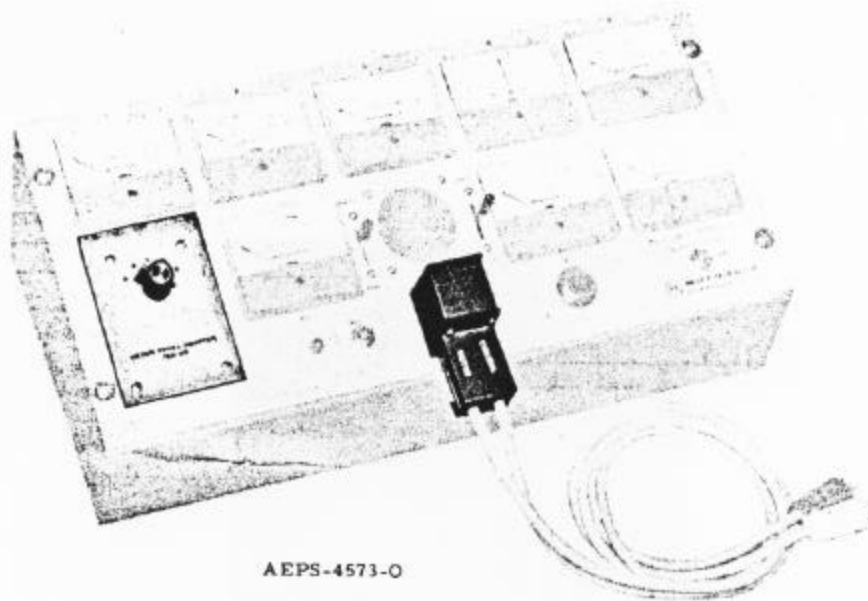


# MOTOROLA

## CONVERSION KIT

MODEL TEK-40



AEPS-4573-O

### 1. APPLICATION

The addition of this kit to a Model TEK-5B or TEK-5C Test Bench Metering Panel provides test metering for the "Micor" series of mobile radios. This kit expands the present range of testing capabilities of the panel while retaining all of the previous functions. The modified TEK-5B or 5C Panel will operate as it did prior to modification when the program switch is in the "A" position.

### 2. DESCRIPTION

The TEK-40 Conversion Kit consists of a five-layer program switch, prewired to a cable harness, and a conversion plug which will couple

two standard TEKA-72 "Micor" Test Cables to the 20-pin metering receptacle on the TEK-5B/C Panel.

### 3. MODIFICATION

#### NOTE

A convenient means of holding the test panel during conversion is provided by removing the panel from the housing, reversing the panel, and refastening it to the housing. When the housing is placed on a flat surface, wiring and components are completely exposed.

#### a. Panel Preparation

Refer to the removal detail and remove the indicated wires and components.

**MOTOROLA INC.**

ENGINEERING PUBLICATIONS

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**Communications Division**

SCHAUMBURG, ILLINOIS 60172

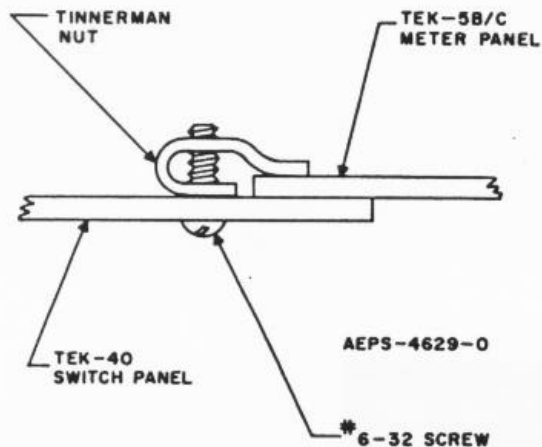
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6/6/72-NPC

b. Switch and Wiring Harness Installation

(1) Using the supplied #6-32 screws, lock-washers (4 each), and nuts (2 #6-32 nuts and two Tinnerman nuts) fasten the TEK-40 Switch Panel to the meter panel using the Tinnerman nuts and the holes at the bottom made available by the removal of the two test points.

**NOTE**

When installing the TEK-40 in the TEK-5B Meter Panel, the two Tinnerman nuts are used to clamp the switch panel to the meter panel as shown in the following detail.



(2) Referring to the TEK-40 wiring diagram, connect the wires to the indicated terminations (solder where necessary). Use the short length of yellow-green wire between pin 3 of the MIC connector and J2-20. Connect the short jumper of white-red wire between J2-9 and J2-19 to complete the conversion.

**4. OPERATION**

a. Install two TEKA-72 Cables into the adapter plug retaining clip and fasten the clip to the adapter plug. A 7-pin red cable plug goes into the metering socket of the adapter plug and a 7-pin white cable plug goes into the control socket. The socket identifications are marked on the retaining clip.

b. Insert the adapter plug assembly into the 20-pin connector in the meter panel.

**NOTE**

The TEKA-72 Cable may now be connected to a "Micor" radio set to perform control (red\*) and metering (white) functions.

\*Pin 3 of the red control plug must be clipped off for proper mating in the radio set control socket.

c. The TEK-40 Program Switch selects different sections of the "Micor" radio sets for metering as shown in the table below.

SELECTOR POSITION	25-50 MHz "MICOR" RADIO	132-174 MHz "MICOR" RADIO
A	Standard TEK-5B/C Operation	
B	Exciter, PA*, Ant, Matching	
C	Receiver	Rcvr, PA*
D		Exciter
E		Power Control

(\*Refer to sub-paragraph 4. f.)

d. Other functions that are operational in positions B, C, D and E are:

(1) Receiver Audio Metering - (M7) when XMIT/REC switch is in REC position.

(2) SPKR/LOAD Switch - In the LOAD position a 3-ohm resistor is substituted for the meter panel speaker selected by SPKR.

(3) XMIT/REC Switch - In the XMIT position the range of meter 4 is 50-0-50 uA.

(4) KEY - Panel mounted pushbutton provides P-T-T function.

(5) MIC - The "Micor" microphone may be connected to the meter panel MIC connector if a TEKA-74 Adapter is used.

e. When testing the "Micor" radio sets, the B+ meter (M9) monitors the regulated nominal 9.6 volts at the control board. This appears as a reading in the range of 600 to 700 on meter 9. To provide a "quick-check" capability, the meter bezel may be removed and the area between 600 and 700 darkened or colored with a pencil to indicate the correct regulator voltage range.

f. The converted TEK-5C (this paragraph does not apply to converted TEK-5B Panels) panel may display slightly lower readings on the first five meters. This error becomes significant when

checking PA currents on meter 5, therefore refer to the meter 5 nomograph for correct meter reading equivalents.

The standard correlation for the TEK-5B and the portable test set is:

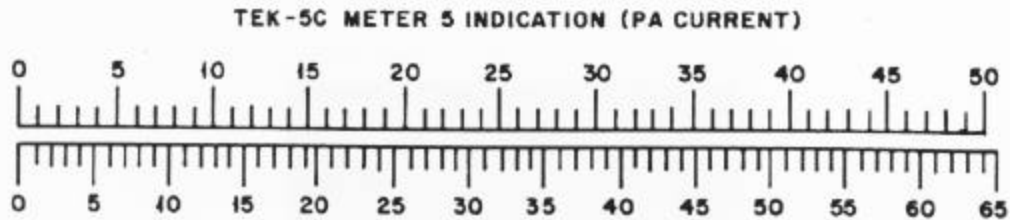
100 mV = 50 uA across 2000-ohms meter resistance

In the TEK-5C:

100 mV = 39 uA across 2560-ohms meter resistance

Therefore to convert the meter reading into actual power amplifier current, multiply the reading by 128% or 1.28. To convert from actual power amplifier current to meter reading multiply the current by 78% or .78.

For easy conversion refer to the meter 5 nomograph.



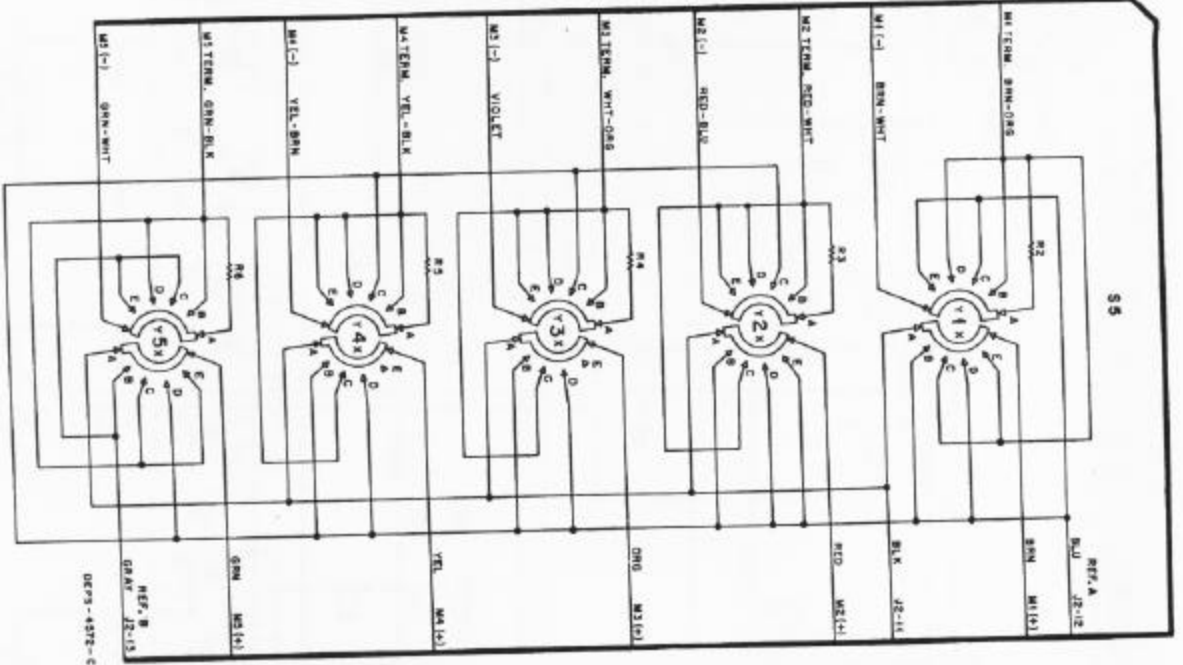
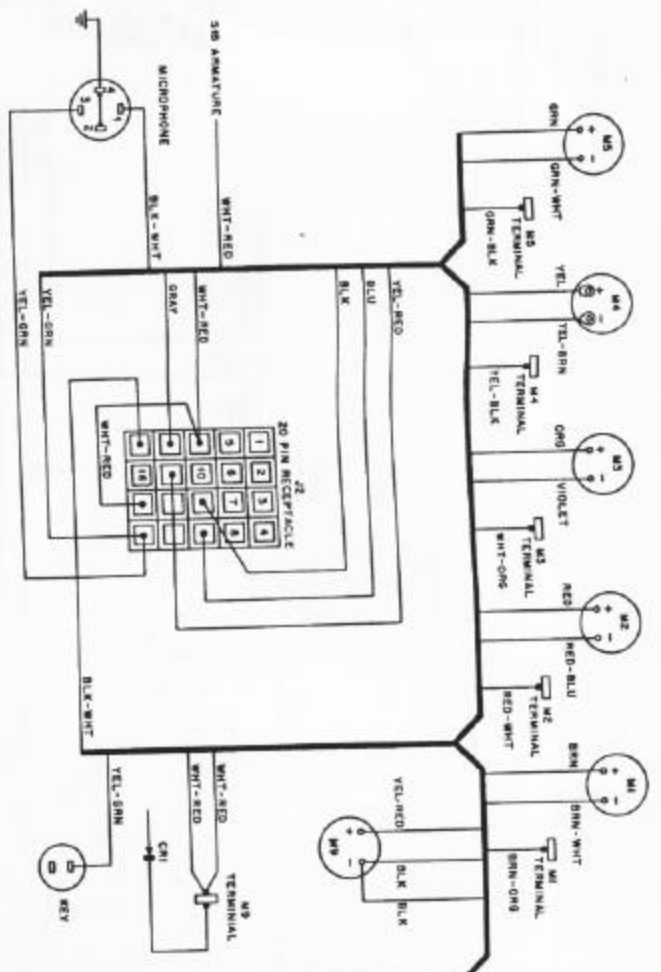
ACTUAL PA CURRENT

AEPS-4584-A

TEK-5C METER 5 INDICATION X 1.282 = ACTUAL PA CURRENT

# TEK-40 CONVERSION KIT

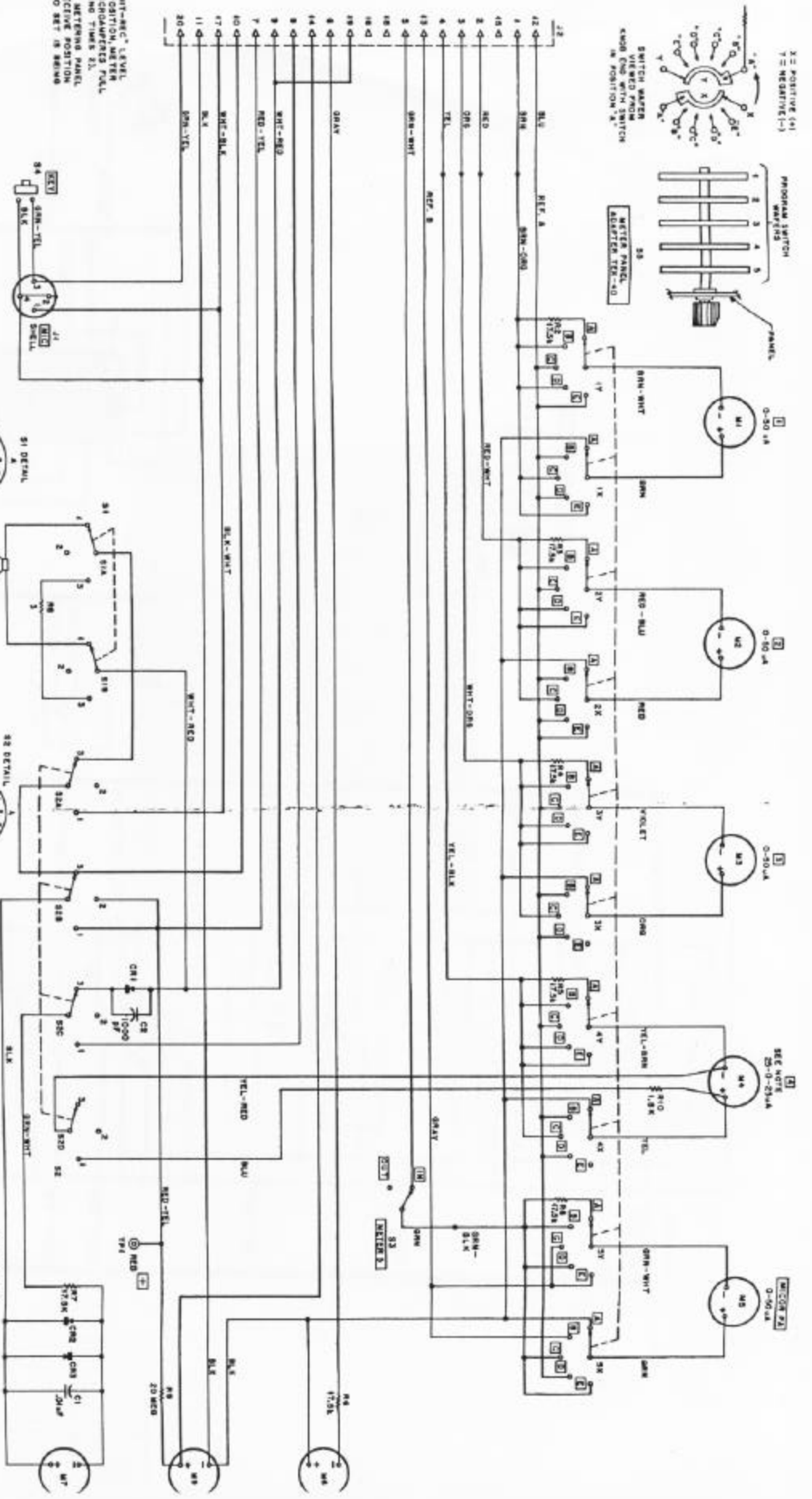
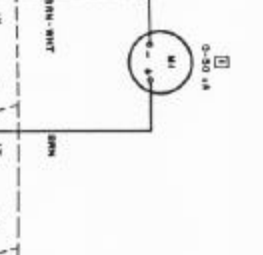
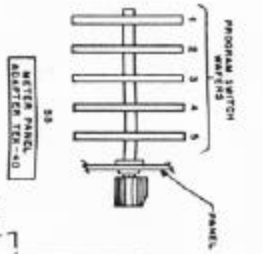
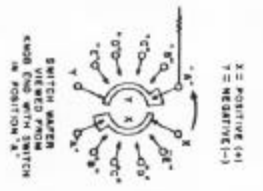
WIRING HARNESS AND PROGRAM SWITCH WIRING DIAGRAM (REAR VIEW)



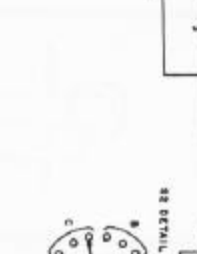
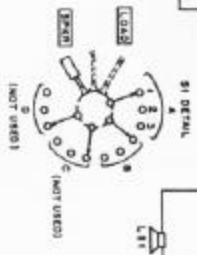
## PARTS LIST

REFERENCE SYMBOL	MOTOR PART
J1	9CB420
J2	9CM420
J3	
R1	5K8924
R2 thru 6	6K8955
S5	40B842
W1	1E9425
	NON-RE
	42B842
	36B825

DEFS - 4572-C

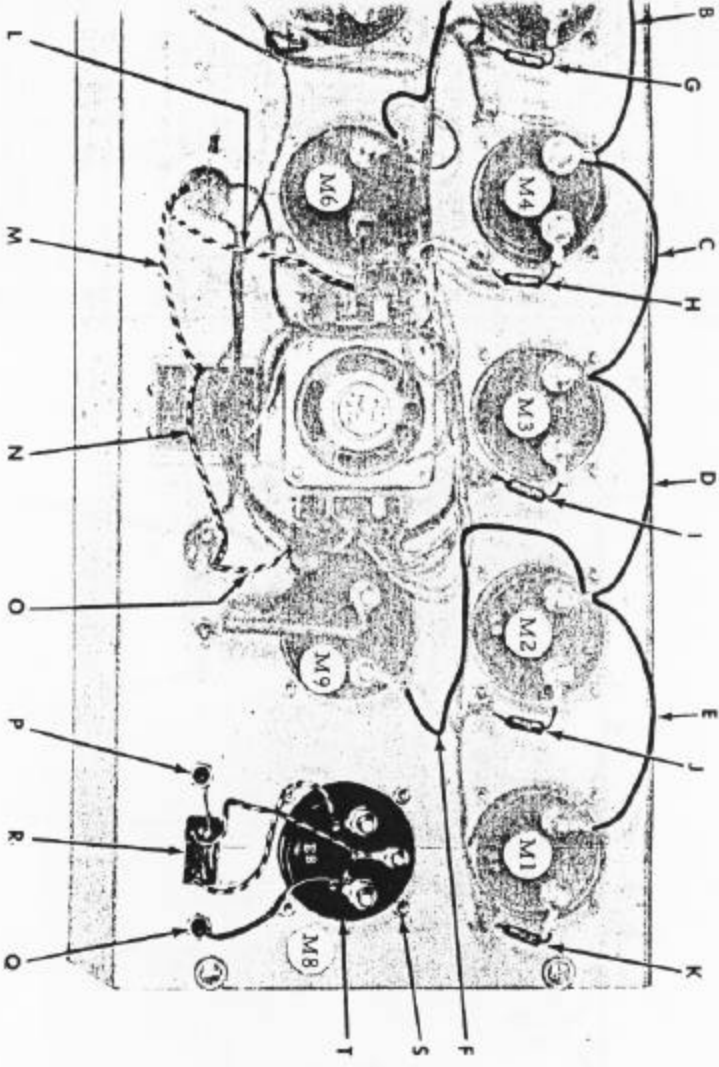


NOTES:  
1. WHEN FUNCTIONAL "SWIT-REC" LEVEL SWITCH IS IN "SWIT" POSITION, METER SHOULD BE IN "REC" POSITION. THIS IS VALID FOR ALL METER SETS.  
2. TESTS MUST BE RUN WITH METER PANEL WHEN A "MOTOR" RADIO SET IS BEING TESTED.



SELECTION POSITION	TEST-RECEIVER REFERENCE POLARITY				
	METER 1	METER 2	METER 3	METER 4	METER 5
A	(+)	(+)	(+)	(+)	(+)
B	(+)	(+)	(+)	(+)	(+)
C	(+)	(+)	(+)	(+)	(+)
D	(+)	(+)	(+)	(+)	(+)
E	(+)	(+)	(+)	(+)	(+)

TEK-5B/C Meter Panel with  
TEK-40 Conversion Kit  
Schematic Diagram  
Motorola No. PEPS-4628-A  
6/6/72-NPC



REMOVAL CHART

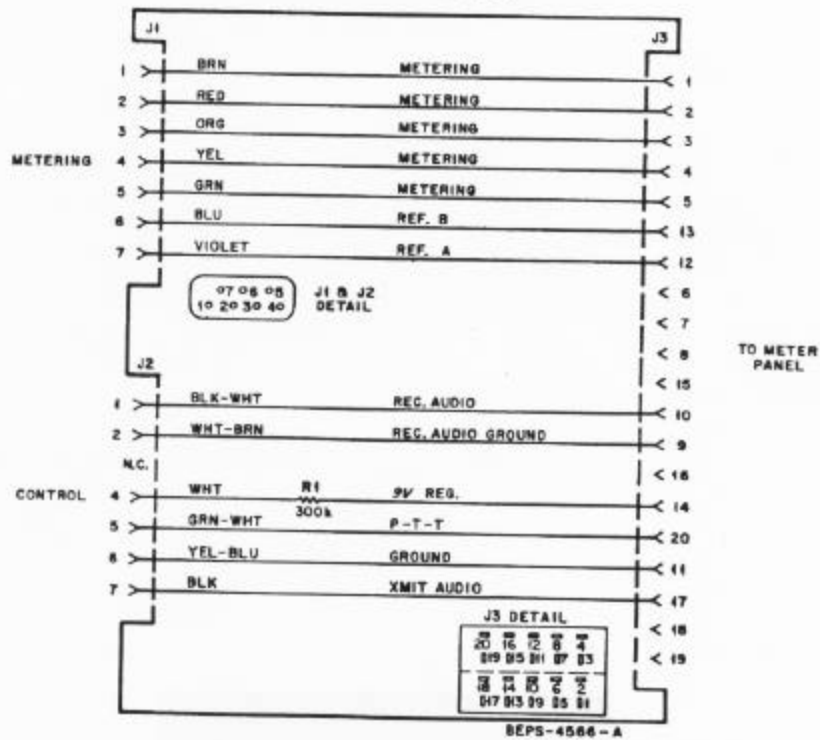
REF. SYM.	DESCRIPTION	TERMINATIONS		NOTES
		FROM	TO	
A	Blk Wire	M6 (+)	M5 (+)	
B	Blk Wire	M5 (+)	M4 (+)	
C	Blk Wire	M4 (+)	M3 (+)	
D	Blk Wire	M3 (+)	M2 (+)	
E	Blk Wire	M2 (+)	M1 (+)	
F	Blk Wire	M2 (+)	M9 (-)	
G	Resistor 17.5K	M5 Term. Strip	M5 (-)	
H	Resistor 17.5K	M4 Term. Strip	M4 (-)	
I	Resistor 17.5K	M3 Term. Strip	M3 (-)	
J	Resistor 17.5K	M2 Term. Strip	M2 (-)	
K	Resistor 17.5K	M1 Term. Strip	M1 (-)	
L	Whi-Blk Wire	Pin 3 Microphone Receptacle	Speaker-Load Switch	
M	Whi-Blk Wire	Pin 3 Microphone Receptacle	J2-9	
N	Whi-Blk Wire	J2-9	S4	
O	Whi-Blk Wire	S4	M9 Term. Strip	Cut lead at M9 Term. Strip to avoid heat damage to diode CR1
P	Pin jack (TP-2) and associated wire			
Q	Pin jack (TP-3) and associated wire			
R	Toggle switch (S5) and associated wires			
S	Mounting hardware for M8 (4 nuts, 4 lockwashers)			
T	Meter M8			

EPS-4569-A

TEK-40 Conversion Kit  
 Removal Detail  
 Motorola No. PEPS-4571-A  
 3/24/71-NPC

# 1P84253C65 ADAPTER PLUG ASSEMBLY

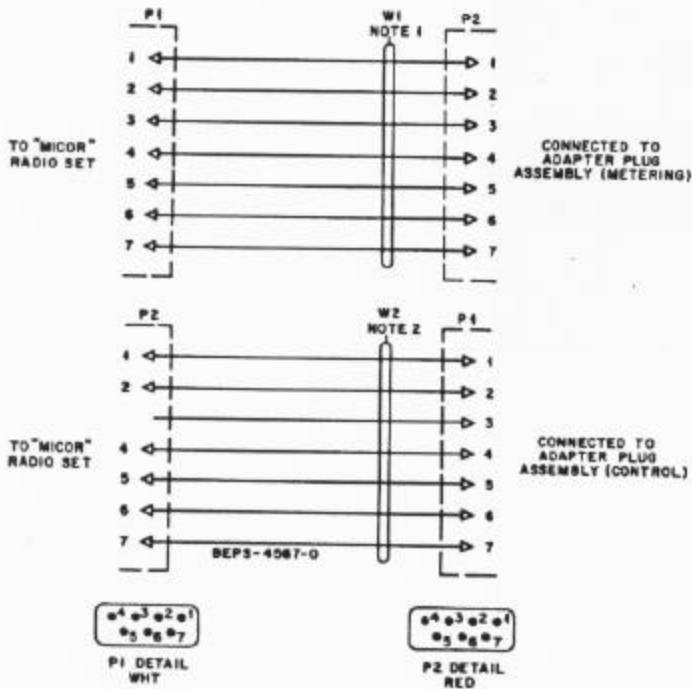
(TEK - 5 B/C WITH TEK-40 CONVERSION KIT  
TO MICOR 7-PIN CABLES)



Adapter Plug Assembly

## TEKA-72 CABLE ASSEMBLY

(ADAPTER PLUG TO RADIO)  
NOTE 3



TEKA-72 Cable Assemblies

NOTES:

1. W1 METERING CABLE ASSEMBLY IS A 7-CONDUCTOR CABLE WITH A 7-PIN PLUG ON EACH END.
2. W2 SAME AS W1 EXCEPT PIN 3 CUT OFF ON RED HANDLE END.
3. THESE CABLES ARE NOT SUPPLIED AS PART OF THE TEK-40 CONVERSION KIT. THEY ARE AVAILABLE THROUGH LOCAL PARTS DEPOTS. THE CABLES USED WITH EITHER A TEK-17 OR TEK-37A CABLE KIT WILL INTERCHANGE WITH THESE CABLES.

EPS-4630-0

Adapter Plug and Cable Assemblies  
Wiring Diagrams  
Motorola No. PEPS-4738-A  
6/6/72-NPC