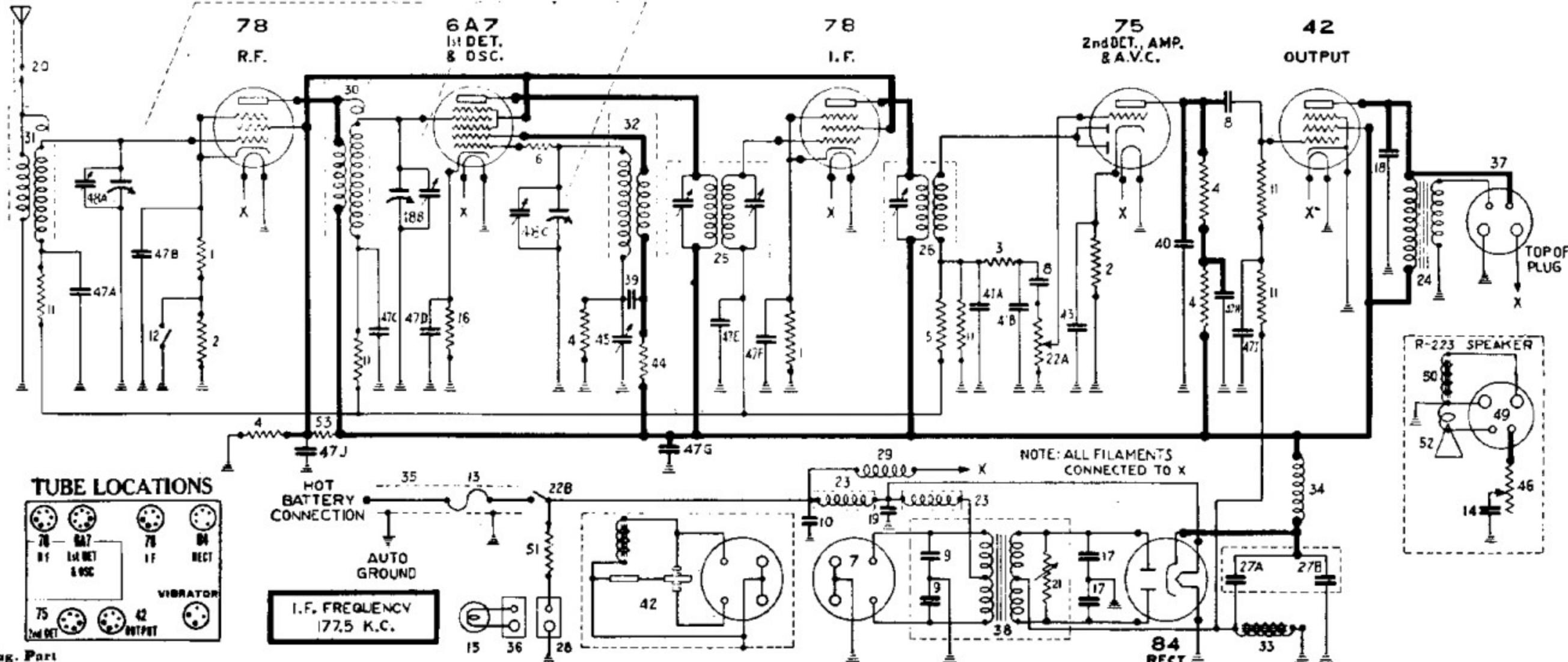


# STEWART-WARNER 1171 & 1172 AUTO RADIO (R-117 CHASSIS)



Diag. Part No.	Description	15	36	26
1 67257	500 ohm $\frac{1}{4}$ watt carbon resistor.....	30	83746	R.F. (B) Coil and shield.....
2 67580	6000 ohm $\frac{1}{4}$ watt carbon resistor.....	31	83747	Antenna (A) coil and shield.....
3 81152	10,000 ohm $\frac{1}{4}$ watt carbon resistor.....	32	83748	Oscillator (O) coil and shield.....
4 81645	50,000 ohm $\frac{1}{4}$ watt carbon resistor.....	33	83760	Filter Choke .....
5 81682	1.1 megohm $\frac{1}{4}$ watt carbon resistor.....	34	83770	B supply R.F. Choke.....
6 81727	1000 ohm $\frac{1}{4}$ watt carbon resistor.....	35	83777	Battery Lead and Fuse Housing.....
7 81837	Vibrator socket (Standard 4 prong).....	36	83778	Pilot Light Cable and Plug.....
8 83007	.02 Mfd. 600 volt paper condenser.....	37	83779	Speaker Cable and Plug.....
9 83058	.25 Mfd. 100 volt paper condenser.....	38	83780	Power Transformer .....
10 83063	.5 Mfd. 100 volt paper condenser.....	39	83783	.00011 mfd. Molded Mica Cond.....
11 83082	260,000 ohm $\frac{1}{4}$ watt carbon resistor.....	40	83784	.0011 mfd. Molded Mica Condenser.....
12 83179	Local-distance switch (SPST) .....	41A	83785	Dual .0005 mfd. Molded Mica Condenser.....
13 83207	15 ampere fuse .....	41B	83785	.....
14 83217	.04 Mfd. 600 volt paper condenser.....	42	83800	Plug-in Vibrator .....
15 83278	6 volt pilot light bulb (1171 only) (See No. 84058 for Model 1172)	43	83803	12 mfd. 25 V. Dry Electrolytic Condenser.....
16 83293	300 ohm $\frac{1}{4}$ watt carbon resistor.....	44	83804	40,000 ohm, $\frac{1}{3}$ watt Carbon Resistor.....
17 83352	.015 Mfd. 600 volt paper condenser.....	45	83805	Oscillator Padding Trimmer.....
18 83706	.006 Mfd. 600 volt paper condenser.....	46	83812	35,000 ohm Tone Control Variable Resistor.....
19 83714	1.5 Mfd. 100 V. shielded paper condenser.....	47A		.05 mfd. 100 volt Paper Condenser
20 83723	Antenna lead and plug.....	47B		.05 mfd. 100 volt Paper Condenser
21 83725	0-500,000 ohm special Gobabar resistor.....	47C		.05 mfd. 100 volt Paper Condenser
22-A 83728	{500,000 ohm volume control} (On-Off Switch }	47D		.05 mfd. 100 volt Paper Condenser
22-B 83728	In one unit.	47E	83831	.05 mfd. 100 volt Paper Condenser
23 83730	Vibrator R.F. Choke .....	47F		.05 mfd. 100 volt Paper Condenser
24 83731	Output Transformer .....	47G		.05 mfd. 100 volt Paper Condenser
25 83732	First I.F. Transformer .....	47H		.1 mfd. 100 volt Paper Condenser
26 83733	Second I.F. Transformer .....	47I		.1 mfd. 400 volt Paper Condenser
27-A 83734	{Dual 8 Mfd. 350 Volt Dry	47J		.25 mfd. 100 volt Paper Condenser
27-B 83734	Electrolytic Condenser .....	48A	83834	.25 mfd. 300 volt Paper Condenser
28 83739	2 prong Pilot Light Socket.....	48B		Three gang Variable Condenser with mtg.
29 83742	Filament R.F. Choke .....	48C		Plate and Shaft Coupling.....

NOTE: ALL FILAMENTS  
CONNECTED TO X

43	Male Speaker Plug and Bracket.....
50	Speaker Field Coil and Housing (3.5 ohms).....
75	35 ohm Flexible Resistor. Note: Early Model 1171 sets used 15 ohm Resistor. No Resistor used in Model 1171.....
21	Diaphragm & Shell Assem. (R-223 Spkr.).....
58	6 to 8 volt Dial Light Bulb (1172 only).....
95	15,000 ohm, 2 watt Carbon Resistor. (See other side for other parts)

**MISCELLANEOUS PARTS NOT SHOWN ON  
DIAGRAM**

Part No.	Description
83144	Spark Plug Suppressor.....
83145	Distributor Suppressor .....
83242	Back Cover and Casting Bracket Screws.....
83727	Back Cover .....
83836	Front Cover and Speaker Grill Cloth.....
83838	Case Assembly, less Covers.....
83861	Tuning Knob (1171 only).....
83862	Volume Control Key (1171 only).....
83904	Generator and Ammeter Condenser.....
84106	Volume Control Knob (1172 only).....

# SERVICE DATA FOR STEWART-WARNER R-131 CHASSIS

## CIRCUIT DESCRIPTION

In the R-131 Chassis, the incoming signal is tuned and amplified in the 78 R.F. stage. Further amplification and frequency conversion to 177.5 K.C. take place in the 77 combination first detector and oscillator tube.

The 177.5 K.C. signal is amplified in the I.F. stage, using a 78 type tube, and then rectified in the diode section of the 75 second detector tube. The rectified current produces a modulated D.C. voltage across the diode load resistor No. 7. The audio component of this voltage appears across the 500,000 ohm volume control. Any part or all of this audio signal may be impressed on the triode section of the 75 tube where amplification takes place.

The modulated drop across resistor No. 7 is filtered and applied to the grids of the 78 R.F. and I.F. tubes to provide A.V.C. resistance of several megohms.

## POWER SUPPLY PROTECTIVE RESISTOR

The filter system and the rectifier tube are protected against breakdown during the warming-up period by the Globar resistor connected across the high voltage secondary of the power transformer (No. 12 in the circuit diagram). This resistor drops rapidly in resistance as the voltage across it rises, so that it acts as a load on the power transformer during the warm-up period and keeps the voltage below the danger point until the tubes are heated and take their normal current. Because of its unique voltage characteristics, the Globar resistor cannot be tested with an ordinary ohmmeter, since it will show a resistance of several megohms.

## CALIBRATION AND ALIGNMENT

A good modulated oscillator and a sensitive output meter are necessary for proper calibration and alignment of the R.F. and I.F. stages of this receiver. The output of the oscillator must be adjustable to give a very weak signal which will not actuate the A.V.C. of the receiver. The output meter must be sensitive enough to give sufficient reading with such a weak signal.

The output meter should be connected from the 41 plate to ground through a .25 mfd. condenser or across the voice coil, depending upon its sensitivity. A convenient point to connect the 41 plate is the terminal of the tone control switch. During all calibration and alignment adjustments, keep the volume control full on.

### I. F. ALIGNMENT

The I.F. trimmers are located on the top of the I.F. transformers which may be reached by removing the front cover. The modulated oscillator should be set to exactly 177.5 K.C. and connected from the 77 control grid to ground. Adjust the oscillator output to give about half-scale reading of the output meter. Tune the set to make certain that no station or signal is tuned in since this would affect the output meter reading. Adjust all three I.F. trimmers to give maximum output reading.

In adjusting the I.F. transformer trimmers, it is desirable to use a bakelite screw driver or one having only a small metal tip. After the I.F. trimmers have been aligned once, go back and repeat the procedure, since any adjustment of one will affect the others to some extent.

## DIAL CALIBRATION

The dial of the Auto Radio is calibrated in kilocycles, except that the last two zeros have been omitted. Inasmuch as changes in the position of the flexible shafts may cause the calibration to vary, the dial can be calibrated as follows:

Tune in a station of known frequency between 800 and 1100 K.C. Insert a screw driver in the slotted shaft on the rear of the control head. Hold the tuning control knob so that the station remains tuned in properly and by turning the screw driver adjust the dial pointer so that it indicates the station frequency.

## REMOTE CONTROL HEAD PARTS

Part No.	Description	List Price
15214	Long mtg. strap screw (10/32 x 1 1/4" R.H.M.S.)	.01
84854	Case screw (4-40 x 3/16")	.00
84860	Flexible casting nut screw	.02
84667	Steering post mtg. bracket	.25
84668	Steering post mtg. strap	.15
84078	Band and plane	.50
84076	Dial light button and socket	.25
84106	Volumetric control knob	.25
84609	Instrument panel mounting screw	.15
84884	Complete accessories for installation	5.00

## FLEXIBLE SHAFTS

Part No.	Description	List Price
84871	Tuning shaft, 2 1/2 inches long	1.50
84873	Volume control shaft, 2 1/2 inches long	1.50
84882	Tuning shaft, 36 inches long	2.00
84883	Volume control shaft, 36 inches long	2.00
84886	Tuning shaft, 30 inches long	2.00
84887	Volume control shaft, 30 inches long	2.00

## R. F. ALIGNMENT

With the test oscillator set to approximately 1400 K.C., tune the set very carefully for maximum output.

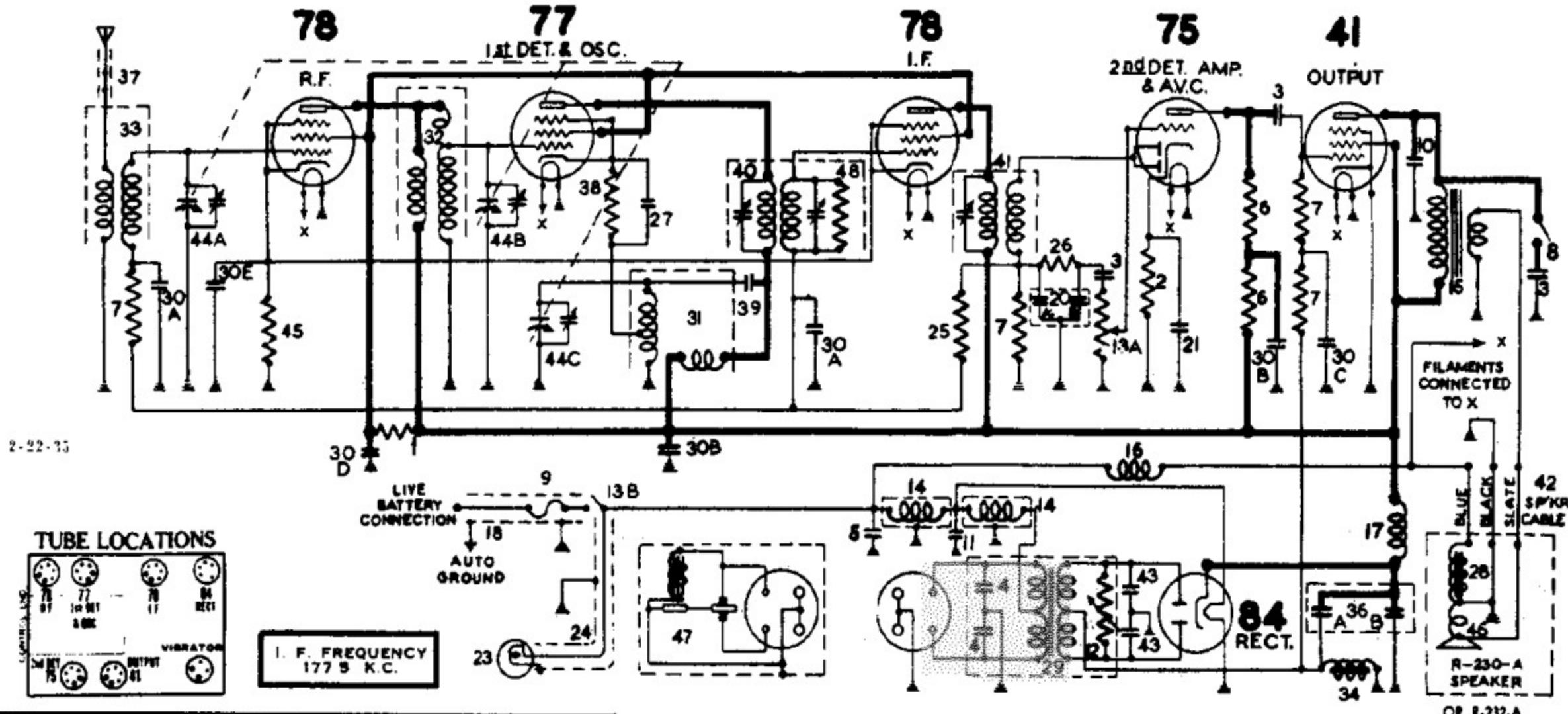
Adjust the output of the oscillator to the minimum value which will give sufficient output meter deflection. Adjust the two trimmers nearest to the shaft end of the gang condenser to give maximum output meter reading.

## MISCELLANEOUS PARTS NOT SHOWN ON DIAGRAM

If the set is badly out of calibration such that it calibrates correctly at one part of the dial but not at another, it is necessary to adjust the oscillator shunt trimmer as explained below. The gang condenser trimmers can be reached by removing the back cover. Connect a .00025 mfd. mica condenser in series with the output of the test oscillator and the aerial lead of the receiver. This condenser is absolutely necessary to secure proper alignment of the antenna stage.

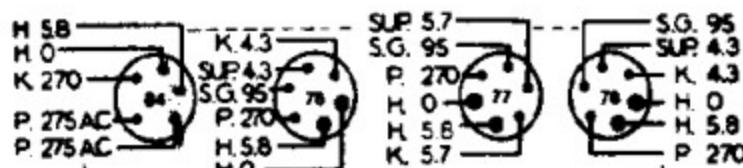
Set the test oscillator to exactly 1400 K.C. Turn the tuning knob until the dial pointer indicates 14.0 (1400 K.C.) and then adjust the oscillator shunt trimmer (third one from shaft end of the variable condenser) until the signal is received with maximum output. Then adjust the other two gang condenser trimmers as directed under R.F. alignment.

MODELS 1511 to 1519  
Schematic, Voltage  
Chassis R-151  
Socket, Parts List

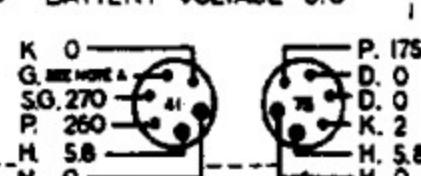


### SOCKET VOLTAGES

BOTTOM VIEW OF CHASSIS



ABBREVIATIONS THESE VOLTAGES MEASURED  
BETWEEN SOCKET TERMINALS  
AND CHASSIS

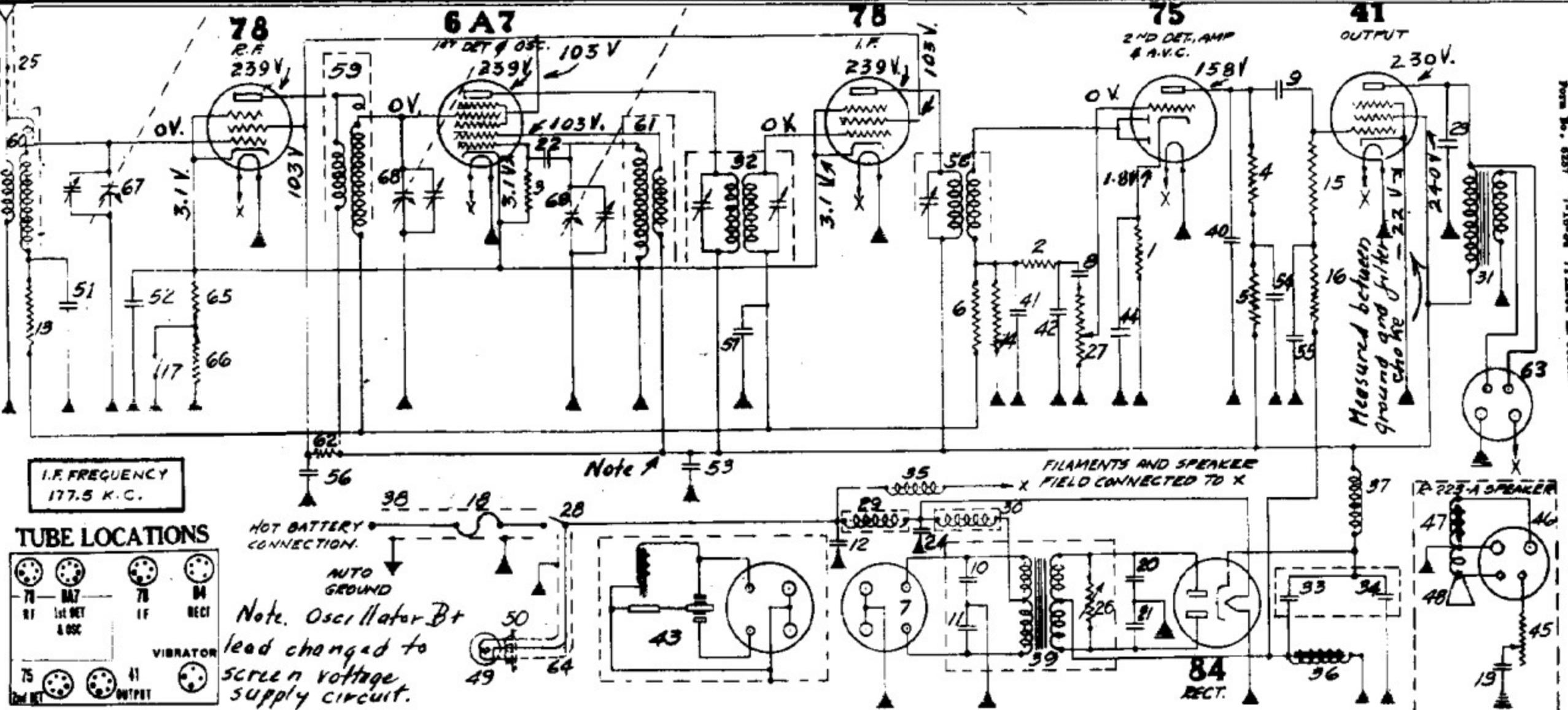


IMPORTANT: Use high resistance voltmeter of 1000 ohms per volt. Readings will vary depending upon range of meter. Make allowances for battery voltage variations.

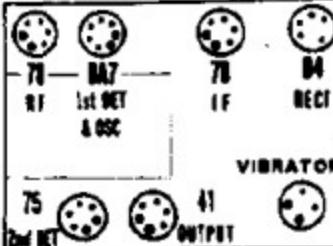
NOTE A: The actual bias on the grid of the 41 tube is -23 volts which must be measured from chassis to the ungrounded filter choke terminal. Due to the high resistance of the grid leak, the voltmeter will show only about -1 volt at the grid.

### MODEL R-151 PARTS LIST

Diag. No.	Part No.	Description	List Price	Diag. No.	Part No.	Description	List Price
1	65022	60,000 ohm 1 watt carbon resistor.	.50	30A	30A	.05 mfd. 300 volt paper cond. (green-white)	.25
2	67580	6,000 ohm 1/4 watt carbon resistor.	.25	30B	30B	1 mfd. 400 v. paper cond. (red or red-white)	.25
3	83007	.02 mfd. 600 volt paper condenser.	.25	30C	84806	.25 mfd. 100 volt paper cond. (green lead)	.25
4	83058	.25 mfd. 100 volt paper condenser.	.25	30D	84807	.25 mfd. 300 volt paper cond. (white lead)	.25
5	83063	.5 mfd. 100 volt paper condenser.	.45	30E	84808	.5 mfd. 100 volt paper cond. (orange lead)	.45
6	83060	51,000 ohm 1/4 watt carbon resistor.	.25	31	84814	Oscillator (O) coil and shield assembly.	1.50
7	83062	260,000 ohm 1/4 watt carbon resistor.	.25	32	84822	R.F. (B) coil and shield assembly.	1.50
8	83179	Tone control switch.	.25	33	84825	Antenna (A) coil and shield assembly.	1.40
9	83207	15 ampere fuse.	.05	34	84827	"B" supply filter choke.	1.35
10	83706	.006 mfd. .000 volt paper condenser.	.25	35A	84829	{ 4 mfd.—400 volt dry electrolytic condenser.	1.50
11	83714	1.5 mfd. 100 volt shielded condenser.	.25	35B	84829	{ 8 mfd.—400 volt dry electrolytic condenser.	1.50
12	83725	Special Globar resistor.	.45	37	84831	Antenna lead and plug.	.10
14	83730	Vibrator R.F. Choke.	.25	38	85081	8000 ohm 1/4 watt carbon resistor.	.20
15	83731	Output transformer.	.25	39	84833	.00007 mfd. molded mica condenser.	.20
16	83742	Filament R.R. choke.	.15	40	84836	1st. I.F. transformer assembly.	2.75
18A	83728	{ 500,000 ohm volume control.	1.25	41	84842	2nd. I.F. transformer assembly.	2.60
18B	83728	Lam. Switch	.15	42	84845	Speaker cable.	.25
17	83770	"B" supply R.F. choke.	.45	43	84850	.05 mfd. 750 volt paper condenser.	.25
18	83777	Battery lead and fuse housing.	.50	44A	84866	{ Three gang variable condenser with mounting plate and shaft coupling.	6.00
20	83785	Dual .0006 mfd. molded mica condenser.	.25	44B	84866		
21	83803	12 mfd. 25 volt dry electrolytic condenser.	.50	44C	84866		
23	84058	6-8 volt dia. light bulb.	.15	45	84882	500 ohm. 1/4 watt flexible wire resistor.	.20
24	84099	Dial light cable.	.25	46	84891	Diaphragm, voice coil, and shell assembly (R-230A only) (Part 85119 for R-232A).	2.10
25	84235	1.1 megohm carbon resistor.	.25	47	84904	Vibrator.	.20
26	84238	11,000 ohm 1/4 watt carbon resistor.	.25	48	85078	510,000 ohm 1/4 watt resistor.	.20
27	84282	.001 mfd. molded mica condenser.	.25	49	85051	8000 ohm 1/4 watt carbon resistor.	.20
28	84791	Field coil and housing (R-230A only) (Part 85118 for R-232A)	.50	50	85118	Field coil and housing (R-232A only).	2.50
29	84798	Power transformer.	.50	46	85119	Diaphragm, and shell assembly (R-232A only)	2.10



## TUBE LOCATIONS



Note. Oscillator  
lead changed to  
screen voltage  
supply circuit.

**MODEL R-118 PARTS LIST**

DIAG.	PART NO.	DESCRIPTION		
1	85780	6000 ohm 1/4 watt carbon resistor	29	85780
2	81152	10,000 ohm 1/4 watt carbon resistor	30	85780
3	81645	50,000 ohm 1/4 watt carbon resistor	31	85781
4	81645	50,000 ohm 1/4 watt carbon resistor	32	85782
5	81645	50,000 ohm 1/4 watt carbon resistor	33	85784
6	81652	1.1 megohm 1/4 watt carbon resistor	34	85784
7	81887	Vibrator socket (standard 4 prong)	35	85784
8	85007	.02 mfd. 600 volt paper condenser	36	85780
9	83007	.02 mfd. 600 volt paper condenser	37	85770
10	83058	.25 mfd. 100 volt paper condenser	38	85777
11	83058	.25 mfd. 100 volt paper condenser	39	85780
12	83068	.5 mfd. 100 volt paper condenser	40	85784
13	83068	100,000 ohm 1/4 watt carbon resistor	41	85785
14	83068	200,000 ohm 1/4 watt carbon resistor	42	85785
15	83068	200,000 ohm 1/4 watt carbon resistor	43	85800
16	83068	200,000 ohm 1/4 watt carbon resistor	44	85808
17	83179	Local distance switch (SPST)	45	85812
18	83207	15 ampere fuse	46	85845
19	83317	.04 mfd. 600 volt paper condenser	47	85850
20	83352	.015 mfd. 600 volt paper condenser	48	84021
21	83352	.015 mfd. 600 volt paper condenser	49	84056
22	83558	.00026 mfd. molded mica condenser	50	84076
23	83708	.006 mfd. 600 volt paper condenser	51	84076
24	83714	1.8 mfd. 100 V. shielded paper cond.	52	84076
25	83723	Antenna lead and plug	53	84077
26	83728	Special diode resistor	54	84077
27	83728	(600,000 ohm volume control) In Case	55	84077
28	83728	(On-off switch) Unit	56	84078
			57	84078
			58	84080
			59	84080
			60	84081

**DIAG. PART**

61	84082	Oscillator (D) coil
62	84088	12,000 ohm 2 watt carbon resistor
63	84091	Speaker cable and female plug
64	84099	Dial light cable
65	84129	100 ohm, 1/2 watt flexible resistor
66	84131	400 ohm, 1/2 watt flexible resistor
67)		
68)	84224	3-gang variable condenser with mounting plate and shaft coupling
..		

MODEL 1181 REMOTE CONTROL HEAD PAGES

- 4 Long mtg. strap screw (10-32 x 1-1/4" RH)
- 0 Bezel only, less glass
- 4 Glass retainer ring
- 3 Glass only
- 4 Bezel gasket (blotting paper)
- 5 Pilot light bulb (Manda #50, 6-8 volts)
- 9 Case Screw (4-40 x 3/16")
- 0 Flexible casing set screw
- 7 Steering post mounting bracket
- 8 Steering post mounting strap
- 4 Dial light button and socket
- 0 Remote control head (less flexible shaft)
- 6 Volume control knob
- 6 Instrument panel mounting accessories

**MODEL 11101 FLEXIBLE SHAFTS**

Special tuning shaft, 28 $\frac{1}{2}$  inches long  
Special volume control shaft, 28 $\frac{1}{2}$  inches long  
Standard volume control shaft, 24 $\frac{1}{2}$  inches long  
Standard tuning shaft, 24 $\frac{1}{2}$  inches long  
Special tuning shaft, 34 inches long  
Special volume control shaft, 34 inches long

## MODEL 1171,1172 STEWART-WARNER CORP.

### Voltage Data

### Alignment Data

The Stewart-Warner 6 Tube Superheterodyne Model No. R-117 Chassis is used in the Model 1171 and 1172 Auto Radio receivers. These two sets are identical with the exception of the remote control head and the flexible shafts.

The Model 1171 remote control uses a key to operate the volume control and a knob for tuning while the 1172 control uses a different type of head with knobs for both the volume control and tuning. Sets with serial numbers below 15000 are Models 1171's, while those above 15000 are 1172's.

The only difference in the chassis used is the omission of the dial light dimming resistor (diagram No. 51) in the 1172 sets.

### DIAL CALIBRATION

In the Model 1171, the dial can be calibrated by tuning in a station of known frequency and then setting the pointer to give the correct reading by turning the adjusting screw which is located on the middle of the back of the remote control head. In the Model 1172, the dial is calibrated by turning the tuning knob after the pointer has stopped at the last dial division. Turning the knob in a clockwise direction, after the pointer reaches 15.4, will lower the dial reading, while turning it counter clockwise after the pointer is at 5.3, will increase the dial reading.

### CIRCUIT DESCRIPTION

In the R-117 Chassis, the incoming signal is tuned and amplified by the 78 R. F. amplifier tube and then it is further amplified and its frequency is converted to 177.5 K. C. in the 6-A-7 combination first detector and oscillator tube.

The 177.5 K. C. signal is amplified by the I. F. stage, using a 7B type tube and is then rectified by the diodes of the 75 second detector tube. The rectified current produces a modulated D. C. voltage drop across the diode load resistor No. 11. The audio frequency modulation is impressed across the 500,000 ohm volume control from where it goes to the triode section of the 75 which acts as an audio amplifier.

The modulated drop across resistor No. 11 is filtered and applied to the grids of the 78 and 6-A-7 tubes to provide A.V.C. action.

### LOCAL-DISTANCE SWITCH

A local-distance switch is provided in the R. F. stage to reduce the sensitivity in locations where there is excessive noise in tuning between stations. When this switch is in the open or "local" position, a high bias is placed on the 78 R. F. tube by means of the 6000 ohm resistor No. 2. This resistor is shorted out when the switch is thrown to the distance position (with white dot showing) thus reducing the bias to its normal value.

### POWER SUPPLY PROTECTIVE RESISTOR

The filter system and the rectifier tube are protected against breakdown during the warming-up period by the Globar resistor connected across the high voltage secondary of the power transformer (No. 2) in the circuit diagram. This resistor drops rapidly in resistance as the voltage across it rises, so that it acts as a load on the power transformer and keeps the voltage below the danger point until the tubes warm up and take their normal current. Because of its unique voltage characteristics, the Globar resistor cannot be tested with an ordinary ohmmeter, since it will show a resistance of several megohms.

### ALIGNMENT

A good modulated oscillator and a sensitive output meter are necessary for proper alignment of the R. F. and I. F. stages of this receiver. The output of the oscillator must be adjustable to give a very weak signal which will not actuate the A. V. C. of the receiver. The output meter must be sensitive enough to give sufficient reading with such a weak signal.

The output meter should be connected from the 42 plate to ground through a .25 mfd. condenser or across the voice coil, depending upon its sensitivity. A convenient point to connect to the 42 plate is the terminal of the tone control which is wired to the speaker plug.

During all alignment adjustments, keep the volume control full on and the local-distance switch in the "distance" position.

### ADJUSTMENT OF OSCILLATOR TRIMMER LOCAL-DISTANCE SWITCH IN DISTANCE POSITION BOTTOM VIEW OF CHASSIS

If the receiver is badly out of calibration, particularly at the high frequency end, the following procedure should be followed.

Set the test oscillator to exactly 1400 K. C. Turn the tuning knob until the dial pointer indicates 14.0 (1400 K. C.) and then adjust the oscillator trimmer (third one from shaft end of the variable condenser) until the signal is received with maximum output. Then adjust the other two gang condenser pointers calibration to get the proper reading. After adjusting the padding trimmer check up the alignment and calibration at 1400 K. C.

### SOCKET VOLTAGES

**IMPORTANT:** Use high resistance voltmeter of 1000 ohms per volt. Readings will vary depending upon range of meter. Make allowances for battery voltage variations.

**NOTE A:** The oscillator grid voltage varies from 0 at 1500 K. C. to -5.0 at 530 K. C.

**NOTE B:** The oscillator anode voltage may vary from 118 at 1500 K. C. to 128 at 530 K. C.

**NOTE C:** The actual bias on the grid of the 42 tube is -15.5 volts which must be measured from chassis to the ungrounded filter choke terminal. Due to the high resistance of the grid leak, the voltmeter will show only about -1 volt at the grid.

### I. F. ALIGNMENT

The I. F. trimmers are located on the top of the I. F. transformers which may be reached by removing the front cover. The modulated oscillator should be set to exactly 177.5 K. C. and connected from the 6-A-7 control grid to ground. Adjust the oscillator output to give about half-scale reading of the output meter. Adjust all three I. F. trimmers to give maximum output reading.

The first I. F. transformer has a double trimmer consisting of a slotted screw for one trimmer and a hex nut around it for the other. In adjusting the second I. F. transformer single having only a small metal tip. After the I. F. trimmers have been aligned once, go back and repeat the procedure, since any adjustment of one will affect the others to some extent.

### R. F. ALIGNMENT

The gang condenser trimmers can be reached by removing the back cover. Connect a .00025 mfd. mica condenser in series with the output of the test oscillator and the aerial lead of the receiver. This condenser is absolutely necessary to secure proper alignment of the antenna stage. Adjust the receiver to approximately 1400 K. C. and carefully tune the service oscillator to give maximum receiver output. Adjust the output of the oscillator to the minimum value which will give sufficient output meter deflection. Adjust the two trimmers nearest to the shaft end of the gang condenser to give maximum output meter reading. The trimmer on the other condenser section (oscillator section) should not be touched unless the set does not calibrate properly.

### ALIGNING THE PADDING CIRCUIT

The low-frequency oscillator padding trimmer located on the side of the chassis does not require adjustment in most cases. However, if the set does not align properly at the low frequency end proceed as follows: Remove the chassis from the case. To do this it is necessary to unsolder the braided shield from the outside of the case at the antenna plug opening and then remove the screws holding the chassis to the case. Set the test oscillator to exactly 600 K. C. and tune the high frequency end, the following procedure should be followed.

Set the test oscillator to exactly 1400 K. C. Turn the tuning knob until the dial pointer indicates 14.0 (1400 K. C.) and then adjust the oscillator trimmer (third one from shaft end of the variable condenser) until the signal is received with maximum output. Then adjust the other two gang condenser trimmers as directed under R. F. alignment.

