

# VIKING SERVICE INFORMATION FOR MODELS

RCS-641M  
RCS-642M

## 13 TUBE AM-FM STEREO RADIO-PHONO COMBINATION WITH 3 TUBE FM STEREO RADIO ADAPTER

For Operation on 110-120 Volts A.C. Cycle as Marked.

When writing for Service information and/or parts, please quote Model and Serial Number as found on the license label. Always order service parts by part number. Part numbers are positive identification which ensures fast service and avoids unnecessary delays.

All information printed in this leaflet is up to date as of August 14th, 1963. Subsequent changes are covered by bulletin.

### Specifications

#### AM-FM TUNER

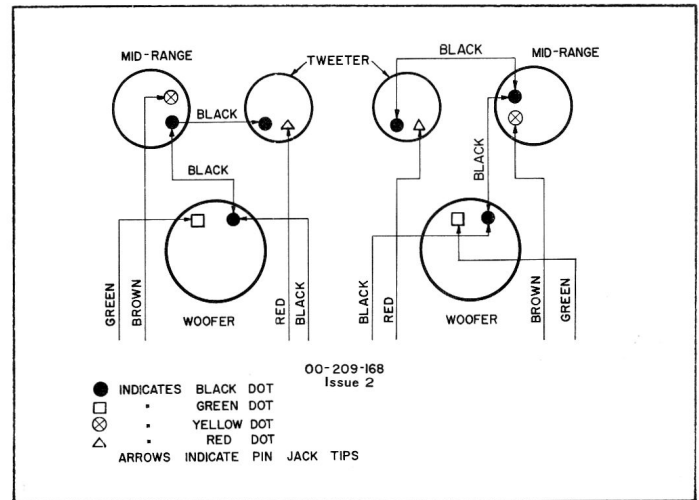
Standard Broadcast Range..... 535 to 1650 Kc.  
Frequency Modulation Range..... 88 to 109 Mc.  
Band Width.....AM 10 Kc. Band Width at 2X Down  
19 Kc. Band Width at 10X Down

FM 350 Kc. Band Width at 10X Down

Sensitivity.....AM---2.0 uv for 100 mv at Detector  
2.0 uv for 20 mv at Audio Take Off Point.  
FM---1.75 uv for 20 db quieting  
3.5 uv for 30 db quieting

I.F. Frequency - AM - 455 Kc/s  
- FM - 10.7 Mc/s

#### SPEAKER CONNECTIONS



#### AMPLIFIER

Frequency Response - 20 cps. to 80,000 cps.  $\pm$  2 db  
MUSIC POWER OUTPUT 40 watts peak  $\pm$  1 db (20 watts peak per channel)

#### LOUDNESS CONTROL DUAL ELEMENT -

Designed to provide bass and treble lift as follows:  
35° rotation from CCW position - 25 db. lift at 30 cps.  
35° rotation from CCW position - 6 db. lift at 15K cps.  
65° rotation from CCW position - 7 db. lift at 30 cps.  
65° rotation from CCW position - 4 db. lift at 15K cps.  
with reference to 1000 cps.

#### BASS TONE CONTROL DUAL ELEMENT -

Designed to provide 10 to 15 db. cut and lift at 50 cps.  
Covers sound spectrum from 20 - 1000 cps.

#### TREBLE TONE CONTROL DUAL ELEMENT -

Designed to provide 10 to 15 db. cut and lift at 10,000 cps. Covers sound spectrum from 1000 to 15,000 cps.

Measurements with tone controls in flat position, level control fully clockwise.

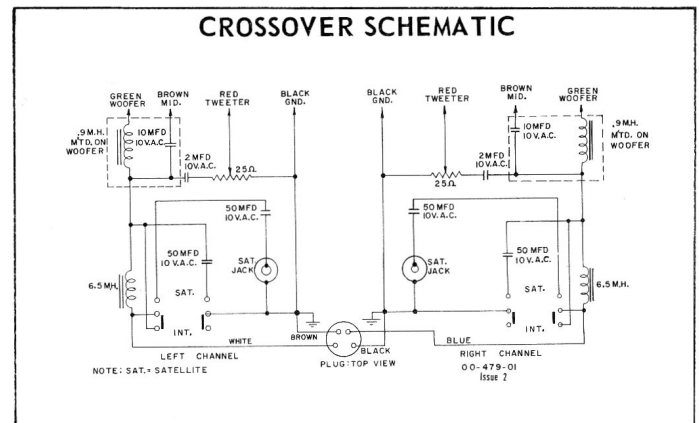
#### BALANCE CONTROL -

Designed to provide equal output from both channels.

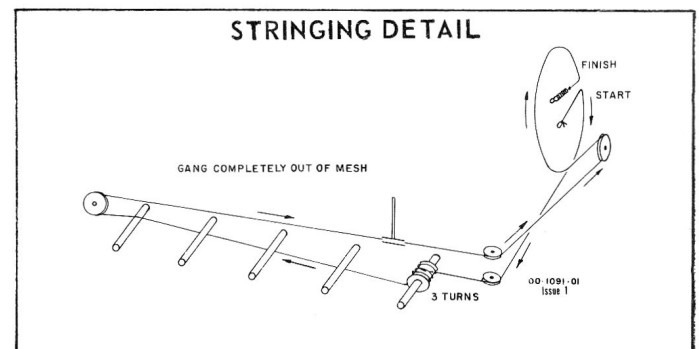
#### LEVEL SWITCH -

Three step level switch designed to decrease level, approximately 9 db. per step. Used in conjunction with Loudness control.

#### CROSSOVER SCHEMATIC



#### STRINGING DETAIL



# EATON'S OF CANADA



# AM-FM TUNER ALIGNMENT

STEP	DUMMY ANTENNA	SIGNAL APPLIED TO	FREQ.	MODULATION	BAND SWITCH SETTING	DIAL POINTER SETTING	INDICATING METER	ADJUST	REMARKS	NOMINAL SENSITIVITY
1	.05 uf	Pin # 1 V3 6BA6	455 Kc/s	400 C.P.S. AM at 30%	AM	600 Kc/s	AC-VTVM To Point "F"	T11, 2nd AM-IF	Adjust for maximum output	4000 uv for 20 mv output
2	.05 uf	Pin # 7 V8 6BE6	455 Kc/s	400 C.P.S. AM at 30%	AM	600 Kc/s	AC-VTVM To Point "F"	T10, 1st AM-IF	Adjust for maximum output	300 uv for 20 mv output
3	** 200 uuf	AM Ant Term Strip # 1	600 Kc/s	400 C.P.S. AM at 30%	AM	600 Kc/s	AC-VTVM To Point "F"	T7, T8, and T9	Connect for long wire antenna, adjust for maximum output.	2.5 uv for 20 mv output
4	** 200 uuf	AM Ant Term Strip # 1	1400 Kc/s	400 C.P.S. AM at 30%	AM	1400 Kc/s	AC-VTVM To Point "F"	C1C, C1D and C1E Trimmers	Connect for long wire antenna, adjust for maximum output	1.8 uv for 20 mv output
5	Repeat steps 3 and 4, check for band coverage at 535 Kc/s - 1650 Kc/s and for tracking at 950 Kc/s.									
6	When local switch is depressed, sensitivity is reduced by approximately ten times.									
7		Pin # 1 V4 6AU6	10.7 Mc/s	---	FM	Point of no inter- ference	DC-VTVM To Point "H"	T5, 3rd FM-IF	Adjust for maximum meter deflection	15000 uv for 1V output
8		Pin # 1 V4 6AU6	10.7 Mc/s	---	FM	Point of no inter- ference	DC-VTVM To Pin # 5 of T6	T6, FM Discriminator Primary	Adjust for maximum meter deflection	*** 10000 uv for 3V output
9		Pin # 1 V4 6AU6	10.7 Mc/s	---	FM AFC	Point of no inter- ference	DC-VTVM To Point "D"	T6, FM Discriminator Secondary	Adjust for zero voltage	---
10		Pin # 1 V3 6BA6	10.7 Mc/s	---	FM	Point of no inter- ference	DC-VTVM To Point "H"	T4, 2nd FM-IF	Adjust for maximum meter deflection	250 uv for 1V output
11		C1A FM Gang	10.7 Mc/s	---	FM	Point of no inter- ference	DC-VTVM To Point "H"	T3, 1st FM-IF	Adjust for maximum meter deflection	---
12	*	FM Ant. Term Strip	90 Mc/s	400 C.P.S. FM 22.5 Kc/s Deviation	FM	90 Mc/s	AC-VTVM To Point "K"	Expand or compress L3 and T2	Adjust for maximum output	3.0 uv for 100 mv output
13	*	FM Ant. Term Strip	106 Mc/s	400 C.P.S. FM 22.5 Kc/s Deviation	FM	106 Mc/s	AC-VTVM To Point "K"	C1A and C1B Trimmers	Adjust for maximum output	3.0 uv for 100 mv output
14	Repeat steps 12 and 13 until output drops at least 20 db when mod. is turned off.									

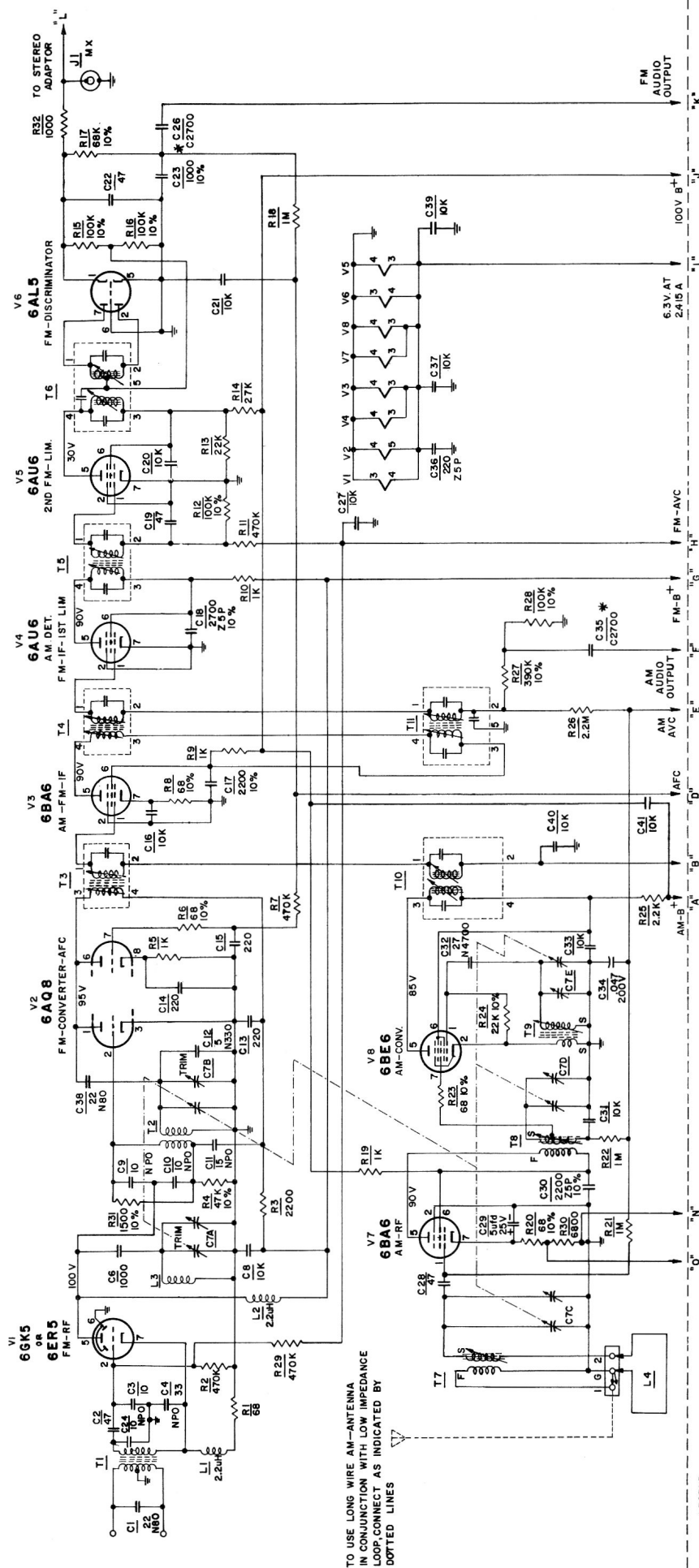
NOTE: - To achieve more accurate alignment of FM IF's and discriminator it is preferable to use a proper sweep generator & oscilloscope.

\* For FM dummy antenna connect one 150 ohm carbon resistor from grounded side of sig. gen. to antenna terminal and one 120 ohm carbon resistor from hot side of signal generator to antenna terminal.

\*\* These steps to be made with local distance switch in distance position.

\*\*\* Connect 47K ohm resistor to Pin #5 of T6 for this measurement.

# AM-FM TUNER SCHEMATIC



TO USE LONG WIRE AM-ANTENNA  
IN CONJUNCTION WITH LOW IMPEDANCE  
LOOP, CONNECT AS INDICATED BY  
DOTTED LINES

### LEGEND

- RESISTORS:  
 HALF WATT UNLESS OTHERWISE NOTED.  
 20% UNLESS OTHERWISE NOTED.  
 K=1000 OHMS  
 M=1000,000 OHMS

### CAPACITORS

- TUBULAR CAPACITY IN  $\mu$ F, AND D.C.W.V.  
 CURVED LINE-OUTSIDE FOIL  
 † ELECTROLYTIC CAPACITY IN  $\mu$ F, AND D.C.W.V.  
 ‡ CERAMIC, MICA, OR OTHER TYPES WITH NO  
 CAPACITORS OUTSIDE OR GROUNDED SIDE.  
 ††† MICA, TOLERANCE IF CRITICAL  
 AND D.C.W.V.

SPECIAL CAPACITORS SUCH AS TEMPERATURE  
 COMPENSATING TYPES ARE IDENTIFIED BY A  
 NOTE AT CAPACITOR LOCATION.  
 eg. OF=OIL FILLED  
 M.=MICA  
 S.M.=SILVER MICA  
 N.P.=NON POLARIZED

NOTE 1-FOR ALIGNMENT INSTRUCTIONS SEE D.E.I. DWG 00-1909-01  
 \* NOTE 2-10K ON ALL 6 WATT MODELS.





# SERVICE REPLACEMENT PARTS LIST

RCS-641M, RCS-642M

## FINAL ASSEMBLY

Part No.	Description
19-120009-03	Speaker - 12" Woofer - 8 ohm V.C.
19-60004-01	Speaker - 6" midrange - 8 ohm V.C.
19-10004-03	Speaker - Horn Tweeter - 8 ohm V.C.
27-7-03	Pilot Lamp - 12V .12A # 1892
30-233-08	Control Panel
53-591-04	Retaining Strip
53-700-01	Knob - Tuning
53-700-02	Knob - Treble, Bass, Balance
53-700-03	Knob - Loudness
53-701-02	Switch Knob - Level Loudness

## AMPLIFIER CHASSIS ASSEMBLY

Symbol	Part No.	Description
T3	24-10080-02	Power Transformer - 60 cycle
T1, T2	24-80063-01	Audio Output Transformer - 8 ohm V.C.
SR1	28-14-01	Dual Silicon Rectifier - 500 ma
SR1,2	OR 28-6-01	Silicon Rectifier - 500 ma
R11, R34	41-100-13	Control - Bass
R9, R32	41-100-12	Control - Tone
R5, R29	41-198-01	Control - Loudness and Level Switch
R8	41-200-01	Control - Balance
R45	42-21-84	Resistor - W.W. 5W 5.6K $\pm$ 10%
C32	44-140-01	Electrolytic - Single - Insulated - 40 ufd x 200V
C34	44-141-01	Electrolytic - Quadruple - Can - 80,40 ufd x 350V; 80 ufd x 150V; 60 ufd x 200V
C35	44-142-01	Electrolytic - 80,40 ufd x 350V; 80,40 ufd x 150V
C12	44-40-04	Electrolytic - Single - 50 ufd x 25V
C39	44-88-05	Electrolytic - Single - 25 ufd x 10V
C37	48-101015-05	Condenser - Polystyrene - 100 uufd $\pm$ 5% 500V
C36	48-103915-05	Condenser - Polystyrene - 390 uufd $\pm$ 5% 500V
C38	48-105115-05	Condenser - Polystyrene - 510 uufd $\pm$ 5% 500V
R47	41-6-01	Potentiometer - 100 ohm 2W
R48	41-199-01	Potentiometer - 100 ohm 2W
	26-2-05	Slider Switch D.P.D.T.
	26-2-07	Slider Switch S.P.D.T.
	26-2-12	Slider Switch T.P.D.T.
	26-2-13	AC Slider Switch S.P.D.T.
	30-277-02	Dial Scale
	53-703-02	Viking Overlay
	53-609-01	Viking Plastic

## SERVICE REPLACEMENT PARTS LIST (Continued)

### TUNER PLATTER ASSEMBLY

Symbol	Part No.	Description
T7	21-410-04	BC Antenna Coil
T9	21-421-01	BC Oscillator Coil
T8	21-428-03	BC Interstage Coil
T10	21-432-01	AM IF Transformer - first
T11	21-432-04	AM IF Transformer - second
T3	21-433-04	FM IF Transformer
T4	21-433-02	FM IF Transformer
T5	21-433-03	FM IF Transformer
L1,L2	21-439-02	RF Choke 2.2 uh
T2	21-445-02	FM Feedback Coil
T6	21-455-01	Discriminator Transformer
T2,L3	21-461-01	FM Oscillator and FM RF Coil
T1	21-471-01	FM Antenna Matching Transformer
C7	44-88-07	Electrolytic - 5 ufd x 25V
C7B	45-50-02	AM-FM Gang Condenser
	45-36-01	FM Trimmer

### FM STEREO RADIO ADAPTER PLATTER ASSEMBLY

Symbol	Part No.	Description
D1,2,3,4	14-504-01	Diode - 1N541
L1,2,3	21-334-03	Horizontal Stabilizing Coil
T1	21-493-01	38 Kc Oscillator Coil
C5	47-22725-23	Condenser - Dipped Mica - 2700 uufd $\pm$ 5% 300V
C7	47-23325-33	Condenser - Dipped Mica - 3300 uufd $\pm$ 5% 300V
C12	48-102215-05	Condenser - Polystyrene - 220 uufd $\pm$ 5% 500V
C9	47-22211-13	Condenser - Dipped Mica - 220 uufd $\pm$ 10% 500V
C18	48-101031-01	Condenser - Polystyrene - 10K uufd 125V $\pm$ 10%
	48-104725-05	Condenser - Polystyrene - 4700 uufd 500V $\pm$ 5%

### CHANGER ASSEMBLY

Part No.	Description
16-90029-01	Dual 1009 Changer
16-250027-01	Astatic 217D Cartridge
16-120028-07	Replacement Styli - Astatic N41SD