

11-24-2001

INSTRUCTION SHEET

UTAH BEGINNER'S KIT

The kit comes to the constructor with some of the smaller parts pre-mounted to avoid any possible error in assembly. The transmitter consists of an R.F. Chassis containing the entire Oscillator circuits as well as the antenna tuning condenser, a separate chassis containing a complete power supply, and a professionally-styled steel cabinet to house the two chassis.

The wiring has been made very simple but should not be hurried, as one mistake may mean a loss of a tube or a part.

THE R. F. CHASSIS

"Top Unit"

This chassis should be wired as shown in the schematic and pictorial diagram enclosed using the push-back wire enclosed with the kit.

The two tuning condensers mount with the right angle brackets mounted on the stand-off insulators by means of the machine screws provided. This method of mounting the condensers is used so as to bring the frames of the condensers above the chassis, thereby offering complete insulation from "ground." The shafts of the two condensers will pass through the oversize holes in the cabinet, but will not touch the cabinet. Due to the use of large diameter skirt-type knobs, very slight, if any, hand capacity will take place when tuning the transmitter.

The mounting of the various parts is clearly shown and will present no difficulty to the builder. The chassis has been so designed that all of the wiring with the exception of the two leads brought up through the rubber grommet to the meter may be completed before installing in the cabinet. Be sure and allow enough length for these leads "about four inches above chassis" for making the meter connections.

The five-prong socket is the mounting for the crystal, using the two side prongs which would normally be Plate and Cathode on a tube, such as a 227. The closed-circuit jack located on the rear of the chassis is the "key" jack, and connection is made with any standard phone plug with two flexible leads "Not tinsel wire" to the key. Be sure to wire this jack exactly as shown in the diagram. The terminal strip on the back connects the various leads brought up from the power supply unit. DO NOT rely on the chassis in making the ground connections. Use a common connecting wire to all ground returns and then solder to the ground lug.

The various numbers marked on the octal 6L6 socket correspond with the numbers shown on the schematic diagram. Important--the #1 lug which is the 6L6 tube shell, connects to the cathode #8 and not to ground.

POWER SUPPLY

Mount the transformer and choke as shown on the pictorial diagram. The two switches on the chassis front have their lugs facing the center of the chassis. Mount the remaining parts and then carefully wire as per diagram. Use a good grade of rosin core solder.

IMPORTANT

Either the type 6L6 metal or glass tube 6L6G may be used in the transmitter, but if a glass type is used, a small capacity must be introduced between the plate and cathode. This may be done as follows:--

Solder a short piece of push-back wire of about three inches in length to the plate #3 on the socket, and another to the Cathode #8.

Twist the two insulated leads together three or four times which will furnish the small capacity required

from plate to cathode.

The above addition is only used if the glass type 6L6G is used. It is not to be used if a 6L6 metal tube is used.

The above is only used when operating on harmonics.

No condenser is used across the input side of the filter. This improves the regulation of the plate supply to a high degree.

The numbers on the rectifier tube socket correspond with those shown on the schematic diagram.

One of the two switches "off-on" turns on the filaments to allow time for the tubes to warm up before plate voltage is applied. The other switch "Send-Receive" permits the tubes to remain warm while receiving. This latter switch removes the plate voltage from the tubes.

After wiring has been completed and checked, the coil should be wound as shown on the coil table for the Amateur band chosen. Wire for this coil is included with this kit.

TUNING PROCEDURE

The correct operating voltage and current will depend a great deal upon the type of antenna used, and whether or not the Oscillator is operating on crystal or harmonic frequency.

NOTE: Although this kit may be operated on more than one band with one crystal, it is not recommended to be used on harmonics unless the operator has had experience or a good frequency meter or wave-meter to distinguish between the crystal frequency or one of the harmonics. It is therefore urged to use a 160 meter crystal for 160 meters, a 40 meter crystal for 40 meters, etc.

The key plug is inserted in its phone jack and the rig turned on

and allowed half a minute to warm up.

The plate current should be between 15 and 25 milliamperes with the Antenna disconnected. This plate current will increase to a value between 65 and 100 M.A. when fully loaded and with Antenna properly tuned and taking full power output which will be about 25 watts on all bands when a crystal frequency is being used.

For example, when a 160 meter crystal is used, the transmitter will operate on 160 meters "Fundamental frequency," or on 80 meters by using the 160 crystal and substituting the 80 meter coil instead of the 160 meter coil.

Plate volts will read from 400 - 350 volts, and the screen volts should be from 200 - 150 volts.

Tuning is simple and only requires that the proper crystal and coil be used. Tune the Oscillator tank condenser for a pronounced dip on the meter. Tune the antenna tuning condenser to a point where the meter reading increases. Continue this procedure until the meter reads to 80 or 100 M.A. If more than one dip takes place in tuning the Oscillator Tank, the reading highest on the dial scale may be assumed to be the correct position.

ANTENNA

The turn data on the Antenna coils has been taken on the average Amateur Antenna system using 6" spaced feeders to a half wave Zepp or Hertz Antenna.

One of the Amateur Handbooks' chapter on Antennas should be consulted and the table showing feeder lengths for Parallel tuning will show the correct length of feeder system to use.

In some cases, such as single-wire feed, the connection to the

Antenna tuning condenser may be wired in series with the Antenna coil instead of that shown on the schematic.

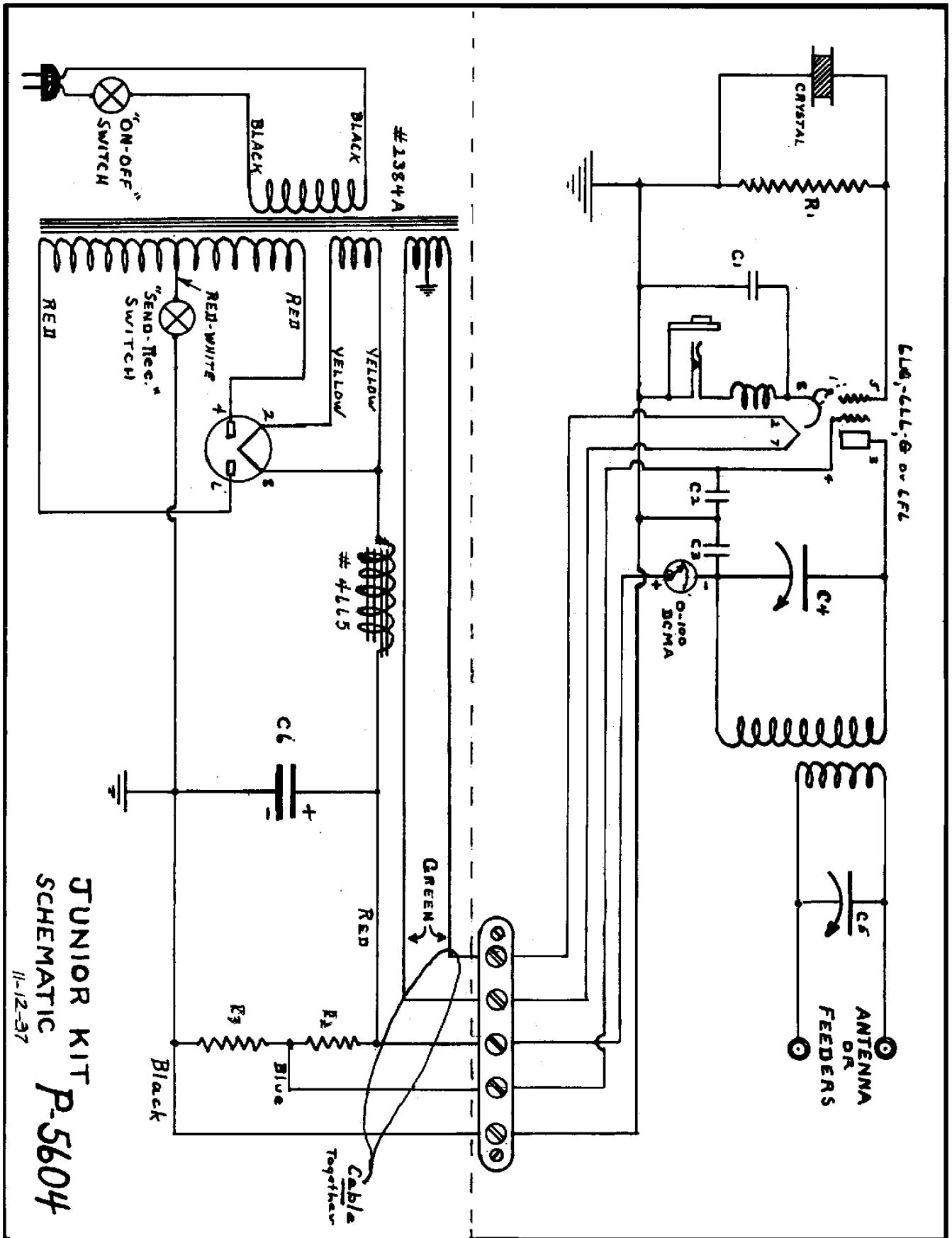
SUMMARY

If properly constructed and adjusted, this kit will give excellent performance. Some of its outstanding features are:--

1. High Output with minimum parts.
2. Crystal Controlled.
3. Professionally styled.
4. Flexible tuning ease.
5. Makes an excellent portable.
6. Most watts Output per dollar.

The UTAH Radio Products Company also make complete line of Transmitter Kits of 80 - 500 and one K.W. ratings in both phone and C.W. units. For information on these kits, see your jobber or write to our Amateur Radio Division.

UTAH RADIO PRODUCTS COMPANY
CHICAGO, U.S.A.



PARTS REFERENCE SHEET

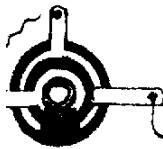
UTAH AMATEUR JR. KIT

R1 50,000 Ohm Carbon Resistor "2 Watt"
R2 5,000 Ohm Vitreous Resistor "10 Watt"
R3 50,000 Ohm Carbon Resistor "2 Watt"
C1 .00025Mf. Mica Condenser
C2 .01 Mf. Paper Condenser
C3 .006 Mf. Mica Condenser
C4 100 mmf. Variable Condenser
C5 250 mmf. Variable Condenser
C6 4 mf. Electrolytic Condenser

R.F.C.--- 2.5 Mh. Radio Frequency Choke

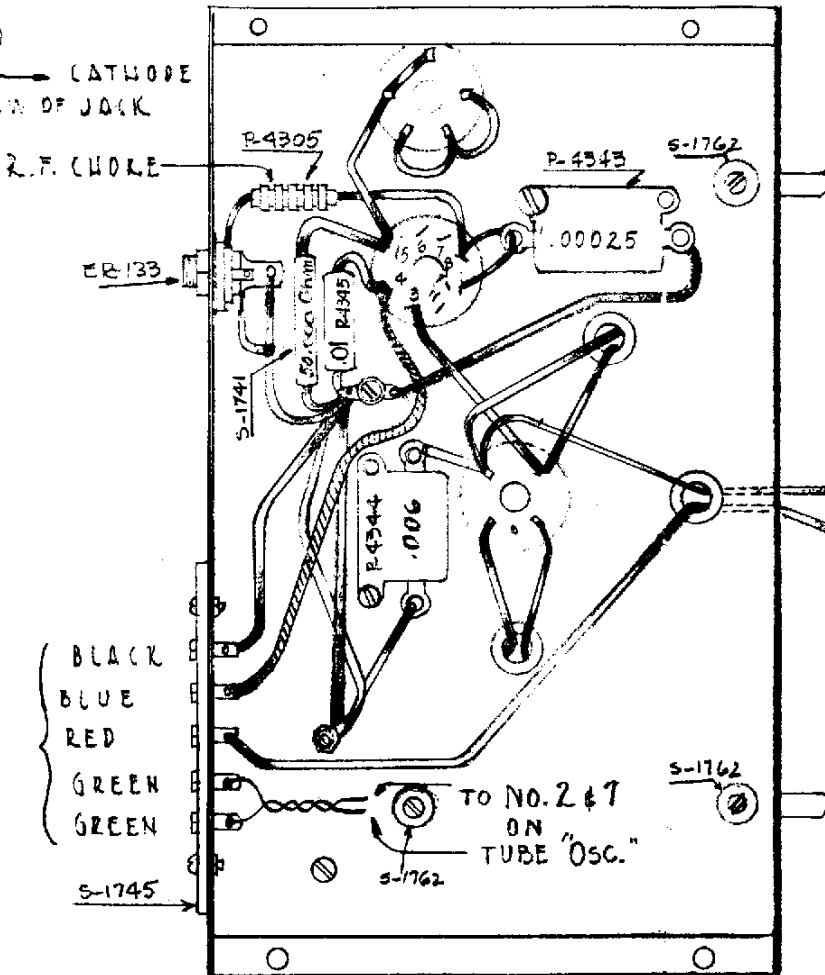
x Crystal "Connect as per Instructions."

M Triplett Model 221 0-100 D.C. Milliammeter



CATHODE
BACK VIEW OF JACK

IND



GREEN -
"CONNECT TO METER"
RED +

- BLACK
 - BLUE
 - RED
 - GREEN
 - GREEN
- S-1745

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REVISIONS

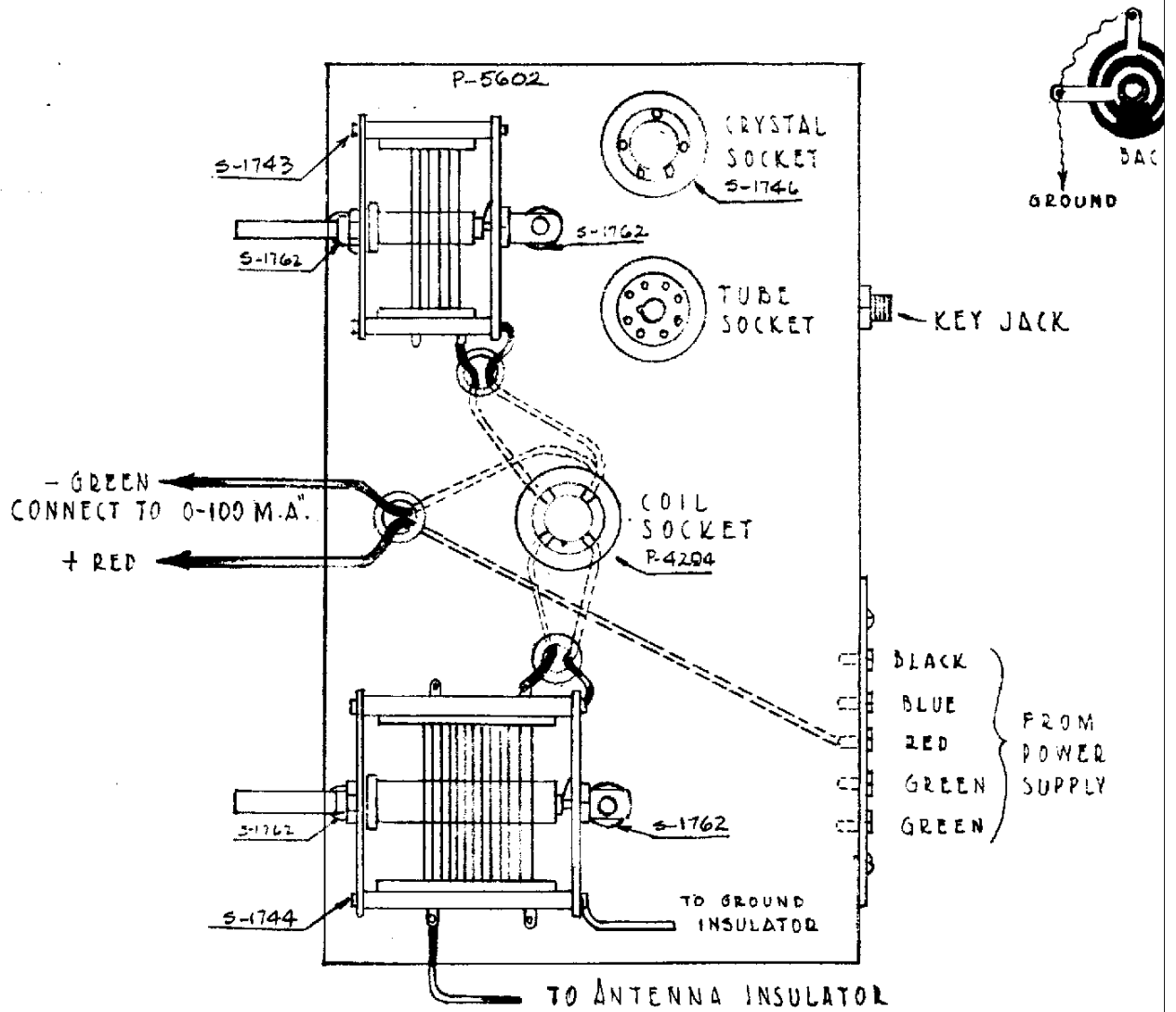
SIGN	WAS	DATE	APPR'D	CHANGE NUMBER
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<p>DIMENSION TOLERANCES</p> <p>DECIMAL DIMENSION (+) (-) .002"</p> <p>FRACTIONAL DIMENSION (+) (-) .0008"</p> <p>ALL REAMED HOLES +.0005" -.0000"</p> <p>UNLESS OTHERWISE SPECIFIED</p>	PURCHASE OR MAKE	
	MATERIAL	
<p>NOTE</p> <p>CHANGES ARE AT POINTS OPPOSITE CHANGE LETTERS IN MARGIN.</p> <p>DO NOT SCALE DRAWING; WORK TO DIMENSIONS.</p>	FINISH	SCALE
	UTAH RADIO PRODU	

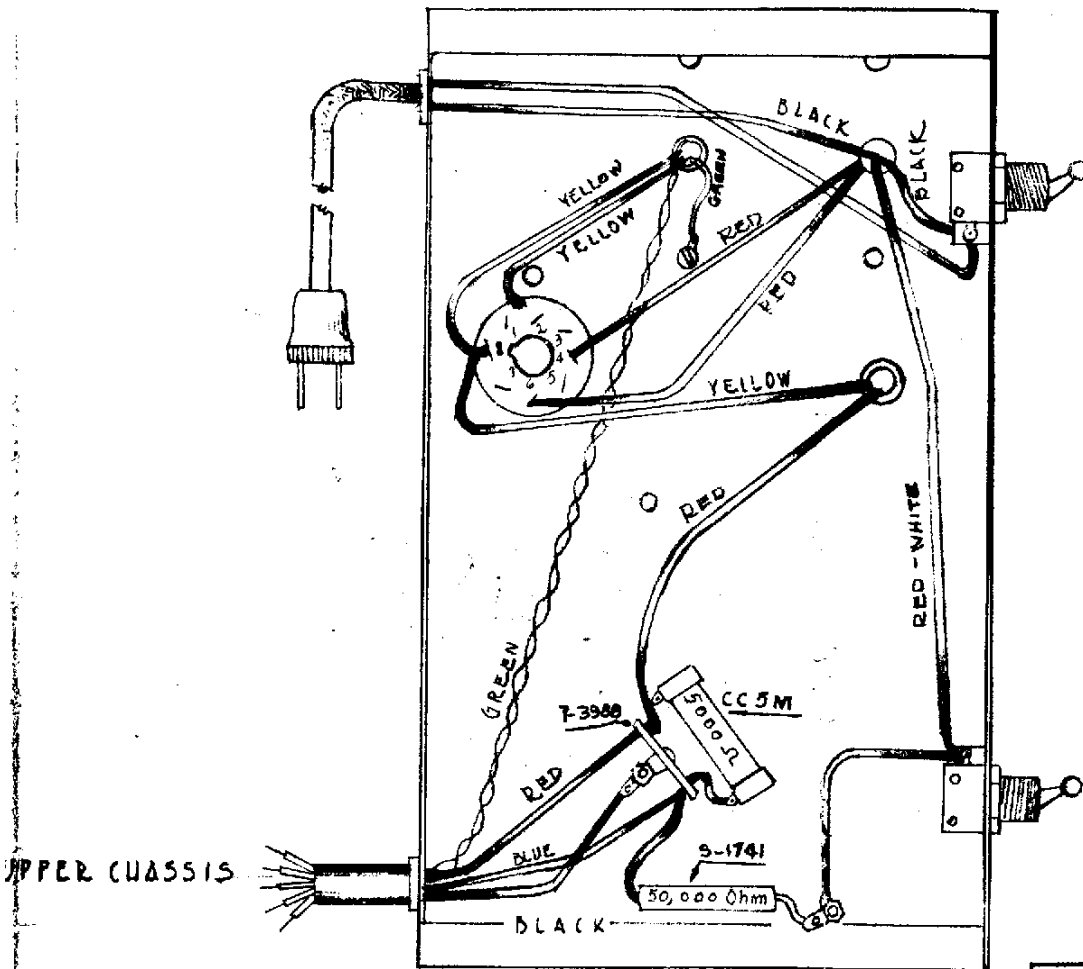
USED ON

TOP CHASSIS JR. KIT

DESIGNED BY	CHK'D	APPR'D	<p>P-5605</p> <p>ISSUE NO: 2</p> <p>DATE: 11-12-37</p>
CHICAGO, ILL.			



PICTORIAL JR KIT



REVISIONS				
SIGN	WAS	DATE	APPR'D	CHANGE NUMBER
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DIMENSION TOLERANCES DECIMAL DIMENSION (+) (-) .002" FRACTIONAL DIMENSION (+) (-) .008" ALL REAMED HOLES +.0005" -.0000" UNLESS OTHERWISE SPECIFIED	PURCHASE OR MAKE		USED ON		
	MATERIAL		NAME BOTTOM CHASSIS JR KIT		
NOTE CHANGES ARE AT POINTS OPPOSITE CHANGE LETTERS IN MARGIN. DO NOT SCALE DRAWING; WORK TO DIMENSIONS.	FINISH	SCALE	DATE ISSUED 11-12-37	DR. CHK'D APPR'D	P-5606 ISSUE NO: 2 DATE: 11-12-37
	UTAH RADIO PRODUCTS CO., CHICAGO, ILL.				

