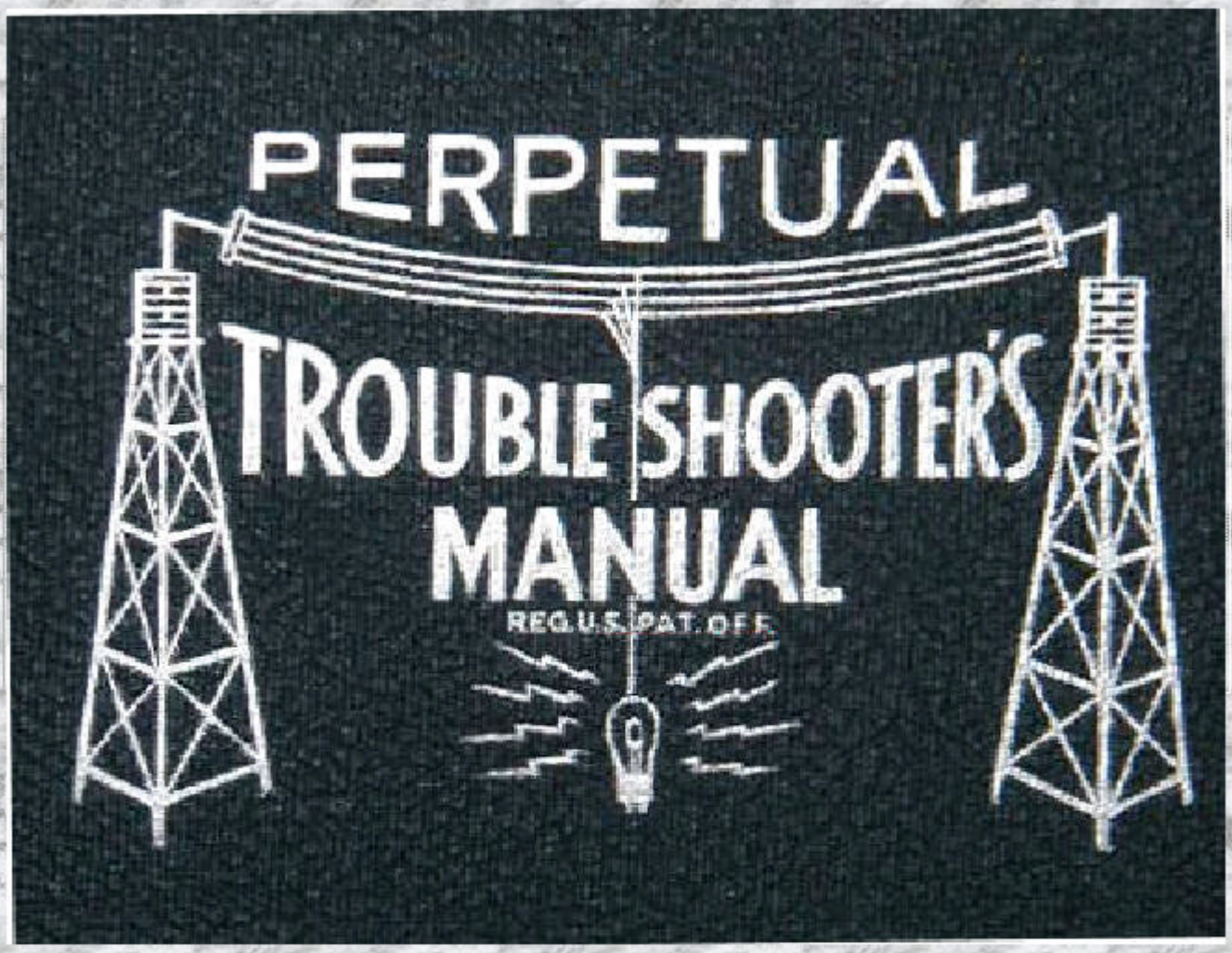
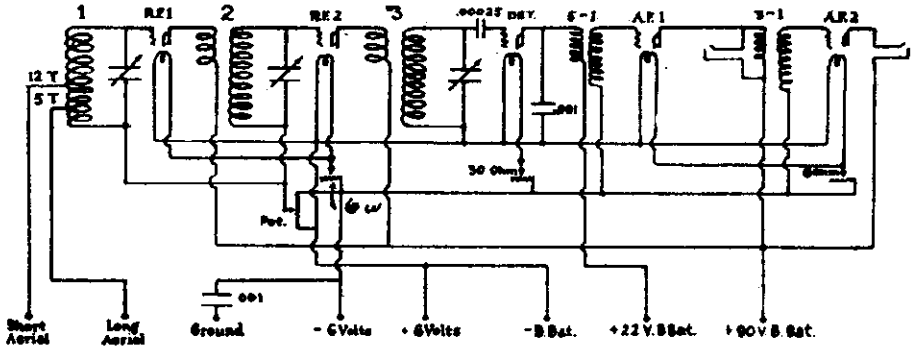
RIDER'S
VOLUME - I

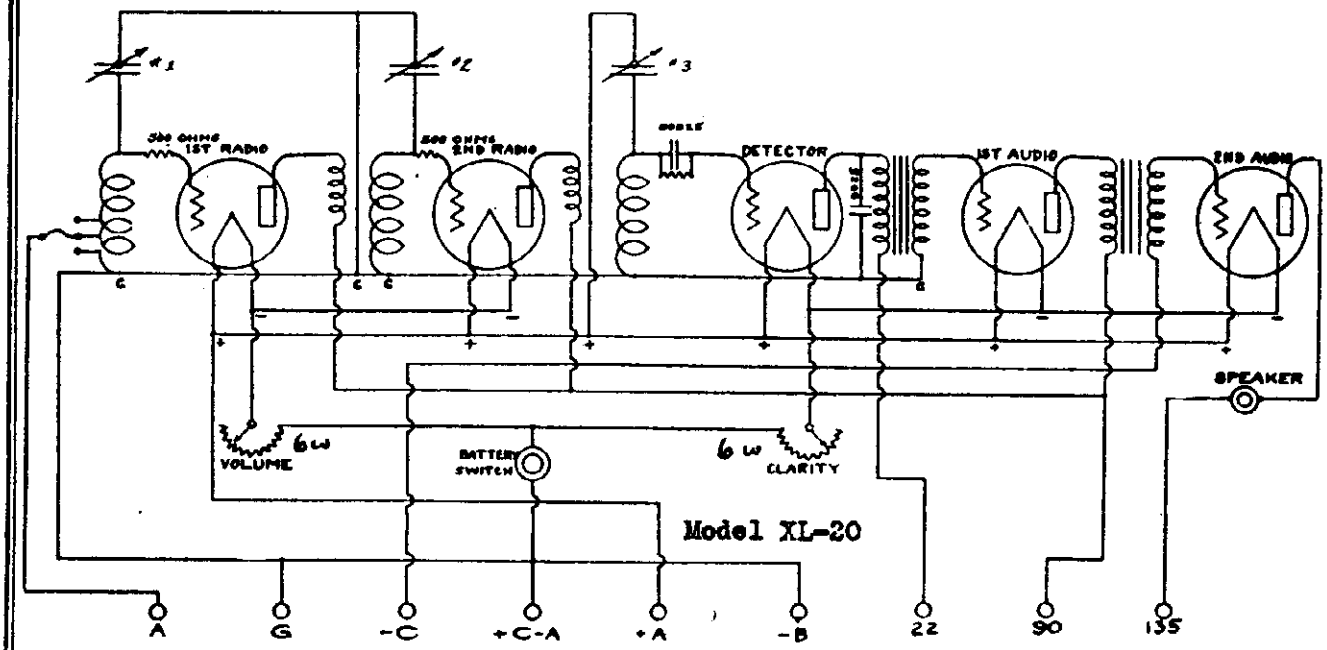


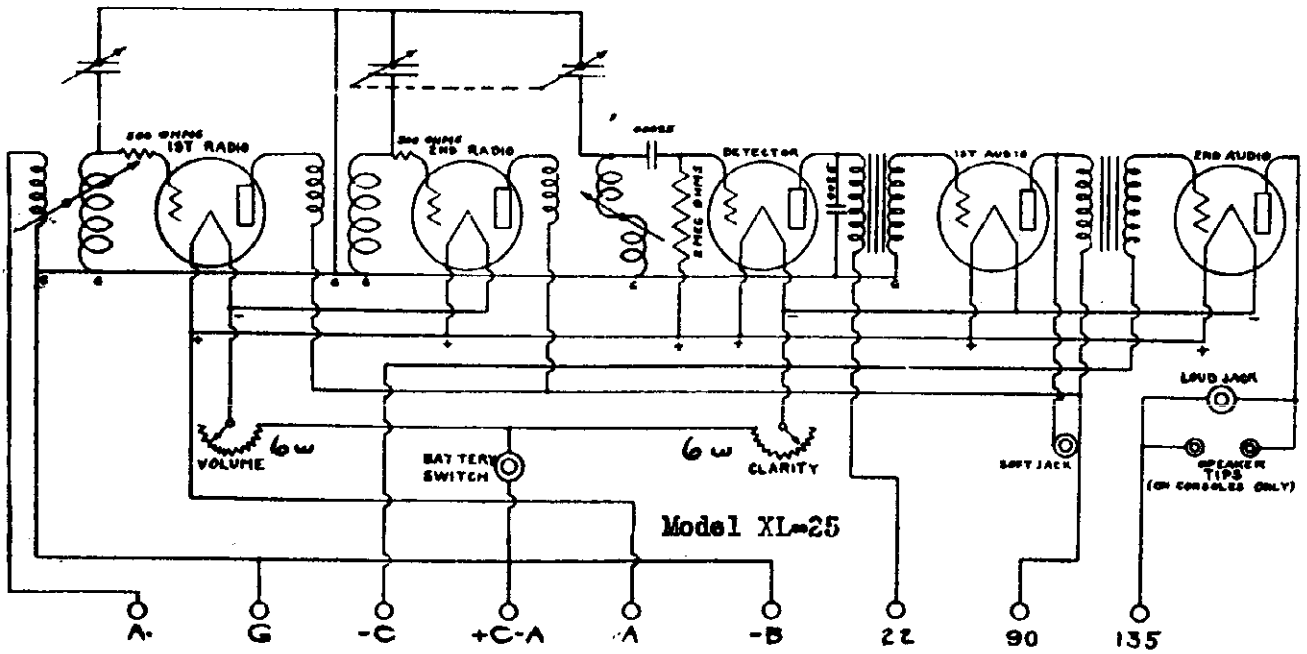
COVERING THE 1920's
THROUGH
LATE 1930

THE A-C DAYTON CO.

MODEL XL-5
XL-20
XL-25

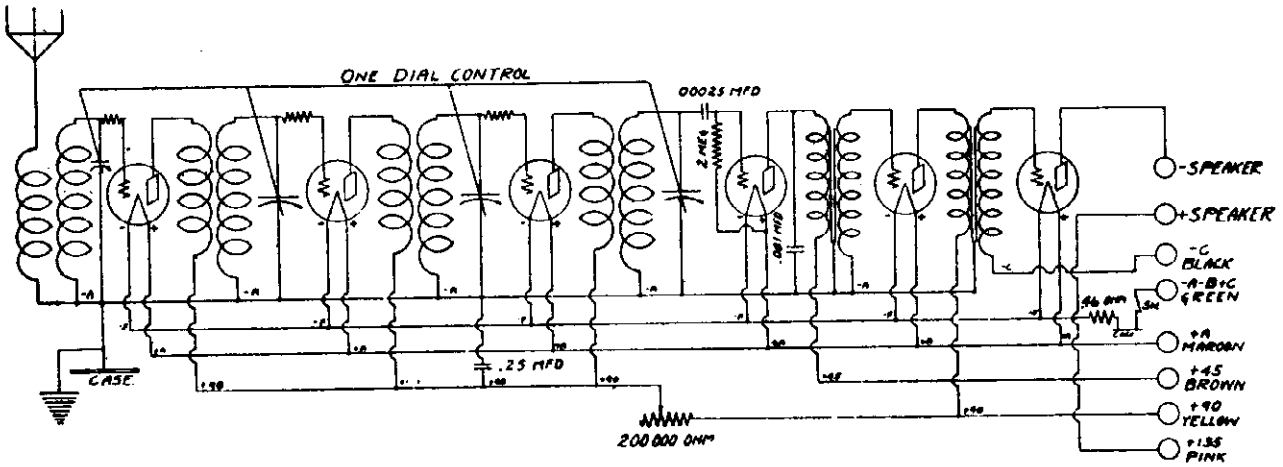




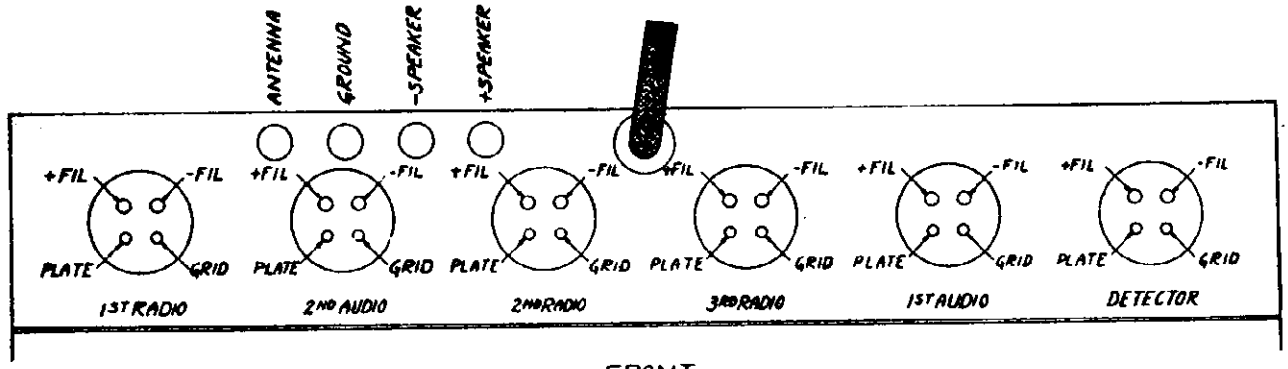


MODEL XL - 50
XL - 60

THE A-C DAYTON CO.

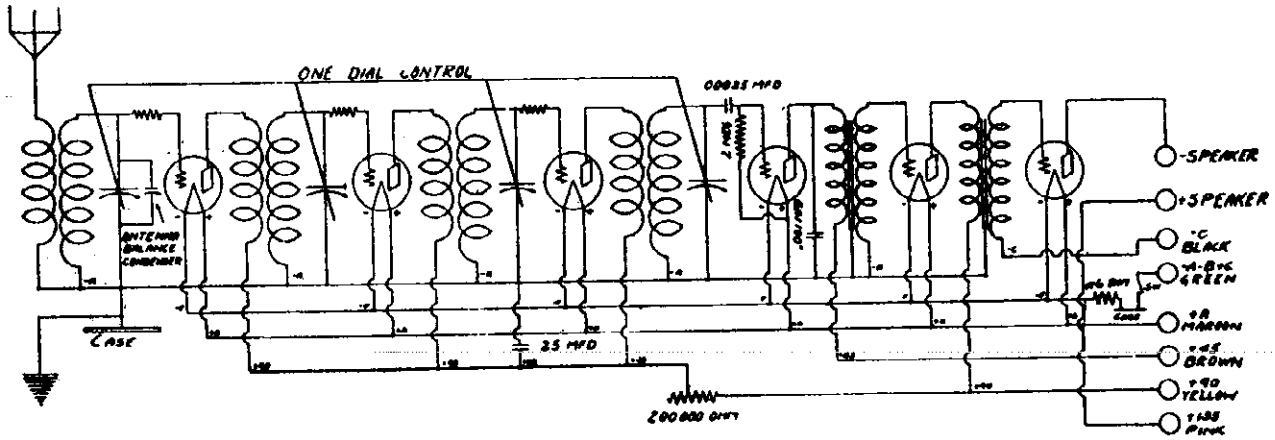


Model XL - 50



FRONT

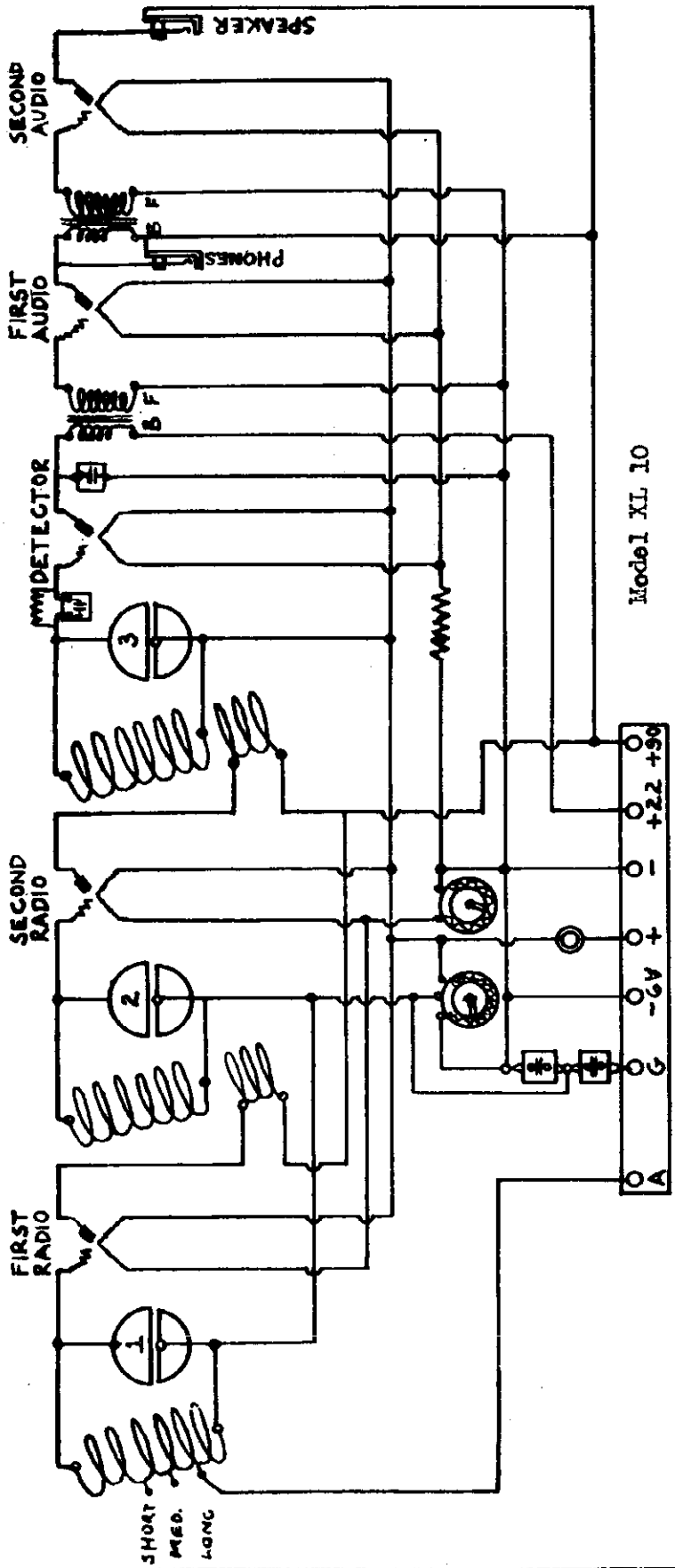
THE A-C DAYTON CO



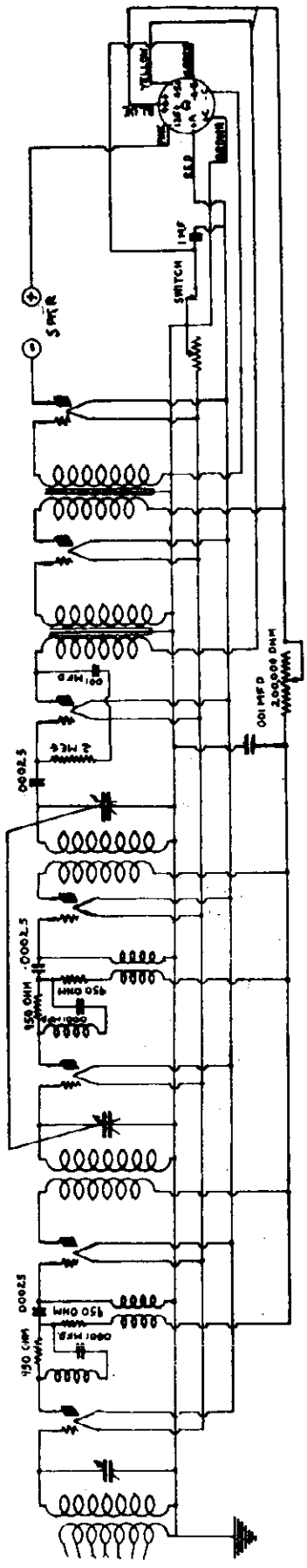
Model XL - 60

THE A-C DAYTON CO.

MODEL XL - 10
XL - 70



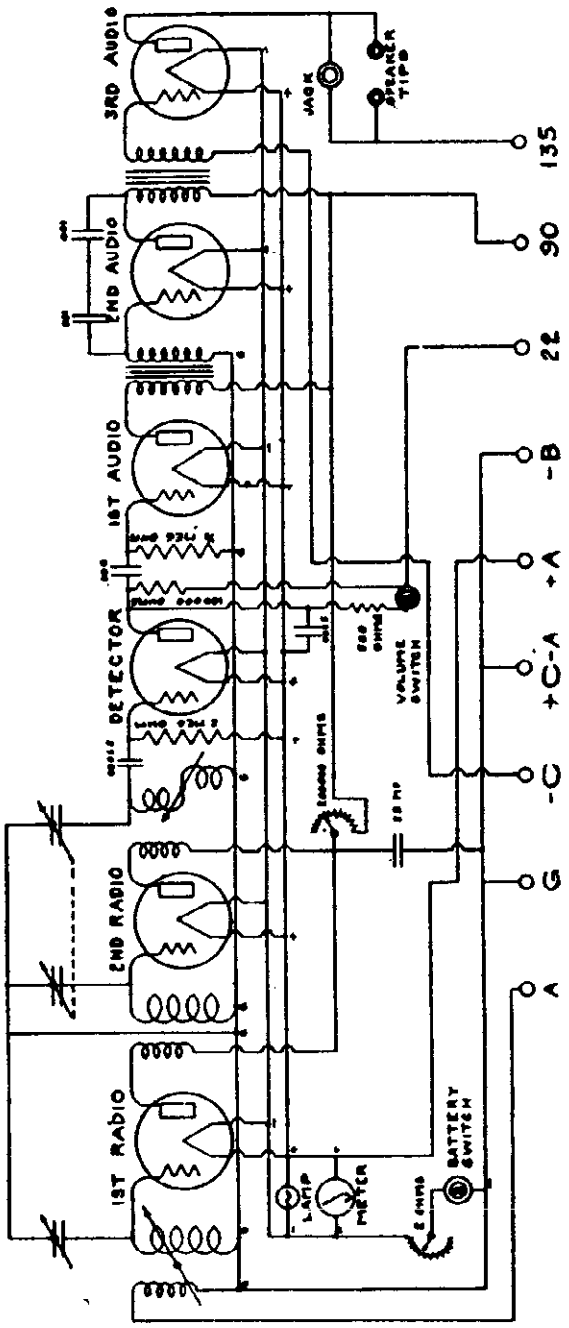
Model XL 10



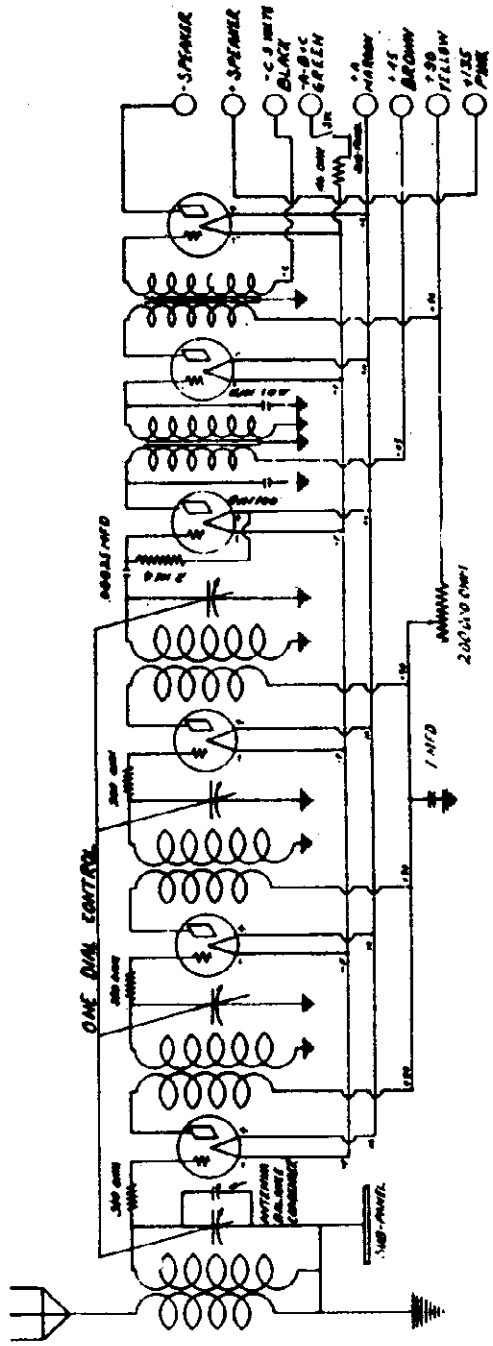
Model XL 70

MODEL XL - 30
XL - 61

THE A-C DAYTON CO



Model XL - 30



Model XL - 61 Battery

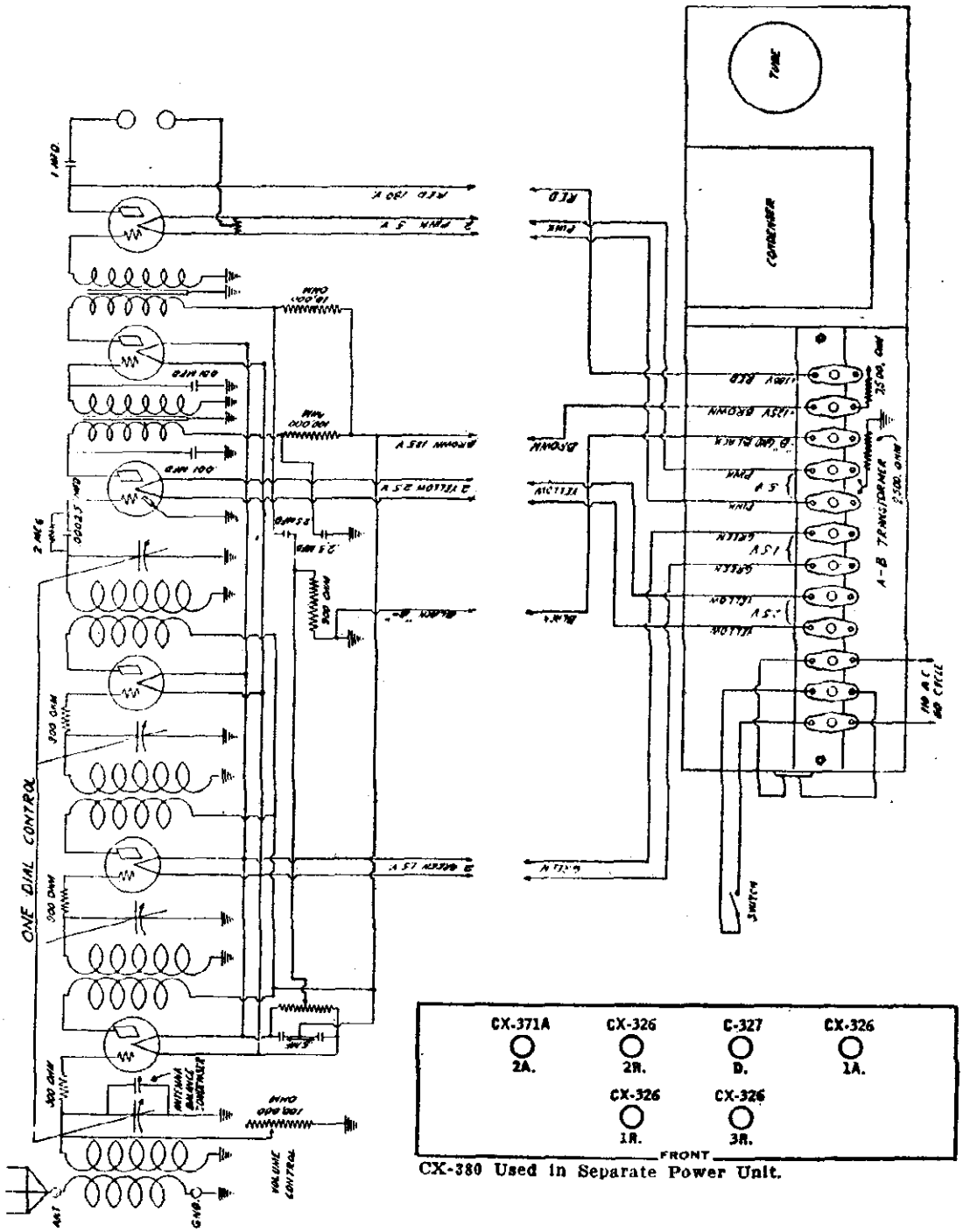
XL 61 (Batt.)

*CX-112A	CX-301A	CX-301A or CX-300A or CX-112A	CX-301A
2nd A.F.	2nd R.F.	Det.	1st A.F.

CX-301A 1st R.F. CX-301A 3rd R.F.

MODEL AC - 63

THE A-C DAYTON CO



AC-63
(A.C.)

4-CX326
1-C327
1-CX371A
1-CX380

CX-380 Used in Separate Power Unit.

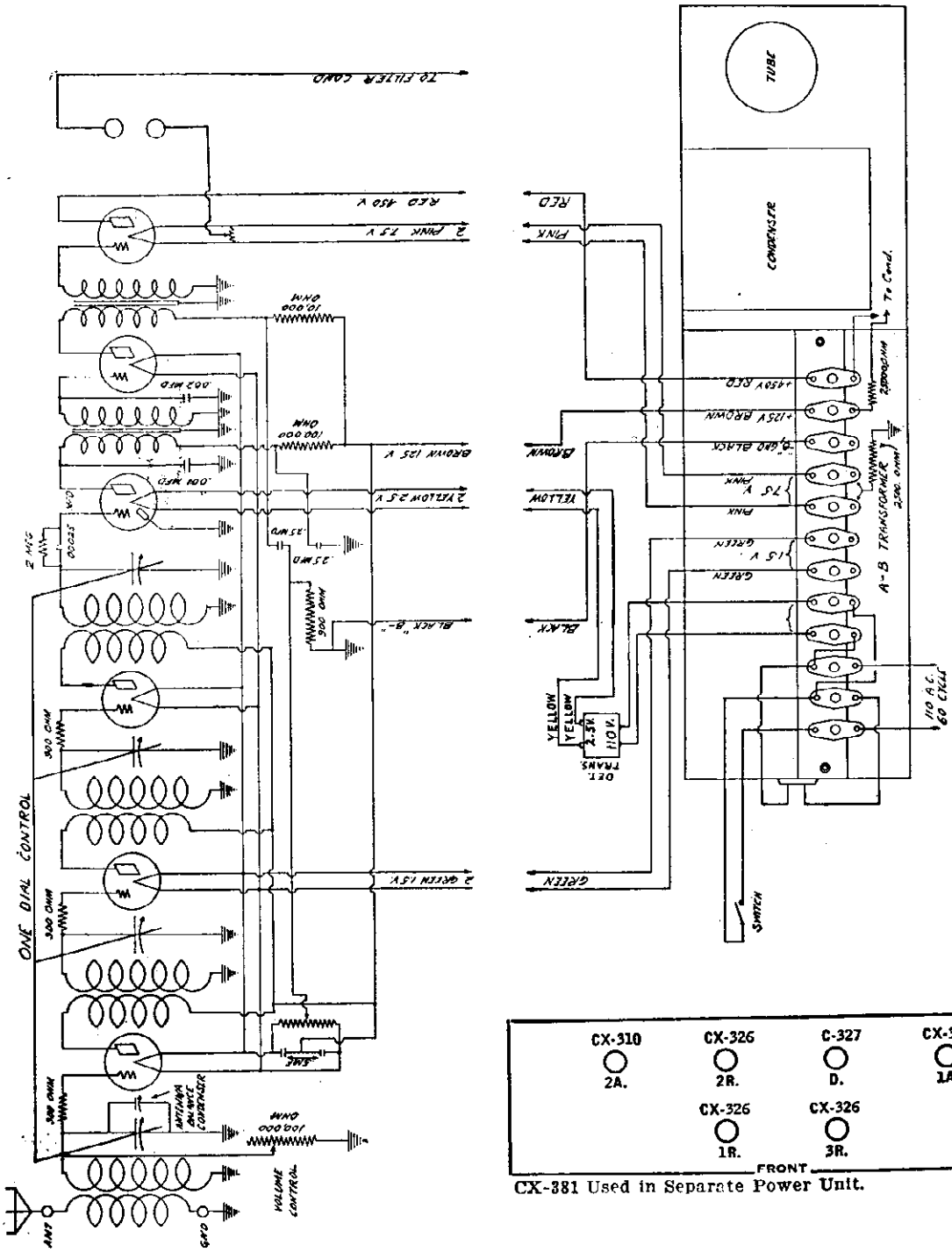
VOLTAGES OF VARIOUS CIRCUITS

Tube Socket	Plate Volts	Plate Current	Filament Volts	"C" Bias
1st R. F.	150 V.	4 mils	1.5 V.	11 V.
2nd R. F.	150 V.	4 mils	1.5 V.	11 V.
3rd R. F.	150 V.	4 mils	1.5 V.	11 V.
Detector	25 V.	1.5 mils	2.5 V.	0 V.
1st A. F.	120 V.	2 mils	1.5 V.	11 V.
2nd A. F.	160 V.	16 mils	5.00 V.	40 V.

The above readings are taken at 120 Volt line voltage. These readings may vary 5% plus or minus.

MODEL AC - 65

THE A-C DAYTON CO.



AC-65 (A.C.)

4-CX326
1-C327
1-CX310
1-CX381

CX-381 Used in Separate Power Unit.

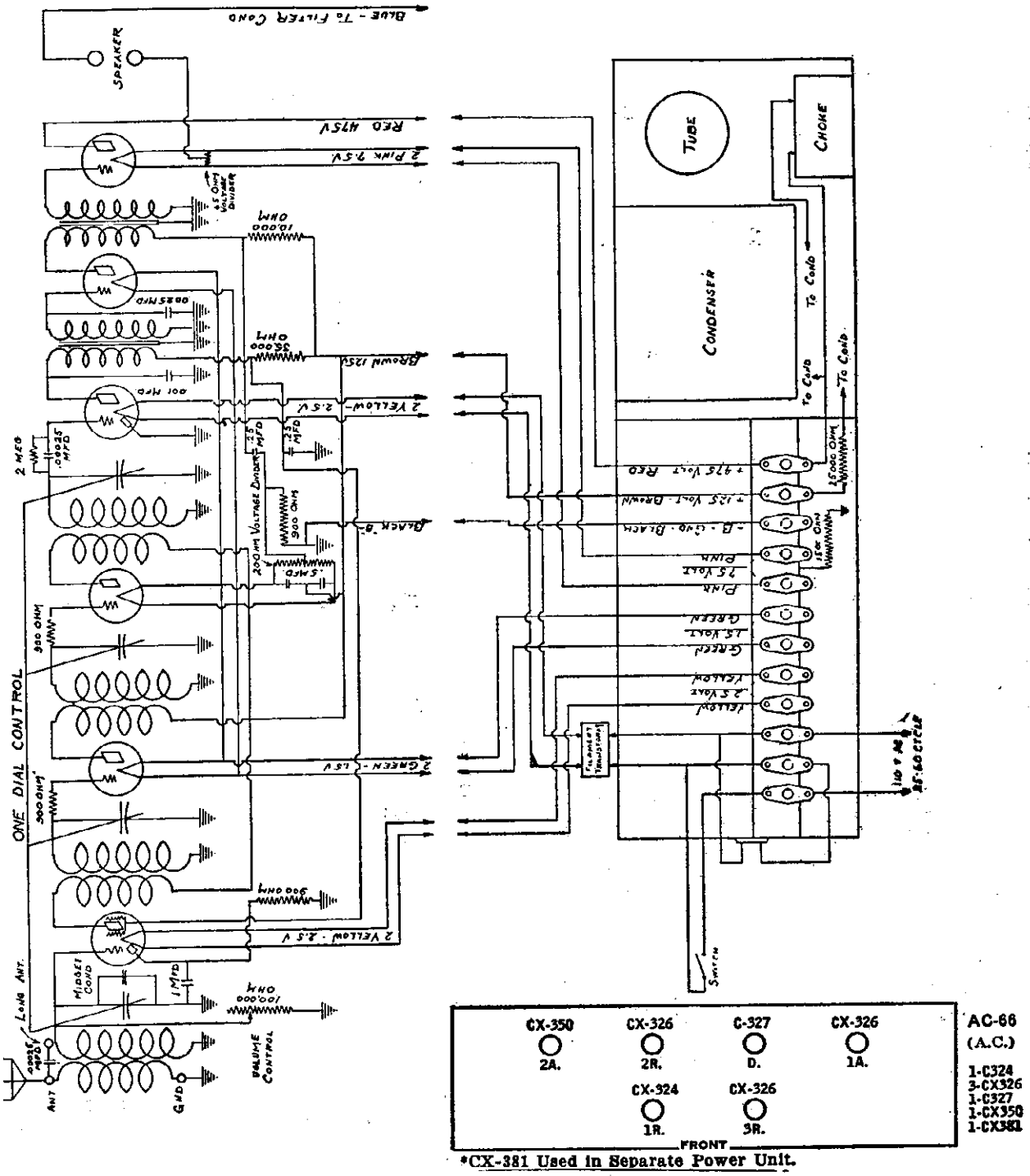
VOLTAGES OF VARIOUS CIRCUITS

Tube Socket	Plate Volts	Plate Current	Filament Volts	"C" Bias
1st R. F.	145 V.	4 mils	1.5 V.	11 V.
2nd R. F.	145 V.	4 mils	1.5 V.	11 V.
3rd R. F.	145 V.	4 mils	1.5 V.	11 V.
Detector	25 V.	1.3 mils	2.45 V.	0 V.
1st A. F.	120 V.	2 mils	1.5 V.	11 V.
2nd A. F.	430 V.	18 mils	6.75 V.	42 V.

The above readings are taken at 120 Volt line voltage. Readings may vary 5% plus or minus

MODEL AC - 66

THE A-C DAYTON CO.



AC-66
(A.C.)
1-C324
3-CX326
1-C327
1-CX350
1-CX381

*CX-381 Used in Separate Power Unit.

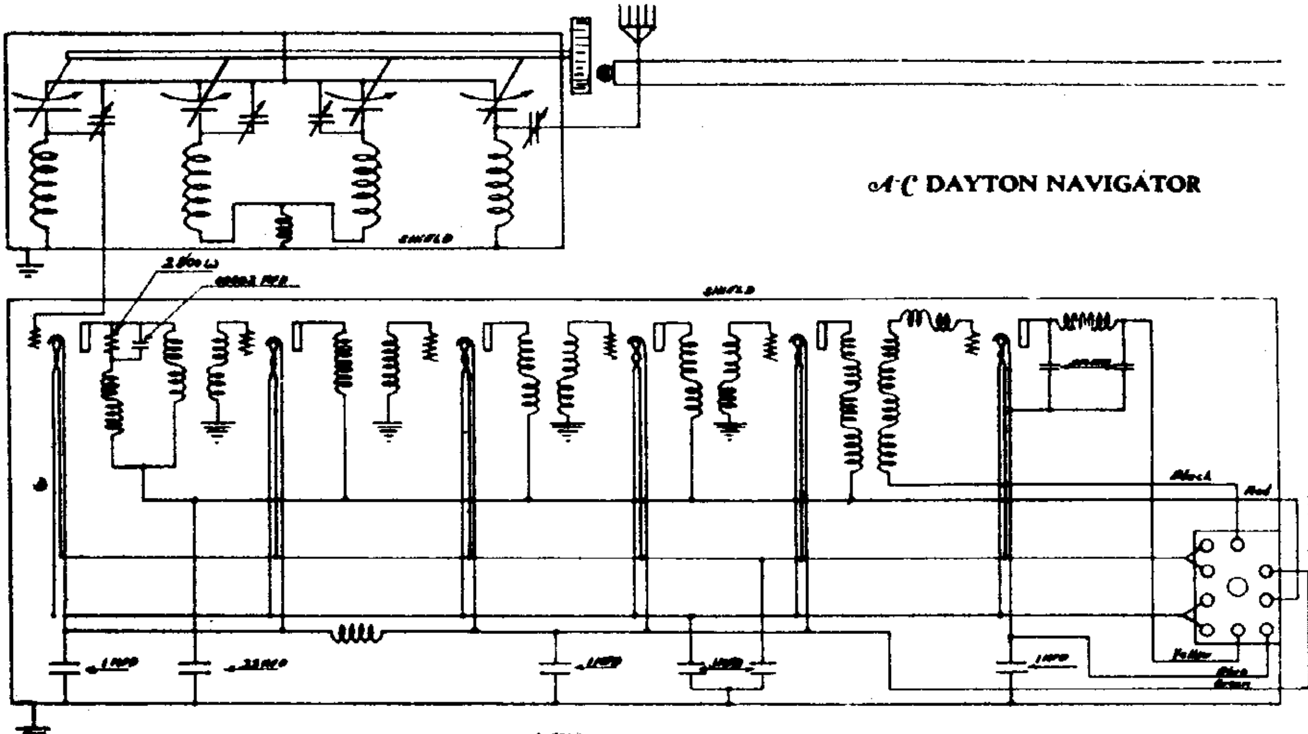
VOLTAGES AT THE VARIOUS SOCKETS

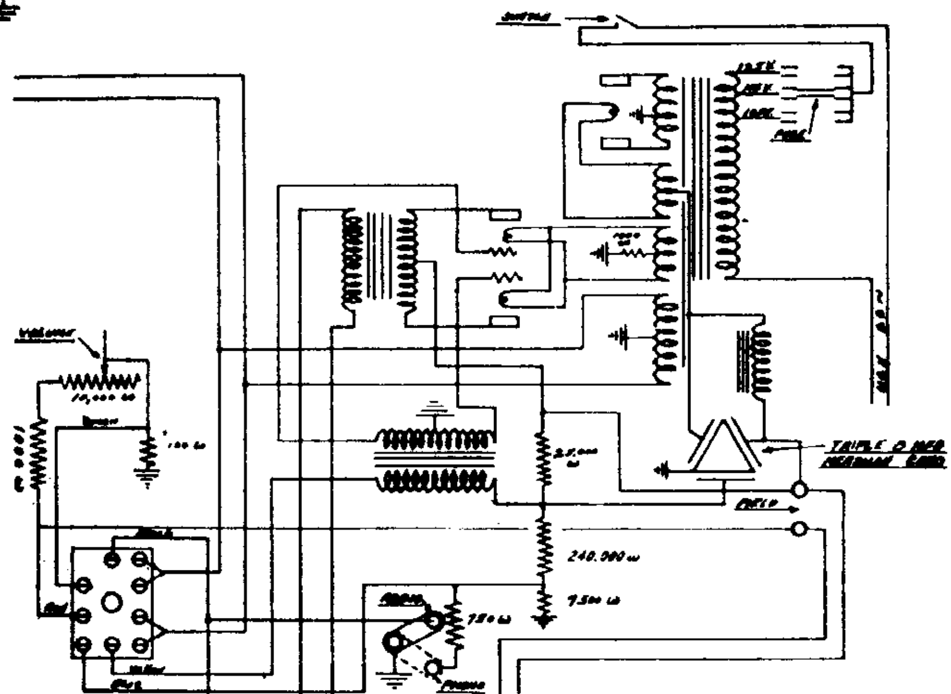
Tube Socket	Plate Volts	Plate Current	Filament Volt	C Bias
1st R. F.	130 V.	1 mil.	2.4 V.	1.5 V.
2nd R. F.	130 V.	4 mils.	1.4 V.	9 V.
3rd R. F.	130 V.	4 mils.	1.4 V.	9 V.
Detector	38 V.	2 mils.	2.4 V.	0 V.
1st A. F.	110 V.	2 mils.	1.4 V.	9 V.
2nd A. F.	350 V.	40 mils.	6.75 V.	63 V.

The above readings can only be taken on a Set Analyzer. They may vary 5% depending on tubes and line voltage.

MODEL
"Navigator"

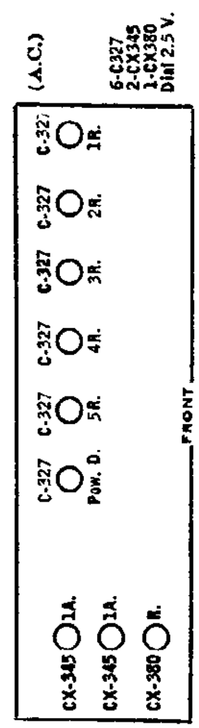
THE A-C DAYTON CO.





A-C DAYTON NAVIGATOR

POWER PACK

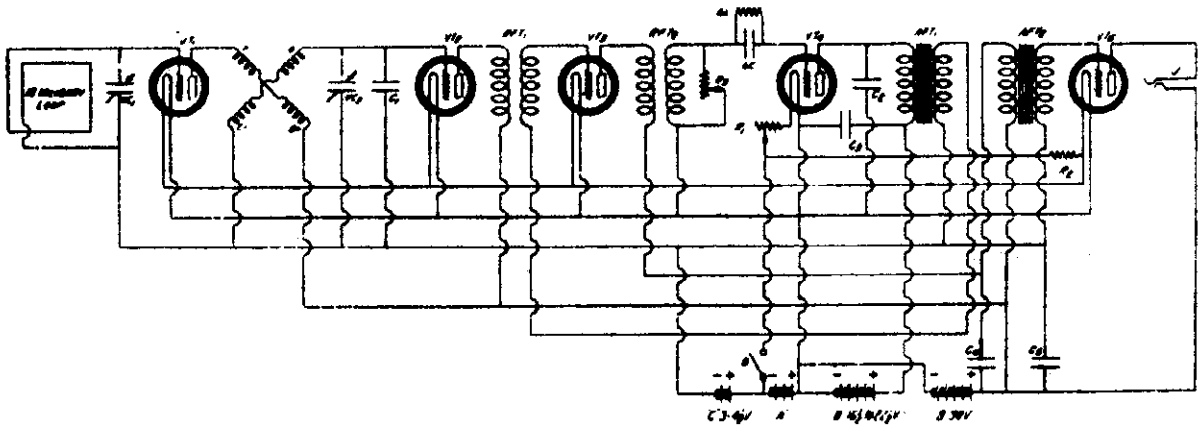


A. C. DAYTON—"Navigator" Line Voltage—115

Tube No. in Order	Type of Tube	Position of Tube (Det. R.F. Amp. etc.)	Tube Out: A Volts	Tube Out: B Volts	Tube in Tester: A Volts	Tube in Tester: B Volts	C Volts Control Grid	Cathode Heater Volts	Normal Plate M.A.	Plate M.A. Grid Test	Plate Change M.A.	Screen Grid Volts
1	227	1st RF	2.5	111	2.4	110	3.5	3.5	5	9	4	-
2	227	2nd RF	2.5	111	2.4	110	3.5	3.5	5	9	4	-
3	227	3rd RF	2.5	111	2.4	110	3.5	3.5	5	9	4	-
4	227	4th RF	2.5	111	2.4	110	3.5	3.5	5	9	4	-
5	227	5th RF	2.5	111	2.4	110	3.5	3.5	5	9	4	-
6	227	Det.	2.5	185	2.4	185	15.0	0	1*	-	-	-
7	245	Audio	2.5	235	2.4	230	50	-	22	26	4	-
8	245	Audio	2.5	235	2.4	230	50	-	22	26	4	-
9	280	Rect.	4.9	-	4.75	-	-	-	65	-	-	-

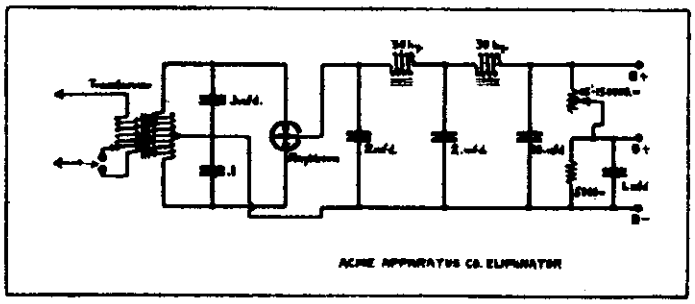
ACME APPARATUS CO.

MODEL 5 Tube Reflex
"B" Unit



CONSTANTS FOR ACME 5 TUBE REFLEX (1926)

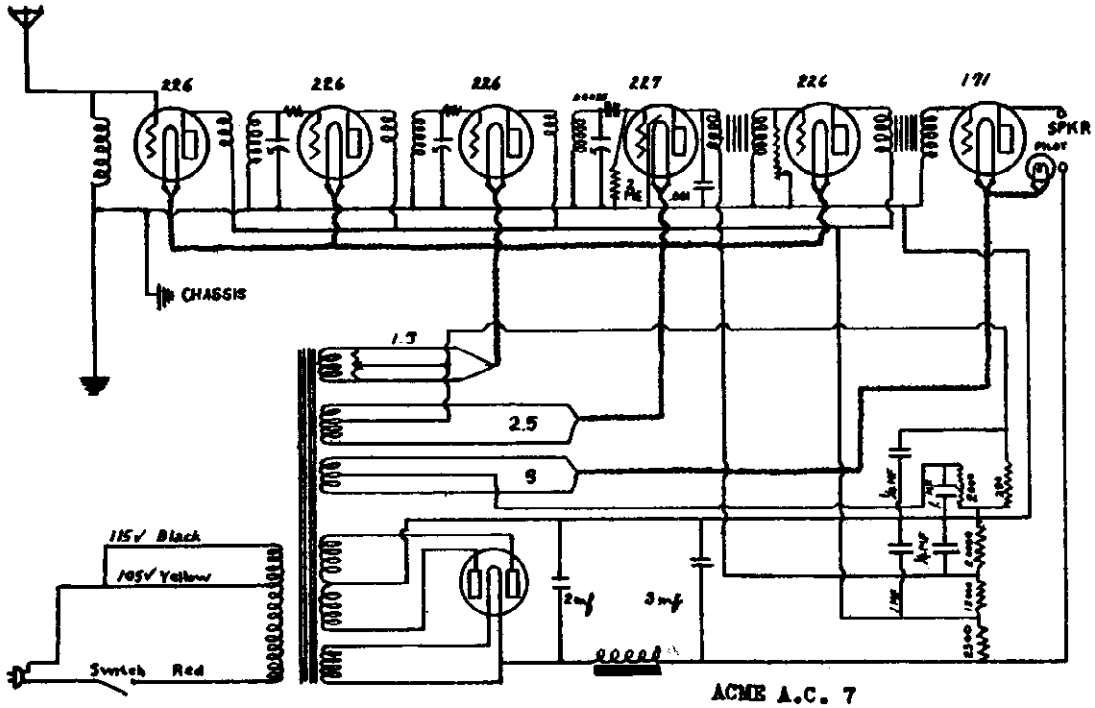
C1	.0004 mfd.	GC	.00025 mfd.
C2	.002 mfd.	GL	.5 to 2 meg
C4	.002 mfd.	R1	6 ohms
C5	1. mfd.	R2	1 ohm
C3	2. mfd.	R3	2000 ohms



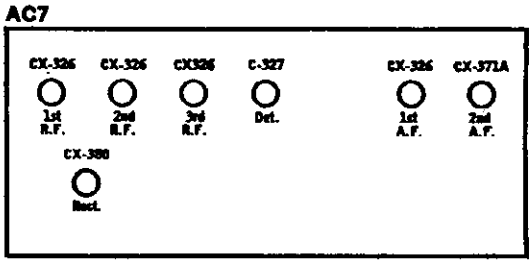
ACME APPARATUS CO. "B" ELIMINATOR (1926)

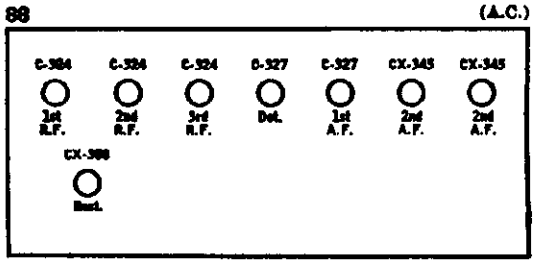
MODEL AC-7
SG-88

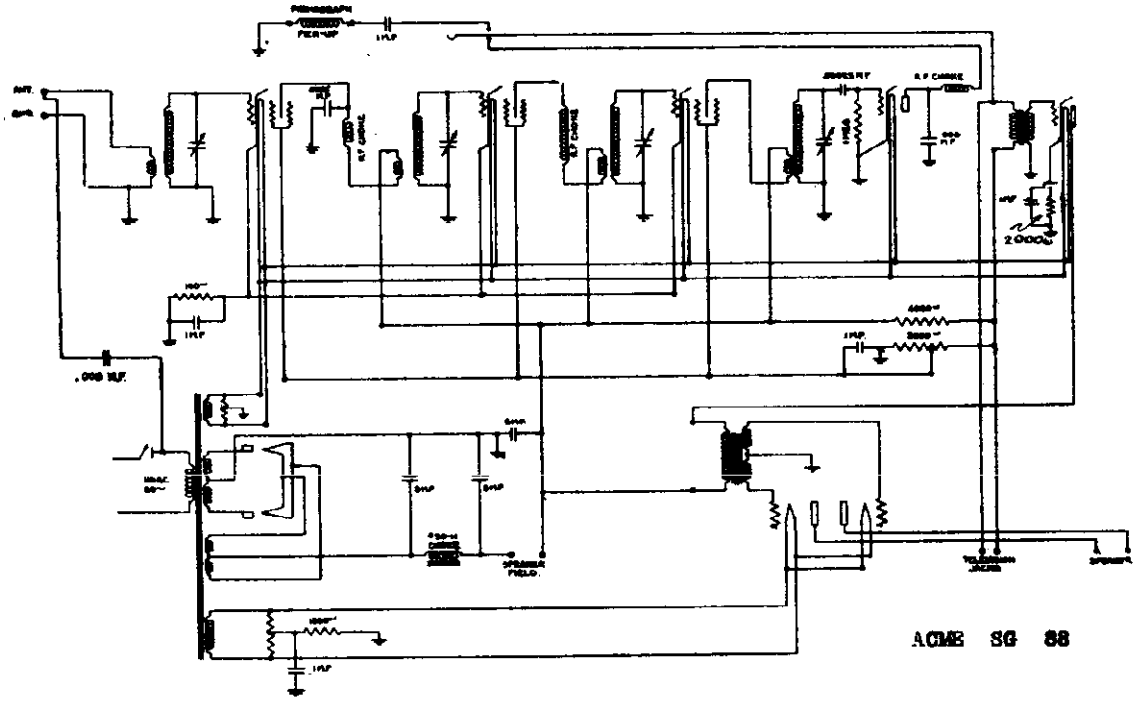
ACME ELECTRIC & MFG. CO.



ACME A.C. 7



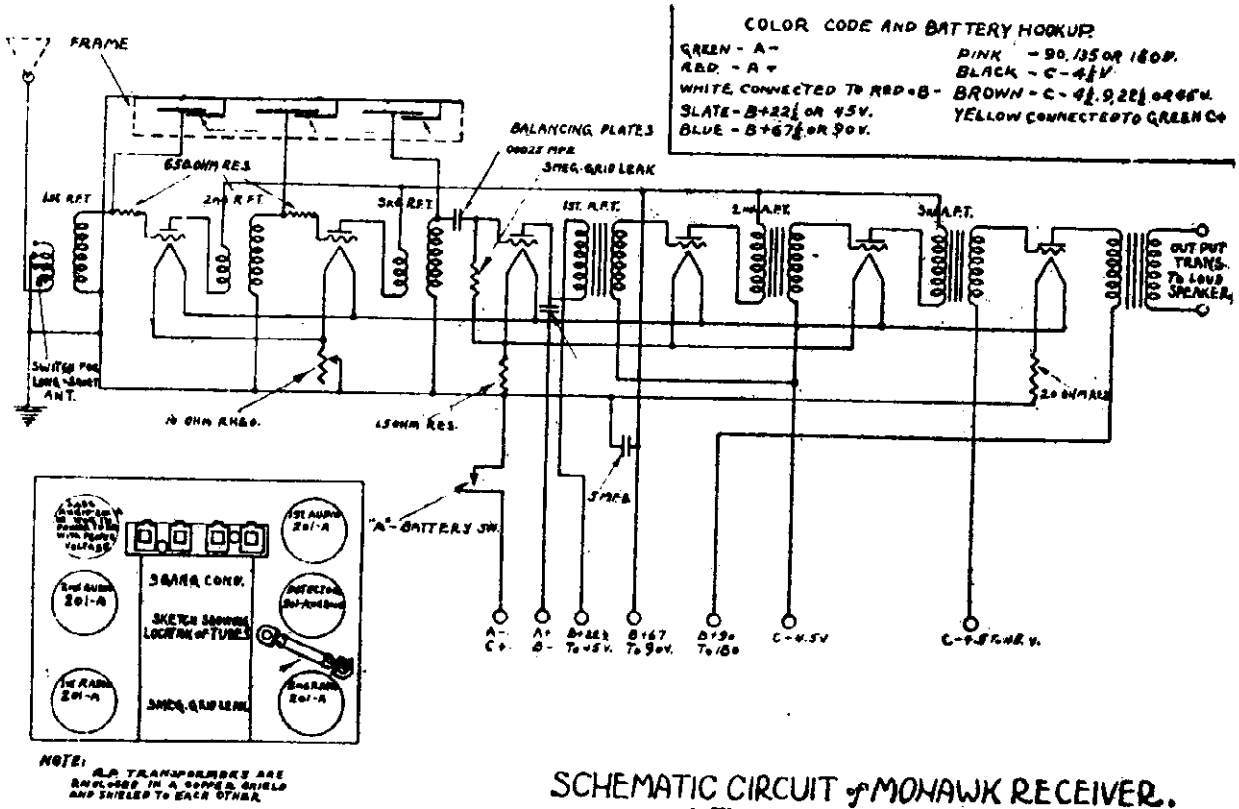




ACME SG 88

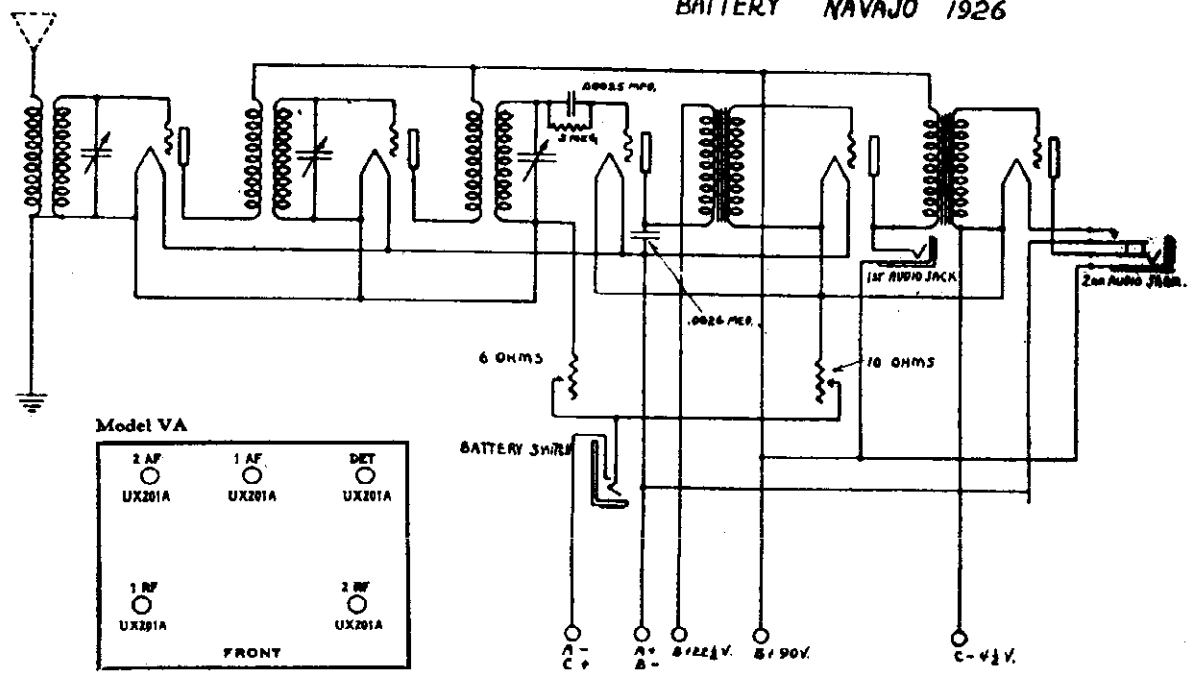
ALL-AMERICAN MOHAWK CORP.

MODEL Navajo
VA
Battery Operated



NOTE: A.F. TRANSFORMERS ARE ENCLOSED IN A COPPER SHIELD AND SHIELED TO EACH OTHER.

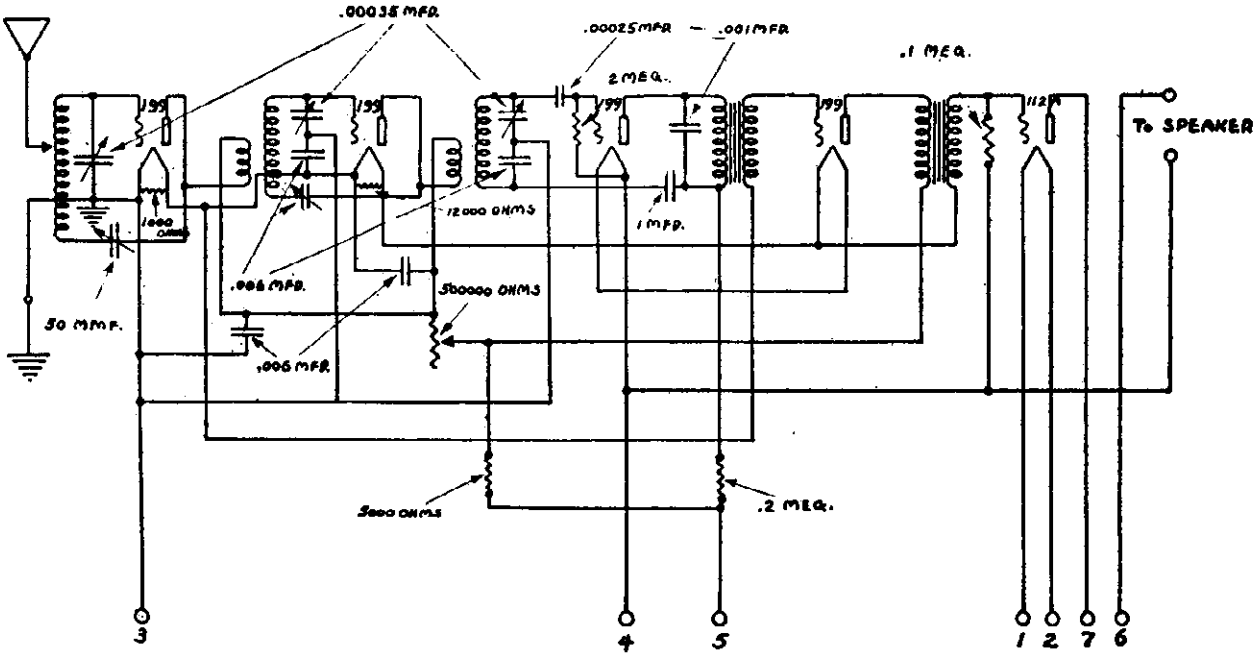
SCHEMATIC CIRCUIT of MOHAWK RECEIVER.
BATTERY NAVAJO 1926



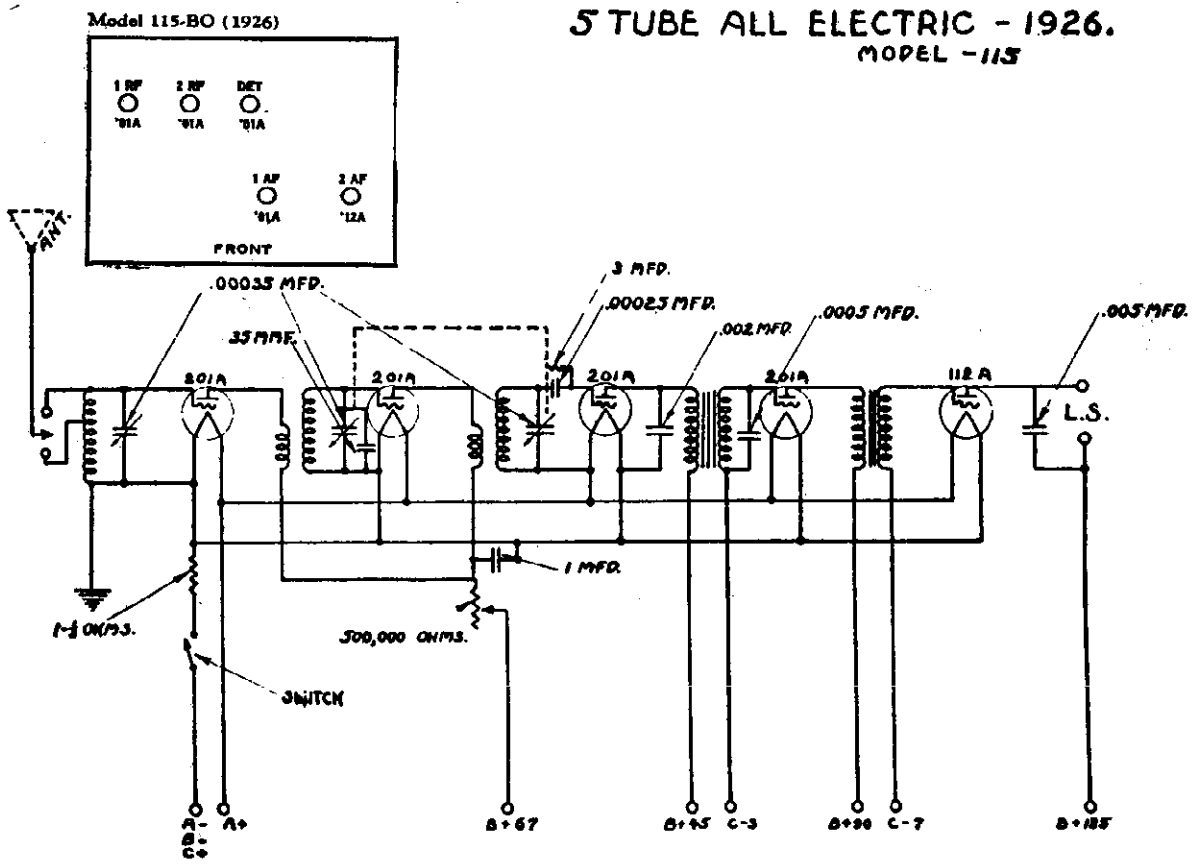
Model VA

5 TUBE VA CIRCUIT -1925-26.-

MODEL 115 -1926 **ALL-AMERICAN MOHAWK CORP.**
5 Tube All-Electric
MODEL 115- 1926
5 Tube All-Battery



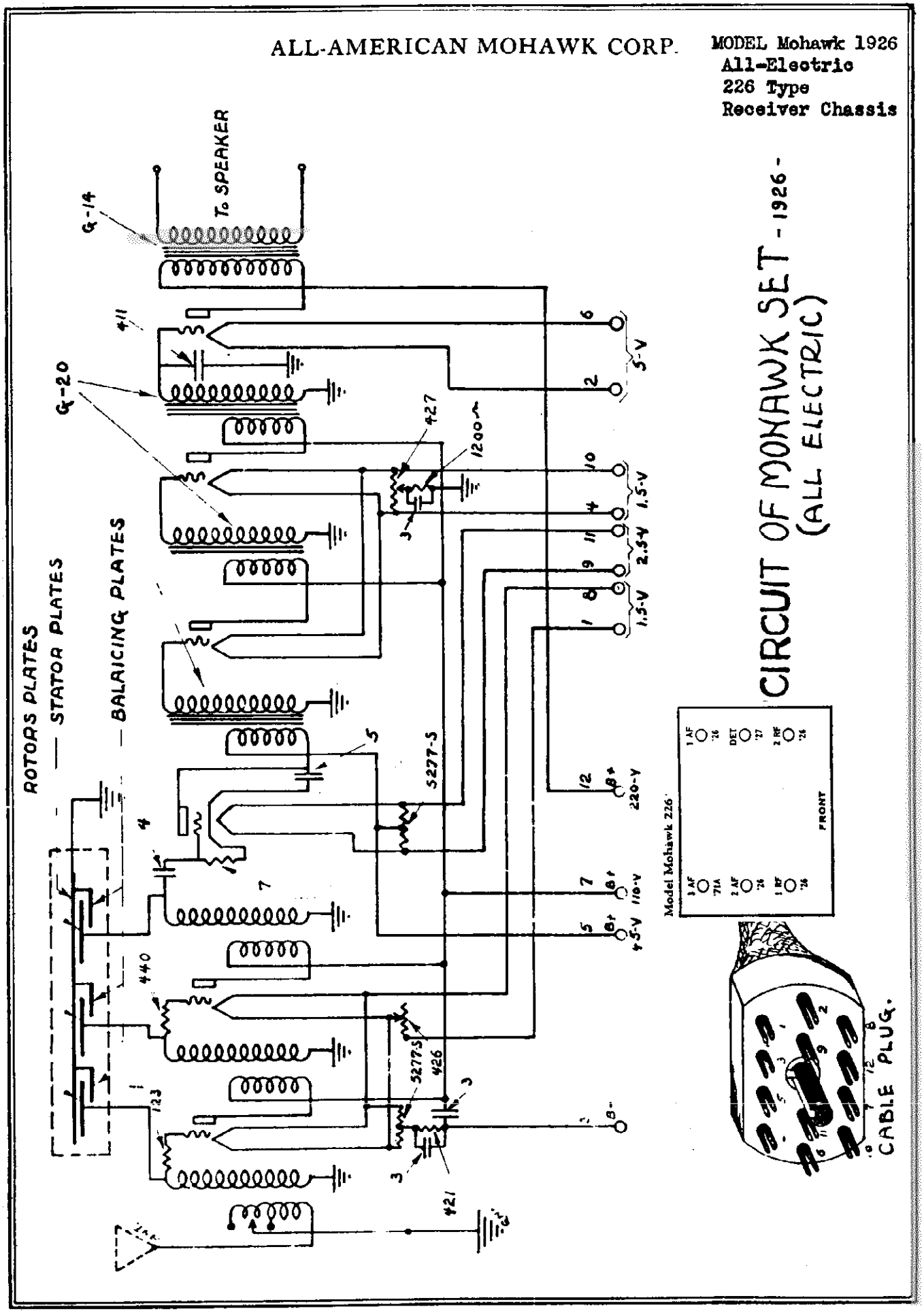
5 TUBE ALL ELECTRIC - 1926.
MODEL -115



5 TUBE ALL AMERICAN BATTERY SET.
MODEL 115 - 1926-27.

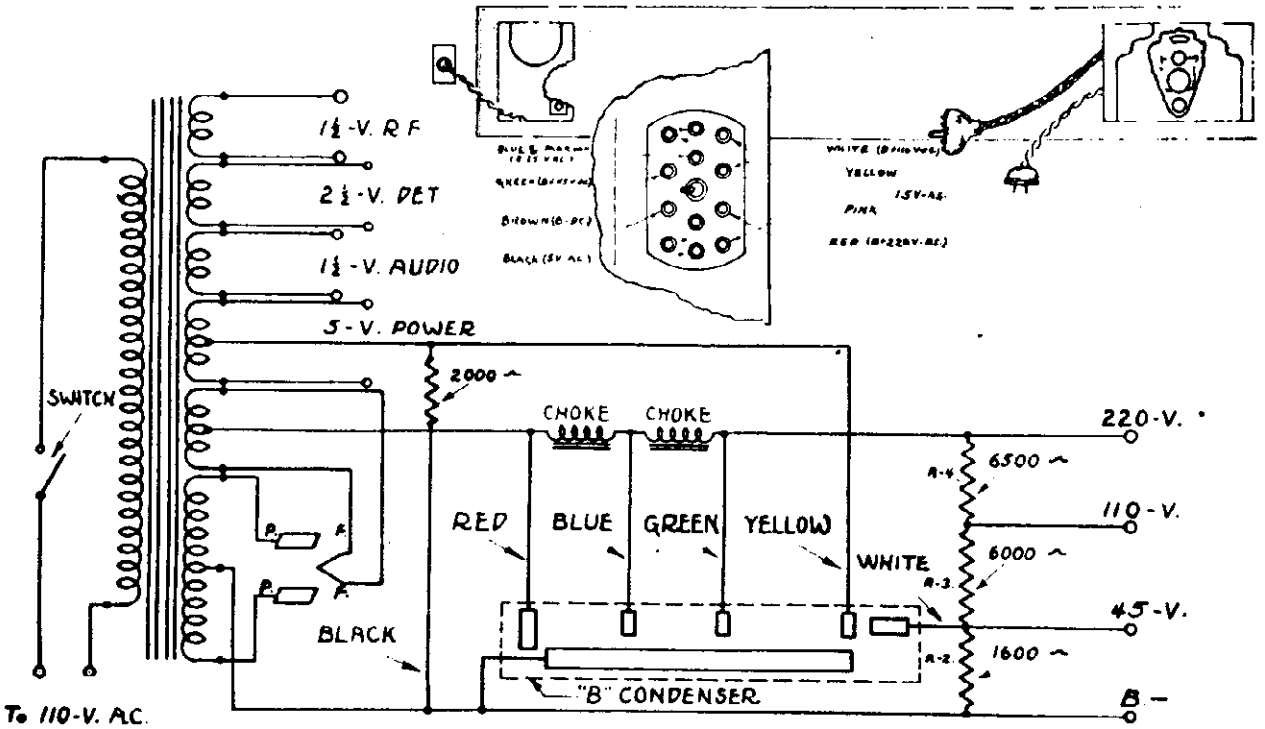
ALL-AMERICAN MOHAWK CORP.

MODEL Mohawk 1926
All-Electric
226 Type
Receiver Chassis

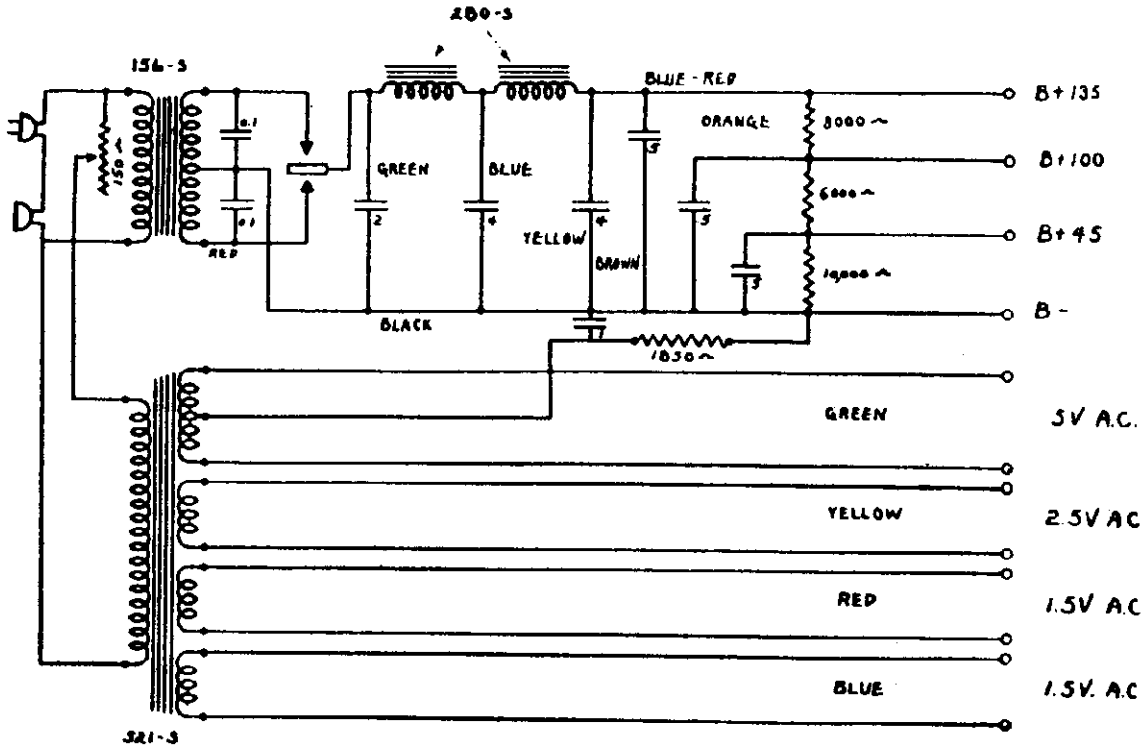


MODEL Mohawk 226
12 Contact
Power Pack
A-10 Eliminator

ALL-AMERICAN MOHAWK CORP.



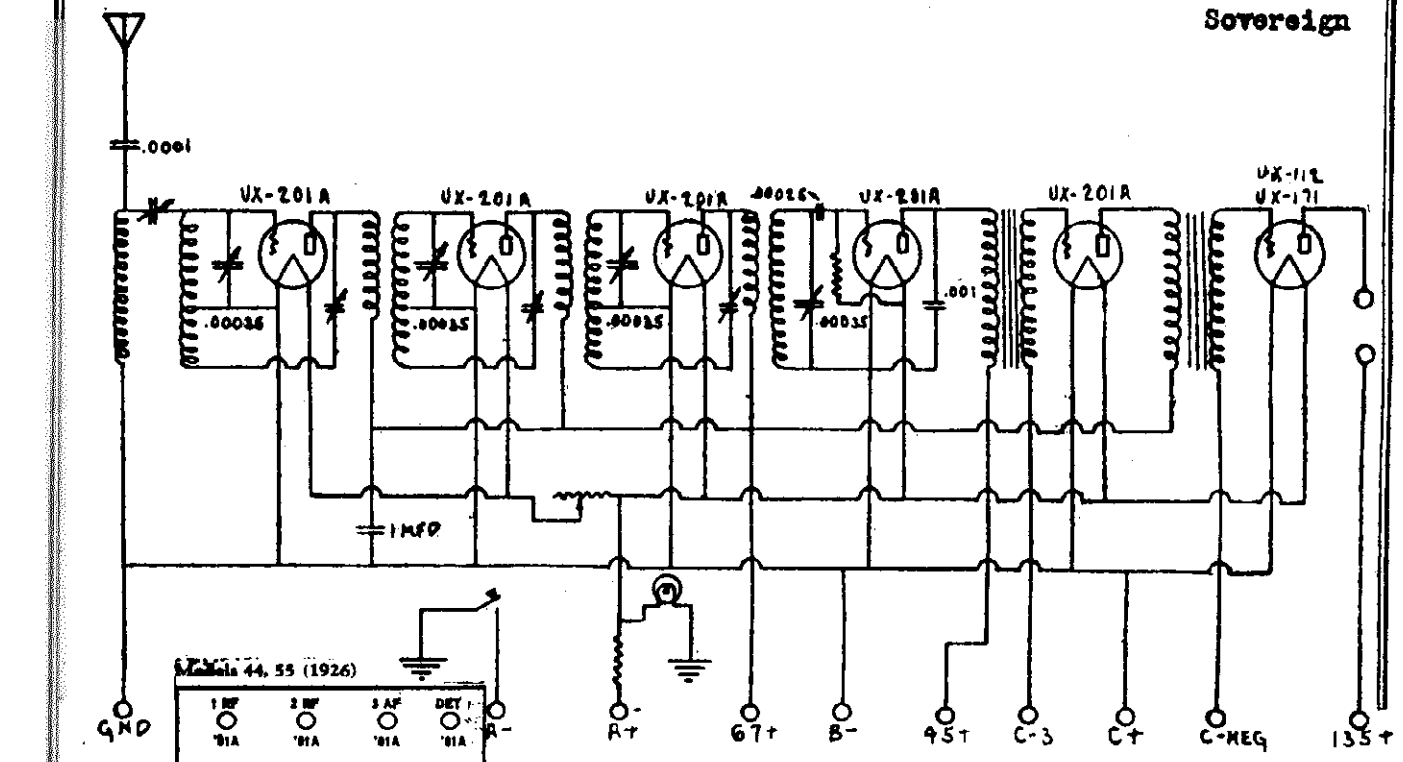
12 CONTACT POWER PACK for Mohawk 226
WITH NEW TYPE CONDENSER



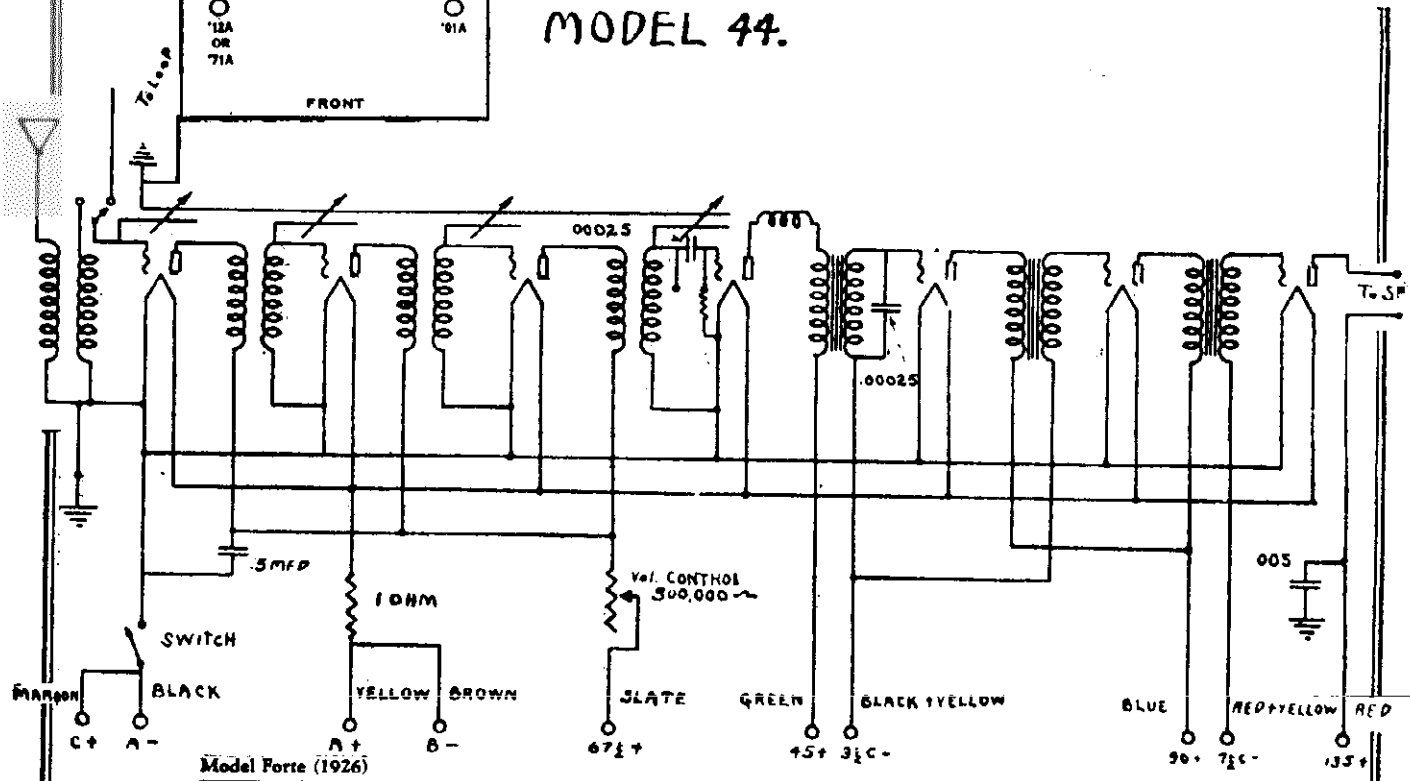
A-10 MOHAWK ELIMINATOR

ALL-AMERICAN MOHAWK CORP.

MODEL 44
7 Tube Forte
Lorraine
Sovereign



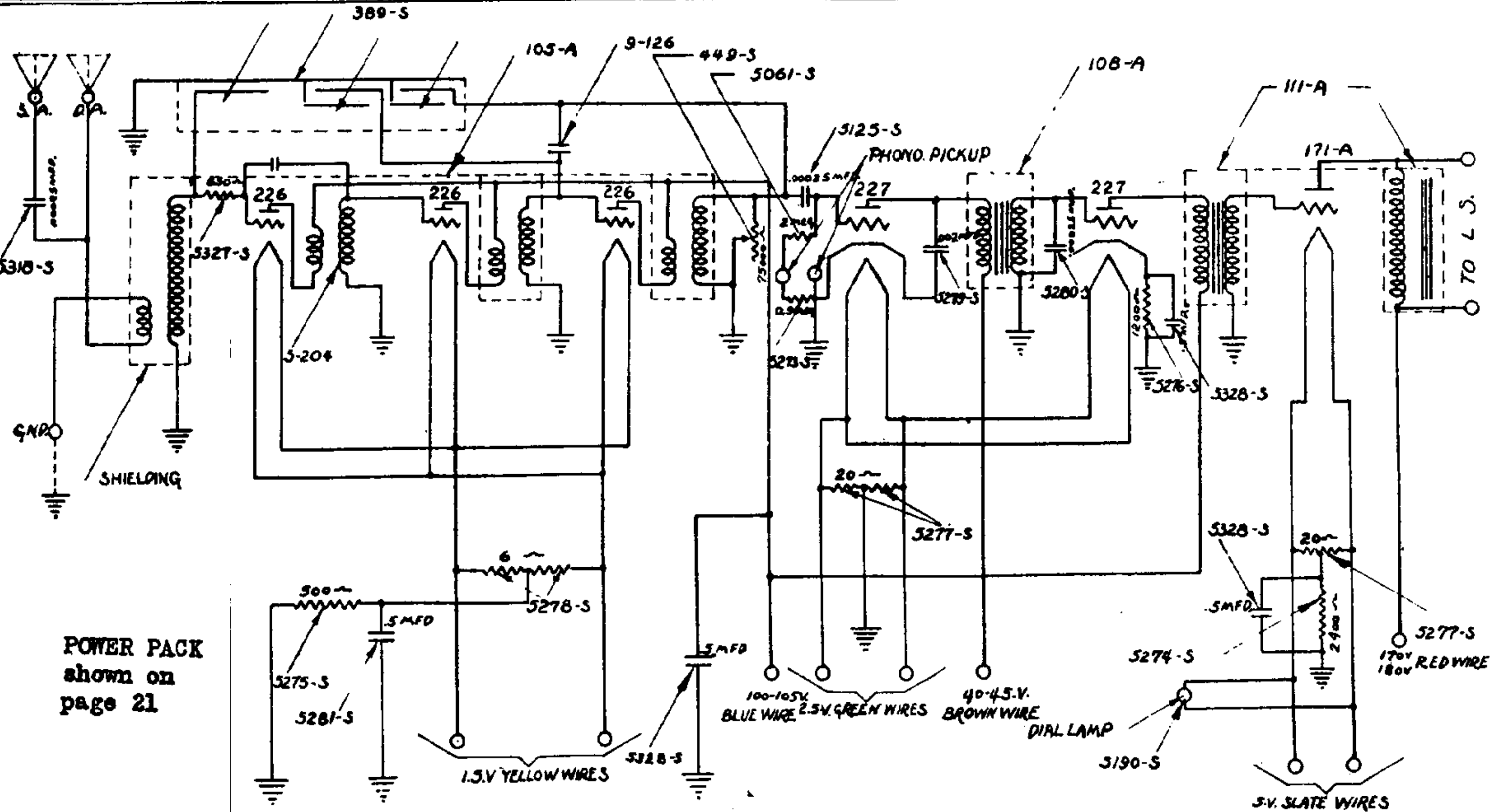
MODEL 44.



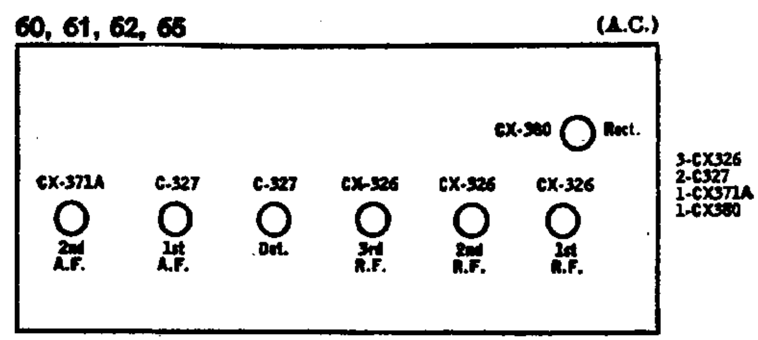
7 TUBE BATTERY OPERATED
1927 FORTE, LORRAINE AND SOVEREIGN

MODEL 60,61,62, 65,66
Receiver Chassis

ALL-AMERICAN MOHAWK CORP.



POWER PACK shown on page 21

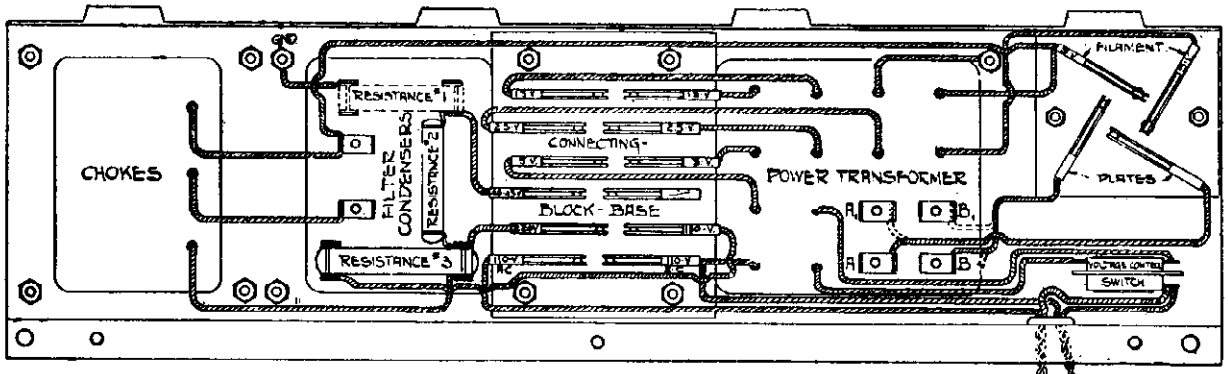


ALL AMERICAN—Models 60-61-62-65-66
Line Voltage 110:—95-115 Volt Tap:—Volume Control Full

Tube No. in Order	Type of Tube	Position of Tube 1st R.F., Det., Etc.	Tube Out: A Volts	Tube Out: B Volts	Tube in Tester: A Volts	B Volts	C Volts	Cathode Volts	Normal Plate M.A.	Plate M.A. Grid Test	Plate M.A. Change
1	226	1st.R.F.	1.4	120	1.25	112	8	-	3.2	6.6	3.4
2	226	2nd.R.F.	1.4	120	1.25	112	8	-	3.2	6.6	3.4
3	226	3rd.R.F.	1.4	120	1.25	112	8	-	3.2	6.6	3.4
4	227	Detector	2.4	110	2.20	40	0	0	2.2	2.2	0.0
5	227	1st.A.F.	2.4	120	2.20	112	8	6	3.0	6.4	3.4
6	171A	2nd.A.F.	4.7	180	4.50	155	40	-	15.0	16.5	1.5
7	280	Rectifier	-	-	4.70	-	-	-	19.0	-	-
8											
9											
10											

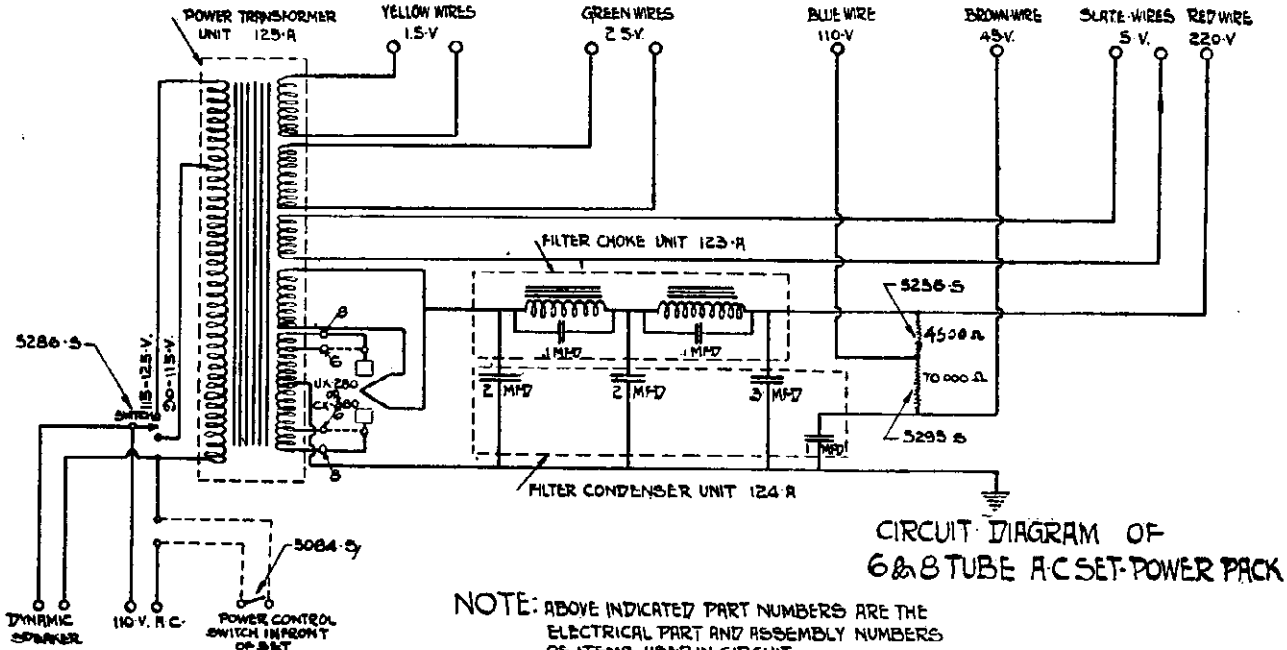
ALL-AMERICAN MOHAWK CORP.

MODEL 60,61,62, 65,66
Power Pack



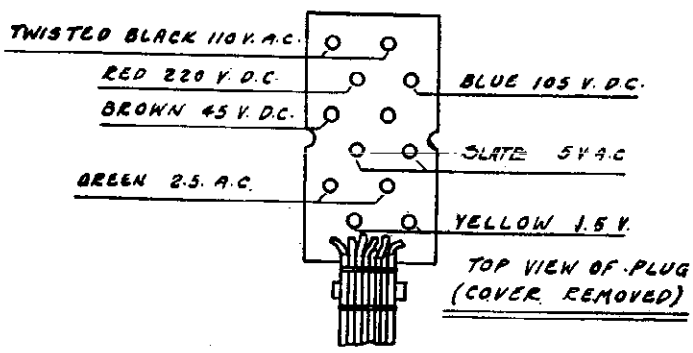
BLUE RESISTANCE #1 = 10,000 Ω
RED " " #2 = 25,000 Ω OR ORANGE-70,000 Ω WITH RES. #1 OUT
MAROON " " #3 = 4500 Ω

NOTE:
WIRING FOR 8 TUBE SET-AS SHOWN-
WIRING FOR 6 TUBE SET-PLATE WIRE 'A' LEAD TO 'A' AND PLATE WIRE 'B' LEAD TO 'B'.



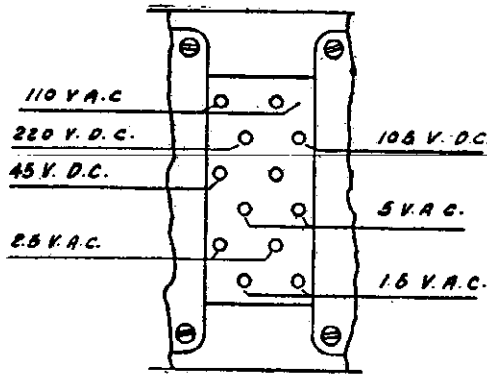
CIRCUIT DIAGRAM OF 6 & 8 TUBE A.C SET-POWER PACK

NOTE: ABOVE INDICATED PART NUMBERS ARE THE ELECTRICAL PART AND ASSEMBLY NUMBERS OF ITEMS USED IN CIRCUIT. WHEN ORDERING PARTS OR ASSEMBLIES SPECIFY THIS NUMBER AS WELL AS NAME OF ITEM

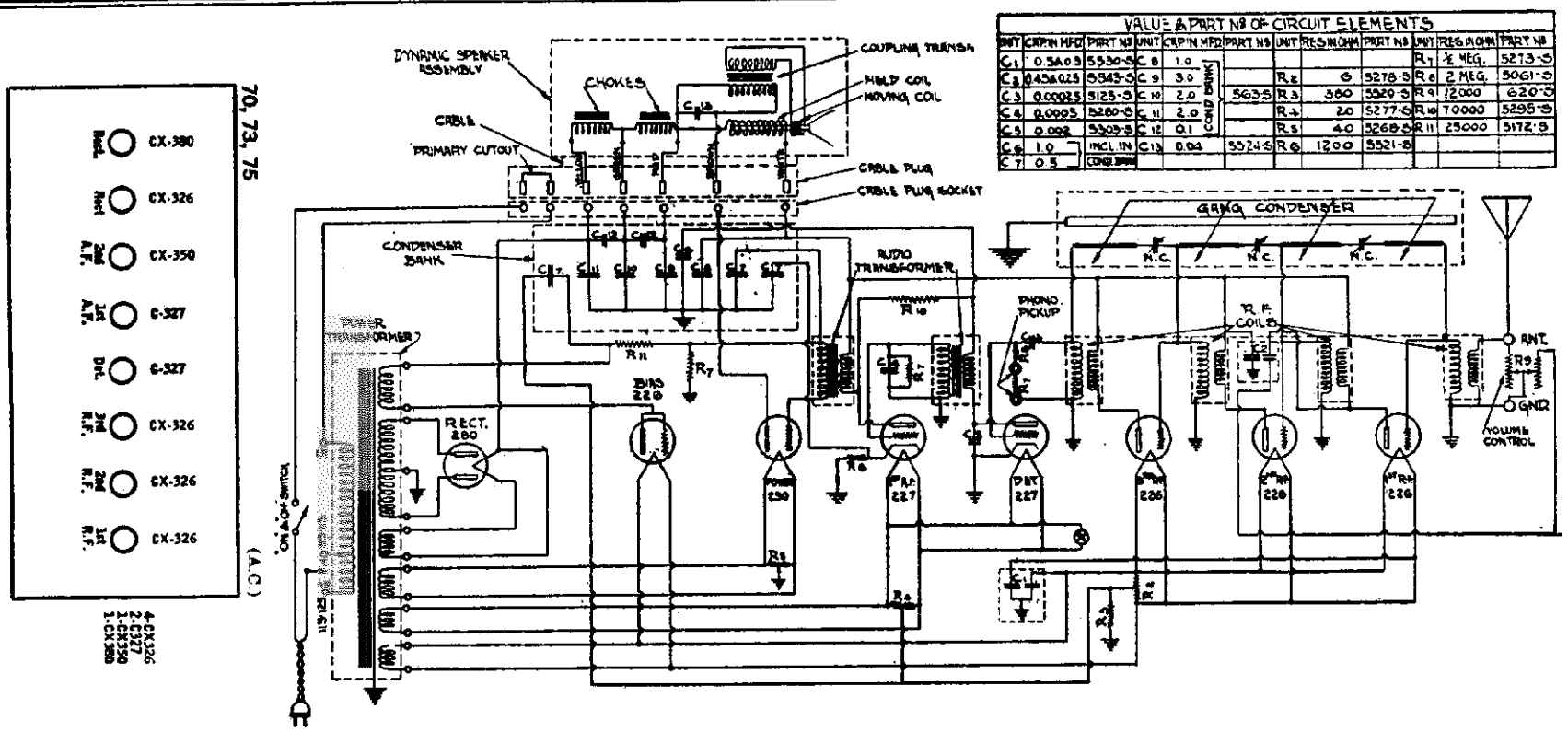


TOP VIEW OF PLUG (COVER REMOVED)

TOP VIEW OF PLUG (COVER REMOVED)



TOP VIEW OF CONNECTING PLUG SOCKET IN POWER PACK



VALUE & PART Nº OF CIRCUIT ELEMENTS

UNIT	CAP'N MFD	PART Nº	UNIT	CAP'N MFD	PART Nº	UNIT	RES'N OHM	PART Nº	UNIT	RES'N OHM	PART Nº
C_1	0.5A0.3	5530-S	C_8	1.0					R_1	½ MEG.	5273-S
C_2	0.45&0.25	5543-S	C_9	3.0		R_2	6	5278-S	R_8	2 MEG.	5061-S
C_3	0.0025	5125-S	C_{10}	2.0	5635-S	R_3	380	5520-S	R_9	12000	6207-S
C_4	0.0005	5260-S	C_{11}	2.0		R_4	20	5277-S	R_{10}	70000	5295-S
C_5	0.002	5303-S	C_{12}	0.1		R_5	40	5268-S	R_{11}	25000	5172-S
C_6	1.0	INCL. IN COND. BANK	C_{13}	0.04	5524-S	R_6	1200	5521-S			
C_7	0.5										

HUM— If an undue amount of hum is experienced it may be caused by any of the following:—Defective tube in either the detector or first a.f. stage. Center tapped resistors open on one side of filament or heater connection or one-half of center tapped resistor shorted out. Center tap of 20 ohm resistor across 227 heater terminals open. A grounded 226 filament or short circuited grid bias resistor.

The hum will also be increased by a defective 226 bias tube for the 250 power tube, filter or load resistor, or by-pass condensers short circuited or open. The adjustable center tapped resistor on the 250 tubes filament being out of adjustment will likewise cause an increase in the hum level. As the filter circuit is a part of the loud speaker assembly it may be checked for hum trouble by substituting another speaker assembly. The condenser bank and power transformer may be substituted in checking for defects in these units which may cause hum. Generally most causes of hum are defective 227 tubes and improper adjustment of the 250 tube filament center tapped resistor.

Possible causes of hum in the power supply and their remedy will be taken up in the paragraph "Power Unit Servicing". It is important that a good ground connection be employed with this receiver as sometimes the hum level will increase where a poor ground connection is used.

TUBE VOLTAGE READINGS— The following gives the values of the various tube readings which should be obtained: When line voltage is = 110 V. A.C., and the line voltage control switch on power pack is in the 95-115 position: (Note these values will vary slightly.)

R. F. tubes 226-326 type
Filament voltage—1.45 to 1.50, "B" voltage—100 to 120,
"C" voltage—7 to 9.

Detector 227-327 type
Heater voltage—2.40 to 2.50, "B" voltage—35 to 50,
Cathode Bias, 0., Heater Bias 6-9 plus.

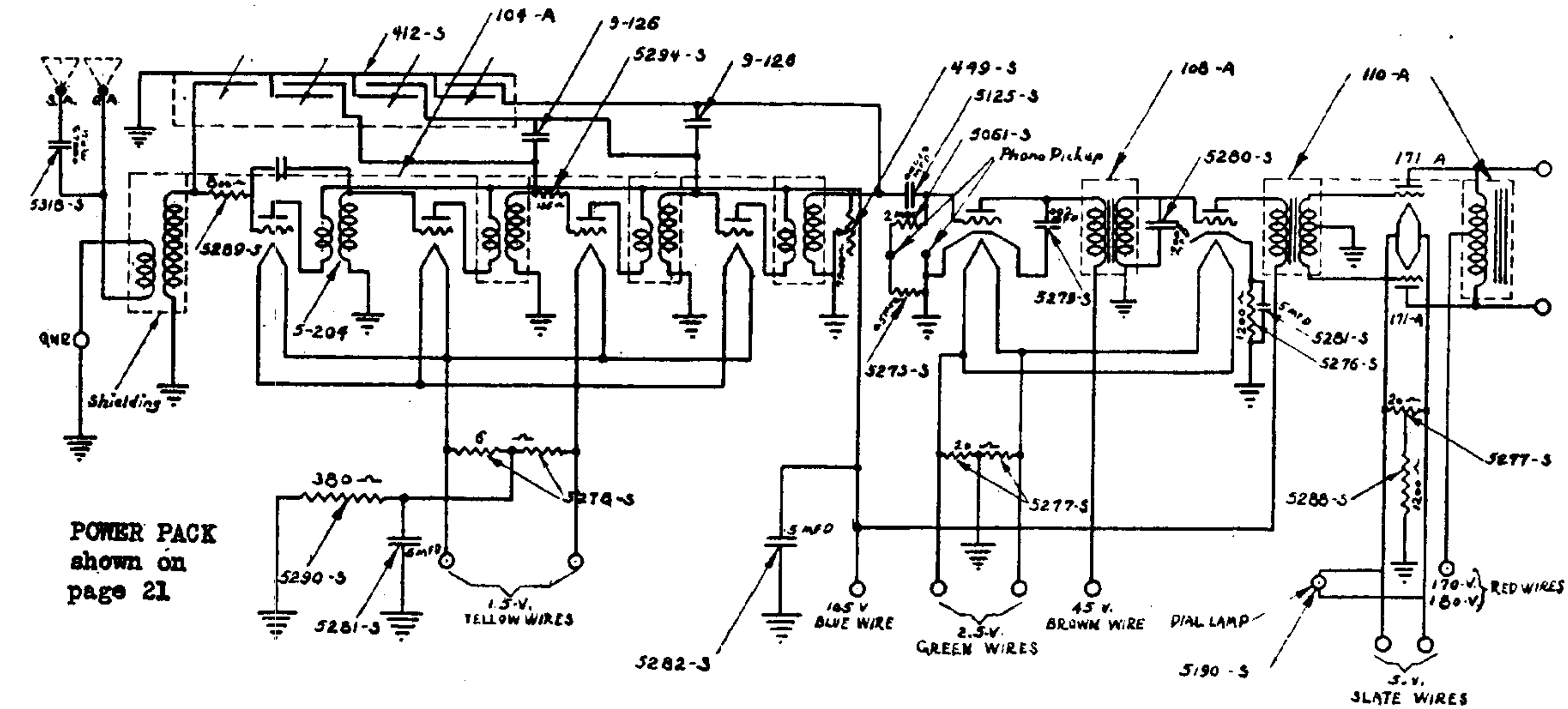
First A.F. Amplifier 227-327 type
Heater voltage—2.40 to 2.50, "B" voltage—100 to 120,
Cathode bias—6 to 9, Heater Bias 6-9 plus.

Power Amplifier 250-350
Filament voltage—7.30 to 7.40, "B" voltage—300 to 325
"C" voltage—52 to 56.

Bias Tube
Filament voltage 1.4 to 1.50.

ALL-AMERICAN MOHAWK CORP.

MODEL 80, 83, 84, 85, 86, 88 Receiver Chassis

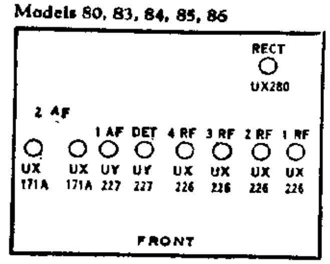


POWER PACK shown on page 21

ALL AMERICAN—Models 80-83-84-85-86-88
Line Voltage 110:—95-115 Volt Tap:—Volume Control Full—2nd A. F. Stage—2 Tubes Push Pull

Tube No. in Order	Type of Tube	Position of Tube 1st. RF, Det., Etc.	Readings, Plug in Socket of Set: Tube Out: A Volts	Tube Out: B Volts	Tube in Tester: A Volts	B Volts	C Volts	Cathode Volts	Normal Plate M.A.	Plate M.A. Grid Test	Plate M.A. Change
1	226	1st.R.F.	1.4	120	1.25	112	9	-	3.5	7.3	3.8
2	226	2nd.R.F.	1.4	120	1.25	112	9	-	3.5	7.3	3.8
3	226	3rd.R.F.	1.4	120	1.25	112	9	-	3.5	7.3	3.8
4	226	4th.R.F.	1.4	120	1.25	112	9	-	3.5	7.3	3.8
5	227	Detector	2.4	110	2.20	40	0	-	2.2	2.2	0
6	227	1st A.F.	2.4	120	2.20	112	0	7	4.4	6.4	2.0
7	171A	2nd.A.F.	4.7	180	4.50	162	42	-	16.0	18.0	2.0
8	171A	2nd.A.F.	4.7	180	4.50	162	42	-	16.0	18.0	2.0
9	280	Rectifier	-	-	4.70	-	-	-	20.0	-	-
10											

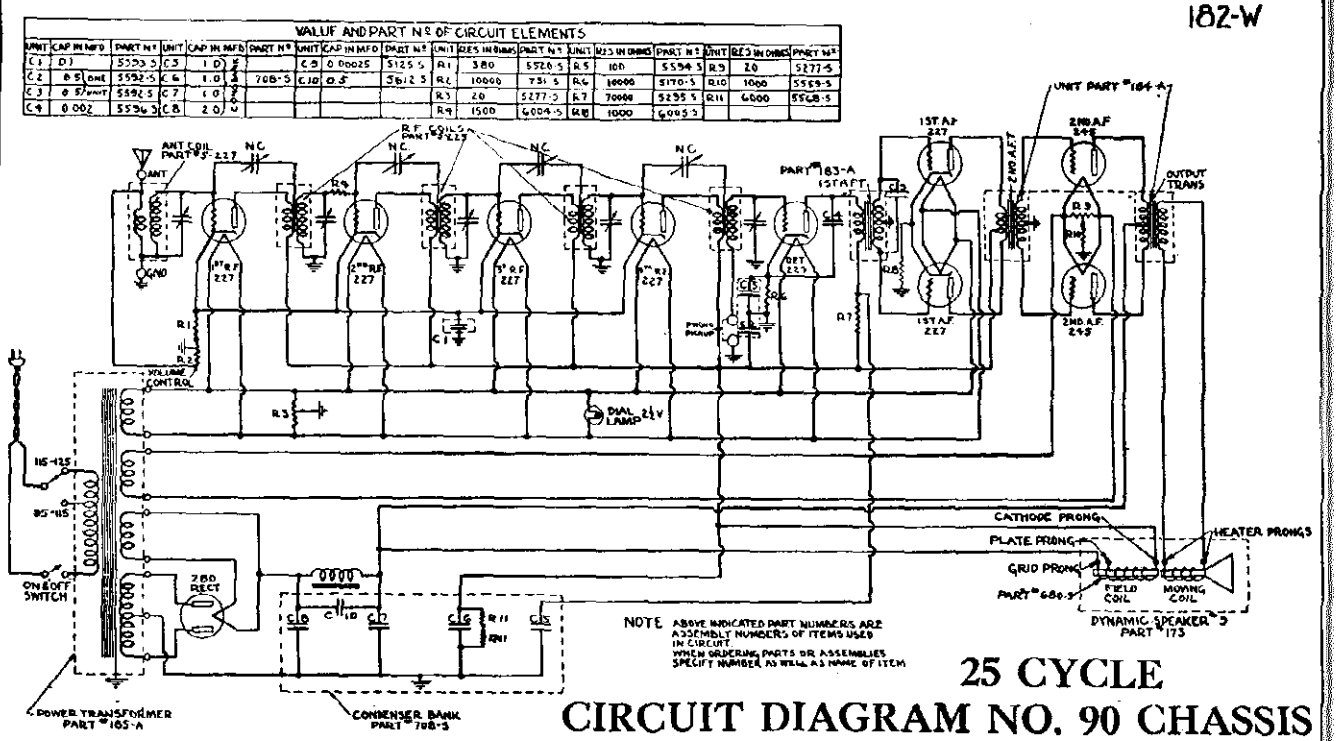
Models 80, 83, 84, 85, 86



MODEL 90
25 Cycle

ALL-AMERICAN MOHAWK CORP.

182-W



25 CYCLE
CIRCUIT DIAGRAM NO. 90 CHASSIS

VOLTAGE READINGS.

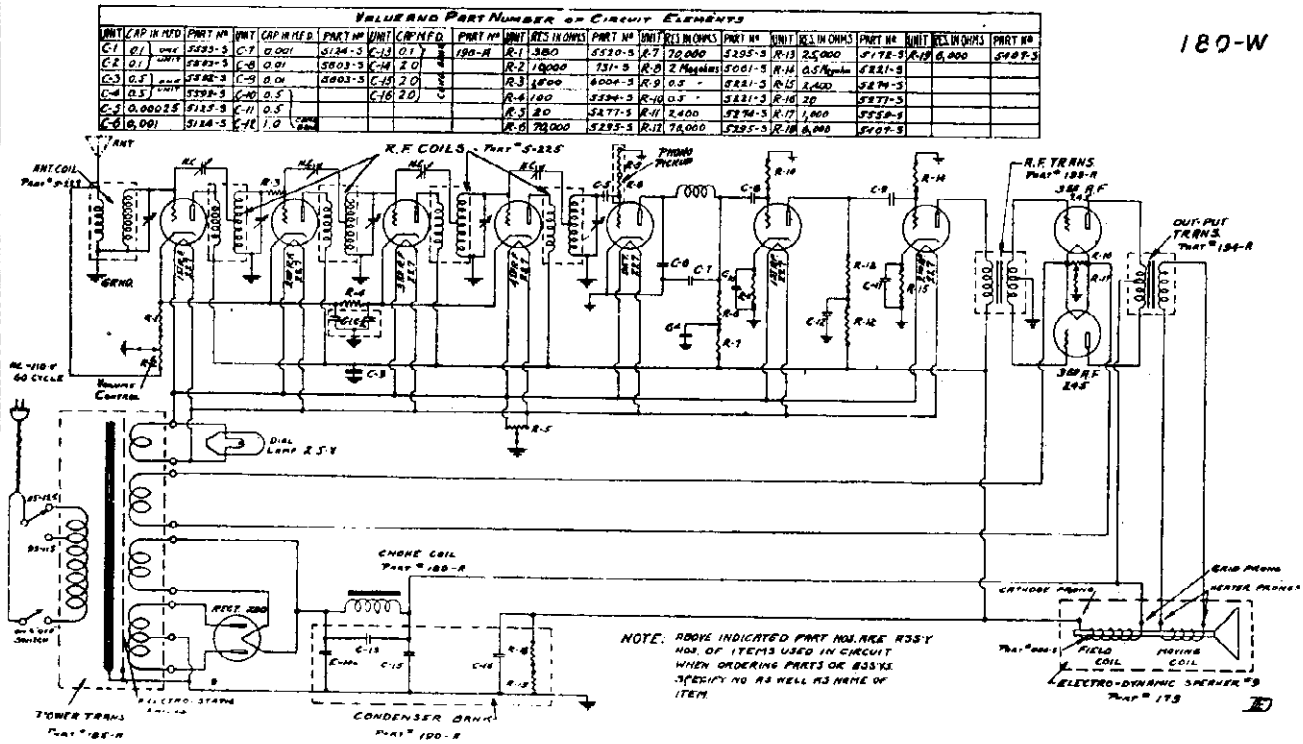
Type of Tube	Position of Tube	Tube in Tester A Volts	B Volts	C Volts	Cathode-Heater Volts	Normal Plate M. A.
227	1 R. F.	2.3	100	6.25	6.0	3.5
227	2 R. F.	2.4	100	5.50	5.5	3.5
227	3 R. F.	2.3	95	6.25	5.5	3.5
227	4 R. F.	2.4	100	6.25	5.5	3.5
227	DET.	2.3	56	5.00	5.0	0.5
227	1 P. P.	2.4	90	5.00	5.0	3.5
227	1 P. P.	2.4	90	5.00	6.0	3.5
245	2 P. P.	2.2	210	42.00		24.0
245	2 P. P.	2.2	210	42.00		24.0
280	RECT.	4.5				38 x 2

SOCKET LAYOUT SAME AS NO. MODEL 90 - 60 CYCLE

ALL-AMERICAN MOHAWK CORP.

MODEL 90
60 Cycle

180-W

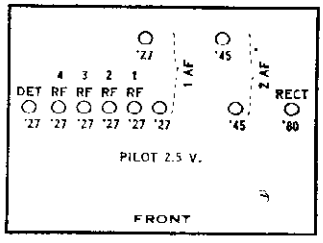


Lyric No. 90 A. C. receiver
—60 CYCLE

TUBE VOLTAGE AND CURRENT READINGS. Below is given a standard set of readings for the tubes of the Lyric A. C. No. 90 receiver, which will serve as a reference in tube voltage and plate current readings:

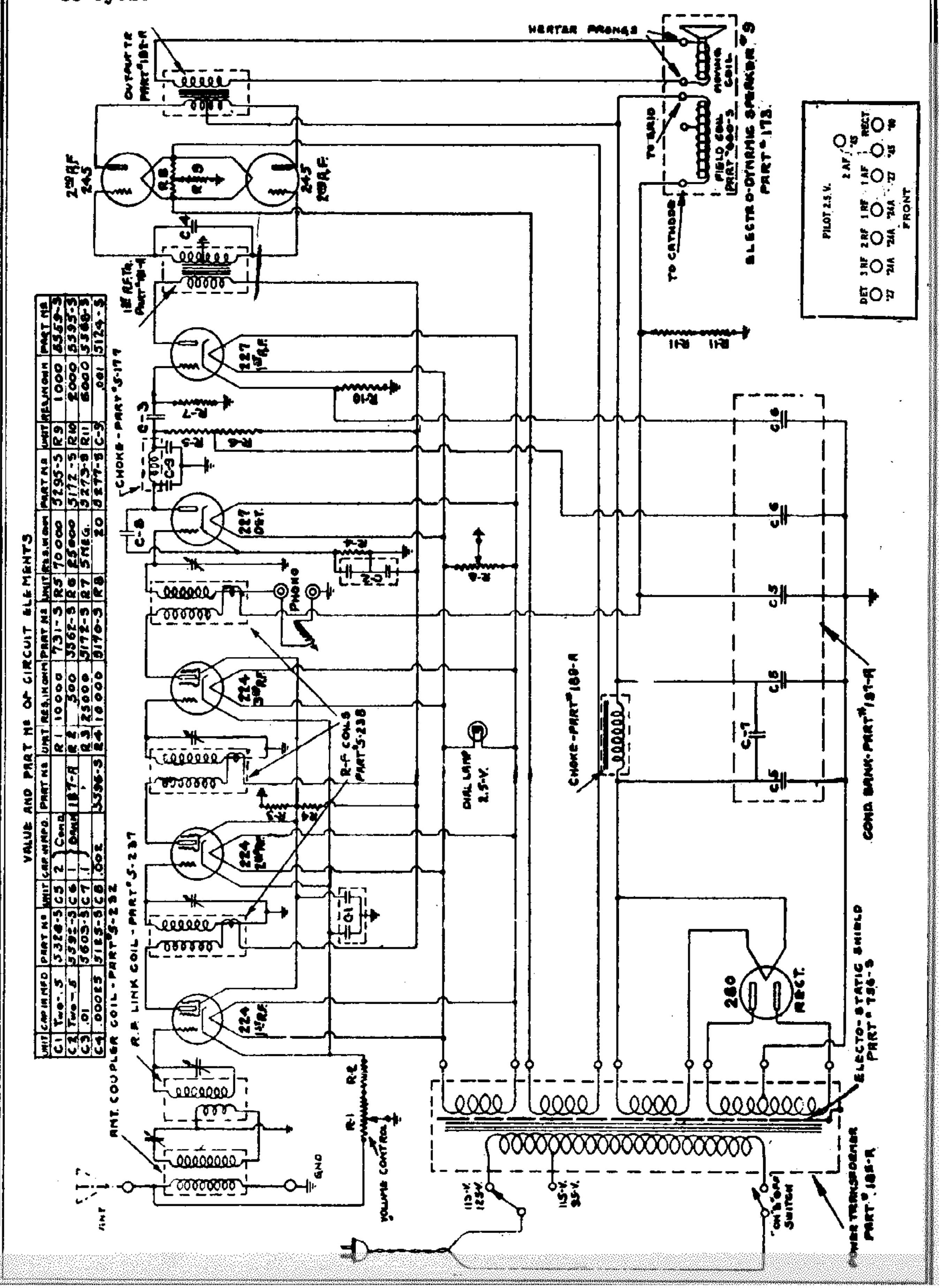
Type of Tube	Position of Tube	Tube Out A Volts	Tube Out B Volts	Tube in Tester A Volts	Tube in Tester B Volts	Tube in Tester C Volts	Cathode-Heater Volts	Normal Plate
227	1 R. F.	2.45	120	2.40	114	6.5	6.5	5.3
227	2 R. F.	2.45	120	2.40	115	6.5	6.5	4.6
227	3 R. F.	2.45	120	2.40	113	7.5	7.5	5.8
227	4 R. F.	2.45	120	2.40	113	7.5	7.5	5.9
227	DET.	2.45	84	2.40	16	.5	.0	.7
227	1 A. F.	2.45	94	2.40	30	.5	2.5	1.0
227	2 A. F.	2.45	128	2.40	106	1.5	7.0	3.6
245	P. P.	2.55	256	2.45	232	45.0		23.0
245	P. P.	2.55	256	2.45	232	45.0		23.0
280	RECT.	5.30		4.90				78.0

Models 90, 93, 94, 95 (1929)



MODEL 96
60 Cycle

ALL-AMERICAN MOHAWK CORP.

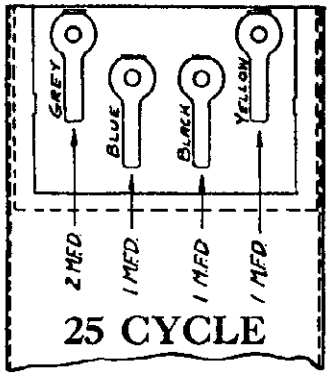


VALUE AND PART No OF CIRCUIT ELEMENTS

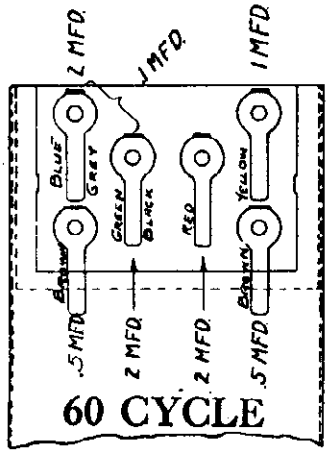
UNIT	CAP IN MFD	PART No	UNIT	CAP IN MFD.	PART No	UNIT	RES. IN OHM	PART No	UNIT	RES. IN OHM	PART No	UNIT	RES. IN OHM	PART No
C1	Two-.5	5328-5	C5	2 } Cond.		R1	10000	731-5	R5	70000	5295-5	R9	1000	5559-5
C2	Two-.5	5592-5	C6	1 } Bank	187-A	R2	300	3562-5	R6	25000	5172-5	R10	2000	5595-5
C3	.01	5603-5	C7	.1 }	"	R3	25000	5172-5	R7	5 MEG.	5273-5	R11	6000	5368-5
C4	.00025	5185-5	C8	.002	5596-5	R4	10000	5170-5	R8	20	5277-5	C-9	.001	5124-5

ALL-AMERICAN MOHAWK CORP.

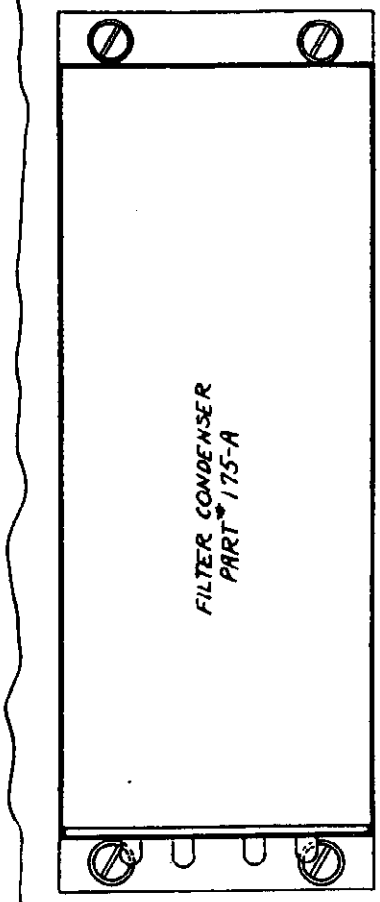
MODEL 90
Data

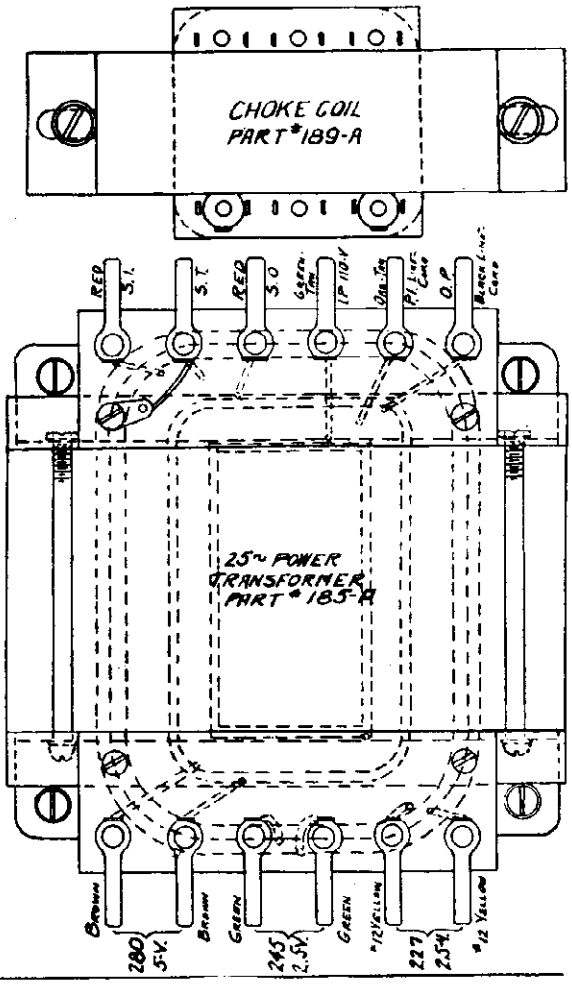


FRONT VIEW OF CONDENSER TERMINALS

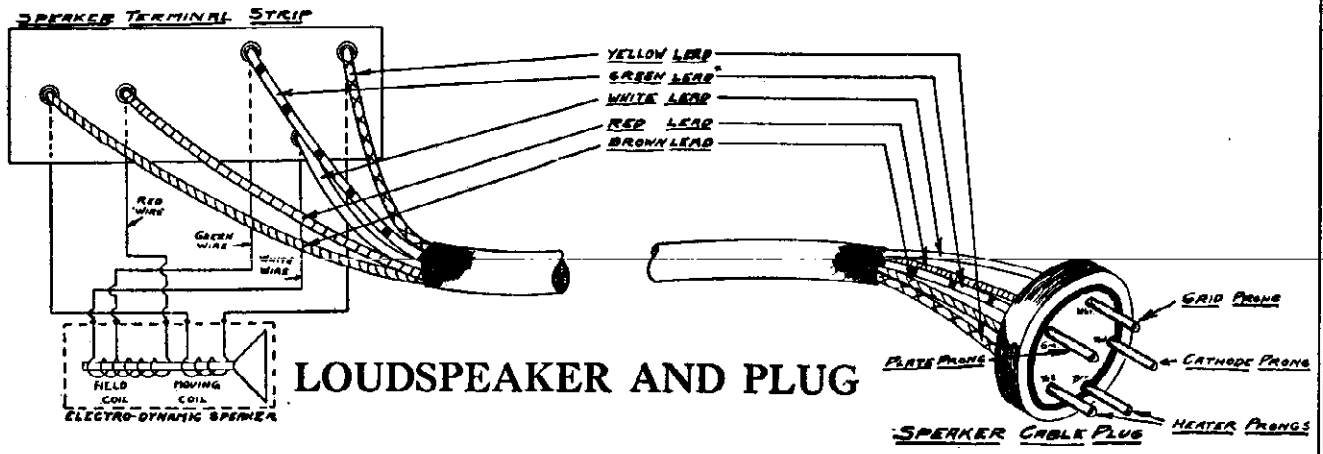


FRONT VIEW OF CONDENSER TERMINALS



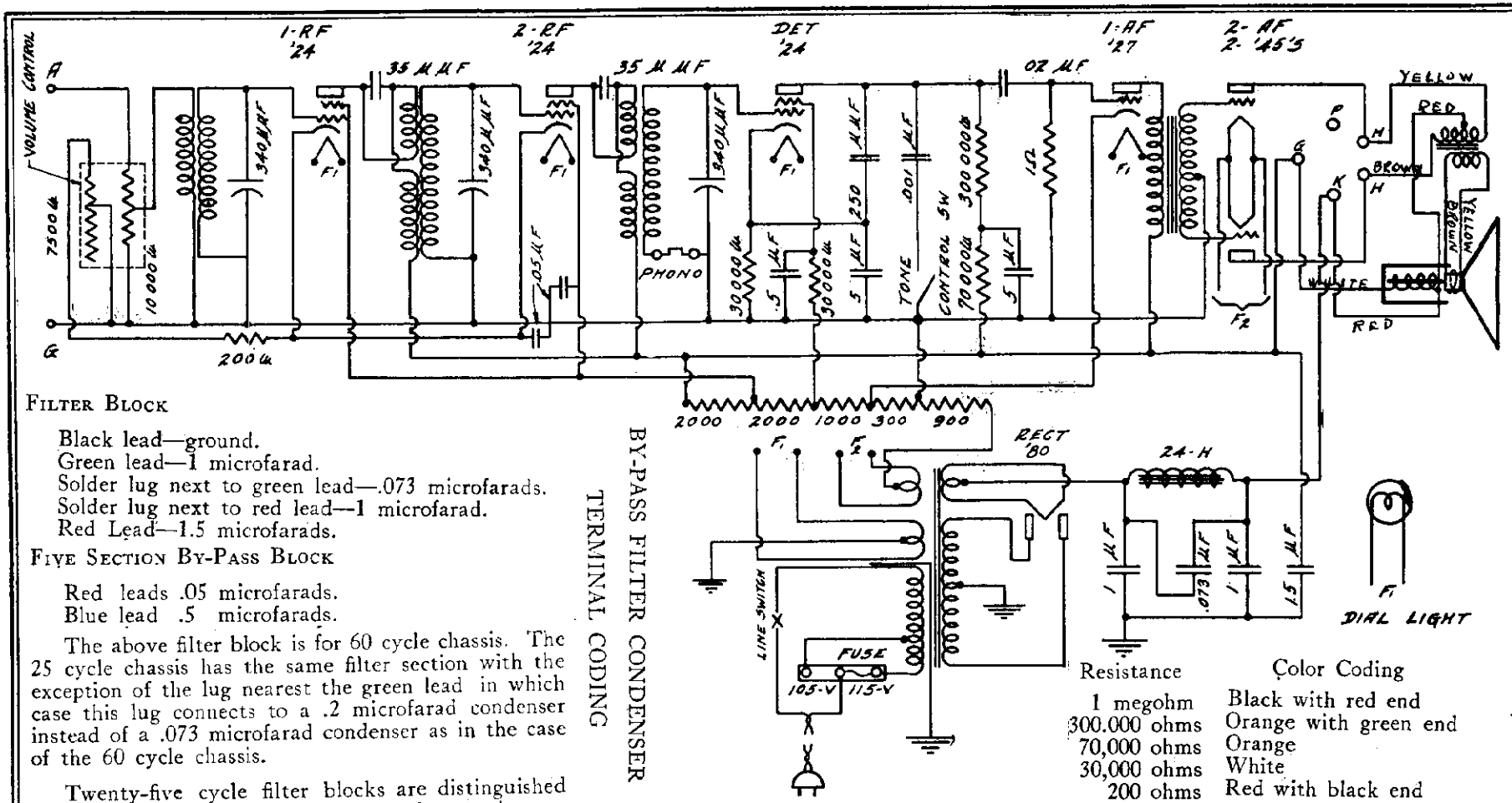


POWER PACK TERMINALS NO. 90 CHASSIS



LOUDSPEAKER AND PLUG

MODEL LYRIC D ALL-AMERICAN MOHAWK CORP.



Filter Block

Black lead—ground.
Green lead—1 microfarad.
Solder lug next to green lead—.073 microfarads.
Solder lug next to red lead—1 microfarad.
Red Lead—1.5 microfarads.

Five Section By-Pass Block

Red leads .05 microfarads.
Blue lead .5 microfarads.

The above filter block is for 60 cycle chassis. The 25 cycle chassis has the same filter section with the exception of the lug nearest the green lead in which case this lug connects to a .2 microfarad condenser instead of a .073 microfarad condenser as in the case of the 60 cycle chassis.

Twenty-five cycle filter blocks are distinguished from sixty cycle blocks by the green dot on the terminal strip at the bottom.

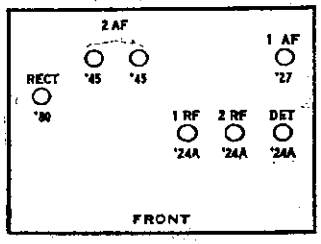
BY-PASS FILTER CONDENSER TERMINAL CODING

Resistance	Color Coding
1 megohm	Black with red end
300.000 ohms	Orange with green end
70,000 ohms	Orange
30,000 ohms	White
200 ohms	Red with black end

Below is a standard list of voltage readings for the tubes of the LYRIC AC Model D receiver:

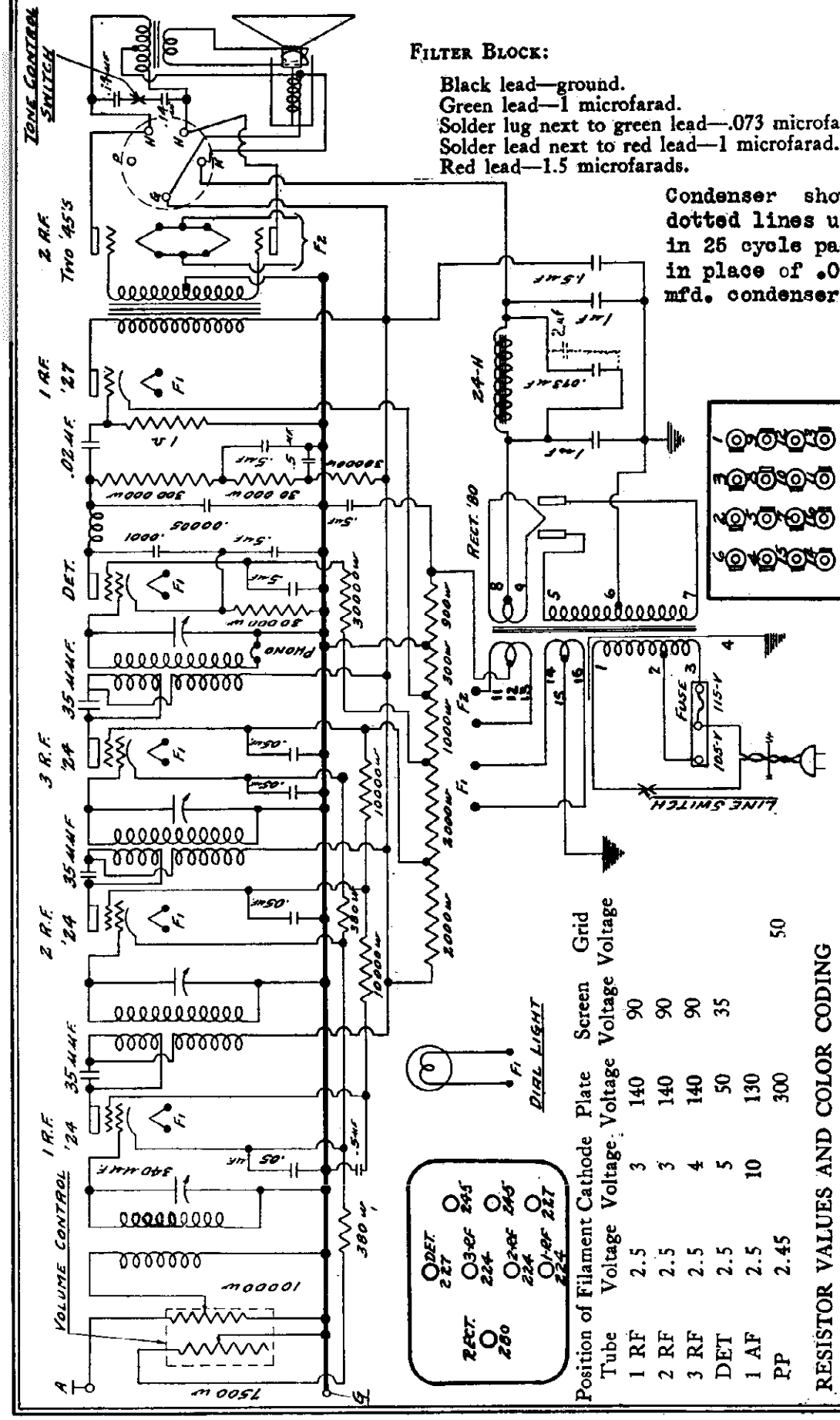
Type of Tube	Position of Tube	Filament Voltage	Cathode Voltage	Plate Voltage	Screen Voltage	Grid Voltage
224	1 RF	2.5	1.6	140	90	
224	2 RF	2.5	1.6	140	90	
224	DET	2.5	5	50	35	
227	1 AF	2.5	10	130		
245	PP	2.45		300		50
245	PP	2.45		300		50

Model D (1929)



ALL-AMERICAN MOHAWK CORP.

MODEL H



Filter Block:

Black lead—ground.
Green lead—1 microfarad.
Solder lug next to green lead—.073 microfarads.
Solder lead next to red lead—1 microfarad.
Red lead—1.5 microfarads.

Condenser shown in dotted lines used in 25 cycle pack in place of .073 mfd. condenser.

Resistor Values and Color Coding

Position of Tube	Filament Voltage	Cathode Voltage	Plate Voltage	Screen Voltage	Grid Voltage
1 RF	2.5	3	140	90	
2 RF	2.5	3	140	90	
3 RF	2.5	4	140	90	
DET	2.5	5	50	35	
1 AF	2.5	10	130		50
PP	2.45		300		

Resistance	Color Coding
1 megohm	Black with red end
300,000 ohms	Orange with green end
30,000 ohms	White
10,000 ohms	Blue
380 ohms	Blue with black end

Fixed Condenser Values and Color Coding

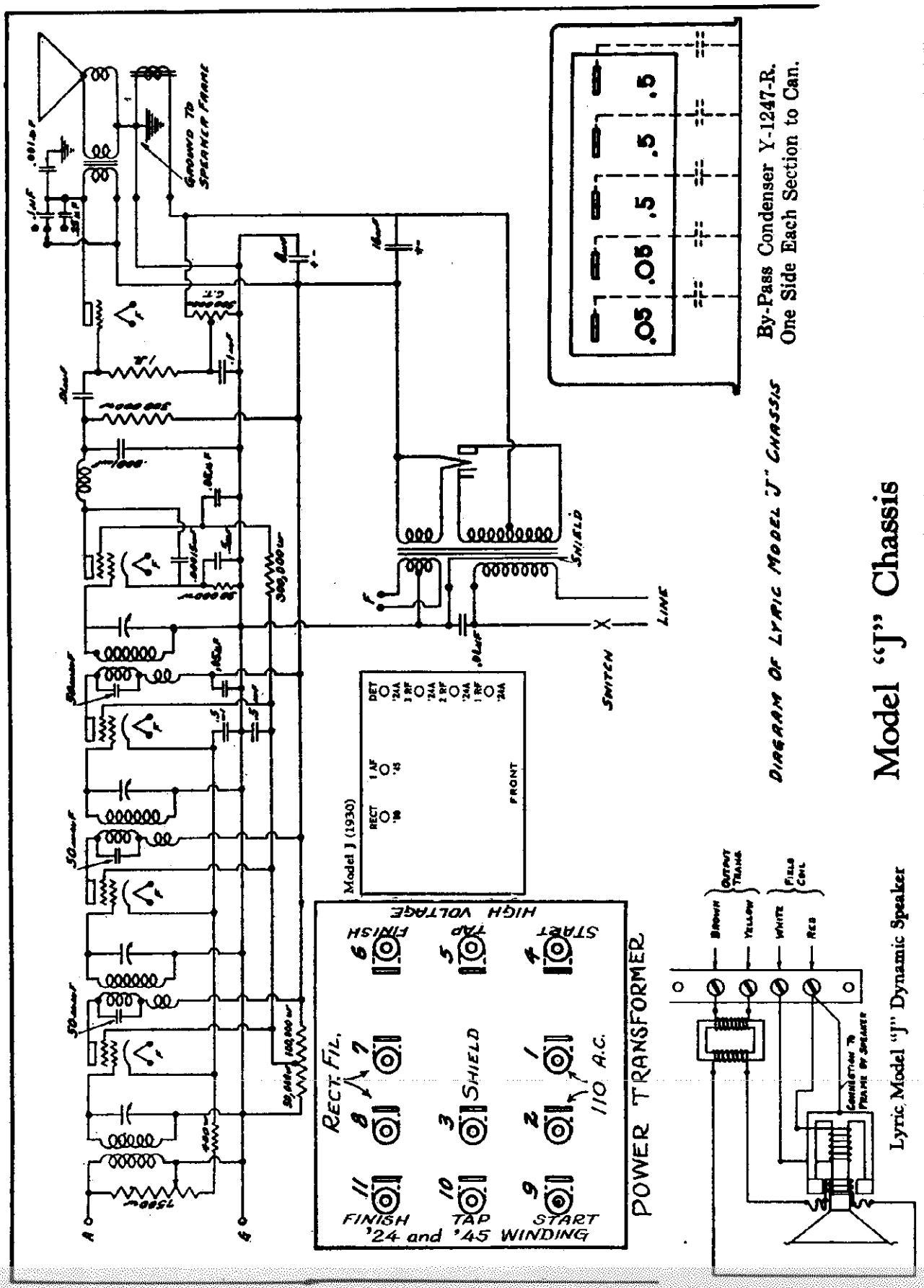
Capacity	Color Coding
35 micro-microfarads	Grey dot
50 micro-microfarads	Blue dot and white dot
100 micro-microfarads	Orchid dot

Five Section By-Pass Block, Lead Type:

Red leads .05 microfarads.
Blue lead .5 microfarads.

MODEL "J"
Schematic

ALL-AMERICAN MOHAWK CORP.



ALL-AMERICAN MOHAWK CORP.

MODEL "J"
Data

Model "J" Chassis

TECHNICAL DATA

The following table shows normal voltages to be found on the LYRIC A. C. Model "J" receiver:

Type of Tube	Position of Tube	Filament Voltage	Cathode Voltage	Plate Voltage	Screen Voltage	Grid Voltage
'24	1 RF	2.25	2.5	250	70	
'24	2 RF	2.25	2.5	250	70	
'24	3 RF	2.25	2.5	250	70	
'24	DET	2.25	3.0	180*	60*	
'45	AUD	2.25		250		—50*
'80	RECT	4.8		360 A.C.		

*Due to the high resistance of the circuit, these voltages can only be accurately measured with an electrostatic voltmeter.

The voltages tabulated above are standard under the following conditions:—

1. Line voltage 114.
2. Volume control in full on position.
3. Antenna disconnected so that no signal is received.
4. Measurements made with a 1000 ohm per volt voltmeter.
5. Except where a minus sign precedes the value, the negative side of the instrument is to be connected to the chassis pan.
6. Tested tubes are used.

Slight variation in voltages will be experienced due to manufacturing tolerance on both the parts of the set and the tubes.

RESISTOR VALUES AND COLOR CODING

Each resistance unit in this set has a distinguishing color code to designate its resistance and current handling capacity. It is recommended that when ordering resistors for replacement purposes, they be specified by colors, resistance and their position in the circuit. This will prevent any possibility of errors.

Resistance	Limits		Watts	Color Code
400 ohms (Wire Wound)	390-	410	1	None
30,000 ohms	27,000-	33,000	1	White or Orange-black-orange
150,000 ohms	135,000-	165,000	1	Violet-green-orange or Brown-green-yellow
300,000 ohms	270,000-	330,000	1	Orange-green end or Orange-black-yellow
500,000 ohms	450,000-	550,000	1	Red-green-yellow or Green-black-yellow
1,000,000 ohms	750,000-	1,250,000	1	Black-red end or Brown-black-green

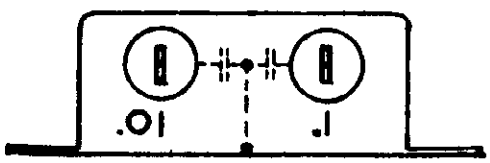
The color coding listed above is in accordance with R. M. A. standards wherever possible. The first color indicates the body, the second the end and the third the band or dot.

FIXED CONDENSER VALUES AND COLOR CODING

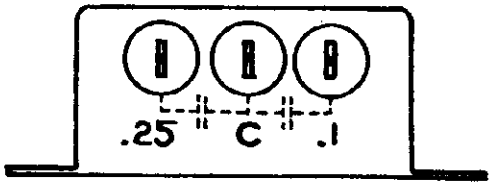
The small condensers in this chassis are color coded and should be ordered the same way as resistors.

Capacitance	Limits	Color Code
.00005 mfd.	.000045-.000055	Grey Dot
.0001	.00009 -.00011	Purple Dot
.00015	.000135-.000165	Yellow Dot
.001	.0009 -.0011	Blue Dot
.01	.009 -.011	None

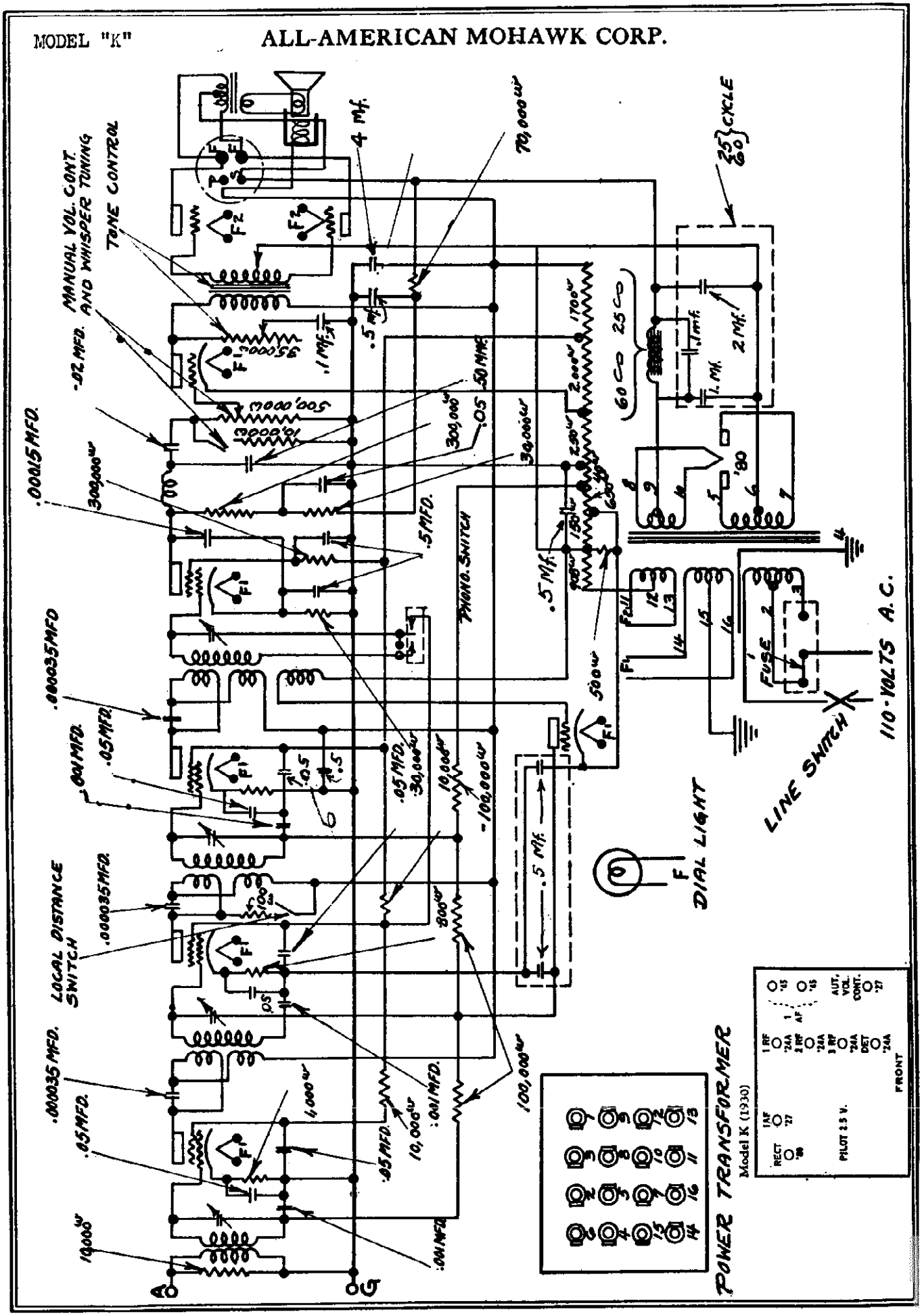
Diagrams show the connections of the various tone control and by-pass condenser blocks. The electrolytic condensers may be distinguished by the diameters of their cans. The 16 mfd. unit is in a 2½" container while the 8 mfd. unit is in a 1⅜" container.



Aux. By-Pass Condenser Y-1276-R.
One Side Each Section to Can.

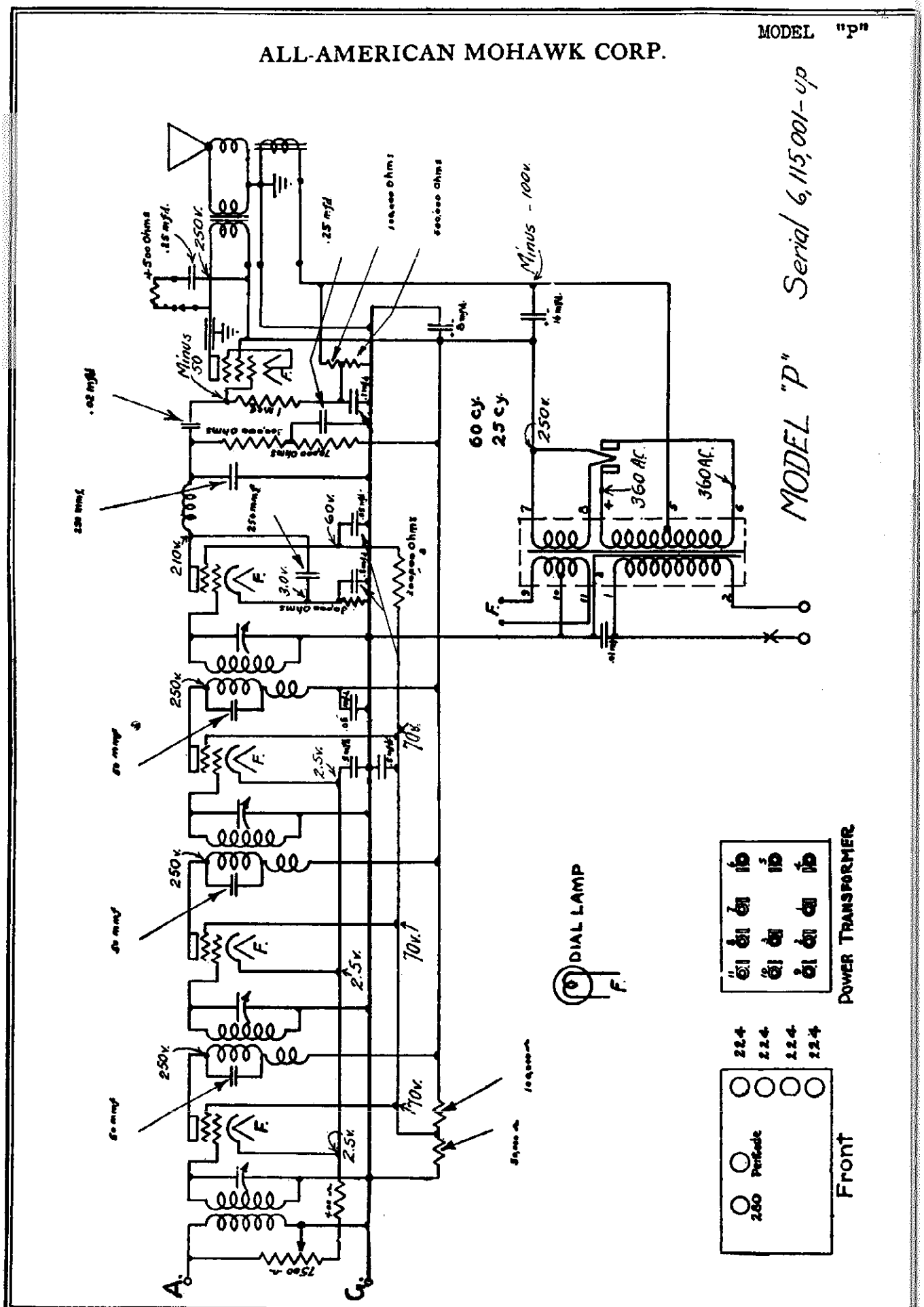


Tone Control Condenser Y-1279-R.
One Side Each Section to Central Lug.


MODEL "K"
ALL-AMERICAN MOHAWK CORP.
MANUAL VOL. CONT. AND WHISPER TUNING
TONE CONTROL
.0015 MFD.
.00035 MFD.
.05 MFD.
.00035 MFD.
LOCAL DISTANCE SWITCH
.00035 MFD.
.05 MFD.
4 Mf.
70,000 ω
25 60 CYCLE
PHONO. SWITCH
.5 MFD.
.5 Mf.
50 MMF.
.05
300,000 ω
30,000 ω
1700 ω
2000 ω
250 ω
60 25
1 Mf.
2 Mf.
'80
FUSE
110 VOLTS A.C.
LINE SWITCH
DIAL LIGHT
POWER TRANSFORMER
Model K (1930)
FRONT
PILOT 2.5 V.
AUT. VOL. CONT.
1 AF
1 RF
2 RF
DET
RECT
1AF
2AF
.1 MFD.
.01 MFD.
.05 MFD.
10,000 ω
100,000 ω
1000 ω
800 ω
500 ω
150 ω
100 ω
1000 ω

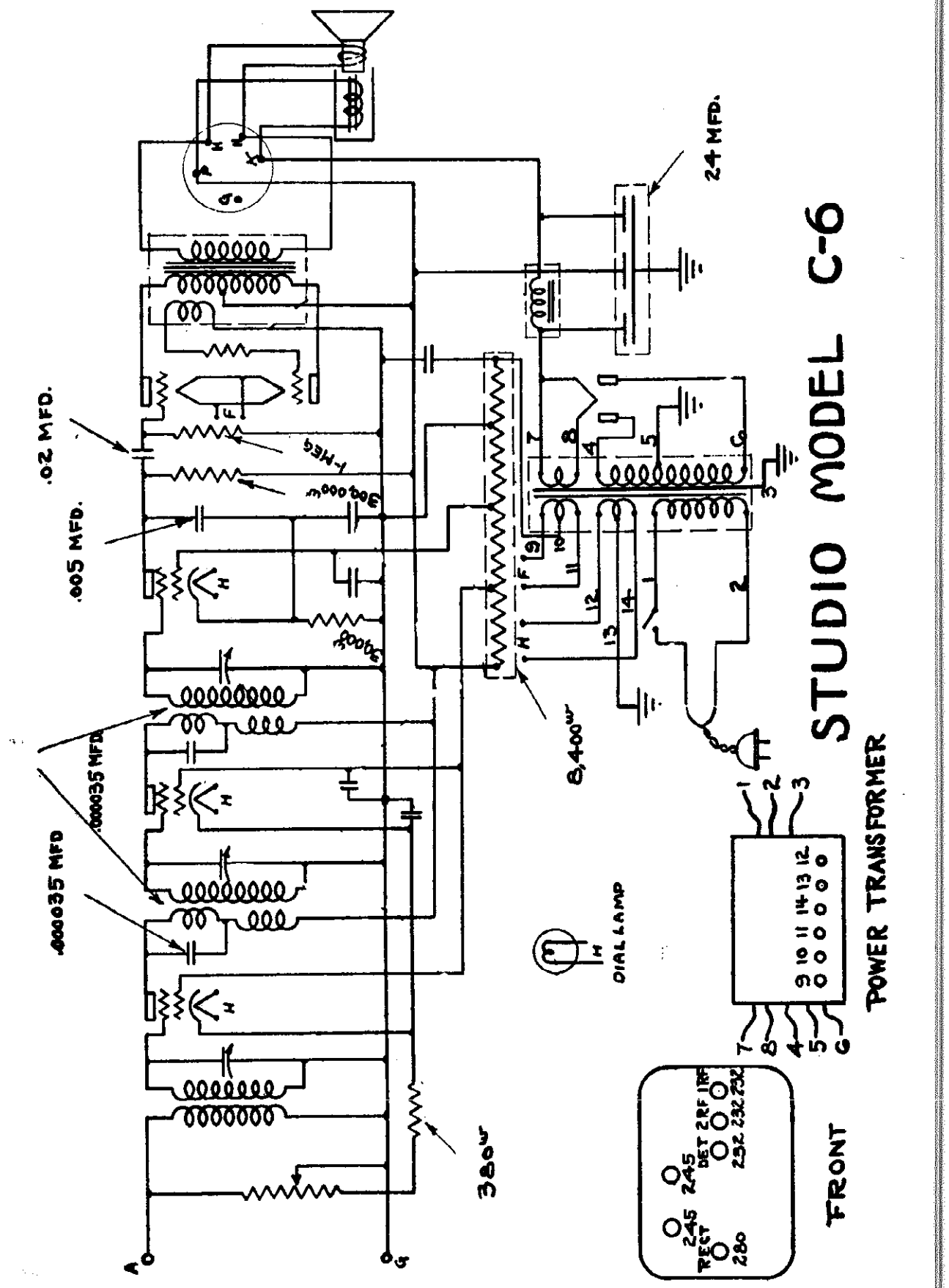
MODEL "P"

ALL-AMERICAN MOHAWK CORP.



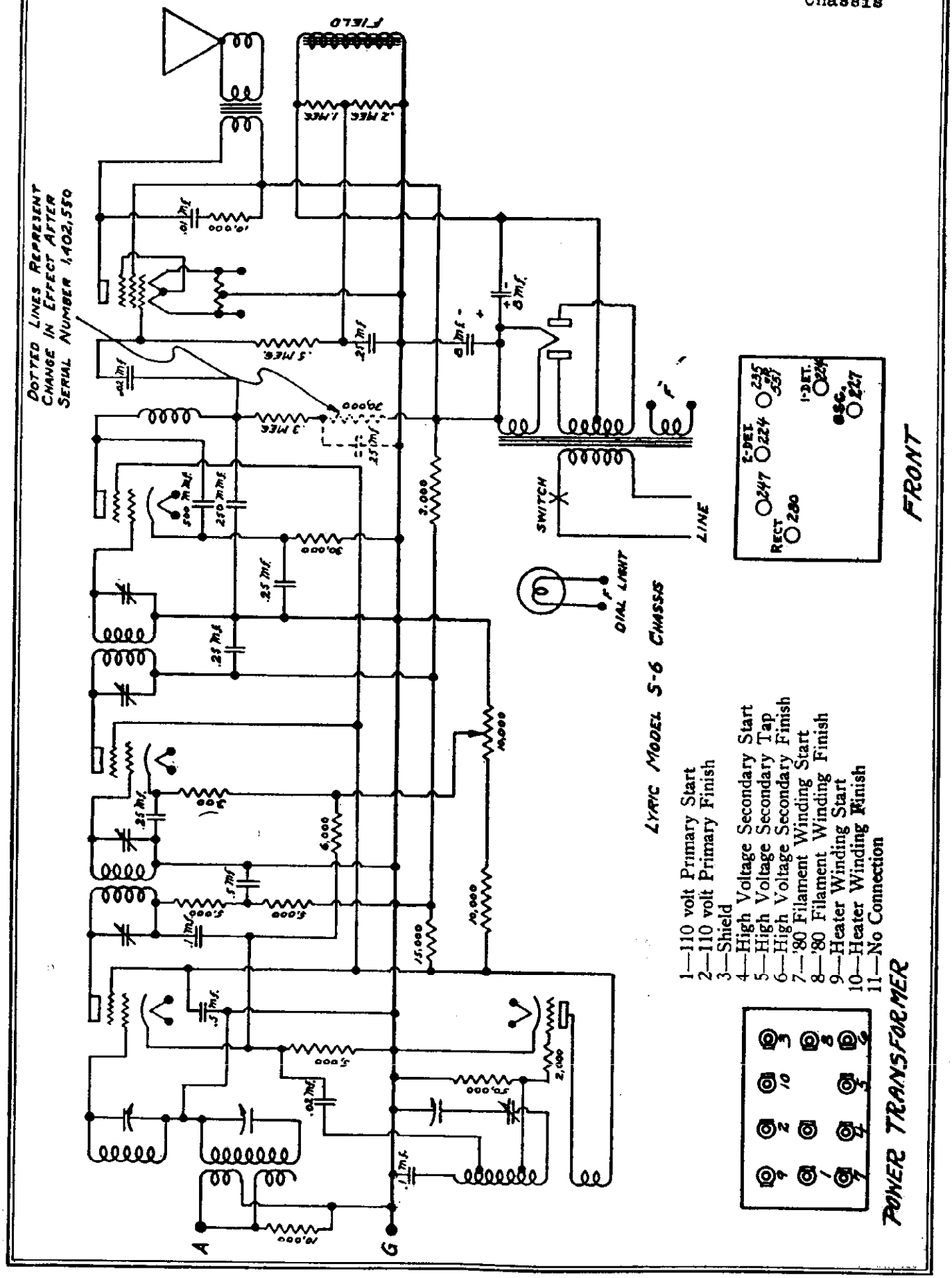
MODEL
Schematic C-6

ALL-AMERICAN MOHAWK CORP.



ALL-AMERICAN MOHAWK CORP.

MODEL S-6
Chassis



LYRIC MODEL S-6 CHASSIS

1—110 volt Primary Start
2—110 volt Primary Finish
3—Shield
4—High Voltage Secondary Start
5—High Voltage Secondary Tap
6—High Voltage Secondary Finish
7—'80 Filament Winding Start
8—'80 Filament Winding Finish
9—Heater Winding Start
10—Heater Winding Finish
11—No Connection

POWER TRANSFORMER

MODEL S-6
Data

ALL-AMERICAN MOHAWK CORP.

Model S-6

TECHNICAL DATA

Resistors:

All carbon resistors used in these chassis are color coded in accordance with the R.M.A. code.

Resistance	*Color*	*Capacity*	*Tolerance*	*Part No.*
300 ohms	Orange-black-brown	1/3 watt	10%	14-1773
2,000 ohms	Red-black-red	1/3 watt	10%	14-1806
3,000 ohms	Orange-black-red	1 watt	10%	14-1498
5,000 ohms	Green-black-red	1/3 watt	10%	14-1600
6,000 ohms	Blue-black-red	1/3 watt	10%	14-1502
10,000 ohms	Brown-black-orange	1/3 watt	10%	14-1599
15,000 ohms	Brown-green-orange	3 watt	10%	14-1745
30,000 ohms	Orange-black-orange	1/3 watt	10%	14-1555
50,000 ohms	Green-black-orange	1/3 watt	10%	14-1544
100,000 ohms	Brown-black-yellow	1/3 watt	10%	14-1541
200,000 ohms	Red-black-yellow	1/3 watt	10%	14-1730
300,000 ohms	Orange-black-yellow	1/3 watt	10%	14-1556
500,000 ohms	Green-black-yellow	1/3 watt	10%	14-1531

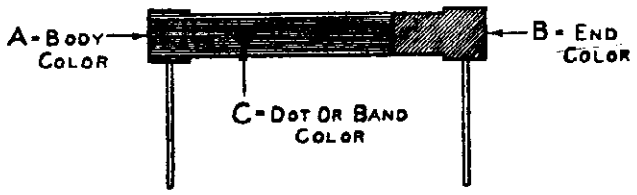
One-third watt resistors are approximately ¾" long x ¼" diameter.

One watt resistors are approximately 1¾" long x ¼" diameter.

Three watt resistors are approximately 1¾" long x ⅜" diameter.

RESISTOR COLOR CODE

All resistors on LYRIC Model "S" receivers have their resistance value indicated by the RMA Color Code which is described below.



A—Body color denotes first significant figure.

B—End color denotes second significant figure.

C—Dot or band color denotes number of zeros following second significant figure.

0—Black	5—Green
1—Brown	6—Blue
2—Red	7—Violet
3—Orange	8—Grey
4—Yellow	9—White

A few samples of this code are given below.

Body Color	*End Color*	*Dot Color*	*Resistance*
Orange	Black	Yellow	300,000 ohms
Brown	Green	Orange	15,000 ohms
Violet	Green	Red	7,500 ohms
Orange	Black	Brown	300 ohms

Condensers:

Fixed mica condensers used in these receivers are color coded to indicate capacity.

Capacity	*Color*	*Tolerance*	*Part Number*
.0005 Mfd.	Green, Black, Brown	10%	14-1186

Paper bypass condensers used in these receivers are of the cub type and are plainly marked to show capacity In addition each unit carries a distinguishing color dot indicating the voltage rating as listed below:

Voltage	*Color*
200	Green dot or label
400	Red dot or label
600	Yellow dot or label

Normal Working Voltages:

1. Line voltage 115 volts.
2. Volume control in full "ON" position.
3. Antenna disconnected so that no signal is received.
4. Measurements made with 1000 ohm per volt meter.
5. Except where a minus sign preceeds the reading the NEGATIVE SIDE OF THE INSTRUMENT IS TO BE CONNECTED TO THE CHASSIS PAN.
6. Tested tubes are used.

In a normal receiver all voltages will be within 5% of the values listed below:—

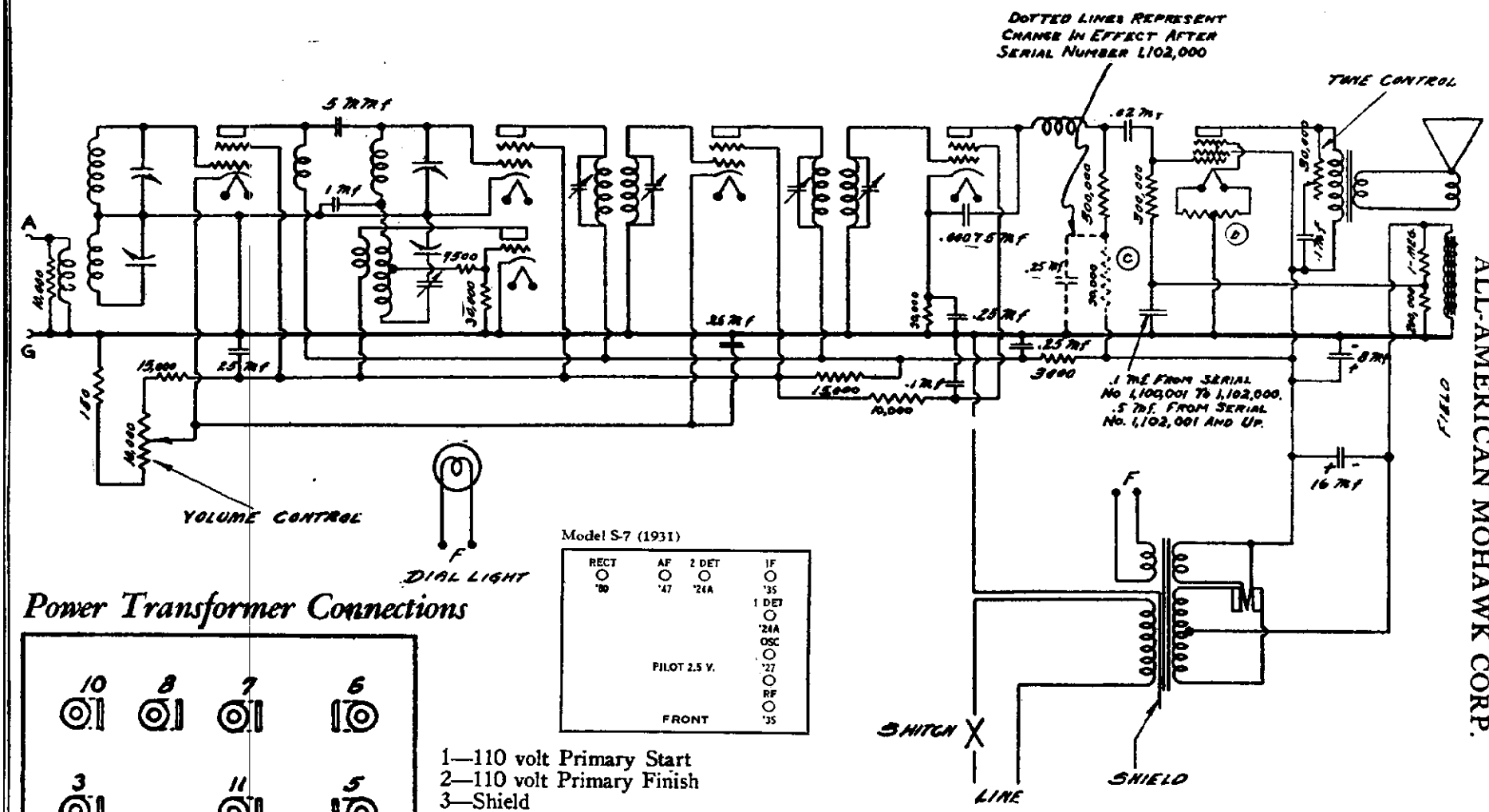
Position of tube	*Type of tube*	*Filament Voltage*	*Cathode Voltage*	*Plate Voltage*	*Screen Voltage*	*Grid Voltage*
1st Det.	-24	2.5	4.2	185	70	0
Oscillator	-27	2.5	0	70		0
I.F. Amp.	-51 or -35	2.5	1.8	195	70	0
2nd Det.	-24	2.5	4.5	195**	70	0
Output	-47	2.5		225	245 (note)	-17**

Speaker Field Current—49 M.A.

Note—Screen of pentode is connected to cathode pin on socket.

** Owing to the high resistance of the circuit these voltages can be measured accurately only with an electrostatic voltmeter.

PEAK FREQUENCY = 175 KC.

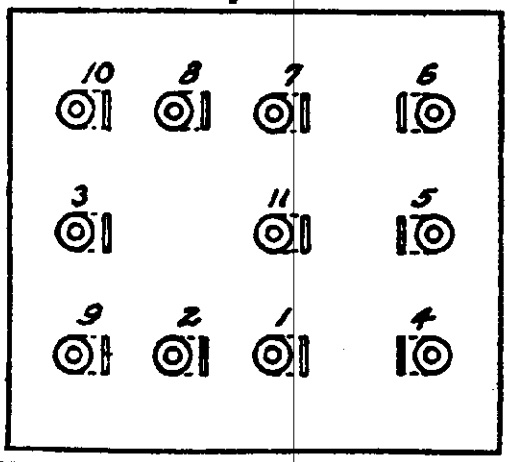


ALL-AMERICAN MOHAWK CORP.

MODEL S-7

Model S-7 (1931)

Power Transformer Connections



1—110 volt Primary Start
2—110 volt Primary Finish
3—Shield
4—High Voltage Secondary Start
5—High Voltage Secondary Tap
6—High Voltage Secondary Finish
7—'80 Filament Winding Start
8—'80 Filament Winding Finish
9—Heater and '47 Filament Winding Start
10—Heater and '47 Filament Winding Finish
11—No Connection

Model S-7 Receiver

MODEL S-7
Data

ALL-AMERICAN MOHAWK CORP.

Model S-7

TECHNICAL DATA

Resistors:

All carbon resistors used in these chassis are color coded in accordance with the R.M.A. code. In the following table the nominal resistance, power capacity, test limits, color marks and part numbers are listed.

Resistance	*Color*	*Capacity*	*Tolerance*	*Part No.*
150 ohms	Brown-green-brown	1/3 watt	10%	11-1760 or 11-1603
3,000 ohms	Orange-black-red	2 watt	10%	11-1759
4,500 ohms	Yellow-green-red	1/3 watt	10%	11-1542
7,500 ohms	Violet-green-red	1/3 watt	10%	11-1642
10,000 ohms	Brown-black-orange	1/3 watt	10%	11-1599
15,000 ohms	Brown-green-orange	1/3 watt	10%	11-1601
15,000 ohms	Brown-green-orange	2 watt	10%	11-1745
30,000 ohms	Orange-black-orange	1/3 watt	10%	11-1555
200,000 ohms	Red-black-yellow	1/3 watt	10%	11-1730
300,000 ohms	Orange-black-yellow	1/3 watt	10%	11-1556
500,000 ohms	Green-black-yellow	1/3 watt	10%	11-1531

One-third watt resistors are approximately ¾" long by ¼" in diameter.

One watt resistors are approximately 1¾" long by ¼" in diameter.

Two watt resistors are approximately 1¾" long by ⅜" in diameter.

Condensers:

Fixed mica condensers used in these receivers are color coded to indicate capacity. In the following table nominal capacity, test limits, color code and part number are listed.

Capacity	*Color*	*Tolerance*	*Part Number*
.00075 Mfd.	Violet, Green, Brown	10%	11-1801
5 m. mfd.	Black, Green, Black	10%	11-1595

Paper bypass condensers used in these receivers are of the cub type and are plainly marked to show capacity. In addition each unit carries a distinguishing color dot indicating the voltage rating as listed below.

Voltage	*Color*
200	Green dot or label
400	Red dot or label
600	Yellow dot or label

Normal Working Voltages:

1. Line voltage 115 volts.
2. Volume control in full "ON" position.
3. Antenna disconnected so that no signal is received.
4. Measurements made with 1000 ohm per volt meter.
5. Except where a minus sign preceeds the reading the NEGATIVE SIDE OF THE INSTRUMENT IS TO BE CONNECTED TO THE CHASSIS PAN.
6. Tested tubes are used.

In a normal receiver all voltages will be within 5% of the values listed below:

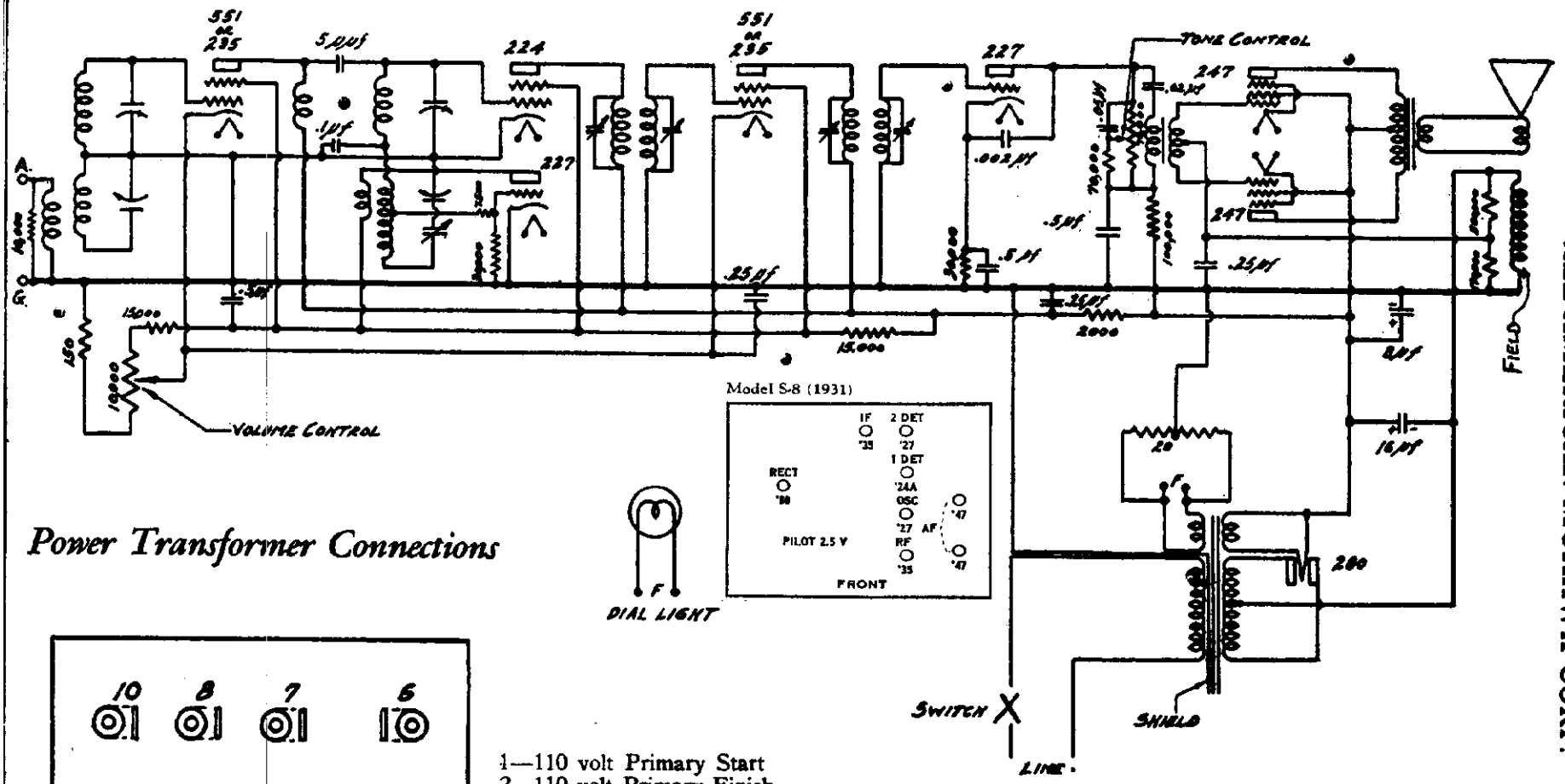
Position of tube	*Type of tube*	*Filament Voltage*	*Cathode Voltage*	*Plate Voltage*	*Screen Voltage*	*Grid Voltage*
R.F. Amp.	-51 or 35	2.50 A. C.	2.00	195.0	70.0	0
1st Det.	-24	2.50 A. C.		195.0	70.0	0
Oscillator	-27	2.50 A. C.	0	70.0		0
I.F. Amp.	-51 or 35	2.50 A. C.	2.00	195.0	70.0	0
2nd. Det.	-24	2.50 A. C.	4.50	168.0 **	70.0	0
Output	-47	2.50 A. C.		230.0	250.0 (note)	-17.0**
Rectifier	-80	5.00 A. C.		350.0 A. C.		

Speaker field current—57 M. A.

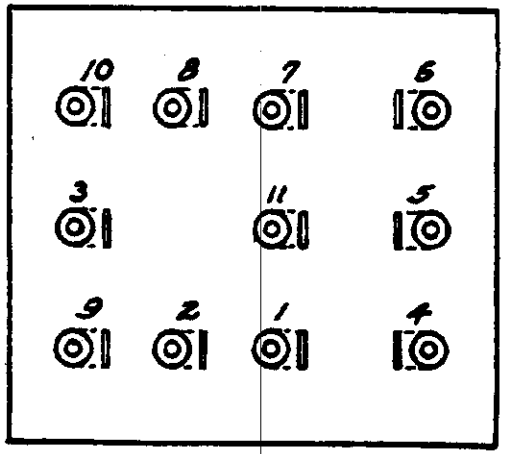
** Owing to the high resistance of the circuit these voltages can be measured accurately only with an electrostatic voltmeter.

Note—Screen of pentode is connected to cathode pin on socket.

PEAK FREQUENCY = 176 KC.



Power Transformer Connections



1—110 volt Primary Start
2—110 volt Primary Finish
3—Shield
4—High Voltage Secondary Start
5—High Voltage Secondary Tap
6—High Voltage Secondary Finish
7—'80 Filament Winding Start
8—'80 Filament Winding Finish
9—Heater and '47 Filament Winding Start
10—Heater and '47 Filament Winding Finish
11—No Connection

Model S-8 Receiver

ALL-AMERICAN MOHAWK CORP. MODEL S-8

MODEL S-8
Data

ALL-AMERICAN MOHAWK CORP

Model S-8

TECHNICAL DATA

Resistors:

All carbon resistors used in these chassis are color coded in accordance with the R.M.A. code. In the following table the nominal resistance, power capacity, test limits, color marks and part numbers are listed.

Resistance	*Color*	*Capacity*	*Tolerance*	*Part No.*
150 ohms	Brown-green-brown	1/3 watt	10%	12-1603 or 12-1760
2,000 ohms	Red-black-red	3 watt	10%	12-1777
7,500 ohms	Violet-black-red	1/3 watt	10%	12-1642
10,000 ohms	Brown-black-orange	1/3 watt	10%	12-1599
15,000 ohms	Brown-green-orange	1/3 watt	10%	12-1601
15,000 ohms	Brown-green-orange	3 watt	10%	12-1745
30,000 ohms	Orange-black-orange	1/3 watt	10%	12-1555
70,000 ohms	Violet-black-orange	1/3 watt	10%	12-1558
100,000 ohms	Brown-black-yellow	1/3 watt	10%	12-1614
170,000 ohms	Brown-violet-yellow	1/3 watt	10%	12-1734
500,000 ohms	Green-black-yellow	1/3 watt	10%	12-1531

One-third watt resistors are approximately ¾" long by ¼" in diameter.

One watt resistors are approximately 1¾" long by ¼" diameter.

Three watt resistors are approximately 1¾" long by ⅜" in diameter.

Condensers:

Fixed mica condensers used in these receivers are color coded to indicate capacity. In the following table nominal capacity, test limits, color code and part numbers are listed.

Capacity	*Color*	*Tolerance*	*Part Number*
5 m. mfd.	Black, Green, Black	10%	12-1595
.002	Red, Black, Red	10%	12-1625

Paper bypass condensers used in these receivers are of the cub type and are plainly marked to show capacity. In addition each unit carries a distinguishing color dot indicating the voltage rating as listed below.

Voltage	*Color*
200	Green dot or label
400	Red dot or label
600	Yellow dot or label

Part numbers for these units are given on the schematic diagram at the end of the manual.

Normal Working Voltages:

1. Line voltage 115 volts.
2. Volume control in full "On" position.
3. Antenna disconnected so that no signal is received.
4. Measurements made with 1000 ohm per volt meter.
5. Except where a minus sign preceeds the reading the NEGATIVE SIDE OF THE INSTRUMENT IS TO BE CONNECTED TO THE CHASSIS PAN.
6. Tested tubes are used.

In a normal receiver all voltages will be within 5% of the values listed below:—

Position of tube	*Type of tube*	*Filament Voltage*	*Cathode Voltage*	*Plate Voltage*	*Screen Voltage*	*Grid Voltage*
R.F. Amp.,	-51 or -35	2.5 A. C.	2.1	200	70	0
1st Det.	-24	2.5 A. C.		205	70	0
Oscillator	-27	2.5 A. C.	0	70		0
I.F. Amp.	-51 or -35	2.5 A. C.	2.1	200	70	0
2nd Det.	-24	2.5 A. C.	10	125		0
Output	-47	2.5 A. C.		235	250 (note)	-17.0**

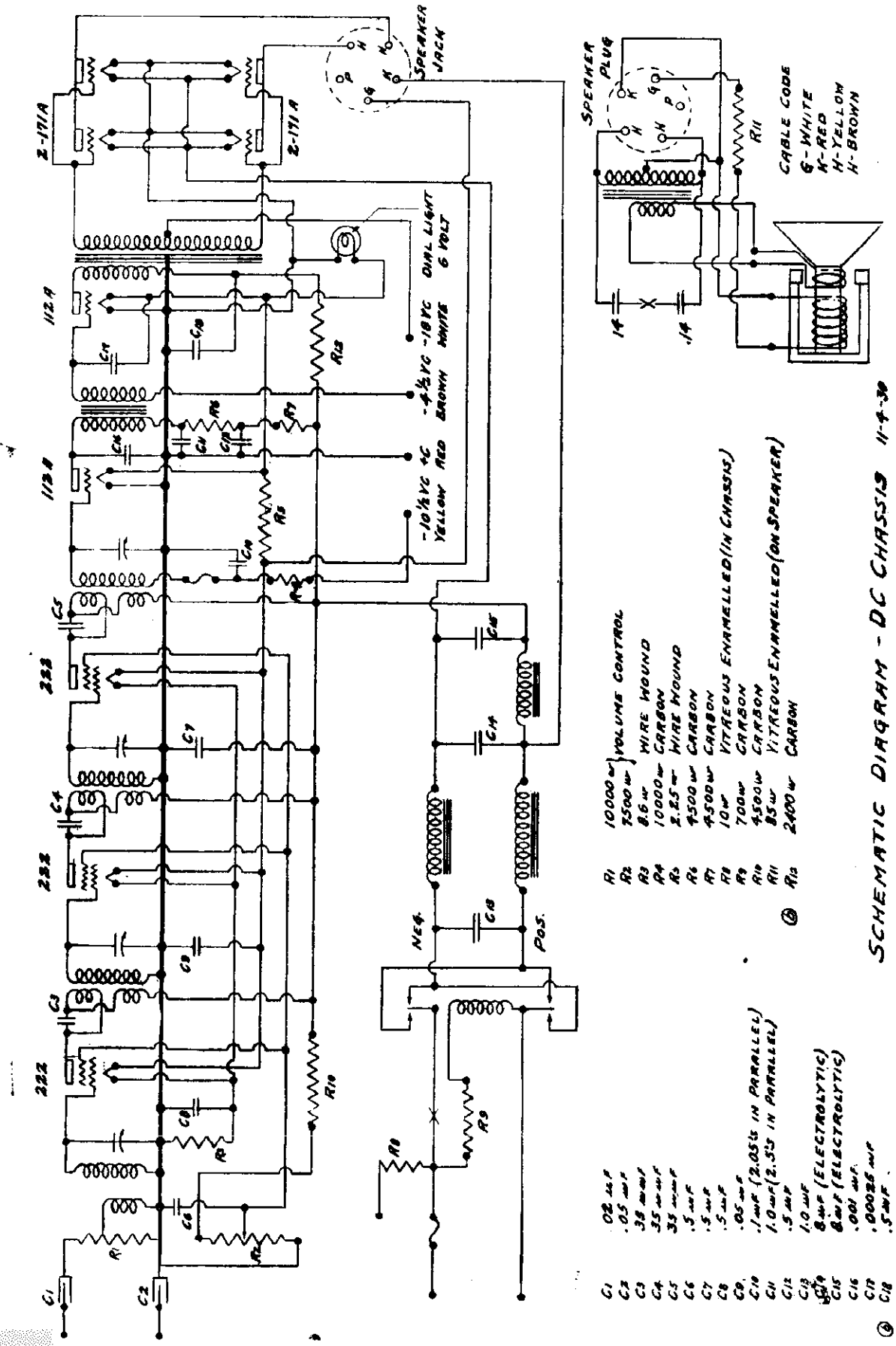
Speaker field current—91 M.A.

Note—Screen of pentode is connected to cathode pin on socket.

**Owing to the high resistance of the circuit these voltages can be measured accurately only with an electrostatic voltmeter.

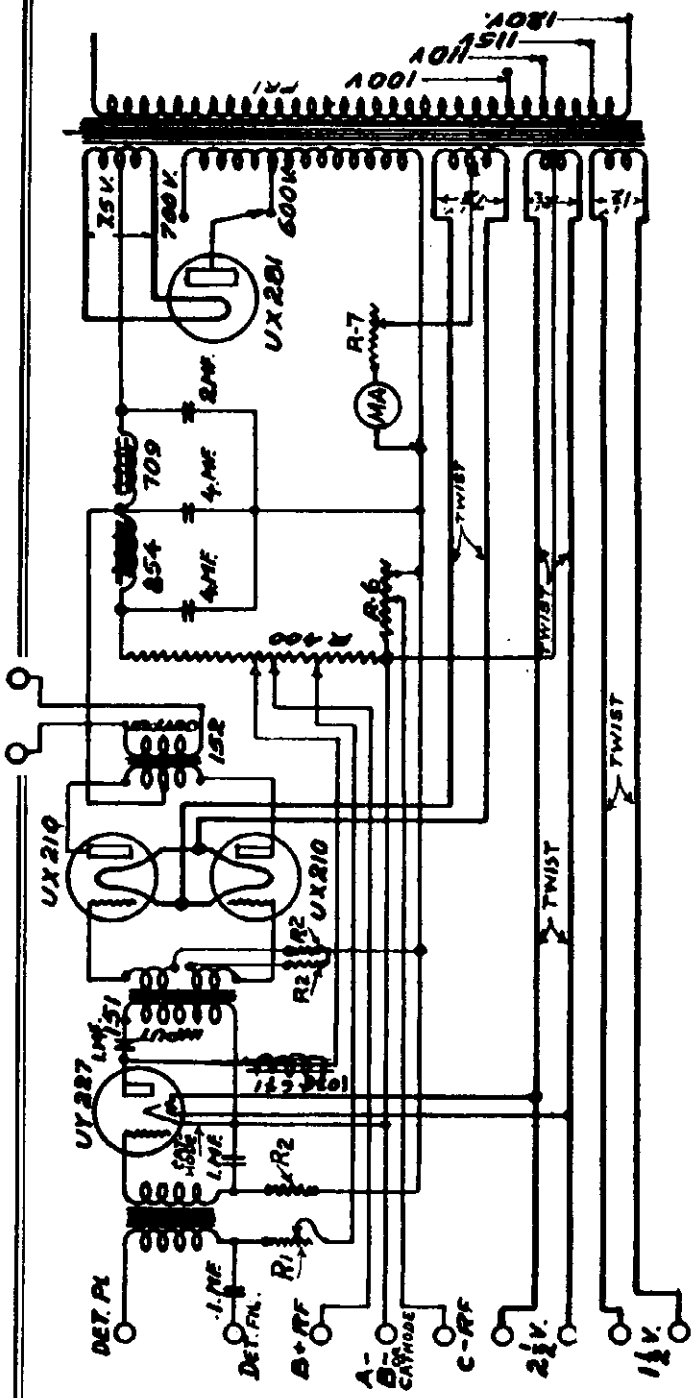
ALL-AMERICAN MOHAWK CORP

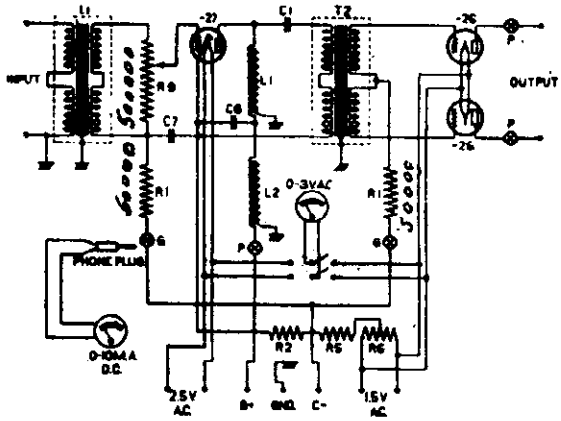
MODEL - DC



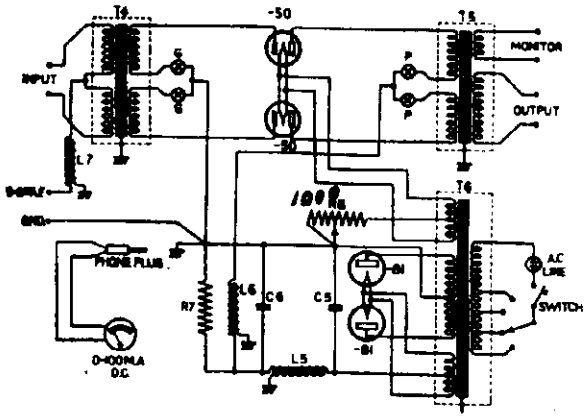
SCHEMATIC DIAGRAM - DC CHASSIS 11-4-30

AMERICAN TRANSFORMER CO. MODEL 25-A Amp'ier

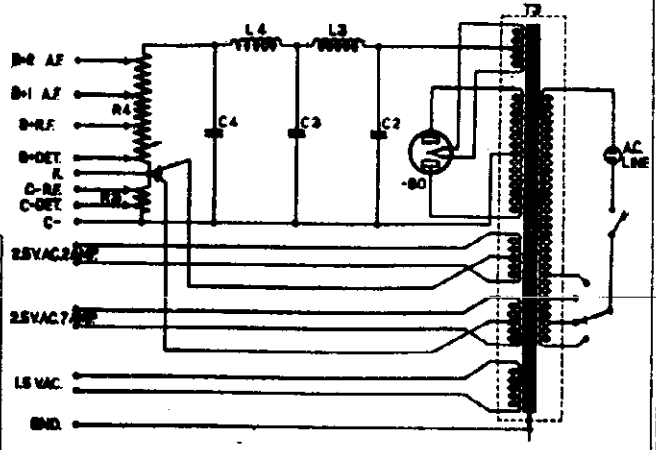




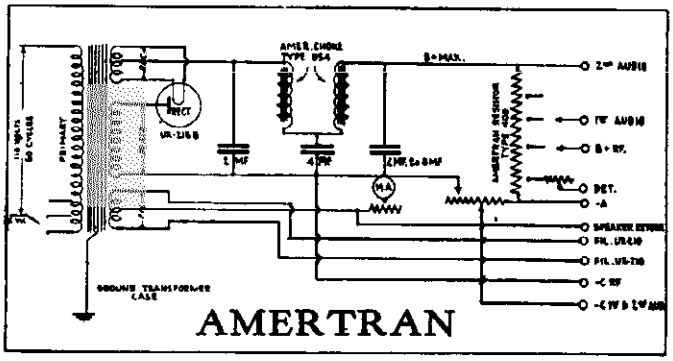
25-A Power Amplifier
(A Unit)



25-A Power Amplifier
(PA Unit)

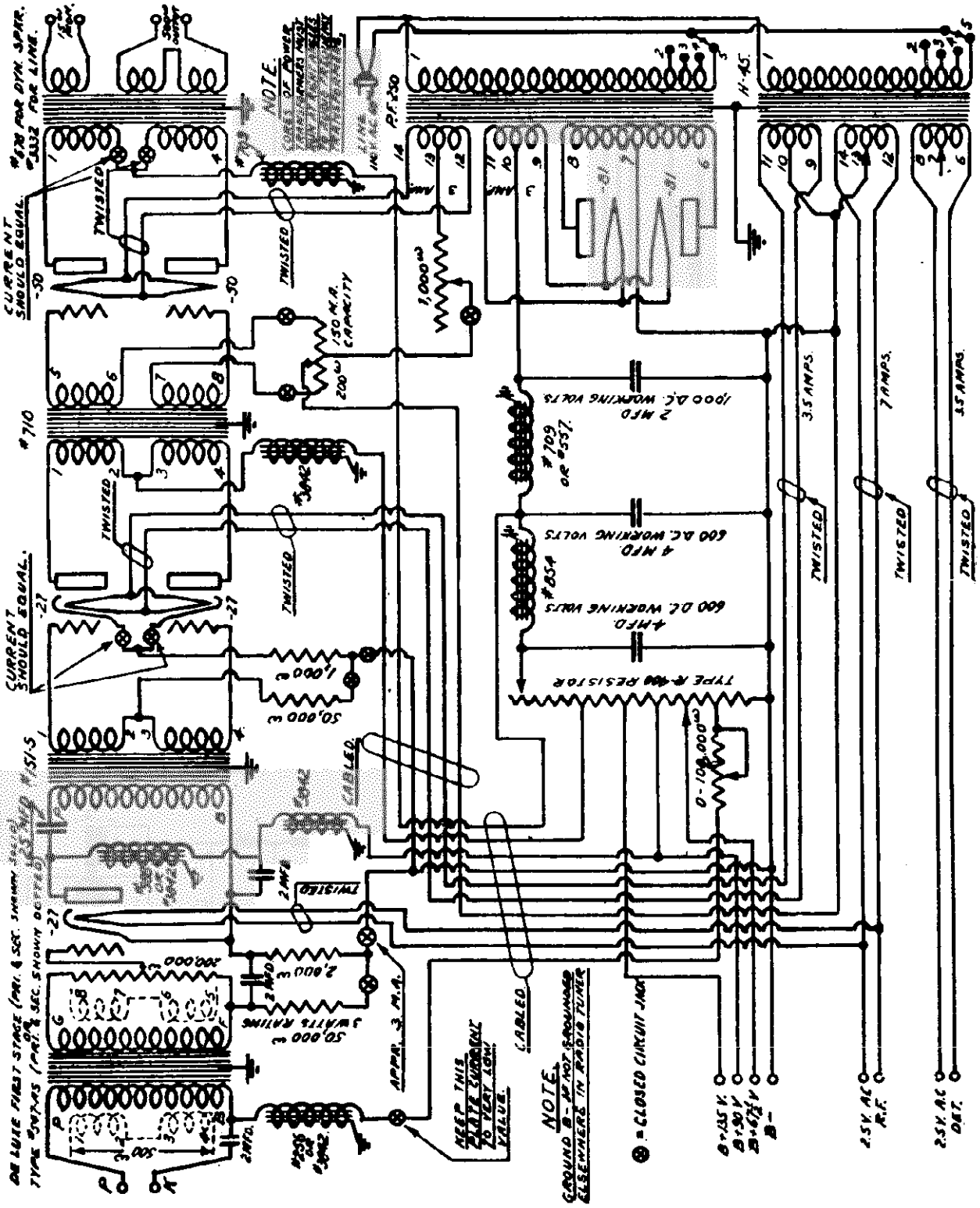


25-A Power Amplifier
(P Unit)



MODEL 250 Amertran
Power Amplifier

AMERICAN TRANSFORMER CO.

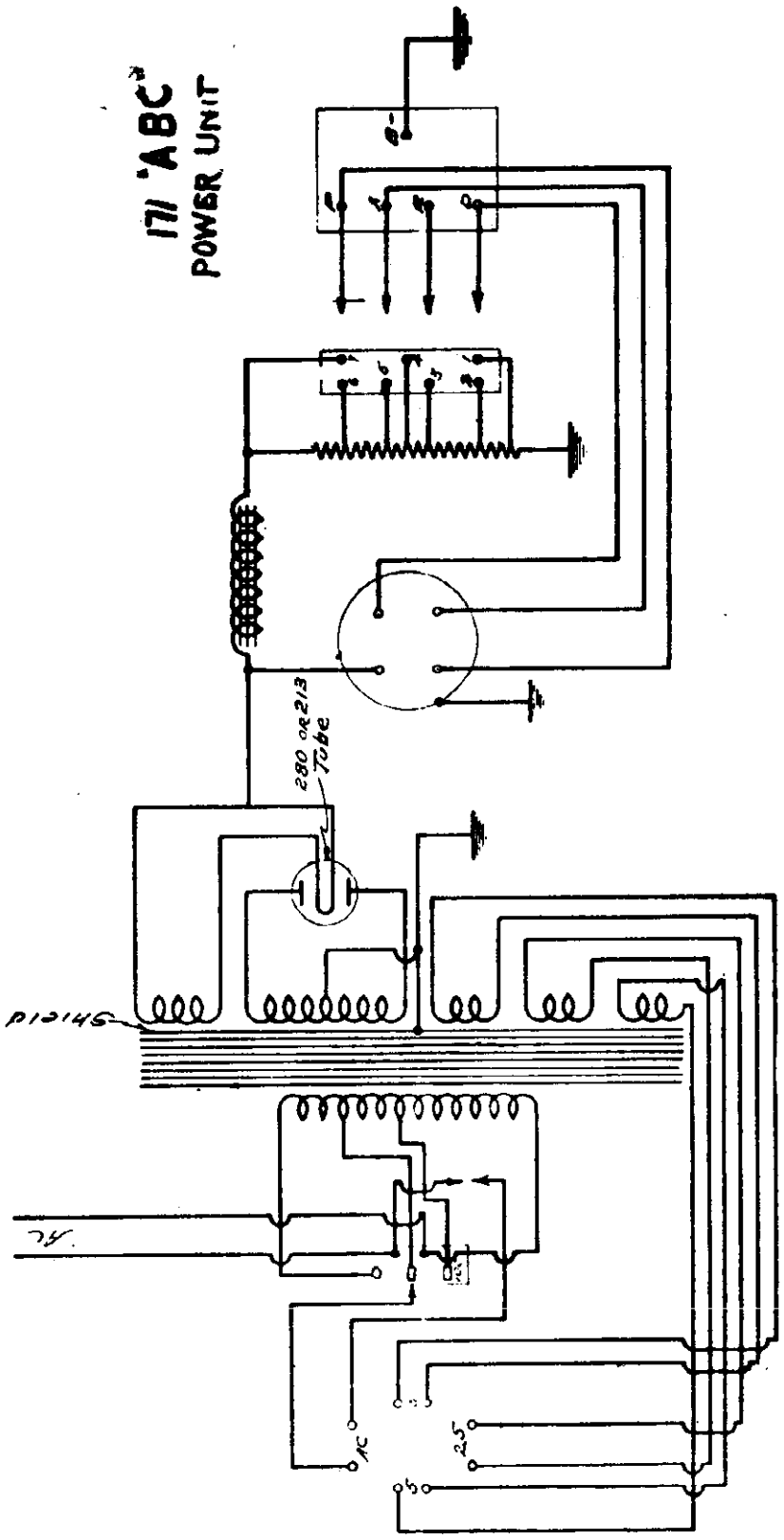


AMRAD CORPORATION

MODEL S-522
MODEL 3560-1
MODEL 3500-2

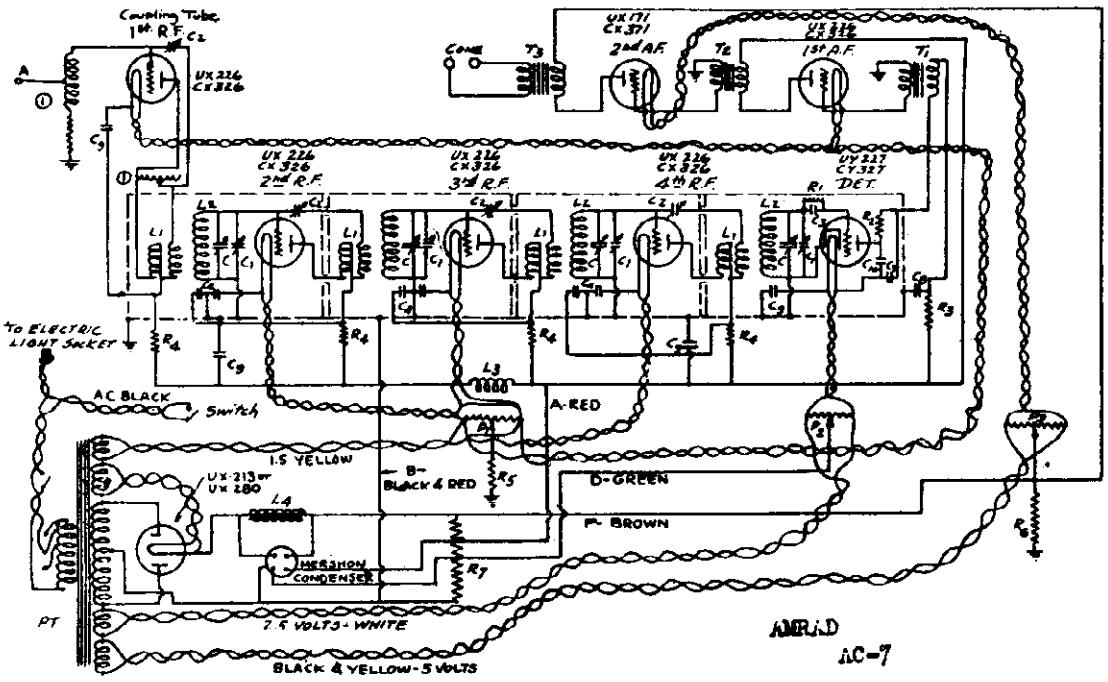
MODEL 171 ABC
Power Pack

AMRAD CORPORATION

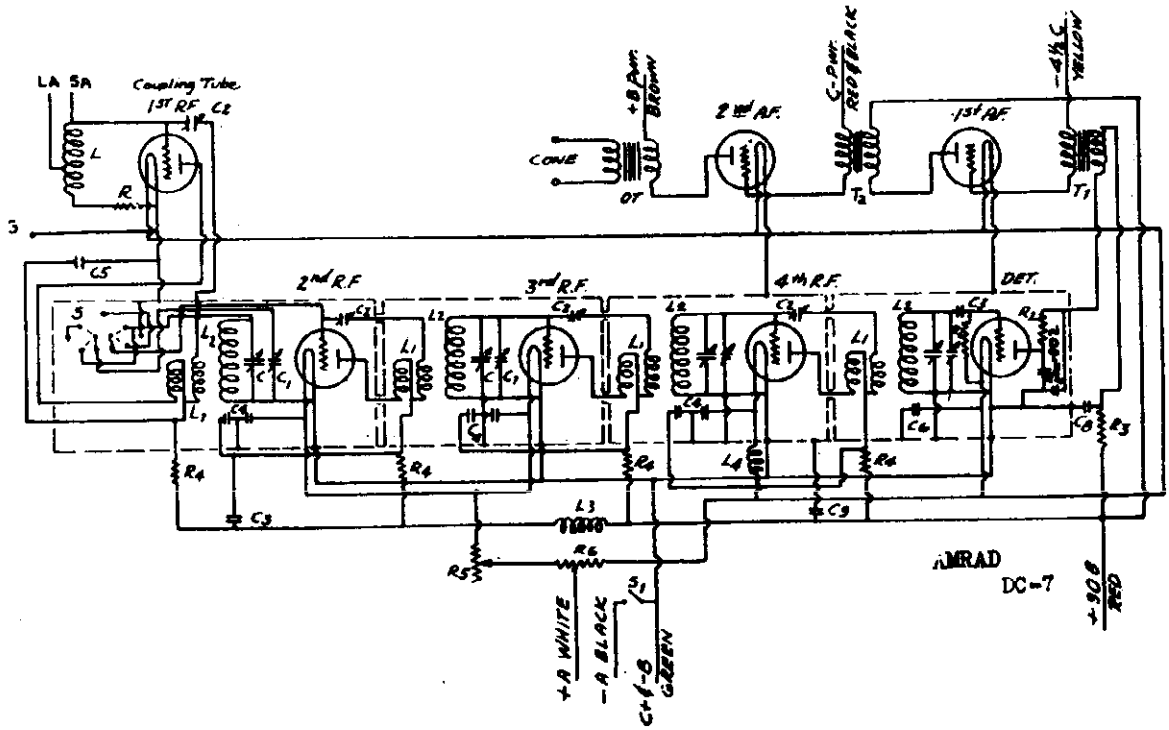


AMRAD CORPORATION

MODEL AC-7
MODEL DC-7

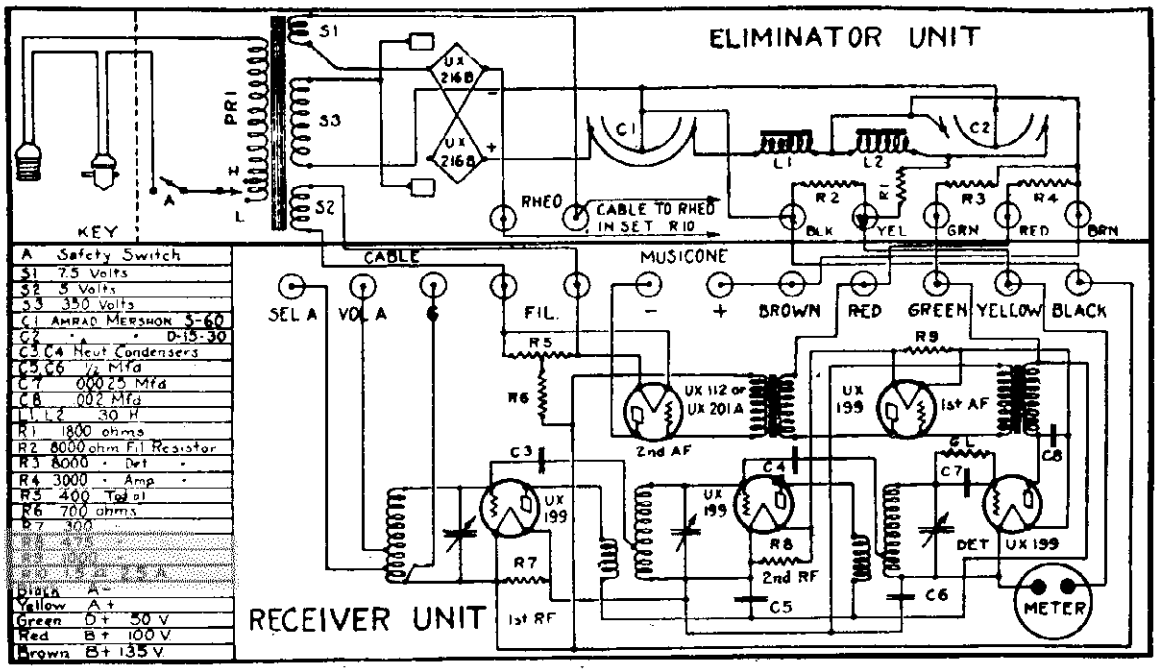


AC7, AC7-C			(A.C.) DC7, DC7-C			(D.C.)
CX-326 1st R.F.	CX-371A 2nd A.F.	CX-326 1st A.F.	CX-301A 1st R.F.	CX-571A 2nd A.F.	CX-301A 1st A.F.	
CX-326 2nd R.F.	CX-326 3rd R.F.	CX-326 4th R.F.	CX-327 Det.	CX-301A 2nd R.F.	CX-301A 3rd R.F.	CX-301A 4th R.F.	CX-301A or CX-300A Det.

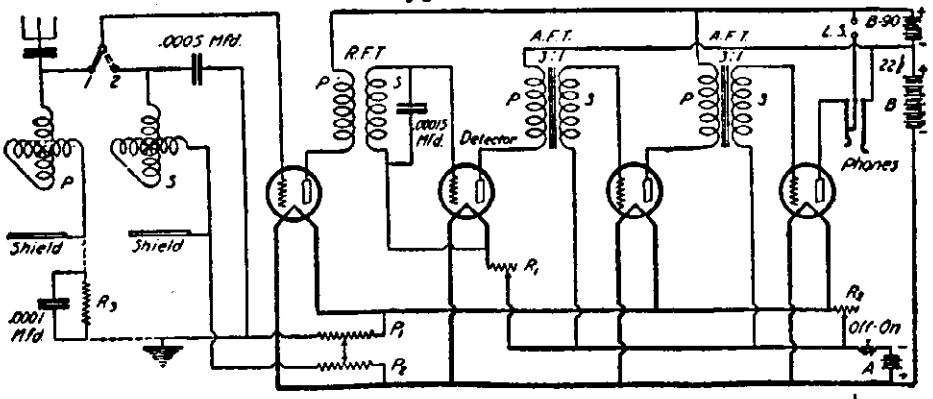


MODEL AC-5
MODEL 80,82,83
MODEL Inductrol

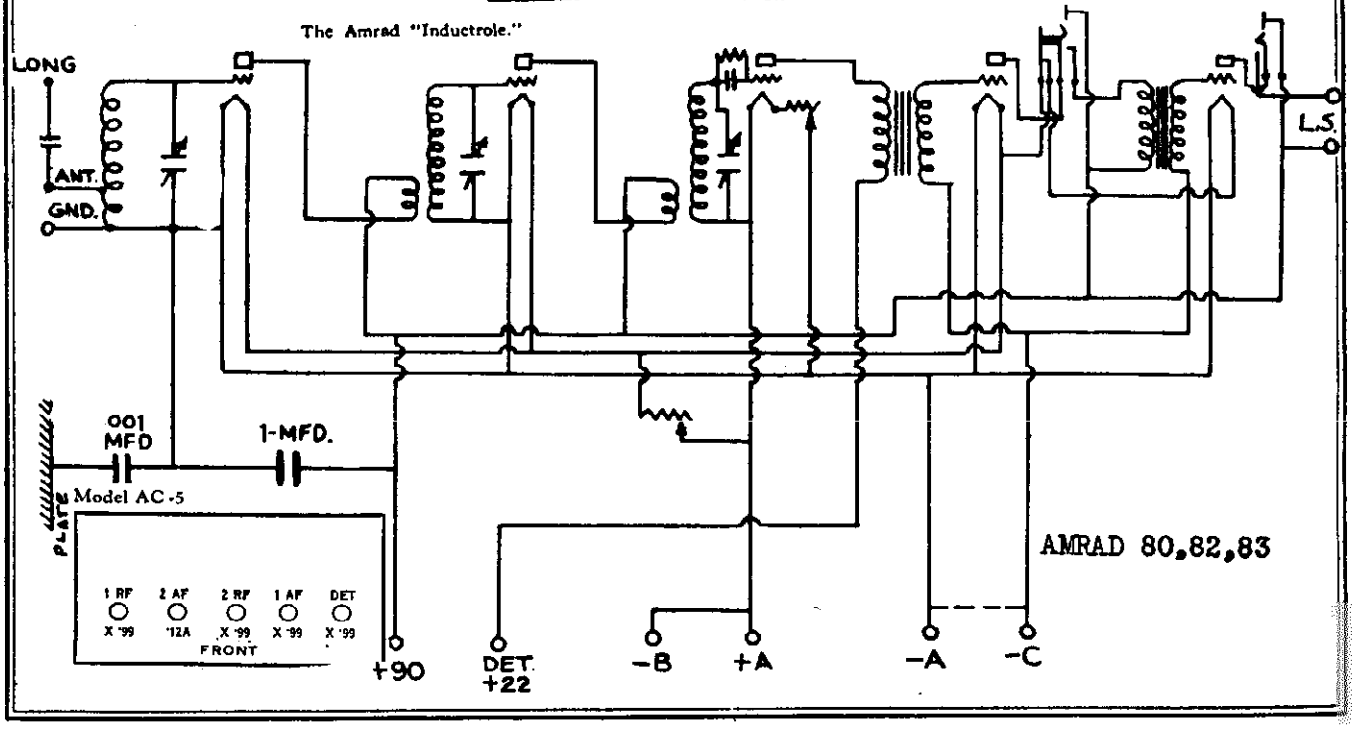
AMRAD CORPORATION



NEUTRODYNE. Type AC-5 and Power Unit.



The Amrad "Inductrole."



AMRAD CORPORATION

MODEL 84
MODEL S-733
MODEL 3950

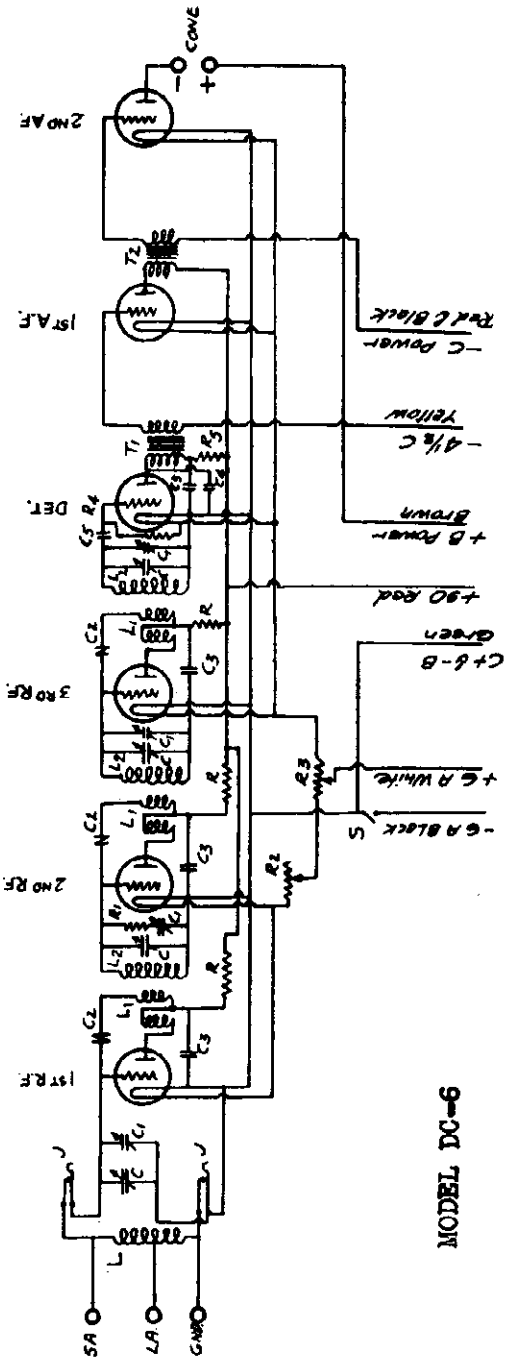
Tube Type	Position in Set	A Volts	B Volts	C Volts	Cathode Volts	Screen Volts
224	1 R.F.	2.3	170	2.5	---	60.
224	2 R.F.	2.3	170	2.5	---	60.
224	3 R.F.	2.3	170	2.5	---	60.
224	Det.	2.3	95	4.0	---	35.
227	1 A.F.	2.3	130	8.0	---	---
245	P.P.	2.3	220	40.	---	---
245	P.P.	2.3	220	40.	---	---
280	Rect.	4.6	250		---	---

Line voltage 117. Volume control maximum.

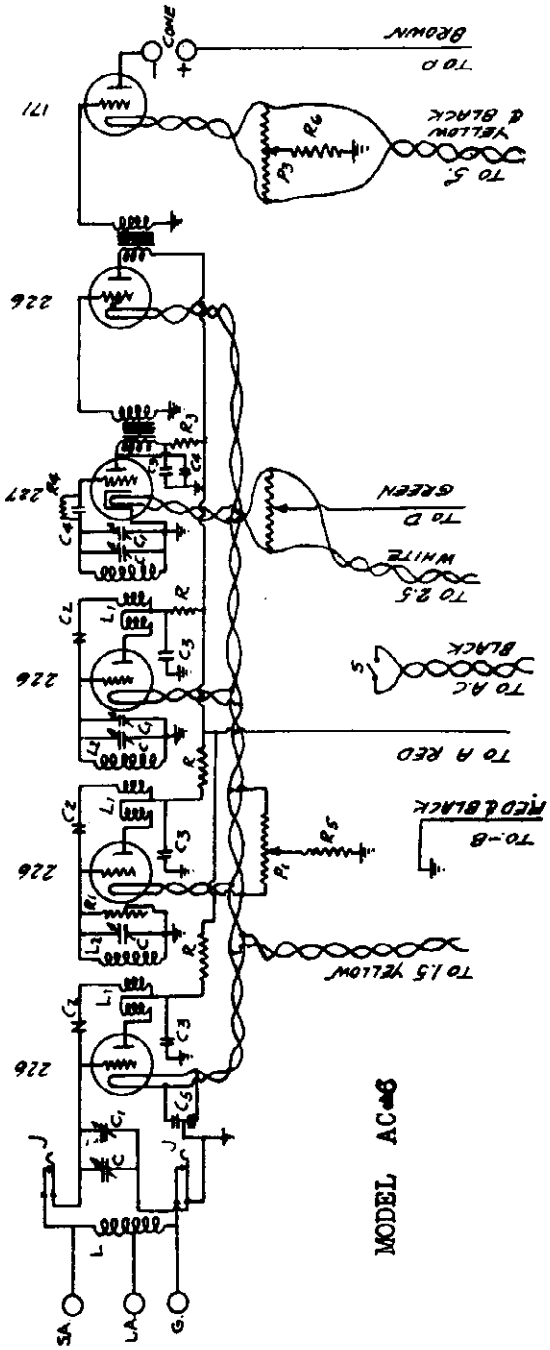
Models 84C, 84D

MODEL AC-6
MODEL DC-6

AMRAD CORPORATION

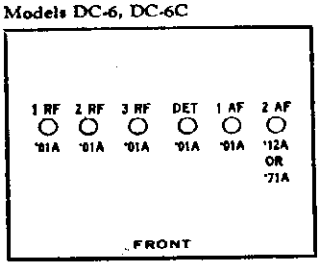


MODEL DC-6

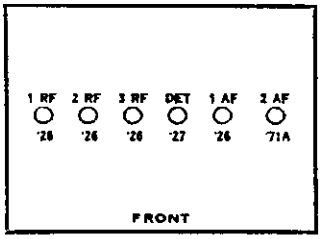


MODEL AC-6

Models DC-6, DC-6C

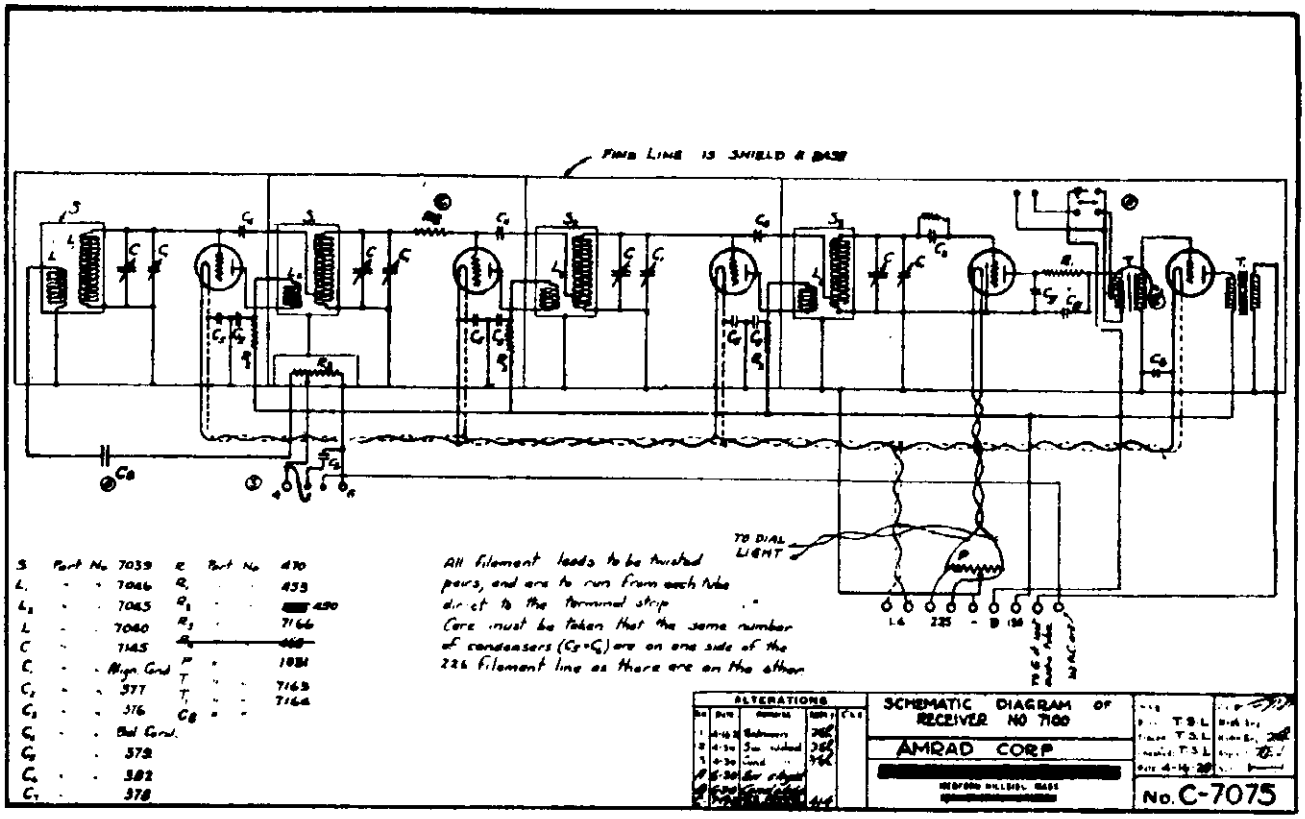


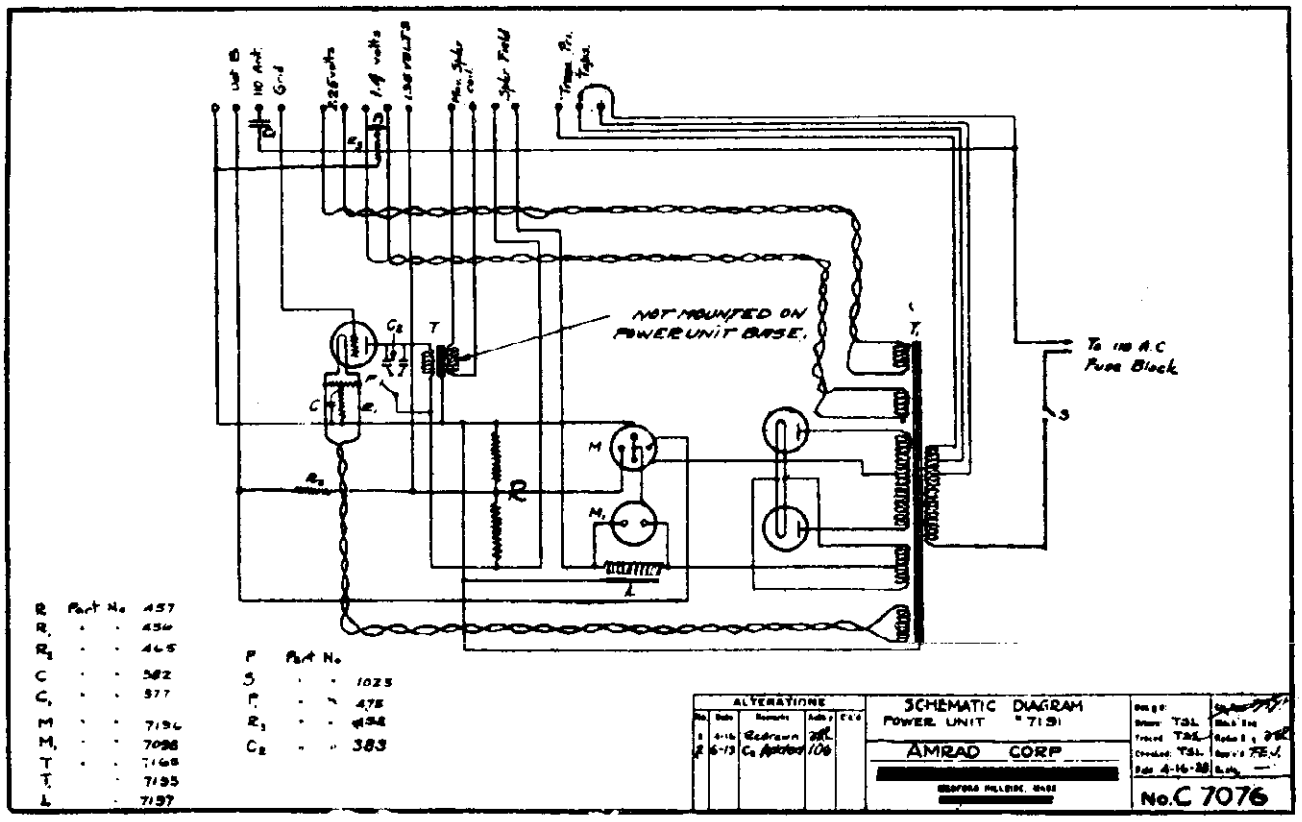
Models AC-6, AC-6C

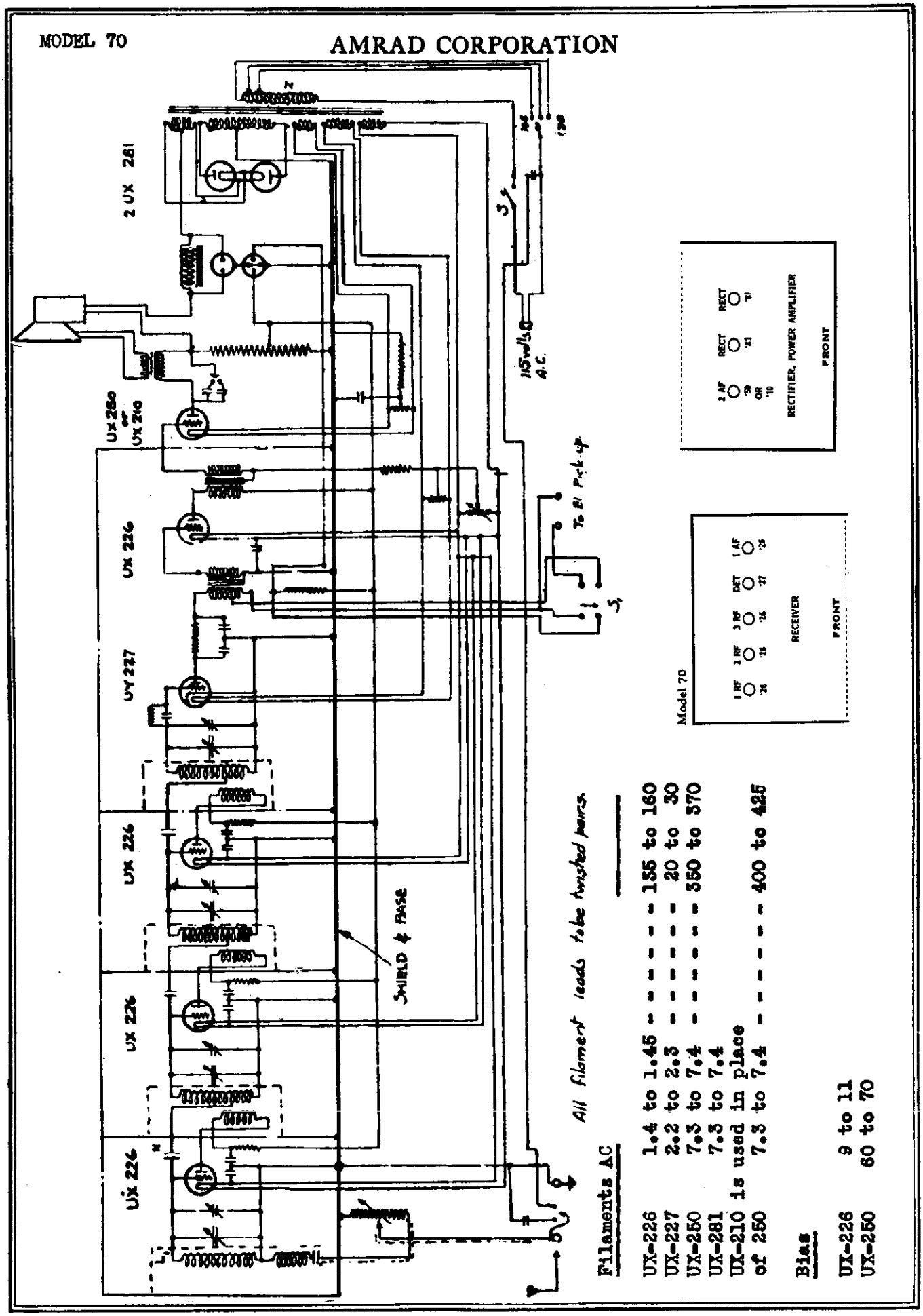


AMRAD CORPORATION

MODEL 7100 Receiver
MODEL 7191 Power Unit

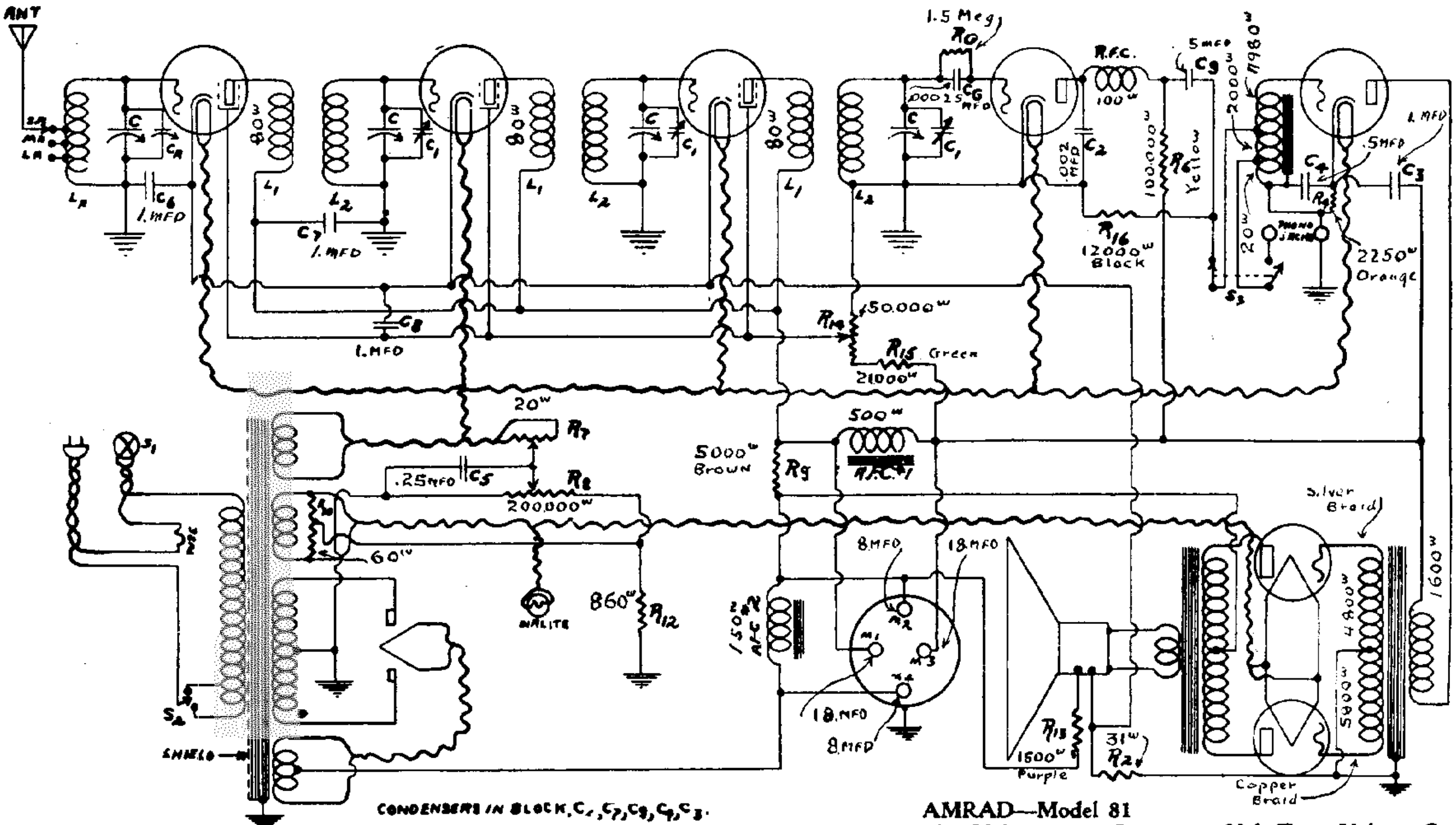




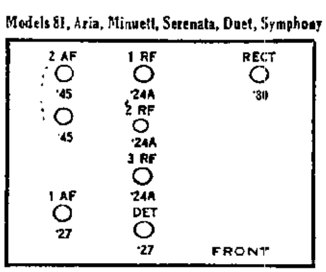

MODEL 70
AMRAD CORPORATION
2 UX 281
UX 280 or UX 210
UX 226
UY 227
UX 226
UX 226
UX 226
115 volts A.C.
To RI Pick-up
S1
S2
SHIELD & BASE
All filament leads to be twisted pairs.
RECTIFIER, POWER AMPLIFIER
FRONT
2 AF
RECT
RECT
Model 70
RECEIVER
FRONT
1 RF
2 RF
3 RF
DET
1 AF
Filaments AC
UX-226 1.4 to 1.45 - - - - - - - 135 to 160
UX-227 2.2 to 2.3 - - - - - - - 20 to 30
UX-250 7.3 to 7.4 - - - - - - - 350 to 370
UX-281 7.3 to 7.4
UX-210 is used in place of 250 7.3 to 7.4 - - - - - - - 400 to 425
Bias
UX-226 9 to 11
UX-250 60 to 70

AMRAD CORPORATION

MODEL Bel-Canto 81.



CONDENSERS IN BLOCK, C_1, C_7, C_8, C_9, C_3.



BEL - CANTO SERIES

Aria, Minuett
Serenata, Duet
Symphony

RCA Speaker
0.8 Ohm
Secondary
410 Ohm Primary
7000 Ohm Field

Peerless Speaker
Single turn
Secondary
550 Ohm Primary

Condenser Data on next page.

AMRAD—Model 81

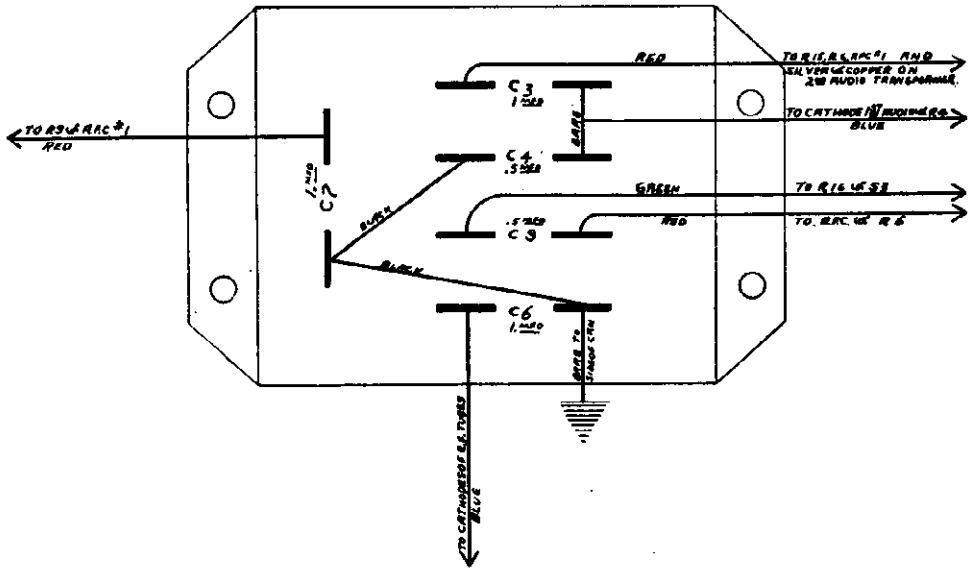
Line Voltage 120—Set on 120 Volt Tap—Volume Control Position Full On

Note: To get the 10.5 V. reading (4-8) the hum control potentiometer must be turned to ground side.

Tube No. in Order	Type of Tube	Position of Tube (1st RF, Det. etc.)	Tube out: A Volts	Tube out: B Volts	Tube in tester: A Volts	Tube in tester: B Volts	C Volts (Control Grid)	Cathode-Heater Volts	Normal Plate M.A.	Plate M.A. Grid Test	Plate Change M.A.	Screen Grid Volts
1	224	1st RF	2.32	190	2.25	180	1.5	-	4	7.5	3.5	80
2	224	2nd RF	2.32	190	2.25	180	1.5	-	4	7.5	3.5	80
3	224	3rd RF	2.32	190	2.25	180	1.5	-	4	7.5	3.5	80
4	227	Det.	2.32	140	2.25	30	0	-	1.5	1.6	.1	-
5	227	1st AF	2.32	190	2.25	160	10.5	-	4.1	5.2	1.1	-
6	245	2nd AF	2.32	300	2.25	250	50	-	28	32	.4	-
7	245	2nd AF	2.32	300	2.25	250	50	-	28	32	.4	-
8	280	Rect.		-	4.65	-	-	-	110	-	-	-
9												
10												

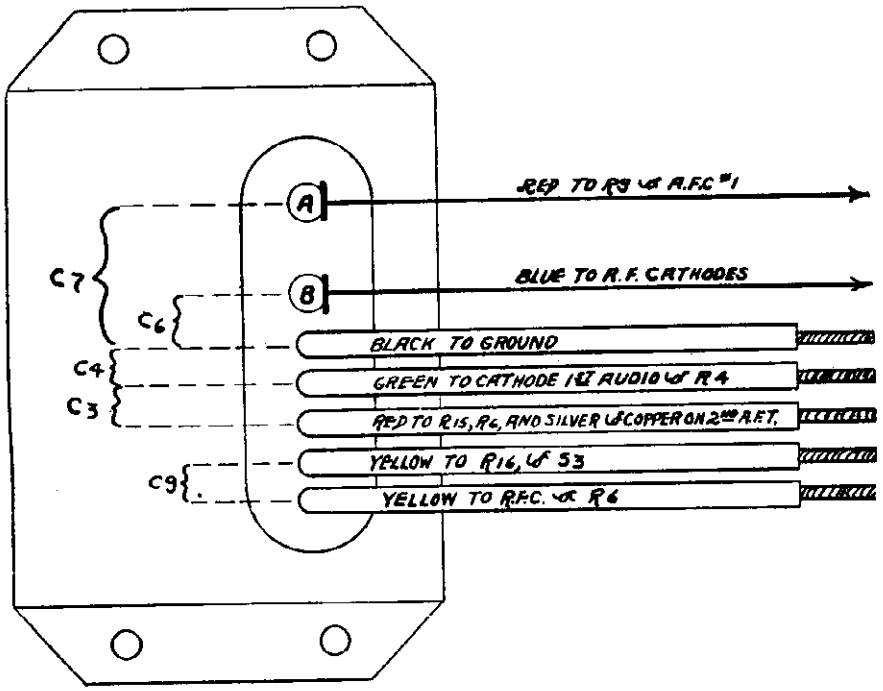
MODEL Bel-Canto 81
Condenser Data

AMRAD CORPORATION



BY-PASS BLOCK CONDENSER, NO. 8113

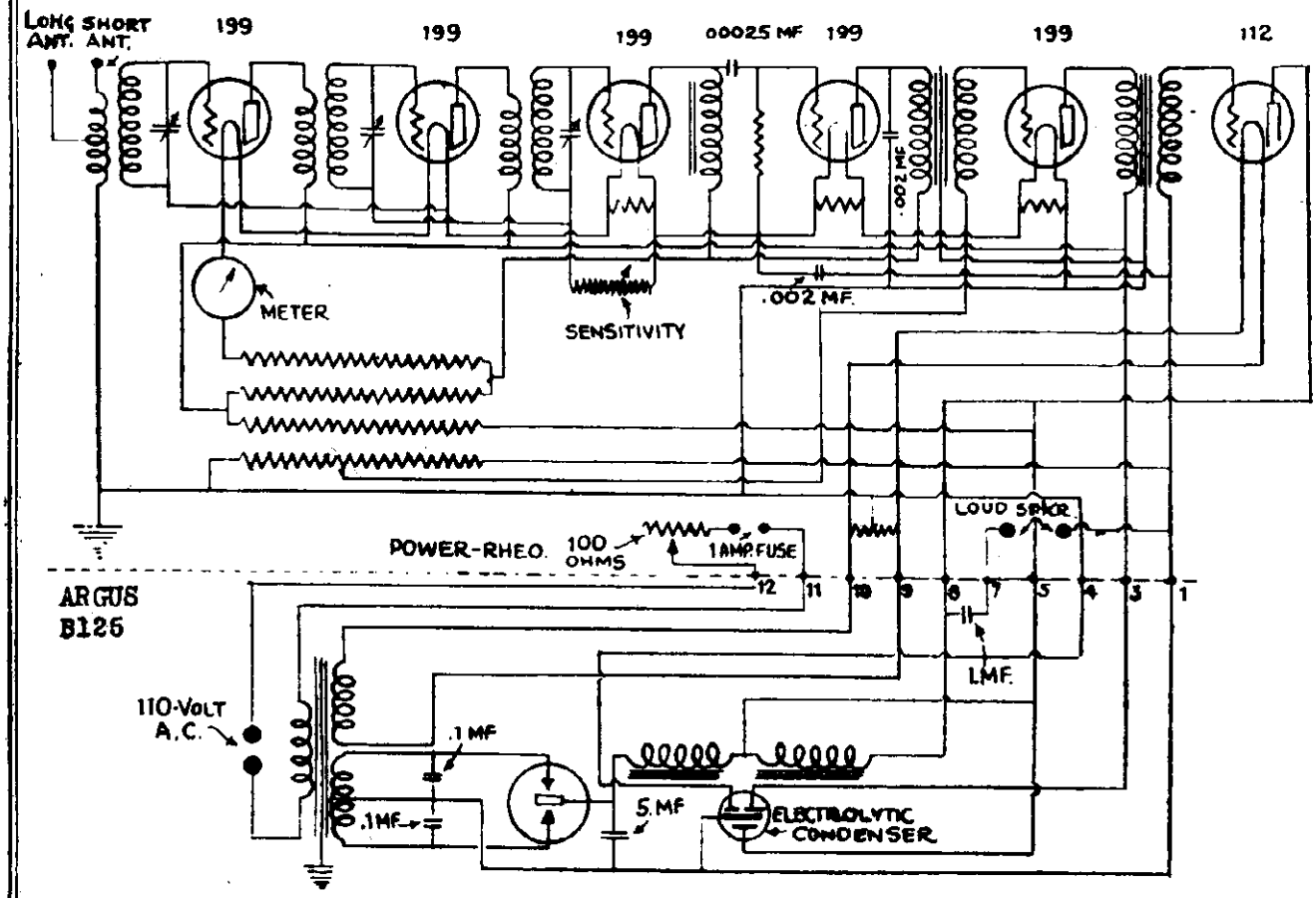
"Lug Terminal" Style. This block contains Fixed Condensers, C3, C4, C6, C7, C9. The different units are indicated, with their connections to their respective circuits.

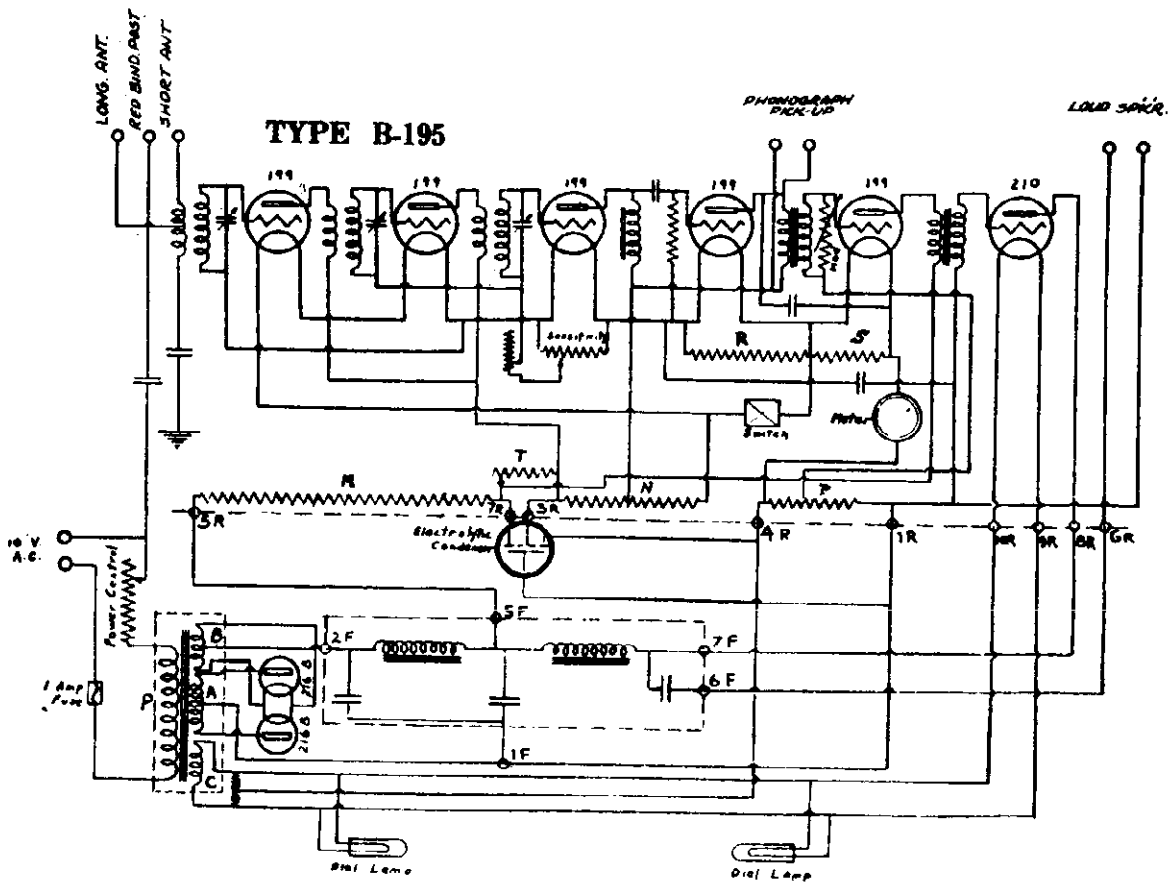


BY-PASS BLOCK CONDENSER, NO. 8113

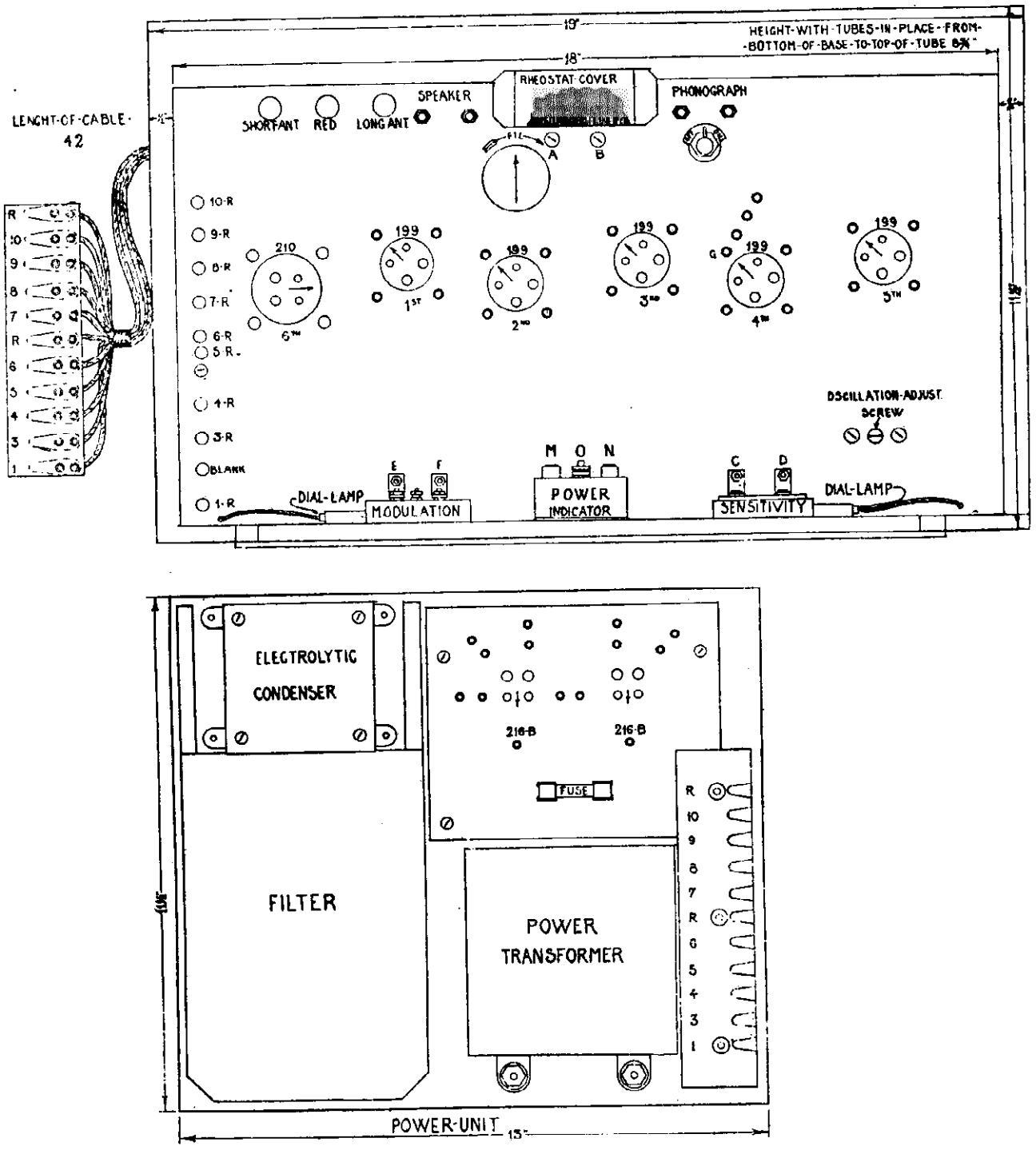
"Wire Terminal" Style. This block contains the same units as does the No. 8113 "Lug Terminal" Style. To test for capacity, opens or shorts, it is necessary to disconnect at least one terminal of the unit from the circuit.

ARGUS RADIO CORP.



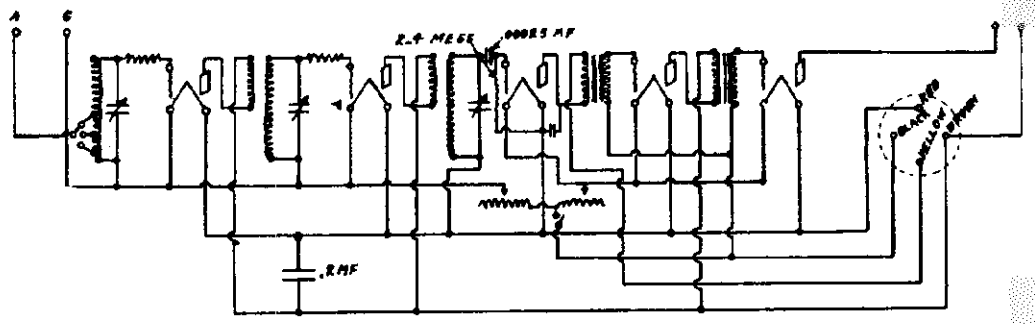


ARGUS RADIO CORP.

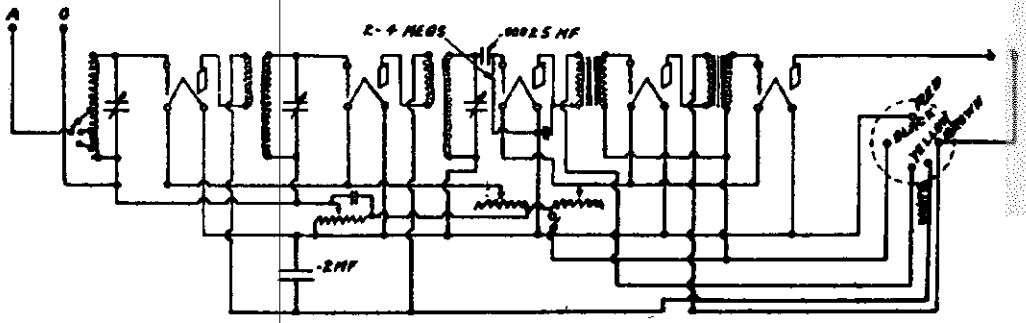


Inside view of ARGUS ELECTRIC RADIO RECEIVER, Model B195,

TWO-PIECE CHASSIS. Diagram shows location of connecting cables.

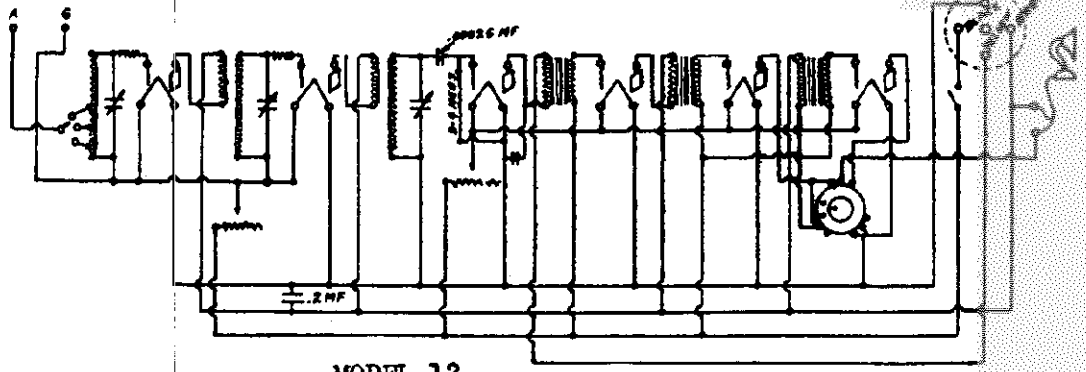


MODEL 10 No. 4700



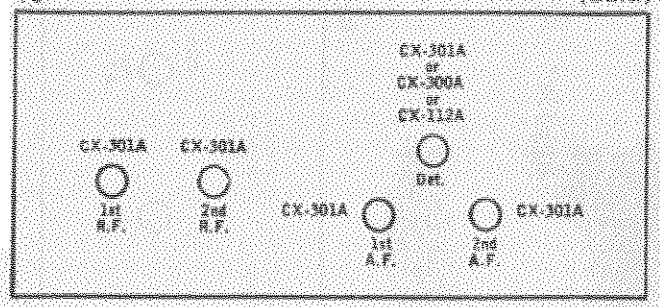
MODEL 10-B

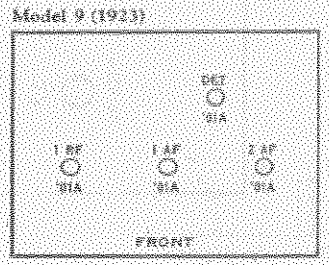
NOTE.—This set has two R.F. rheostats (one for each R.F. tube). —F1R connects to the slider lead of the 1st R.F. rheostat instead of to —F2R.

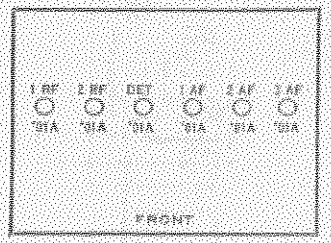


MODEL 12

(Diagram shows one rheostat controlling detector and all three A.F. tubes. In actual set, rheostat controls detector and 1st audio only, 2nd and 3rd audio tubes being on separate fixed resistances.)





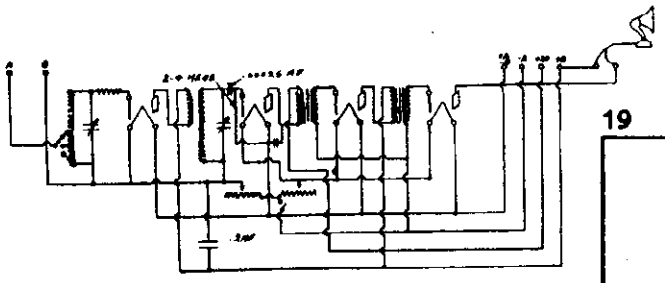


ATWATER KENT MFG. CO.
MODEL 10
MODEL 10-B
MODEL 12

A-K. PAGE 11

MODEL 19
MODEL 20 # 7570
MODEL 20 # 4640

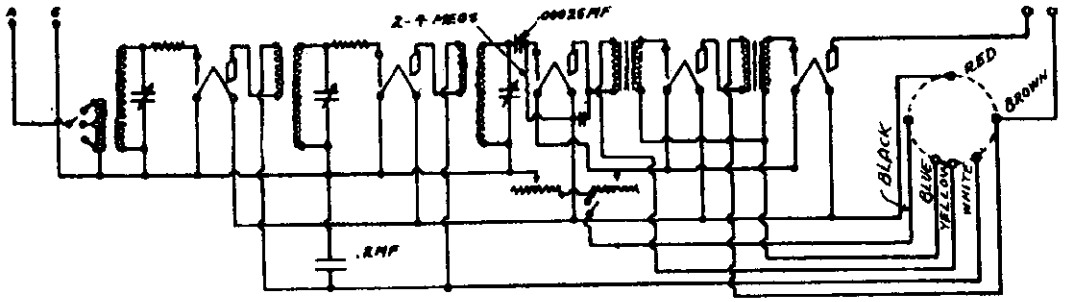
ATWATER KENT MFG. CO.



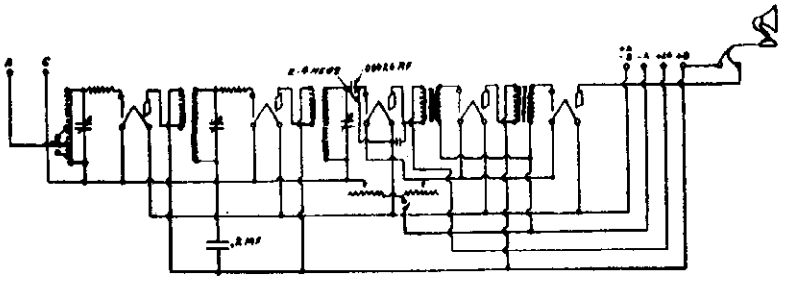
MODEL 19 SET No. 4880.

19 (Batt.)

CX-301A	CX-301A or CX-300A or CX-112A	CX-301A	CX-301A
1st R.F.	Det.	1st A.F	2nd A.F.



MODEL 20 COMPACT SET No. 7570. WIRING DIAGRAM.



MODEL 20 SET No. 4640.

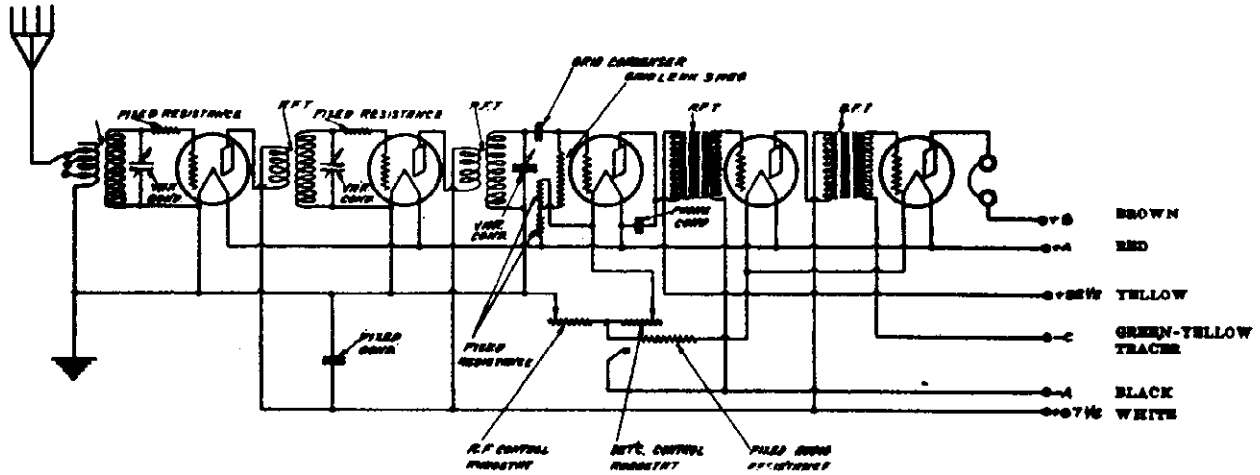
20 (Batt.)

CX-301A	CX-301A	CX-301A or CX-300A or CX-112A	CX-301A	*CX-301A
1st R.F	2nd R.F.	Det.	1st A.F	2nd A.F

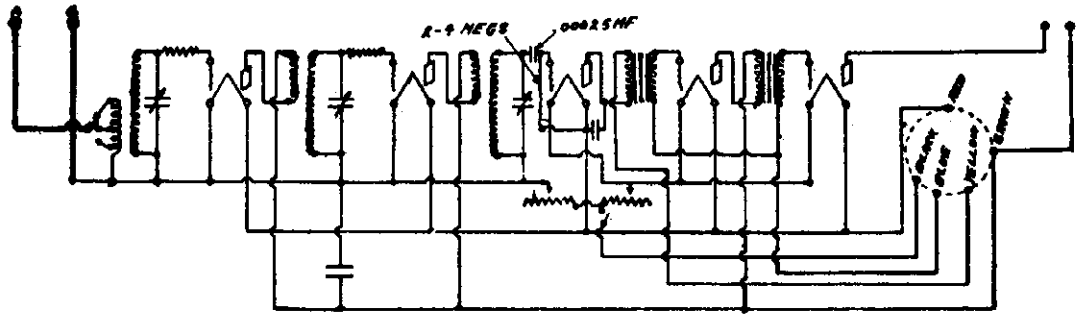
* This tube is a CX-371A in Model 20 compact.

MODRL 20 # 7960
MODEL 21 # 7780

ATWATER KENT MFG. CO.

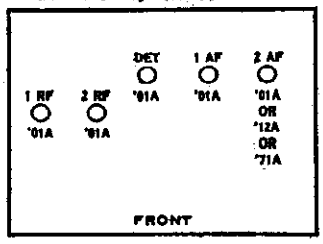


MODEL 20 COMPACT SET No. 7960. WIRING DIAGRAM.

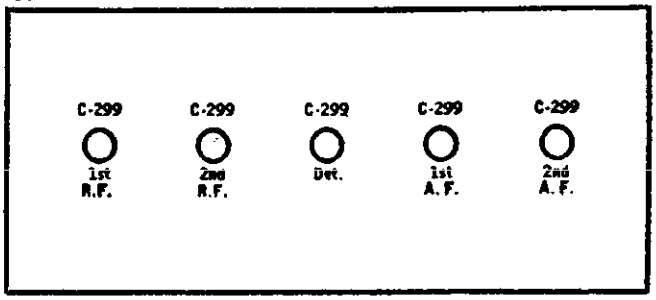


MODEL 21 DRY CELL SET No. 7780.

Model 20 Comp. (1925)

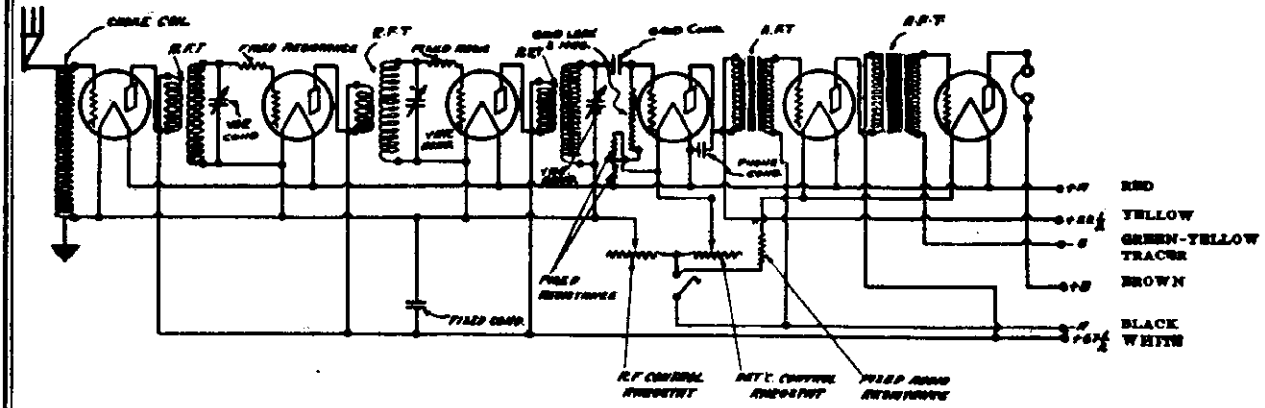


21 (Batt.)

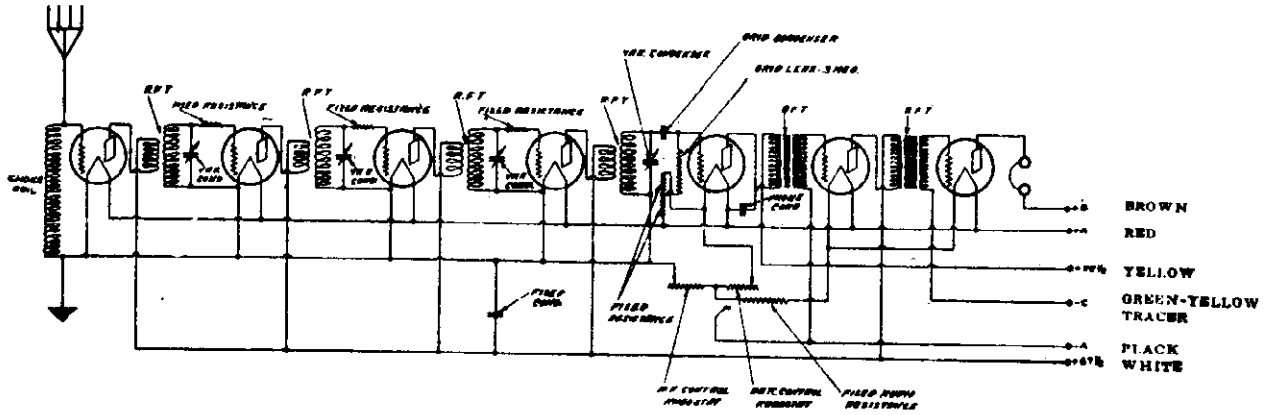


MODEL 30
MODEL 32
MODEL 35
MODEL 48

ATWATER KENT MFG. CO.



WIRING DIAGRAM OF MODELS 30, 35 AND 48. (In Model 35, one rheostat controls the three R.F. filaments and a fixed resistance is connected in series with the detector and two A.F. filaments.)



WIRING DIAGRAM OF MODEL 32.

32 (Batt.)

CX-301A 1st R.F.	CX-301A 2nd R.F.	CX-301A 3rd R.F.	CX-301A 4th R.F.	CX-301A or CX-300A or CX-112A Det.	CX-301A 1st A.F.	CX-371A or CX-112A 2nd A.F.

30, 33, 35, 48, 49 (Batt.)

CX-301A 1st R.F.	CX-301A 2nd R.F.	CX-301A 3rd R.F.	CX-301A or CX-300A or CX-112A Det.	CX-301A 1st A.F.	*CX-371A or *CX-112A 2nd A.F.

ATWATER KENT MFG. CO.

MODEL 33
MODEL 36 Early
MODEL 36 Late
MODEL 49

MODEL 36 ABOVE SERIAL No. 2,610,000

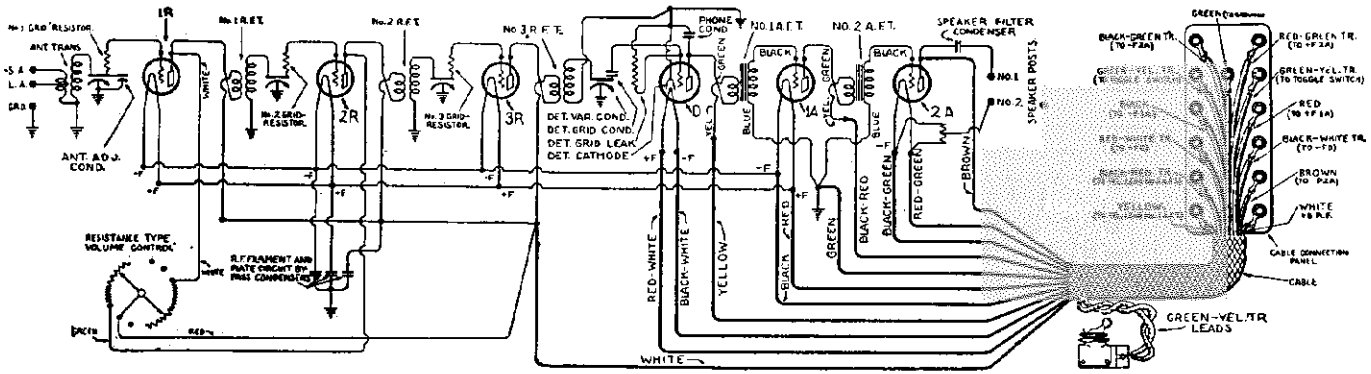
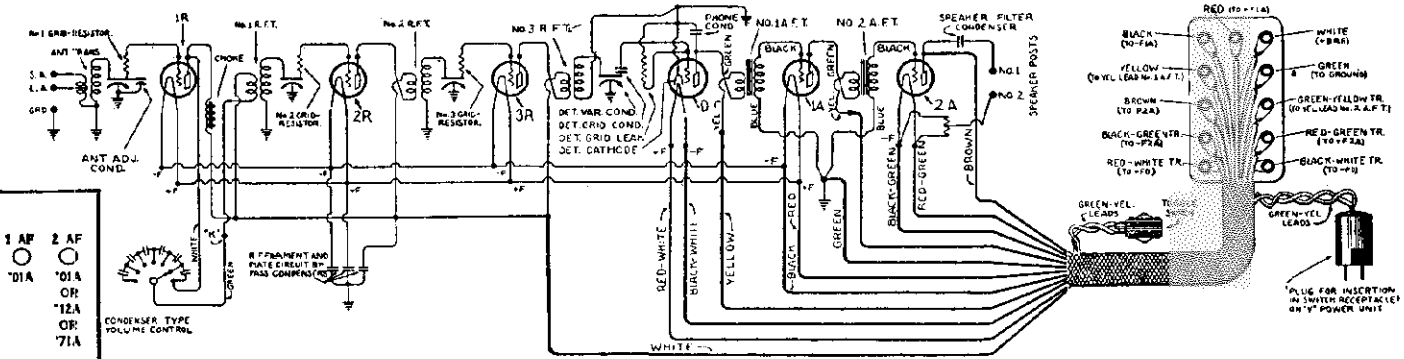


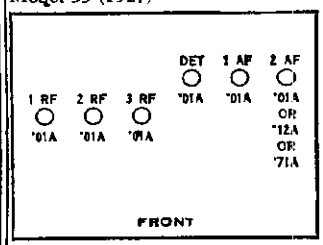
FIG. 70. WIRING DIAGRAM OF MODEL 36 WITH RESISTANCE-TYPE VOLUME CONTROL.

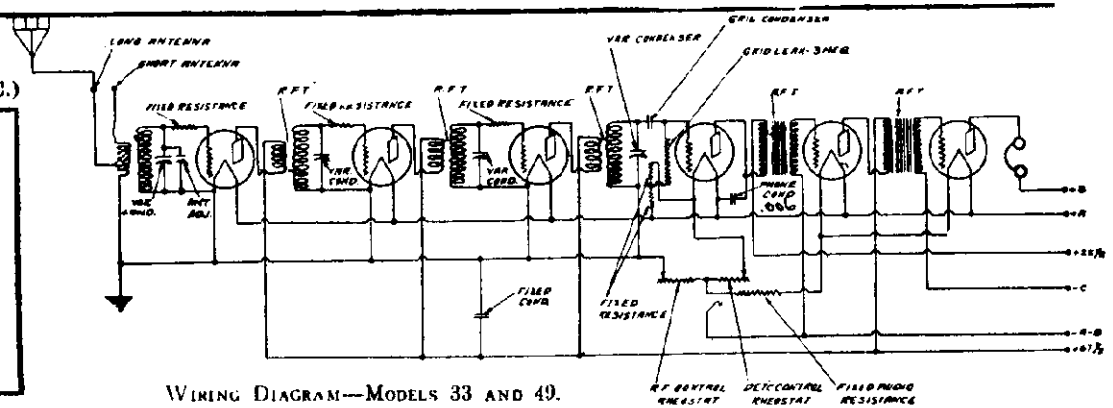
MODEL 36 BELOW SERIAL No. 2,610,000



WIRING DIAGRAM OF MODEL 36 WITH CONDENSER-TYPE VOLUME CONTROL.

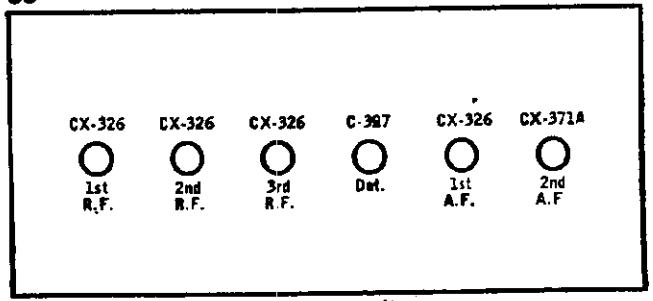
Model 33 (1927)





WIRING DIAGRAM—MODELS 33 AND 49.

36 (A.C.)

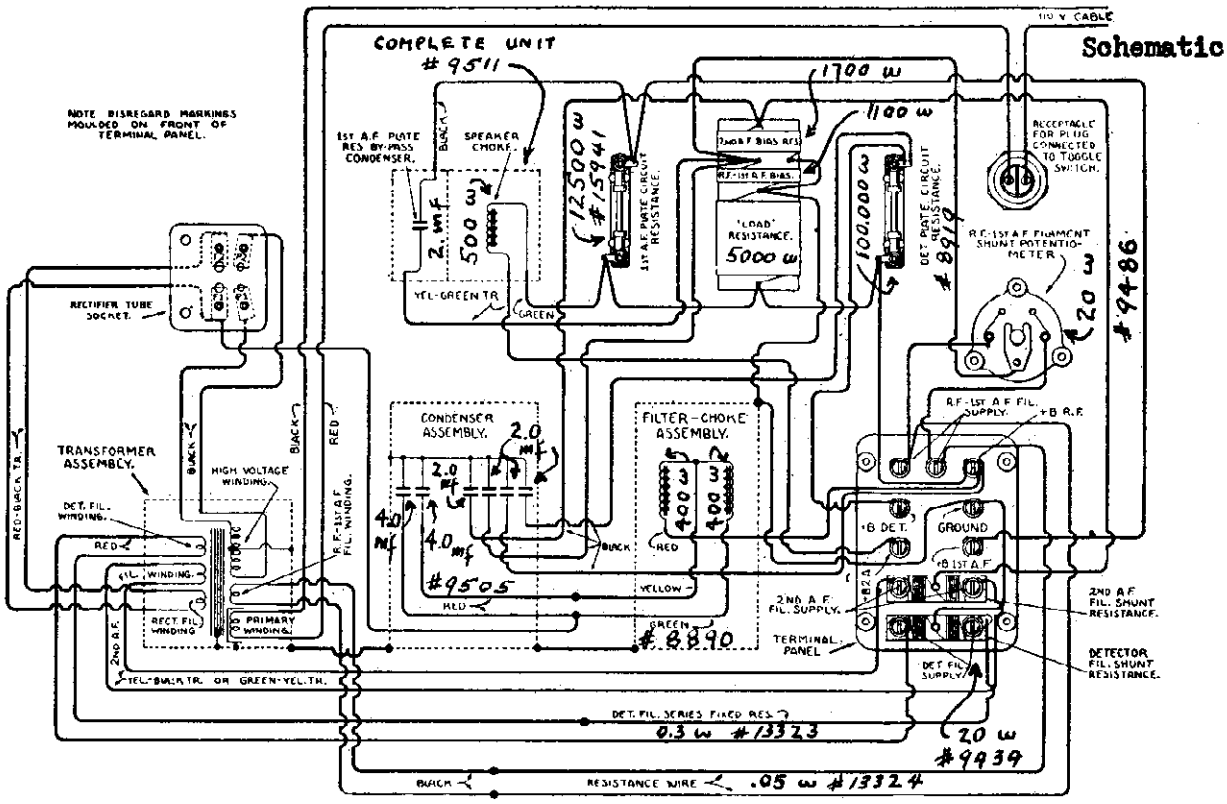


CX-380 used in separate power unit.

ATWATER KENT MFG. CO.

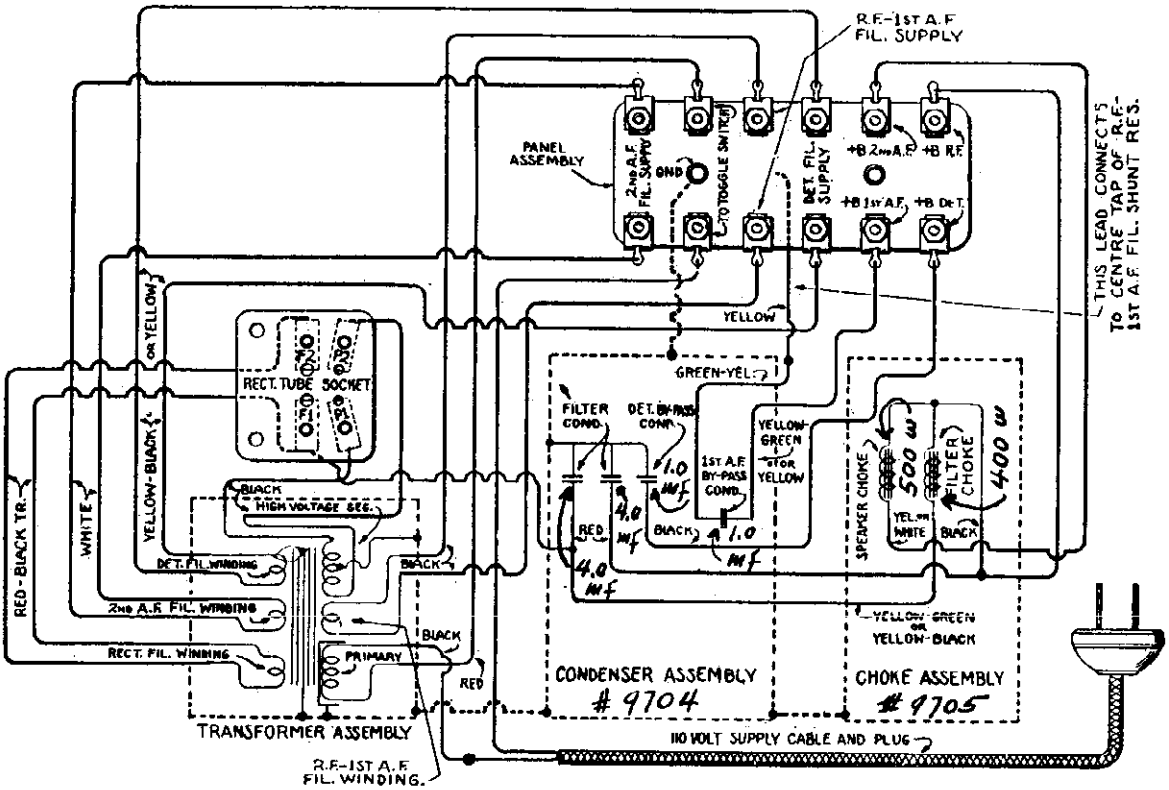
MODEL 36
Power Pack

Schematic



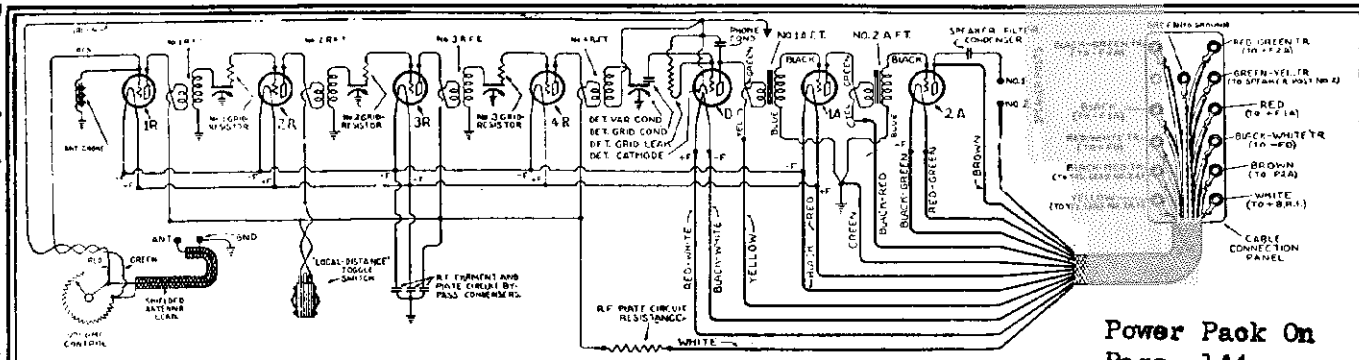
Model "Y" Power Units below Serial No. 260,000

(Used with Model 36 Sets below Serial No. 2,610,000)



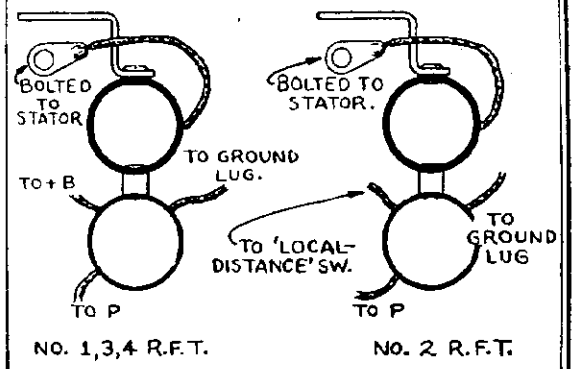
Model "Y" Power Units Above Serial No. 260,000

(Used with Model 36 Sets above Serial No. 2,610,000)

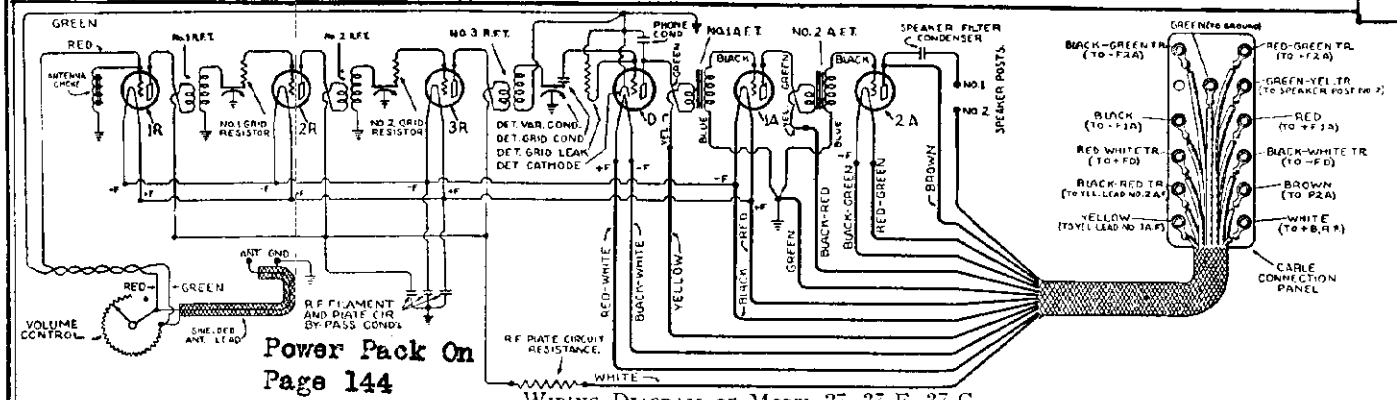


WIRING DIAGRAM OF MODEL 38.

A 2nd-A. F. filament-shunt resistor is used before Serial No. 1,752,000 and the green-yellow tracer cable lead is not used. Connections for this resistor are shown in dotted lines in the diagram on page 61. A schematic diagram of the volume control is shown in Fig. 78.



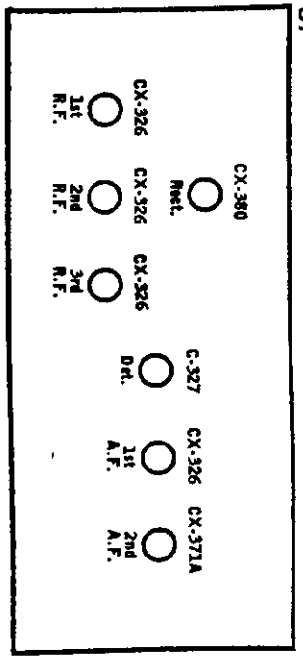
SKETCH SHOWING CONNECTIONS FROM R. F. TRANSFORMERS



WIRING DIAGRAM OF MODEL 37, 37-F, 37-C.

A 2nd-A F. filament-shunt resistor is used before Serial No. 1,385,000, in which case speaker post No. 2 connects to the centre-tap of this resistor, and the green-yellow tracer lead is not used. The R. F. plate circuit resistor is used after Serial No. 1,385,000.

In Model 37-C the on-off switch is connected to the two terminals on either side of the ground eyelet. A 2nd-A. F. filament shunt resistor is used in the chassis of all Model 37-C receivers.



ATWATER KENT MFG. CO.

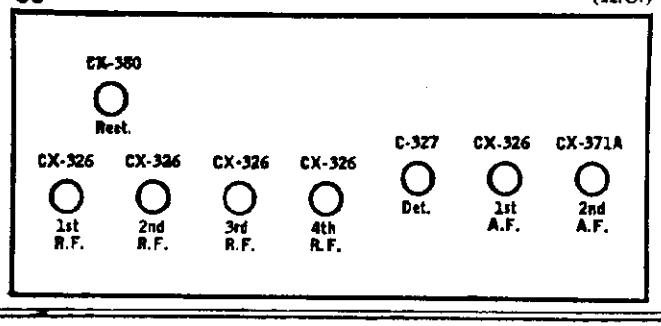
MODEL 37
MODEL 38
(A.C.)

ATWATER-KENT—Models 37-38

Line Voltage 115—On Early Models "B" and "C"
Voltages Are Lower Than Shown

TUBE NO IN ORDER	TYPE OF TUBE	POSITION OF TUBE (1ST. R.F., DET., ETC.)	READINGS TAKEN IN SOCKET OF SET: TUBE OUT A VOLTS	TUBE OUT B VOLTS	TUBE IN TESTER A VOLTS	TUBE IN TESTER B VOLTS	TUBE IN TESTER C VOLTS	TUBE IN TESTER CATHODE VOLTS	TUBE IN TESTER NORMAL PLATE M.A.	PLATE M.A. GRID TEST	PLATE M.A. CHANGE
1.	226	1st R.F.	1.3	173	1.25	165	10	-	4.8	8.4	3.6
2.	226	2nd R.F.	1.3	173	1.25	165	10	-	4.8	8.4	3.6
3.	226	3rd R.F.	1.3	173	1.25	165	10	-	4.8	8.4	3.6
4.	227	Detector	2.25	80	2.0	22.5	-	-	2.2	2.2	0.0
5.	226	1st A.F.	1.3	173	1.25	165	10	-	4.8	8.4	3.6
6.	171	2nd A.F.	4.6	192	4.5	180	36	-	18.0	19.5	1.5
7.	280	Rectifier	-	-	4.5	-	-	-	20.0	-	-
8.											
9.											
10.											

38 (A.C.)



MODEL 37
Power Pack
Early and Late
Data

Schematic

ATWATER KENT MFG. CO.

RESISTORS	Early	Late
Detector plate	100000 ohms #8919 Green paint	65000 ohms # 15592 1 watt black or bl. and gr.
1st a-f plate	12500 ohms #15941 red See late.	12500 ohms # 15941 red or purple and yellow or red.
R-f and 1st a-f bias	1100 ohms # 9691 eliptical	625 ohms # 13128 eliptical
2nd a-f bias	1750 ohms # 9692 eliptical	2200 ohms # 13289 eliptical
Filament shunt	20 ohms # 9434	20 ohms # 9434 flat, wire
Speaker choke	500 ohms	500 ohms
Filter chokes	1600 ohms total	1600 ohms total
CONDENSERS	See schematic	See Schematic. Condenser unit is # 13315. Also houses transformer.

Special Note.
A 1. mfd condenser is also contained in the transformer-condenser housing but this condenser is not connected in the model 37 power pack.

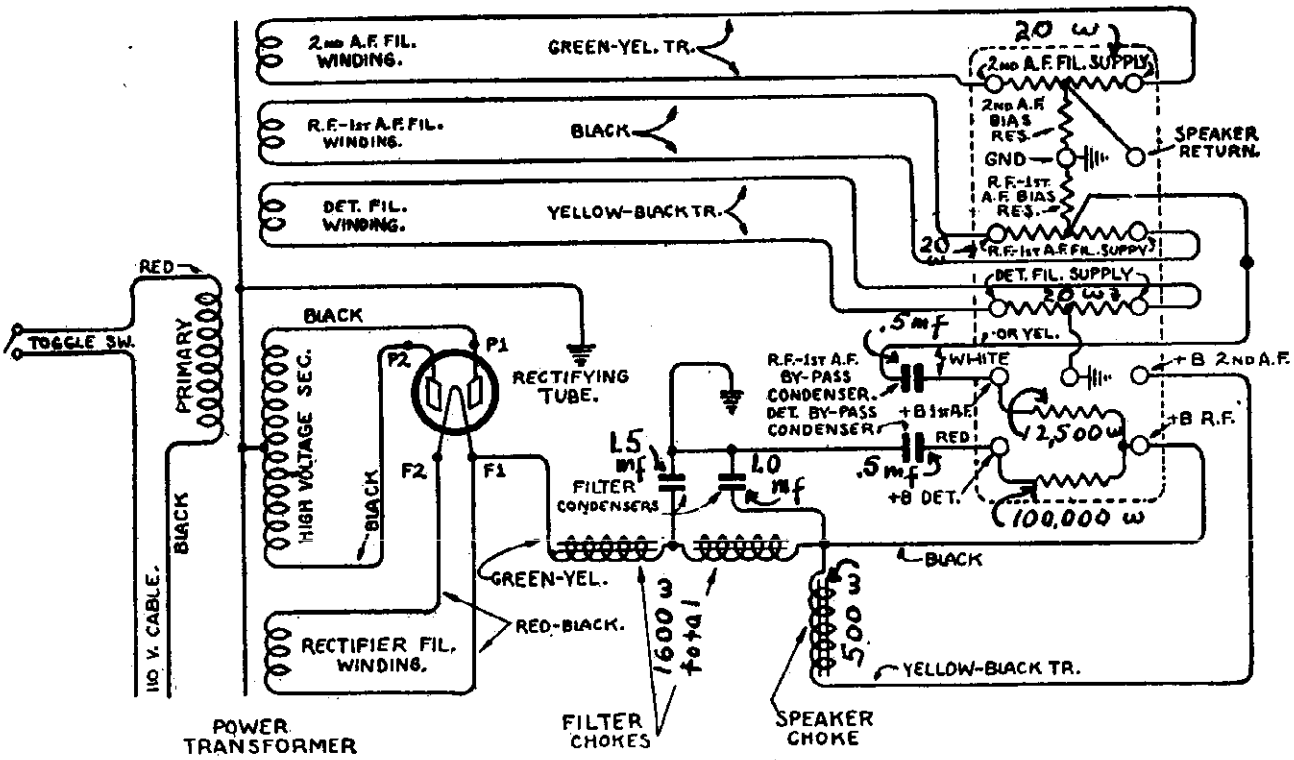
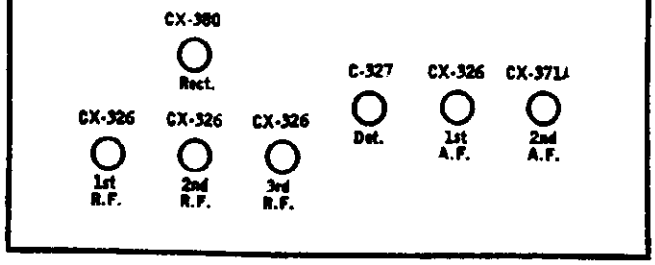


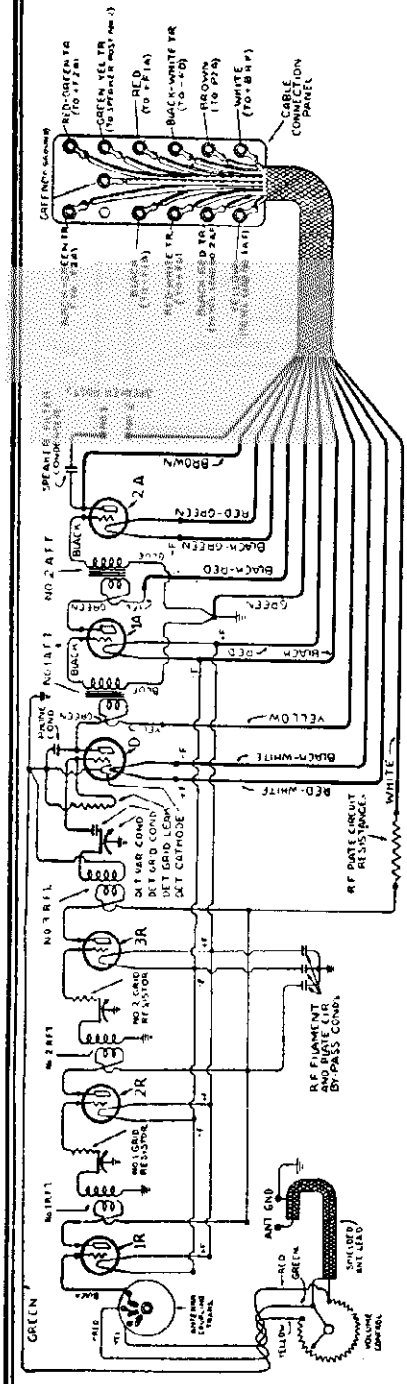
DIAGRAM OF POWER UNIT IN MODELS 37 AND 38

ATWATER KENT MFG. CO.

MODEL 40
MODEL 42
MODEL 52

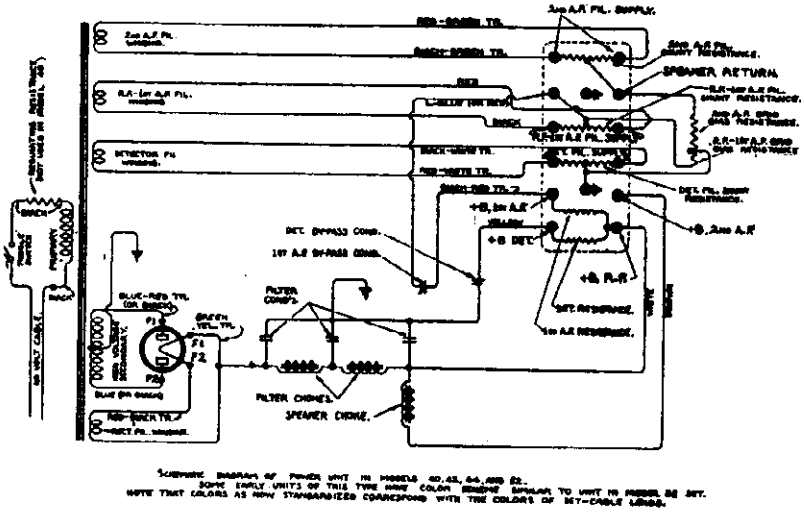
40, 42, 52 (A.C.)





WIRING DIAGRAM OF MODEL 40, 40-F, 42, 42-F, 52, 56 AND 57.

Model 52 does not have the shielded antenna lead, but is provided with two twenty-foot leads which are connected to the volume control, black for antenna and black-green tracer for ground. Model 56 and 57 have antenna and ground posts at the bottom of the cabinet.



SCHEMATIC DIAGRAM OF POWER UNIT IN MODELS 40, 42, 44, AND 52.
SOME EARLY UNITS OF THIS TYPE HAVE COLOR SCHEME SIMILAR TO UNIT IN MODEL 56 SET.
NOTE THAT COLORS AS NOW STANDARDIZED CORRESPOND WITH THE COLORS OF SET-CABLE LEADS.

ATWATER-KENT—Model 40
Line Voltage 115

TUBE SOCKET NUMBER	TYPE OF TUBE	POSITION OF TUBE (1ST R.F., DET., ETC.)	READINGS PLUG IN SOCKET OF SET — TUBE OUT — A VOLTS	B VOLTS	TUBE IN TESTER — A VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS	NORMAL PLATE M.A.	PLATE M.A. GRID TEST	PLATE M.A. GRID CHANGE
1	226	1st.R.F.	1.3	145	1.25	138	10	–	4.8	8.4	3.6
2	226	2nd.R.F.	1.3	145	1.25	138	10	–	4.8	8.4	3.6
3	226	3rd.R.F.	1.3	145	1.25	138	10	–	4.2	8.0	3.8
4	227	Detector	2.25	157	2.0	40	–	–	2.2	2.2	0.0
5	226	1st.A.F.	1.3	172	1.25	130	8	–	3.8	7.6	3.8
6	171A	2nd.A.F.	4.2	210	4.1	148	32	–	14.4	15.4	1.0
7	280	Rectifier	–	–	4.5	–	–	–	16.5	–	–

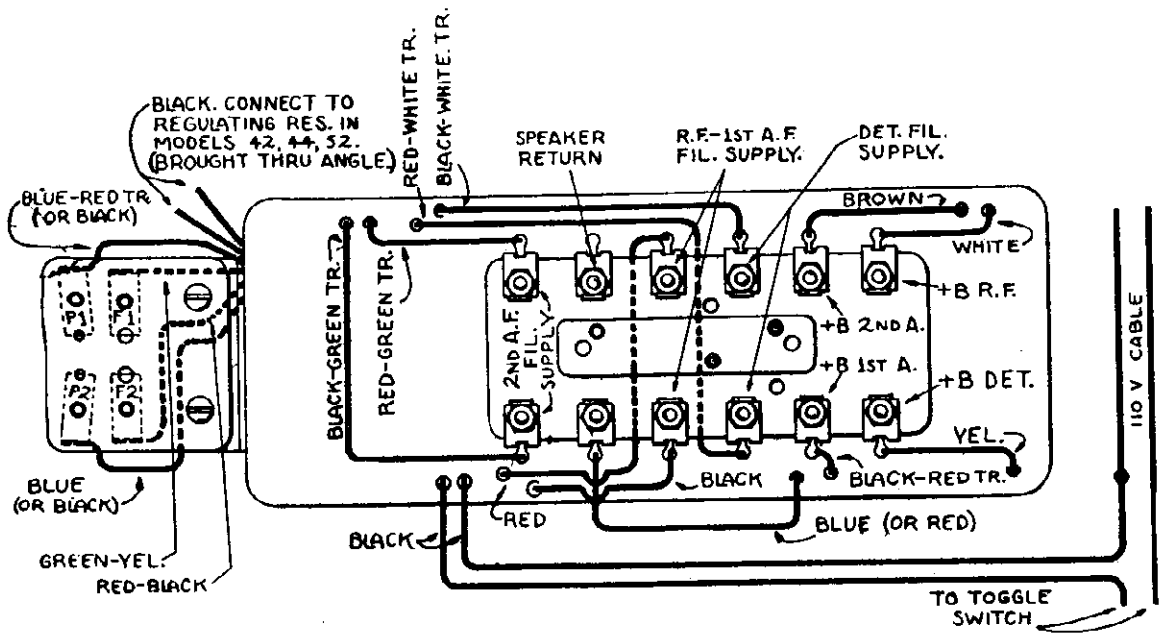
ATWATER-KENT—Models 42-44-52-56
Line Voltage 115—4th R. F.—Tube in Model 44 Only

TUBE SOCKET NUMBER	TYPE OF TUBE	POSITION OF TUBE (1ST R.F., DET., ETC.)	READINGS PLUG IN SOCKET OF SET — TUBE OUT — A VOLTS	B VOLTS	TUBE IN TESTER — A VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS	NORMAL PLATE M.A.	PLATE M.A. GRID TEST	PLATE M.A. GRID CHANGE
1	226	1st.R.F.	1.55	164	1.4	152	12	–	5.4	9.1	3.7
2	226	2nd.R.F.	1.55	164	1.4	152	12	–	5.7	9.2	3.5
3	226	3rd.R.F.	1.5	156	1.4	152	11.5	–	5.4	9.1	3.7
4	227	Det.	2.25	174	2.15	38	0	–	2.2	2.2	0.0
5	226	1st.A.F.	1.5	192	1.4	150	10.5	–	5.0	8.7	3.7
6	171A	2nd.A.F.	4.7	232	4.5	162	36	–	15.0	16.0	1.0
7	280	Rectifier	–	–	4.8	–	–	–	16.0	–	–

MODEL 40,42,44,52
Power Unit Layout
MODEL 40,45
2nd Type Power Unit

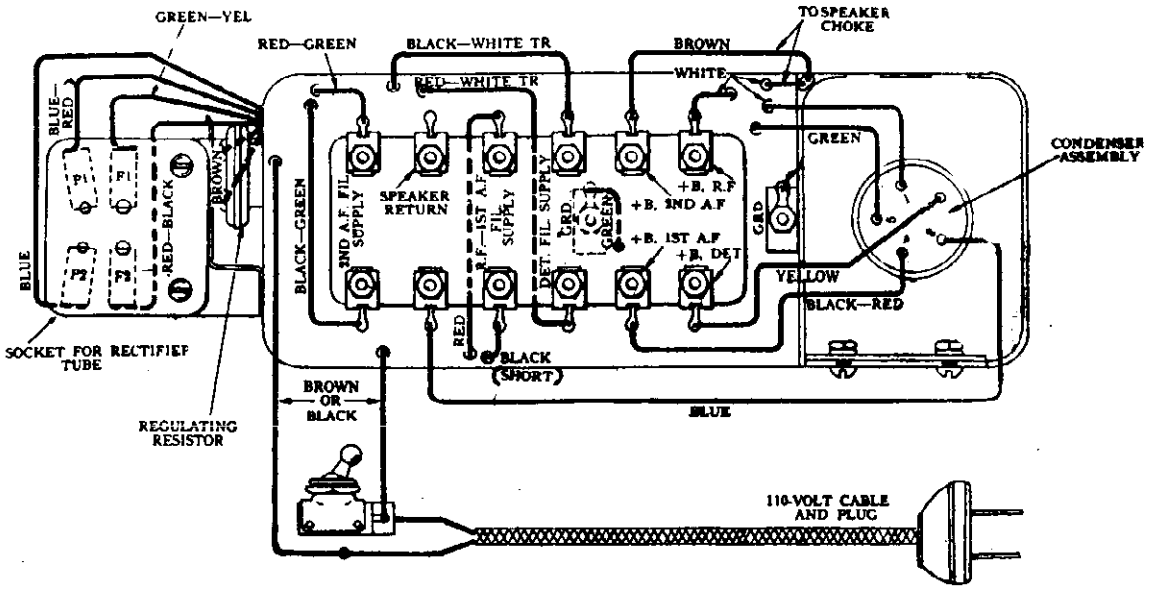
ATWATER KENT MFG. CO.

Schematic



POWER UNIT IN MODELS 40, 42, 44 AND 52, SHOWING CONNECTIONS FROM SEALED CONTAINER TO PANEL ASSEMBLY, RECTIFIER SOCKET AND REGULATING RESISTANCE

This view shows the approximate position of leads from sealed container. In Models 42, 44 and 52, a hole is cut in the rectifier-socket mounting angle and the two black leads are brought up through the hole and connect to the regulating resistance, which is mounted upright at the left-hand end of the sealed container.



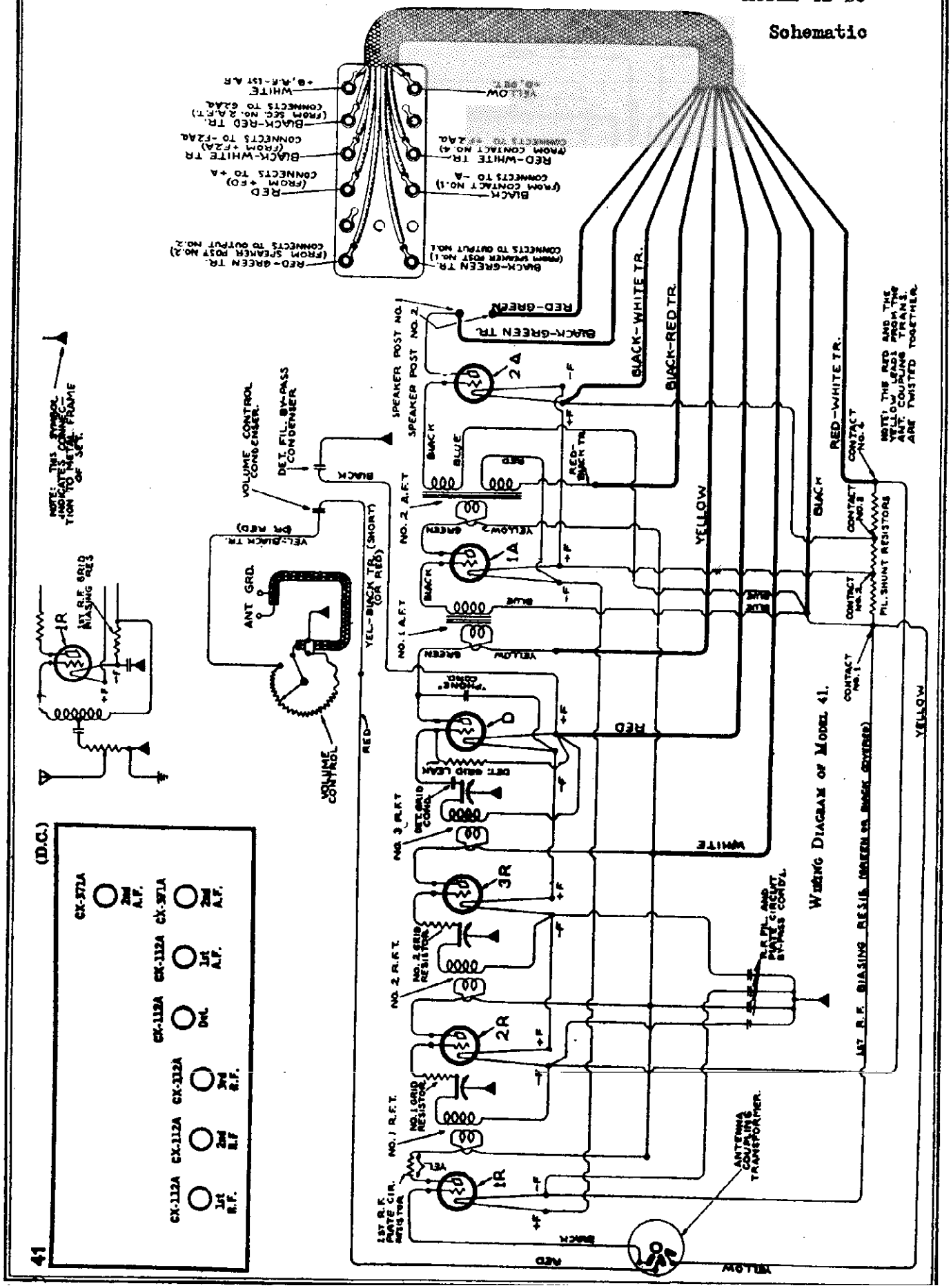
VIEW SHOWING CONNECTIONS IN 2ND TYPE OF POWER UNIT FOR MODELS 40 AND 45.

This view shows the panel assembly moved to left of normal position.
The regulating resistor is not used in these models.

ATWATER KENT MFG. CO.

MODEL 41 DC

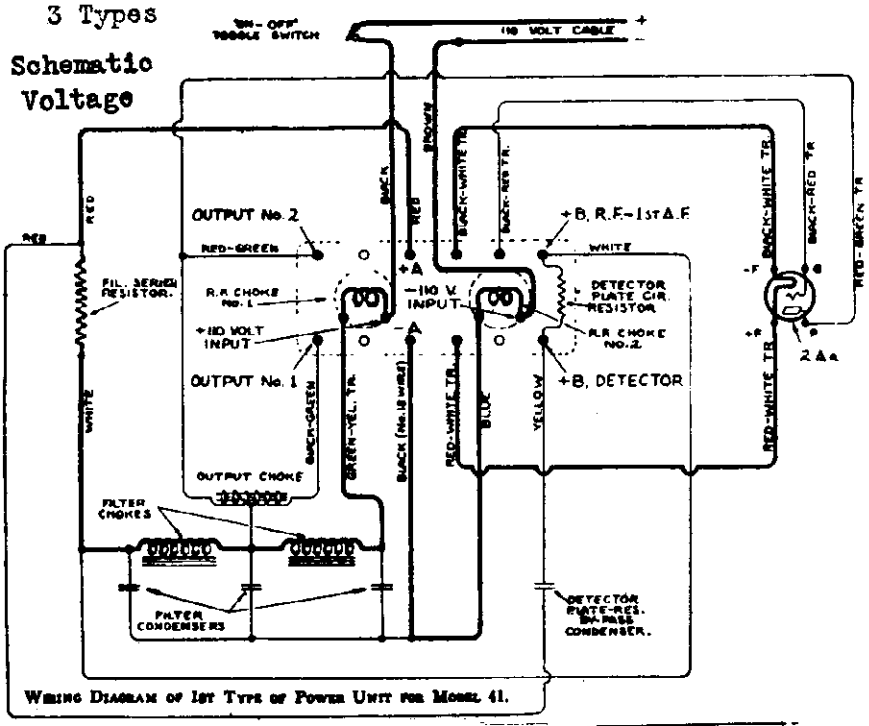
Schematic



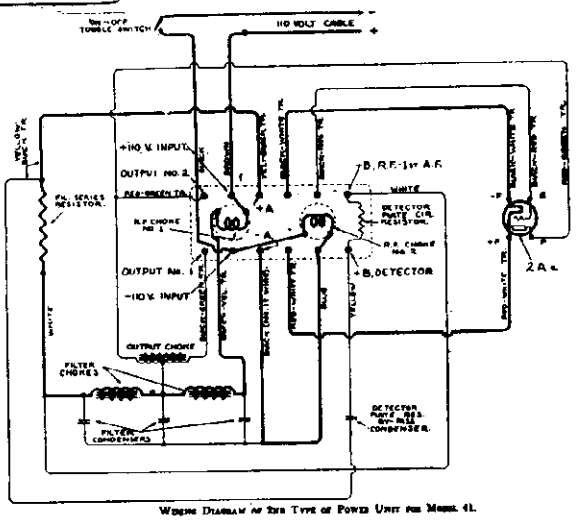
MODEL 41
Power Pack
3 Types

ATWATER KENT MFG. CO.

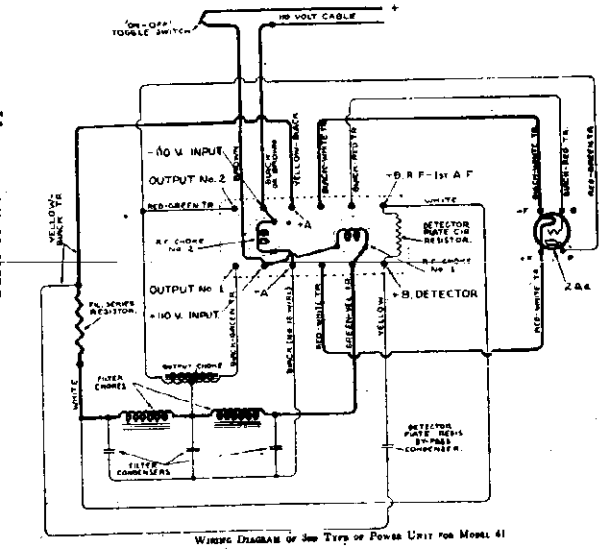
Schematic Voltage



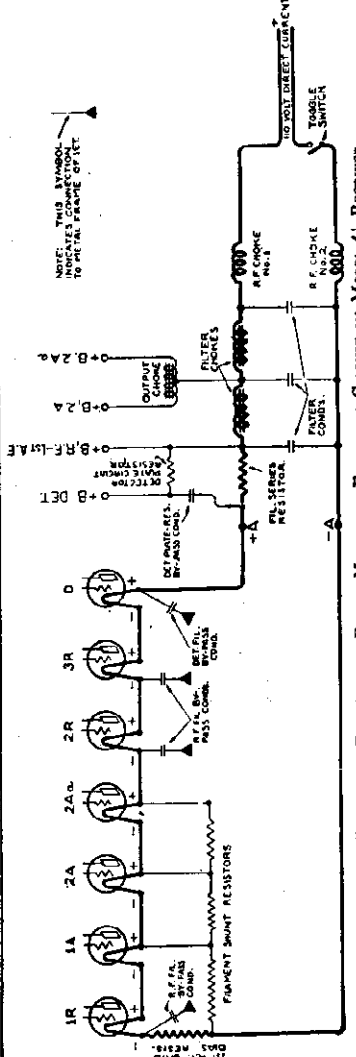
Wiring Diagram of 1st Type of Power Unit for Model 41.



Wiring Diagram of 2nd Type of Power Unit for Model 41.



Wiring Diagram of 3rd Type of Power Unit for Model 41



Simplified Diagram of Power Unit and Filament Circuit in Model 41 Receiver.
Tubes of the 112-A type are used in all sockets except 2A and 2A4.

Voltage at 2nd A.F. Tube on Power Unit

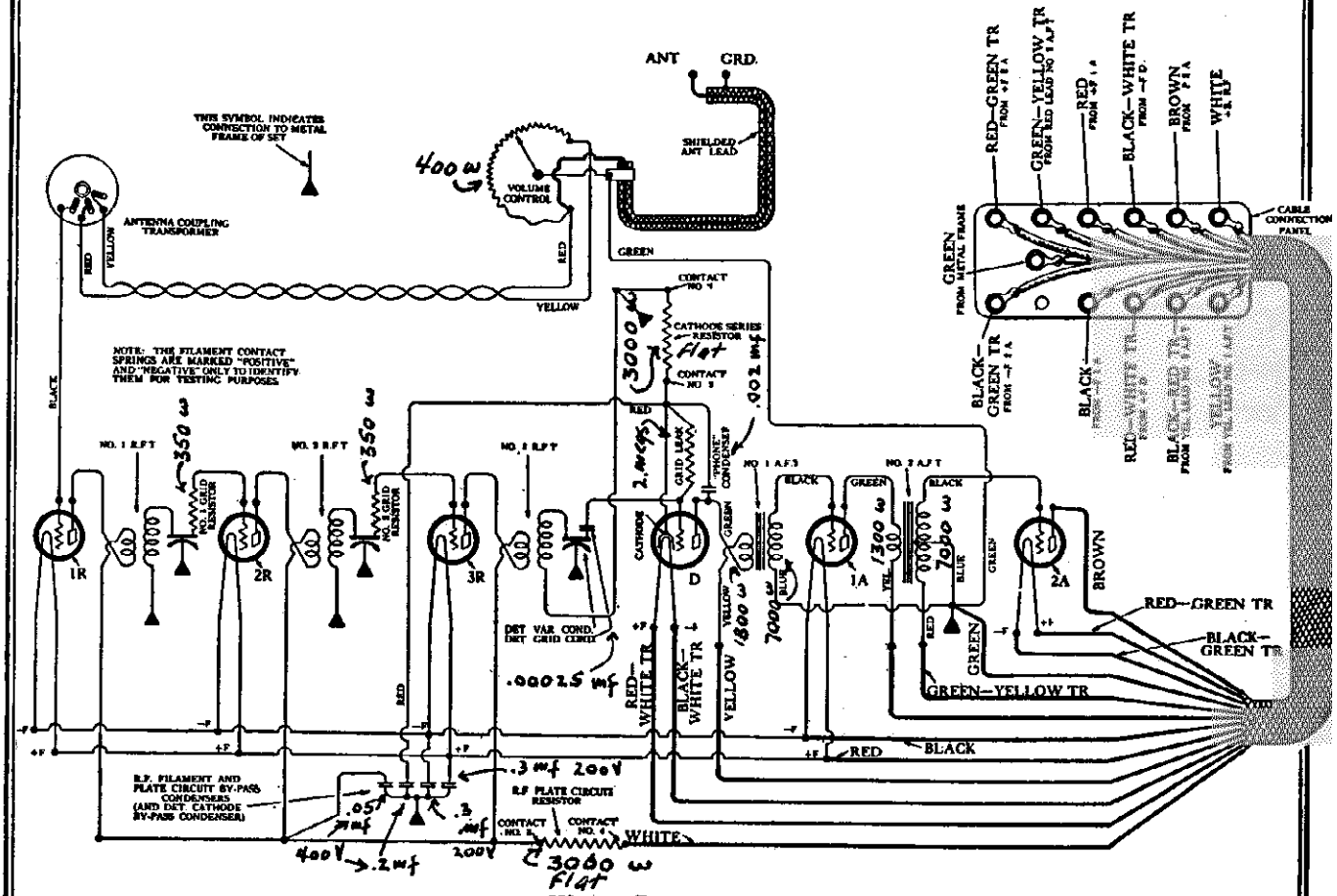
	Filament Voltage	Plate Voltage
1st R.F.	4.8 V.	60 V.
2nd R.F.	4.9 V.	65 V.
3rd R.F.	4.6 V.	65 V.
Detector	4.6 V.	24 V.
1st A.F.	4.9 V.	81 V.
2nd A.F.	4.8 V.	81 V.

Grid Bias

	2 V.	Filament Voltage	4.8 V.
1st R.F.			
1st A.F.	4.8 V.	Grid Bias Voltage	9.7 V.
2nd A.F.	9.7 V.	Plate Voltage	85 V.

ATWATER KENT MFG. CO. MODEL 43 Receiver

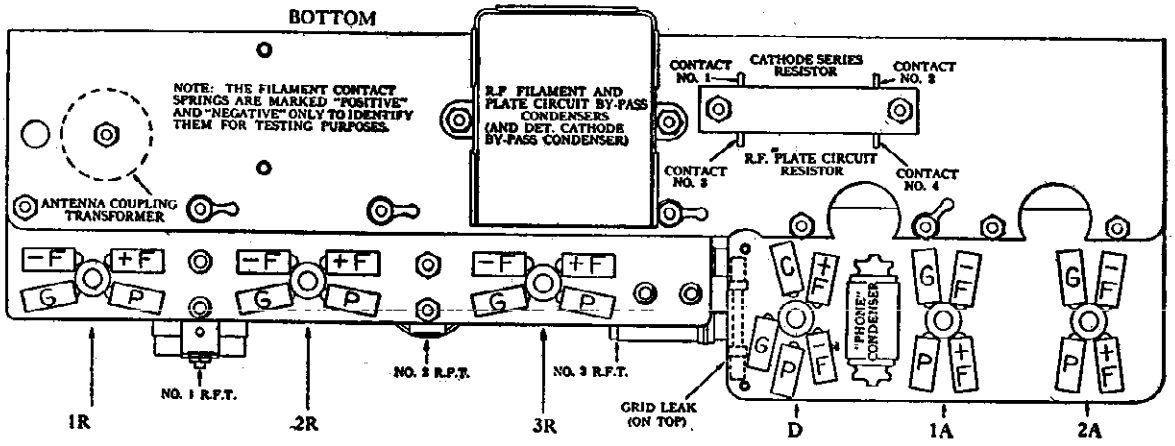
Schematic



Wiring Diagram of Model 43 Set.

The +B, 1st A.F. cable lead is black with a red tracer.

Wiring diagram of Model 43 power pack is shown on 152

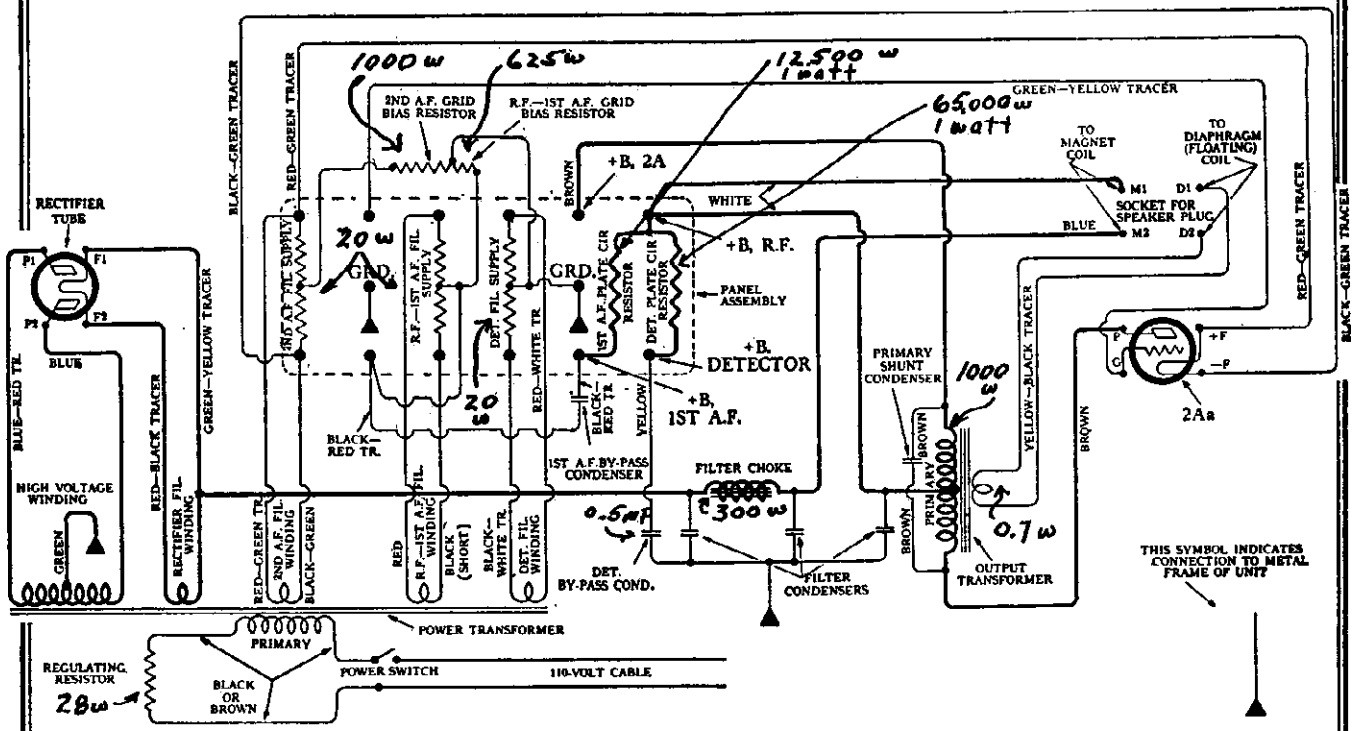


Test Chart for Model 43.

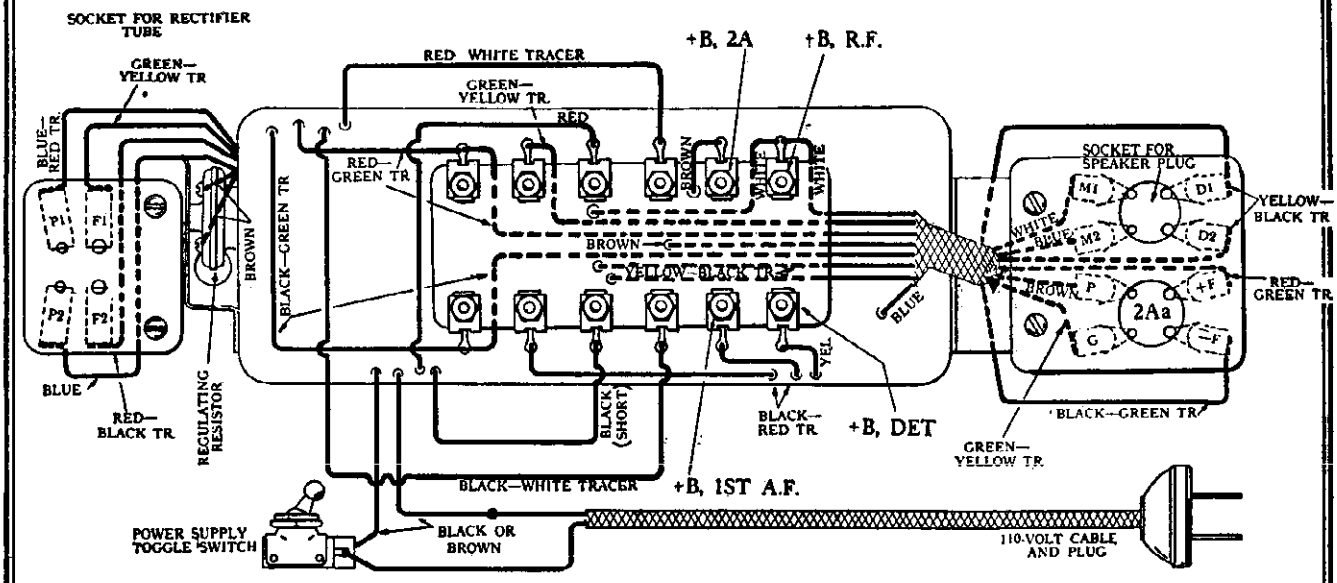
Power pack reference on page 1-14.

MODEL 43
Power Pack
Schematic

ATWATER KENT MFG. CO.



WIRING DIAGRAM OF POWER UNIT IN MODEL 43.



SHOWING CONNECTIONS AND APPROXIMATE POSITION OF LEADS FROM SEALED CONTAINER IN MODEL 43 POWER UNIT.

early type of power unit for Model 43, two brown leads from the primary-shunt condenser connect to the +B, 2A terminal and to the brown P2Aa lead respectively. In later models these connections are made internally.

MODEL 44 and 45 ATWATER KENT MFG. CO.

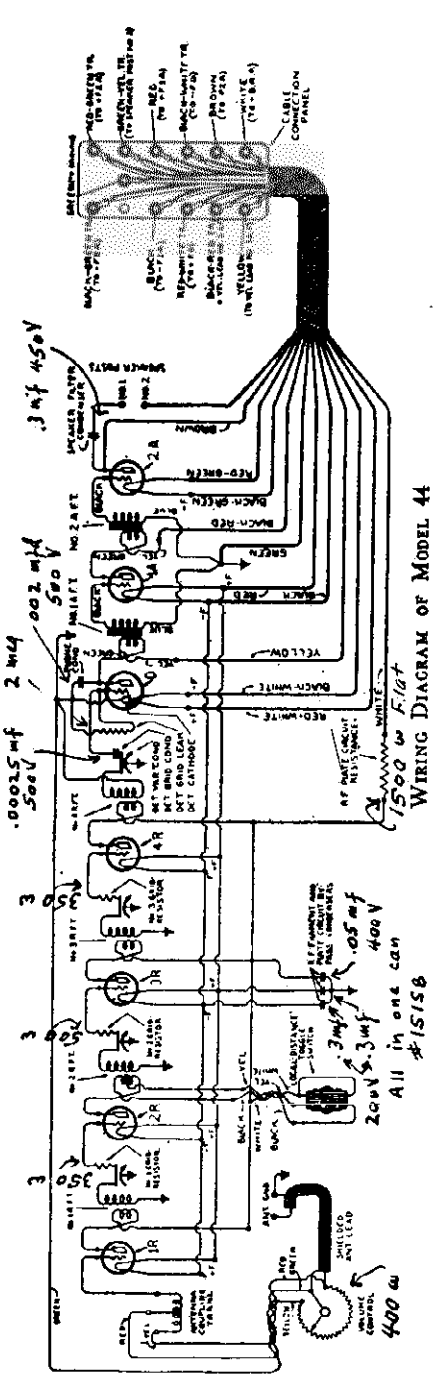
SPECIAL NOTE.

1st type power unit for Model 44 is shown on page 145. Second type power unit for Model 45 is shown on page 148.

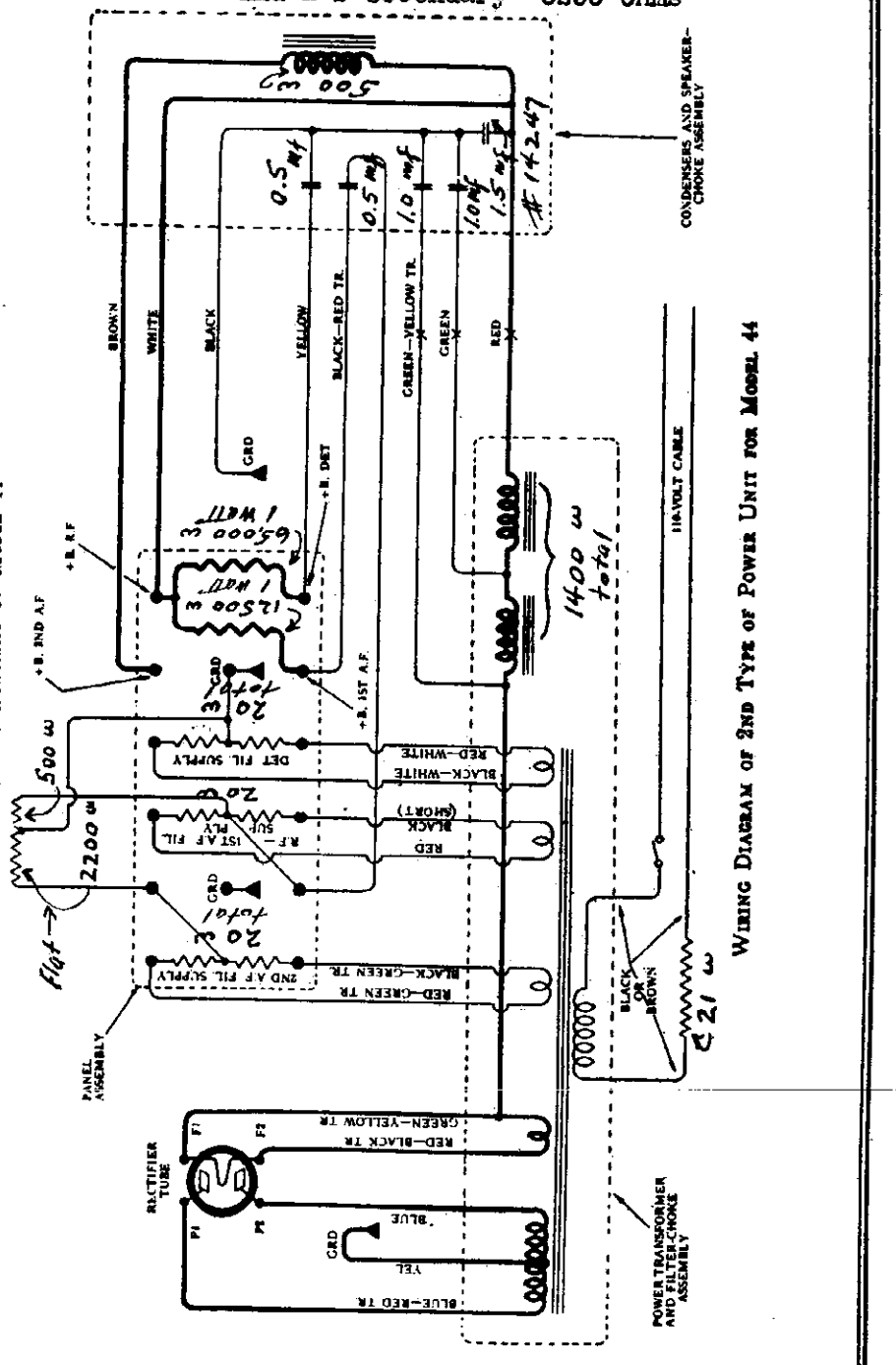
TRANSFORMERS IN MODELS 44 and 45

1st a-f primary 1000 ohms # 8060
1st a-f secondary 7000 ohms

2nd a-f primary 1700 ohms # 7661
2nd a-f secondary 3250 ohms



WIRING DIAGRAM OF MODEL 44



WIRING DIAGRAM OF 2ND TYPE OF POWER UNIT FOR MODEL 44

MODEL 50 ATWATER KENT MFG. CO. MODEL 50

Model 50

CONDENSERS

Detector grid	.00025 mfd	# 8593	500 volts
Detector phone	.002 mfd	# 8590	500 volts
Plate bypass	.3 mfd	# 14902	450 volts

RESISTORS

Detector grid leak	2.0 megs	# 15892 (8195)	1 watt
1st r-f plate	12500 ohms	# 8796	yellow glass
A-f filament	1.5 ohms	# 8627	black covered, flexible
Detector rheostat	20 ohms	# 8310	
R-f rheostat	5 ohms	# 8599	
R-f grid leak	2.0 megs	# 15892 (8195)	1 watt

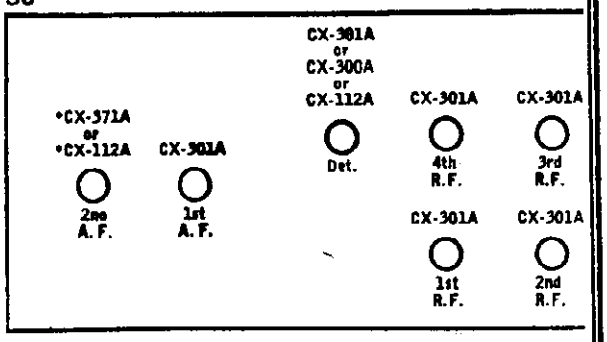
CHOKES

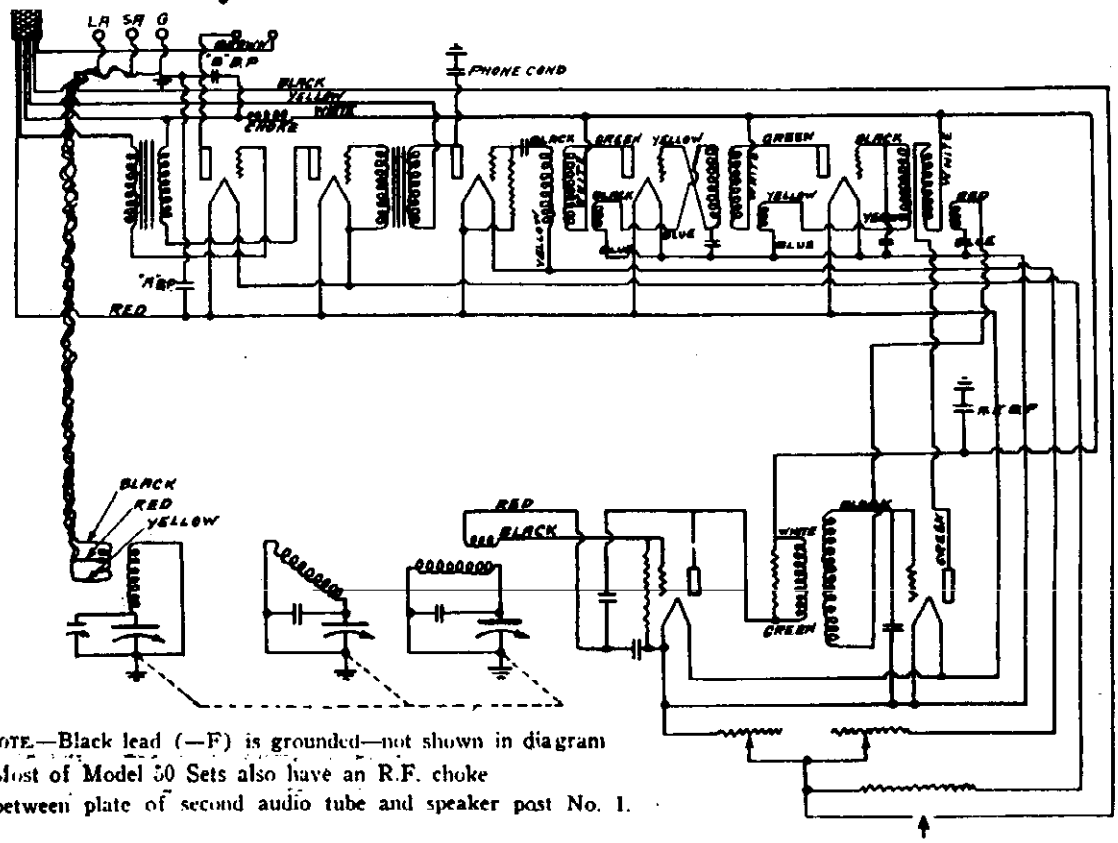
A-f plate	35 ohms	# 8232

TRANSFORMERS

1st a-f primary	1000 ohms	# 8650
1st a-f secondary	7000 ohms	
2nd a-f primary	1400 ohms	# 8940
2nd a-f secondary	7000 ohms	

50





NOTE—Black lead (—F) is grounded—not shown in diagram
Most of Model 50 Sets also have an R.F. choke between plate of second audio tube and speaker post No. 1.

WIRING DIAGRAM OF MODEL 50.

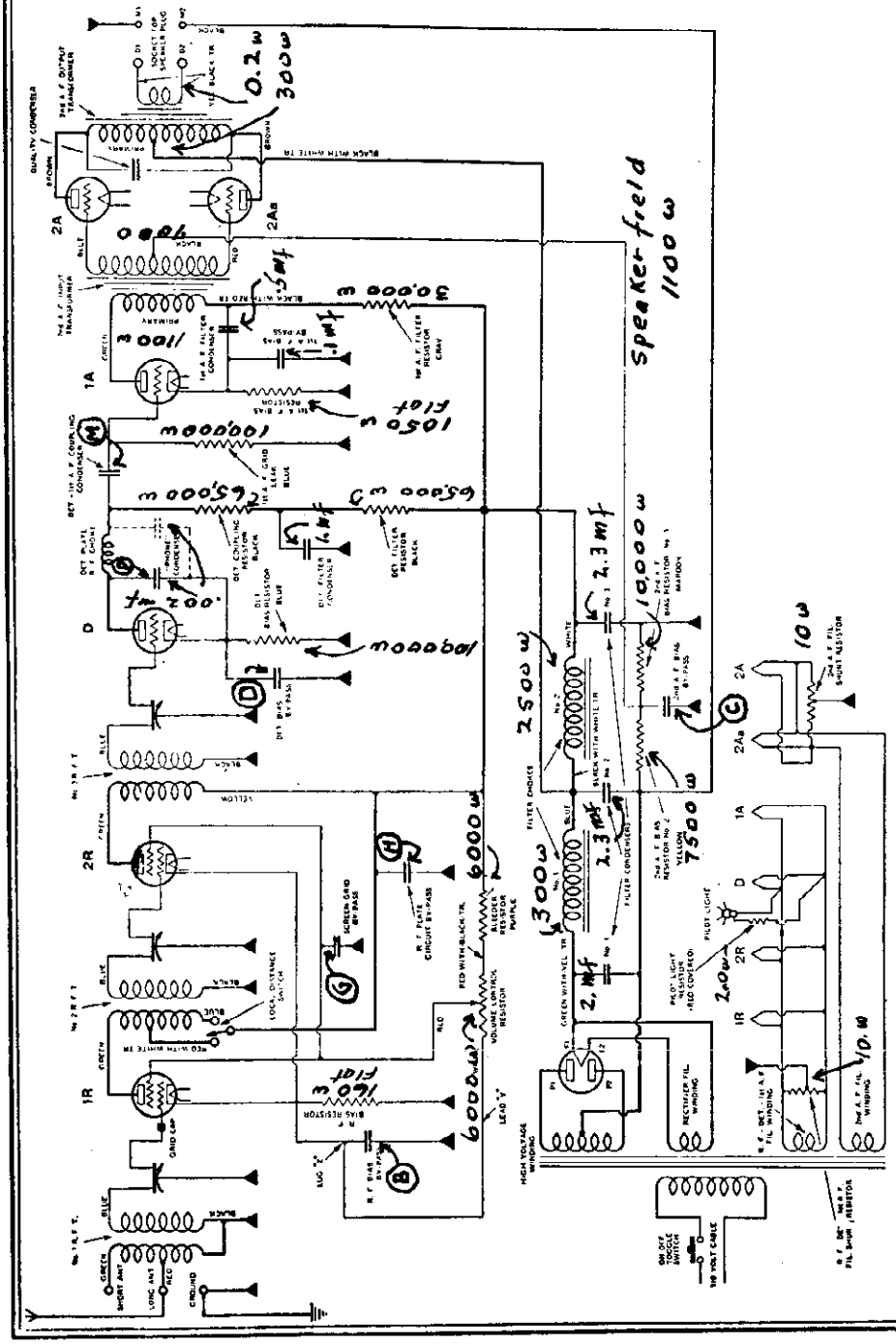
ATWATER KENT MFG. CO.

MODEL 55, 55-C
Early

VOLTAGE TABLE

Tube	Filament		Plate		Grid		Screen	
	Early	late	Early	late	Early	late	Early	late
R-F	2.2	2.2	160	160	2.8	3.7	78	96
Det	2.2	2.2	101	101	11.	11.		
1st A-F	2.2	2.2	64	69	1.8*	2.8*		
2nd A-F	2.2	2.2	213	230	39.	46		
Rec	4.5	4.5						

* Measured voltage, not operating voltage. Line voltage 110 V.

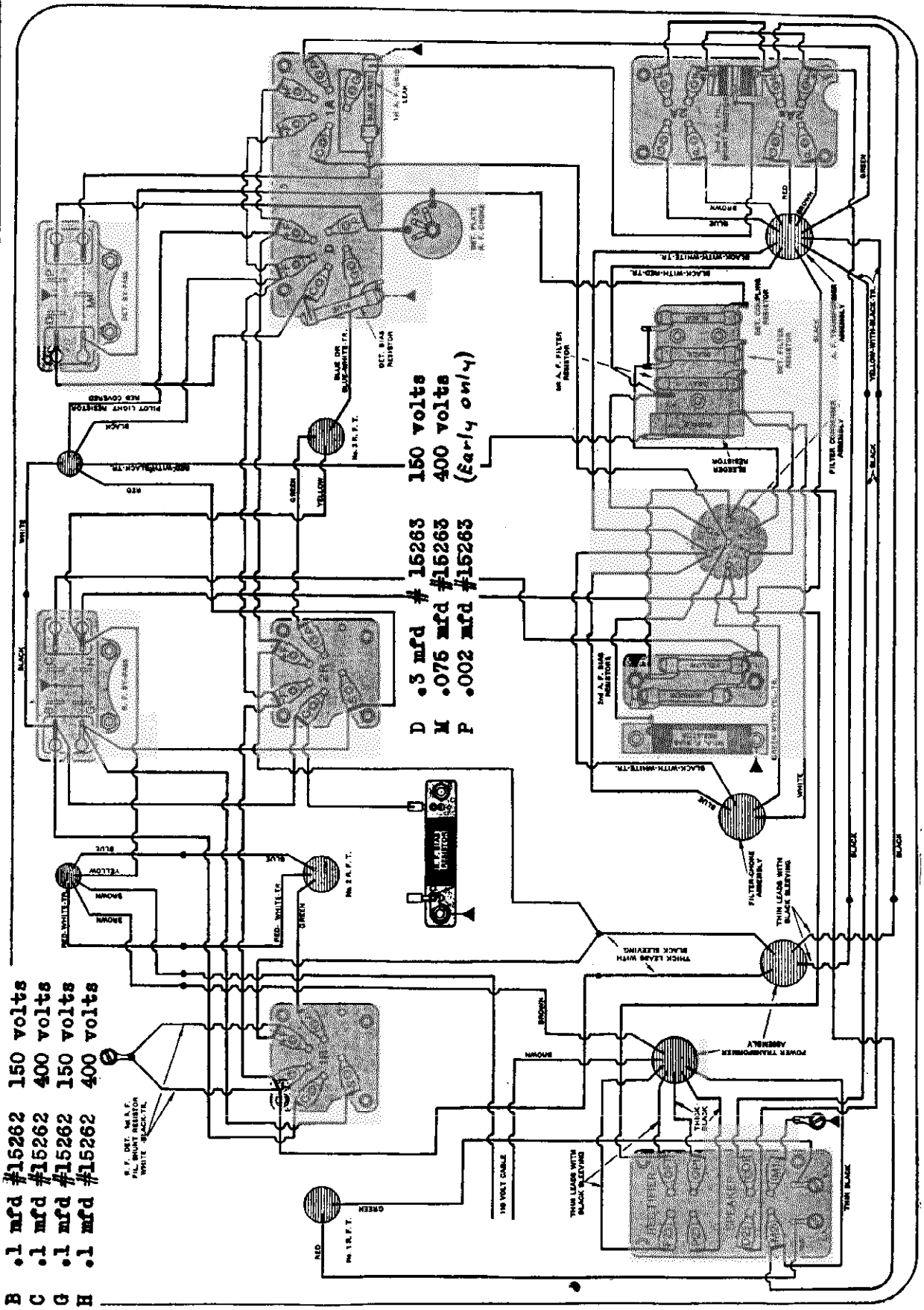


FILTER CONDENSER CONNECTIONS. See chassis
• These numbers refer to the figures shown within the circle representing the filter condenser can.

1st a-f filter	.5 mfd	connected between centre stud and terminal (3)
Detector filter	1. mfd	connected between terminal (4) and can
1st a-f bias	.5 mfd	connected between centre stud and can
Filter #1	2.0 mfd	connected between terminals (1) and (4)
Filter #2	2.3 mfd	connected between terminals (2) and (4)
Filter #3	2.3 mfd	connected between terminals (6) and can.

MODEL 55, 55-C
Early

ATWATER KENT MFG. CO.



BOTTOM WIRING OF EARLY-TYPE MODEL 55 AND 55-C.

This drawing shows the new-style R. F. bias resistor. In some early sets, a separate double-type phone condenser is used.

ATWATER KENT MFG. CO.

MODEL 55 and 55-C
Late

Schematic

Chassis

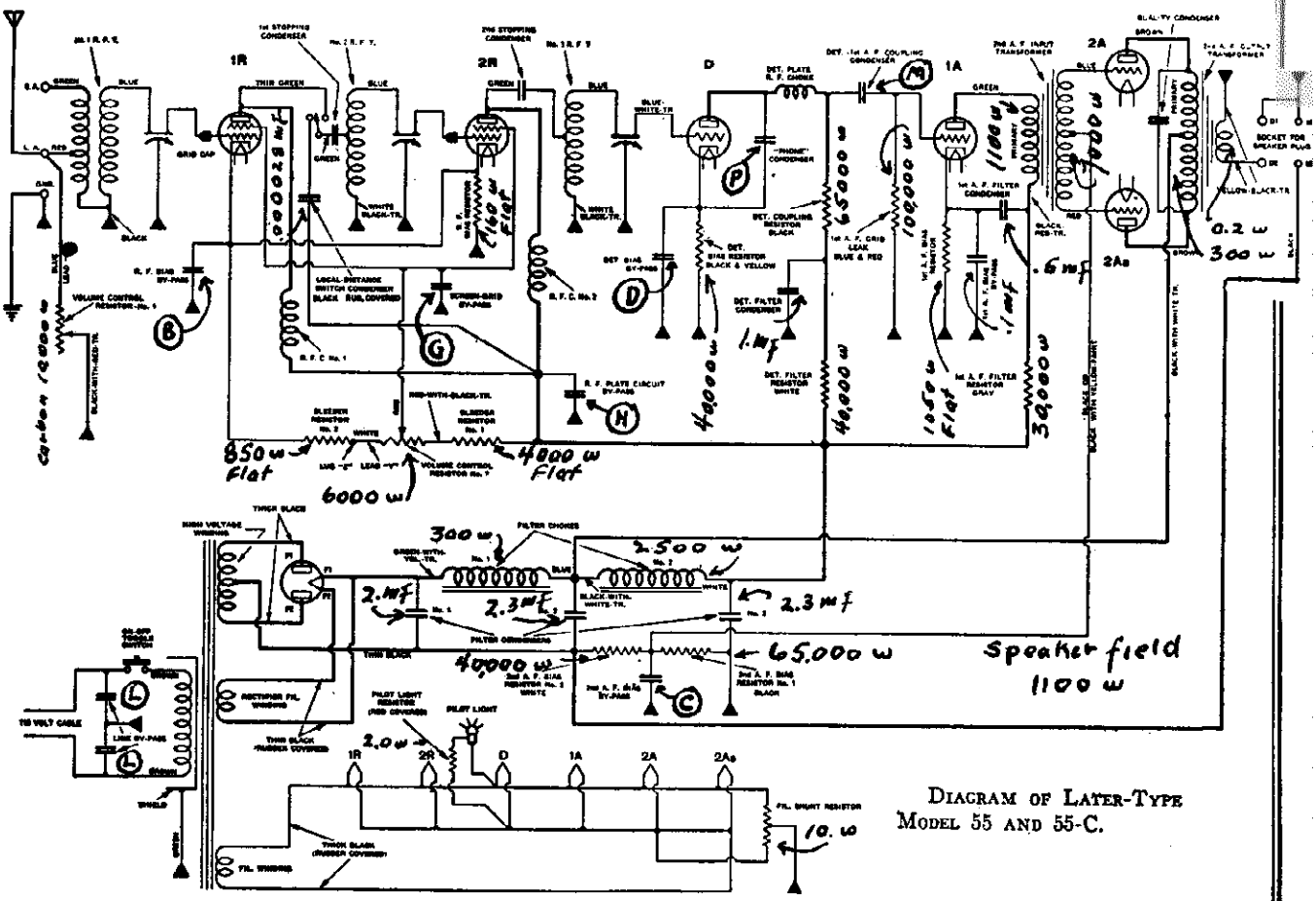
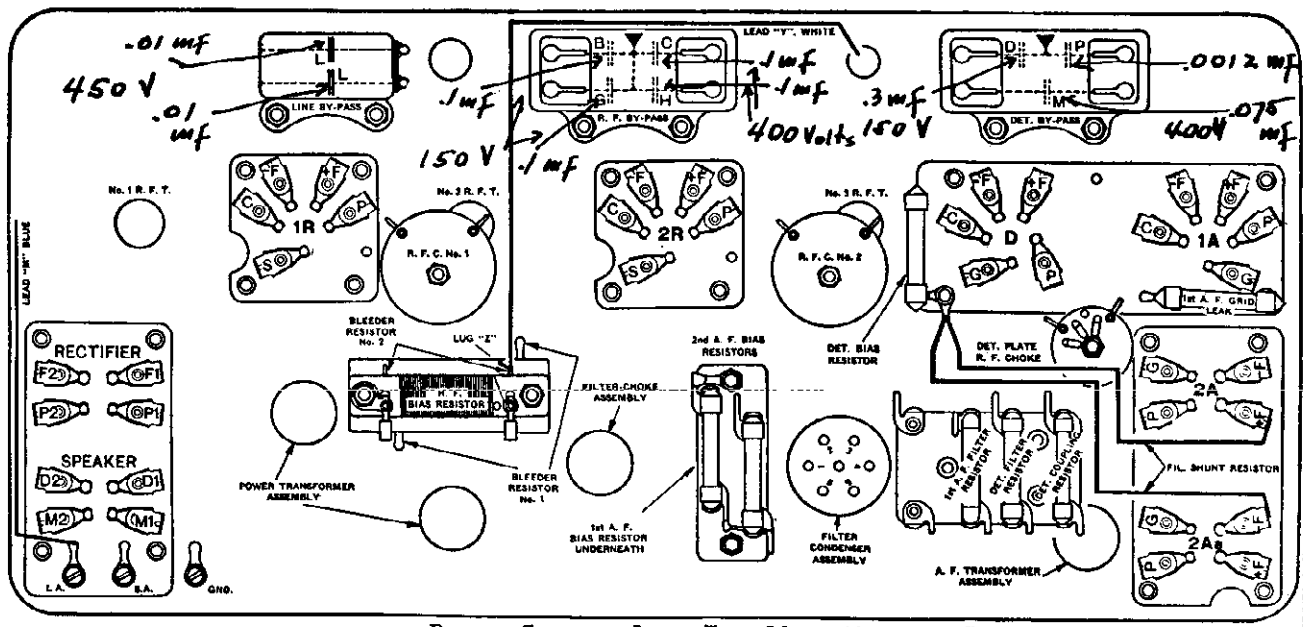


DIAGRAM OF LATER-TYPE MODEL 55 AND 55-C.



BOTTOM CHART OF LATER-TYPE MODEL 55 AND 55-C.

Condenser references on pages 1-17 and 1-18

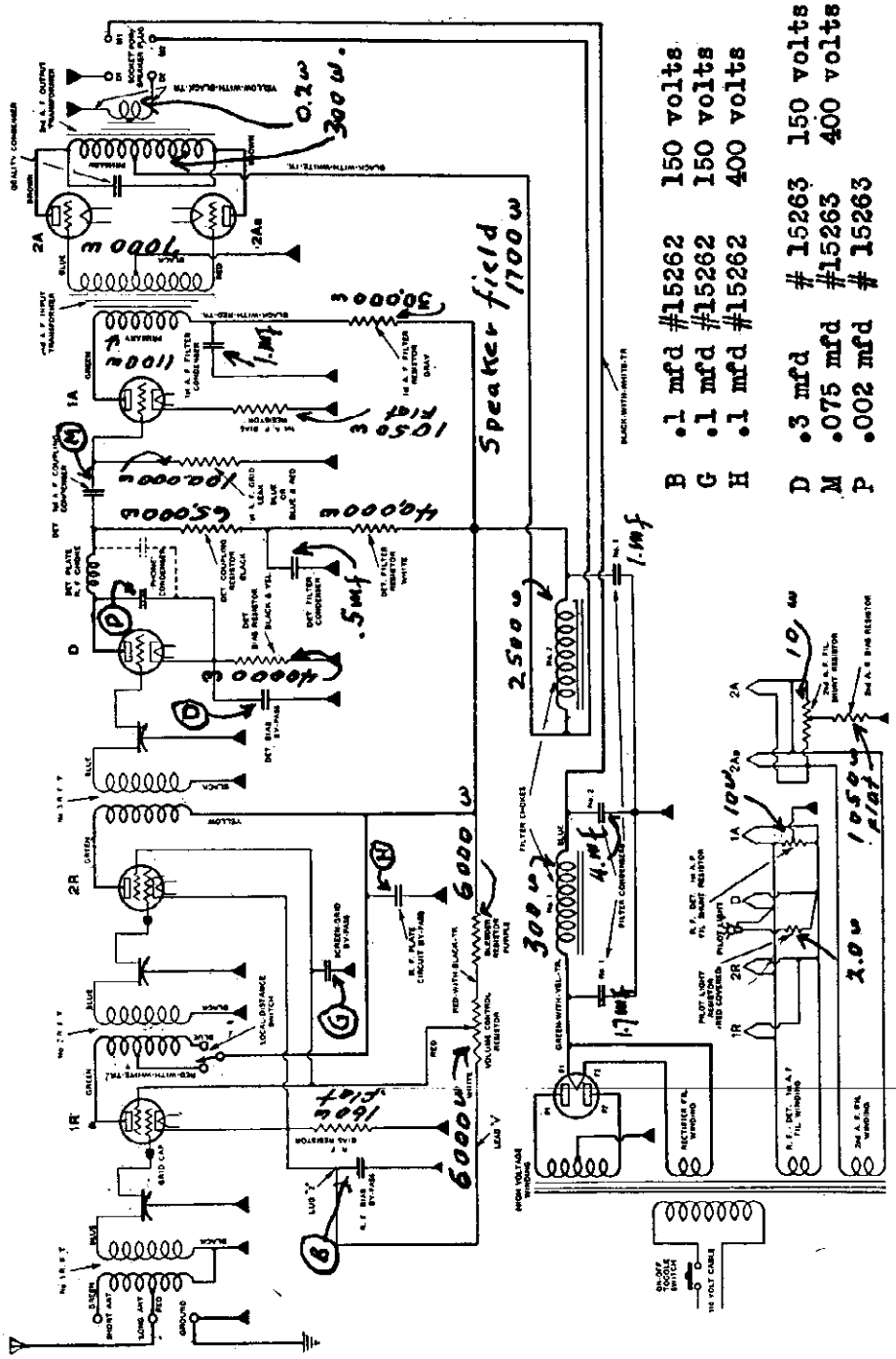
MODEL 55-F and 55-FC
Early

ATWATER KENT MFG. CO.

VOLTAGE TABLE

Tube	Filament	Plate	Grid	Screen
R-F	2.2	160	3.7	96
Det	2.2	101	11.	
1st A-F	2.2	69	2.8*	
2nd A-F	4.5	174	41.	
Rect.	4.5			

* Measured voltage, not operating voltage. Line voltage 110 V.

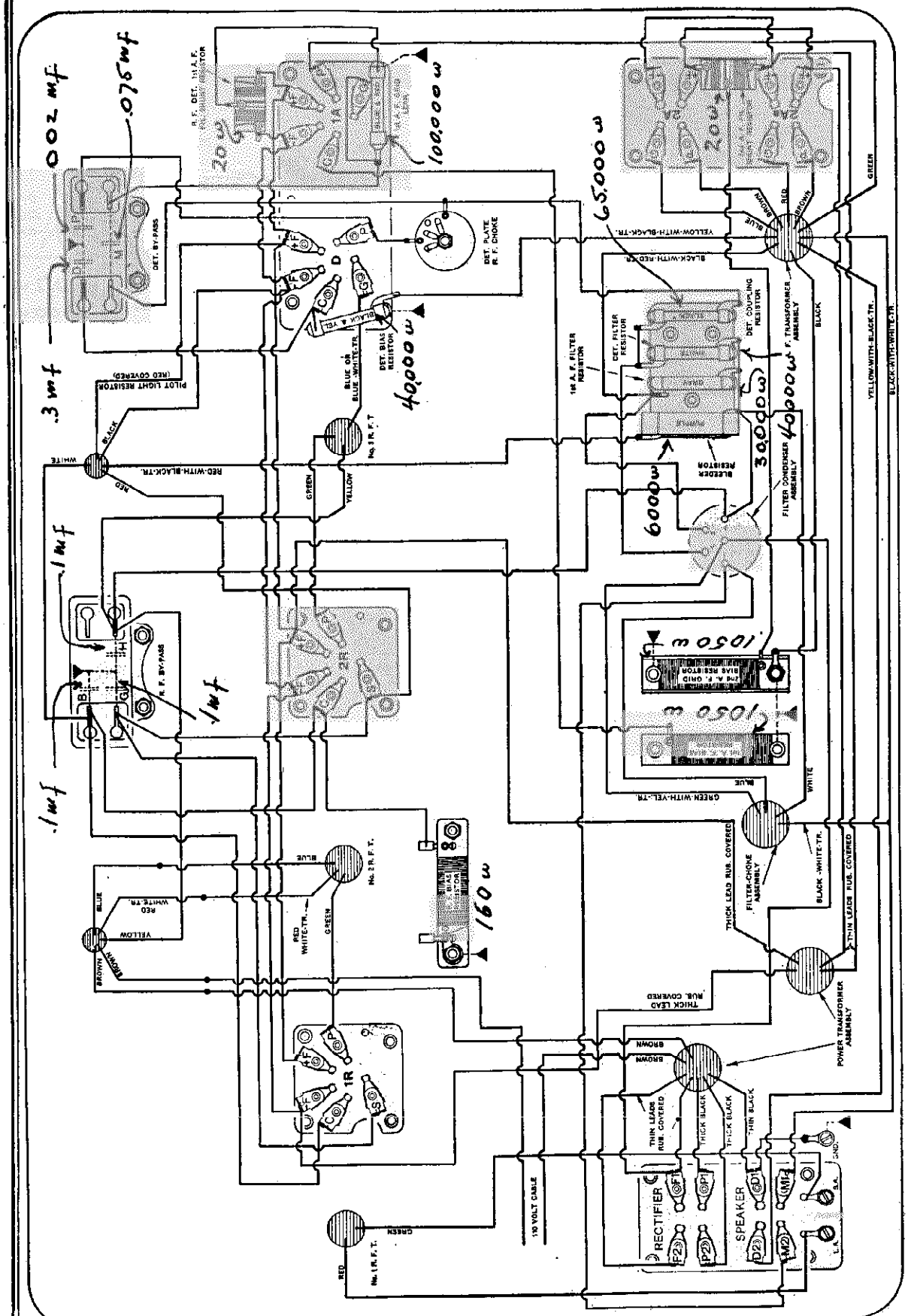


IAGRAM OF EARLY-TYPE MODEL 55-F AND 55-F-C.

FILTER CONDENSER CONNECTIONS. (See chassis layout
The numbers and connections stated are marked upon the filter unit can and are also shown on the chassis layout within the cirle designating the filter condenser can.

Filter #1 1.7 mfd connected between the center stud and can
Filter #2 4.0 mfd connected between terminal (1) and can
Filter #3 1.0 mfd connected between terminal (4) and can
Detector filter .5 mfd connected between terminal (2) and can
A-f filter 1.0 mfd connected between terminal (3) and can

ATWATER KENT MFG. CO. MODEL 55-F and 55-FC Early Chassis



Bottom Wiring of Early-Type Model 55-F and 55-F-C.

Some of these sets had a combination resistor, No. 15274, which is superseded by two separate resistors, No. 16988 being used as R. F. bias resistor, and No. 17077 as filament shunt resistor.

MODEL 55-F and 55-FC
Late
Chassis

ATWATER KENT MFG. CO.

FILTER CONDENSER CONNECTIONS. See data pertaining thereto on page 162
Bypass condenser specifications are shown below.

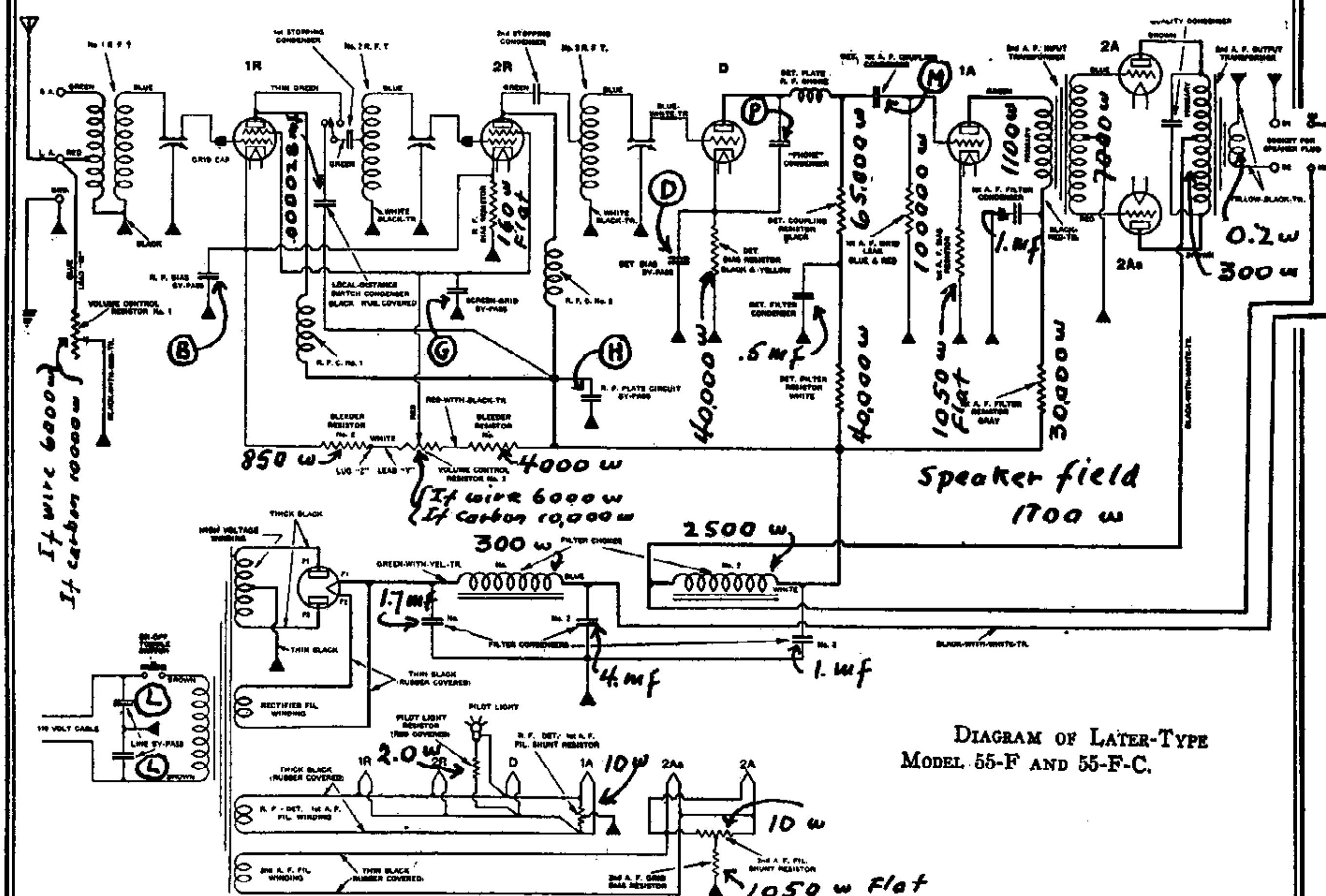
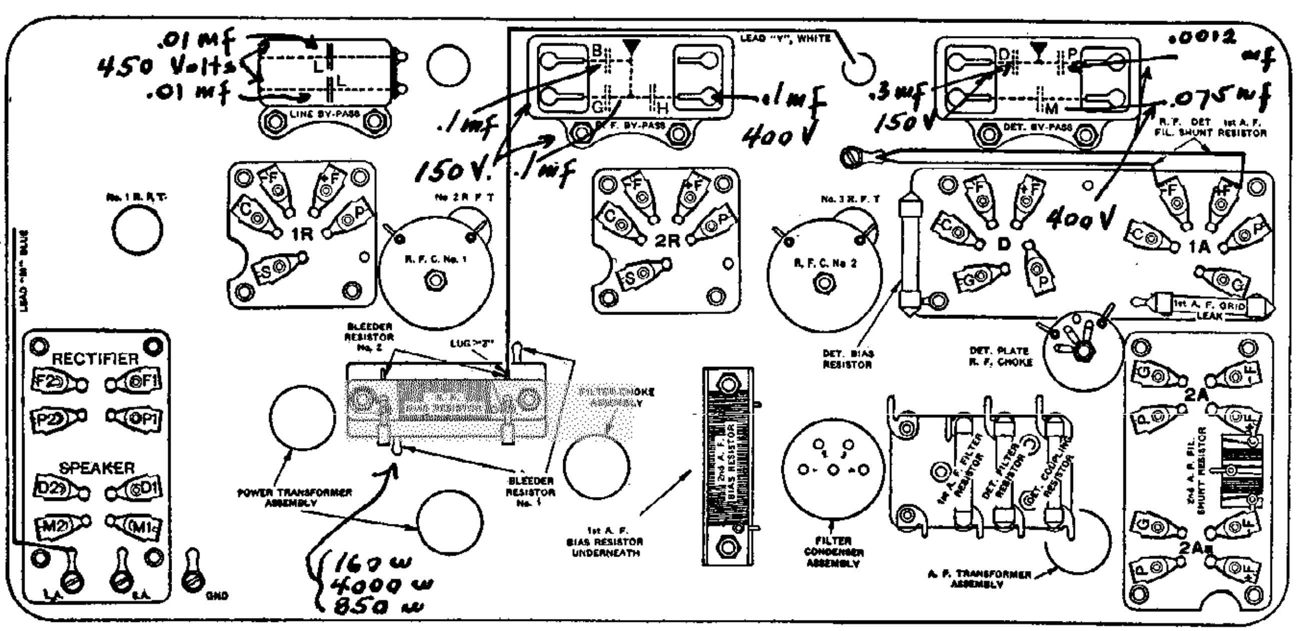


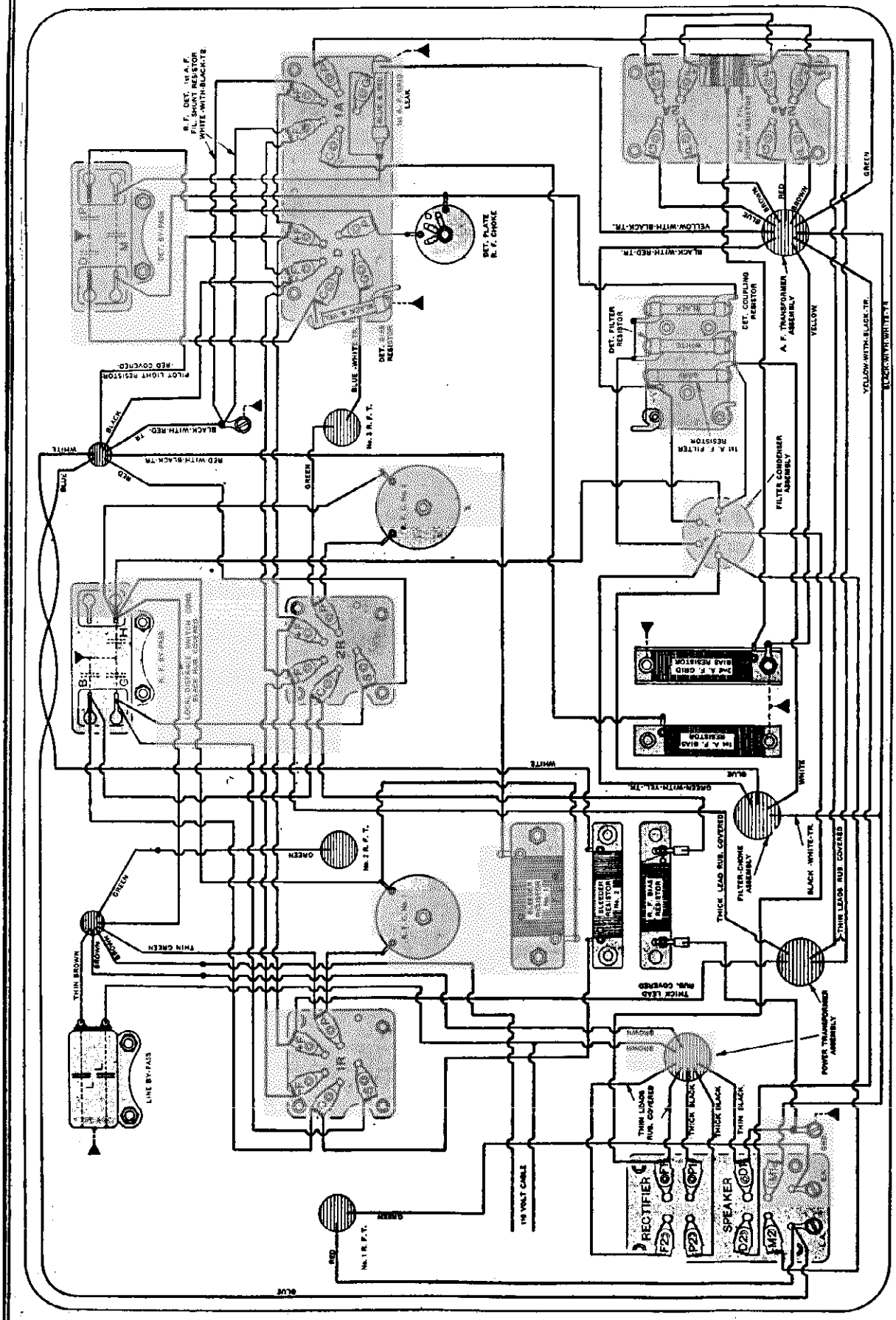
Diagram of Later-Type Model 55-F and 55-F-C.



Bottom Chart of Later-Type Model 55-F and 55-F-C.

ATWATER KENT MFG. CO.

MODEL 55-F and 55-FC
Late Chassis



BOTTOM WIRING OF LATER-TYPE MODEL 55-F AND 55-F-C.

The 1st-A. F. bias resistor is mounted under the 2nd-A. F. bias resistor. The three other wire-wound resistors are mounted together, being insulated from each other by sheets of fibre.

Some of these sets had a combination resistor, No. 16868, which is superseded by two separate resistors, No. 16988 being used as R. F. bias, and No. 16989 as bleeder No. 2.

ATWATER KENT MFG. CO.

VOLTAGE DATA FOR MODELS 60 and 60-C (1st and 2nd Types)

Line voltage 110. 120 volt line is 10 percent higher.

Tube	Filament	Plate	Grid	Screen	
R-F (1st)	2.2	160	7.3	119	119
R-F (2nd-3rd)	2.2	160	3.7	83	
Det.	2.2	101	11.		
A-F (1st)	2.2	69	1.8*		
A-F (2nd)	2.2	230	44.		
Rect.	4.5				

* Measured, not actual operating voltage.

VOLTAGE DATA FOR MODEL 60 and 60-C (3rd Type)

Line voltage 110. Volume control at minimum.

Tube	Filament	Plate	Grid	Screen
R-F	2.3	170	16.5*	142
Det.	2.3	119	1.5	
A-F (1st)	2.3	73	1.9**	
A-F (2nd)	2.3	224	36. ***	

* Local distance switch at distance

** Measured, not actual operating voltage.

*** If 2nd A-F bias resistor #1 is open, bias will be about 85 v.

Checking Sensitivity of Set

When checking the sensitivity of the set, it is necessary to use an oscillator, and a meter to indicate maximum output volume.

A local oscillator is necessary to ensure constancy of signal strength; signals from broadcast stations are not sufficiently constant for this work.

An output meter is necessary to ensure a reliable indication of output volume; the ear is not reliable enough for this purpose.

The oscillator feeds a weak signal into the receiver. The signal is amplified in the receiver and produces a reading on a meter which is connected to the output of the set. This meter indicates the strength of output volume. The reading on the output meter is greatest when all the tuned circuits in the set are adjusted to the same frequency as the oscillator signal.

1. *Oscillator.*

The oscillator must provide modulated R. F. signals at four different frequencies in the broadcast range. *These four frequencies should correspond to dial settings of 5, 45, 65 and 95 on the dial of a 3rd type Model 60-C* ***which has the original factory synchronism.***

Each of the four R. F. oscillators should have an adjustable pick-up so that the strength of each oscillator may be controlled independently of the other three.

2. *Output Measuring Circuit.*

The output measuring circuit is shown and described

Adjusting Trimmer Condensers

1. Connect the common pick-up lead from the four R. F. oscillators to one end of a No. 8112 condenser. Connect the other end of this condenser to the Long-Antenna post. Connect the oscillator container to the Ground post.
2. Put plug "A" of the output measuring circuit in the speaker-plug socket on the set. Plug an F-4 type speaker in socket "B." Throw switch "D" to the right.
3. Put all tubes in the set; power switch on; volume control at maximum; local-distance switch at distance. Break away the sealing wax on the trimmer-condenser screws
4. *Tune set exactly to 5 on dial.* Reduce or increase the amount of pick-up from the 1st oscillator to secure a reading of about 20 on the output meter.
5. With a screw-driver, turn the pressure screw of the 4th trimmer condenser one way or the other, as necessary, to the point where the reading on the output meter is greatest. Repeat this process on the 3rd trimmer, then on the 2nd, and finally on the 1st. Reduce the pick-up from the 1st oscillator if necessary in order to keep the needle of the galvanometer near the centre of its scale.

This adjustment of the trimmer-condenser screws is termed the CORRECT POSITION.

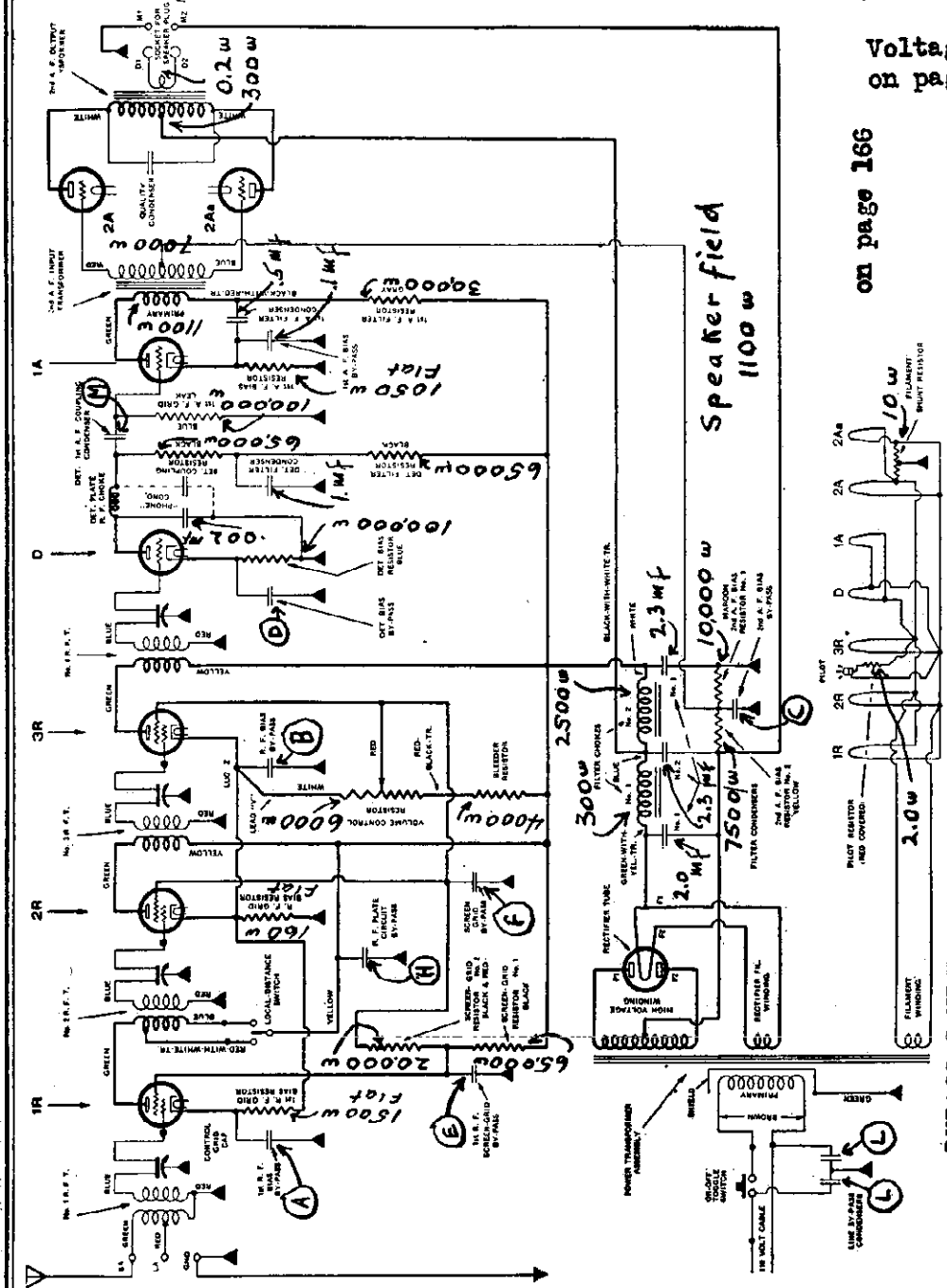
ATWATER KENT MFG. CO.

MODEL 60 and 60-C
Early
Schematic

FILTER CONDENSER CONNECTIONS. See chassis layout Data

The numbers listed as connections are marked upon the filter condenser unit and shown within the circle designating the condenser unit on the chassis layout.

1st a-f filter	.5 mfd	connected between center stud and terminal (3)
Detector filter	1. mfd	connected between terminal (4) and can
1st a-f bias	.5 mfd	connected between center stud and can
Filter #1	2.0 mfd	connected between terminals (1) and (4)
Filter #2	2.3 mfd	connected between terminals (2) and (4)
Filter #3	2.3 mfd	connected between terminals (6) and can



Voltage data on page 173

on page 166

BYPASS CONDENSER VALUES. The bypass condensers are designated by letters, exclusive of those within the filter condenser can. For bypass condensers, see schematic above and chassis layout

RF Bypass #1	A	.1 mfd	150 volts	E	.1 mfd	150 volts
	F	.1 mfd	400 volts	H	.1 mfd	400 volts
RF Bypass #2	B	.1 mfd	150 volts	C	.1 mfd	150 volts
	L	.01 mfd	400 volts	L	.01 mfd	400 volts
Detector Bypass	D	.3 mfd	150 volts	M	.075 mfd	400 volts

EARLY-TYPE MODEL 60 AND 60-C.

Voltage reference on page 1-24

MODEL 61,61-C DC
Early
Schematic

ATWATER KENT MFG. CO.

FILTER CONDENSER DATA. The filter condenser unit in the Model 61 and 61-C, (Direct Current) Early, contains two of the filter condensers and two other bypass condensers. The numbers to bd quoted in connection with the connections are marked upon the condenser can and are shown upon the chassis layout

1st a-f filter	.5 mfd	connected between terminals(1)and (3)
Detector filter	1.0 mfd	connected between terminals (2) and (6)
Filter # 2	4.0 mfd	connected between terminal (4) and center stud
Filter # 3	2.0 mfd	connected between terminal (5) and center stud

Filter #1 is a part of one of the bypass units as stated elsewhere on this page.

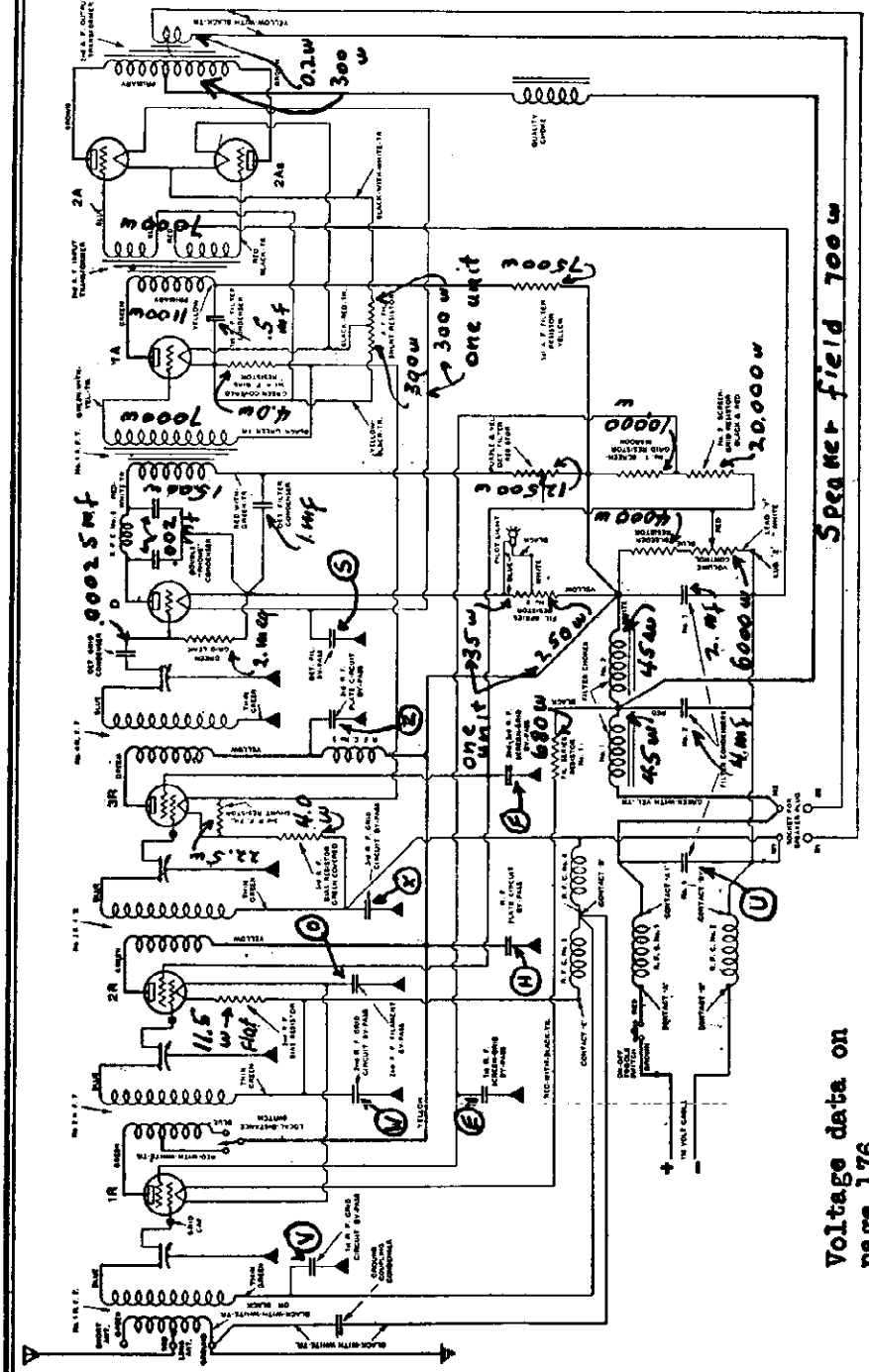


DIAGRAM OF EARLY MODEL 61 AND 61-C (DIRECT CURRENT).

Voltage data on page 176

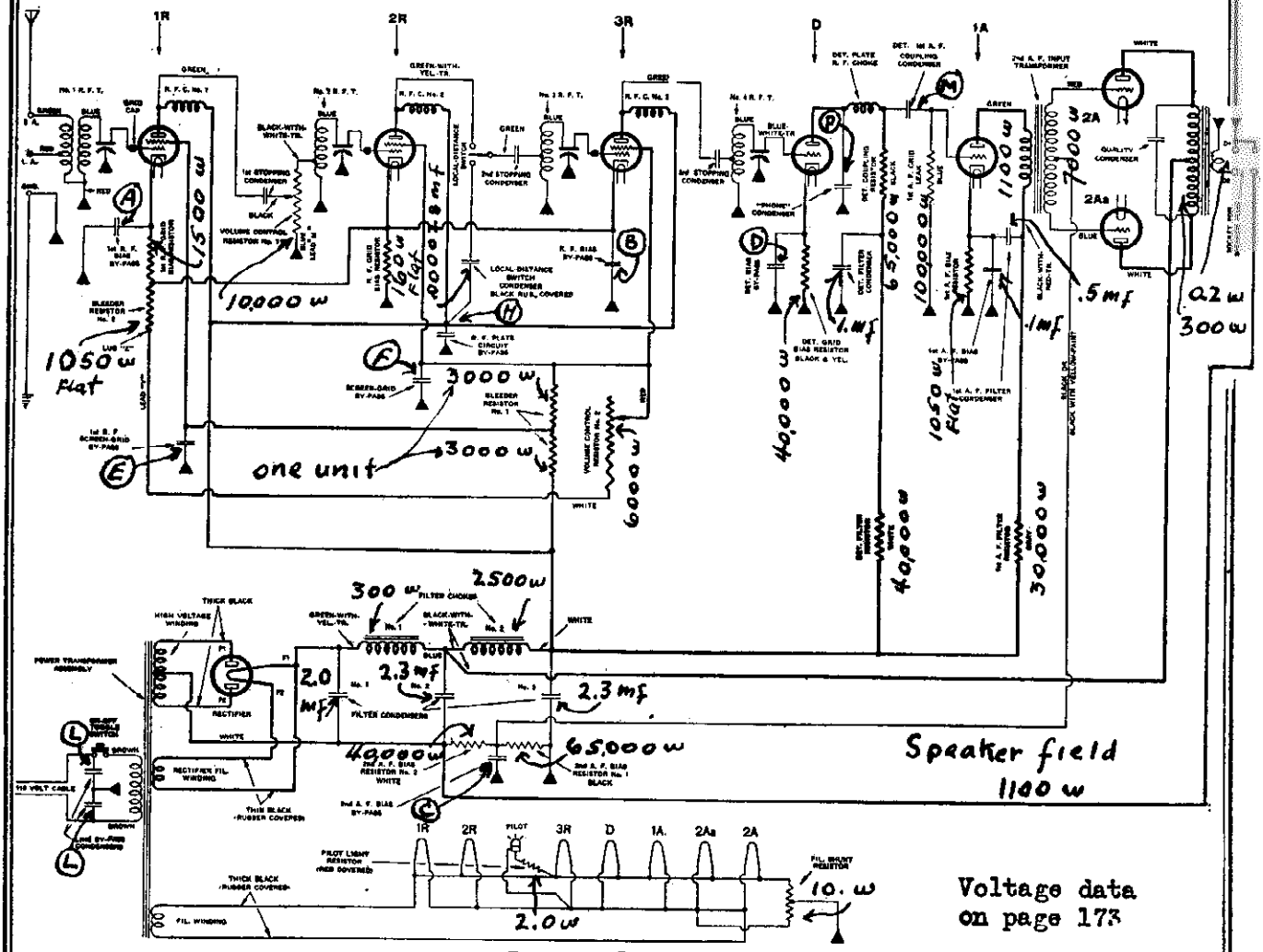
BYPASS CONDENSERS. The following designating letters are shown upon the schematic wiring diagram and also upon the chassis layout

RF Bypass #1	E	.1 mfd	150 volts	O	.1 mfd	400 volts
	V	.1 mfd	150 volts	W	.1 mfd	400 volts
RF Bypass #2	F	.1 mfd	400 volts	H	.1 mfd	400 volts
	X	.1 mfd	150 volts	Z	.1 mfd	150 volts
Detector Bypass S		.3 mfd	150 volts	U*	.075 mfd	400 volts

* Condenser U is Filter #1

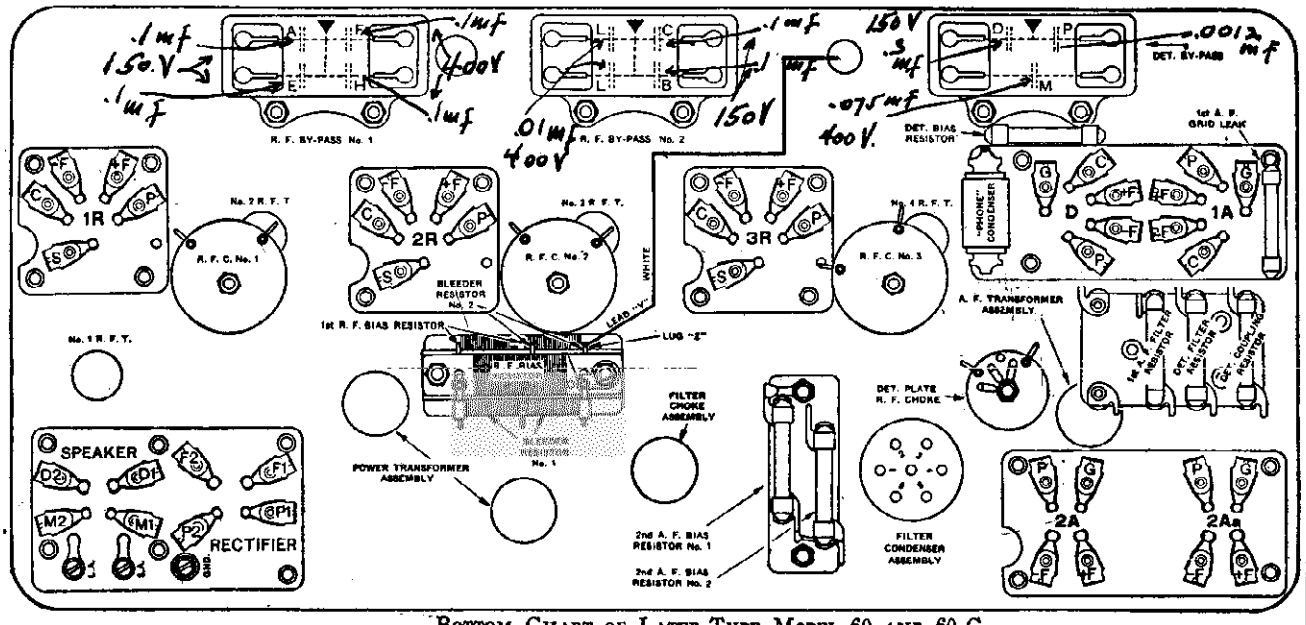
Voltage reference on page 1-28.

ATWATER KENT MFG. CO. MODEL 60 and 60-C Late Schematic



Voltage data on page 173

CIRCUIT OF LATER MODEL 60 AND 60-C.

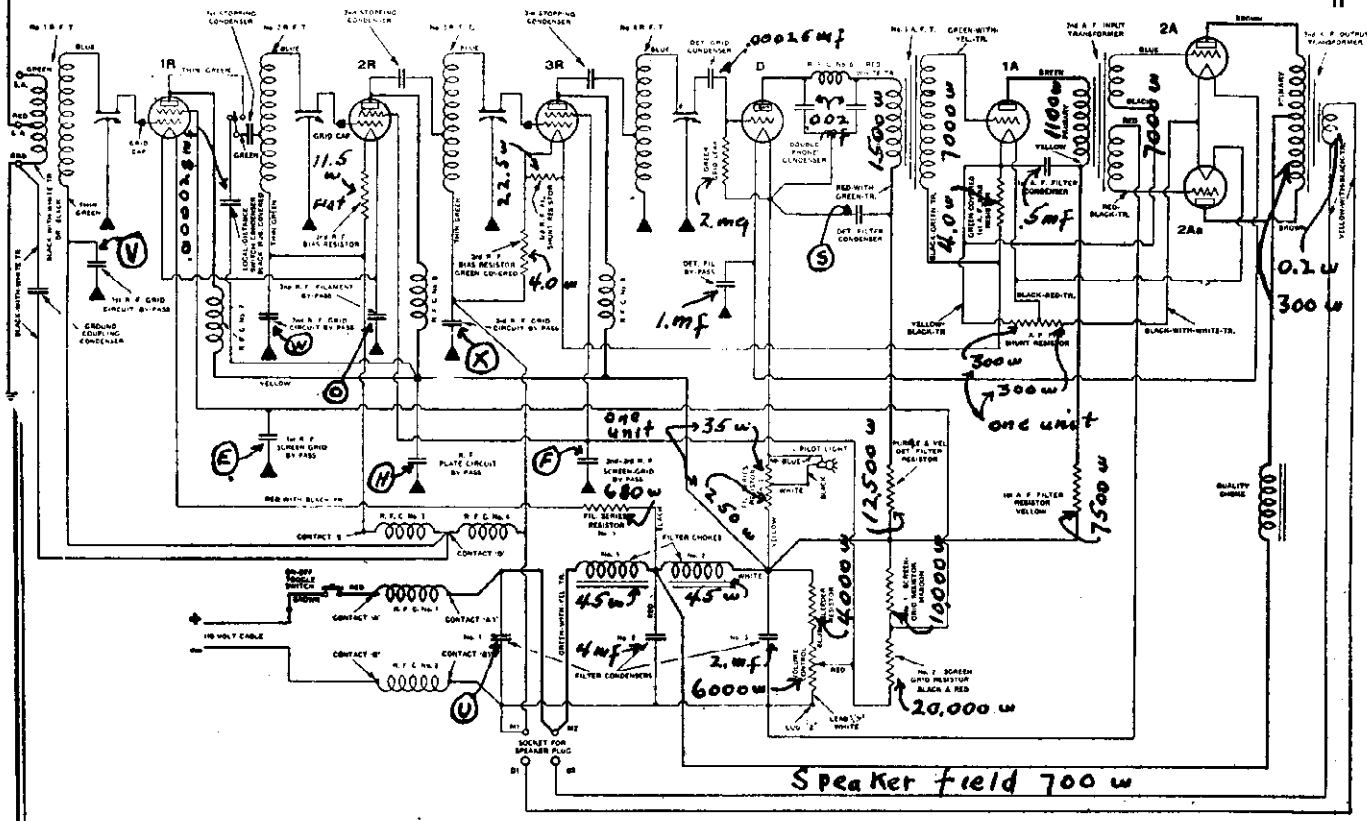


BOTTOM CHART OF LATER-TYPE MODEL 60 AND 60-C.

Voltage reference on page 1-24

MODEL 61-61-C
Late Schematic

ATWATER KENT MFG. CO

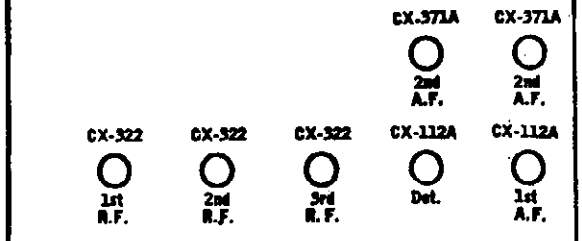


SCHEMATIC DIAGRAM OF LATER MODEL 61 AND 61-C (DIRECT CURRENT).

FILTER CONDENSER SPECIFICATIONS are shown on page 174. BYPASS CONDENSER designations shown upon wiring diagram also appear upon chassis layout on page 177. For BYPASS CONDENSER data refer only to page 177 and not to page 174.

	R-F	Det.	1st A-F	2nd A-F
Fil.	2.9	4.6	4.6	4.6
Plate	78	32	50	80
Grid	4.6*		1.4	9
Screen	60**			

61



* This voltage applies only to the 1st R-F stage. The 2nd R-F bias voltage is 1.4 volts and the 3rd R-F bias voltage is 0.9 volts.

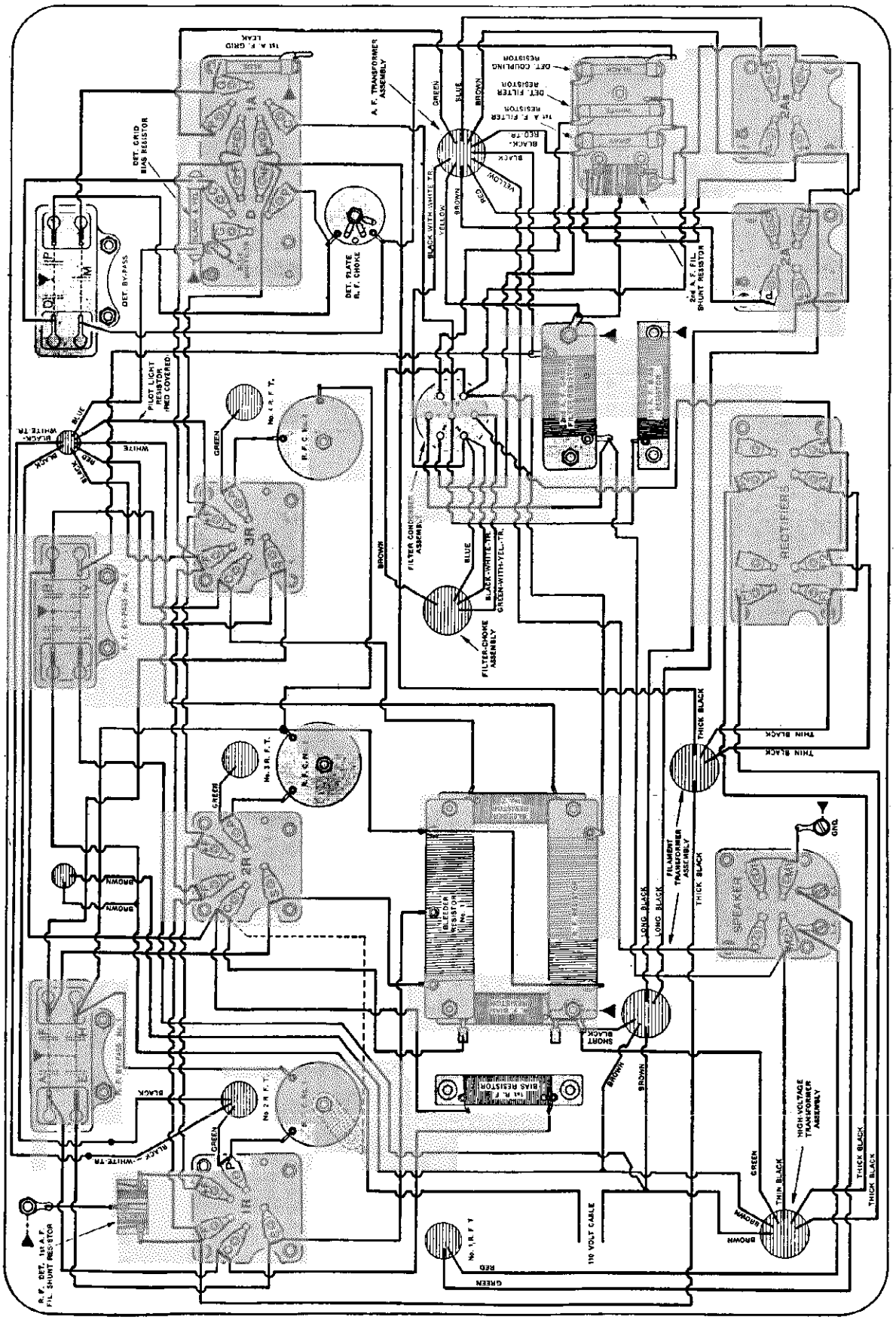
**The screen voltage quoted applies only to the third R-F tube. The other R-F tubes secure different values of screen voltage. R-F tube number 1 or rather the first R-F stage has 46 volts applied to its screen. Likewise the 2nd R-F stage has 46 volts applied to its screen.

The forementioned voltage measurements are made with the volume control adjusted to minimum.

Condenser reference on page 1-26.

ATWATER KENT MFG. CO.

MODEL 66
Chassis



BOTTOM WIRING OF LATER-TYPE MODEL 66.

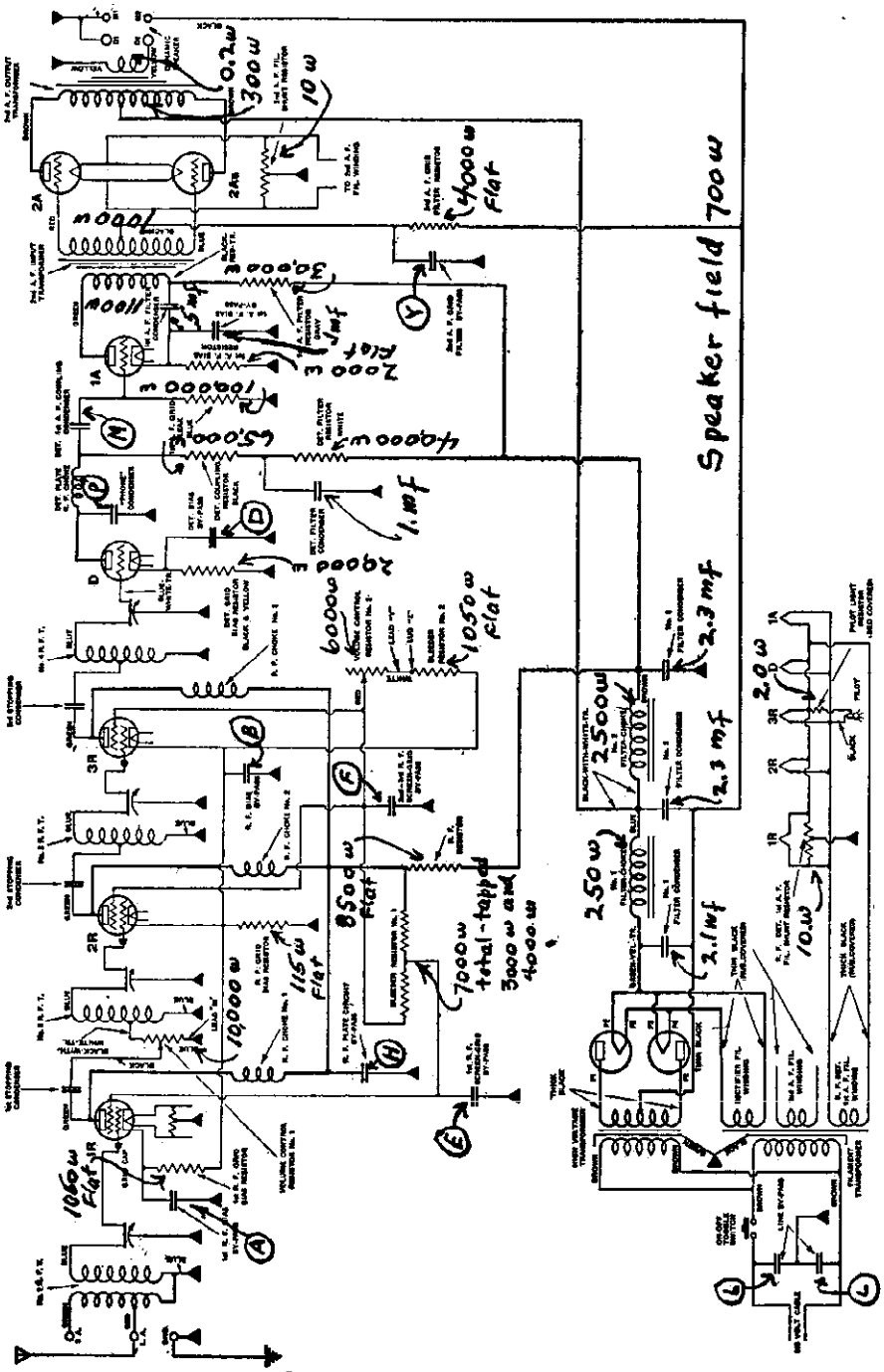
The resistor shown in dotted lines is the old-style R. F. bias resistor. This is shown merely to indicate how the old-style R. F. bias resistor was connected. The 1st-R. F. bias resistor is mounted on top of the new-style R. F. bias resistor. The 1st-A. F. bias resistor is mounted under the 2nd-A. F. grid-filter resistor.

MODEL 66
Schematic
Data

ATWATER KENT MFG. CO

FILTER CONDENSER CONNECTIONS. The following specifications should be used in conjunction with the schematic shown below and the chassis layout shown on The numerals refer to the numbers marked upon the condenser can

Filter #1	2.1 mfd connected between terminals (1) and (4)
Filter #2	2.3 mfd connected between terminals (2) and (4)
Filter #3	2.3 mfd connected between terminal (6) and can
Detector filter	1.0 mfd connected between terminal (5) and can
1st a-f filter	0.5 mfd connected between center stud and can
1st a-f bias	0.1 mfd connected between center stud and (3)



CIRCUIT OF MODEL 66.

In some early Model 66, volume control resistor No. 1 is connected across the R. F. choke coil in the plate circuit of the 1st R. F. tube. The slider of this resistor is connected to a tap on No. 2 R. F. T. through a coupling condenser.

BYPASS CONDENSER VALUES. The letter designations given should be used in conjunction with the schematic wiring diagram above and the chassis layout

RF Bypass #1	A	.1 mfd	150 volts	F	.1 mfd 400 volts
	E	.1 mfd	150 volts	H	.1 mfd 400 volts
RF Bypass #2	B	.1 mfd	150 volts	L	.01 mfd 400 volts
	Y	.1 mfd	150 volts	L	.01 mfd 400 volts
Detector Bypass	D	.3 mfd	150 volts	M	.075 mfd 400 volts
				P	.0012 mfd 400 volts

ATWATER KENT MFG. CO.

MODEL 67, 67-C
Early and Late
Schematic

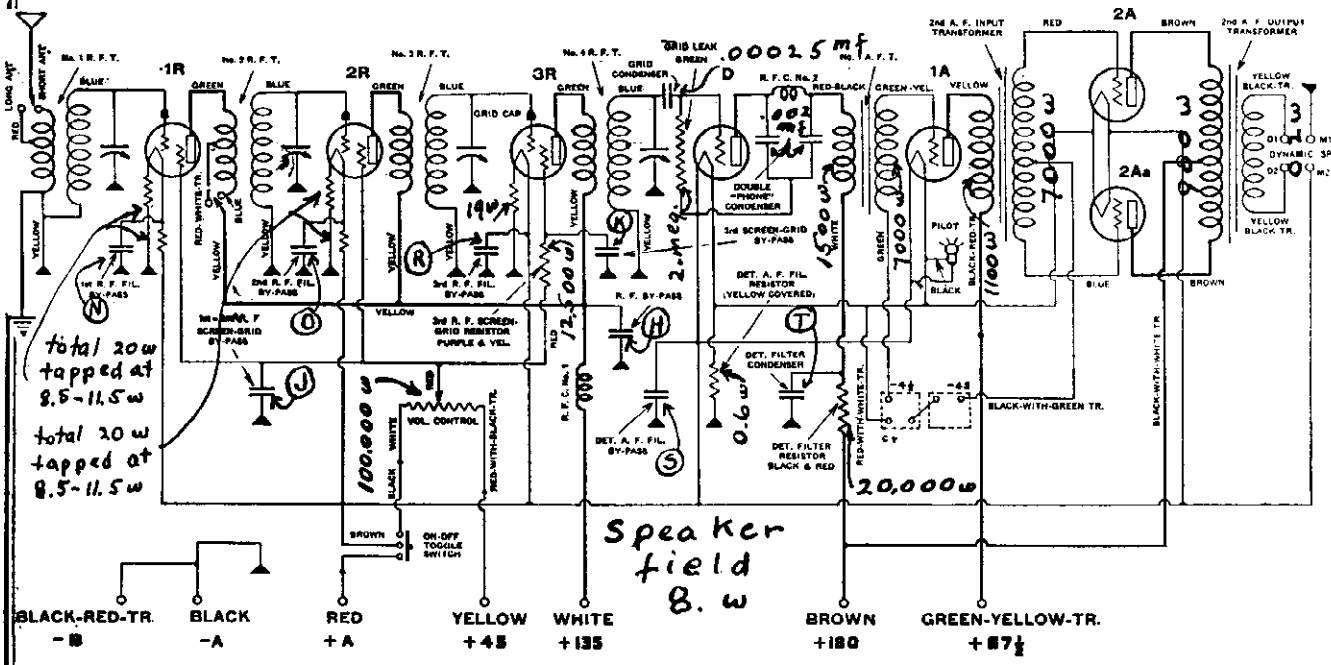


Diagram of Early Model 67 and 67-C (Battery Operated).

Voltage data on page 180

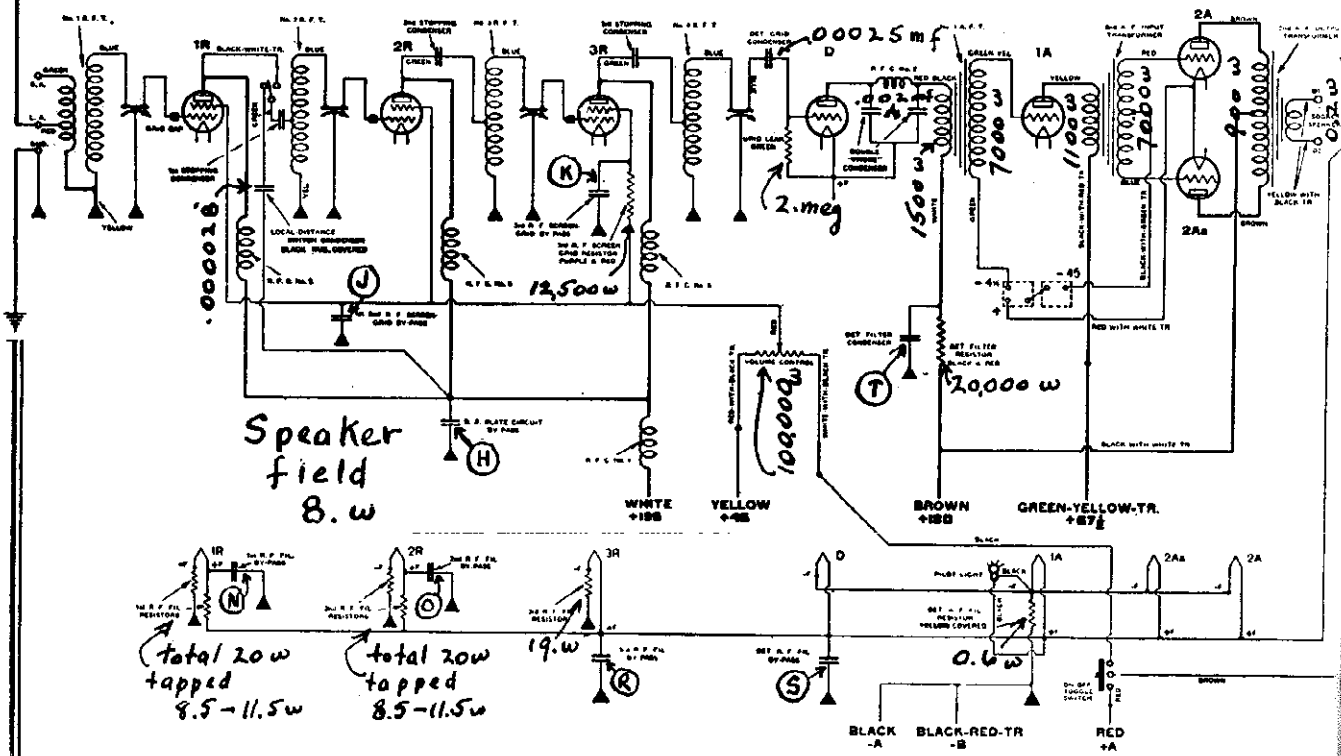


Diagram of Later Model 67 and 67-C (Battery Operated).

Voltage reference on page 129

MODEL 66 Voltage
MODEL 67 and 67-C Voltage

ATWATER KENT MFG. CO.

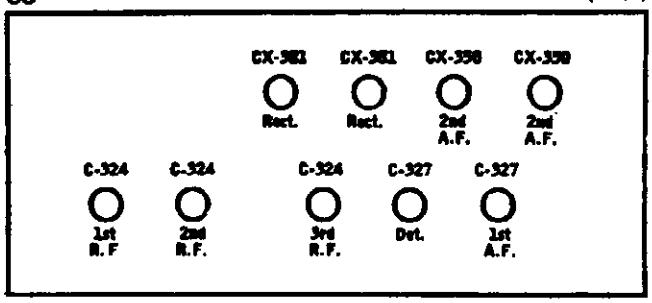
VOLTAGE DATA FOR MODEL 66

Line voltage 110. Line voltage of 120 volts increases voltage 10%.

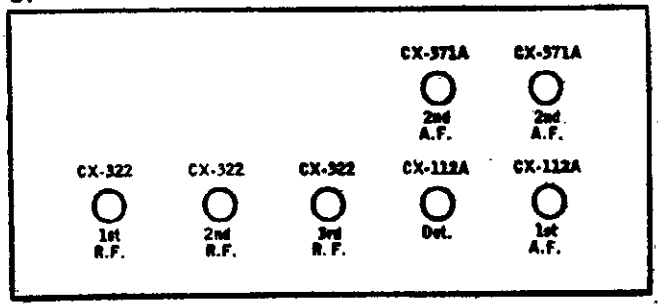
Tube	Filament	Plate	Grid	Screen
R-F (1st)	2.2	158	5.5	110
R-F (2nd-3rd)	2.2	160	2.8	78
Detector	2.2	206	23.	
A-F (1st)	2.2	137	2.8*	
A-F (2nd)	6.9	412	78.	

* This is the measured voltage, not the actual operating voltage.

66 (A.C.)



67 (Batt.



VOLTAGE DATA FOR MODELS 67 and 67-C

These values apply when the total "B" voltage is 150 volts.

Tube	Filament	Plate	Grid	Screen
RF (1st-2nd)	3.3	110	1.5	30
R-F (3rd)	3.3	110	2.5	25
Det.	5.0	50	--	
A-F (1st)	5.0	55	4.5	
A-F (2nd)	5.0	150	45.	

These values apply when the total "B" voltage is 180 volts.

Tube	Filament	Plate	Grid	Screen
R-F (1st-2nd)	3.3	135	1.5	45
R-F (3rd)	3.3	135	2.5	40
Det.	5.0	60	--	
A-F (1st)	5.0	65	4.5	
A-F (2nd)	5.0	180	45.	

ATWATER KENT MFG. CO.

MODEL 70, 74, 76
Chassis D

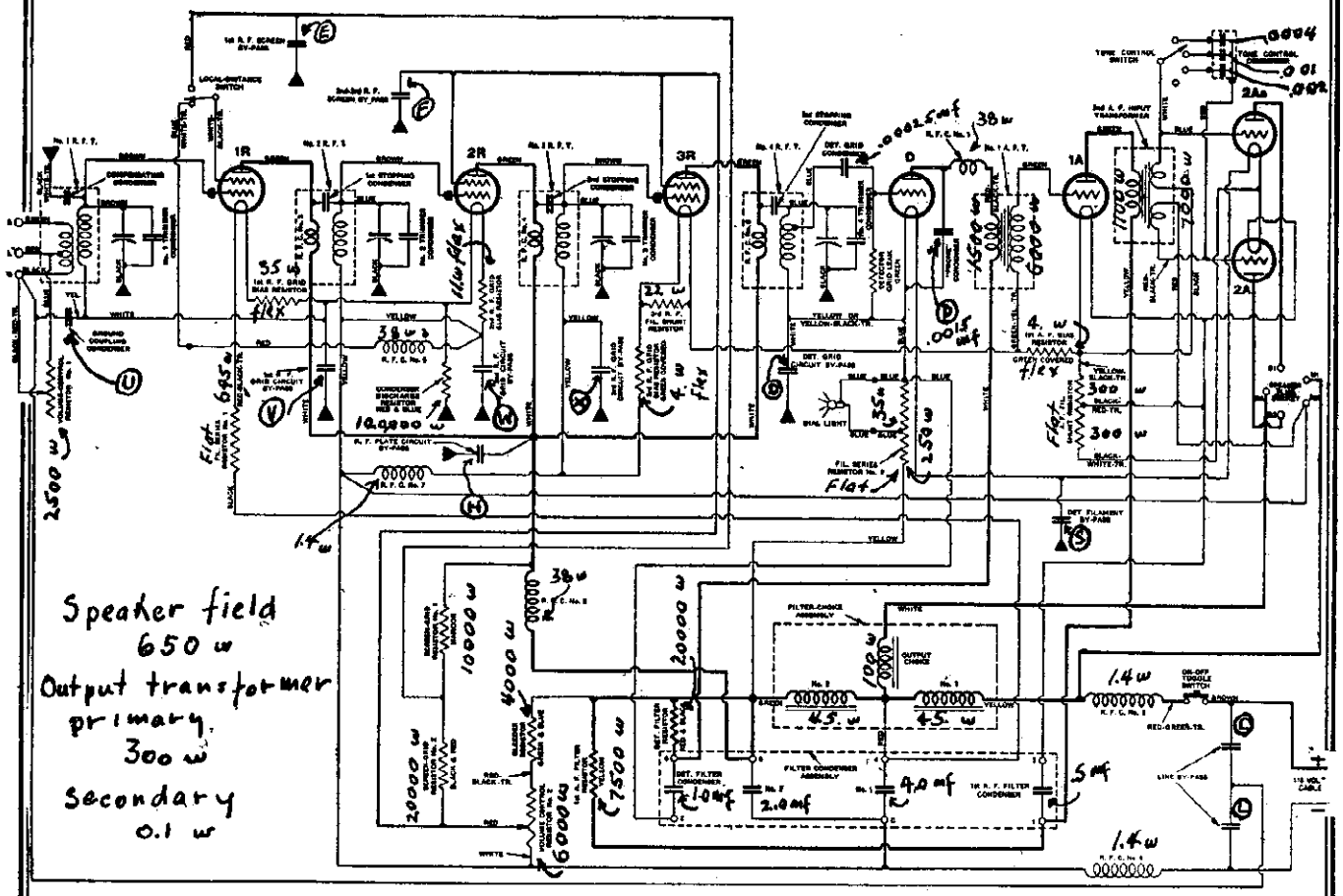


DIAGRAM OF D-1 CHASSIS.

BYPASS CONDENSERS. The letters within the circles adjacent to the various by-pass condensers correspond with the letters shown within the respective bypass units on chassis layout
Note exception stated beneath the following tabulation.

RF Bypass #1	L	.1 mfd	400 volts	L	.1 mfd	400 volts	# 14710
	U	.02 mfd	400 volts				
RF Bypass #2	E	.1 mfd	400 volts	F	.1 mfd	400 volts	# 15262
	V1*	.1 mfd	400 volts	W1*	.1 mfd	400 volts	
RF Bypass #3	H	.1 mfd	400 volts	S	.1 mfd	400 volts	# 16680
	P	.0015mfd	400 volts				
RF Bypass #4	D	.1 mfd	400 volts	V	.1 mfd	400 volts	# 15262
	X	.1 mfd	400 volts	W	.1 mfd	400 volts	

* Used only in D-2 chassis as shown in wiring diagram of D-2 receiver
These two condensers are not used in D-1 chassis, but are shown in their proper position in the chassis layout

Tone control All condensers are rated at 100 volts

SPECIAL NOTE.

Chassis D-1 and D-2 are identical except for the minor changes noted above in connection with bypass condensers W1 and V1 and also as noted on the D-2 schematic

MODEL 70, 74, 76
Chassis "D-1"

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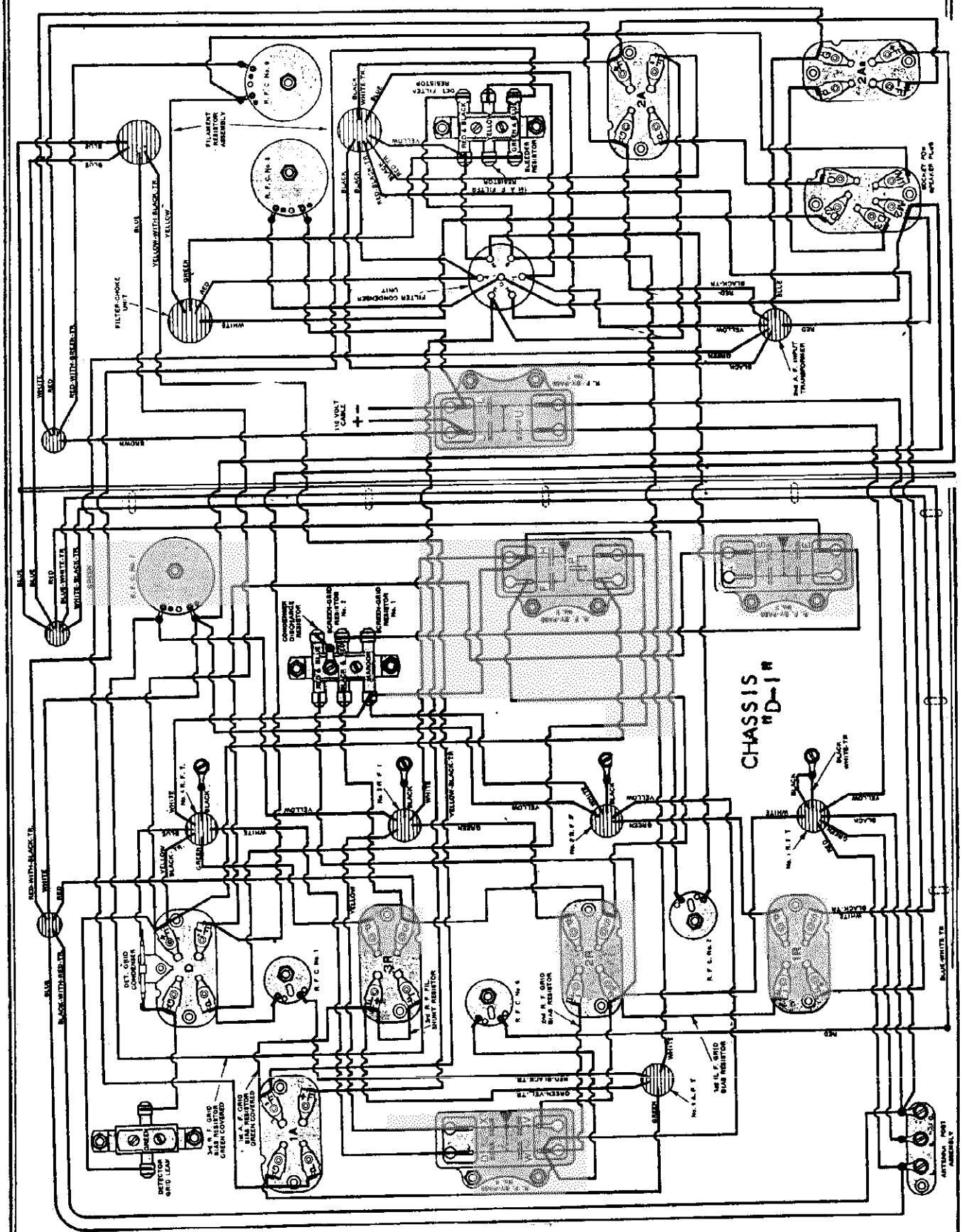
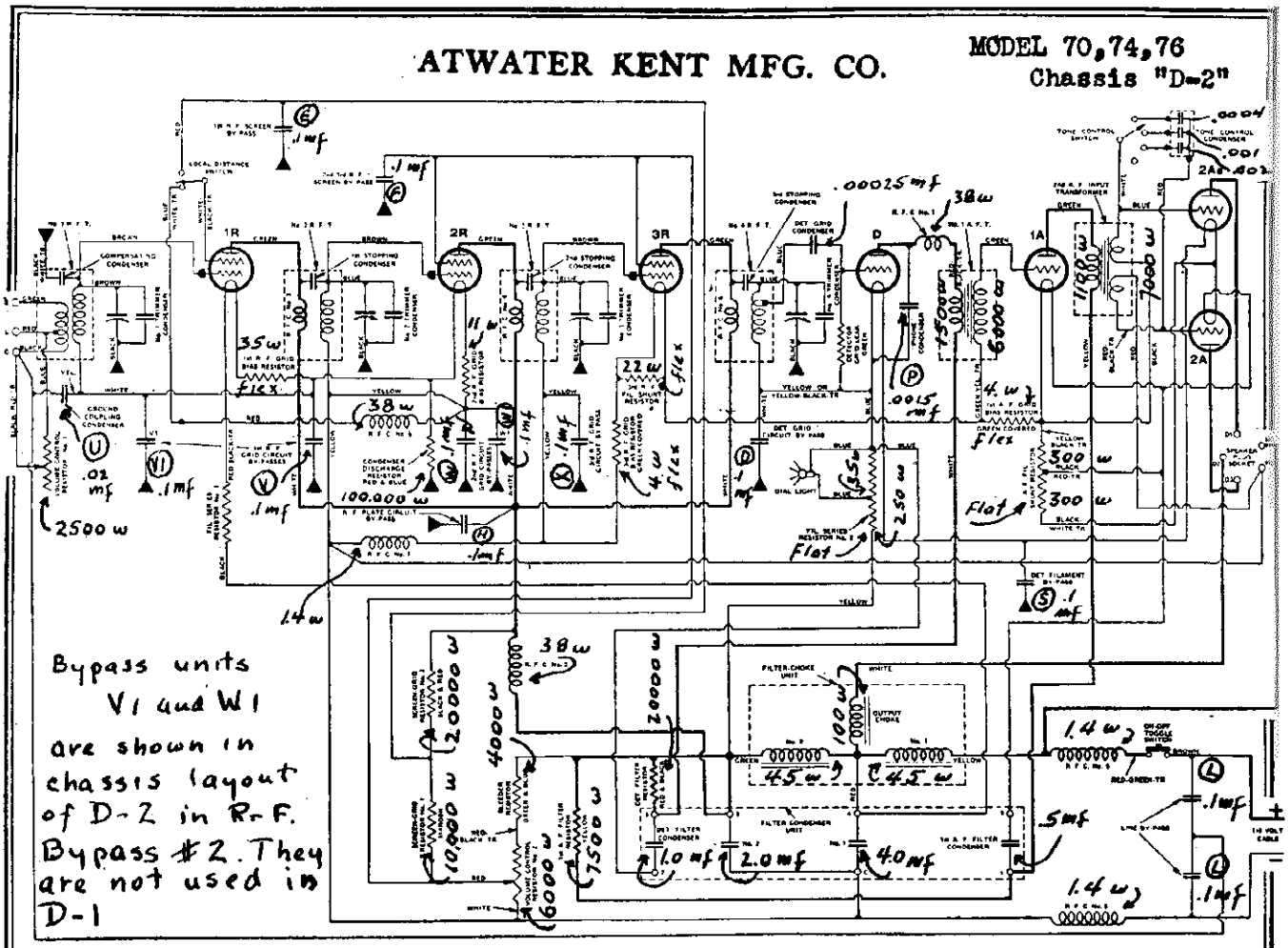


Voltage data on page 189



SCHEMATIC DIAGRAM OF TYPE D-2 CHASSIS.

Note the addition of by-pass condensers V-1 and W-1 and the reversal of screen-grid resistors No. 1 and No. 2.

VOLTAGE TABLE FOR TYPE D CHASSIS

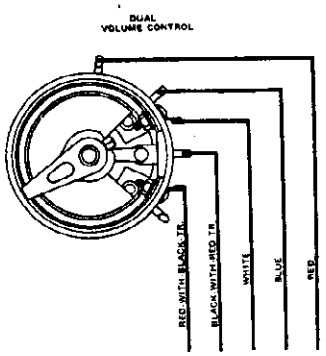
Set in operation. Volume control at maximum.
L-D switch at distance.

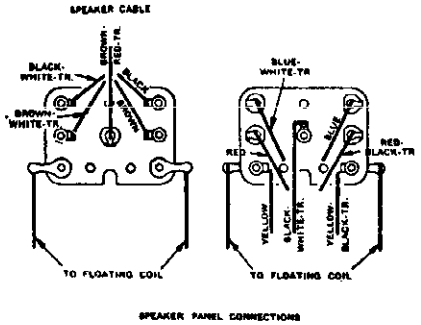
Use High Resistance D. C. Voltmeter (about 0-50-250) to Measure Plate and Grid Voltages.
Use A. C. Voltmeter to Measure Filament Voltages.

APPROX. VOLTAGES, USING 120 V. LINE

TUBE	FILAMENT VOLTAGE	PLATE VOLTAGE	CONTROL-GRID VOLTAGE	SCREEN VOLTAGE
1st-R.F.	3·3	75	4.2	60*
2nd-R.F.	3·3	75	1.3	50
3rd-R.F.	3·3	75	1	50
Detector	5	20	—	—
1st-A.F.	5	45	6	—
2A	5	75	10	—
2Aa	5	80	10	—

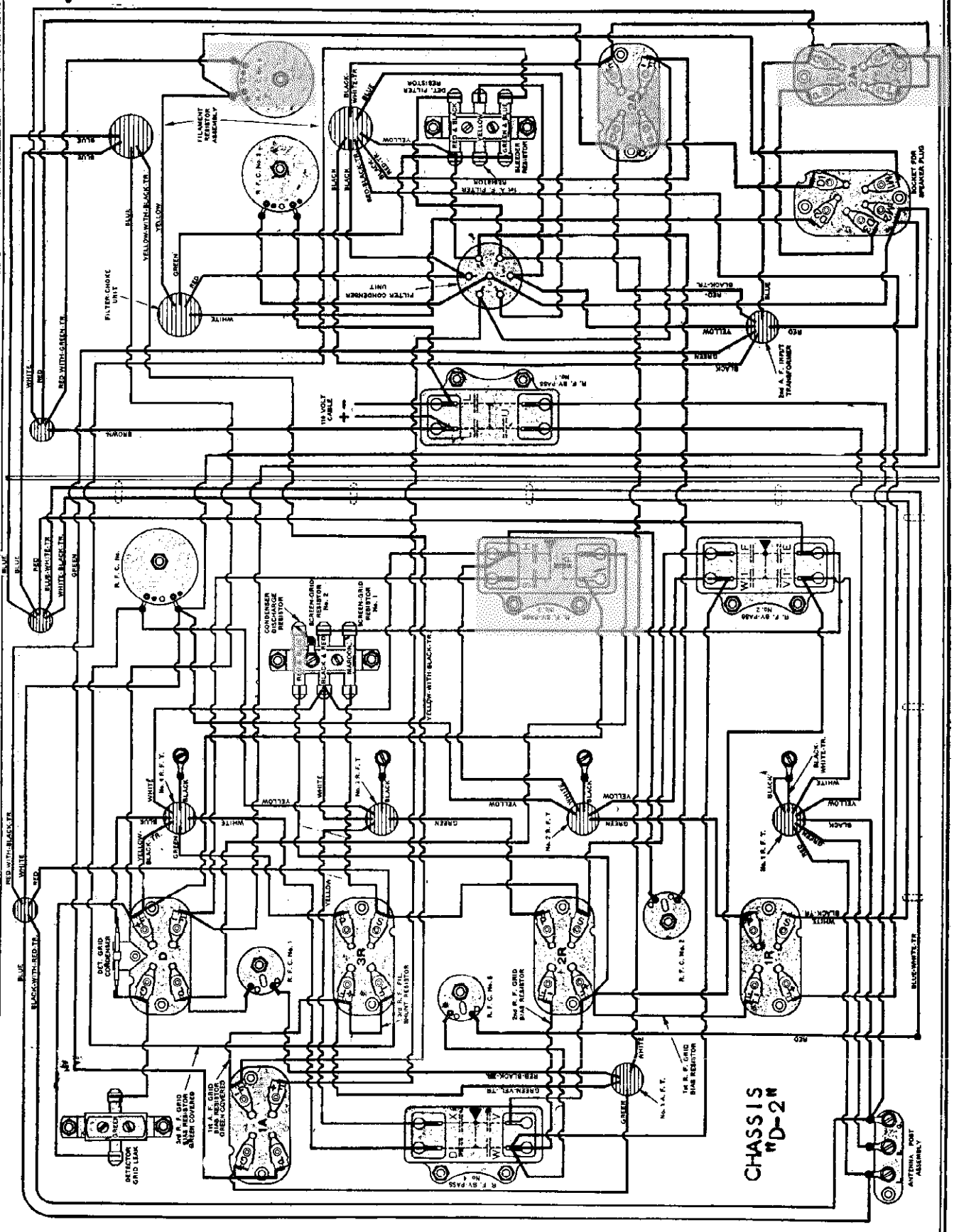
All readings made from cathode in heater-type tubes, and from —F in plain-filament-type tubes.
Use 250-volt scale to measure 2nd A. F. grid voltage.
*This is 50 volts in D-2 chassis.





MODEL 70,74,76
Chassis "D-2"
Layout

ATWATER KENT MFG. CO.

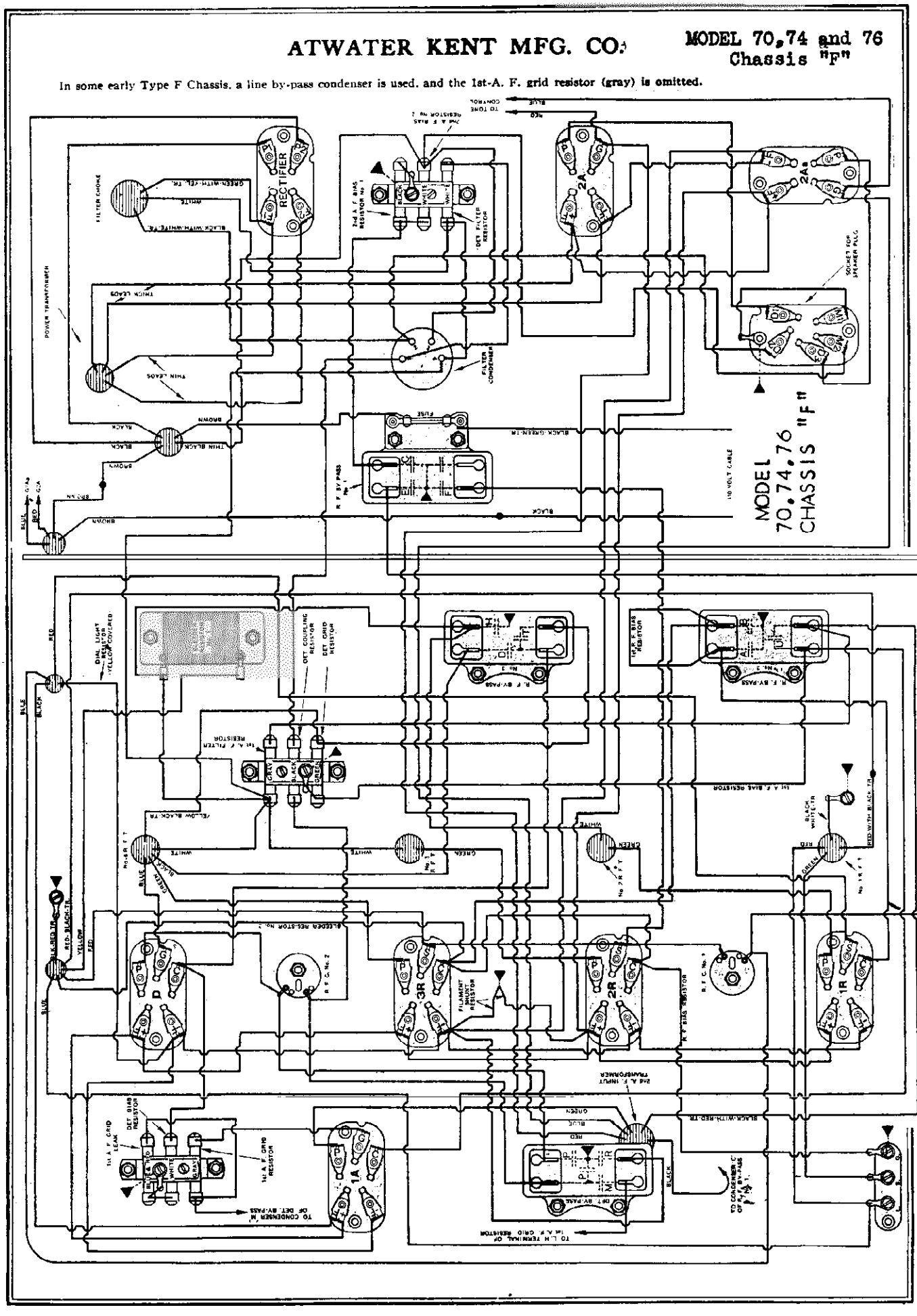


Voltage data on page 189

ATWATER KENT MFG. CO.

MODEL 70,74 and 76
Chassis "F"

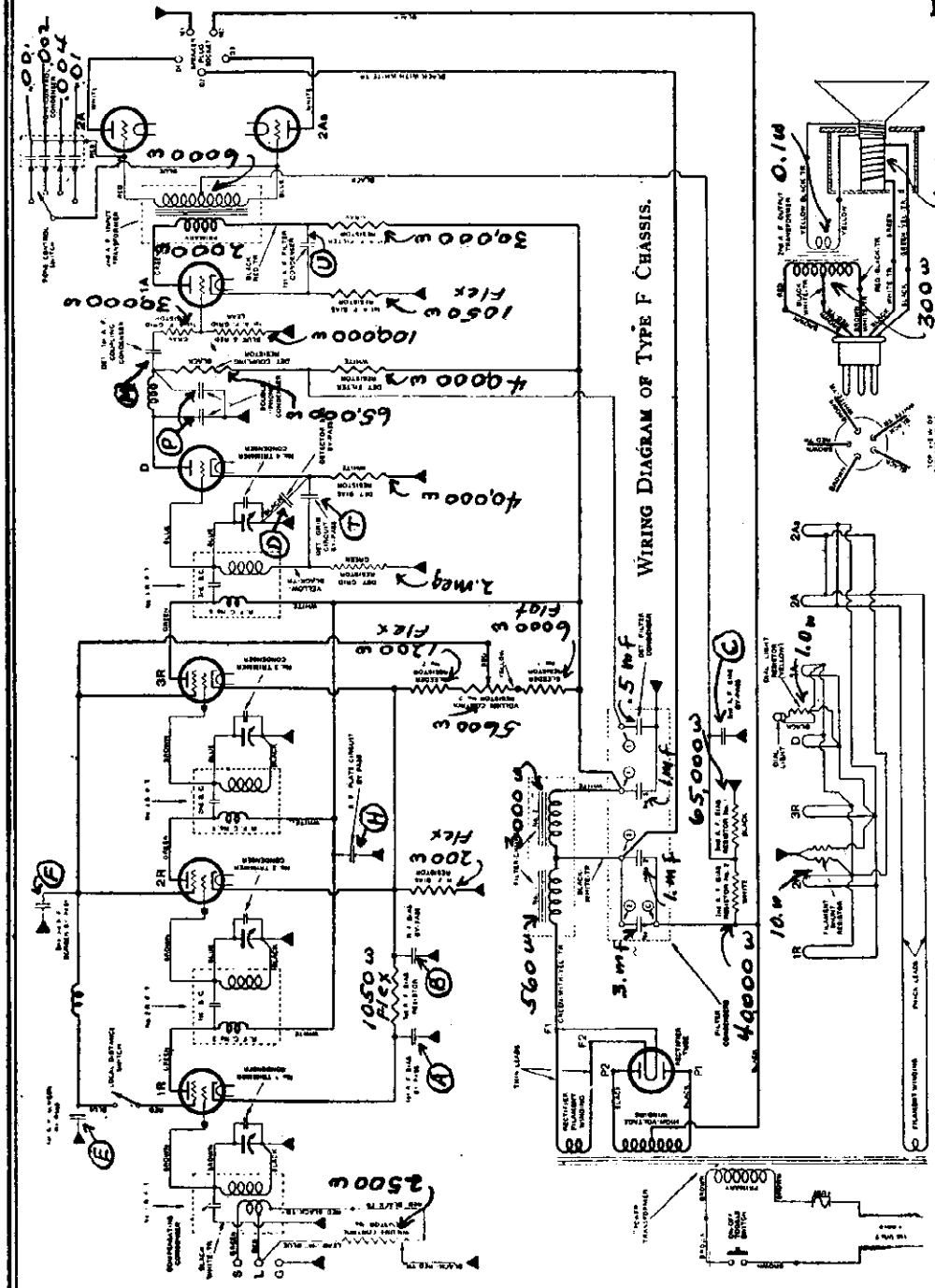
In some early Type F Chassis, a line by-pass condenser is used, and the 1st-A. F. grid resistor (gray) is omitted.



MODEL 70,74,76
Chassis F

ATWATER KENT MFG. CO.

Voltage data on page 186



FILTER CONDENSER. In early models, the filter condenser has five contacts as indicated by the numbers within circles in the diagram. For those shown there

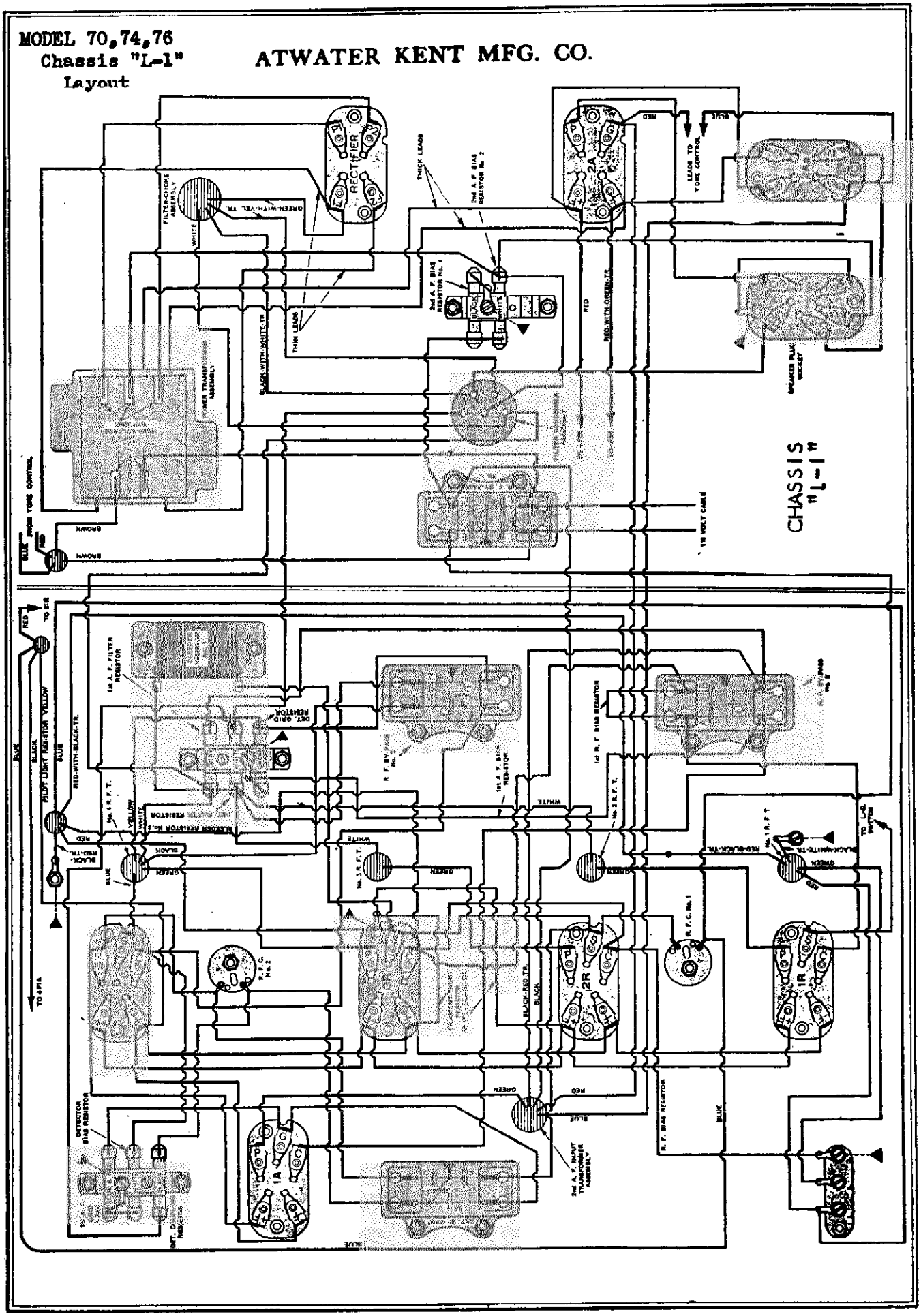
Detector filter	.5 mfd	connected between terminal (1)	and can
Filter #1	3.0 mfd	connected between terminal (2)	and center stud
Filter #2	1.0 mfd	connected between terminal (3)	and center stud
Filter #3	1.0 mfd	connected between terminal (4)	and can

BYPASS CONDENSERS. The letters within the circles correspond with the designations within the bypass units shown in the chassis layout

RF Bypass #1	C	.1 mfd	400 volts	E	.1 mfd	400 volts	# 15790
	F	.01mfd	400 volts	(In very early F "F" is .1 mfd.)			
RF Bypass #2	A	.1 mfd	150 volts	U	.12 mfd	400 volts	# 15770
	B	.1 mfd	150 volts				
RF Bypass #3	D	.1 mfd	400 volts	H	.2 mfd	400 volts	# 15790
	T	.04 mfd	400 volts				
Detector Bypass	N	.1 mfd	400 volts	M	.075 mfd	400 volts	# 15640
	P	.0012 mfd	400 volts	P	.00025 mfd	400 volts	
Tone Control	All condensers are rated at 100 volts						

MODEL 70,74,76
Chassis "L-1"
Layout

ATWATER KENT MFG. CO.



MODEL 70,74,76
Chassis L-1

ATWATER KENT MFG. CO.

BYPASS CONDENSERS. The letters within the circles designate the condensers within the multiple units shown on the chassis layout

RF Bypass #1	L	.01 mfd	400 volts	L	.01 mfd	400 volts	# 15790
	C	.1 mfd	400 volts	E	.1 mfd	400 volts	
RF Bypass #2	A	.1 mfd	150 volts	U	.12 mfd	400 volts	#15770
	B	.1 mfd	150 volts				
RF Bypass #3	D	.1 mfd	400 volts	H	.2 mfd	400 volts	# 15780
	T	.04 mfd	400 volts				
Detector Bypass	F	.1 mfd	400 volts	M	.075 mfd	400 volts	# 15640
	P	.0012 mfd	400 volts	P	.00025 mfd	400 volts	
Tone Control	All condensers rated at 100 volts						

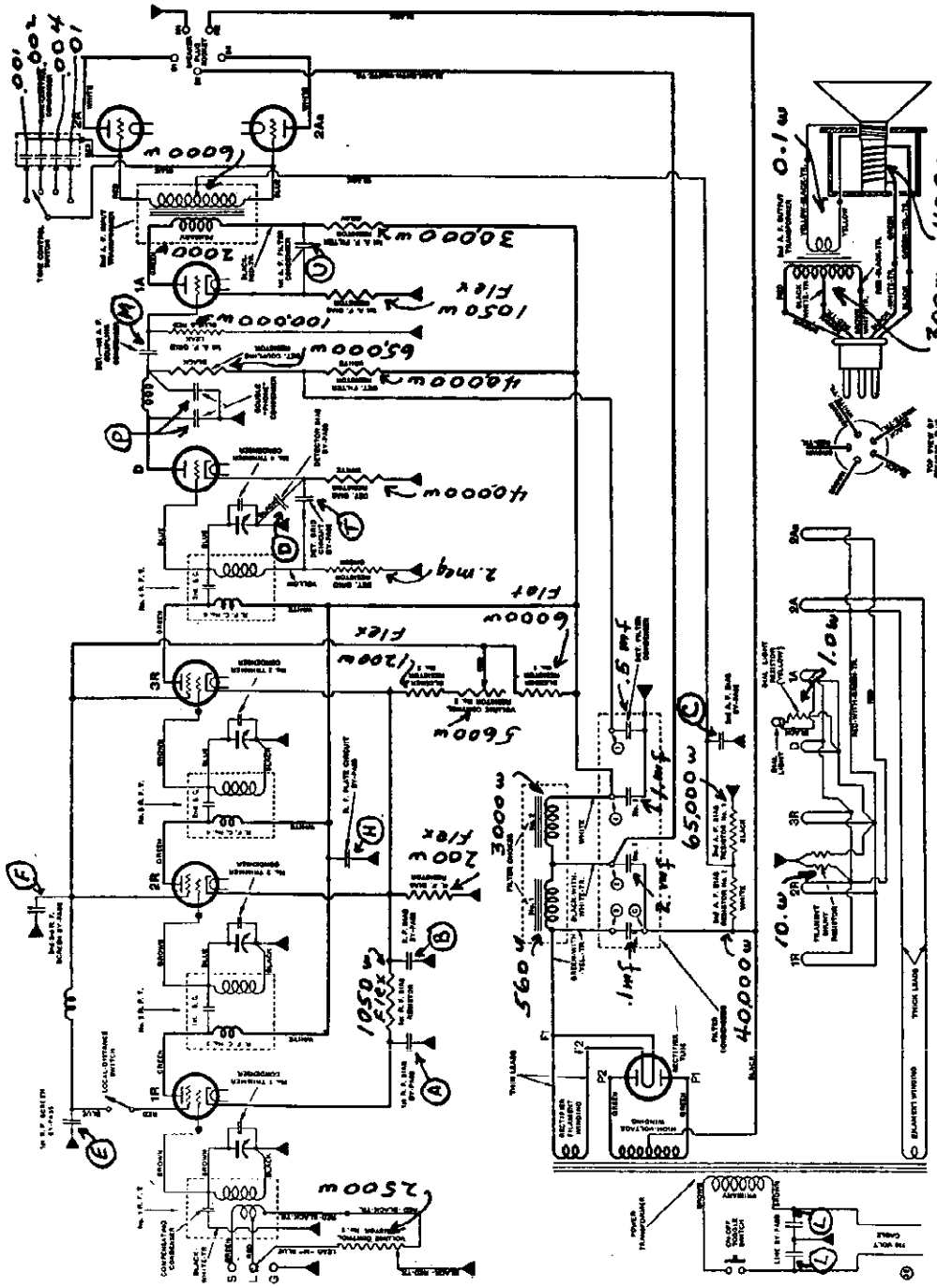


DIAGRAM OF L-1 CHASSIS.

FILTER CONDENSERS

Numerals within circles adjacent to filter condensers designate connections upon condenser can terminal block. These numbers are also shown upon the chassis layout

Detector filter	.5 mfd connected between terminal (1) and can
Filter #1	.1 mfd connected between terminal (3) and center stud
Filter #2	2.0 mfd connected between terminal (2) and center stud
Filter #3	1.0 mfd connected between terminal (4) and can

ATWATER KENT MFG. CO.

MODEL 70, 74, 76
Chassis L-2

BYPASS CONDENSERS. The letters within circles designate the condensers within the multiple units shown on the chassis layout

RF Bypass #1	L	.01 mfd	400 volts	L	.01 mfd	400 volts	# 15790
	C	.1 mfd	400 volts	E	.1 mfd	400 volts	
RF Bypass #2	A	.1 mfd	150 volts	U	.12 mfd	400 volts	# 15770
	B	.1 mfd	150 volts				
RF Bypass #3	D	.1 mfd	400 volts	H	.2 mfd	400 volts	# 15780
	T	.04 mfd	400 volts				
Detector Bypass	F	.1 mfd	400 volts	M	.075 mfd	400 volts	# 15640
	P	.0012 mfd	400 volts	P	.00025 mfd	400 volts	
Tone Control	All condensers are rated at 100 volts						

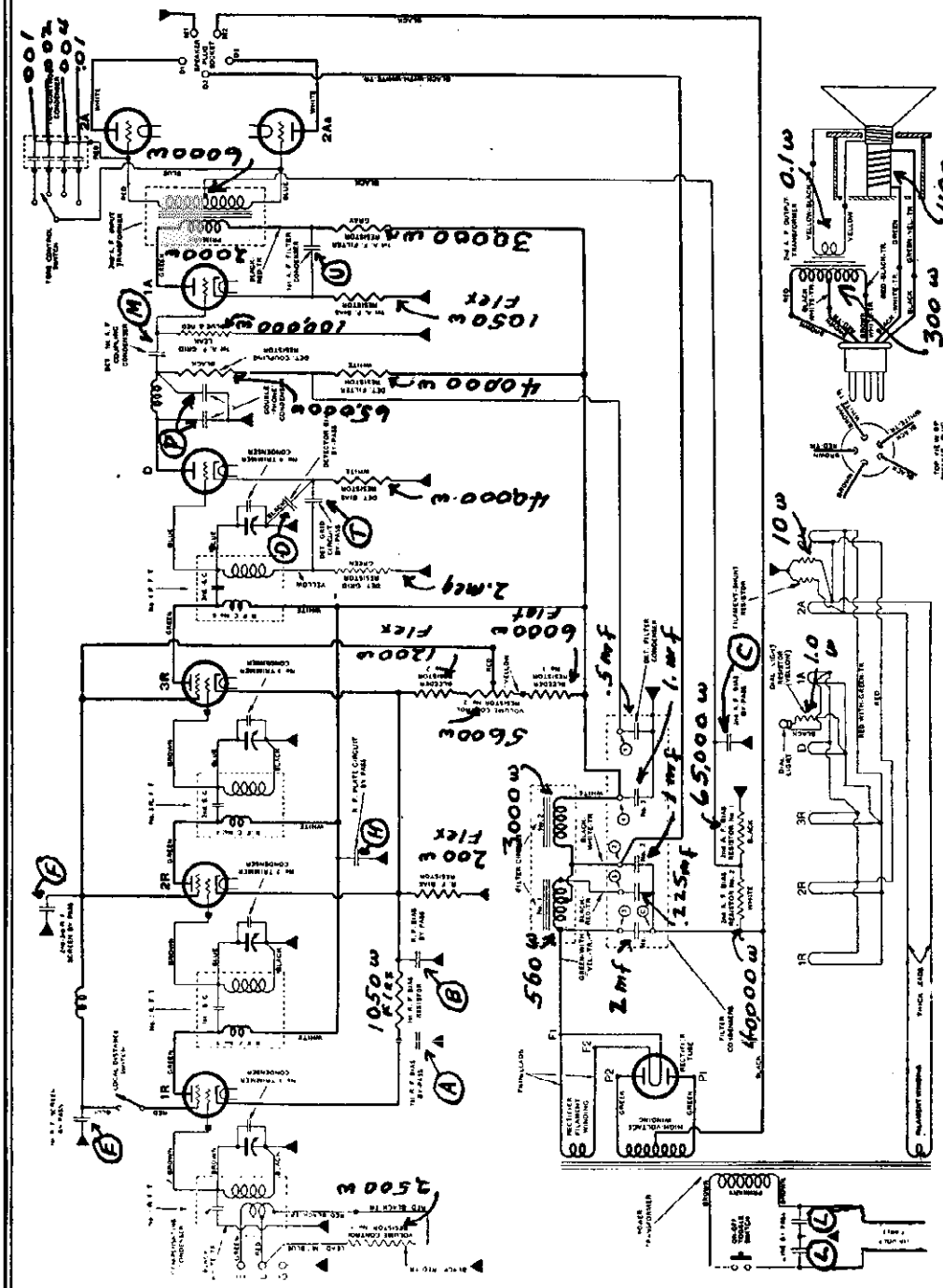


DIAGRAM OF L-2 CHASSIS.

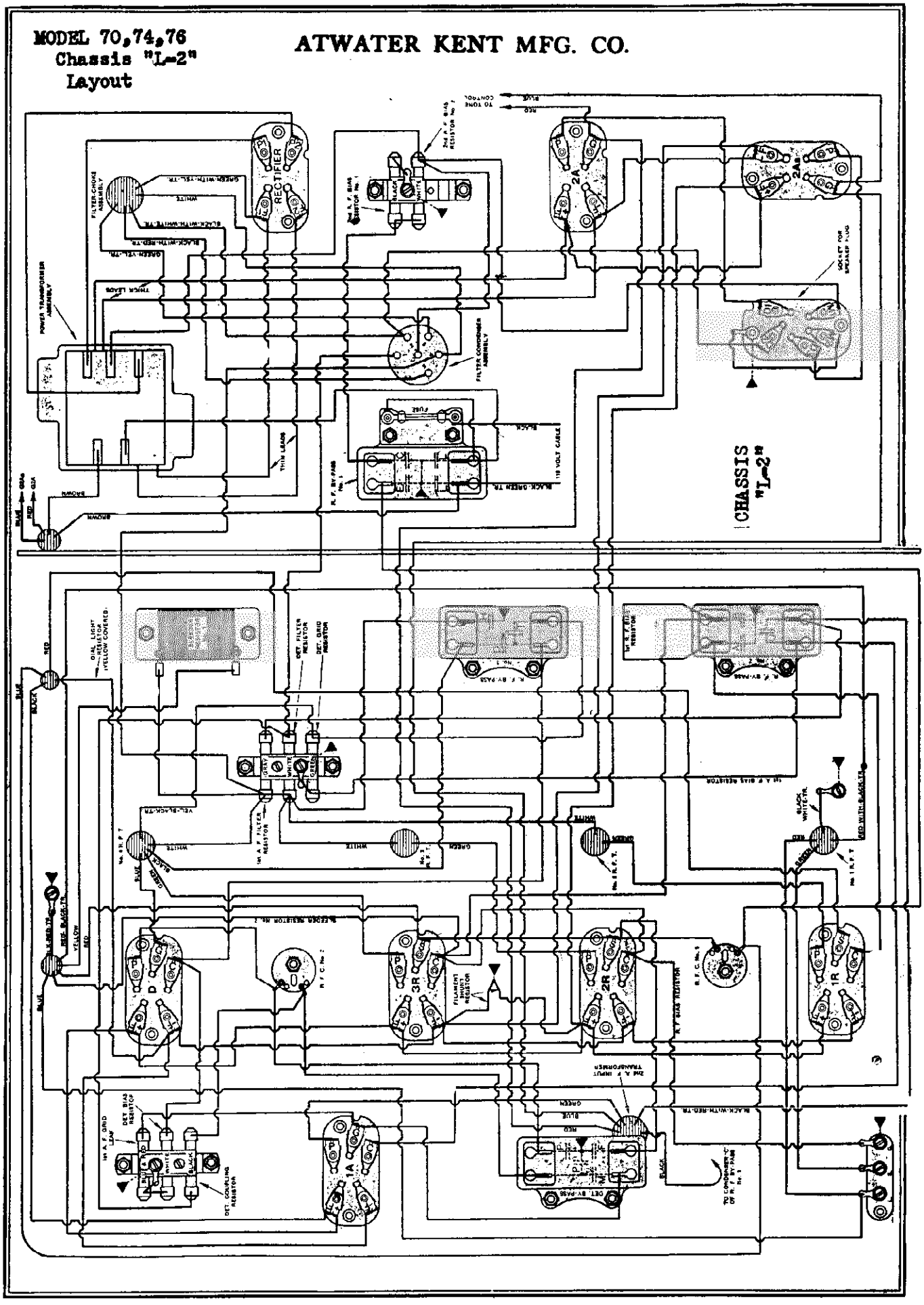
In the majority of L-2 sets, the filament shunt resistor is connected across the R.F. filaments
Also, a 2-ampere fuse is connected in one side of the 110-volt line.

FILTER CONDENSERS. Numerals in circles designate connections upon filter condenser terminal block.

Detector filter	.1 mfd	connected between terminal (1) and can
Filter #1	2.0 mfd	connected between terminal (2) and center stud
Filter #2	1.0 mfd	connected between terminal (3) and center stud
Filter #3	1.0 mfd	connected between terminal (4) and can
Resonant condenser	.225 mfd	connected between terminal (6) and center stud

MODEL 70,74,76
Chassis "L-2"
Layout

ATWATER KENT MFG. CO.



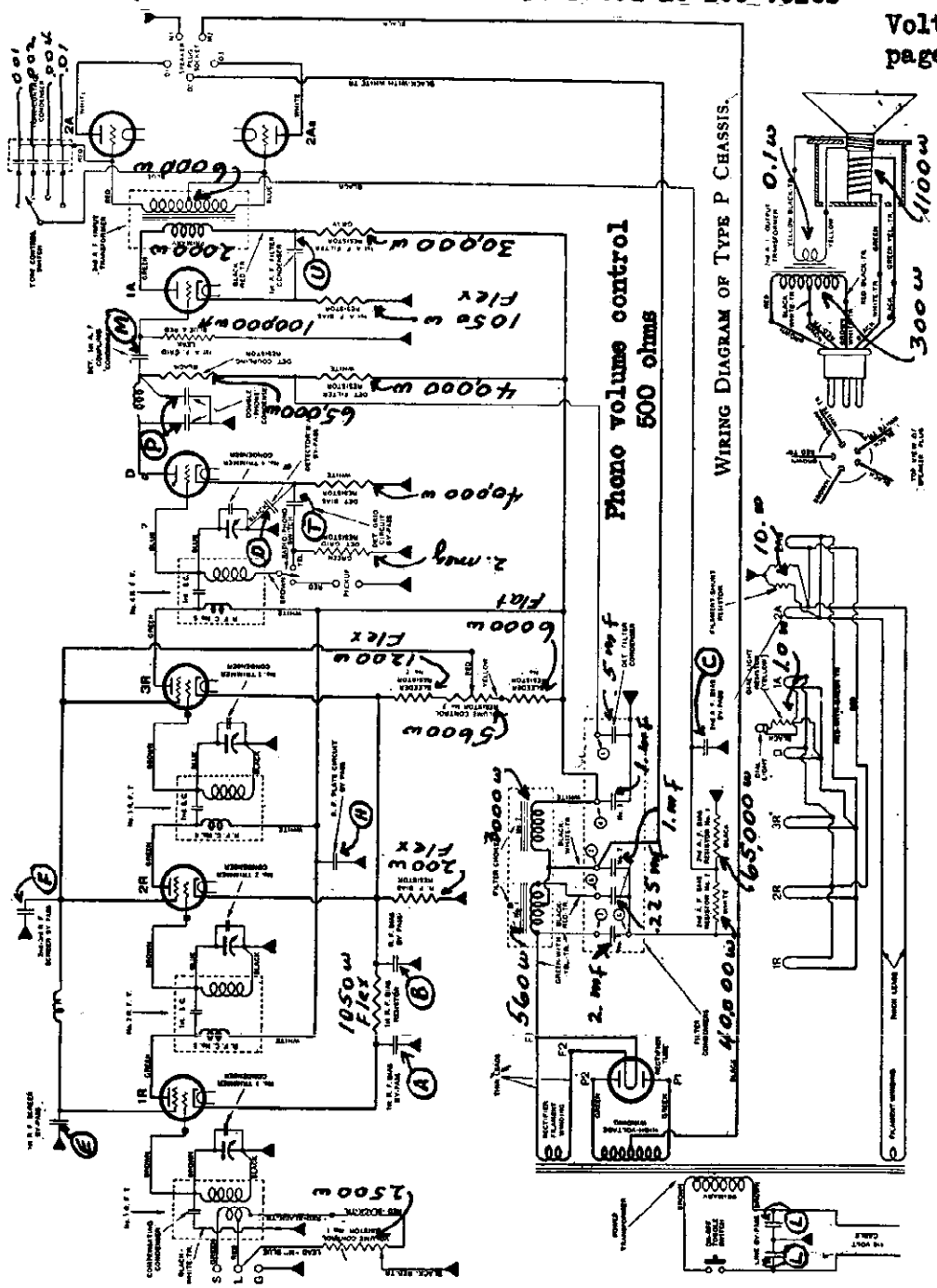
MODEL 76
Chassis P

ATWATER KENT MFG. CO.

BYPASS CONDENSERS. The letters within circles designate the condensers within the multiple units shown on the chassis layout

RF Bypass #1	L	.01 mfd	400 volts	L	.01 mfd	400 volts	# 15790
	C	.1 mfd	400 volts	E	.1 mfd	400 volts	
RF Bypass #2	A	.1 mfd	150 volts	U	.12 mfd	400 volts	# 15770
	B	.1 mfd	150 volts				
RF Bypass #3	D	.1 mfd	400 volts	H	.2 mfd	400 volts	# 15780
	T	.04 mfd	400 volts				
Detector Bypass	F	.1 mfd	400 volts	M	.075 mfd	400 volts	# 15640
	P	.0012 mfd	400 volts	P	.00025 mfd	400 volts	
Tone Control	All condensers are rated at 100 volts						

Voltage data on page 194



FILTER CONDENSERS. Numerals in circles designate connections upon filter condenser terminal block.

Detector filter	.1 mfd	connected between terminal (1) and can	
Filter #1	2.0 mfd	connected between terminal (2) and center stud	
Filter #2	1.0 mfd	connected between terminal (3) and center stud	
Filter #3	1.0 mfd	connected between terminal (4) and can	
Resonant condenser	.225 mfd	connected between terminal (5) and center stud	

Voltage reference on page 1-44

MODEL 70,74,76
Chassis "L-2"- "P"
Voltage Data
Notes

ATWATER KENT MFG. CO.

VOLTAGE TABLE FOR TYPE L-2 AND P CHASSIS

Set in operation. Volume control at maximum.
L-D (or 'phono) switch up.

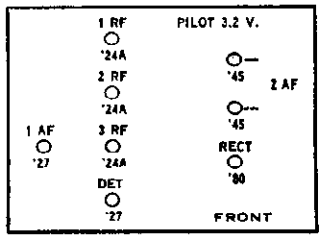
Use High Resistance D. C. Voltmeter (about 0-50-250) to Measure Plate and Grid Voltages.
Use A. C. Voltmeter to Measure Filament Voltages.

APPROX. VOLTAGES, USING 120 V. LINE

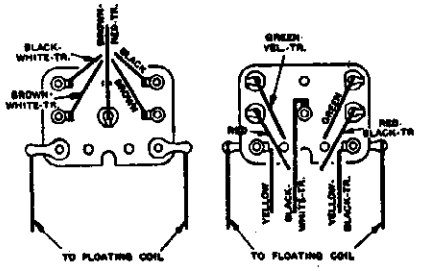
TUBE	FILAMENT VOLTAGE	PLATE VOLTAGE	CONTROL-GRID VOLTAGE	SCREEN VOLTAGE
1st-R.F.	2.4	180	5	85
2nd-R.F.	2.35	180	4.5	86
3rd-R.F.	2.35	180	4.5	86
Detector	2.35	110	14**	—
1st-A.F.	2.35	70	2	—
2A	2.45	250	55*	—
2Aa	2.45	250	55*	—
Rectifier	5.	—	—	—

* Use 250-volt scale.
** This is the voltage across the detector bias resistor; when measuring from grid to cathode, the voltage reading is only 2.
All readings made from cathode in heater-type tubes, and from —F in plain-filament-type tubes.

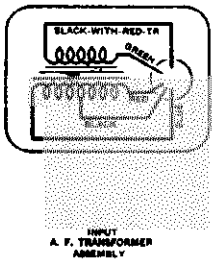
Models 75P, 70, 74, 76, 60 (3rd type) (1930)



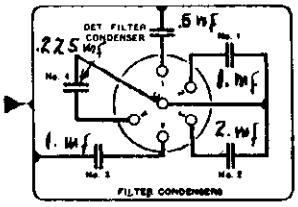
SPEAKER CABLE



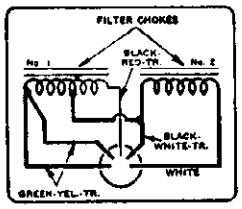
SPEAKER PANEL CONNECTIONS



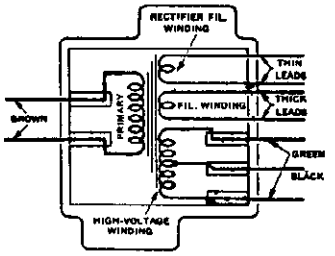
INPUT A. F. TRANSFORMER ASSEMBLY



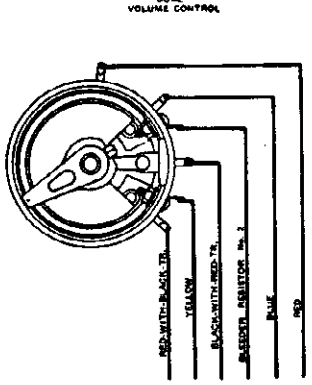
FILTER CONDENSER ASSEMBLY

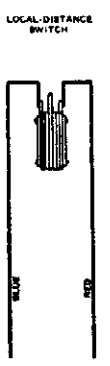


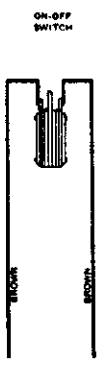
FILTER-CHOKE ASSEMBLY

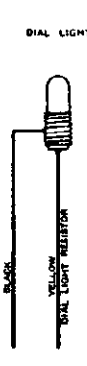


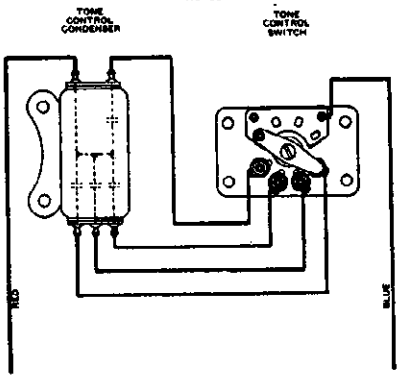
POWER TRANSFORMER ASSEMBLY











Condensers in R.F. By-Pass No. 1

L—Line by-pass.
L—Line by-pass.
C—2nd-A.F. bias by-pass.
E—1st-R.F. screen by-pass.

Condensers in Detector By-Pass

F—2nd-3rd R.F. screen by-pass.
M—Detector-1st A.F. coupling condenser.
P—Phone condenser.
P—Phone condenser.

Condensers in R.F. By-Pass No. 2

A—1st-R.F. bias by-pass.
B—R.F. bias by-pass.
U—1st-A.F. filter condenser.

Condensers in R.F. By-Pass No. 3

D—Detector bias by-pass.
H—R.F. plate-circuit by-pass.
T—Detector grid-circuit by-pass.

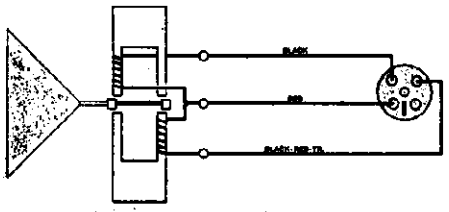
CONNECTION OF UNITS IN TYPE L-2 CHASSIS, AND, AT RIGHT, CONNECTIONS TO TERMINAL PANEL OF TYPE N SPEAKER.

ATWATER KENT MFG. CO.

MODEL 70, 76
Chassis "Q"
Voltage

Type Q Chassis (battery operated) has three stages of screen-grid R. F. amplification, grid detection, one stage of transformer-coupled audio, and a double-audio output stage.

An output filter choke and condenser are used in the Q-2 (above Serial No. 5704025), as shown in the diagram below. The Q-1 Chassis does not have these two parts.



CONNECTIONS OF INDUCTOR TYPE J SPEAKER.

VOLTAGE TABLE FOR TYPE Q CHASSIS

Set in operation. Volume control at maximum. L-D switch at distance.

Use High Resistance D. C. Voltmeter (about 0-50-250) to Measure Plate and Grid Voltages. Use A. C. Voltmeter to Measure Filament Voltages.

180 VOLTS "B" BATTERY

TUBE	FILAMENT VOLTAGE	PLATE VOLTAGE	CONTROL-GRID VOLTAGE	SCREEN VOLTAGE
1st-R.F.	3.3	135	1.5	45
2nd-R.F.	3.3	135	1.5	45
3rd-R.F.	3.3	135	2.5	45
Detector	5.0	70	—	—
1st-A.F.	5.0	67	45	—
2A	5.0	180	45	—
2Aa	5.0	180	45	—

R.F. By-Pass No. 1

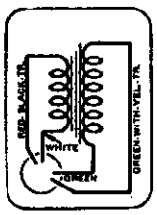
G—R.F. screen by-pass.
V—1st-R.F. grid-circuit by-pass.
Y—Output filter condenser.
N—1st-R.F. filament by-pass.

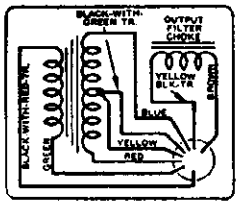
R.F. By-Pass No. 2*

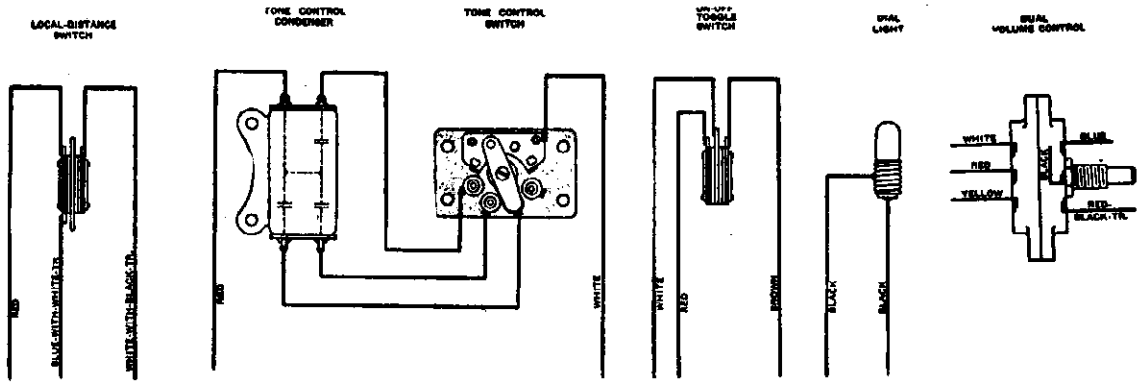
H—R.F. plate-circuit by-pass.
T—Detector filter condenser.
P—"Phone" condenser.
P—"Phone" condenser.

R.F. By-Pass No. 3

S—Detector filament by-pass.
R—3rd-R.F. filament by-pass.
R—3rd-R.F. filament by-pass.
O—2nd-R.F. filament by-pass.



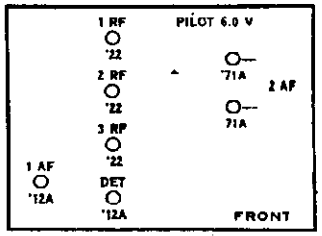




The output filter choke is not used in the Q-1 chassis.

*The connections shown for R. F by-pass No. 2 are correct when this part is No. 16060 However, if a No. 18350 (H-28) is used. "P" and "P" are at top and "H" and "T" are at bottom; therefore, the connections to this condenser are correspondingly changed

Models Q (Battery), D (DC) (1930)



MODEL 70,76
Chassis Q

ATWATER KENT MFG. CO.

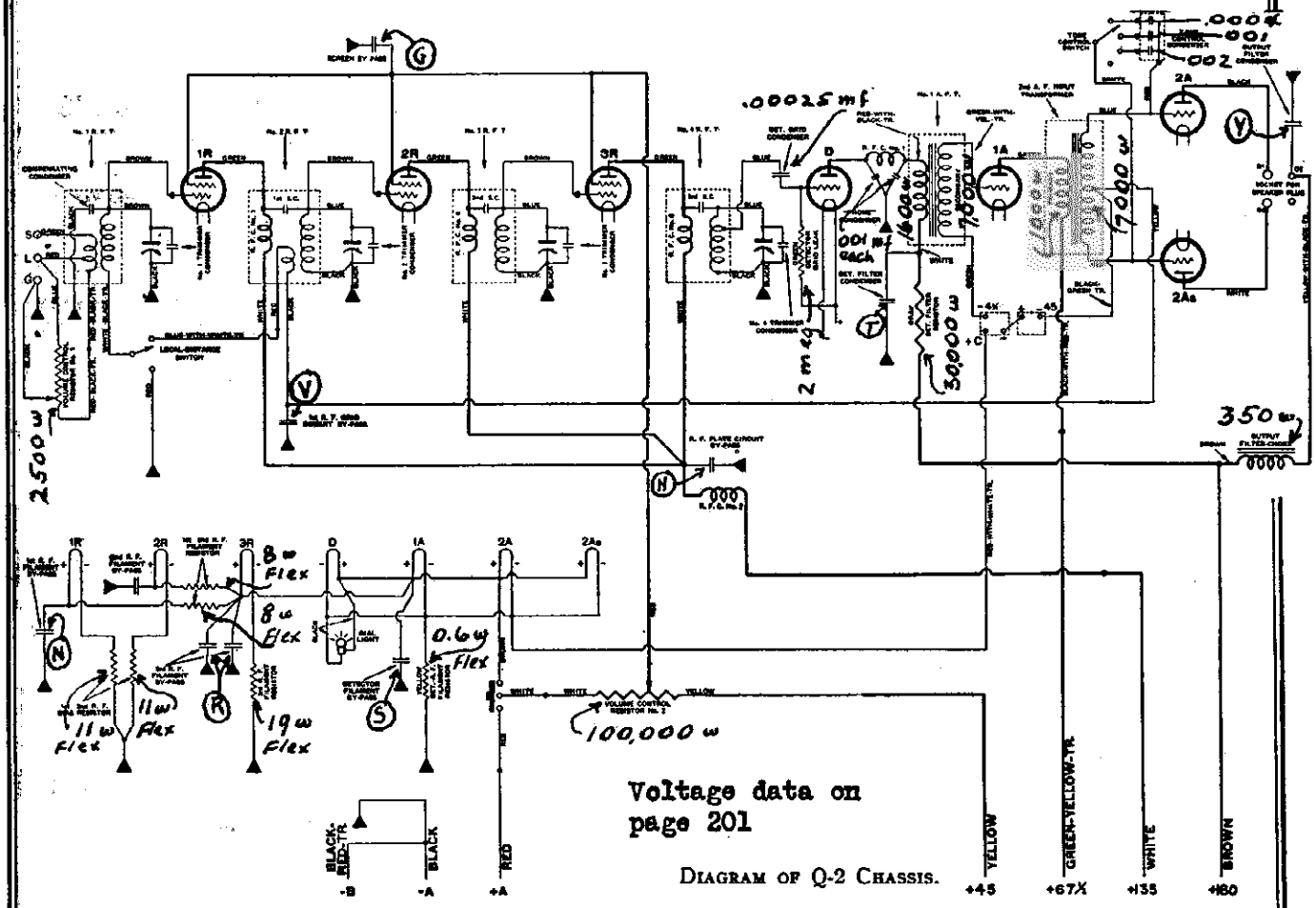
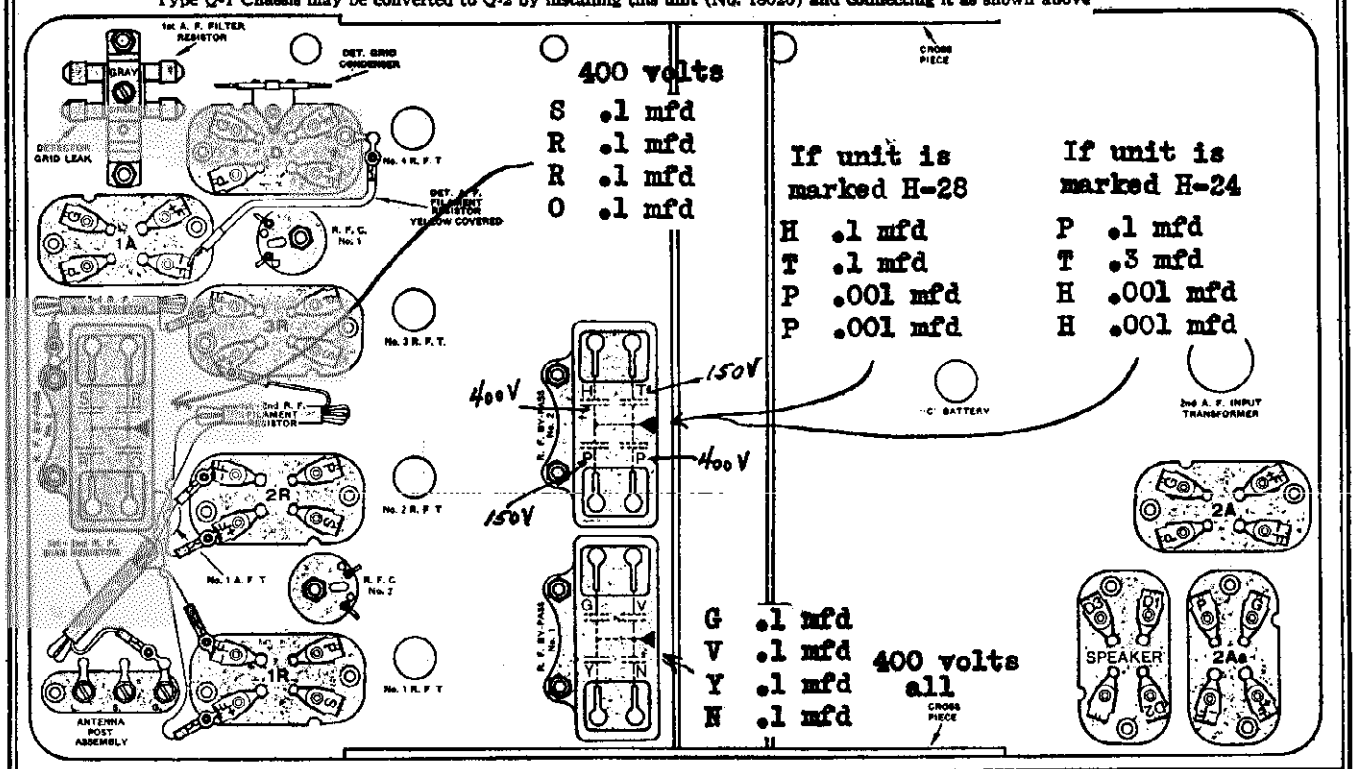


DIAGRAM OF Q-2 CHASSIS.

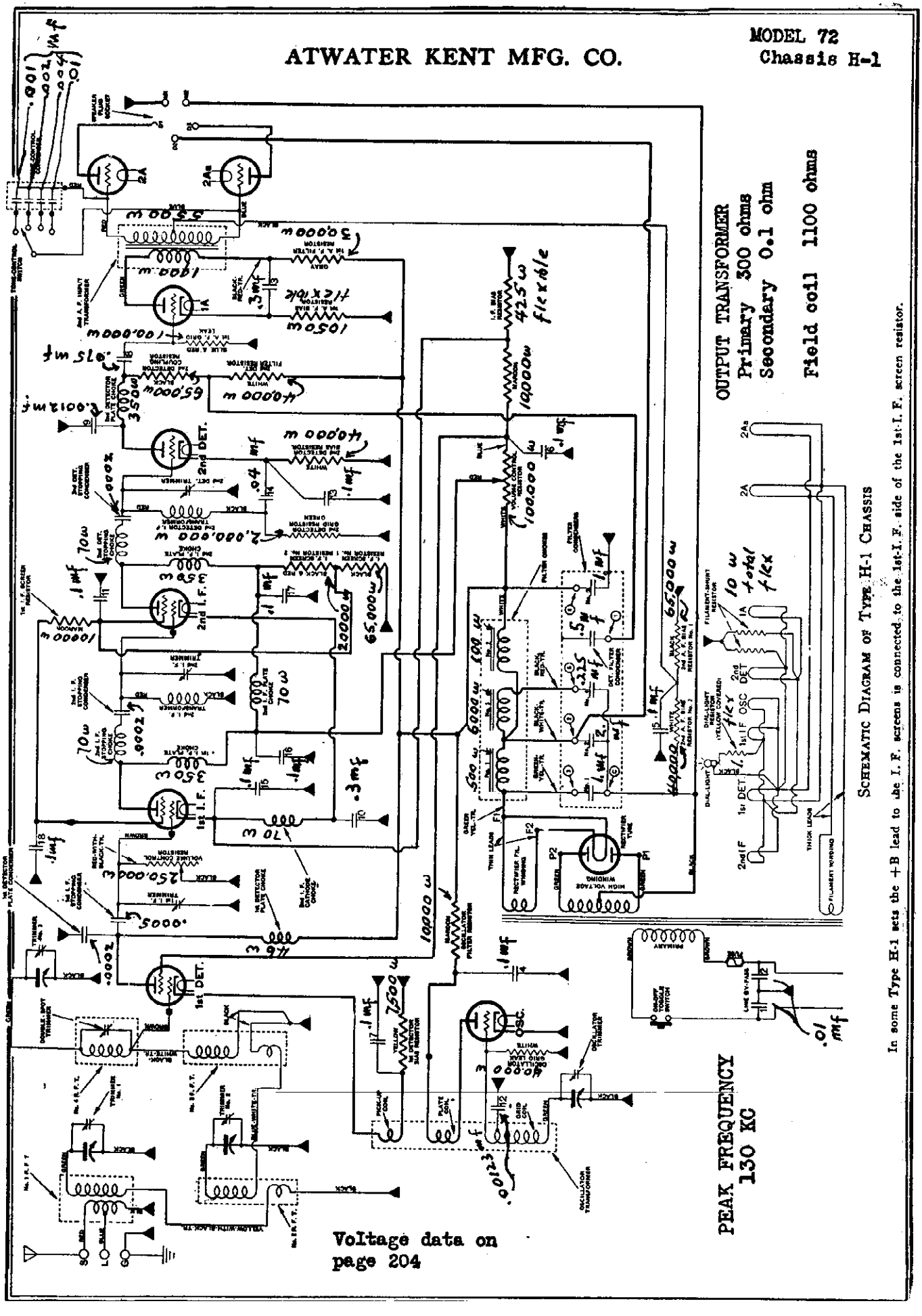
The output filter choke and filter condenser are used only in Type Q-2 Chassis. The choke is mounted in the 2nd-A. F. input transformer container. Type Q-1 Chassis may be converted to Q-2 by installing this unit (No. 18020) and connecting it as shown above



Voltage reference on page 1-45

ATWATER KENT MFG. CO.

MODEL 72
Chassis H-1



SCHEMATIC DIAGRAM OF TYPE H-1 CHASSIS

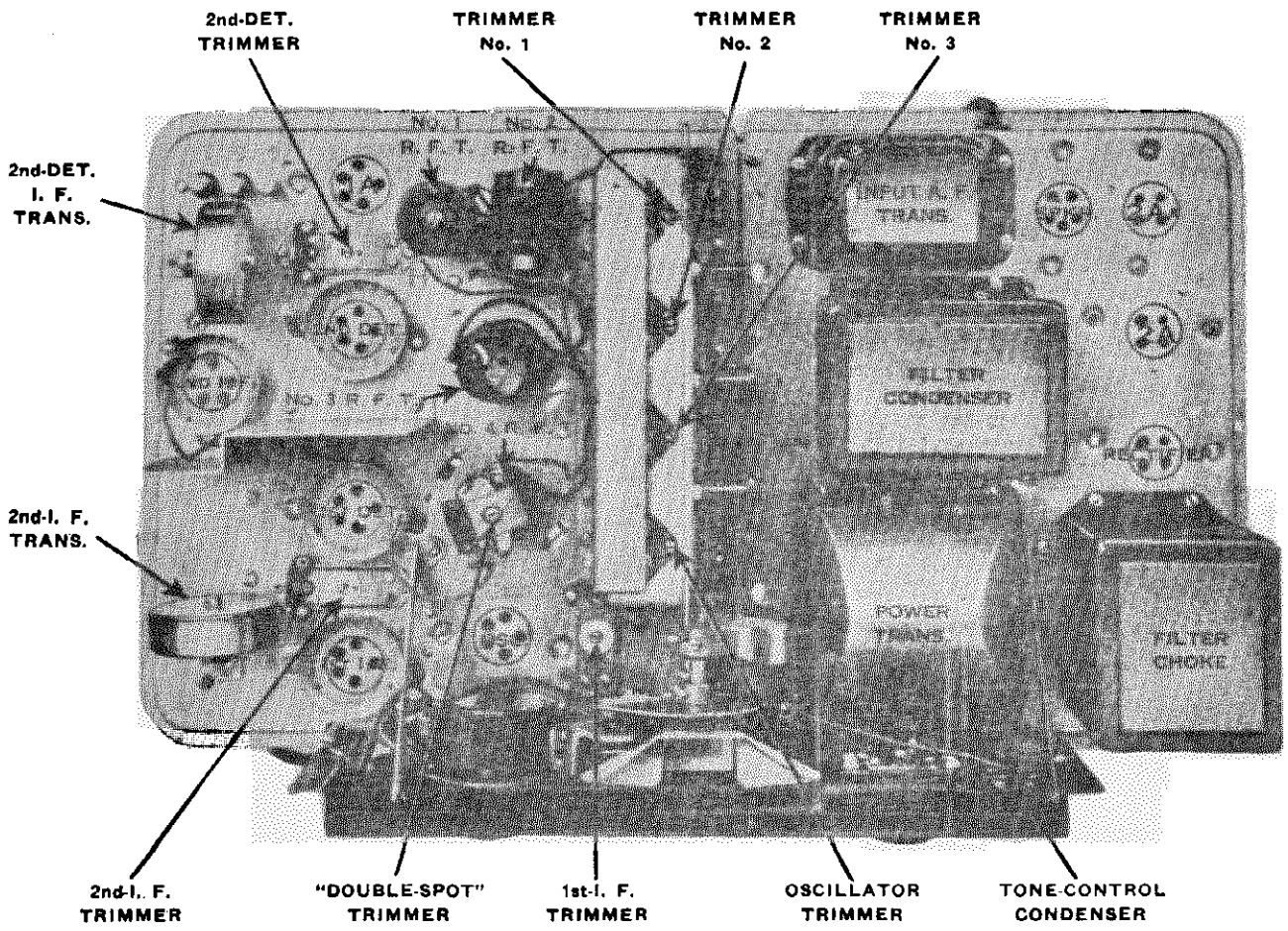
In some Type H-1 sets the +B lead to the I. F. screens is connected to the 1st I. F. side of the 1st I. F. screen resistor.

MODEL 72
Chassis "H-1"
Voltage

ATWATER KENT MFG. CO.

TYPE H-1, No. 16500, SUPER-HETERODYNE CHASSIS

(Below Serial No. 5,855,201)



Top View of Atwater Kent Type H-1 Super-Heterodyne Chassis

Tube	"A" Volts	"B" Volts	Control Grid	Screen
1st Det	2.4	150	3.	12.
Osc.	2.3	100	10.*	
1st IF	2.3	150	3.	75.
2nd IF	2.3	145	3.	85.
2nd Det	2.3	100	13.**	
1st AF	2.3	65	2.	
2nd AF PP	2.5	250	55.*	
2nd AF PP	2.5	250	55.*	
Rect.	4.7			

With volume control at minimum, the IF plate voltage is reduced to about 150 volts and screen voltage is reduced to about 10 volts. * Use 250 volts scale of high resistance voltmeter. ** This is the voltage across the detector bias resistor.

ATWATER KENT MFG. CO.

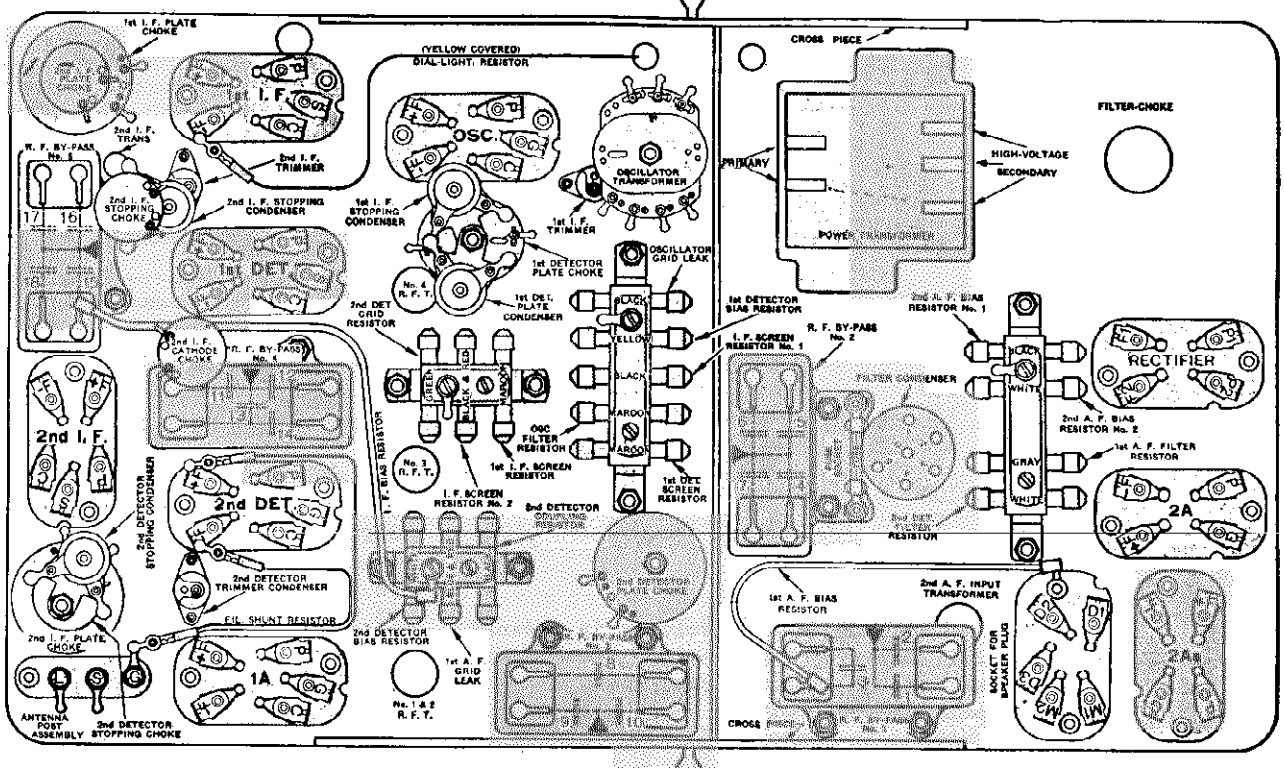
MODEL 72
Chassis H-1
Below serial
5,855,201

FILTER CONDENSERS. Numerals in circles indicate connections upon filter condenser terminal block. These numbers are shown upon the parts layout below and also upon the chassis layout

Detector filter	.1 mfd	connected between terminal (1)	and can
Filter #1	2.0 mfd	connected between terminal (2)	and center stud
Filter #2	1.0 mfd	connected between terminal (3)	and center stud
Filter #3	1.0 mfd	connected between terminal (4)	and can
Resonant condenser	.225 mfd	connected between terminal (5)	and center stud

BYPASS CONDENSERS. The small numerals adjacent to the bypass condensers corresponds with the designating numerals upon the chassis layout

RF Bypass #1	1	.01 mfd	400 volts	2	.01 mfd	400 volts	# 17360
	3	.3 mfd	400 volts				
RF Bypass #2	4	.1 mfd	400 volts	5	.1 mfd	400 volts	# 15262
	6	.1 mfd	400 volts	7	.1 mfd	400 volts	
RF Bypass #3	8	.075 mfd	400 volts	9	.0012 mfd	400 volts	# 16745
	10	.3 mfd	150 volts				
RF Bypass #4	11	.1 mfd	400 volts	12	.00123mfd	400 volts	# 17370
	13	.1 mfd	400 volts	14	.04 mfd	400 volts	
RF Bypass #5	15	.1 mfd	400 volts	16	.1 mfd	400 volts	# 15262
	17	.1 mfd	400 volts	18	.1 mfd	400 volts	



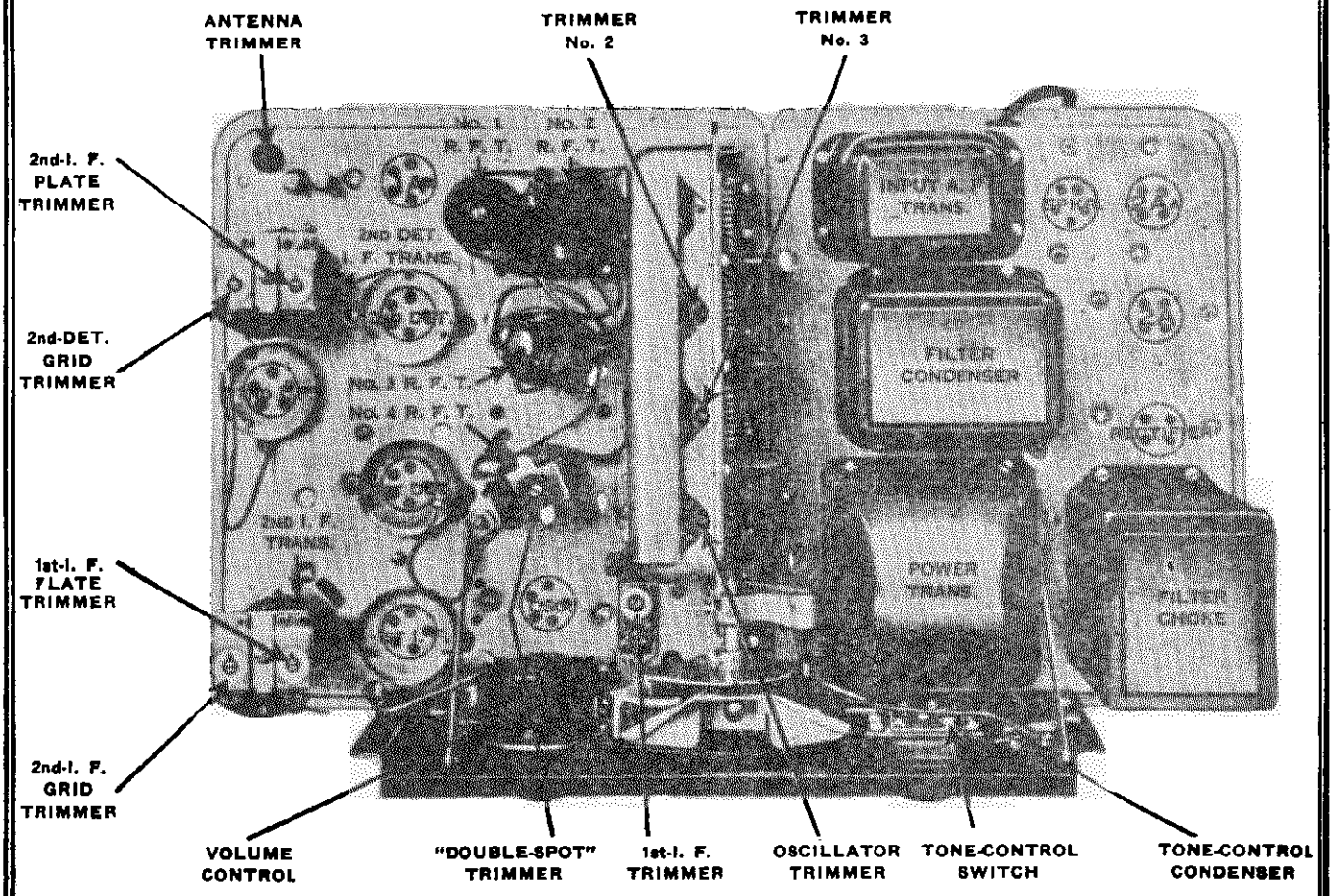
BOTTOM CHART OF TYPE H-1 CHASSIS

MODEL 72
Chassis "H-2"
Voltage

ATWATER KENT MFG. CO.

TYPE H-2, No. 16500, SUPER-HETERODYNE CHASSIS

(Above Serial No. 5,855,201)



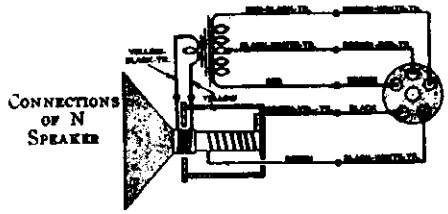
Top View of Atwater Kent Type H-2 Super-Heterodyne Chassis
Note that trimmer No. 1 is omitted. The antenna trimmer serves the same purpose

VOLTAGE TABLE FOR TYPE H-2 CHASSIS

Set in operation. Volume control at maximum

Tube	"A" Volts	"B" Volts	Control Grid	Screen
1st Det	2.3	150	4.	15.
Osc	2.5	130	10.*	
1st IF	2.3	150	3.5	100.
2nd IF	2.3	150	3.5	85.
2nd Det	2.3	100	14.**	
1st AF	2.3	70	2.	
2nd AF PP	2.5	250	55.*	
2nd AF PP	2.5	250	55.*	
Rect.	4.7			

With the volume control at minimum, the IF voltage is reduced to 15 volts. * Use 250 volt scale of high resistance voltmeter. ** This is the voltage across the detector bias resistor; when measuring from grid to cathode, the voltage reading is only 2. All readings made from cathode in heater type tubes and -F in filament type tubes.

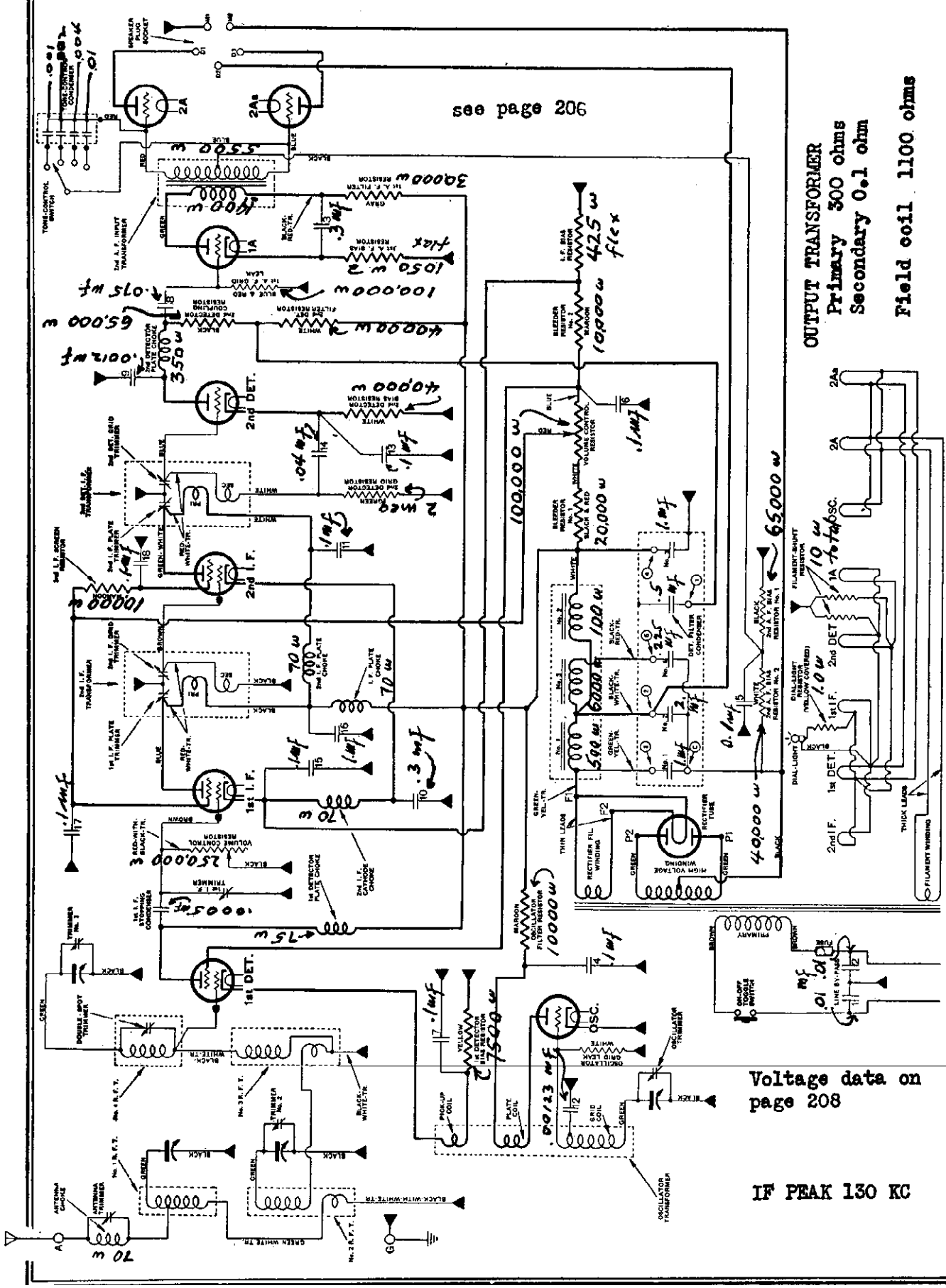


THE DOUBLE SPOT CIRCUIT

The double spot circuit is simultaneously tuned to two different frequencies. The complete circuit consists of #3 and #4 RF transformers and #3 variable condenser. A part of this circuit, #4 RFT, the double spot trimmer and #3 variable condenser is automatically tuned to 260 KC more than the desired frequency.

ATWATER KENT MFG. CO.

MODEL 72
Chassis H-2



MODEL 72
Chassis H-2
Above serial
5,855,201

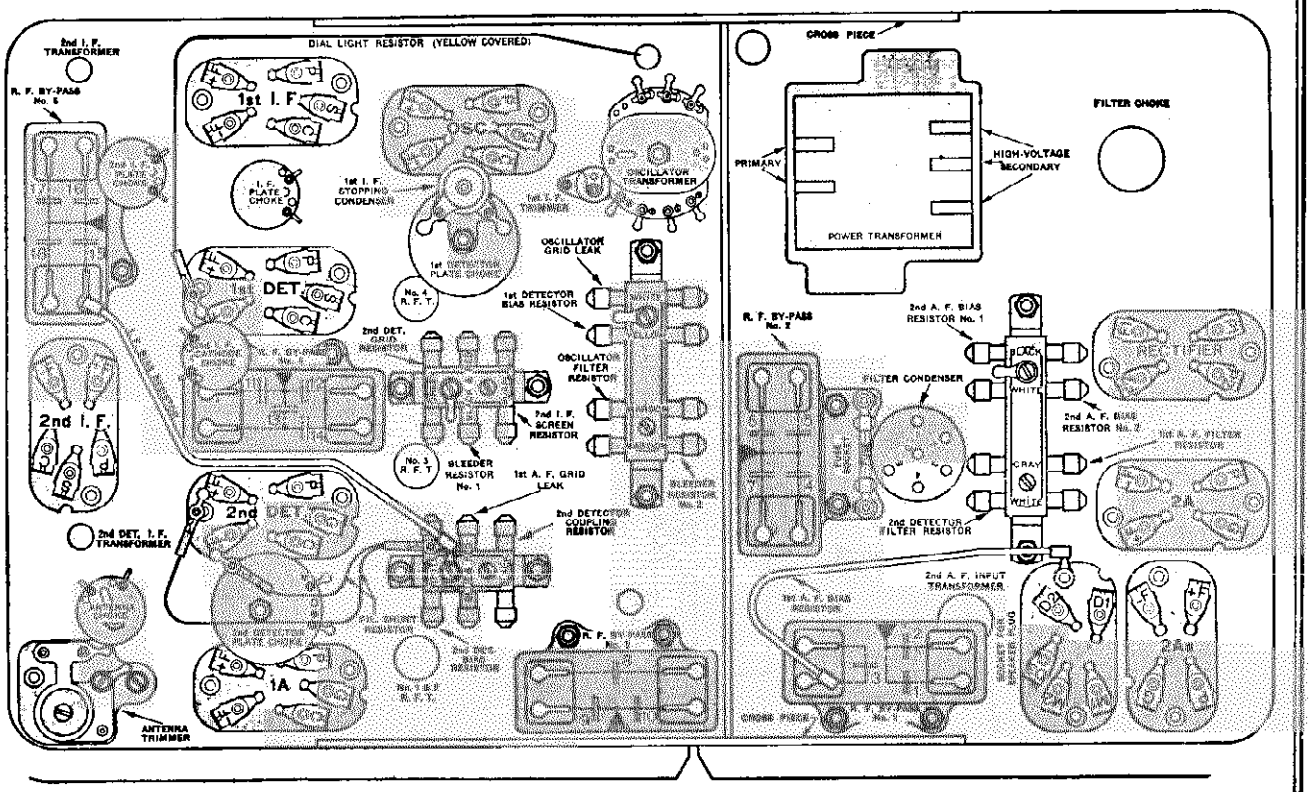
ATWATER KENT MFG. CO.

FILTER CONDENSERS. Numerals in circles shown on wiring diagram indicate connections upon filter condenser terminal block. These numbers are also shown upon the parts layout below. Also upon the chassis wiring diagram

Detector filter	.1 mfd	connected between terminal (1)	and can
Filter #1	2.0 mfd	connected between terminal (2)	and center stud
Filter #2	1.0 mfd	connected between terminal (3)	and center stud
Filter #3	1.0 mfd	connected between terminal (4)	and can
Resonant condenser	.225 mfd	connected between terminal (5)	and center stud

BYPASS CONDENSERS. The small numerals adjacent to the various bypass condensers shown on the wiring diagram correspond with the designating numerals upon the parts layout below and the chassis

RF Bypass #1	1	.01 mfd	400 volts	2	.01 mfd	400 volts	# 17360		
	3	.3 mfd	400 volts						
RF Bypass #2	4	.1 mfd	400 volts	5	.1 mfd	400 volts	# 15262		
	6	.1 mfd	400 volts	7	.1 mfd	400 volts			
RF Bypass #3	8	.075 mfd	400 volts	9	.0012 mfd	400 volts	# 16745		
	10	.3 mfd	150 volts						
RF Bypass #4	11	.1 mfd	400 volts	12	.00123 mfd	400 volts	# 17370		
	13	.1 mfd	400 volts	14	.04 mfd	400 volts			
RF Bypass #5	15	.1 mfd	400 volts	16	.1 mfd	400 volts	# 15262		
	17	.1 mfd	400 volts	18	.1 mfd	400 volts			

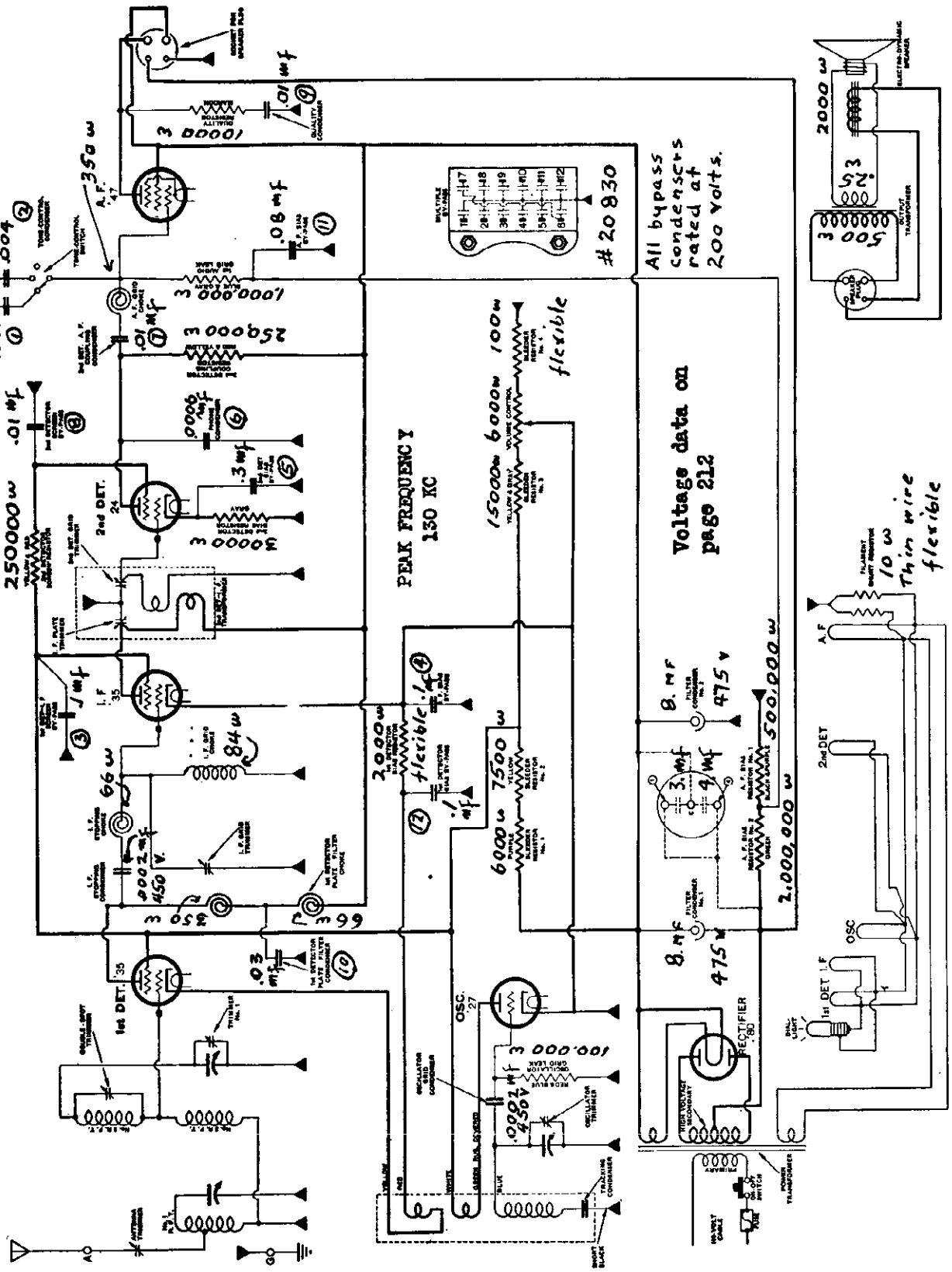


BOTTOM VIEW OF TYPE H-2 CHASSIS

In this chart, the 2nd-I. F. screen resistor should be maroon instead of purple.

MODEL 80, 80-F
83, 83-F

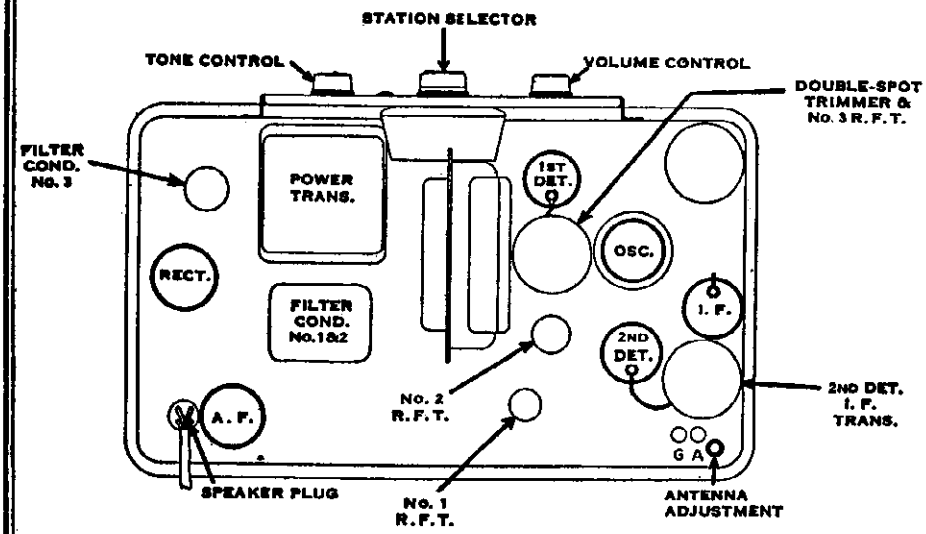
ATWATER KENT MFG. CO.



In Model 83 and 83-F, a filter-condenser unit is used and it is connected as shown in dotted lines. This unit is NOT used in Model 80 and 80-F. In Model 83, 83-F, the electrolytic filter condenser No. 1 is not used, and the filament circuit is slightly different.

MODEL 80, 80-F
83, 83-F

ATWATER KENT MFG. CO.



TOP VIEW OF MODEL 83, 83-F.

The circle in the upper right-hand corner is the shield that covers the coupling unit between the 1st-detector and the I. F. tubes.

Condensers in Multiple By-pass Model 80, 80-F, 83, 83-F

1—Tone-control condenser.
2—Tone-control condenser.
3—1st-detector—I. F. screen by-pass.
4—I. F. bias by-pass.
5—2nd-detector bias by-pass.
6—Phone condenser.
7—2nd-detector—A. F. coupling condenser.
8—2nd-detector screen by-pass.
9—Quality condenser.
10—1st-detector plate filter condenser.
11—A. F. bias by-pass.
12—1st-detector bias by-pass.

The numbers given above correspond with the numbers marked upon the multiple condenser unit.

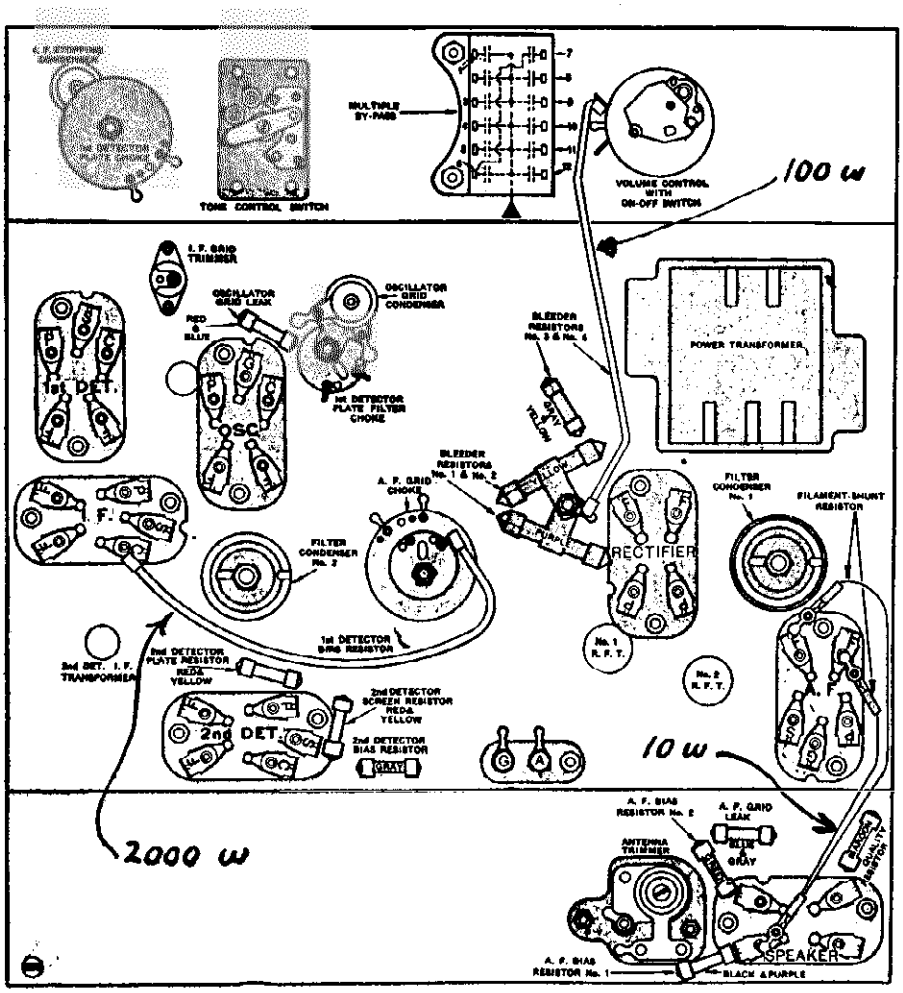


CHART OF MODEL 80, 80-F.

The parts on Model 83, 83-F are similar except that Model 83, 83-F has a filter condenser unit and only one electrolytic condenser.

VOLTAGE TABLE

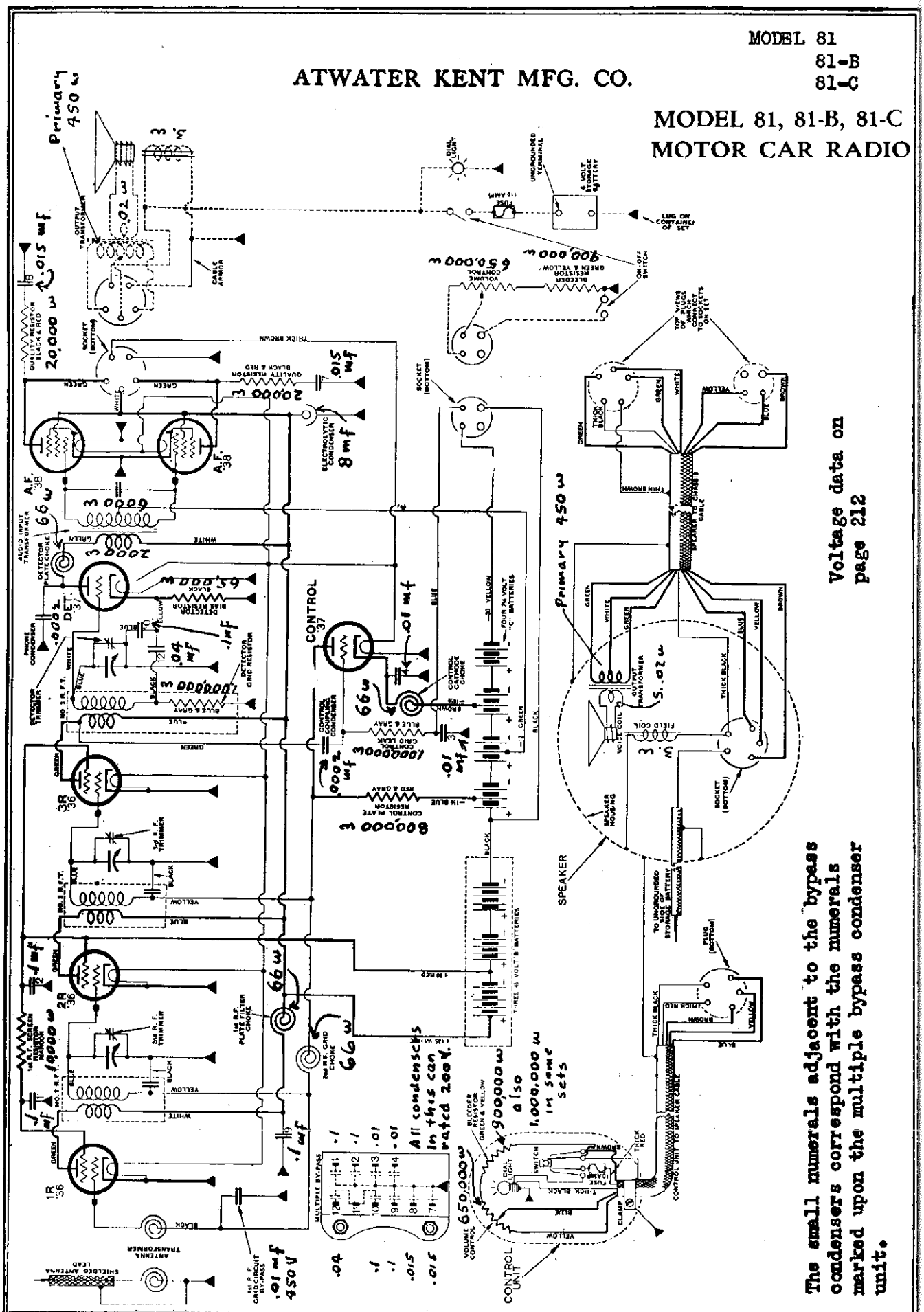
	Fil.	Plate	Screen	Control
1st Det.	2.4	225	90	5.
I-F	2.4	230	95	2.
2nd Det	2.4	110	45	5.
1st A-F	2.4	230	240	4.
2nd A-F				
Osc	2.4	100		*

* A variable depending upon several factors. Capacity of voltmeter leads may cause oscillator tube to cease functioning.

MODEL 81
81-B
81-C

ATWATER KENT MFG. CO.

MODEL 81, 81-B, 81-C MOTOR CAR RADIO



The small numerals adjacent to the bypass condensers correspond with the numerals marked upon the multiple bypass condenser unit.

Voltage data on page 212

Voltage reference on page 1-56.

VOLTAGE DATA

ATWATER KENT MFG. CO.

VOLTAGE TABLE

FOR MODEL 80, 81, 82, 82-D, 82-Q, 83, 84, 84-D, 84-Q, 85, 85-Q, 86, 87 and 89

The voltages listed in this table are only approximate, and are measured values, not actual operating values. Turn volume control to maximum.

Use 250-volt scale of a 1000-ohm-per-volt D. C. voltmeter.

All plate, screen and grid measurements are made from cathode in heater-type tube, and from —F in plain-filament-type tube.

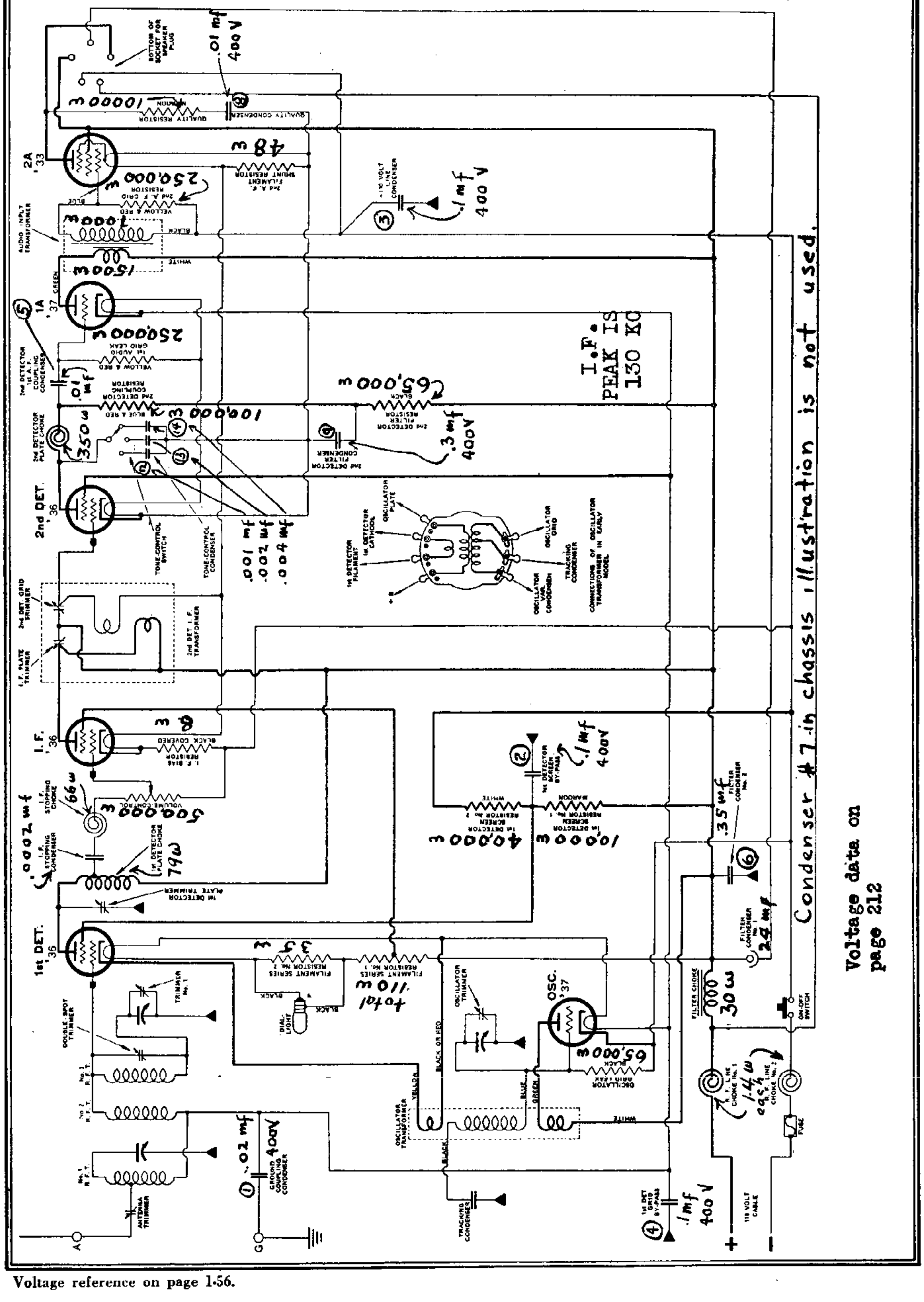
When replacing a tubular resistor, use a resistor of the same identifying color. In a few cases, owing to engineering changes, the color of a resistor in a chassis may not agree with the color specified in the diagram. In such a case, disregard the diagram and use a replacement resistor having the same color as the defective unit. However, if a resistor has been removed, or its identification destroyed, replace it with a resistor having the color that is specified in the diagram for that set.

		MODEL 80	MODEL 81	MODEL 82	MODEL 82-D	MODEL 82-Q	MODEL 83	MODEL 84	MODEL 84 D	MODEL 84 Q	MODEL 85	MODEL 85-Q	MODEL 86	MODEL 87	MODEL 89
	LINE VOLTAGE	110	—	110	112	—	110	110	120	—	110	—	115	110	110
	TOTAL "B" VOLTAGE	—	125	—	—	125	—	—	—	125	—	125	—	—	—
R. F. TUBE**	FILAMENT	—	5.5	—	—	2	—	—	—	2	—	—	2.4	2.4	2.4
	PLATE	—	125	—	—	125	—	—	—	125	—	—	125	170	125
	SCREEN	—	75	—	—	60	—	—	—	65	—	—	40	80	50
	GRID	—	SMALL	—	—	3	—	—	—	3	—	—	2	2	2
1ST DET. TUBE†	FILAMENT	2.4	5.5	2.4	5.5	2	2.4	2.4	5.7	2	2.4	2	2.4	2.4	2.4
	PLATE	225	95	135	70	125	225	205	80	125	135	125	125	160	120
	SCREEN	90	—	50	50	40	90	65	50	25	50	40	35	70	45
	GRID	5	7	4	5	3	5	6	5	3	3	3	4	11	4
I. F. TUBE	FILAMENT	2.4	—	2.4	6	2	2.4	2.4	6.5	2	2.4	2	2.4	2.4	2.4
	PLATE	230	—	140	95	125	230	215	105	125	135	125	125	170	125
	SCREEN	95	—	50	50	60	95	65	55	65	50	65	40	80	50
	GRID	2	—	SMALL	SMALL	3	2	3	SMALL	SMALL	2	3	2	2	2
2ND DET. TUBE	FILAMENT	2.4	—	2.4	5.5	2	2.4	2.4	5	2	2.4	2	2.4	2.4	2.4
	PLATE	110	—	105	55	45	110	90	55	60	100	40	95	90	120
	SCREEN	45	—	65	10	25	45	45	10	25	65	25	60	—	—
	GRID	5	—	8	2	3	5	6	1	3	7	3	8	SMALL	15
1ST A. F. TUBE	FILAMENT	2.4	5.5	2.4	5.5	2	2.4	2.4	6	2	2.4	2	2.4	2.4	2.4
	PLATE	230	120	230	75	55	230	205	80	55	215	55	210	90	120
	SCREEN	240	123	240	—	—	240	215	—	—	225	—	230	—	—
	GRID	4	11	5	3	3	4	5	2.5	3	5	3	5	3	4
2ND A. F. TUBE	FILAMENT	—	—	—	2	2	—	—	2	2	—	2	—	2.4	2.4
	PLATE	—	—	—	85	120	—	—	90	120	—	120	—	200	225
	SCREEN	—	—	—	90	135	—	—	95	135	—	135	—	210	235
	GRID	—	—	—	7	15	—	—	7	5	—	15	—	14	14
OSC. TUBE	FILAMENT	2.4	—	2.4	5	2	2.4	2.4	6	2	2.4	2	2.4	2.4	2.4
	PLATE	95	—	95	100	60	100	70	110	60	100	40	95	85	100
	GRID	*	—	*	*	*	*	*	*	*	*	*	*	*	*
CONTROL TUBE	FILAMENT	—	5.5	2.4	—	—	—	—	—	—	2.4	—	2.4	—	2.4
	PLATE	—	3	15	—	—	—	—	—	—	15	—	30	—	25
	SCREEN	—	—	8	—	—	—	—	—	—	7	—	7	—	5
	GRID	—	2	4	—	—	—	—	—	—	5	—	4	—	3

* The measured oscillator grid voltage will vary dependent on the capacity of the voltmeter leads. In some cases, the presence of the leads will stop oscillation and no reading will be secured for grid bias. In other cases, the reading will be only slight, or it may be as high as 10 volts.

**This includes the 1st, 2nd and 3rd R. F. tubes in Model 81. †This is the detector tube in Model 81.

ATWATER KENT MFG. CO. — MODEL 82-D

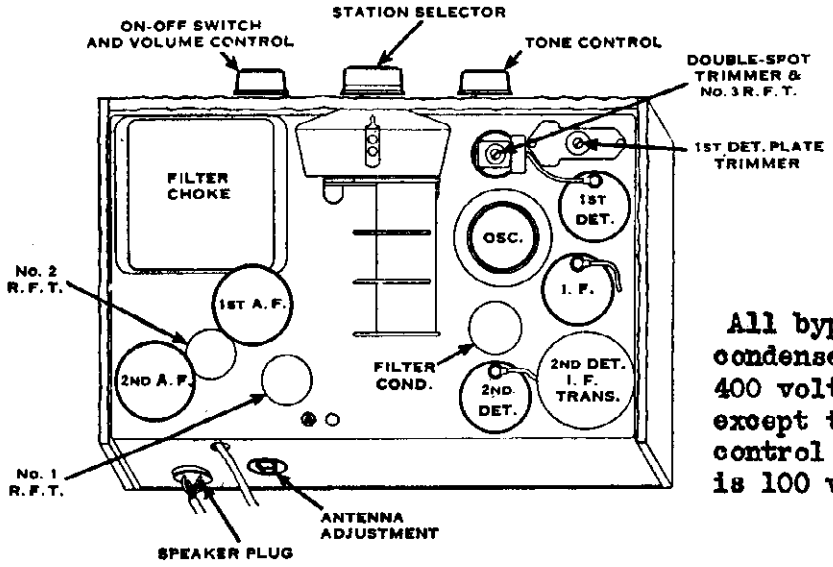


Voltage reference on page 1-56.

MODEL 82-D

ATWATER KENT MFG. CO.

MODEL 82-D TOP VIEW AND CHART



All bypass condensers 400 volts except tone control which is 100 volts

TOP VIEW OF MODEL 82-D.

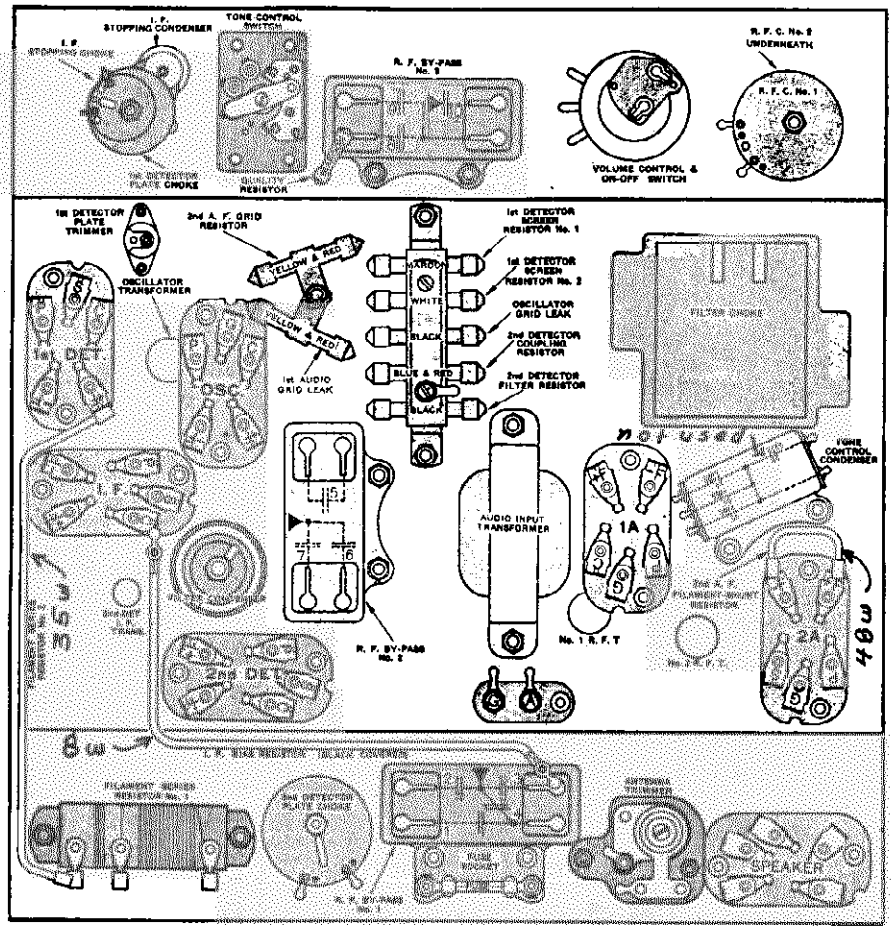
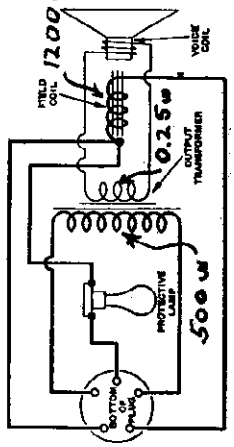


CHART OF MODEL 82-D.

The protective lamp (25 watts) is connected in series with the electrolytic filter condenser in the chassis. If the 110-volt D. C. supply plug is reversed, the lamp will light. When the 110-volt plug is properly inserted, the lamp does not light. This action is due to the fact that the electrolytic condenser passes current if the polarity of the applied D. C. voltage is not correct.



CIRCUIT OF SPEAKER USED IN MODEL 82-D, 84-D.

By-pass Condensers in Model 82-D

R. F. By-pass No. 1

1—Ground coupling condenser.
2—1st-detector screen by-pass.
3—110-volt line condenser.
4—1st-detector grid by-pass.

R. F. By-pass No. 2

5—2nd-detector—1st-A.F. coupling condenser
6—Filter condenser No. 2.
7—Not used.

R. F. By-pass No. 3

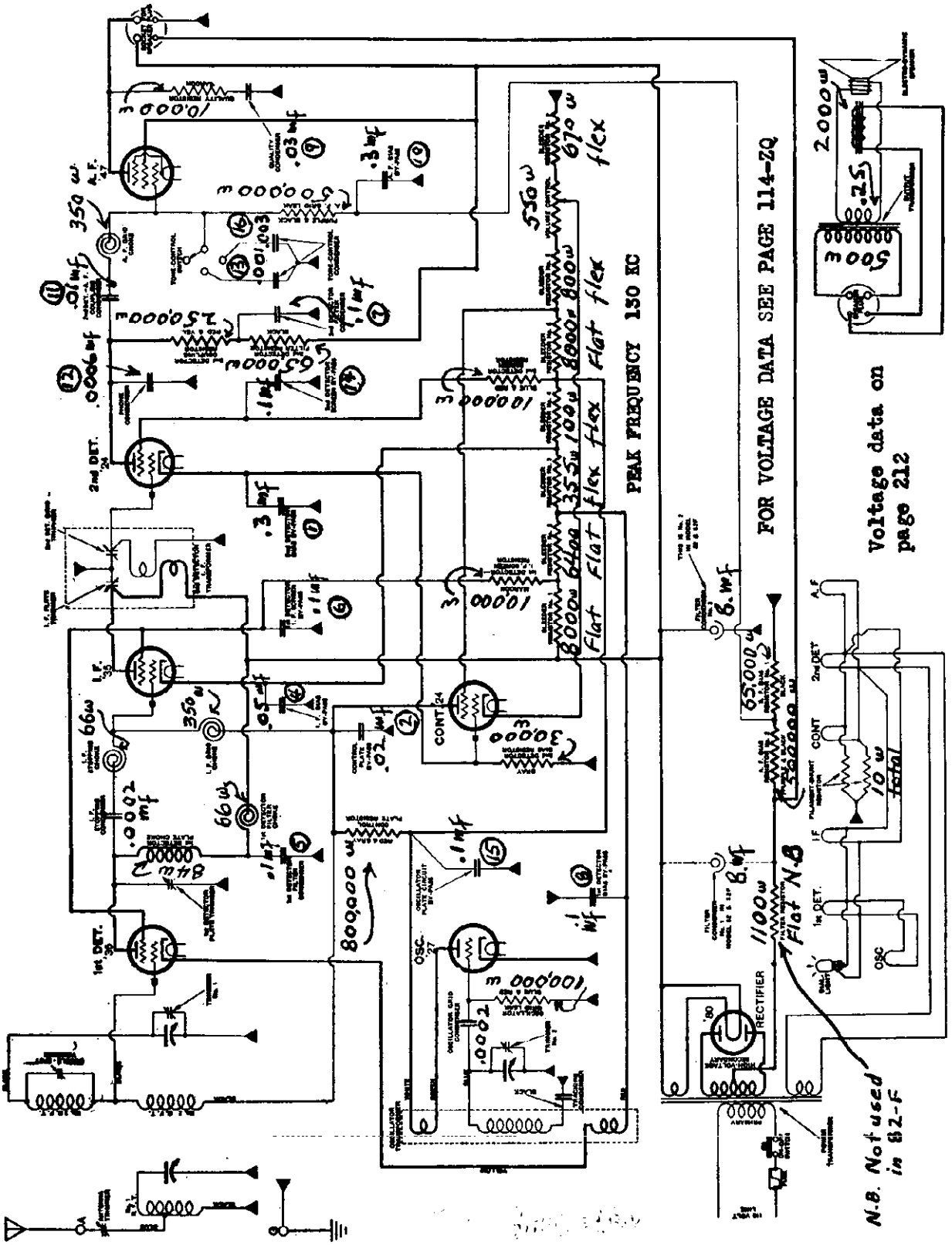
8—Quality condenser.
9—2nd-detector filter condenser.
10—110-volt line by-pass.

Tone-control Condenser

11—Not used.
12—Tone condenser.
13—Tone condenser.
14—Tone condenser.

MODEL 82, 82-F

ATWATER KENT MFG. CO.

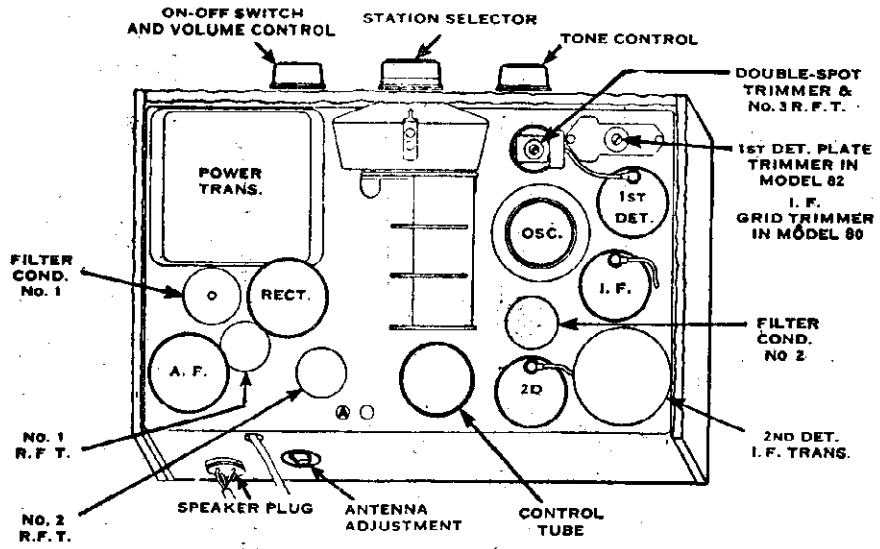


Numerals adjacent to bypass condensers designate units shown upon parts layout on next page within multiple condensers. Condenser voltage ratings are shown upon next page.

Voltage reference on page 1-56.

MODEL 82, 82-F

ATWATER KENT MFG. CO.



TOP VIEW OF MODEL 82, 82-F.

The top view of Model 80, 80-F is similar except that it has no control tube and the position of No.1 and No. 2 R. F. T. is interchanged.

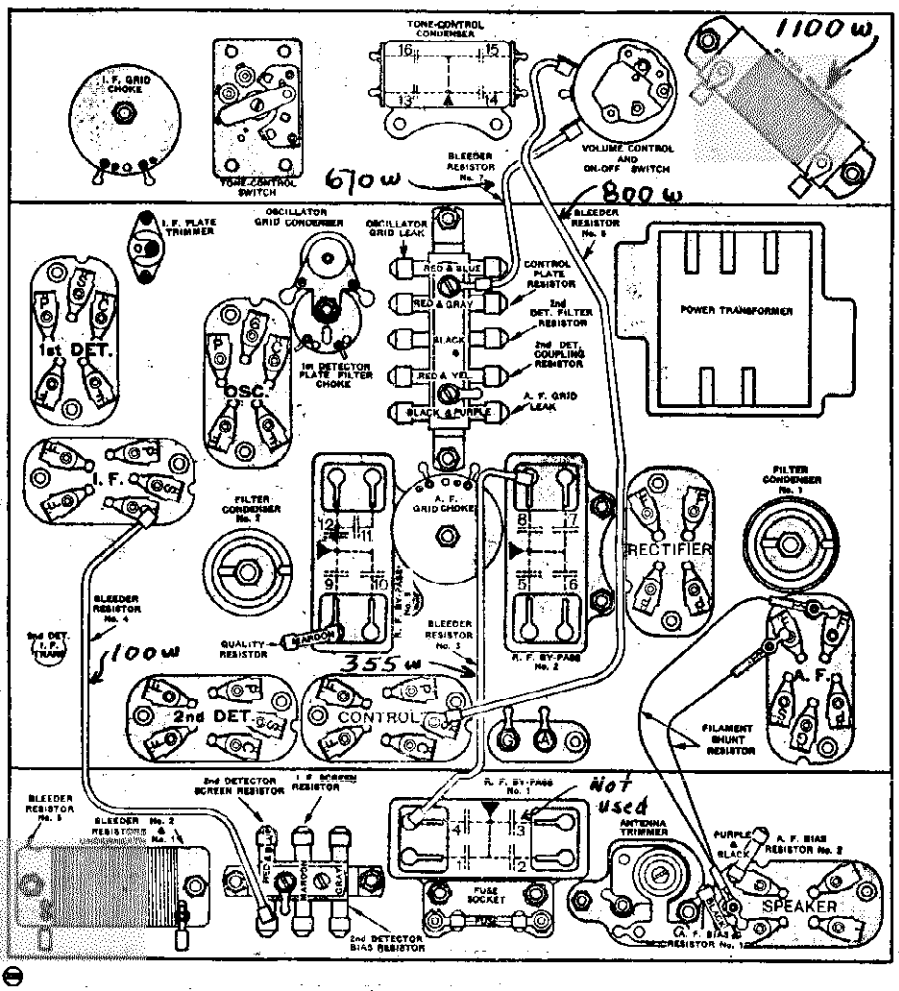


CHART OF MODEL 82, 82-F.

The filter reslator is not used in Model 82-F.

CONDENSERS

RF Bypass # 1
 # 21180
All 400 Volts

RF Bypass # 2
 # 15262
5-6 150 volts
7-8 400 volts

RF Bypass # 3
 # 21170
All 400 volts

Tone Control
 # 20010
All 100 volts

By-pass Condensers in Model 82, 82-F

R. F. By-pass No. 1

1—2nd-detector bias by-pass.
2—Control plate by-pass.
3—Not used.
4—I. F. bias by-pass.

R. F. By-pass No. 2

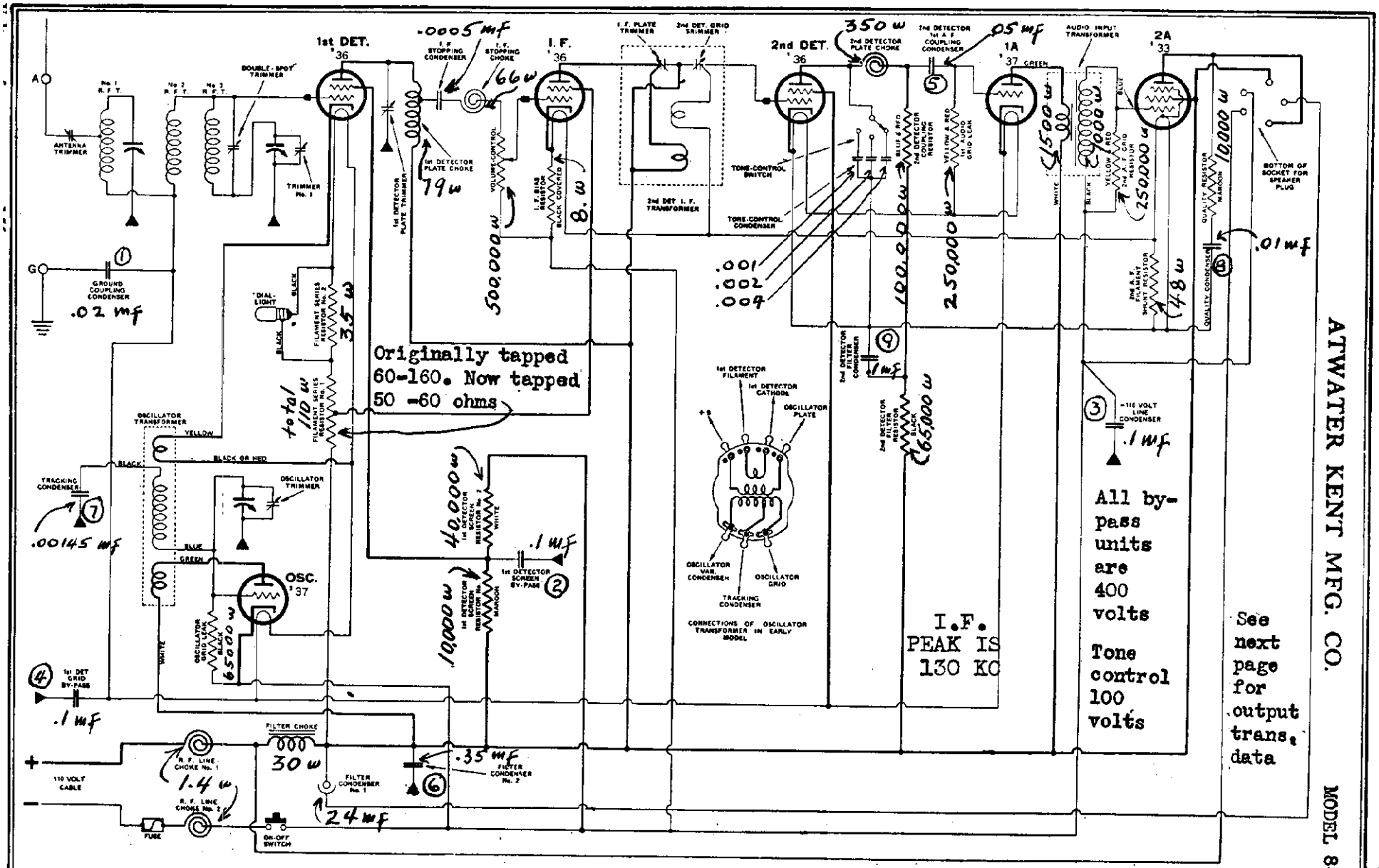
5—1st-detector filter condenser.
6—1st-detector—I. F. screen by-pass,
7—2nd-detector filter condenser.
8—1st-detector bias by-pass.

R. F. By-pass No. 3

9—Quality condenser.
10—A. F. bias by-pass.
11—2nd-detector—A. F. coupling condenser.
12—Phone condenser.

Tone-control Condenser

13—Tone condenser.
14—2nd-detector screen by-pass.
15—Oscillator plate-circuit by-pass.
16—Tone condenser.



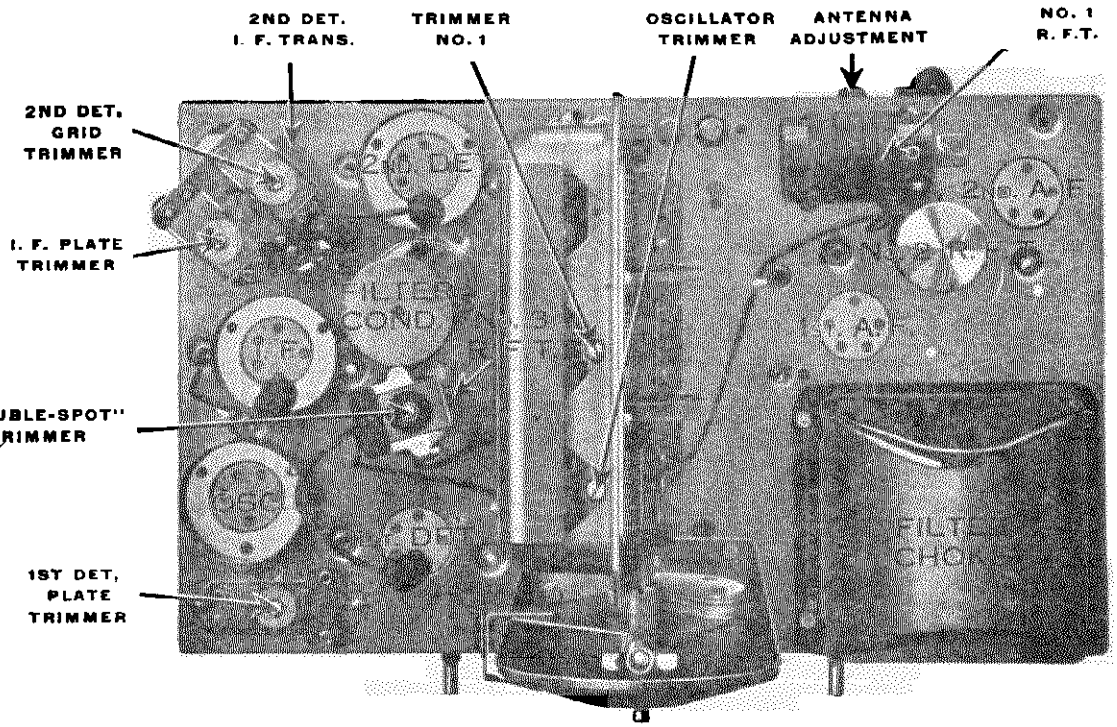
Early Model 84-D does not have tone control; it has a condenser, instead of a resistor, across the secondary of the audio input transformer; it has a small phone condenser (500 mmf.) connected to the plate of the 2nd-detector, and it has an antenna choke connected between the antenna and ground posts.

Antenna choke 130 w 2nd A-F grid condenser # 10 is .0025 mf

Voltage data on page 212

MODEL 84-D

ATWATER KENT MFG. CO.



TOP VIEW OF MODEL 84-D.

OUTPUT TRANSFORMER

Primary 500 ohms
Secondary 0.25 ohm

Field coil 1200 ohms

By-pass Condensers in Model 84-D

Condensers in R. F. By-pass No. 1

1—Ground coupling condenser.
2—1st-detector screen by-pass.
3—110-volt line condenser.
4—1st-detector grid by-pass.

R. F. By-pass No. 2

5—2nd-detector—1st-A. F. coupling condenser.
6—Filter condenser No. 2.
7—Tracking condenser.

R. F. By-pass No. 3

8—Quality condenser.
9—2nd-detector filter condenser.
10—2nd-A. F. grid condenser in early-type sets, 2nd-detector phone condenser in later-type sets.

Tone-control Condenser (Late-type sets only)

11—Not used.
12—Tone condenser.
13—Tone condenser.
14—Tone condenser.

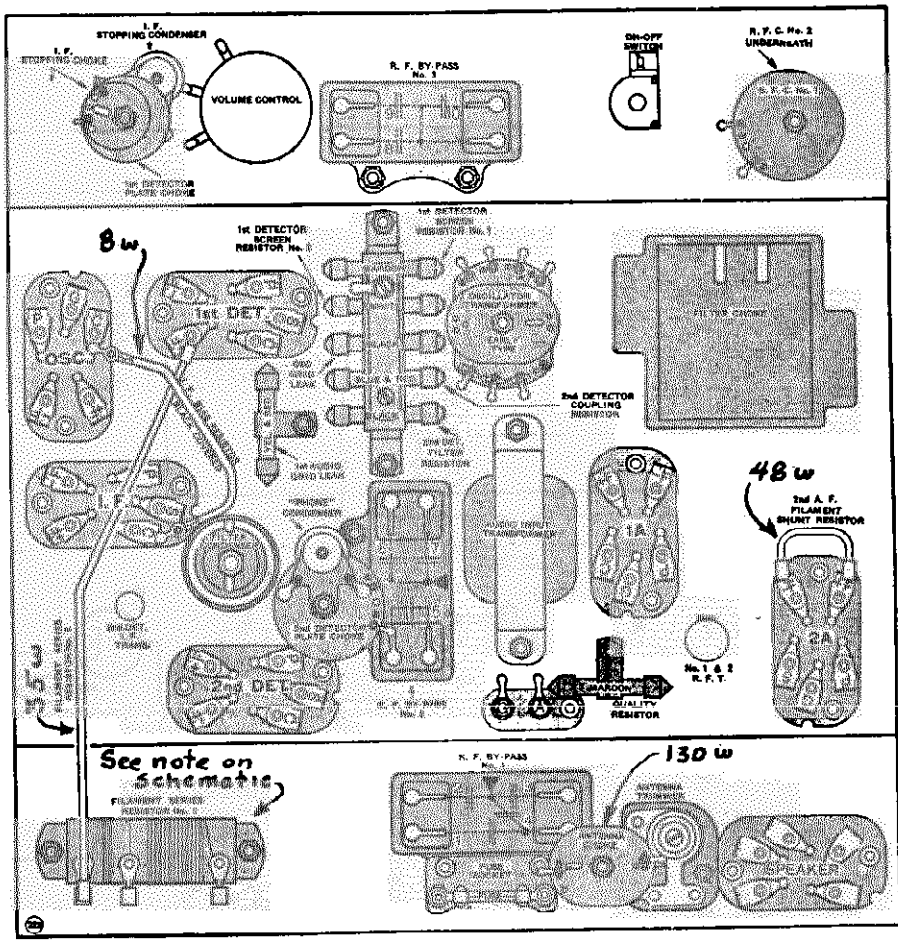
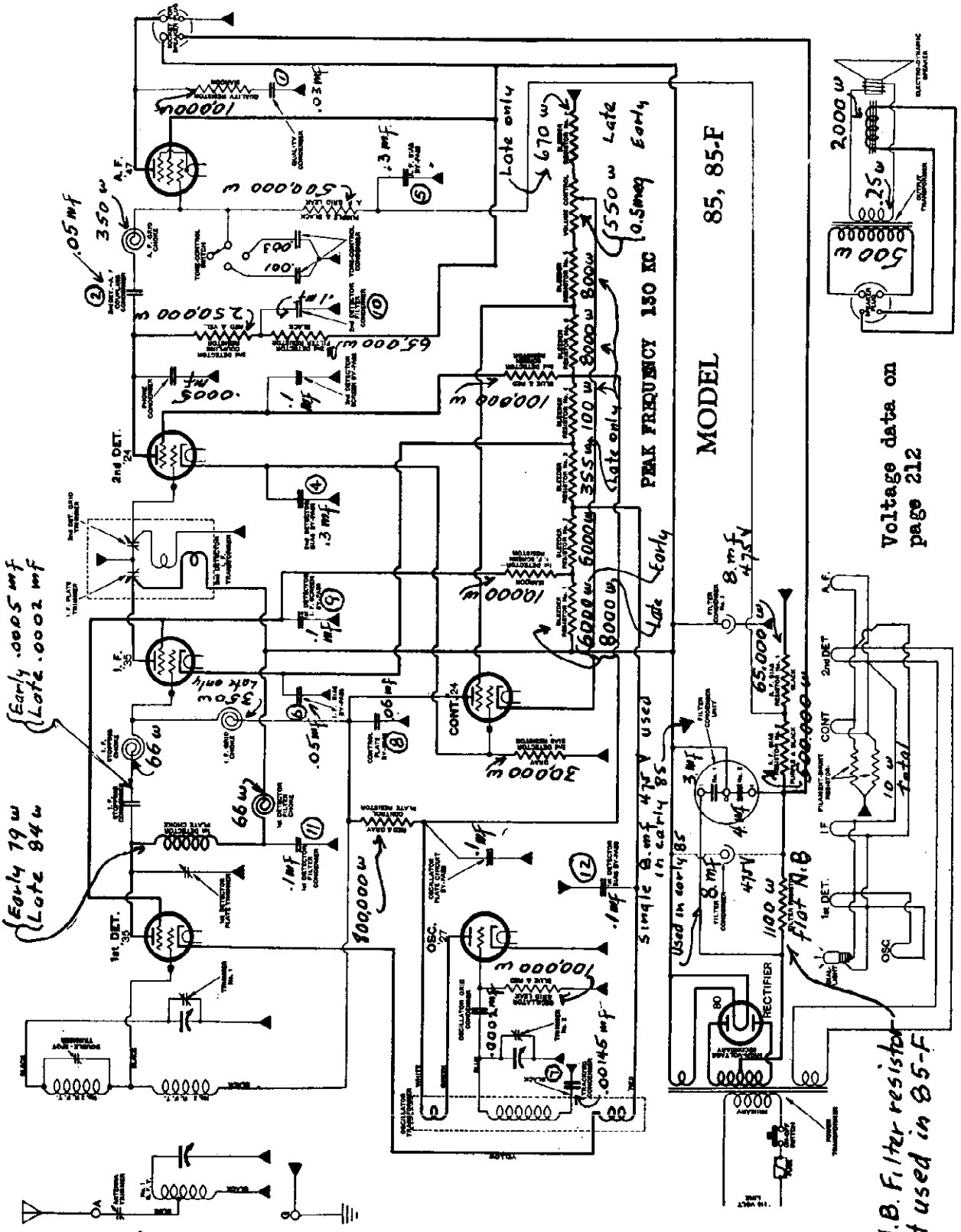


CHART OF MODEL 84-D. (EARLY TYPE WITHOUT TONE CONTROL.)

MODEL 85, 85-F

ATWATER KENT MFG. CO.

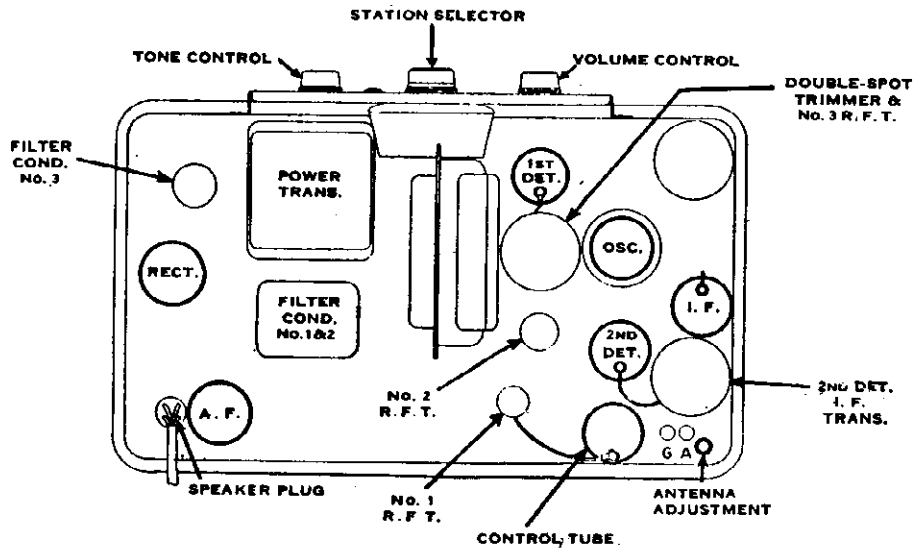


A few early-type Model 85 do not have automatic volume control; they have three electrolytic filter condensers; the circuit of these early Model 85 sets is similar to Model 80. The tracking condenser is mounted on the oscillator transformer in Model 82 and some 85 sets. The filament circuit of Model 82 is somewhat different from that shown above.

Voltage reference on page 1-56.

MODEL 85, 85-F

ATWATER KENT MFG. CO.



TOP VIEW OF MODEL 85, 85-F.

The circle in the top right corner represents the shield for the coupling unit between the 1st-detector and I. F. tubes.

CONDENSERS

RF Bypass # 1
19160 Early
19980 Late
All 400 volts

RF Bypass # 2
19150 Early
19990 Late
All 400 volts

RF Bypass # 6
15262
All 400 volts

Tone Control
16490 Early
20010 Late
All 100 volts

See schematic

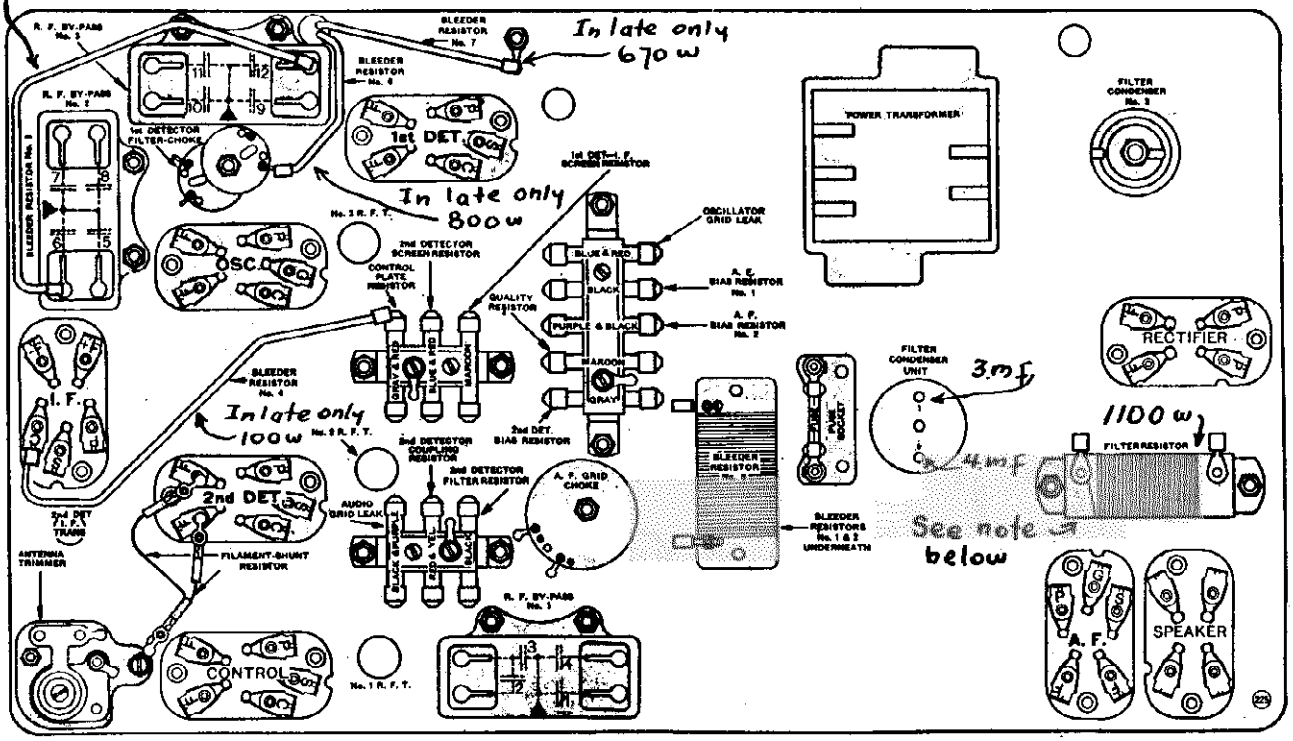


CHART OF MODEL 85, 85-F.

The filter resistor is not used in Model 85-F.

By-pass Condensers in Model 85, 85-F

R. F. By-pass No. 1

1—Quality condenser.
2—2nd-detector—A. F. coupling condenser.
3—Phone condenser.
4—2nd-detector bias by-pass.

R. F. By-pass No. 2

5—A. F. bias by-pass.
6—I. F. bias by-pass.
7—Tracking condenser.
8—Control-plate by-pass.

R. F. By-pass No. 3

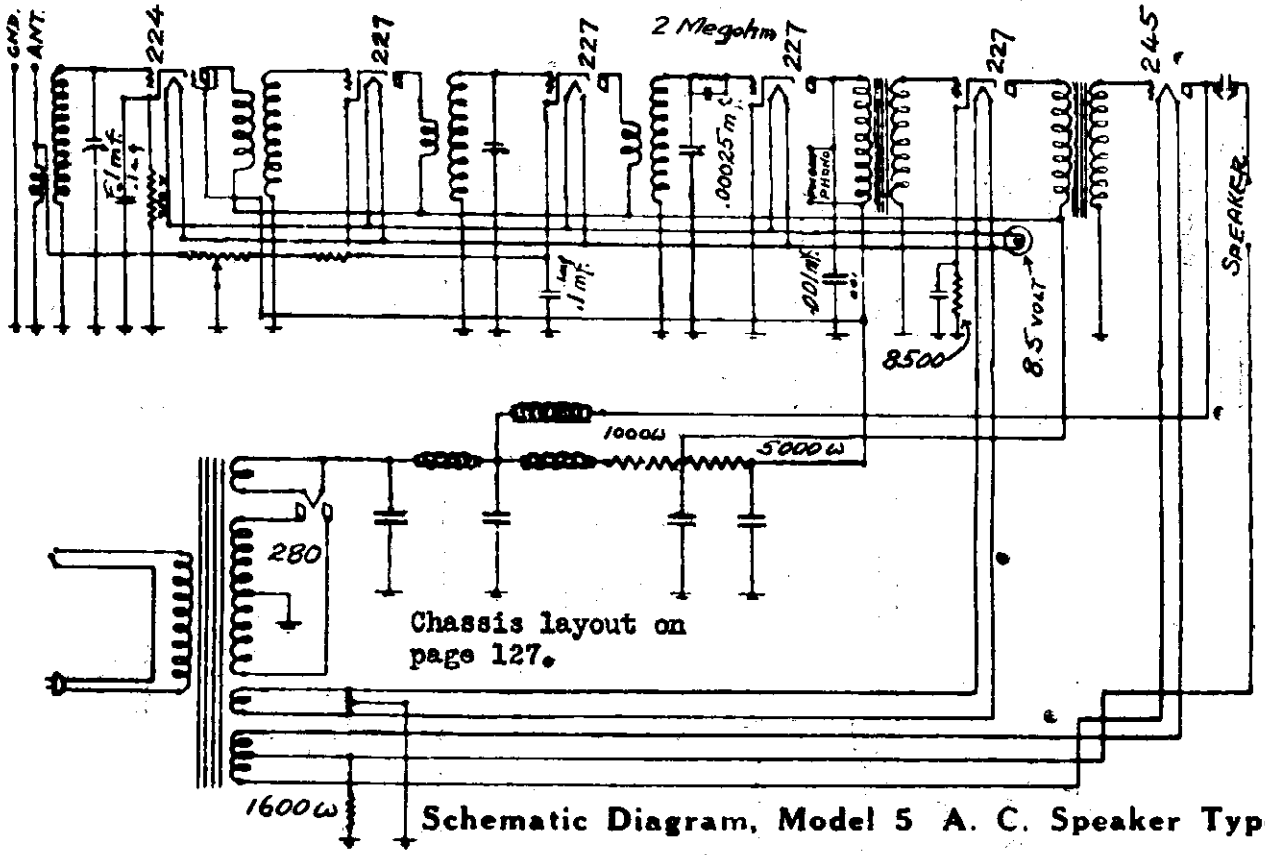
9—1st-detector—I. F. screen by-pass.
10—2nd-detector filter condenser.
11—1st-detector filter condenser
12—1st-detector bias by-pass.

Tone-control Condenser (on front panel)

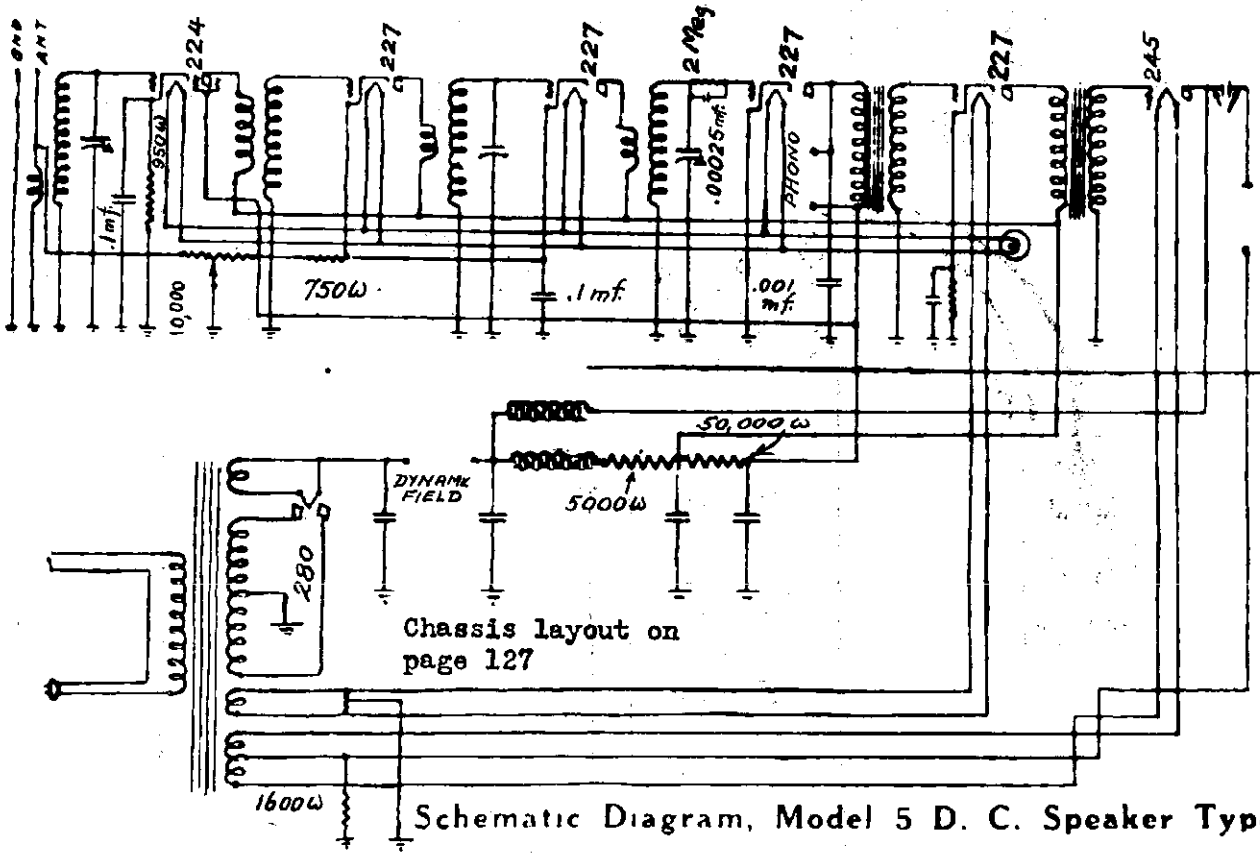
Two top contacts—2nd-detector screen by-pass and oscillator plate-circuit by-pass.
Two bottom contacts—tone-control condensers.

ATCHISON RADIO MFG. CO.

MODEL 5 AC
MODEL 5 DC



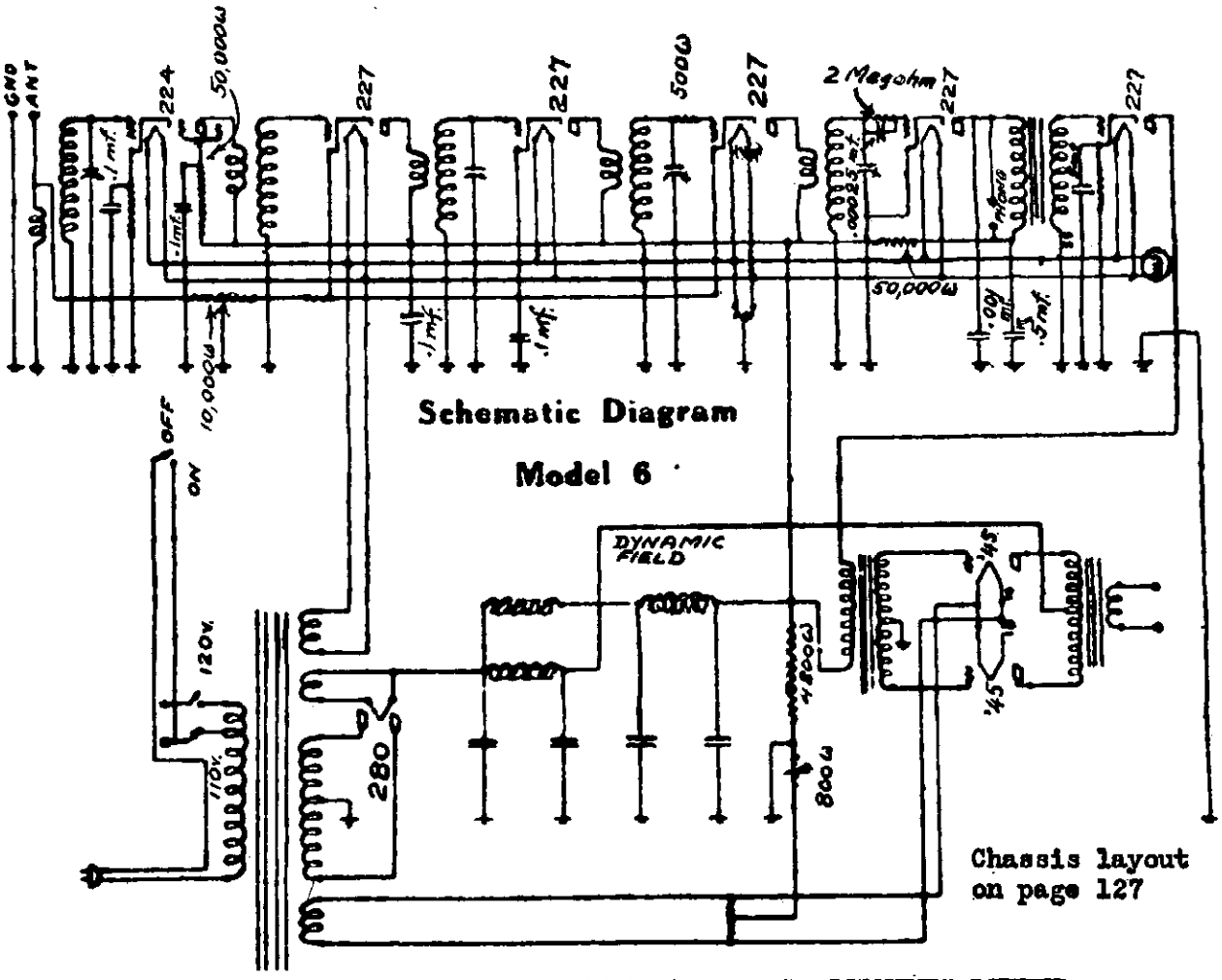
Schematic Diagram, Model 5 A. C. Speaker Type



Schematic Diagram, Model 5 D. C. Speaker Type

MODEL 6 AC

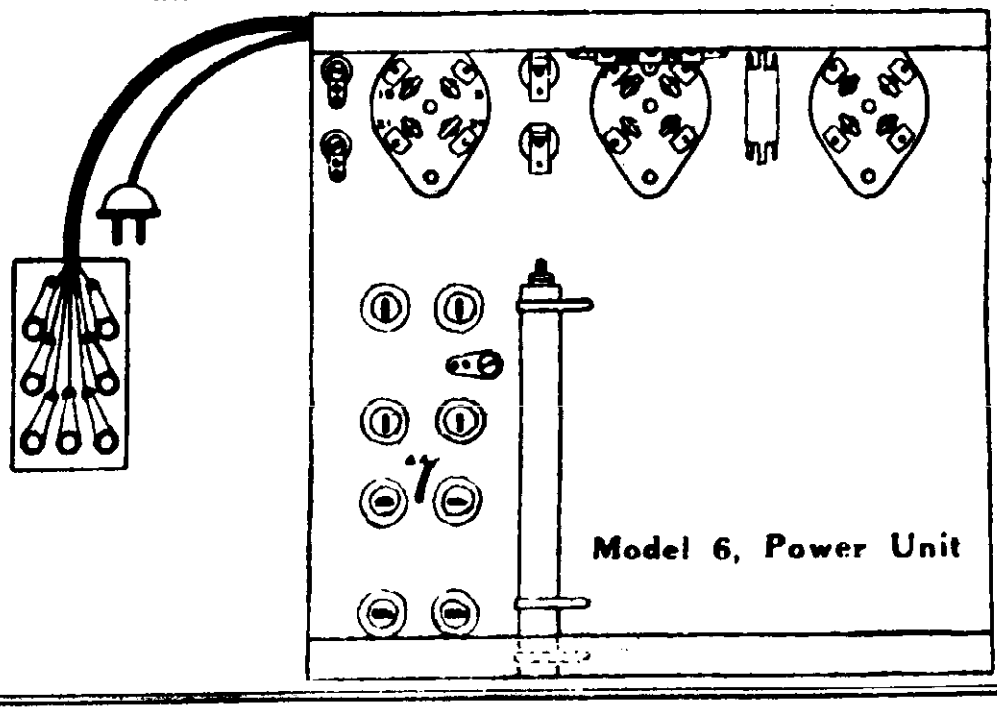
ATCHISON RADIO MFG. CO.



Schematic Diagram

Model 6

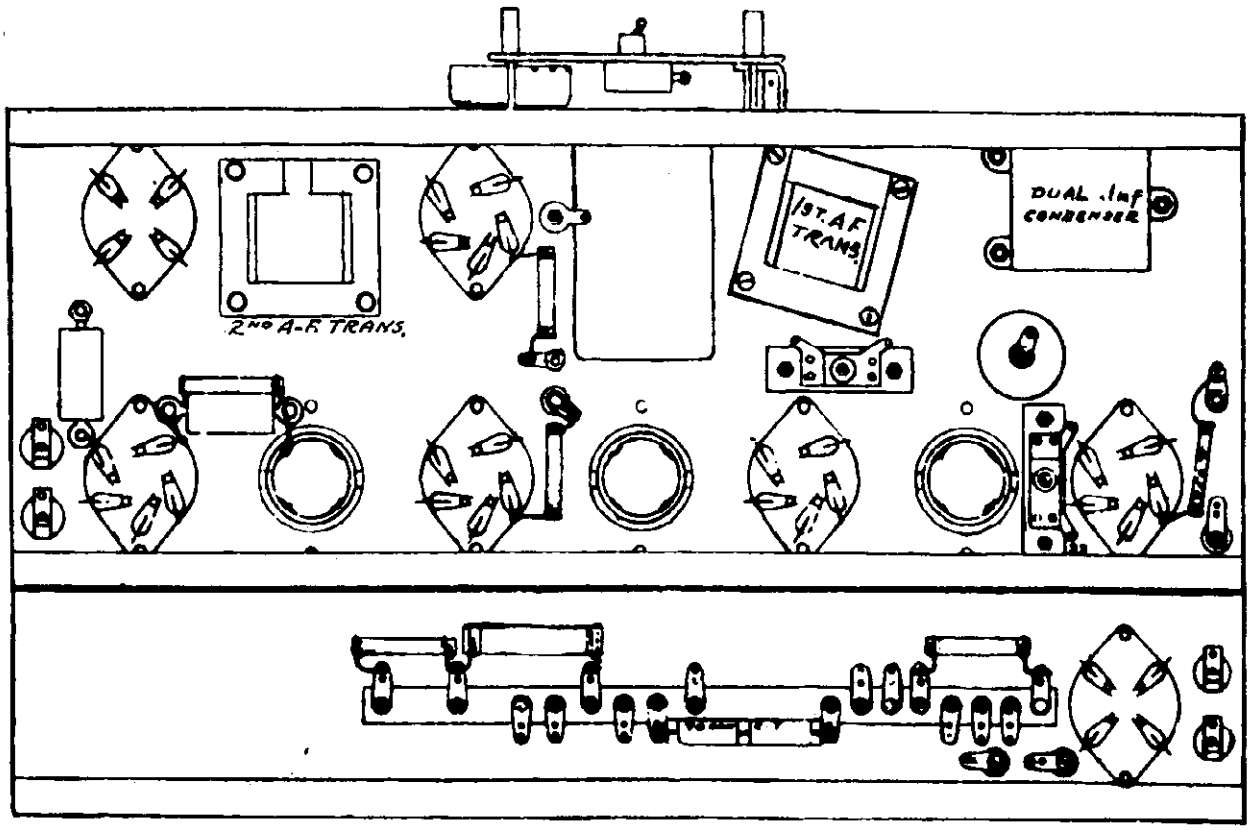
Chassis layout on page 127



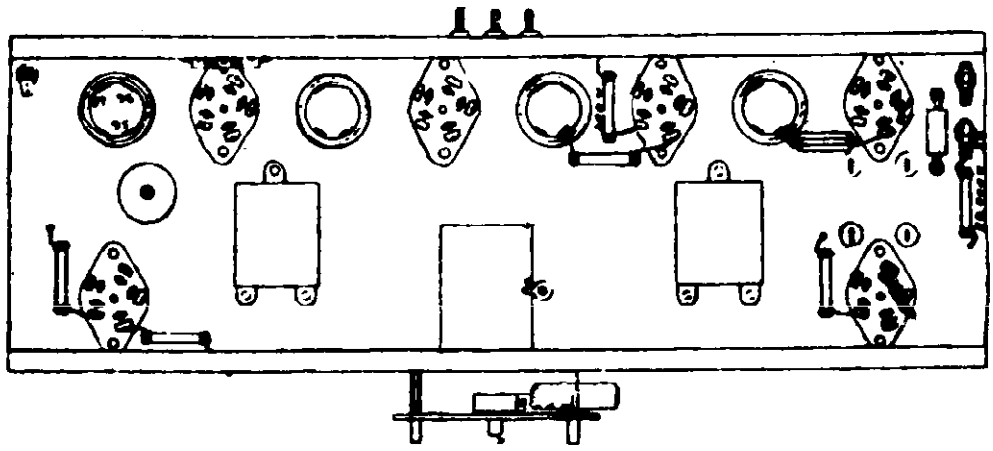
Model 6, Power Unit

ATCHISON RADIO MFG. CO.

MODEL 5 Chassis
MODEL 6 Chassis



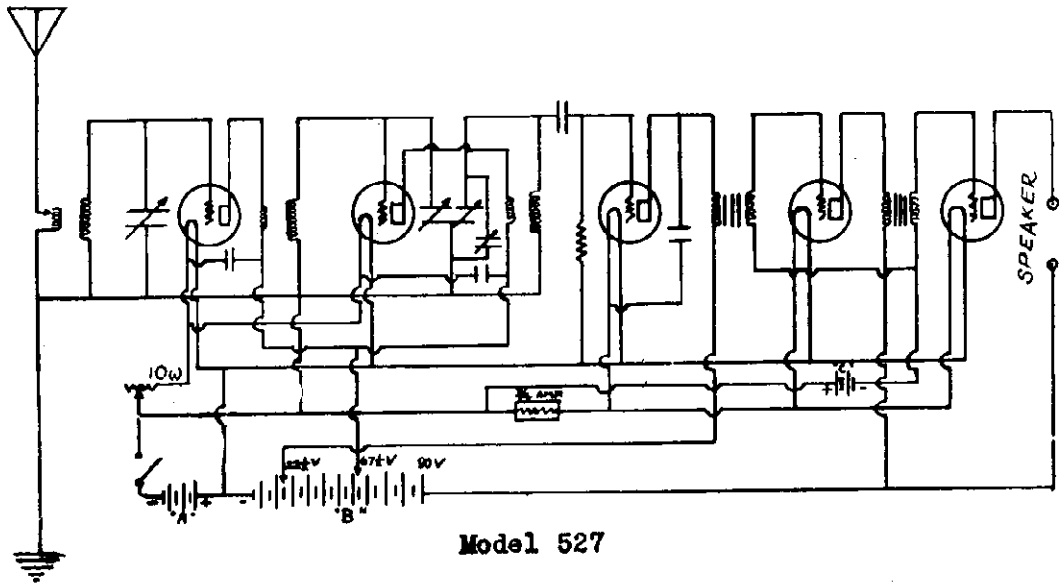
Model 5, Chassis Arrangement



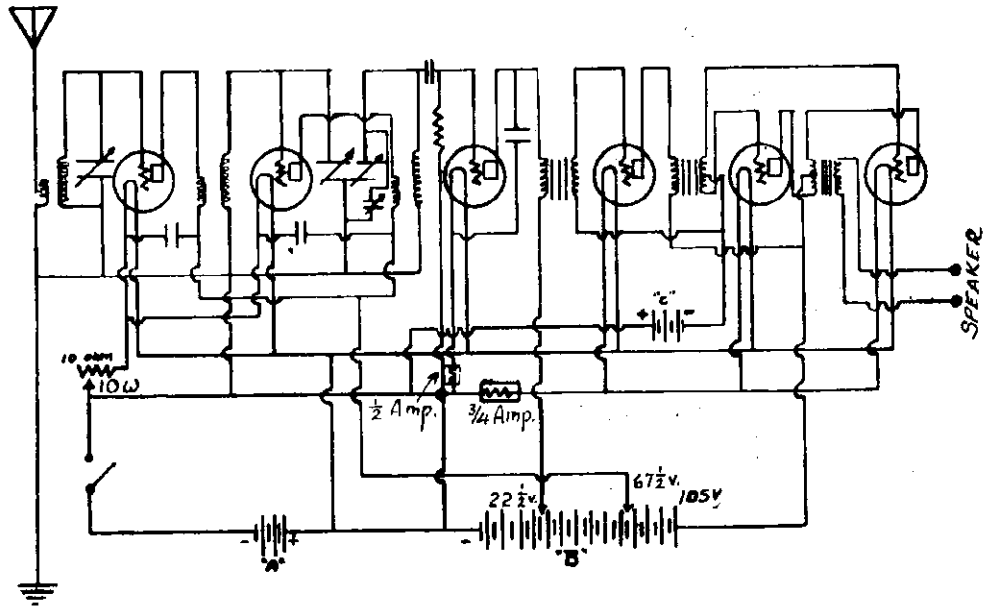
Model 6. Chassis Arrangement

AUDIOLA RADIO CO.

MODEL 527
MODEL 627



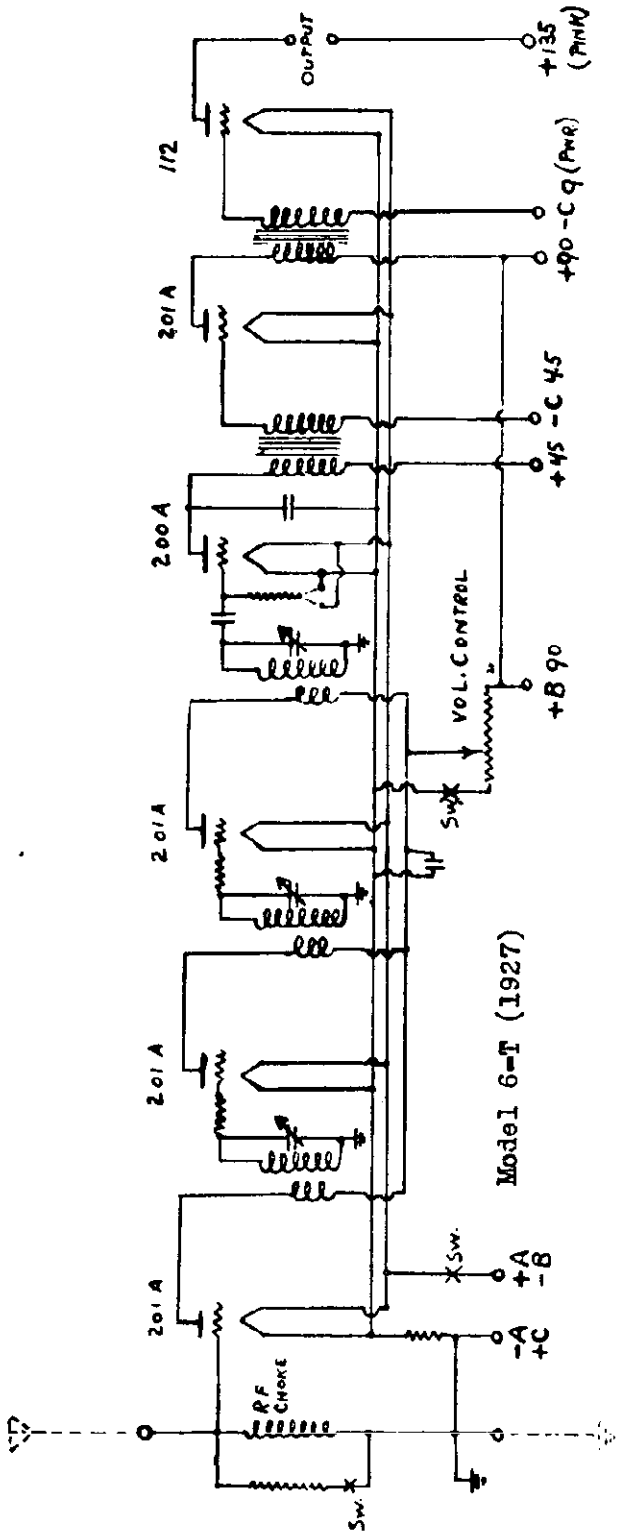
Model 527

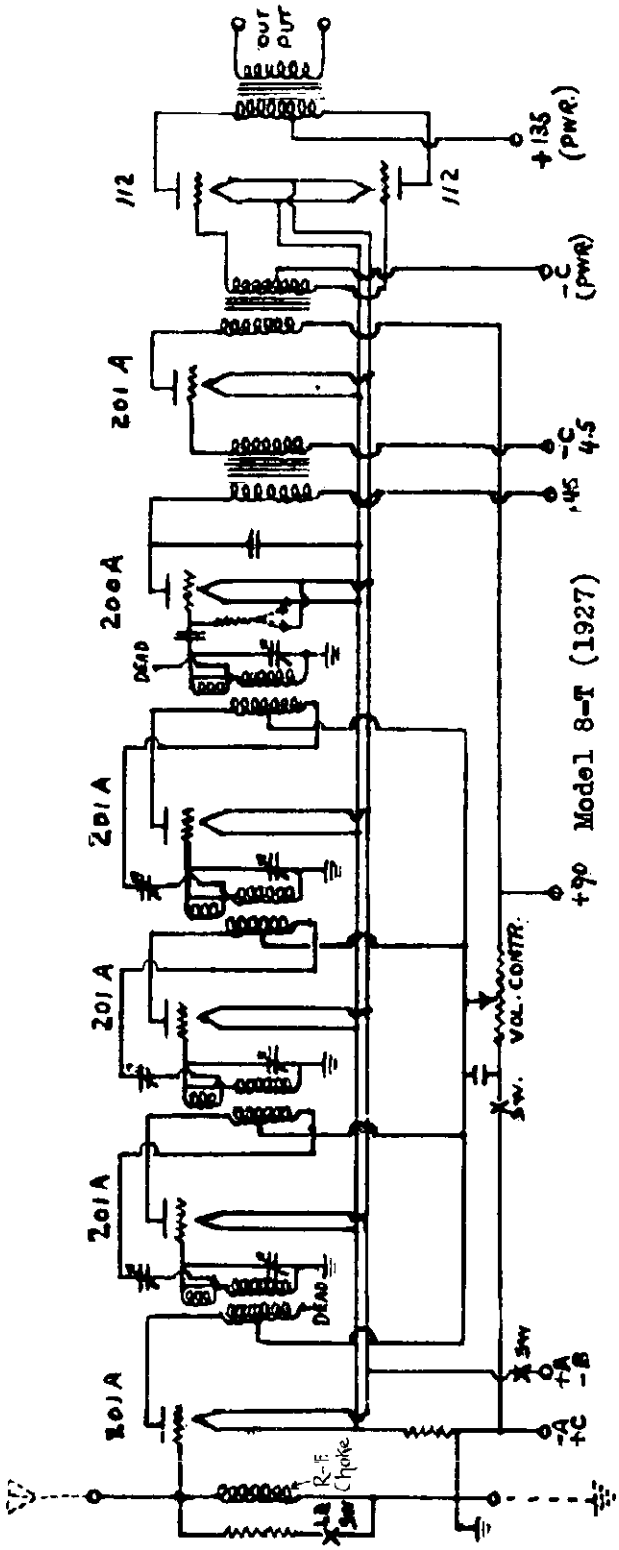


Model 627

MODEL 6-T (1927)
MODEL 8-T (1927)

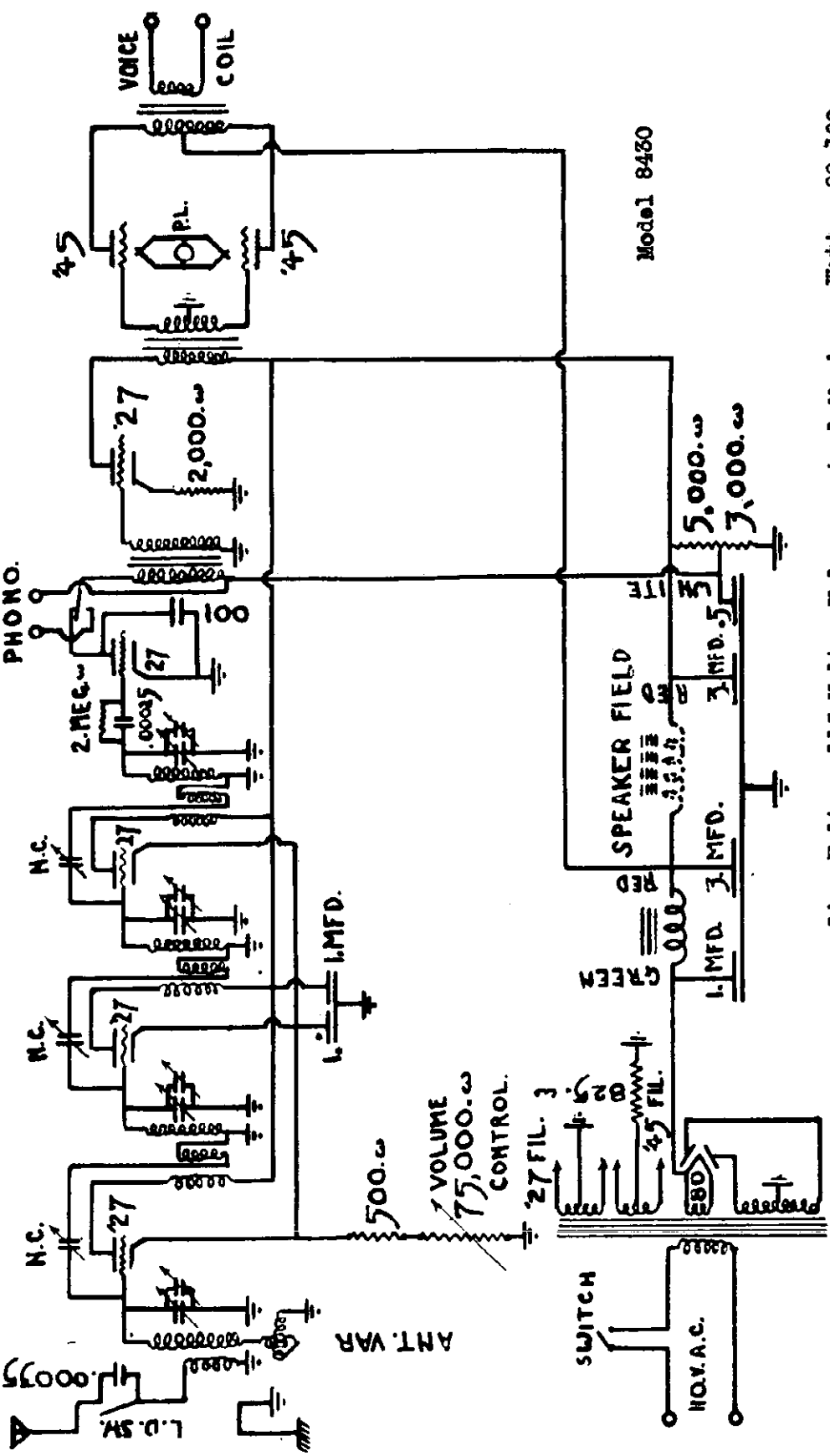
AUDIOLA RADIO CO.





AUDIOLA RADIO CO.

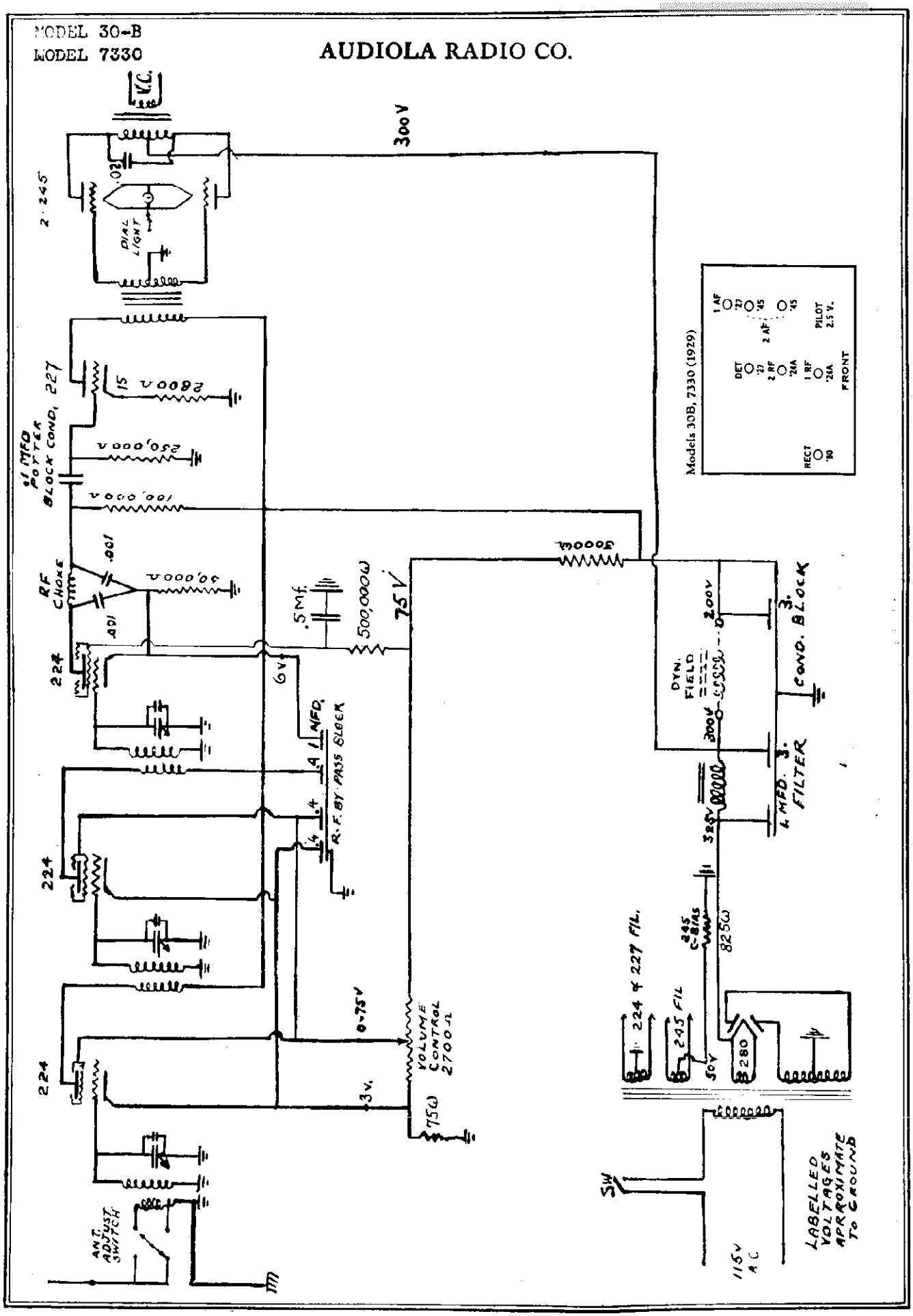
MODEL 8430



Line Voltage 115 Volts. Volume control Maximum. Watts. 90-100.

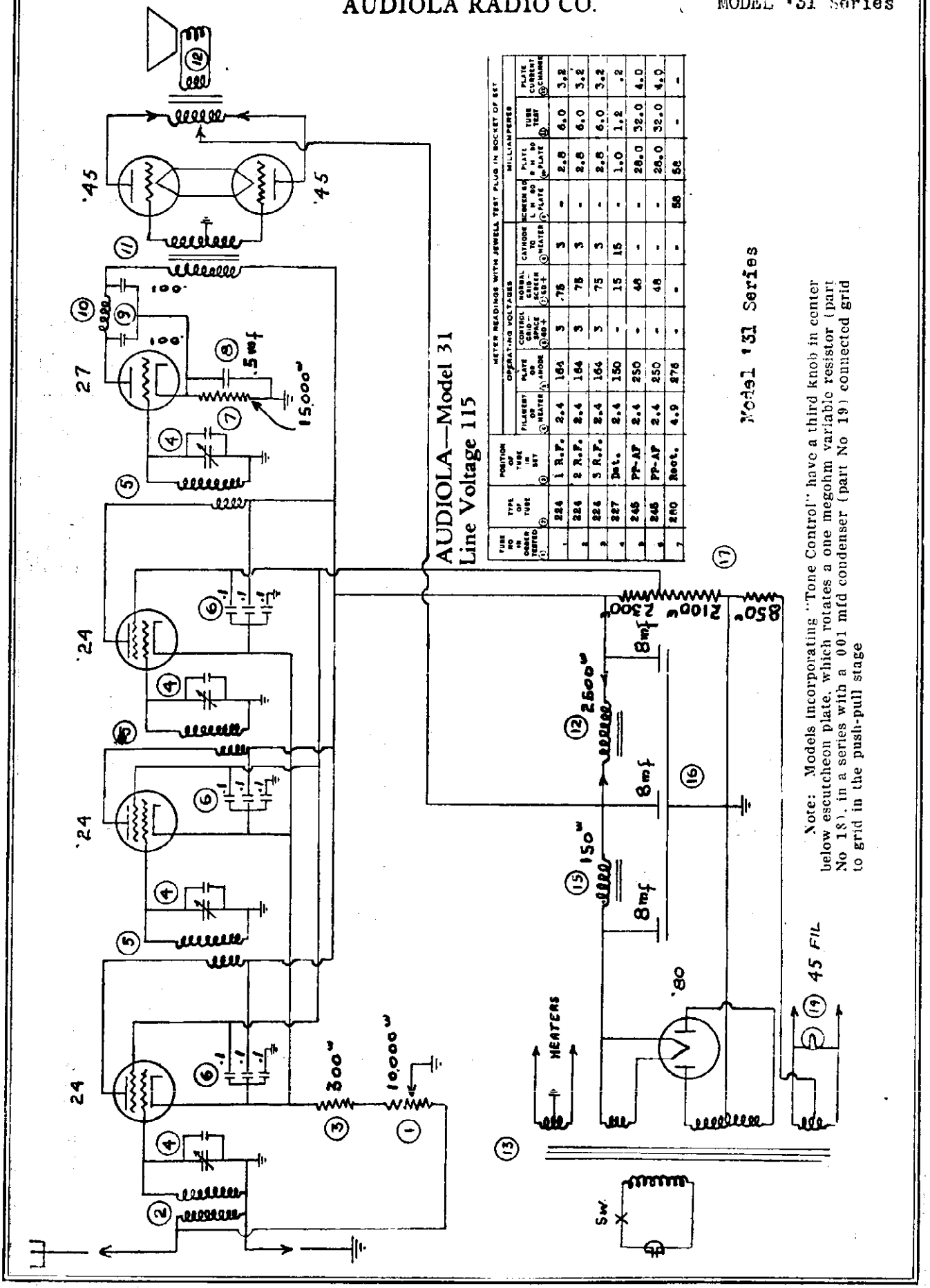
	Fil.	Plate	Grid	Plt. Crnt.
R-F	2.4	135-150	8-10	5. - 8. ma
Det.	2.4	80-80*		2. - 4.
A-F (1st)	2.4	135-150	10-14	4. - 6.
A-F (2nd)	2.4	210-250	40-50	22.-32.
Rect.	4.7-5.2			95.-105.

Voltage across field 80 - 100. Field current 40-50 ma.


MODEL 30-B
MODEL 7330
AUDIOLA RADIO CO.
V.C.
300 V
2 - 245
.02
DIAL LIGHT
227
15
25000 A
250,000 A
100,000 A
.1 MFD POTTER BLOCK COND.
RF CHOKE
.001
50,000 A
224
.5 Mf.
500,000 Ω
75 V
6 V
1 MFD.
R.F. BY-PASS CONDR
0-75 V
3 V.
VOLUME CONTROL 27000 Ω
75 Ω
ANT. ADJUST SWITCH
30000
DYN. FIELD
200 V
300 V
3. COND. BLOCK
4. MFD. 3. FILTER
325 V
245 C-Bias
8250
224 & 227 FIL.
245 FIL.
50 V
280
SW
115 V A C
LABELLED VOLTAGES APPROXIMATE TO GROUND
Models 30B, 7330 (1929)
1 AF
2 AF
DET
1 RF
2 RF
PILOT
2.5 V.
RECT
FRONT

AUDIOLA RADIO CO.

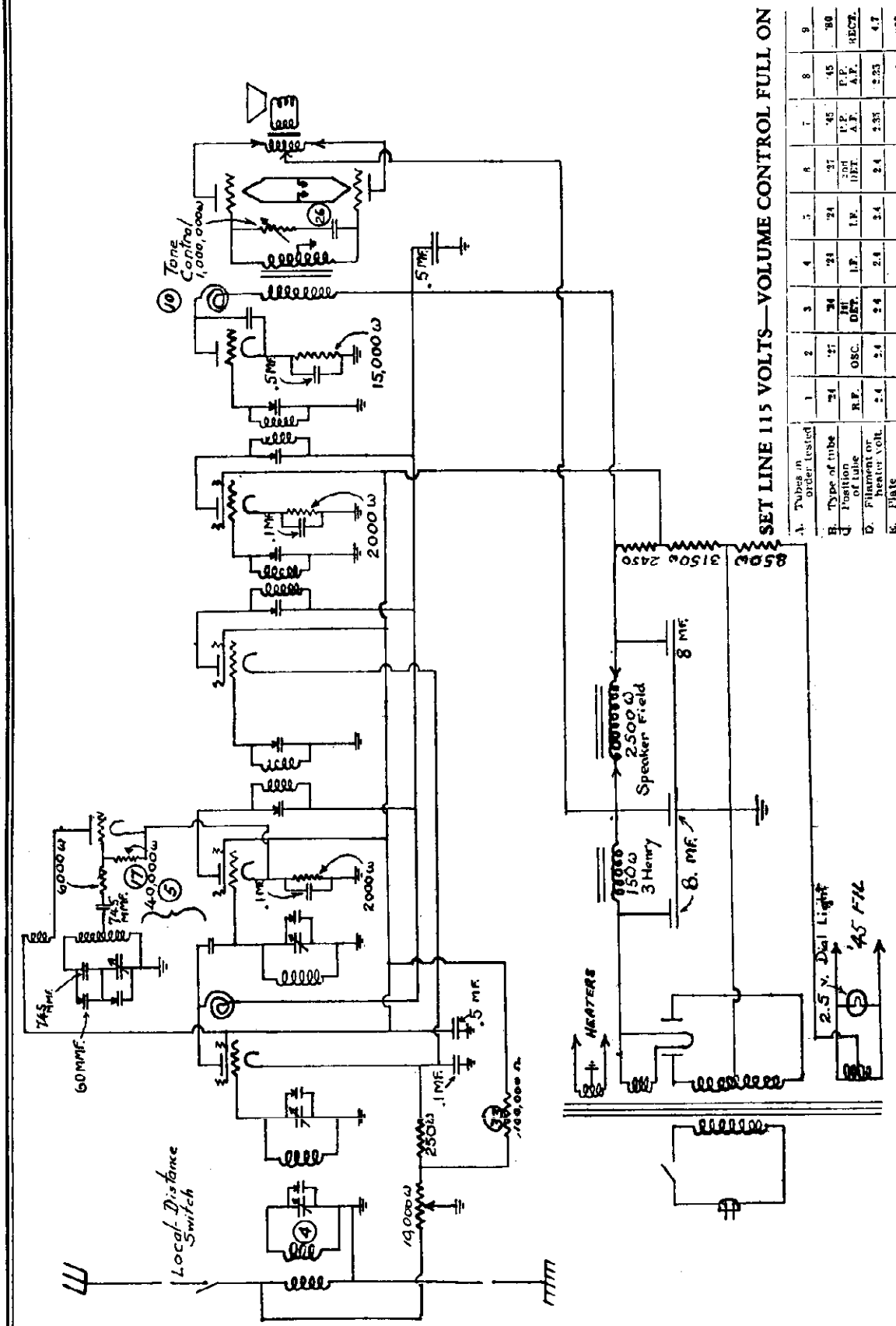
MODEL '31 Series



Note: Models incorporating "Tone Control" have a third knob in center below escutcheon plate, which rotates a one megohm variable resistor (part No 18), in a series with a .001 mfd condenser (part No 19) connected grid to grid in the push-pull stage

MODEL '31 Super

AUDIOLA RADIO CO.

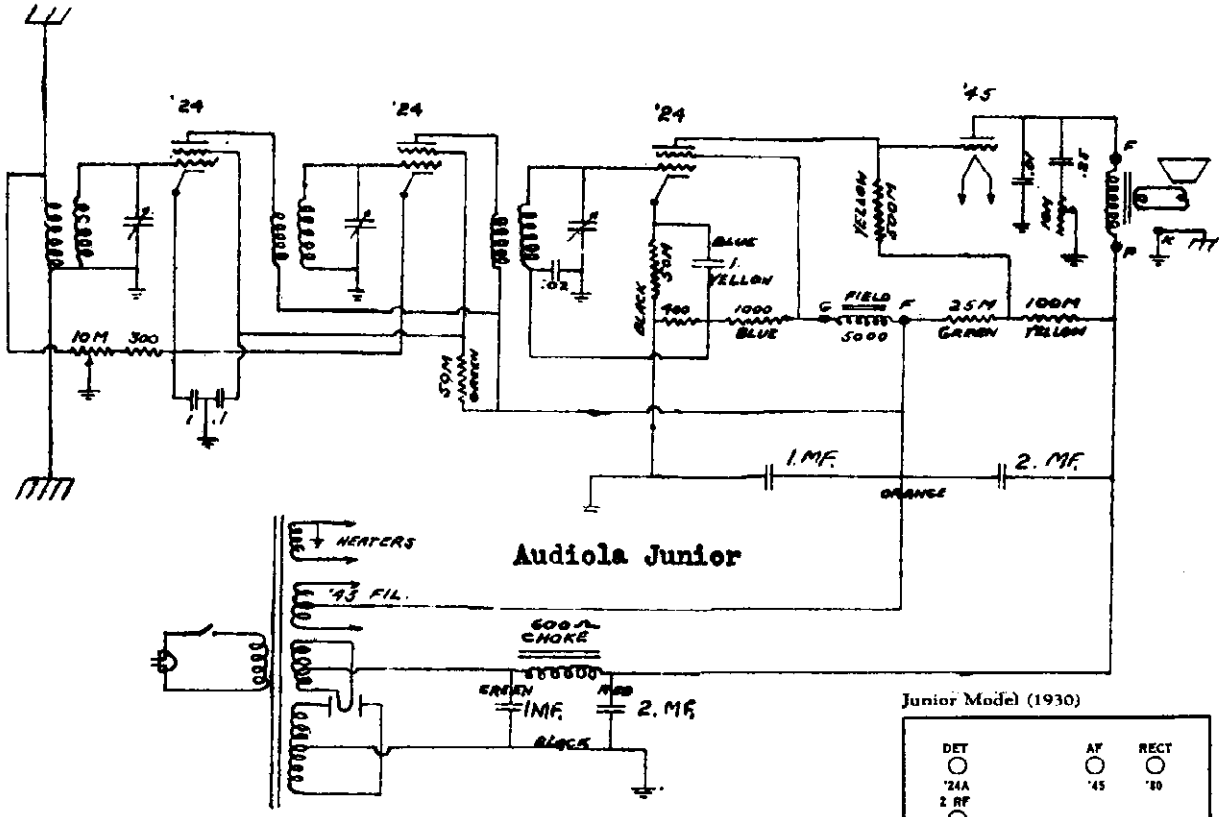


	1	2	3	4	5	6	7	8	9
A. Tubes in order tested									
B. Type of tube	224	227	224	224	224	227	245	245	280
C. Position of tube	R.F.	OSC.	1st DET.	I.F.	I.F.	2nd DET.	P.P. A.F.	P.P. A.F.	RECT.
D. Filament or heater volt.	2.4	2.4	2.4	2.4	2.4	2.4	2.35	2.35	4.7
E. Plate voltage	240	80	180	160	160	150	245	245	280
F. Control grid voltage	2.5	...	6.0	2.5	1.0	1.0	48	48	...
G. Screen grid voltage	80	...	80	80	80	...	...	...	...
H. Cathode to heater	2.5	*12.0	3.0	2.5	4.0	18	...	...	...
I. Plate current	4.0	*7.0	.5	3.0	2.0	1.0	28	28	58

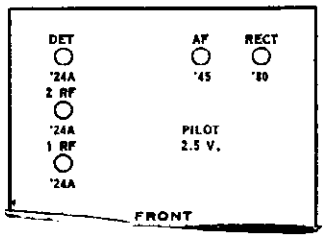
*Non-Oscillating.

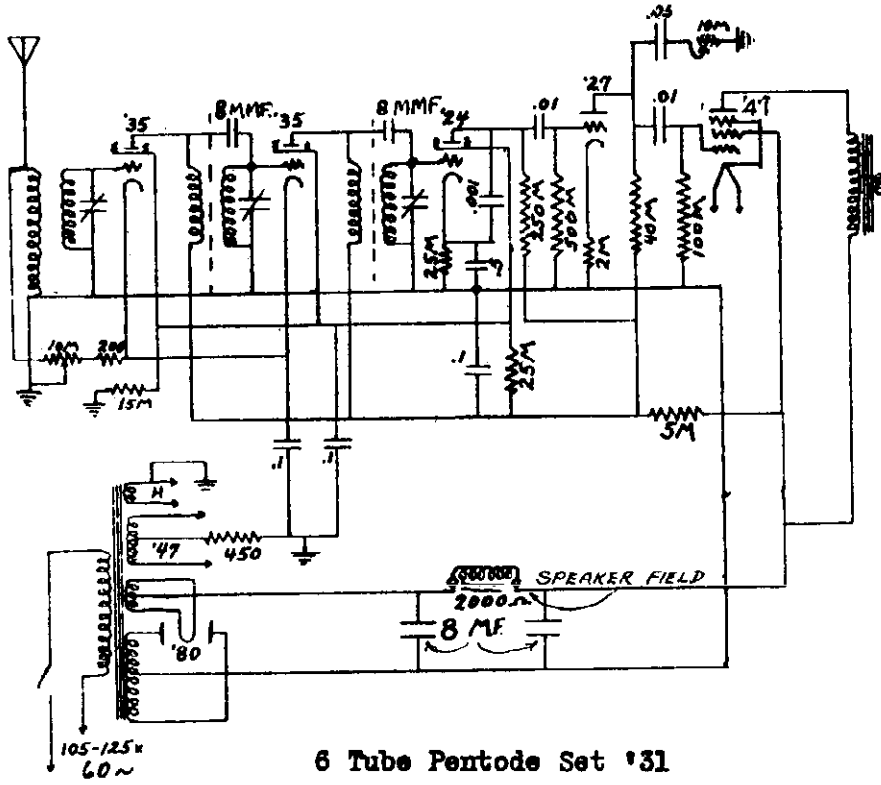
MODEL Audiola Jr.
MODEL 6 Tube Pentode
'31

AUDIOLA RADIO CO.

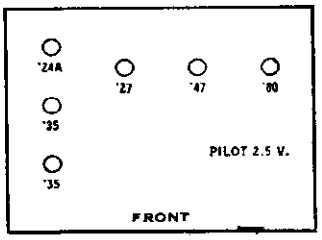


Audiola Junior





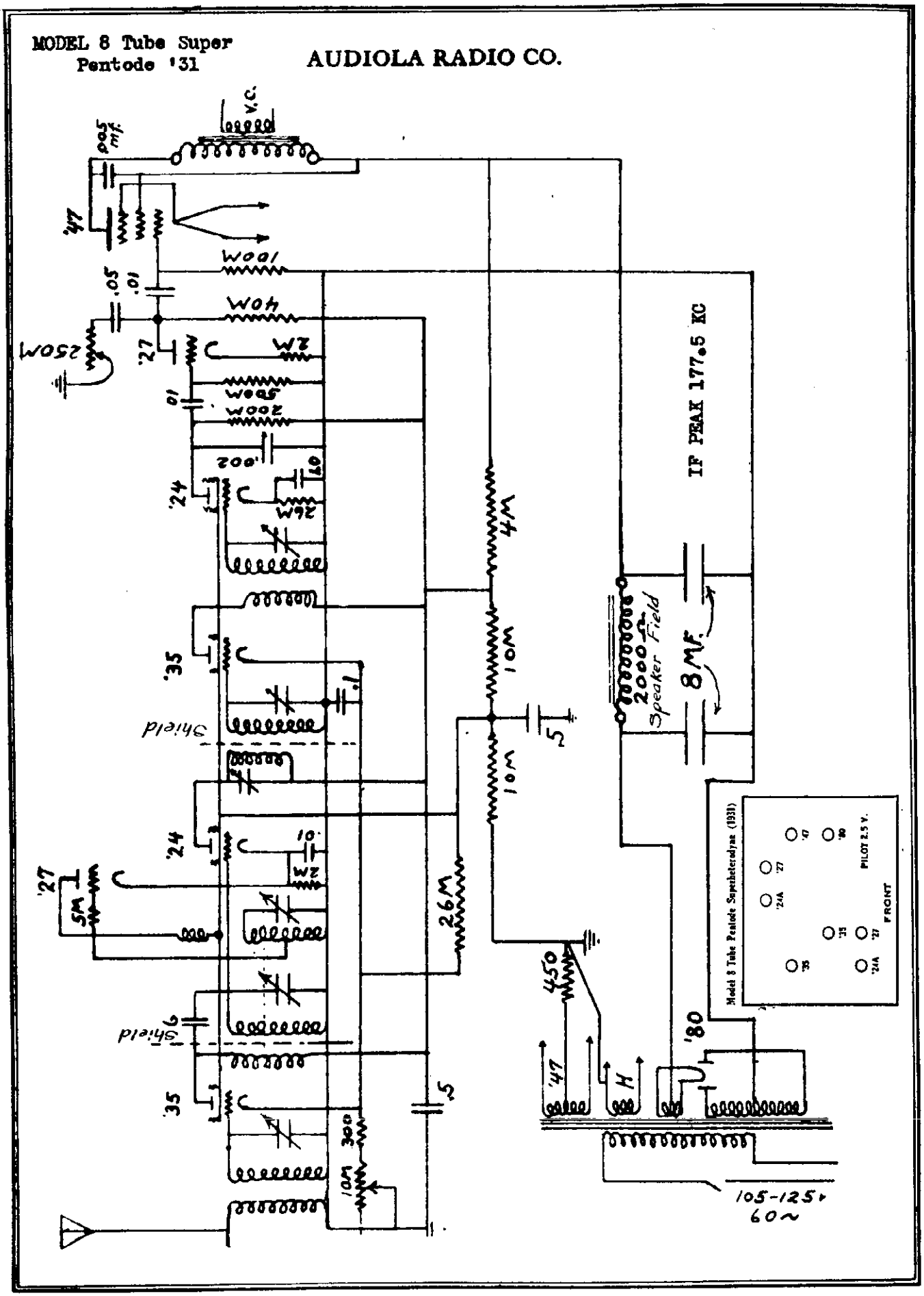
Model 6 Tube Pentode Set (1931)



6 Tube Pentode Set '31

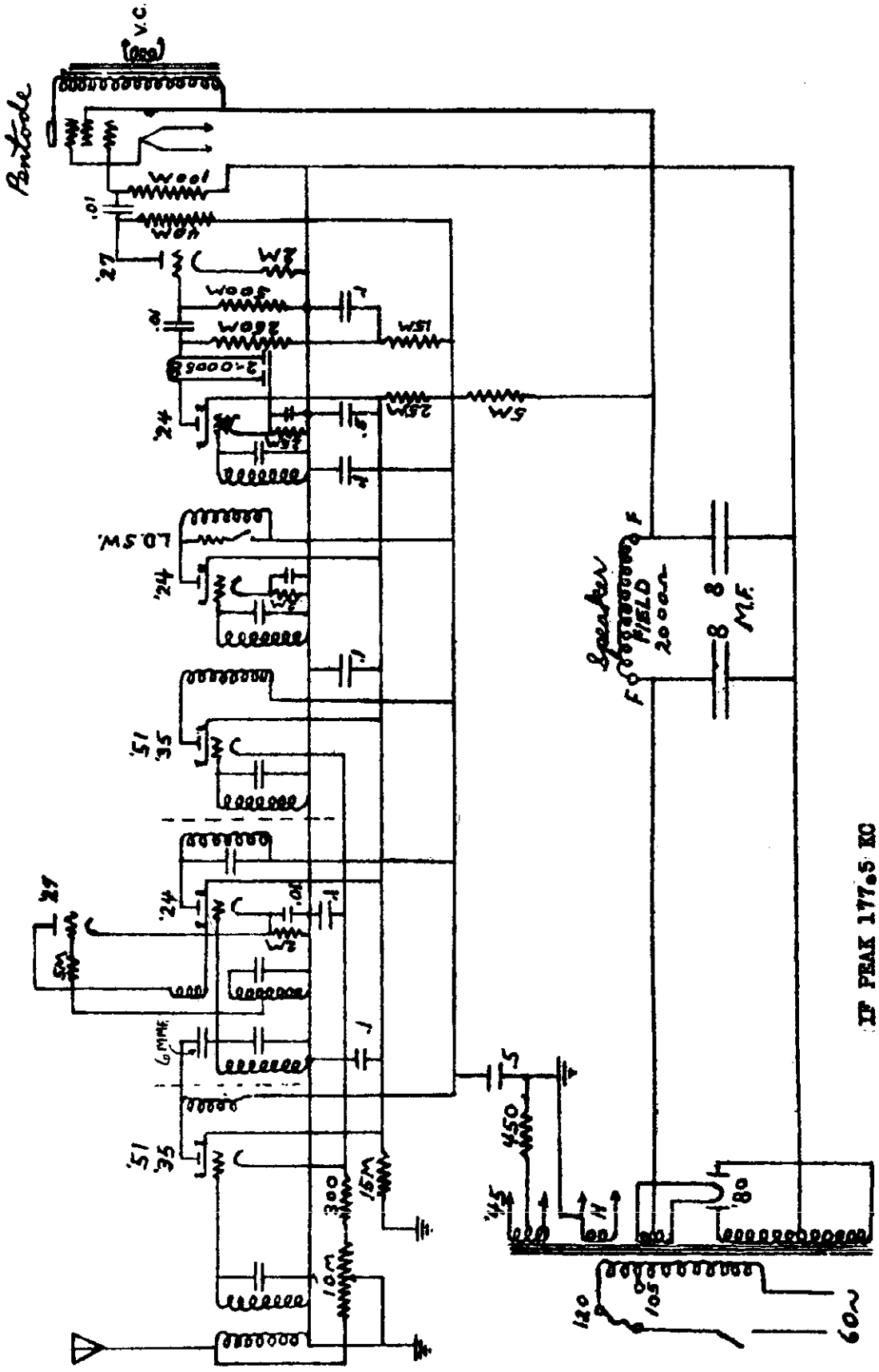
MODEL 8 Tube Super
Pentode '31

AUDIOLA RADIO CO.



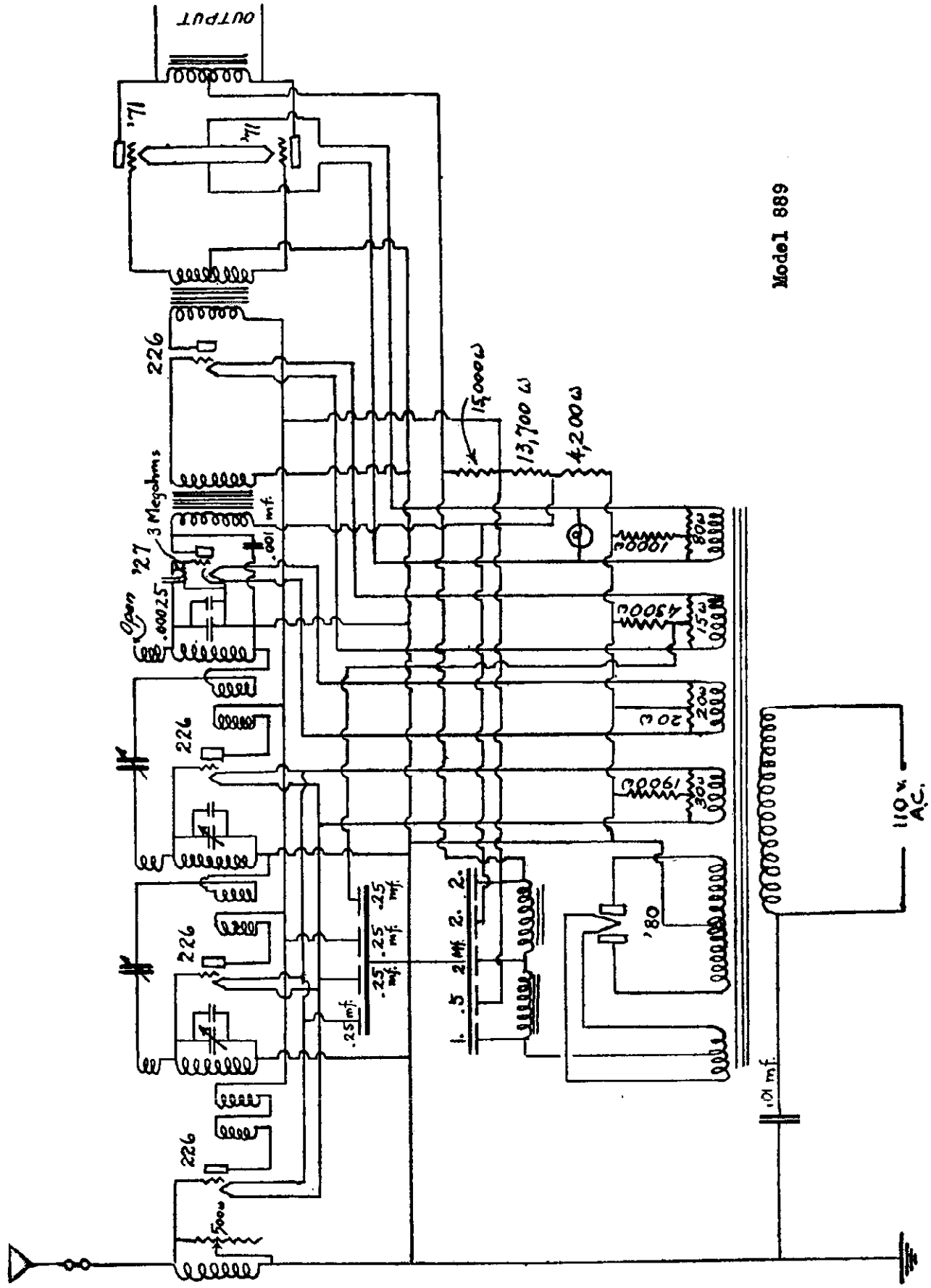
AUDIOLA RADIO CO.

MODEL 9 Tube Super
(1) Pentode '51



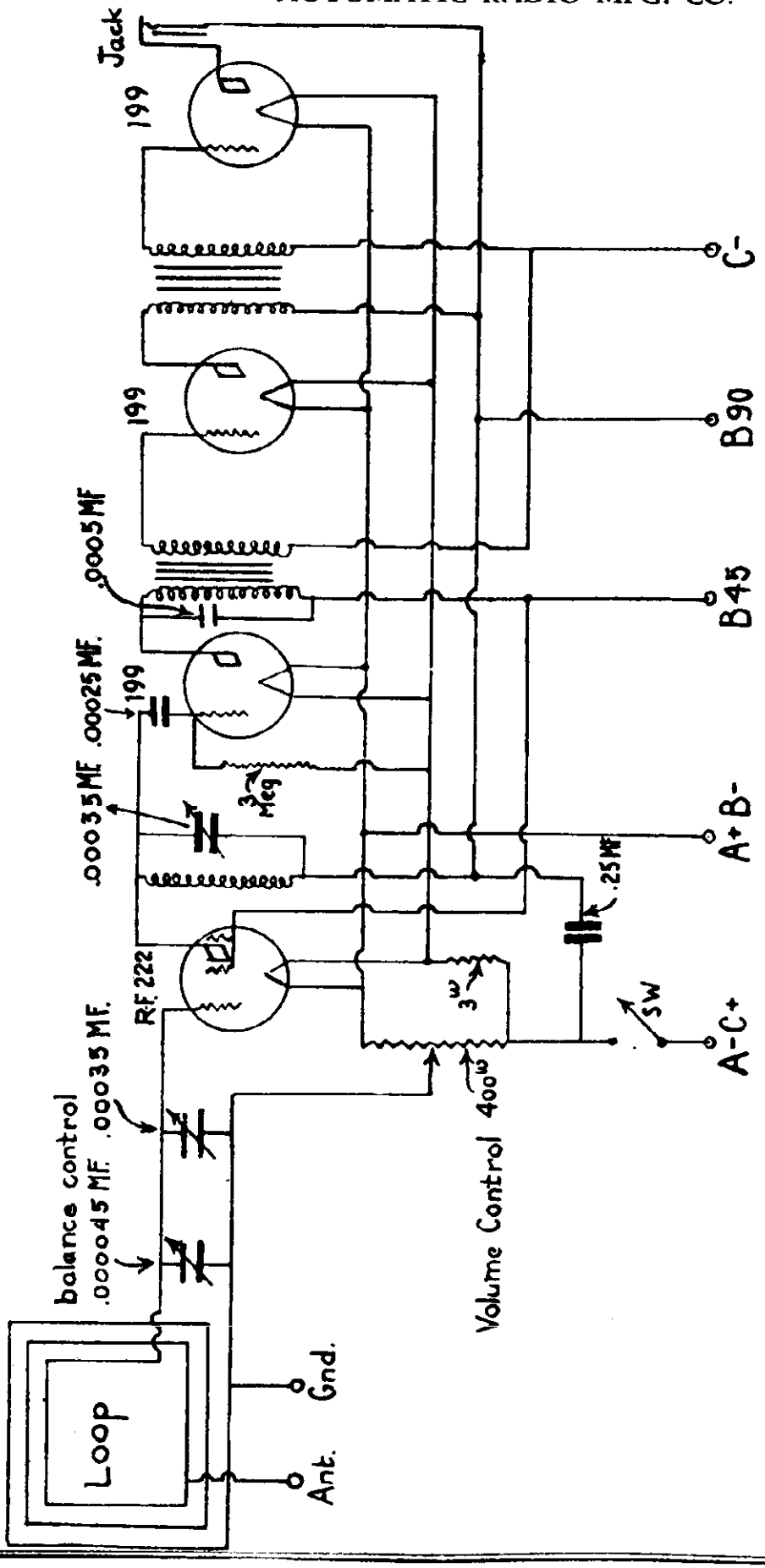
MODEL 889

AUDIOLA RADIO CO.

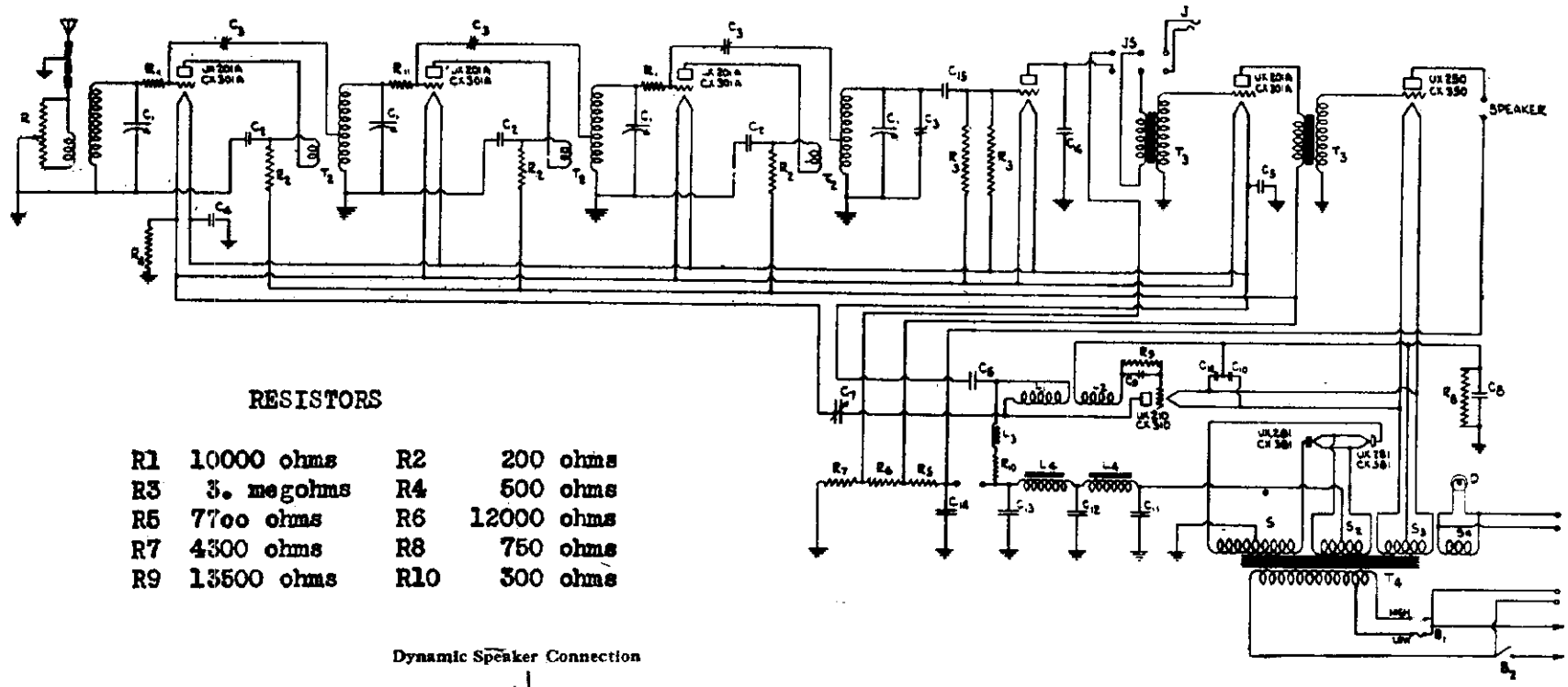


AUTOMATIC RADIO MFG. CO.

MODEL "TOM THUMB"
Screen Grid Four
Battery

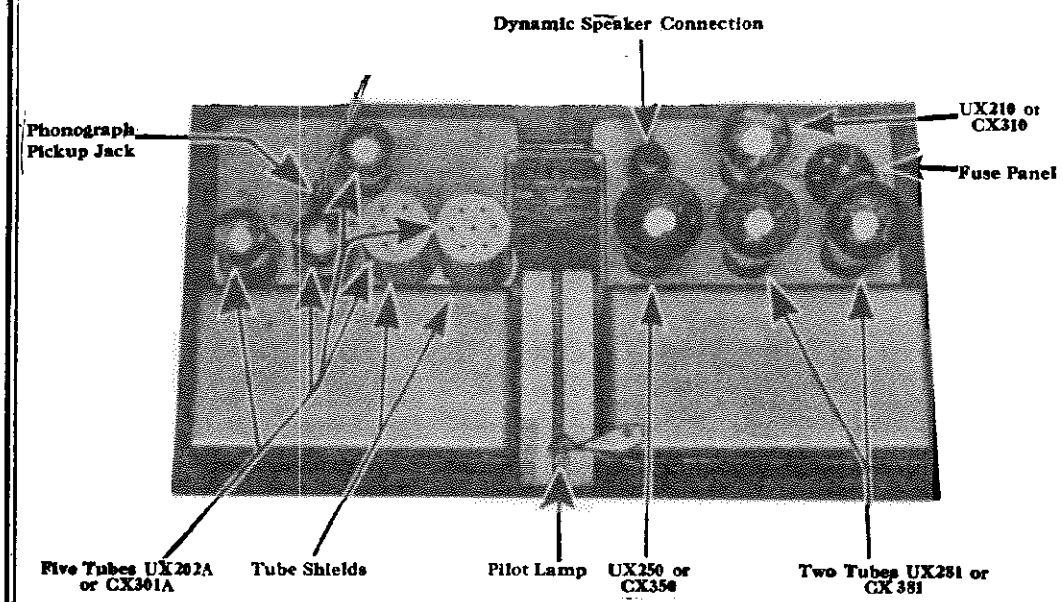


Schematic diagram of "Tom Thumb" screen grid four (battery)



RESISTORS

R1	10000 ohms	R2	200 ohms
R3	3. megohms	R4	500 ohms
R5	7700 ohms	R6	12000 ohms
R7	4300 ohms	R8	750 ohms
R9	13500 ohms	R10	300 ohms

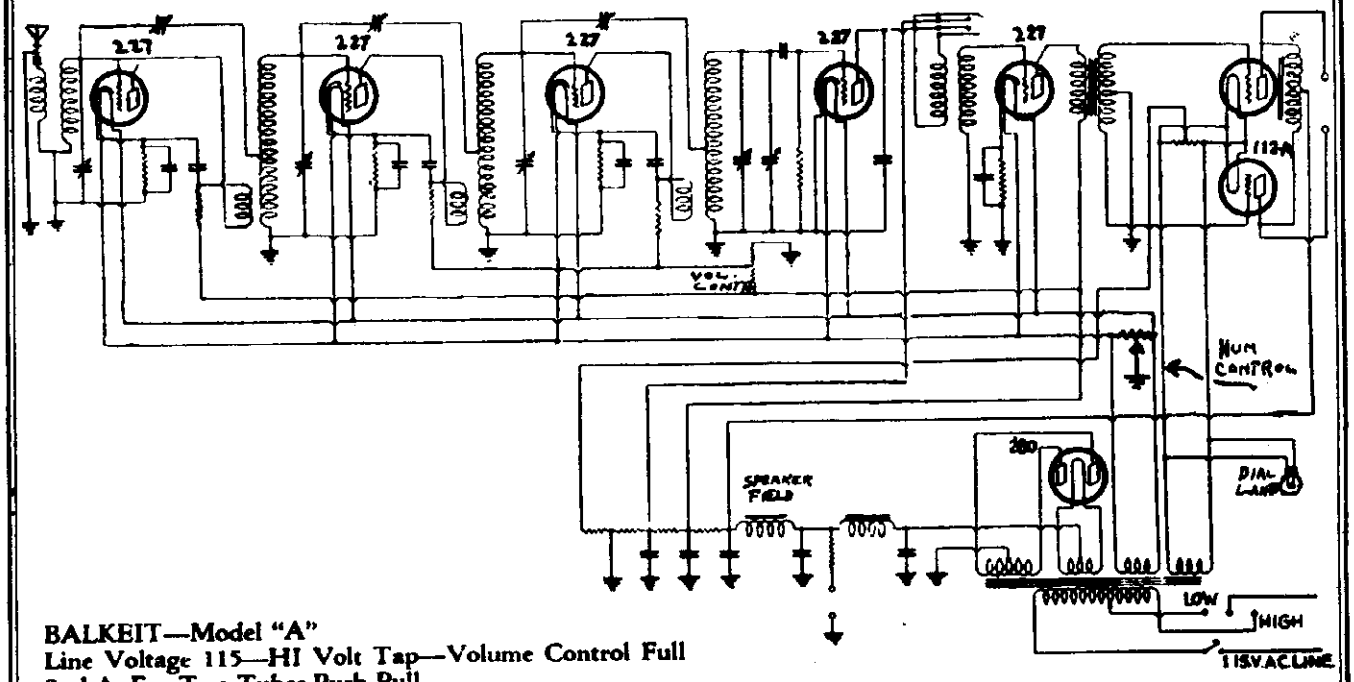


CONDENSERS

C1	.00037 mfd	C2	.1 mfd
C3	.00002 mfd	C4	.5 mfd
C5	1. mfd	C6	.006 mfd
C7	.00025 mfd	C8	2. mfd
C9	.0025 mfd	C10	.002 mfd
C11	2. mfd	C12	3. mfd
C13	4. mfd	C14	4. mfd
C15	.00015 mfd		

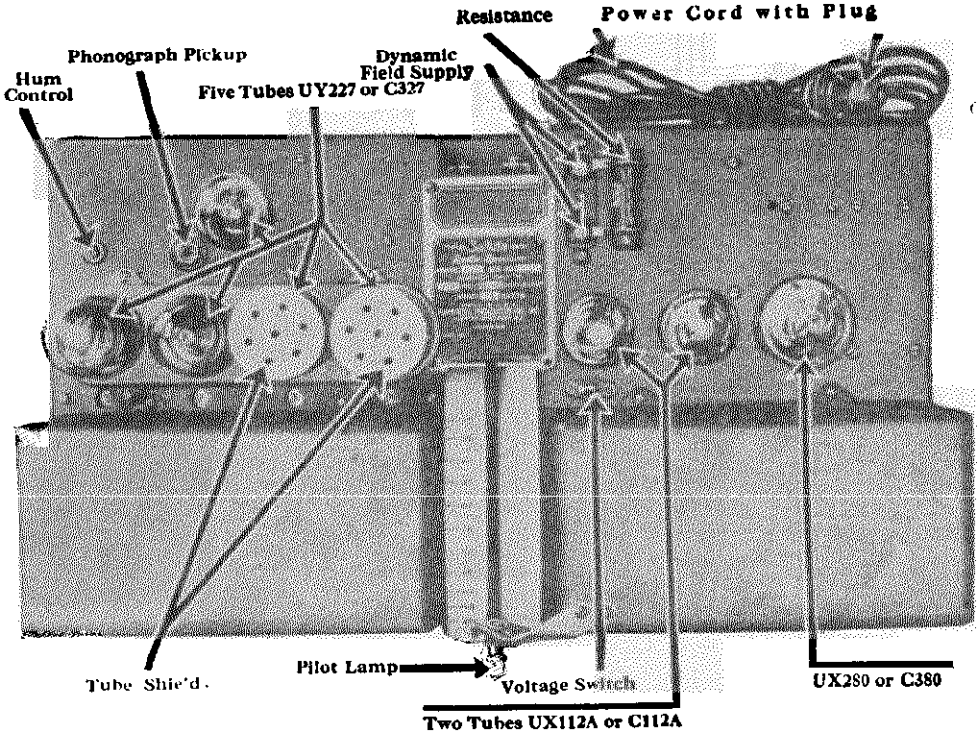
MODEL A-3,A-5,A-7

BALKEIT RADIO CO.



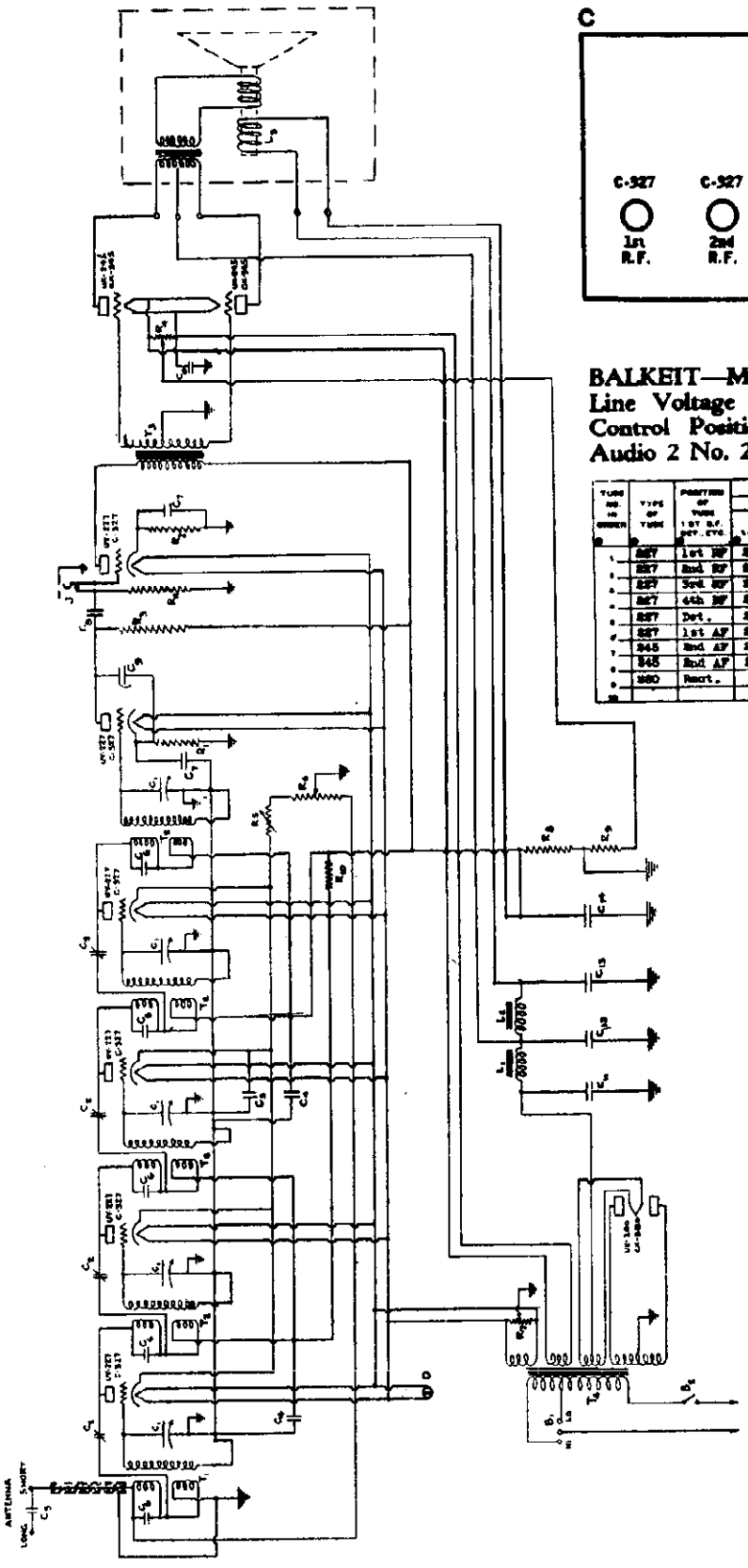
BALKEIT—Model "A"
Line Voltage 115—HI Volt Tap—Volume Control Full
2nd A. F.—Two Tubes Push Pull

TUBE NO. OR LETTER	TYPE OF TUBE	POSITION OF TUBE (1ST R.F. DET., ETC.)	READINGS TAKEN IN SOCKET OF SET: TUBE OUT A VOLTS	TUBE OUT B VOLTS	TUBE IN TESTER A VOLTS	TUBE IN TESTER B VOLTS	TUBE IN TESTER C VOLTS	TUBE IN TESTER CATHODE VOLTS	TUBE IN TESTER NORMAL PLATE M.A.	TUBE IN TESTER PLATE M.A. HUM TEST	TUBE IN TESTER PLATE M.A. GRIDS OPEN
1	227	1st.R.F.	2.3	98	2.1	84	5	-	3.1	4.5	1.4
2	227	2nd.R.F.	2.3	98	2.1	84	5	-	3.1	4.5	1.4
3	227	3rd.R.F.	2.3	98	2.1	84	5	-	3.1	4.5	1.4
4	227	Detector	2.3	46	2.1	30	0	-	2.2	2.4	0.2
5	227	1st.A.F.	2.3	98	2.1	84	5	-	3.1	4.5	1.4
6	112A	2nd.A.F.	4.7	142	4.5	132	9.5	-	9.0	13.8	4.8
7	112A	2nd.A.F.	4.7	142	4.5	132	9.5	-	9.0	13.8	4.8
8	280	Rectifier	-	-	4.5	-	-	-	32.0	-	-
9											
10											

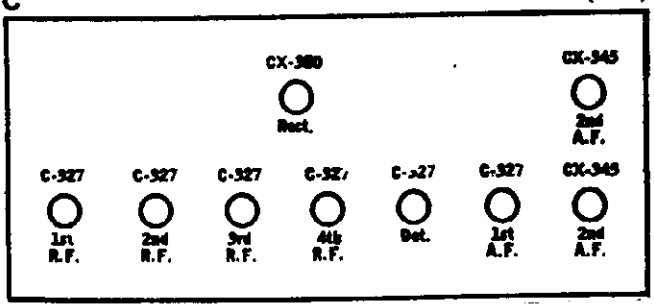


MODEL "C"

BALKEIT RADIO CO.



C (A.C.)



BALKEIT—Model "C"
Line Voltage 115—Set on High Volt Tap—Volume Control Position Full On—Use 120 V. Scale—2nd Audio 2 No. 245 in Parallel

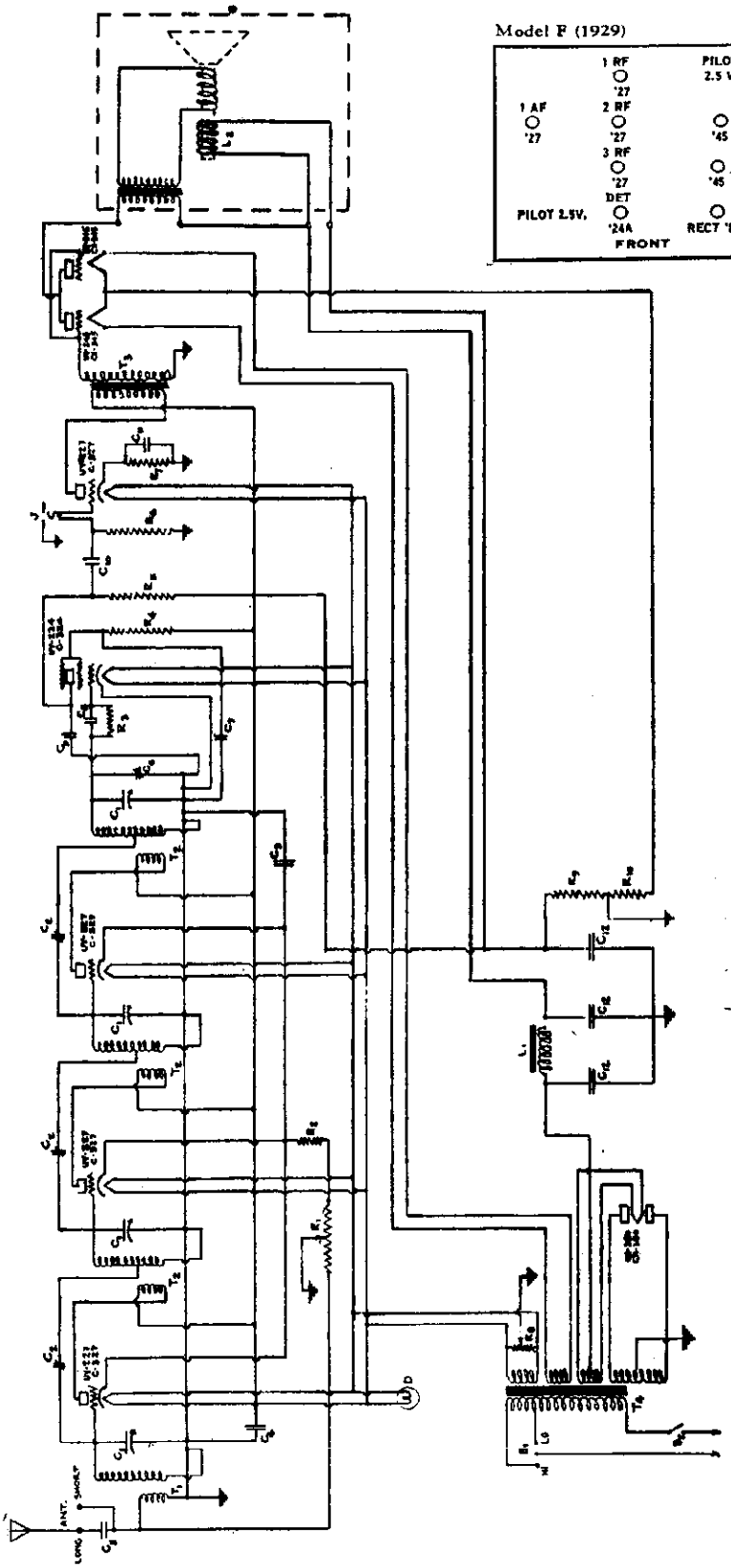
1	327	1st RF	2.35	118	2.4	117	10	10	3.8	4.6	.8	-
2	327	2nd RF	2.35	118	2.4	117	10	10	3.8	4.6	.8	-
3	327	3rd RF	2.35	118	2.4	117	10	10	3.8	4.6	.8	-
4	327	4th RF	2.35	118	2.4	117	10	10	3.8	4.6	.8	-
5	327	Det.	2.35	68	2.4	68	8.5	8.5	0.3	0.4	.1	-
6	327	1st AF	2.35	118	2.4	117	8	7.5	4.4	6.1	1.7	-
7	245	2nd AF	2.4	-	2.5	285	41	-	84	89	4.	-
8	245	2nd AF	2.4	-	2.3	285	41	-	84	89	4.	-
9	380	Rect.	-	-	4.75	-	-	-	94	-	-	-
10												

C-1	Tuning Condenser		
C-2	Neutralizing Condenser		
C-3	R. F. Grid Bias Condenser	.25	MF
C-4	R. F. Plate By-Pass Condenser	.25	MF
C-5	Antenna Condenser	.00025	MF
C-6	Primary By-Pass Condenser	.00025	MF
C-7	Grid Bias Condenser	1.0	MF
C-8	1st Audio Coupling Condenser	0.1	MF
C-9	Detector Plate Condenser	.002	MF
C-10	By-Pass Condenser	.25	MF
C-11	Filter Condenser	2	MF
C-12	Filter Condenser	2	MF
C-13	Filter Condenser	2	MF
C-14	Filter Condenser	1	MF
J	Phonograph Jack		
L-1	Filter Choke		
L-2	Filter Choke		
L-3	Speaker Field		
R-1	Detector Grid Bias Resistance	25,000	Ohms
R-2	1st Audio Grid Bias Resistance	1,750	Ohms
R-3	1st Audio Coupling Resistance	.1	Megohn
R-4	Mid-Tap Resistance	20	Ohms
R-5	R. F. Grid Bias Resistance	2,000	Ohms
R-6	Volume Control	15,000	Ohms
R-7	Hum Control	20	Ohms
R-8	Loss Current Resistance	3,600	Ohms
R-9	245 Grid Bias Resistance	770	Ohms
R-10	R. F. Plate Rsistance		
R-11	1st Audio Grid Resistance	.5	Megohn
T-1	Antenna Transformer		
T-2	R. F. Interstage Transformer		
T-3	Input Push-Pull Transformer		
T-4	Power Transformer		
B-1	HI-LO S.P.D.T. Toggle Switch		
B-2	S.P.S.T. Toggle Switch		
D	Dial Lamp		

Chassis layout on next page.

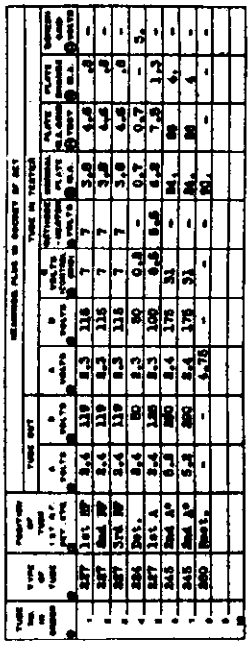
MODEL "F"

BALKEIT RADIO CO.



Model F (1929)

BALKEIT—Model "F"
Line Voltage 115—Set on High Volt Tap—Volume Control Position Full On *Last Stage Is 2 No. 245 in Parallel



C_1 Tuning Condenser.
C_2 Neutralizing Condenser.
C_3 R.F. Grid Bias Condenser .25 MF.
C_4 R.F. Plate By-Pass Condenser .25 MF.
C_5 Antenna Condenser .00025 MF.
C_6 Det. Padding Condenser.
C_7 Det. Screen Grid Bias Condenser .25 MF.
C_8 Det. Control Grid Condenser .0001 MF.
C_9 Det. Plate Condenser .0005 MF.
C_{10} 1st Audio Coupling Condenser 0.1 MF.
C_{11} 1st Audio Grid Condenser 0.5 MF.
C_{12} Filter Condensers 8.0 MF Each.
L_1 Filter Choke.
L_2 Speaker Field 2500 Ohms.
J Phonograph Jack.
D Dial Lamp.
R_1 Volume Control 15,000 Ohms.
R_2 R.F. Grid Bias Resistance 620 Ohms.
R_3 Det. Control Grid Resistance .5 Megohm
R_4 Det. Screen Grid Resistance .5 Megohm
R_5 1st Audio Coupling Resistance .1 Megohm.
R_6 1st Audio Grid Resistance .5 Megohm.
R_7 1st Audio Grid Bias Resistance 1750 Ohms.
R_8 Hum Control 20 Ohms.
R_9 Loss Current Resistance 4500 Ohms
R_{10} 245 Grid Bias Resistance 650 Ohms
T_1 Antenna Transformer.
T_2 R.F. Inter stage Transformer.
T_3 Input Audio Transformer
T_4 Power Transformer.
B_1 Hi-Lo S.P.D.T. Toggle Switch.
B_2 S.P.S.T. Toggle Switch.

Chassis layout on next page

SPECIFICATIONS

BALKITE PRODUCTS CO.

Balkite Models and Specifications

Current Models

Balkite AB 6-180, "A" and "B" Current Supply

Max. Output

"A"	6 volts	2 amperes
"B"	180	55 m.a.

B Voltages, 180, 135, 90, 67½, 45 or 22½

Consumption: watts 127
Dimensions: 10¼" x 18½" x 7¾"

Balkite AB 6-135, "A" and "B" Current Supply.

Max. Output

"A"	6 volts	2 amperes
"B"	135	40 m.a.

B Voltages, 135, 90, 67½, 45 or 22½

Consumption: watts 117
Dimensions: 10¼" x 18½" x 7¾"

Balkite A-6, "A" Current Supply.

Output

6 volts — 2 amperes

Consumption: watts 100
Dimensions: 6" x 10¾" x 8⅜"

Balkite B-180, "B" Current Supply.

Output

180 volts — 55 m.a.

Voltages, 180, 135, 90, 67½ and 45 or 22½

Consumption: watts 27
Dimensions 4½" x 12¾" x 8¾"

Balkite B-135, "B" Current Supply.

Output

135 volts — 40 m.a.

Voltages, 135, 90, 67½ and 45 or 22½
Consumption: watts 17
Dimensions: 4½" x 8¼" x 8⅝"

Balkite BW, "B" Current Supply..

Output

90 volts — 18 m.a.

Voltage, 90 and 45 or 22½
Consumption: watts 6
Dimensions: 3⅝" x 7⅝" x 8¾"

Balkite Model J Charger, Full Rate and Trickle Charger

Charging Rates

High Rate, 2½ amperes
Low Rate, ½ ampere

Consumption: watts 60
Dimensions: 5⅜" x 8½" x 7⅝"

Balkite Model N Trickle Charger, Trickle Charger

Charging Rates
High Rate, .8 ampere
Low Rate, .5 ampere

Consumption: watts 20
Dimensions: 4⅛" x 7½" x 6¼"

Balkite Model K Trickle Charger, Trickle Charger

Charging Rate, .5 ampere
Consumption: watts 15
Dimensions: 2¾" x 5½" x 5¼"

Previous Models

Balkite BY, "B" Current Supply.

Output

150 volts — 40 milliamperes

Voltages, 150, 135, 90, 67½ and 45 or 22½
Consumption: watts 17
Dimensions: 4½" x 12¾" x 8¾"

Balkite BX, "B" Current Supply.

Output

135 volts — 30 milliamperes

Voltages, 135, 90, 67½ and 45 or 22½
Consumption: watts 12
Dimensions: 4½" x 8¼" x 8⅝"

Balkite Combination, Model "KX", "B" Current Supply and Trickle Charger.

"B" Output

135 volts — 30 milliamperes

"B" Voltages, 135, 90, 67½ and 45 or 22½
"A" Charging Rate, 0.5 ampere
Consumption: watts 17
Dimensions: 13¼" x 4½" x 8⅞"

Balkite "B", Model D, "B" Current Supply.

Output

90 volts — 20 milliamperes

Voltages, 90, 45 or 22½
Consumption: watts 7
Dimensions: 3⅝" x 7⅝" x 8¾"

Balkite BII, "B Current Supply.

Output

90 volts — 40 milliamperes

Voltages, 90, 45, 22½
Consumption: watts 10

Balkite Model H Charger, High Rate Charger.

Charging Rate, 2½ amperes
Consumption: watts 60

Balkite Model A Charger, High Rate Charger.

Charging Rate, 3 amperes
Consumption: watts 80