Admiral

Model: 8C11	Chassis:	Year: Pre 1950
Power:	Circuit:	IF:
Tubes:		
Bands:		

Resources
Riders Volume 18 - ADMIRAL 18-27
Riders Volume 18 - ADMIRAL 18-28
Riders Volume 18 - ADMIRAL 18-29
Riders Volume 18 - ADMIRAL 18-30
Riders Volume 18 - ADMIRAL 18-31
Riders Volume 18 - ADMIRAL 18-32

ADMIRAL CORPORATION MODELS 8C11, 8C12, 8C13, 8C14, 8C15, 8C16, 8C17, CHASSIS 8C1

ALIGNMENT PROCEDURE

FM ALIGNMENT EQUIPMENT

The model 8C1 chassis should be aligned only with an AM signal generator and a vacuum tube voltmeter. Any standard brand vacuum tube voltmeter with a DC scale of not over 5 volts is suitable. A 3-volt zero center scale is desirable. A signal generator with a frequency range up to 110 MC. is desirable. It is possible however, to align the receiver with a signal generator going to 20 or 30 megacycles, by using the harmonics of these lower frequencies. To do this merely set the signal generator dial as follows and align exactly as explained in the alignment instructions.

Where alignment chart specifies 109 *MC.*, set signal generator to highest available frequency of the following:

109. MC	27.25 MC
54.50 MC	21.80 MC
36.33 MC	18.17 MC

Where alignment chart specifies 102 *MC.*, set signal generator to highest available frequency of the following:

102. MC	25.50 MC
51. MC	20.40 MC
34. MC	17. MC

Signal generators which do not tune to 110 MC or whose harmonics are not strong enough, cannot be used for FM alignment.

POINTER SETTING

With the gang closed, the pointer should be at the position as shown in the stringing diagram (Fig. 4), that is, the bottom edge of the pointer should line up with the top of the "MC" lettering on the dial scale. If the pointer is in a different position, move it by hand while keeping the gang closed.

TRIMMER IDENTIFICATION CHART

Trimmer Symbol		Function
A	T3	Ratio Detector transformer
B	T2	2nd IF transformer (FM)
C	T2	2nd IF transformer (FM)
D	T1	1st IF transformer (FM)
E	T1	1st IF transformer (FM)
F	T3	Ratio Detector transformer
G	C38	FM oscillator trimmer
H	C5b	FM RF trimmer
I	T5	2nd IF transformer (AM)
J	T5	2nd IF transformer (AM)
K	T4	1st IF transformer (AM)
L	T4	1st IF transformer (AM)
M	C5d	AM oscillator trimmer
N	C5a	AM antenna trimmer

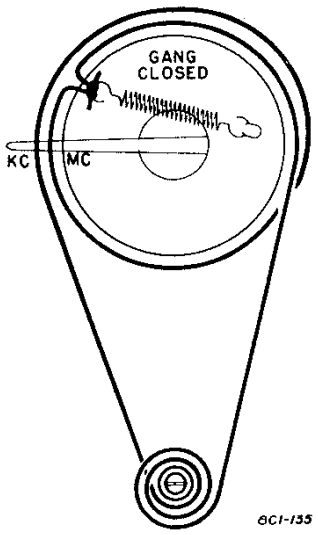


Fig. 4. Stringing Diagram

IMPORTANT PRELIMINARY ALIGNMENT STEPS

In FM alignment, it is essential that every step be followed. Especially important is picking the center of the I.F. curve (step 4 in the FM-I.F. alignment instructions). During this portion of the alignment it is necesary to tune the signal generator very carefully; it may necessitate having to estimate the dial readings to a tenth of a division.

- Check the set screws that hold the tuning drum to the shaft to see that they are tight and that the drum has not slipped on the shaft. The correct position of the drum can be seen in the stringing diagram.
- With the gang closed, the pointer should be at the position as shown in the stringing diagram, that is, the bottom edge of the pointer should line up with the top of the "MC" lettering on the dial scale. If the pointer is in a different position, move it by hand while keeping the gang closed.
- Be sure both the set and the signal generator are thoroughly warmed up before starting alignment.

MODELS 8C11, 8C12, 8C13, 8C14, 8C15, 8C16, 8C17, CHASSIS 8C1 ADMIRAL CORPORATION

FM I.F. AND RATIO DETECTOR ALIGNMENT

- Keep output indicator leads well separated from signal generator leads and chassis wiring.
- Band switch in FM position (fully to the left).
- While peaking IF's, keep reducing signal generator output so VTVM reading is approximately +1.5 volts DC with exception of Step #5.
- Speaker must be connected during alignment.
- FM antenna disconnected during alignment.

I.F. SLUG INFORMATION

To avoid splitting the slotted head of the powdered iron core tuning slug in the I.F. transformers, use a screw-driver with a blade ⅛" wide for I.F. alignment.

Under normal operating conditions, mis-alignment of slug-tuned circuits with age is slight. Therefore, re-alignment of the I.F. transformers should be accomplished by only a slight adjustment of the slugs.

Before proceeding, be sure to follow all steps listed above, under "Important Preliminary Alignment Steps."

	Connect Signal Generator	Generator Frequency	Receiver Dial Setting	Output Indicator and Special Connections	Adjust as Follows (very carefully)
1	Thru .001 cond. to pin # 1 of 6BA6 RF amplifier**	10.7 MC unmodulated.	Tuning gang wide open	Connect VTVM (DC probe) from point "W" to ground. (See Fig. 11.)	"A" (ratio detector primary) for maximum reading on VTVM.
2	"	"	"	" "	Iron cores "B" and "C" (2nd IF trans.) for maximum reading on VTVM.
3	"	"	"	" "	Iron cores "D" and "E" for maximum on VTVM. Readjust A, B, C, D, E, for maximum. (Keep reducing generator output to keep VTVM at 1.5 volts).
4	"	a. Reduce output of signal generator until VTVM reads **exactly** +1.5 volts DC. b. Tune generator frequency above 10.7 MC until VTVM reads **exactly** +1.0 volt. Note **exact** generator frequency. Extreme care in reading this is essential. c. Tune generator frequency below 10.7 MC until VTVM reads **exactly** +1.0 volt. Note **exact** generator frequency. Extreme care in reading this is essential. d. Add generator frequency in step c to generator frequency in step d and divide by 2. The result is the center frequency of the IF curve to be used in step 5. See example on next page. e. Tune generator frequency above and below 10.7 MC and note voltage reading on VTVM at different frequency points until you have a good impression of the shape of the selectivity curve. If you have two peaks as in Figures 9 or 10, note readings (voltage) of both peaks. If one peak is over 20% higher than the other one, it will be necessary to realign IF's. A selectivity curve that would require realignment is illustrated by Figure 10.			
5	"	Center of IF selectivity curve per step 4d above. See "EXAMPLE" on next page.	Tuning gang wide open	Connect VTVM (DC probe) from point "X" to ground. (See Fig. 11.)	Iron core "F" (ratio detector secondary) for zero voltage reading on VTVM. (The correct zero point is located between a positive and a negative maximum.)

If any adjustments were very far off, it is desirable to repeat steps 3, 4 and 5.
**Do not feed I.F. signal into converter grid as this will cause mis-alignment.

FM RF ALIGNMENT PROCEDURE

	Connect Signal Generator	Generator Frequency	Receiver Dial Setting	Output Indicator and Connections	Adjust as Follows
6	FM ant. terminal.	109 MC† (unmodulated).	Tuning gang wide open	Connect VTVM (DC probe) from point "W" to ground.	*G for maximum VTVM reading.
7	"	102 MC† (unmodulated).	102 MC	"	*Tune in generator signal on receiver. Adjust H for max. VTVM reading

* It is advisable to adjust generator output so VTVM readings do not exceed approximately + 1.5 V. DC after peaking.
† If your signal generator does not reach this frequency; use harmonics as described in "FM Alignment"

SETTING SIGNAL GENERATOR TO CENTER OF I.F. SELECTIVITY CURVE

CAUTION: Due to the difficulty of setting a signal generator to the accuracy required by this operation, extreme care must be exercised in making each setting. Otherwise, improper alignment of the ratio detector and consequent audio distortion will result.

EXAMPLE: (See Figures 5 and 6)

Voltage reading in Step 4a is + 1.5 volts.

Generator frequency on low side of 10.7 MC for a reading of + 1 volt DC = 10.640 MC.

Generator frequency on high side of 10.7 MC for a reading of + 1 volt DC = 10.800 MC.

Center frequency is obtained by adding 10.640 and 10.800, then dividing by 2. For these readings it will be 10.72 MC.

Set generator frequency to 10.72 MC as this is center of selectivity curve as shown in Figure 6.

Note: Numerical vernier dial readings may be used instead of MC.

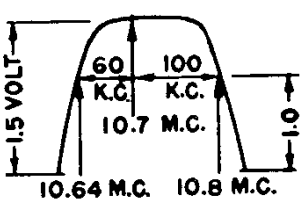


Fig. 5

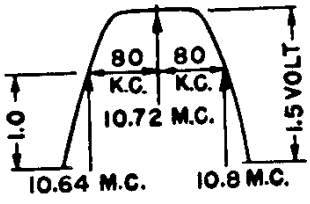


Fig. 6

TYPICAL SELECTIVITY CURVES

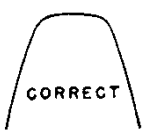


Fig. 7.

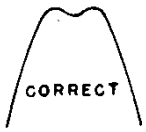


Fig. 8.

Fig. 9.

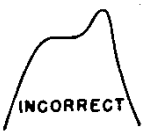


Fig. 10.

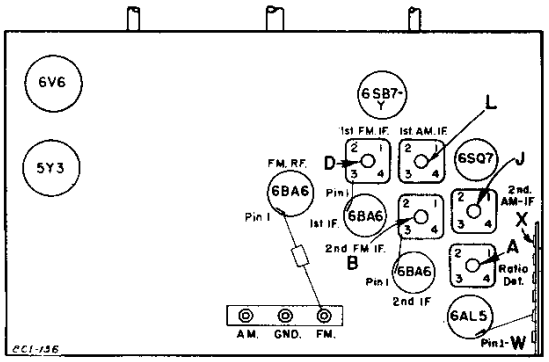


Fig. 11. Bottom Trimmer Location

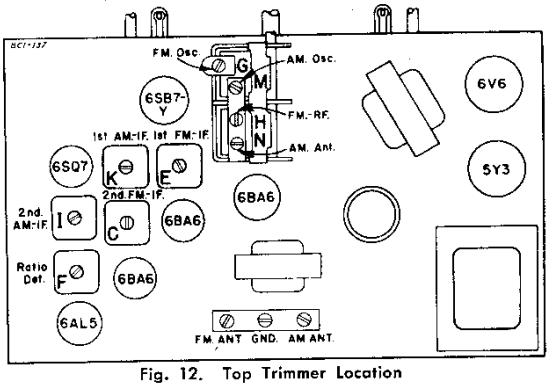


Fig. 12. Top Trimmer Location

AM ALIGNMENT PROCEDURE

- Use regular output meter connected across speaker voice coil.
- Turn receiver Volume Control full on; Tone Control full treble.
- Band Switch in center position.
- Use lowest output setting of signal generator that gives a satisfactory reading on meter.

	Connect Signal Generator	Dummy Antenna Between Radio and Signal Generator	Signal Generator Frequency	Receiver Dial Setting	Adj. Trimmers in Following Order to Max.
Set Band Switch to Broadcast Position (center) and be sure to follow instructions under heading "Important Preliminary Alignment Steps." Loop antenna can be disconnected from chassis in Steps 1 and 2.					
1	6SB7-Y (Pin #8)	.1 MFD	455 KC	Tuning gang wide open	I, J, K, L
2	To loop ant. terminal	Direct connection	1620 KC	Tuning gang wide open	M
Set Receiver Chassis on table next to back of cabinet. Connect Loop Antenna to Receiver.					
3	Place generator lead close to loop of set to obtain adequate signal. No actual connection (signal by radiation).		1400 KC	Tune in signal	N

MODELS 8C11, 8C12, 8C13, 8C14, 8C15, 8C16, 8C17, CHASSIS 8C1 — ADMIRAL CORPORATION

RESISTORS

Symbol	Description	Part No.
R1	390 Ohms, 1/4 Watt	60B 2-391
R2	470,000 Ohms, 1/4 Watt	60B 2-474
R3	22,000 Ohms, 1 Watt	60B 14-223
R4	1 Megohm, 1/4 Watt	60B 3-105
R5	47,000 Ohms, 1/4 Watt	60B 2-473
R6	47,000 Ohms, 1/4 Watt	60B 2-473
R7	15,000 Ohms, 2 Watt	60B 20-153
R8	470 Ohms, 1/4 Watt	60B 2-471
R9	470,000 Ohms, 1/4 Watt	60B 2-474
R10	27,000 Ohms, 1 Watt	60B 14-273
R11	470 Ohm, 1/4 Watt	60B 2-471
*R12	47,000 Ohms, 1/4 Watt	
R13	220,000 Ohms, 1/4 Watt	60B 2-224
R14	220,000 Ohms, 1/4 Watt	60B 2-224
R15	15,000 Ohms, 2 Watt	60B 20-153
R16	27,000 Ohms, 1/4 Watt	60B 2-273
R17	390 Ohms, 1/4 Watt	60B 2-391
R18	27,000 Ohms, 1 Watt	60B 14-273
R19	6,800 Ohms, 1/4 Watt, 5%	60B 1-682
R20	6,800 Ohms, 1/4 Watt, 5%	60B 1-682
R21	120,000 Ohms, 1/4 Watt	60B 2-124
R22	100,000 Ohms, 1/4 Watt	60B 2-104
R23	47,000 Ohms, 1/4 Watt	60B 2-473
R24	2 Megohms Tone Control (Includes ON-OFF Switch SW2)	75B 1-24
R25	1 Megohm Volume Control (Tapped at 500,000 Ohms)	75B 2-10
R26	10 Megohms, 1/4 Watt	60B 3-106
R27	22,000 Ohms, 1/4 Watt	60B 2-223
R28	470,000 Ohms, 1/4 Watt	60B 2-474
R29	470,000 Ohms, 1/4 Watt	60B 2-474
R30	390 Ohms, 1 Watt	60B 14-391

*Part of encased Diode Filter Unit 63A3-1. This unit consists of R12, C17, C18 (see schematic). If a section of the unit becomes defective, replace with component of proper value.

CONDENSERS

Symbol	Description	Part No.
C1	105 mmfd., 5%, —.00075 Temp. Coeff. Ceramic	65B 6-9
C2	.01 mfd., 400 Volts, Paper	64B 1-25
C3	.0015 mfd., "Hi-K" Ceramic	65A 14-1
C4	140 mmfd., 3%, Silver Mica	65B 1-26
C5a	486 mmfd. (max.) AM RF	Gang Cond. 68B 16
C5b	15 mmfd. (max.), FM RF	
C5c	15 mmfd. (max.), FM Osc.	
C5d	143 mmfd. (max.), AM Osc.	
C6	22 mmfd., 5%, Ceramic	65B 6-47
C7	7 mmfd, ±1 mmfd., —.00047 Temp. Coeff., Ceramic	65B 6-45
C8	.01 mfd., 400 Volts, Paper	64B 1-25
C9	35 mmfd., 5%, Ceramic	65B 6-46
C10	105 mmfd., 5%, —.00075 Temp. Coeff. Ceramic	65B 6-9
C11	7 mmfd., ±1 mmfd., —.00047 Temp. Coeff., Ceramic	65B 6-45
C12	.0015 mfd., "Hi-K" Ceramic	65A 14-1
C13	.01 mfd., 400 Volts, Paper	64B 1-25
C14	.01 mfd., 400 Volts, Paper	64B 1-25
C15	.005 mfd. min., Ceramic (Disc)	65A 10-1
C16	.01 mfd., 400 Volts, Paper	64B 1-25
*C17	100 mmfd., Mica	
*C18	100 mmfd., Mica	
C19	.01 mfd., 400 Volts, Paper	64B 1-25
C20	.005 mfd. min., Ceramic (Disc)	65A 10-1
C21	105 mmfd., 5%, —.00075 Temp. Coeff., Ceramic	65B 6-9
C22	4 mfd., 150 Volts, Electrolytic	67A 4-2
C23	105 mmfd., 5%, —.00075 Temp. Coeff., Ceramic	65B 6-9
C24	.002 mfd., 600 Volts, Paper	64B 1-14
C25a	30 mfd., 350 Volts	Elect. 67C 6-25
C25b	30 mfd., 350 Volts	
C25c	20 mfd., 25 Volts	
C26	.01 mfd., 400 Volts, Paper	64B 1-25
C27	.2 mfd., 200 Volts, Paper	64B 1-29
C28	.001 mfd., 600 Volts, Paper	64B 1-15
C29	.005 mfd., 600 Volts, Paper	64B 1-12
C30	500 mmfd., 10%, Mica	65B 5-27
C31	.005 mfd., 600 Volts, Paper	64B 1-12
C32	.01 mfd., 400 Volts, Paper	64B 1-25
C33	.1 mfd., 400 Volts, Paper	64B 1-20
C34	.01 mfd., 400 Volts, Paper	64B 1-25
C35	200 mmfd., 20%, Ceramic	65B 7-21
C36	.01 mfd., 400 Volts, Paper	64B 1-25
C37	.005 mfd., 600 Volts, Paper	64B 1-12
C38	2½ to 6 mmfd., Trimmer, Silver Ceramic	66A 24-2

*Part of encased Diode Filter Unit 63A3-1. This unit consists of R12, C17, C18 (see schematic). If a section of the unit becomes defective, replace with component of proper value.

COILS, TRANSFORMERS, ETC.

Symbol	Description	Part No.
L1	Antenna, FM (90" of #22 wire)	
L2	Antenna, Loop (AM)	95A 24-2
L3	Choke, RF	AB103-33
L4	Coil, Loop Loading (AM)	69A 56
L5	Coil, RF (FM)	69A 55
L6	Coil, Oscillator (FM)	69A 54
L7	Coil, Oscillator (AM)	69A 20-1
L8	Choke, Filter	74A 10
L9	Choke, Filament Approx. 10 turns (18") of solid #22 hook-up wire wound on C26 Solder one end to inside foil lead of C26	
T1	Transformer, 1st IF (FM)	72B 37
T2	Transformer, 2nd IF (FM)	72B 38
T3	Transformer, Ratio Detector	72B 39
T4	Transformer, 1st IF (AM)	72B 54
T5	Transformer, 2nd IF (AM)	72B 49
T6	Transformer, Power	80B 5
T7	Transformer, Output	79A 9
M7	Speaker 10" P.M. Dynamic	78B 28
SW1	Switch, Band (FM, AM, Phono)	77B 18
SW2	Switch, Power	Part of R24
SW3	Switch, Phono Motor (see Record Changer Manual)	
	Diode Filter (consists of R12, C17 and C18)	63A 3-1

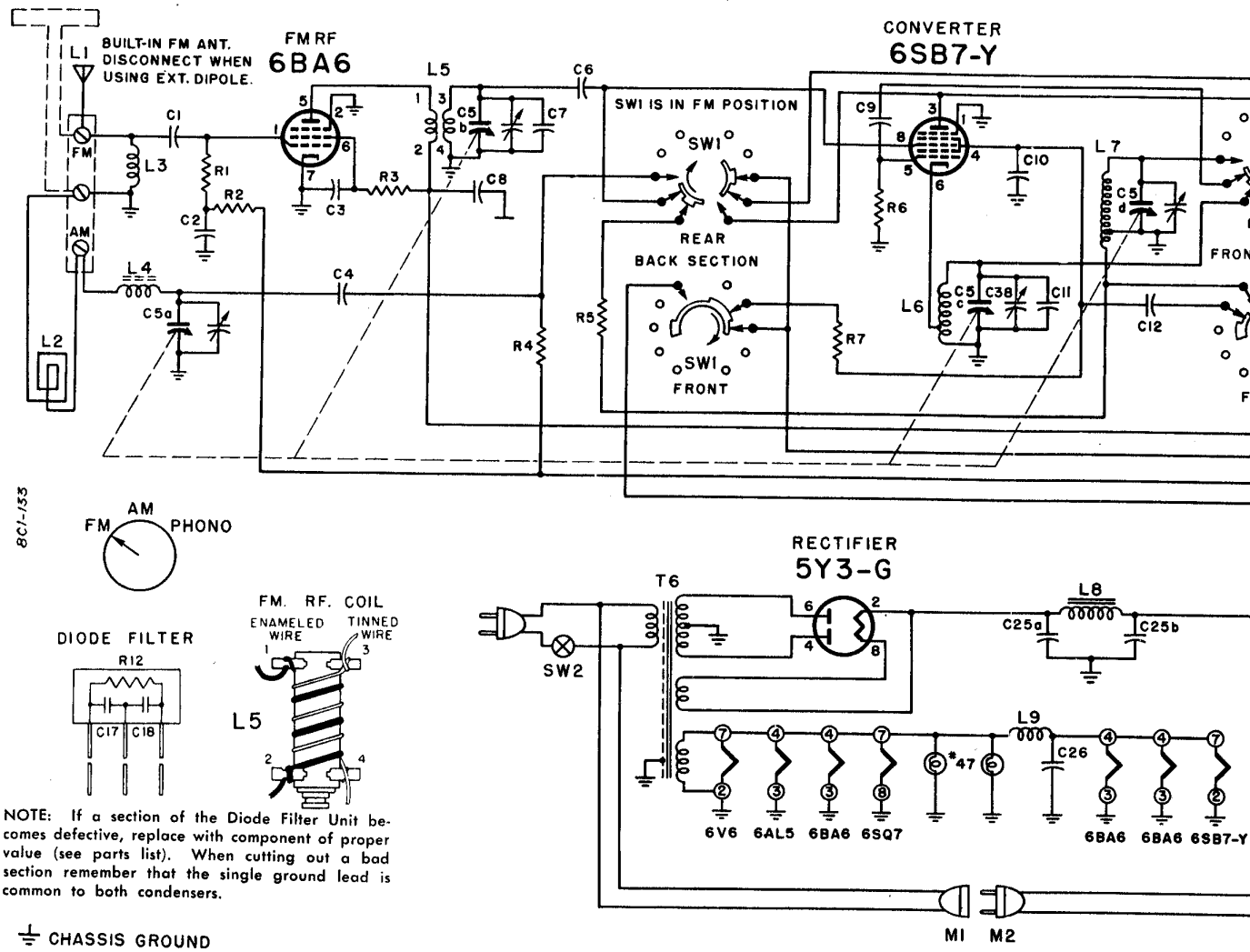
DIAL PARTS

Description	Part No.
Dial Bulb, #47	81A 1-8
Dial Bulb Socket (with leads)	82A 8-3
Dial Cord (18")	50A 1-3
Dial Escutcheon and window (Radio)	23D 29-2
Dial Escutcheon, Television (8C11, 8C12, 8C13 only)	23D30-1
Dial Pointer, Plastic	A1685
Dial Scale Assembly	A1676
Drum and Hub Assembly	A-1318
Rubber Channel (Inner edge of Dial Scale — 29½")	12A 20-3
Set Screw, Dial Drum, 8-32x1¼"	1A 5-59-0
Spring, Dial Cord	19B 1-3
Sleeve, Dial Tuning (brass)	27A 45

PHONOGRAPH PARTS

Note: See RC181 Record Changer

Symbol	Description	Part No.
M1	Cable and Socket, Phono Motor	89A 6-6
	Phono Motor Extension Cable (used on 8C11, 8C12, 8C13)	89A 6-32



NOTE: If a section of the Diode Filter Unit becomes defective, replace with component of proper value (see parts list). When cutting out a bad section remember that the single ground lead is common to both condensers.

⏚ CHASSIS GROUND

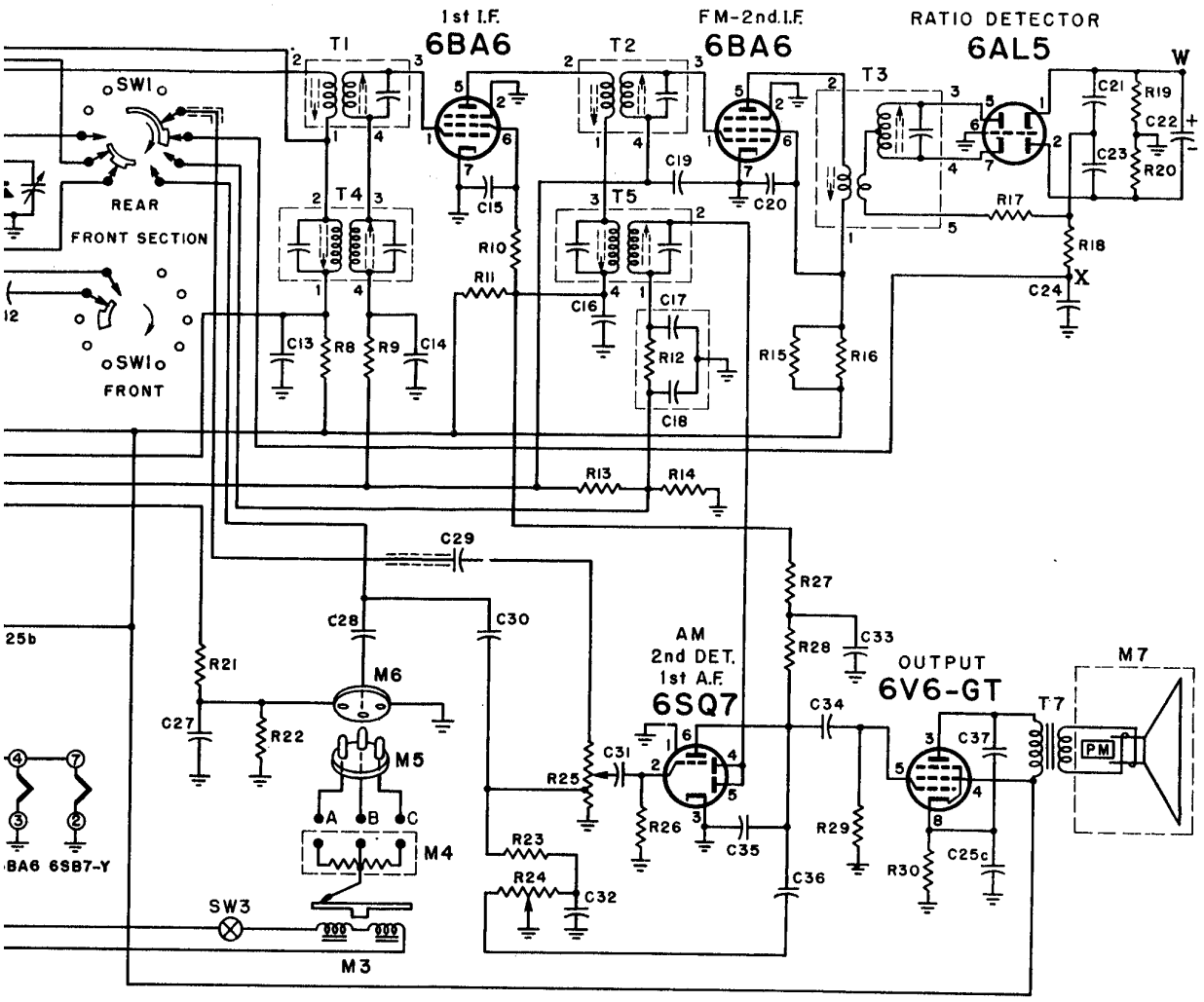
MISCELLANEOUS

Description	Part No.
*Cabinet	
Walnut (8C11)	35E 80-1
Mahogany (8C12)	35E 80-2
Blond (8C13)	35E 80-3
Walnut (8C14)	35E 76-1
Mahogany (8C15)	35E 76-2
Mahogany (8C17)	35E 82-1
Carton complete with fillers	
for 8C14, 8C15	44B 108
for 8C17	44B 109
Carton complete with fillers, less crate (for 8C11, 8C12, 8C13)	44B 115
Crate, less carton (for 8C11, 8C12, 8C13)	44B 117
*Door, Radio or Phono Tilt-Out	
pair for Walnut (8C11)	98A 41-1
pair for Mahogany (8C12)	98A 41-2
pair for Blond (8C13)	98A 41-3
pair for Walnut (8C14)	98A 41-4
pair for Mahogany (8C15)	98A 41-5
pair for Mahogany (8C17)	98A 41-6
*Door, Record Compartment Complete	
for Walnut (8C14)	98A 41-7
for Mahogany (8C15)	98A 41-8
Door Arm (near center of cabinet; see Ref. =5 in Fig. 1)	A1440
Door Arm (nearest side of cabinet; see Ref. =5 in Fig. 1)	A1441
Door Bracket (near center of cabinet; see Ref. =7 in Fig 1)	A1438
Door Bracket (nearest side of cabinet; see Ref. =7 in Fig 1)	A1439
Door Catch and Strike Plate for Record Compartment Door	98A 41-9
Door Handle (Tilt-Out Doors)	
for Walnut (8C11), Mahogany (8C12 and 8C17)	33A 33-1
for Blond (8C13)	33A 33-2
for Walnut (8C14) & Mahogany (8C15)	98A 41-10
Door Hinge, Record Storage Compartment for Walnut (8C14) & Mahogany (8C15)	98A 41-11
Door Knob, Record Storage Compartment	
for Walnut (8C14) & Mahogany (8C15)	98A 41-12
Grille, Metal	
for Walnut (8C11), Mahogany (8C12) and Blond (8C13)	36A 7-3
Grille Cloth	
for Walnut (8C11) & Mahogany (8C12)	98A 41-13
for Blond (8C13)	98A 41-14
for Walnut (8C14) & Mahogany (8C15)	98A 41-15
for Mahogany (8C17)	98A 41-16
Grommet, Rubber	
for mounting Chassis	12A 1-11

- Line
- Volt um t age mea volt
- Volt term othe
- Banc
- Dial
- Volu

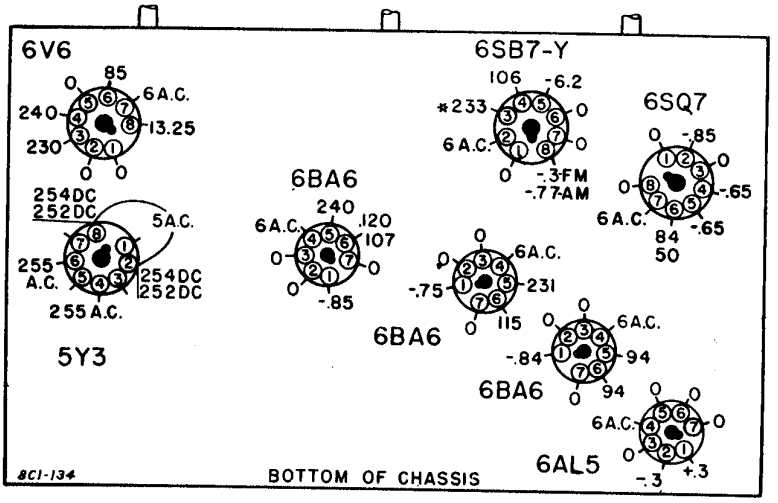
CORPORATION

MODELS 8C11, 8C12, 8C13, 8C14, 8C15, 8C16, 8C17, CHASSIS 8C1



VOLTAGE CHART

- Line Voltage 117.
- Voltages measured with a vacuum tube voltmeter. Second voltage readings and A.C. voltages measured with a 1000 ohm-per-volt meter.
- Voltages read between socket terminals and ground, unless otherwise indicated.
- Band switch in FM position.
- Dial turned to low frequency end.
- Volume Control—minimum.



*If measured with band switch in phono position, reading will be zero.