

VIKING SERVICE INFORMATION FOR MODELS

12 TUBE AM-FM STEREO RADIO-PHONO COMBINATION

RCS-638
RCS-638M
RCS-639
RCS-639M
RCS-640
RCS-640M

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

When writing for Service Information or Parts please quote Model Number, Serial Number and finish of cabinet.
All information printed in this leaflet is up to date as of June 28, 1963. Subsequent changes are covered by bulletin.

SPECIFICATIONS

Standard Broadcast Range..... 535 to 1650 Kc. FM 300 Kc. Band Width at 10X Down
 Frequency Modulation Range..... 88 to 109 Mc..
 Band Width AM 10 Kc. Band Width at 2X Down Sensitivity..... AM---2.0 uv for 100 mv at Detector
 19 Kc. Band Width at 10X Down 2.0 uv for 20 mv at Audio Take Off Point.
FM---1.75 uv for 20db quieting
3.5uv for 30db quieting

AMPLIFIER (Specifications per channel)

Frequency Response - 20 cps. to 50,000 cps. ± 3 db.
POWER OUTPUT - 20 watts peak ± 1db

LEVEL BALANCE CONTROL DUAL ELEMENT FRICTION CLUTCH TYPE

Designed to provide bass and treble lift as follows: -
 35° Rotation from CCW position - 18 db lift at 30 C/S
 35° Rotation from CCW position - 12 db lift at 15 KC/S
 65° Rotation from CCW position - 6 db lift at 30 C/S
 65° Rotation from CCW position - 6 db lift at 15 KC/S
 with reference to 1000 C/S

BASS TONE CONTROL DUAL ELEMENT

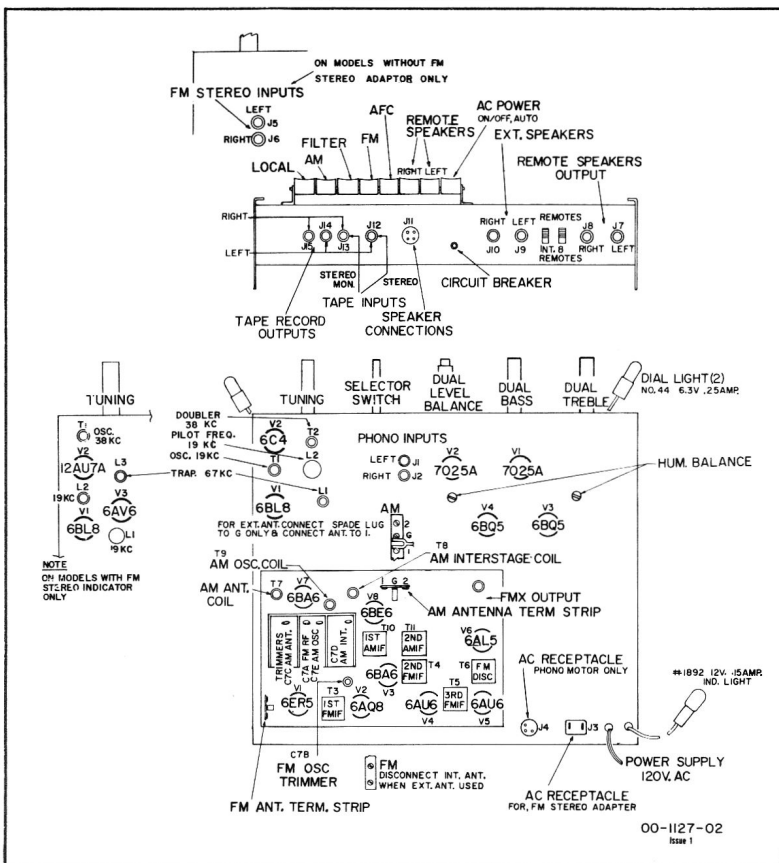
Designed to provide 10 to 15db cut and lift at 50 cps. Covers sound spectrum from 20-1000 cps.

TREBLE TONE CONTROL DUAL ELEMENT

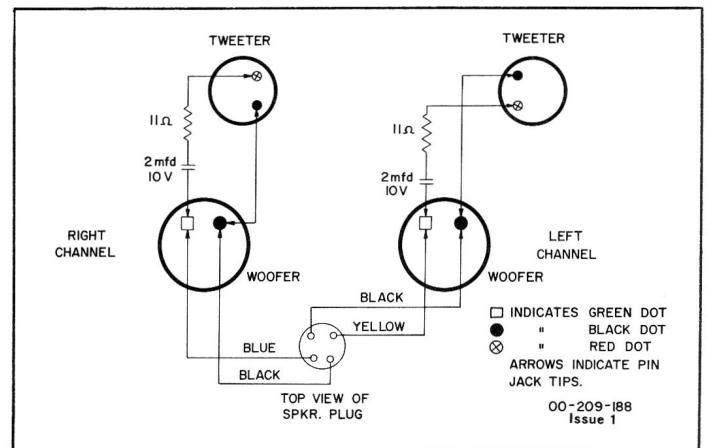
Designed to provide 10 to 15db cut and lift at 10,000 cps. Covers sound spectrum from 1000 to 15,000 cps.

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

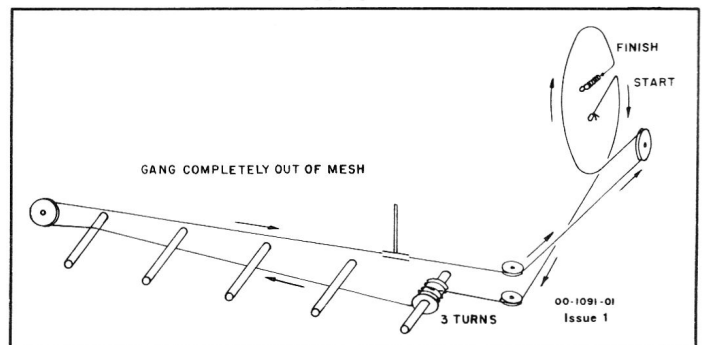
CHASSIS LAYOUT



SPEAKER CONNECTIONS



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.									

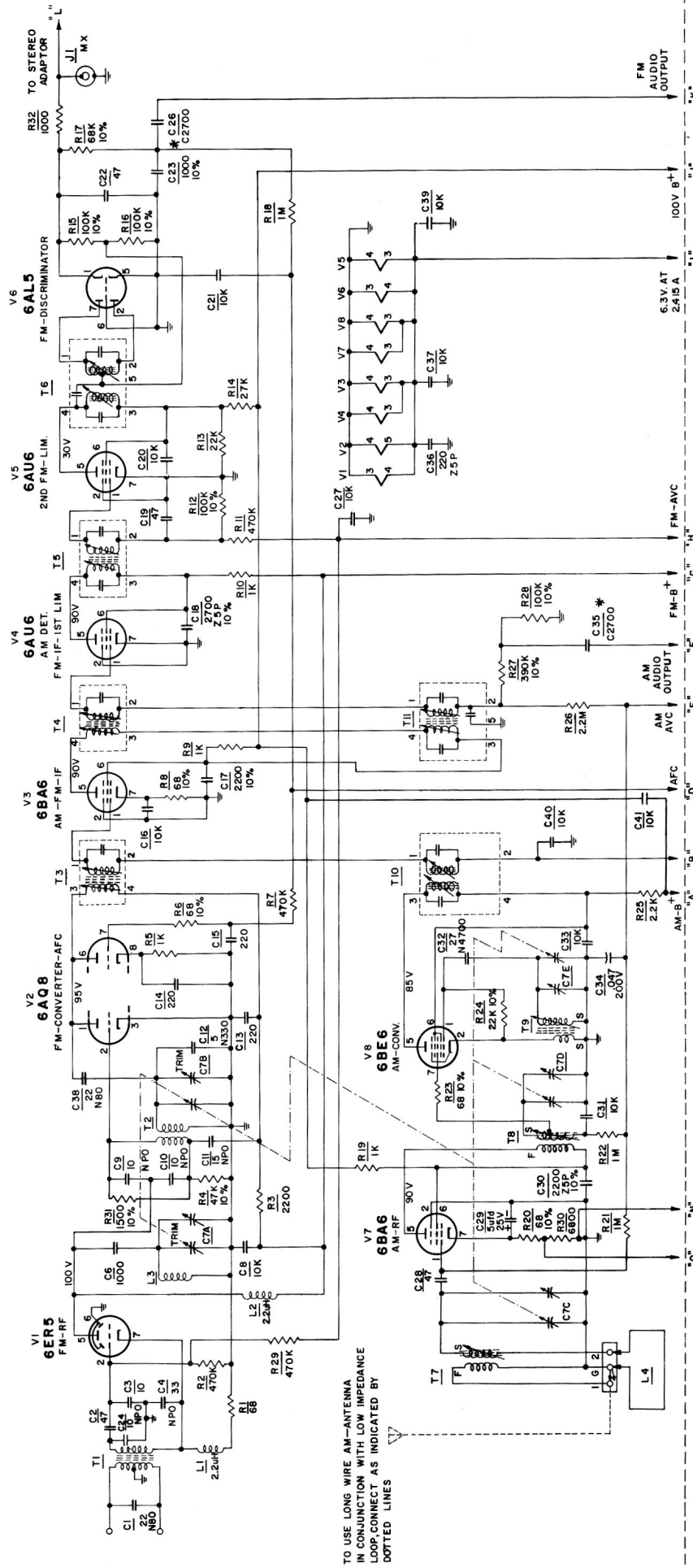
NOTE: - To achieve more accurate alignment of FM IF's and discriminator it is preferable to use a proper sweep generator & oscilloscope.

* 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

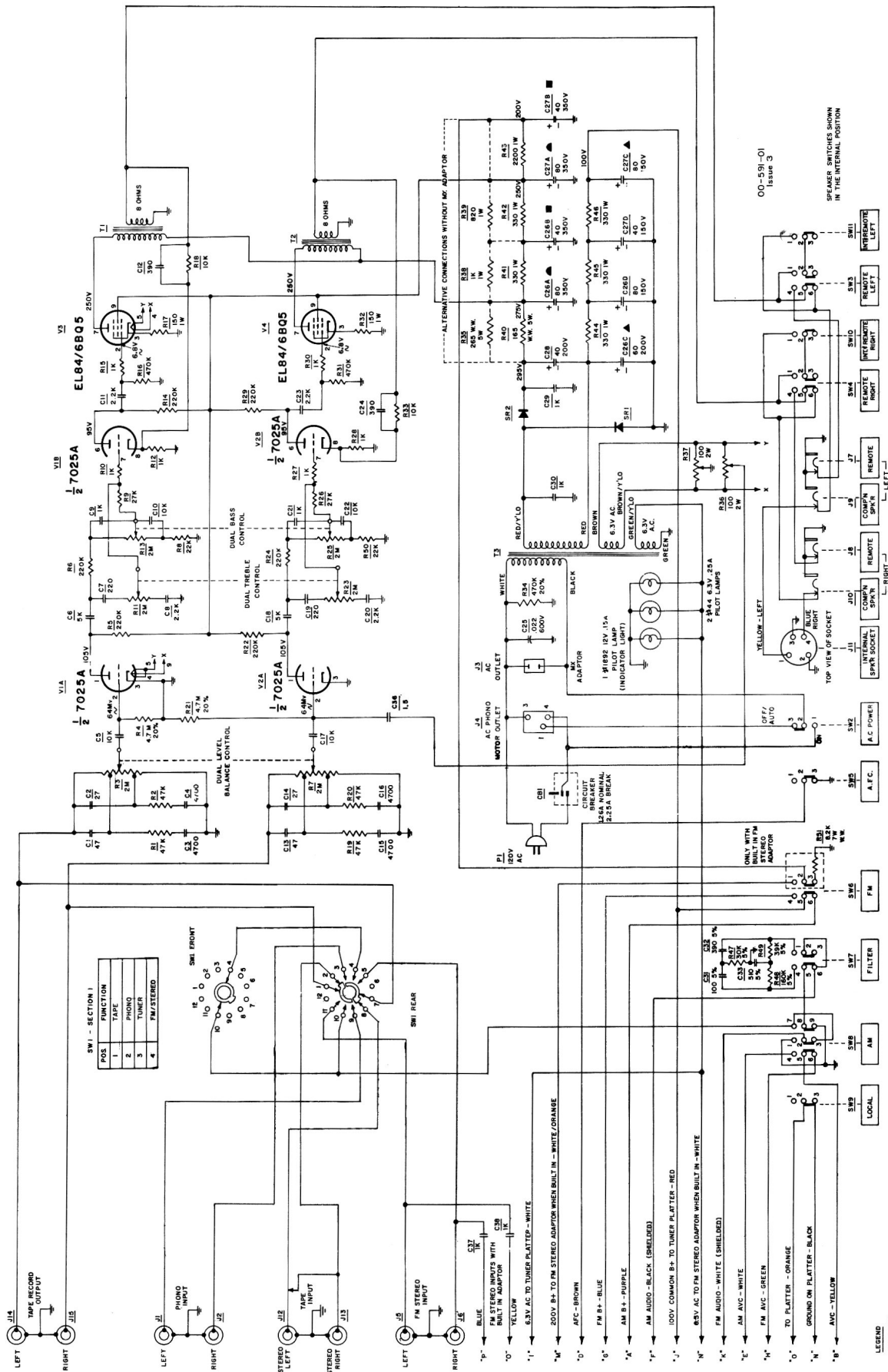
LEGEND
RESISTORS-
HALF WATT UNLESS OTHERWISE NOTED.
20% UNLESS OTHERWISE NOTED.
M=1,000,000 OHMS

CAPACITORS
TUBULAR CAPACITY IN μf , AND D.C.W.V.
CURVED LINE-OUTSIDE FOIL
† ELECTROLYTIC CAPACITY IN μf , AND D.C.W.V.
CERAMIC, MICA OR OTHER TYPES WITH NO
OBVIOUS OUTSIDE OR GROUND SIDE
CAPACITY IN μf , 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
SM = SILVER MICA
N.P. = NON POLARIZED

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

AMPLIFIER SCHEMATIC



SW1 - SECTION I

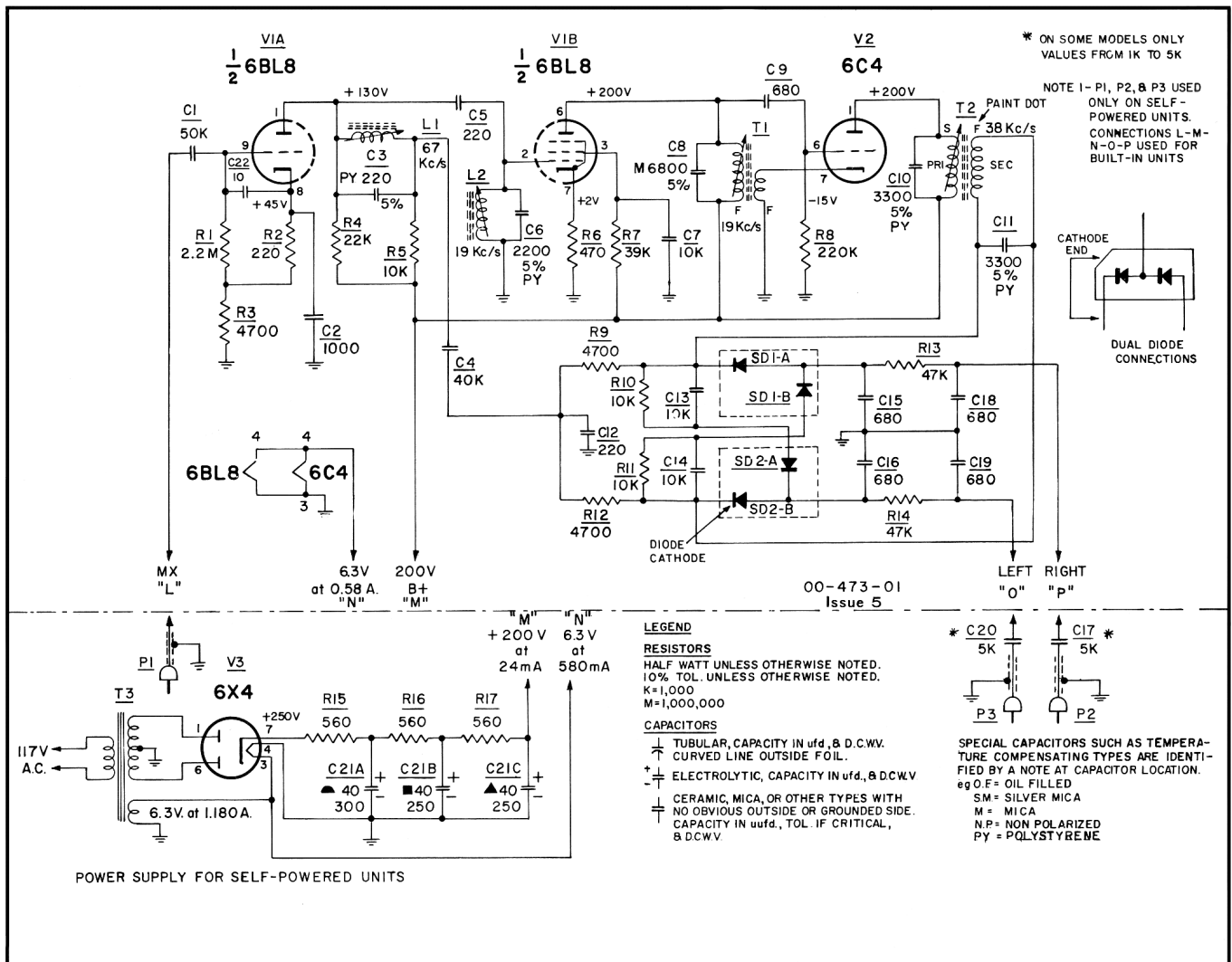
POS.	FUNCTION
1	TAPE
2	PHONO
3	TUNER
4	FM/STEREO

00-59-01
Issue 3



LEGEND
RESISTORS
10% TOLERANCE *
CAPACITORS
10% TOLERANCE *
SPECIAL CAPACITORS SUCH AS TEMPERATURE COMPENSATING TYPES
TUBULAR CAPACITY IN μ F AND D.C.V.
ELECTROLYTIC CAPACITY IN μ F @ D.C.V.
CERAMIC/MICA OR OTHER TYPES WITH NO
CAPACITY IN μ F, VOL. OF CAPACITANCE, D.C.V.
* NP-NON POLARIZED

FM STEREO RADIO ADAPTER SCHEMATIC



SERVICE REPLACEMENT PARTS LIST

FINAL ASSEMBLY

Part No.	Description
16-120047-01	45 R.P.M. Inserts
19-10006-02	Dome Tweeter - 8 ohm V.C.
19-100006-03	10" P.M. Speaker - 8 ohm V.C.
27-7-03	Pilot Lamp - 12V .15A #1892
30-233-07	Control Panel
53-591-04	Retaining Strip
53-701-01	Switch Knob - Level Balance
53-700-01	Knob - Tuning
53-700-02	Knob - Bass Treble
53-700-03	Knob - Level Balance, Selector
53-703-02	Viking Overlay
53-609-01	Viking Plastic Ship

AMPLIFIER CHASSIS ASSEMBLY

Symbol	Part No.	Description
T3	24-10080-01	Power Transformer - 60 cycle
T3	24-20080-01	Power Transformer - 25 cycle (25 cycle models only)
T1, T2	24-80042-02	Audio Output Transformer - 8 ohm V.C.
SW3, 4, 6, 7	26-2-05	Slider Switch - DPDT
SW5, 9, 10, 11	26-2-07	Slider Switch - SPDT
SW8	26-2-12	Slider Switch - TPDT
SW2	26-2-13	Slider Switch - SPDT
CB1	26-65-08	Circuit Breaker - 1.26 Amp

SERVICE REPLACEMENT PARTS LIST - Continued

AMPLIFIER CHASSIS ASSEMBLY (Cont'd.)

Symbol	Part No.	Description
SW1	26-111-01	Selector Switch
	27-1-01	Pilot Lamp - 6-8V #44 .25A
SR1, SR2	28-6-01	Silicon Rectifier - 500 ma
	OR 28-15-01	Silicon Rectifier - Dual
	30-277-01	Dial Scale
R3, R7	41-161-03	Control - Dual - Level Balance - 1 meg
R11, R23	41-100-10	Control - Treble - 2M
R13, R25	41-100-11	Control - Bass - 2M
R37	41-6-01	Control - Hum Balance - 100 ohm - 2W
R36	41-199-01	Control - Hum Balance - 100 ohm - 2W
R35	42-21-87	Resistor - W.W. 265 ohm - 5W \pm 10% (on models without FM adapter only)
R40	42-21-65	Resistor - W.W. 165 ohm - 5W \pm 10% (on models with FM Adapter only)
R51	42-21-90	Resistor - W.W. 8200 ohm - 7W \pm 10% (on models with FM Adapter only)
C28	44-140-01	Electrolytic - Single Insulated 40 ufd x 200V
C26	44-141-01	Electrolytic - 80, 40 ufd x 350V; 60 ufd x 200V; 80 ufd x 150V
C27	44-142-01	Electrolytic - 80, 40 ufd x 350V; 80, 40 ufd x 150V
	53-600-02	Pushbutton

TUNER PLATTER CHASSIS 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 - 1st
T11	21-432-04	AM IF Transformer - 2nd
T3	21-433-04	FM IF Transformer
T4	21-433-02	FM IF Transformer
T5	21-433-03	FM IF Transformer
L1,2	21-439-02	RF Choke 2.2 uh
T2	21-445-02	FM Feedback Coil
T6	21-455-01	Discriminator Transformer - FM
T2,L3	21-461-01	FM Oscillator & FM RF Coil
T1	21-471-01	FM Antenna Matching Transformer
C7	45-50-02	AM FM Gang Condenser
C7B	45-36-01	FM Trimmer
C29	44-88-01	Electrolytic - 5 ufd 25V

STEREO RADIO ADAPTER PLATTER ASSEMBLY

Symbol	Part No.	Description
SD1, 2	14-503-03	Dual Diode
L1, L2	21-334-03	Horizontal Stabilizing Coil
T2	21-482-01	38 KC Doubler Coil
T1	21-483-01	19 Kc Oscillator Coil
C8	47-36825-01	Condenser - Dipped Mica - 6800 uufd \pm 5% 300V
C10, 11	48-103325-05	Condenser - Tubular - Polystyrene - 3300 uufd \pm 5% 500V
C3	48-102215-05	Condenser - Tubular - Polystyrene - 220 uufd \pm 5% 500V
C6	48-102225-05	Condenser - Tubular - Polystyrene - 2200 uufd \pm 5% 500V
C1	48-15031-02	Condenser - Metallized Paper Tubular - .05 ufd 150V \pm 20%

CHANGER ASSEMBLY

Part No.	Description
16-90025-02	Garrard AT6 Changer
16-120025-01	Garrard Multipurpose Pick-up Case
16-250026-02	Astatic 233SD Cartridge
16-120028-09	Replacement Styli-Astatic N50SD