

SERVICE MANUAL



KENWOOD



MODEL KW-55

AM-FM STEREO MULTIPLEX RECEIVER

DEALER ONLY

PARTS DESCRIPTION LIST

■ CAPACITORS

SYMBOL NO.	DESCRIPTION	
C1, C45	Ceramic	10mmfd. $\pm 10\%$
C3, C106, C206	Ceramic	50mmfd. $\pm 10\%$
C4, C6, C9, C11, C13, C15, C22, C26, C31, C32, C102, C202, C312, C316, C317, C318, C319, C324, C325, C326, C328	Ceramic	0.01mfd. $+100 - 0\%$
C7, C30	Ceramic	1mmfd. $\pm 10\%$
C16, C48	Ceramic	15mmfd. $\pm 10\%$
C19, C74	Electrolytic Tubular	5mfd. 25V
C20	Ceramic	7mmfd. $\pm 5\%$
C23	Ceramic	20mmfd. $\pm 10\%$
C24	Ceramic	5mmfd. $\pm 10\%$
C27, C73, C103, C203	Metalized-Paper	0.1mfd. $\pm 20\%$
C28	Paper Tubular	0.005mfd. $\pm 20\%$
C29, C43, C44, C50, C51, C62, C93, C94, C99, C100, C109, C112, C121, C209, C212, C220, C221	Paper Tubular	0.05mfd. $\pm 20\%$
C42, C49, C81, C76, C83, C84, C85, C86, C114, C119, C214, C219	Ceramic	100mmfd. $\pm 10\%$
C47	Mica	440mmfd. $\pm 5\%$
C63, C64	Mica	1000mmfd. $\pm 5\%$
C65, C327	Ceramic	180mmfd. $\pm 10\%$
C66, C68, C89, C111, C211	Ceramic	0.001mfd. $\pm 20\%$
C67	Paper Tubular	0.02mfd. $\pm 20\%$
C70	Ceramic	400mmfd. $\pm 10\%$
C71, C72	Mica	830mmfd. $\pm 5\%$
C75	Electrolytic Tubular	20mfd. 50V
C77, C79	Mica	480mmfd. $\pm 5\%$
C78	Ceramic	200mmfd. $\pm 10\%$
C80	Mica	250mmfd. $\pm 5\%$
C81	Mica	400mmfd. $\pm 5\%$
C82	Ceramic	0.005mfd. $\pm 20\%$
C97, C98, C110, C118, C210, C218	Electrolytic Tubular	25mfd. 10V
C101, C201	Ceramic	30mmfd. $\pm 10\%$
C107, C207	Ceramic	0.01mfd. $\pm 20\%$
C108, C115, C122, C208, C215, C222	Ceramic	560mmfd. $\pm 20\%$
C113, C213	Paper Tubular	0.01mfd. $\pm 20\%$
C116, C216	Ceramic	730mmfd. $\pm 20\%$
C117, C217	Ceramic	0.003mfd. $\pm 20\%$
C301, C302	Electrolytic Tubular	100mfd. 250V
C303, C304, C305	Electrolytic 3-section	40mfd. 350V
C306, C307, C314	Electrolytic Tubular	40mfd. 150V
C308, C309, C310, C311, C322	Ceramic	0.001mfd. $+100 - 0\%$
C313	Paper Tubular	0.01mfd. $\pm 20\%$
C315	Paper Tubular	0.02mfd. $\pm 20\%$
C320	Electrolytic Tubular	3mfd. 150V
CT3	Trimmer	Max 10mmfd.
CT101	Trimmer	Max 50mmfd.

■ POTENTIOMETERS

SYMBOL NO.	DESCRIPTION	PART NO.
VR1	Dual, 1M (A) Volume	R02-2109
VR2	Dual, 1M (A-C) Balance	R02-0134
VR3	Dual, 1M (A) Treble	R04-0201
VR4	Dual, 1M (A) Bass	R04-0201
VR6	500K (B), Stereo Indicator Adj	R10-39
VR7	1K (B), AM Tuning Meter Zero Adj	R10-06
VR8	100K (B), MPX Stereo Max. Adj	R10-40
VR9	50K (A), MPX Separation Adj	R10-12
VR10	1M ohm (B), AFC	R01-0136
VR11	500K (B), MPX Subcarrier Balance	R10-16
VR12	100ohm (B) HUM Balance	R10-01

■ RESISTORS

SYMBOL NO.	DESCRIPTION	
R3, R8, R19, R32, R50, R316	Composition	1K $\pm 20\%$ $\frac{1}{2}$ W
R10, R11, R24	Composition	15K $\pm 20\%$ $\frac{1}{2}$ W
R13, R30, R67, R303	Composition	10K $\pm 20\%$ $\frac{1}{2}$ W
R21	Composition	100ohm $\pm 20\%$ $\frac{1}{2}$ W
R22	Composition	270K $\pm 20\%$ $\frac{1}{2}$ W
R23, R43	Composition	2.2M $\pm 20\%$ $\frac{1}{2}$ W
R25	Composition	680ohm $\pm 10\%$ $\frac{1}{2}$ W
R27, R41, R62, R63, R66, R70, R71, R74, R91, R96, R112, R212, R310	Composition	1M $\pm 20\%$ $\frac{1}{2}$ W
R28, R92, R97	Composition	47K $\pm 20\%$ $\frac{1}{2}$ W
R29, R119, R219	Composition	150K $\pm 10\%$ $\frac{1}{2}$ W
R31	Dep. Carbon	1K $\pm 10\%$ $\frac{1}{2}$ W
R42	Composition	150ohm $\pm 20\%$ $\frac{1}{2}$ W
R45	Composition	150K $\pm 20\%$ $\frac{1}{2}$ W
R47, R101, R110, R201, R210	Composition	100K $\pm 20\%$ $\frac{1}{2}$ W
R51, R111, R211	Composition	33K $\pm 20\%$ $\frac{1}{2}$ W
R52	Composition	4.3K $\pm 10\%$ $\frac{1}{2}$ W
R53	Dep Carbon	100ohm $\pm 10\%$ $\frac{1}{2}$ W
R61	Composition	470K $\pm 10\%$ $\frac{1}{2}$ W
R64, R93, R98	Composition	1.5K $\pm 10\%$ $\frac{1}{2}$ W
R65	Composition	390ohm. $\pm 10\%$ $\frac{1}{2}$ W
R68	Composition	1.5K $\pm 20\%$ $\frac{1}{2}$ W
R69	Dep. Carbon	150K $\pm 10\%$ $\frac{1}{2}$ W
R72	Composition	18K $\pm 10\%$ $\frac{1}{2}$ W
R73	Composition	47K $\pm 10\%$ $\frac{1}{2}$ W
R75	Composition	6.8K $\pm 10\%$ $\frac{1}{2}$ W
R76, R127, R227	Composition	3.3K $\pm 10\%$ $\frac{1}{2}$ W
R77, R78, R79, R80, R81, R82, R83, R84	Dep. Carbon	22K $\pm 5\%$ $\frac{1}{2}$ W
R94, R100	Composition	68K $\pm 20\%$ $\frac{1}{2}$ W
R95, R99	Composition	3.3M $\pm 10\%$ $\frac{1}{2}$ W
R102, R125, R126, R202, R225, R226	Composition	470K $\pm 20\%$ $\frac{1}{2}$ W
R103, R203	Dep. Carbon	47K $\pm 10\%$ $\frac{1}{2}$ W
R104, R204	Dep. Carbon	1.5K $\pm 10\%$ $\frac{1}{2}$ W
R105, R114, R205, R214	Dep. Carbon	270K $\pm 10\%$ $\frac{1}{2}$ W
R106, R206	Composition	3.3M $\pm 20\%$ $\frac{1}{2}$ W
R107, R207	Dep. Carbon	68K $\pm 10\%$ $\frac{1}{2}$ W
R109, R209	Dep. Carbon	1M $\pm 20\%$ $\frac{1}{2}$ W
R113, R120, R213, R220	Composition	2.2K $\pm 10\%$ $\frac{1}{2}$ W
R115, R116, R215, R216	Composition	4.7K $\pm 20\%$ $\frac{1}{2}$ W
R117, R217	Composition	330K $\pm 10\%$ $\frac{1}{2}$ W
R118, R218	Composition	68K $\pm 10\%$ $\frac{1}{2}$ W
R121, R221	Composition	100ohm $\pm 10\%$ $\frac{1}{2}$ W
R122, R222	Dep. Carbon	470K $\pm 10\%$ $\frac{1}{2}$ W
R123, R124, R223, R224	Dep. Carbon	100K $\pm 10\%$ $\frac{1}{2}$ W
R128, R129, R228, R229	Wirewound	56ohm $\pm 5\%$ 2 W
R301	Wirewound	220ohm $\pm 5\%$ 4 W
R302	Wirewound	3.3K $\pm 5\%$ 8 W
R304, R312	Composition	22K $\pm 20\%$ $\frac{1}{2}$ W
R305	Wirewound	3.3K $\pm 5\%$ 20W
R306	Wirewound	2.2K $\pm 5\%$ 8 W
R307	Glass	8K $\pm 5\%$ 4 W
R308	Wirewound	330ohm $\pm 5\%$ 4 W
R309	Wirewound	270ohm $\pm 5\%$ 4 W
R311	Composition	3.3K $\pm 20\%$ $\frac{1}{2}$ W

■ PRINTED CIRCUITS

SYMBOL NO.	DESCRIPTION	PART NO.
PC1	R1 68ohm, C2 0.001mfd. Bias Circuit	R15-16
PC2	R2 1K, C5 0.01mfd. Bias Circuit	R15-17
PC3	R4 68ohm, C8 0.01mfd. Bias Circuit	R15-08
PC4	R6 68ohm, C10 0.01mfd. Bias Circuit	R15-08
PC5	R9 56K, C12 50mmfd. Grid Leak Circuit	R15-19
PC6	R12 56K, C14 50mmfd. Grid Leak Circuit	R15-19
PC7	R16, 17 10K, C17, 18 250mmfd. FM Det. Circuit	R15-27
PC8	R18 10K, C21 100mmfd. FM OSC Circuit	R15-44
PC9	R20 560ohm, C25 0.01mfd. Bias Circuit	R15-23
PC51	R44 22K, C46 100mmfd. AM OSC Circuit	R15-22
PC101	R85 51K, R86 10K, R87 8.2K, C87 83mmfd, C88 510mmfd, C89 430 mmfd, Twin T Filter	R15-36
PC102	R88 51K, R89 10K, R90 8.2K, C90 83mmfd, C91 510mmfd, C92 430 mmfd, Twin T Filter	R15-36
PC301	R108 68K, C104 0.001mfd, C105 0.003 mfd, Equalization	R15-09
PC302	R208 68K, C204 0.001mfd, C205 0.003 mfd, Equalization	R15-09

■ COILS/TRANSFORMERS

SYMBOL NO.	DESCRIPTION	PART NO.
L1	ANT. Coil	L24-756A
L2	RF Choke Coil 3mmH	L20-030
L3	RF Coil	L24-756R
L4	FM OSC Coil	L24-756S
L5	RF Choke Coil 3mmH	L20-030
L6	RF Choke Coil 3mmH	L20-030
L7	RF Choke Coil 3mmH	L20-030
L51	Ferrite Loop Stick AM Ant.	L15-14
L52	RF Choke Coil 3mmH	L20-030
L53	AM OSC Coil	L07-05
L54	RF Choke Coil 3mmH	L20-030
L55	RF Choke Coil 3mmH	L20-030
L101	Filter Coil 44.3mH	L22-04
L102	Filter Coil 13.7mH	L22-06
L103	Filter Coil 38mH	L17-19
L104	Filter Coil 38mH	L17-19
L105	Filter Coil 22mH	L17-25
L401	Choke Coil 3mmH	L20-030
L402	Heater Choke	L22-01
L403	Heater Choke	L22-01
T1	1st. FM IFT 10.7MC	L02-41
T2	2nd. FM IFT 10.7MC	L02-41
T3	3rd. FM IFT 10.7MC	L02-41
T4	4th. FM IFT 10.7MC	L02-41
T5	FM Det.	L02-42
T51	1st. AM IFT 455KC	L01-29A
T52	2nd. AM IFT 455KC	L01-29B
T53	AM RF Coil	L12-01
T101	19KC Resonance Coil	L17-18
T102	19KC OSC Coil	L13-45
T103	38KC Doubler Coil	L17-03
OPT1	Channel-L OUTPUT Transformer	T02-46
OPT2	Channel-R OUTPUT Transformer	T02-46
PT	Power Transformer	T01-91A

■ TUBES/DIODES

SYMBOL NO.	DESCRIPTION
V1	6AQ8/ECC85, RF Amp. & MIX.
V2	6AQ8/ECC85, FM OSC & AFC
V3	6BA6, FM IF Amp.
V4	6BA6, FM IF Amp. & AM Det.
V5	6AU6, FM IF Amp. & LIM.
V6	6AU6, FM IF Amp. & LIM.
V7	6AL5, FM Det.
V8	6BA6, AM RF Amp.
V9	6BE6, AM OSC & CONV.
V10	12AX7/ECC83, Bias Boltage Amp. & 19KC Resonance Amp.
V11	6AU6, Composit Amp.
V12	6BL8/ECL80 19KC Amp. & 38KC SYNCH OSC
V13	12AX7/ECC83 AF Amp.
V14	12AX7/ECC83 Channel L-R Phono EQ
V15	12AX7/ECC83 Channel L-R Phono EQ
V16	12AX7/ECC83 Channel L-R AF Amp.
V17	12AX7/ECC83 Channel L AF Amp. Driver
V18	12AX7/ECC83 Channel R AF Amp. Driver
V19, 20	6BQ5/EL84 Channel L Power Amp.
V21, 22	6BQ5/EL84 Channel R Power Amp.
D101	OA79 Stereo Beam Signal Rect.
D102 ~ 105	OA79 MPX Det.
D401, 402	FR1K Rect.

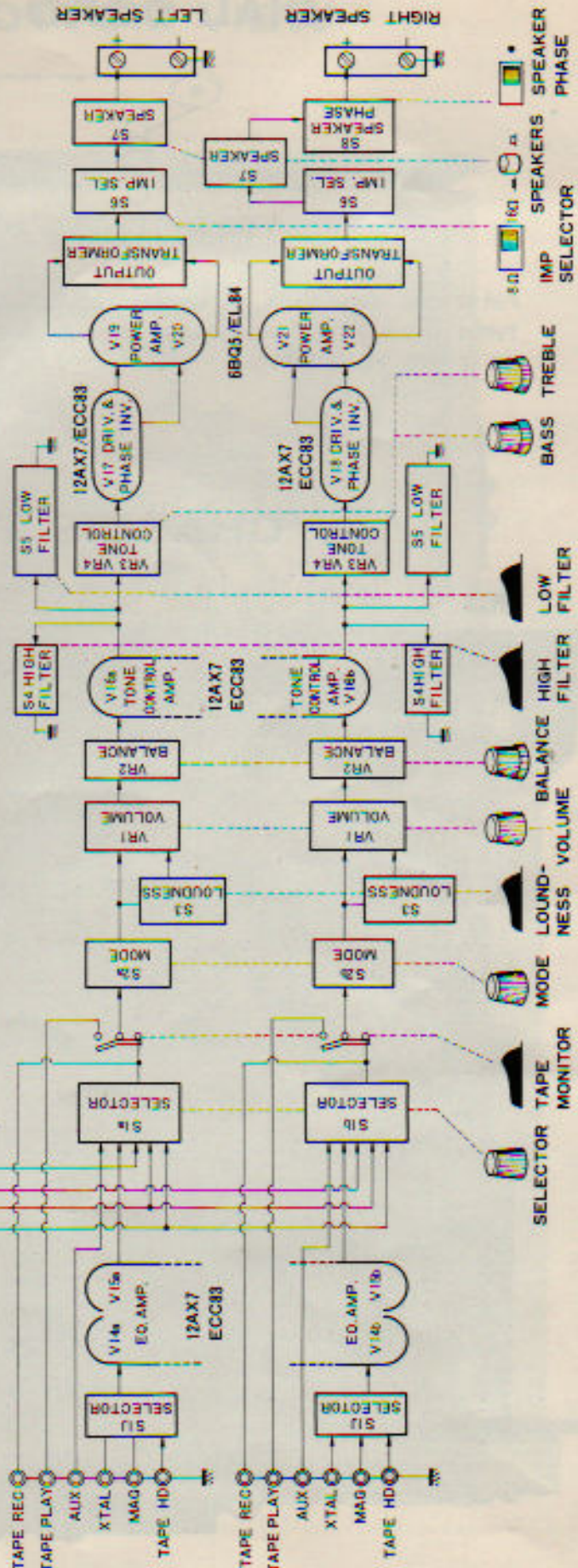
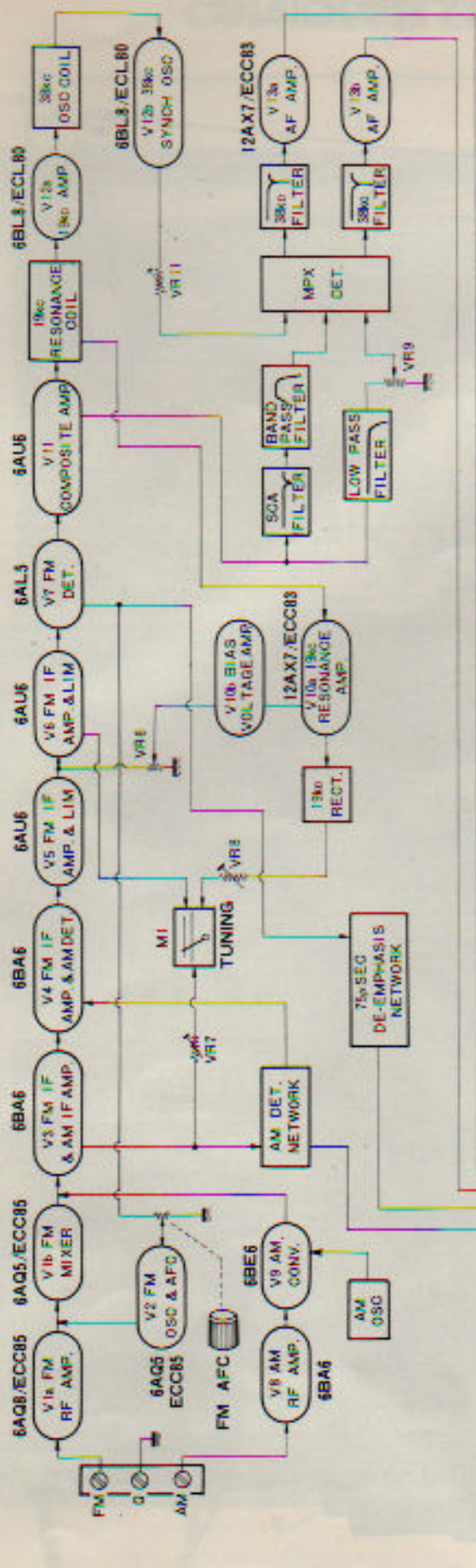
■ SWITCHES

SYMBOL NO.	DESCRIPTION	PART NO.
S1	Rotary Y — 3-8-6 SELECTOR	S03-529
S2	Rotary Y — 1-2-5 MODE	S03-530
S3	See Saw LOUDNESS	S10-22V
S4	See Saw HIGHT FILTER	S10-22V
S5	See Saw LOW FILTER	S10-22V
S6	Slide IMP SELECTOR	S10-22R
S7	Push SPEAKER	S11-14
S8	Slide SPEAKER PHASE	S10-22R
S9	See Saw TAPE MONITOR	S10-22V
S10	Power	S12-16

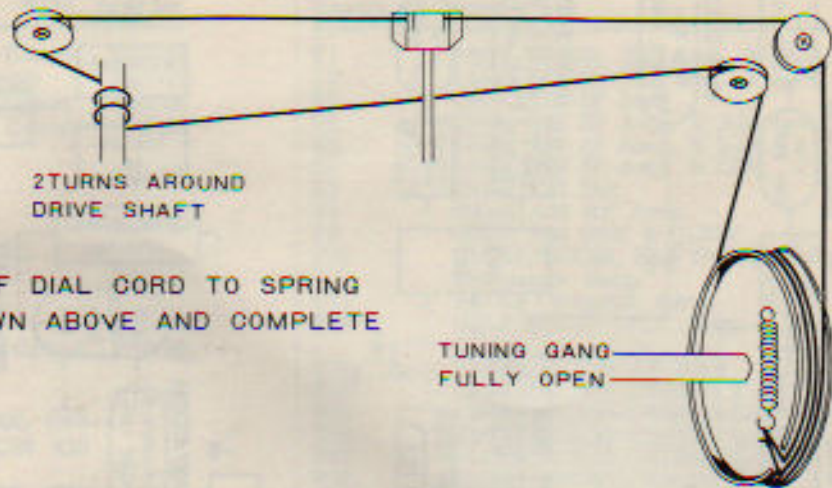
■ MISCELLANEOUS

SYMBOL NO.	DESCRIPTION	PART NO.
CP	Tuning Cap. AM-FM 3 Gang	D01-72
F1	Fuse, 4 Amp.	S17-04
M1	Tuning Meter	T11-43
M1, 2	MONO STEREO Indicator Lamp. 8V 0.15A	S18-01
M3	Meter Lamp. white 8V 0.15A	S18-01
M4	Meter Lamp. Blue 8V 0.15A	S16-07
M6, 7	Lamp 8V 0.3A	S16-06
J	Stereo phone Jack.	E16-08
—	Knob FM AFC	S14-174
—	Knob POWER	S14-174
—	Knob VOLUME	S14-174
—	Knob BASS, Dual Front	S14-173
—	Knob BASS Dual Back	S14-175
—	Knob TREBLE Dual Front	S14-173
—	Knob TREBLE Dual Back	S14-175
—	Knob BALANCE Dual Front	S14-173
—	Knob BALANCE Dual Back	S14-176
—	Knob SELECTOR	S14-174
—	Knob MODE	S14-174
—	Knob TUNING	S14-174
—	Knob Pushbutton	S14-177
—	Dial Glass	A07-756
—	Jewel Red	A53-13
—	Jewel Blue	A53-16

BLOCK DIAGRAM

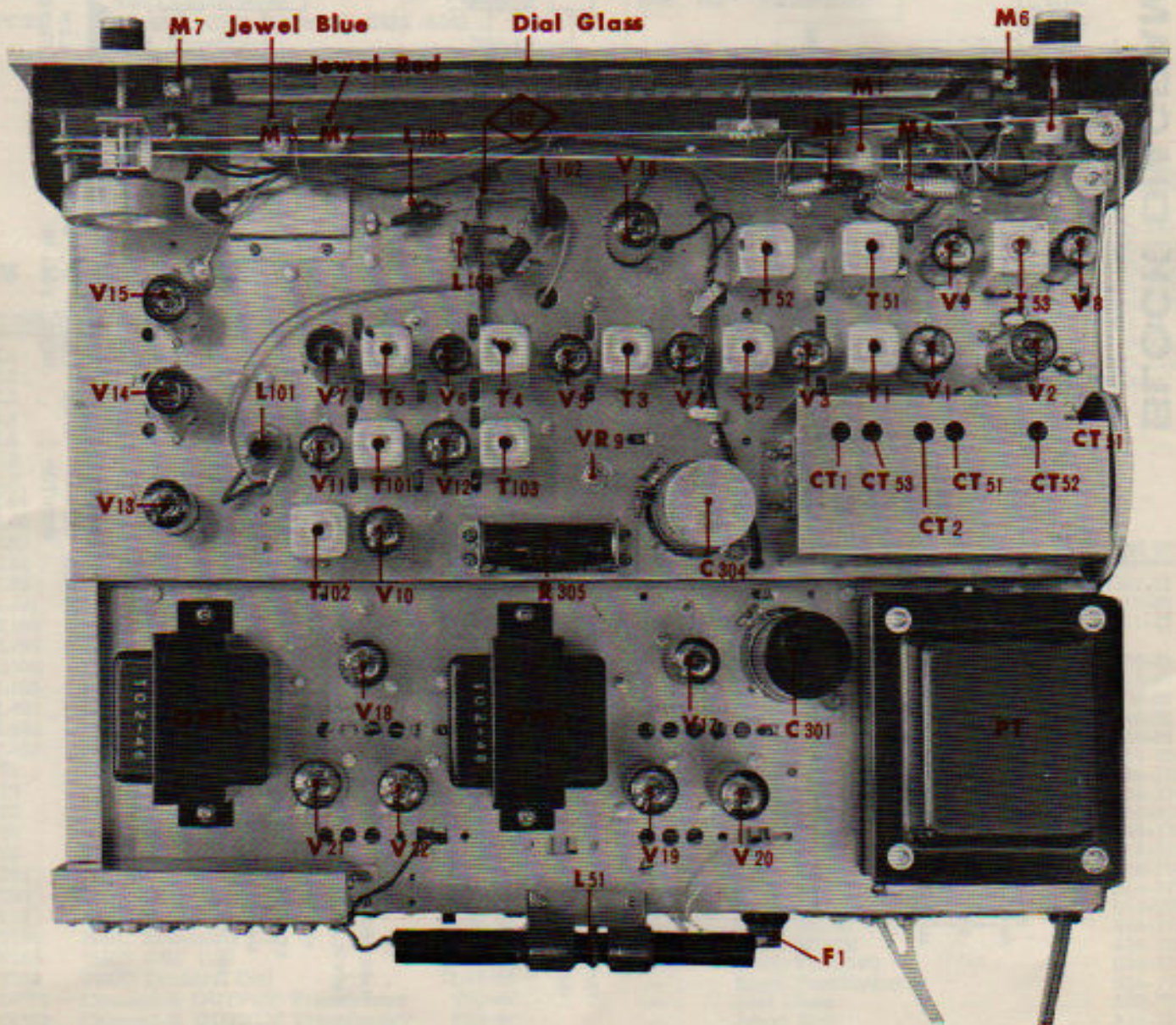


DIAL CORD STRINGING

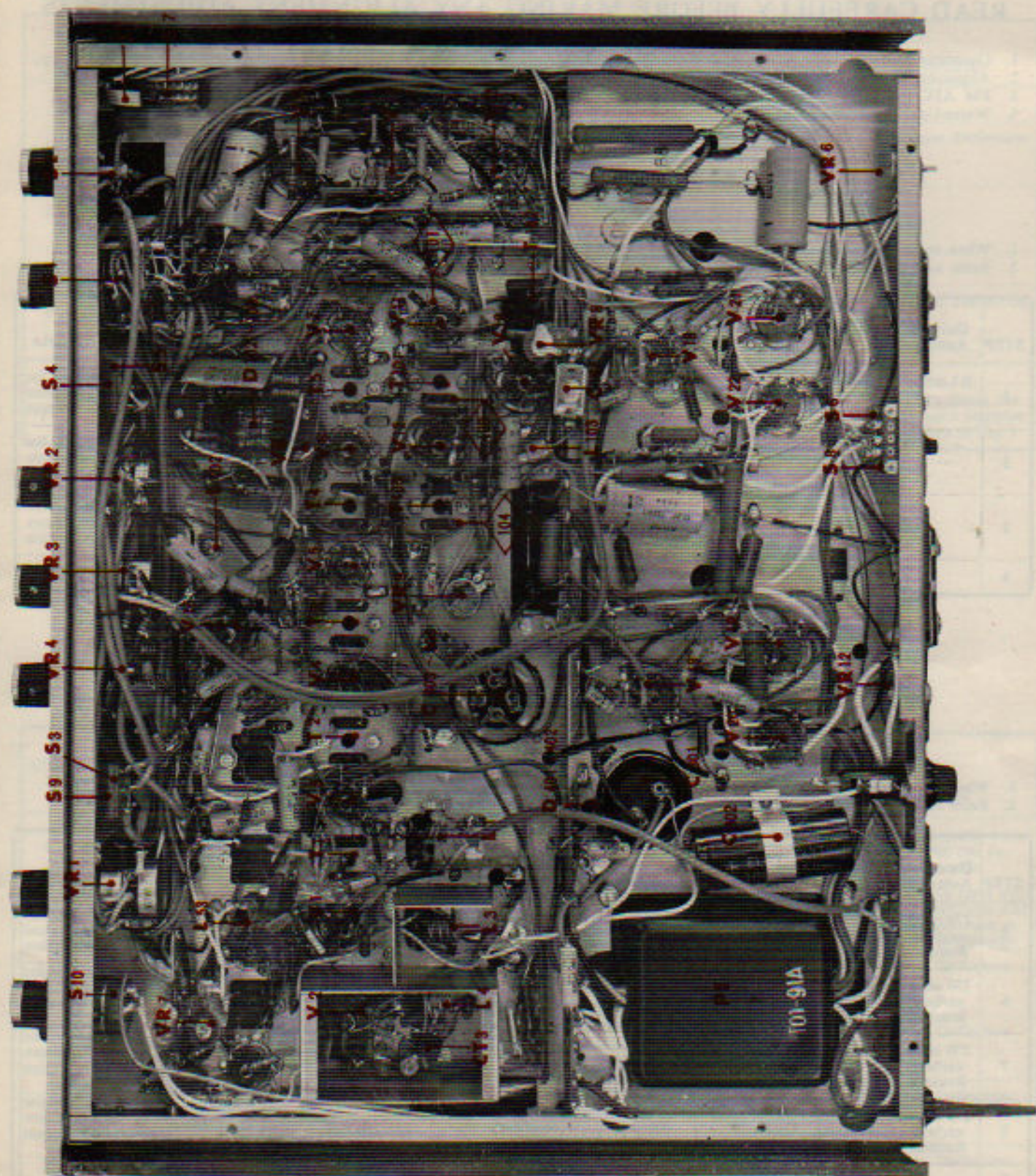


FIRST TIE ONE END OF DIAL CORD TO SPRING
THEN STRING AS SHOWN ABOVE AND COMPLETE
BY TYING TO SPRING.

CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW



ALIGNMENT INSTRUCTIONS

READ CAREFULLY BEFORE MAKING ANY ALIGNMENT ADJUSTMENTS

1. Generator Signal: Always work with the minimum generator signal sufficient to provide a satisfactory output indication.
2. Alignment Tools: IF transformers require a plastic screwdriver-type alignment tool.
3. FM AFC: Always place in OFF position before alignment.
4. Warm-Up: Allow 30 minutes warm-up period for Receiver and equipment.

AM ALIGNMENT

1. When using AM signal generator. Oscilloscope and VTVM
2. Refer to AM part shown in photo for test point

STEP	Dummy Antenna	Signal Generator Coupling	Signal Generator Frequency	Selector Switch	Tuner Dial Setting	Connect VTVM & Oscilloscope	Adjust	Remarks
1	0.1 mfd.	High side to [51] Low side to chassis	455KC (400 cps, 30% AM)	AM	Any non-interfering setting	High side to TAPE REC. Low side to chassis	T51 & T52 top & bottom	Adjust for maximum Deflection
2		Connect to short Loop of wire. Radiate signal into ferrite Loopstick antenna of receiver	600KC (400 cps, 30% AM)	AM	Check pointer for alignment at left hand start mark then tune to 600KC	High side to TAPE REC. Low side to chassis	L53 T53 L51 (Ring)	Adjust for maximum Deflection
3			1400KC (400 cps, 30% AM)	AM	1400KC	High side to TAPE REC. Low side to chassis	CT53 CT51 CT52	Adjust for maximum Deflection
4	Repeat steps 2 & 3 until no further improvement is possible							

FM ALIGNMENT

1. When using FM signal generator. Oscilloscope and VTVM.
2. Refer to FM part shown in photo for test point.

STEP	Dummy Antenna	Signal Generator Coupling	Signal Generator Frequency	Selector Switch	Tuner Dial Setting	Indicating Meter	Adjust	Remarks
5	270 ohm carbon Resistor	High side to FM antenna terminals. Low side to chassis	10.7 MC (unmod)	FM	Any non-interfering setting	Tuning Indicator	T4, T3, T2 T1 top & bottom	Adjust for maximum Deflection
6	270 ohm carbon Resistor	High side to FM antenna terminals. Low side to chassis	98MC (400 cps \pm 75KC) FM 500~ 1000 μ V	FM	Tune for maximum using tuning indicator	VTVM at LEFT output jack of TAPE REC.	T5 top & bottom	Adjust for maximum Deflection
7	270 ohm carbon Resistor	High side to FM antenna terminals. Low side to chassis	88MC (400 cps \pm 75KC FM)	FM	88MC	VTVM & crystal earphone at LEFT output jack of TAPE REC.	L4 L1 L3	Adjust for maximum Deflection (☼)
8	270 ohm carbon Resistor	High side to FM antenna terminals. Low side to chassis	106MC (400 cps \pm 75KC FM)	FM	106MC	VTVM & crystal earphone at LEFT output jack of TAPE REC.	CT3 CT2 CT1	Adjust for maximum Deflection (☼)
9	Repeat 7 & 8 until no further improvement is possible							

(☼) Confirm the presence of 400 cps signal with crystal earphone.

FM MULTIPLEX ALIGNMENT

1. When using FM Stereo Generator, Audio Signal Generator, Oscilloscope and VTVM.
2. Refer to M'X part shown in photo for test point.

STEP	Audio Signal Generator Coupling	Audio Signal Generator Frequency	Selector Switch	Connect VTVM & Oscilloscope	Horizontal Selector Switch Position of Oscilloscope	Adjust	Remarks
SCA Filter Coil Alignment (Remove Tune ⓐ before aligning)							
1	High side to [101] Low side to chassis	67KC (0.5V)	FM	High side to [102] Low side to chassis	"INT" SWEEP	L102	Minimum Deflection
2	High side to [101] Low side to chassis	74KC (0.5V)	FM	High side to [102] Low side to chassis	"INT" SWEEP	C	
19KC Tuning Coil Alignment (Remove Tube V6 before aligning)							
3	High side to [101] Low side to chassis	19KC (0.2V)	FM	High side to [103] Low side to chassis	"INT" SWEEP	T102 top & bottom	Maximum Deflection
38KC Oscillator Coil Alignment (Remove Tube ⓐ before aligning)							
4	to Horizontal input of Oscilloscope	19KC (1V)	FM STEREO	High side to [104] Low side to chassis	H. Amp	T103	Align to obtain the stable wave response as shown in Fig. 1

Insert the tube ⓐ after alignment step 1 through 3

FINAL ALIGNMENT (When using FM Generator)

Signal generator Setting , Output Voltage : 100 μ V
Deviation : 67.5KC at A + B Signal

STEP	FM Stereo Generator				Selector Switch	Connect VTVM & Oscilloscope	Adjust	Remarks
	Coupling	Modulation Frequency	Input Selector	19KC Pilot Carrier Switch				
4	High side to FM ANT. terminal. Low side to chassis	400 cps	A-B or LEFT-RIGHT	OFF	FM STEREO	Left or Right "OUTPUT"	T103	to obtain a stable wave form at 400 cps on oscilloscope
5	High side to FM ANT. terminal. Low side to chassis	400 cps	A-B or LEFT-RIGHT	ON	FM STEREO	Left or Right "OUTPUT"	T102 top & bottom	to obtain a wave form with maximum amplitude and minimum distortion at 400 cps on oscilloscope
6	High side to FM ANT. terminal. Low side to chassis	OFF	OFF	ON	FM STEREO	Left or Right "OUTPUT"	VR11	Minimum Deflection
7	High side to FM ANT. terminal. Low side to chassis	400 cps	A or LEFT	ON	FM STEREO	Right "OUTPUT"	VR9	Minimum Deflection
8	High side to FM ANT. terminal. Low side to chassis	8K cps	A or LEFT	ON	FM STEREO	Right "OUTPUT"	L101	Minimum Deflection
9	High side to FM ANT. terminal. Low side to chassis	400 cps	A or LEFT	ON	FM STEREO	Right "OUTPUT"	VR9	Minimum Deflection
10	High side to FM ANT. terminal. Low side to chassis	400 cps	B or RIGHT	ON	FM STEREO	Left "OUTPUT"	VR9	Minimum Deflection

STEREO INDICATOR ALIGNMENT

11	High side to FM ANT. terminal. Low side to chassis	OFF	OFF	ON	FM STEREO	—	T101 top & bottom
12	High side to FM ANT. terminal. Low side to chassis	OFF	OFF	ON	FM STEREO	—	VR8

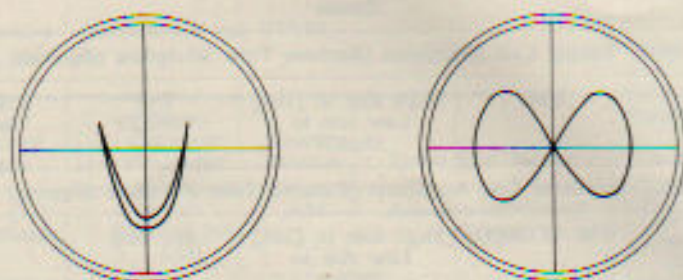


FIG. 1

REPLACEMENT DATA FOR PARTS

THE FOLLOWING CAN BE SUBSTITUTED WITH U.S. MADE PARTS

1. TUBES: General Electric, RCA, Raytheon or Sylvania. However on the 12AX7 tube, we recommend Philips, Telefunken or Mullard (foreign made) tube available in the U. S.
2. RESISTORS: Select one with its value within its tolerance and its wattage identical or higher than the specification.
3. CAPACITORS: Select one with its value within its tolerance and its working voltage identical or higher than the specification.
4. GERMANIUM DIODES: Where the diodes are used in pairs, replace both diodes to assure complete balance. (As in the ratio detector circuit or matrix circuit.)
5. SILICON DIODES: (RECTIFIER) RCA IN540; IR Universal IN2070; or other U. S. made with identical value.

* THE FOLLOWING ARE NOT AVAILABLE IN U.S. MADE PARTS:

1. TRANSFORMERS
2. COILS
3. POTENTIOMETERS
4. SWITCHES (With the exception of power switch.)

* These parts are available at our authorized service centers and Kenwood Electronics, Inc., Los Angeles and New York.

