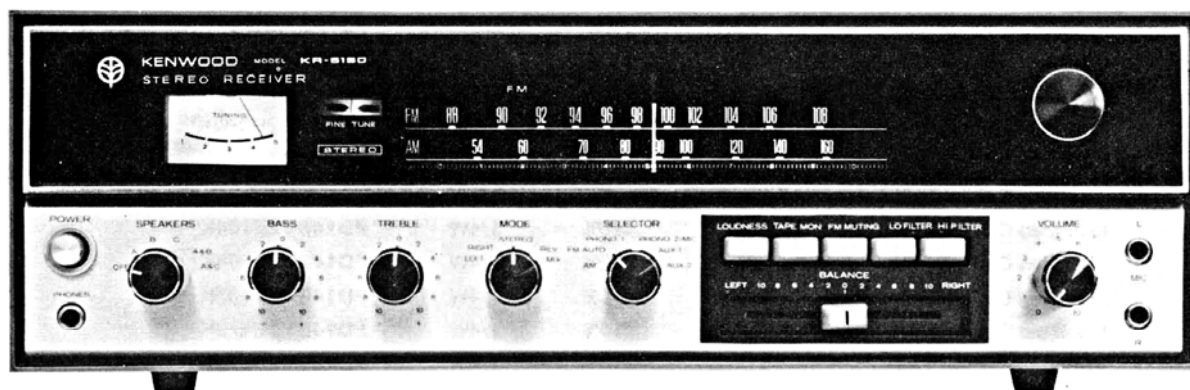




KENWOOD
HI/FI STEREO COMPONENTS

SERVICE MANUAL

KR-5150



SOLID STATE AM-FM STEREO RECEIVER

PARTS DESCRIPTION LIST

MAIN CHASSIS (AE9K) SECTION						
PC BOARD						
	RF UNIT (UA1125K) IF UNIT (UA1224K3) MPX UNIT (75μS) PRE, TONE & MAIN UNIT (UA6001J2)				X01-0025-10 X02-0020-13 X04-0010-10 X09-0013-02	
Symbol No.	Description				Part No.	Remarks
CAPACITOR						
C1	Electrolytic Tubular	100μF	3.15WV		CE04W0F101	
C2	Electrolytic Tubular	33μF	16WV		CE04W1C330	
C3	Mylar	0.22μF	±20%		CQ92M1H224M	
C101	Mylar	0.027μF	±20%		CQ92M1H273M	
C111	Mylar	0.0022μF	±20%		CQ92M1H222M	
C112	Mylar	0.068μF	±20%		CQ92M1H683M	
C113	Mylar	0.018μF	±20%		CQ92M1H183M	
C114	Mylar	0.0056μF	±20%		CQ92M1H562M	
C171	Electrolytic Block	2200μF	50WV		CE62A1H222	
C201	Mylar	0.027μF	±20%		CQ92M1H273M	
C211	Mylar	0.0022μF	±20%		CQ92M1H222M	
C213	Mylar	0.018μF	±20%		CQ92M1H183M	
C214	Mylar	0.0056μF	±20%		CQ92M1H562M	
C271	Electrolytic Block	2200μF	50WV		CE62A1H222	
C301	Oil Impregnated	0.01μF	+100%, -0%		CP052W103P	
C302, 303	Oil Impregnated	0.02μF	±20%		CP02B2J203M	
C304	Electrolytic Block	2000μF	75WV		CE62S75V202	
C305	Electrolytic Tubular	470μF	35WV		CE02W1V471	
C306	Electrolytic Tubular	100μF	16WV		CE04W1C101	
C308	Electrolytic Tubular	1000μF	16WV		CE02W1C102	
RESISTOR						
R1	Insulated Carbon Film	560Ω	±10%	1/4W	PD14BY2E561K	
R101	Insulated Carbon Film	100kΩ	±10%	1/4W	PD14BY2E104K	
R102	Insulated Carbon Film	390kΩ	±10%	1/4W	PD14BY2E394K	
R111, 112	Insulated Carbon Film	10kΩ	±10%	1/4W	PD14BY2E103K	
R113	Insulated Carbon Film	4.7kΩ	±10%	1/4W	PD14BY2E472K	
R114	Insulated Carbon Film	27kΩ	±10%	1/4W	PD14BY2E273K	
R171	Fixed Carbon Composition	1kΩ	±10%	1/2W	RC05GF2H102K	
R172	Fixed Carbon Composition	470Ω	±10%	1/2W	RC05GF2H471K	
R173	Insulated Carbon Film	10kΩ	±10%	1/4W	PD14BY2E103K	
R201	Insulated Carbon Film	100kΩ	±10%	1/4W	PD14BY2E104K	
R202	Insulated Carbon Film	390kΩ	±10%	1/4W	PD14BY2E394K	
R211, 212	Insulated Carbon Film	10kΩ	±10%	1/4W	PD14BY2E103K	
R213	Insulated Carbon Film	4.7kΩ	±10%	1/4W	PD14BY2E472K	
R214	Insulated Carbon Film	27kΩ	±10%	1/4W	PD14BY2E273K	
R271	Fixed Carbon Composition	1kΩ	±10%	1/2W	RC05GF2H102K	
R272	Fixed Carbon Composition	470Ω	±10%	1/2W	RC05GF2H471K	
R273	Fixed Carbon Composition	56Ω	±10%	1/2W	RC05GF2H560K	
R301	Fixed Carbon Composition	1MΩ	±10%	1/2W	RC05GF2H105K	
R302	Insulated Carbon Film	330Ω	±5%	8W	RW14AG3K331J	
R303	Insulated Carbon Film	820Ω	±5%	4W	RW14AG3G821J	
R304	Fixed Carbon Composition	1.5kΩ	±10%	1/2W	RC05GF2H152K	
R305	Insulated Carbon Film	22Ω	±10%	1/4W	PD14BY2E220K	
R306	Fixed Carbon Composition	22Ω	±10%	1/2W	RC05GF2H220K	

PARTS DESCRIPTION LIST

Symbol No.	Description	Part No.	Remarks
R307	Fixed Carbon Composition 2.2k Ω $\pm$ 10% 1/2W	RC05GF2H222K	
POTENTIOMETER			
VR1	VOLUME (50k Ω B) Dual	R06-4005-05	
VR2	BALANCE (100k Ω W) Slide	R13-4005-05	
VR3	BASS (50k Ω A) Dual	R08-4042-05	
VR4	TREBLE (50k Ω A) Dual	R08-4042-05	
TRANSISTOR/DIODE/THERMISTOR			
Q1~4	2SC1111		
Q5	2SD234		
D1	5B1		
D2	10D1		
D3	1S338T		
TH1, 2	SDT-65		
SWITCH			
S1	SELECTOR (Rotary) F · 5 · 14 · 6	S04-5012-05	
S2	MODE (Rotary) F · 2 · 4 · 5	S04-2037-05	
S3	LOUDNESS (FIVE Pushbutton)	S39-5001-05	
S4	TAPE MONITOR (FIVE Pushbutton)	S39-5001-05	
S5	MUTING (FIVE Pushbutton)	S39-5001-05	
S6	LOW FILTER (FIVE Pushbutton)	S39-5001-05	
S7	HIGH FILTER (FIVE Pushbutton)	S39-5001-05	
S8	SPEAKERS (Rotary) F · 2 · 6 · 6	S04-2036-05	
S9	POWER SW (Push Button)	S39-1010-05	
S10	PRE-MAIN SEPARATE (Slide)	S10-22D	
S11	AC VOLTAGE SELECT (Slide)	S31-2004-05	
MISCELLANEOUS			
—	Chassis	A10-0209-01	
—	Frame	A15-0002-04	
—	Panel	A20-0326-05	
—	Sub-Panel	A22-0075-02	
—	Rear Panel	A23-0163-12	
—	Reflector (A)	A33-0009-03	
—	Reflector (B)	A33-0010-03	
—	Sole Plate	A40-0058-03	
—	Thermistor Holder x 2	A90-310	
—	Antenna Holder	A5065	
—	Meter Holder (for TUNING) x 2	A5107B	
—	Name Plate	B09-190	
—	Caution Sticker	B09-192	
—	Front Glass	B10-0032-02	
—	Dial	B20-0158-03	
—	Dial Pointer	B21-4001-05	
P. L.	Pilot Lamp (Fuse Type) x 4	B30-0015-15	
P. L.	Pilot Lamp (Small) x 8	B30-0033-05	
M	SIGNAL Meter	B31-0006-05	
M	TUNING Meter	B42-0009-04	
—	Name Plate	B42-0024-02	
—	Certification	B42-0009-04	
—	Schematic Diagram	B52-0072-00	
—	Flywheel	D05-52B	

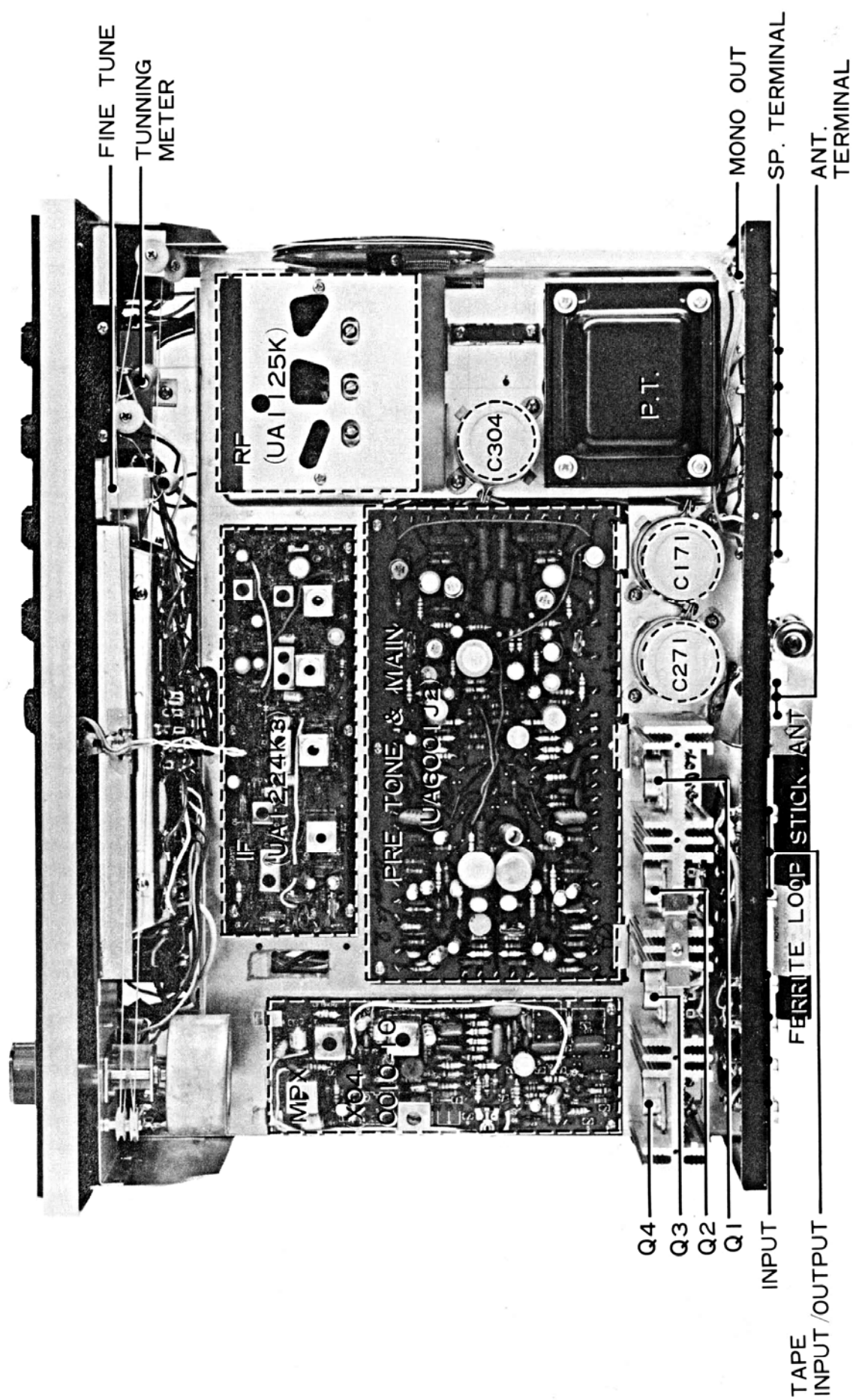
PARTS DESCRIPTION LIST

Symbol No.	Description	Part No.	Remarks
—	Dial Spring	D06-02	
—	Small Pulley x 5	D09-14B	
—	Small Bushing x 4	D10-05	
—	Small Bushing	D10-09	
—	Pointer Metal Fittings	D11-18	
—	Pulley	D15-0058-04	
—	Dial Shaft	D20-0079-03	
J	Pin Jack (1P)	E08-11C	
J	Pin Jack (4P)	E08-14G	
J	Pin Jack (8P)	E08-18F	
—	AC Outlet x 2	E08-0205-05	
J	PHONE Jack	E11-0002-05	
J	Pin Jack with DIN Connector (4P)	E13-0401-05	
—	Pilot Lamp Socket x 8	E15-0033-05	
J	MIC Jack x 2	E16-22	
—	Transistor Socket x 4	E4082	
—	Radiator	F01-0069-03	
—	Shield Plate (for Radiator)	F10-0185-03	
—	Felt with Sticker	F15-0008-04	
—	Dust Sheet	F15-0054-04	
—	Insulating Plate	F20-0027-04	
—	Rubber Bushing	G02-020	
—	Legs x 4	G10-02	
—	Cord Bushing	G11-19	
—	AC Cord Bushing	G11-25	
—	Corrugated Cardboard Case	H01-0505-03	
—	Warranty Card	H26-02	
—	Fuse Holder	J13-0023-05	
—	Front Glass Holder x 2	J19-0029-14	
—	Front Glass Holder x 3	J19-0062-04	
—	Meter Holder (for SIGNAL)	J19-0063-03	
—	Dial Holder	J19-0064-04	
—	Meter Holder (for SIGNAL)	J19-0065-03	
—	Switch Stopper	J19-0082-04	
—	Front Glass Holder x 2	J19-0091-04	
—	Switch Holder	J21-0703-04	
—	Knob (TUNING)	K23-0047-03	
—	Knob (SPEAKERS, BASS, TREBLE, MODE, SELECTOR, VOLUME)	K23-0049-03	
—	Knob (BALANCE)	K23-0051-04	
—	FM Antenna	L10-04	
—	Ferrite Loopstick Antenna	L15-39	
L1, 2	Chock Coil	L20-010	
—	Fuse Holder	S15-13	
F	Fuse (2A)	S17-02	
—	Feeder Holder	S21-29	
—	Switch Stopper	S4013	
—	Slider	S4132	
P.T.	Power Transformer	T01-177W	
—	AC Cord with Plug	W09-15	
	<i>In USA, added to the parts of (K), In PX, added to the parts of (U)</i>		

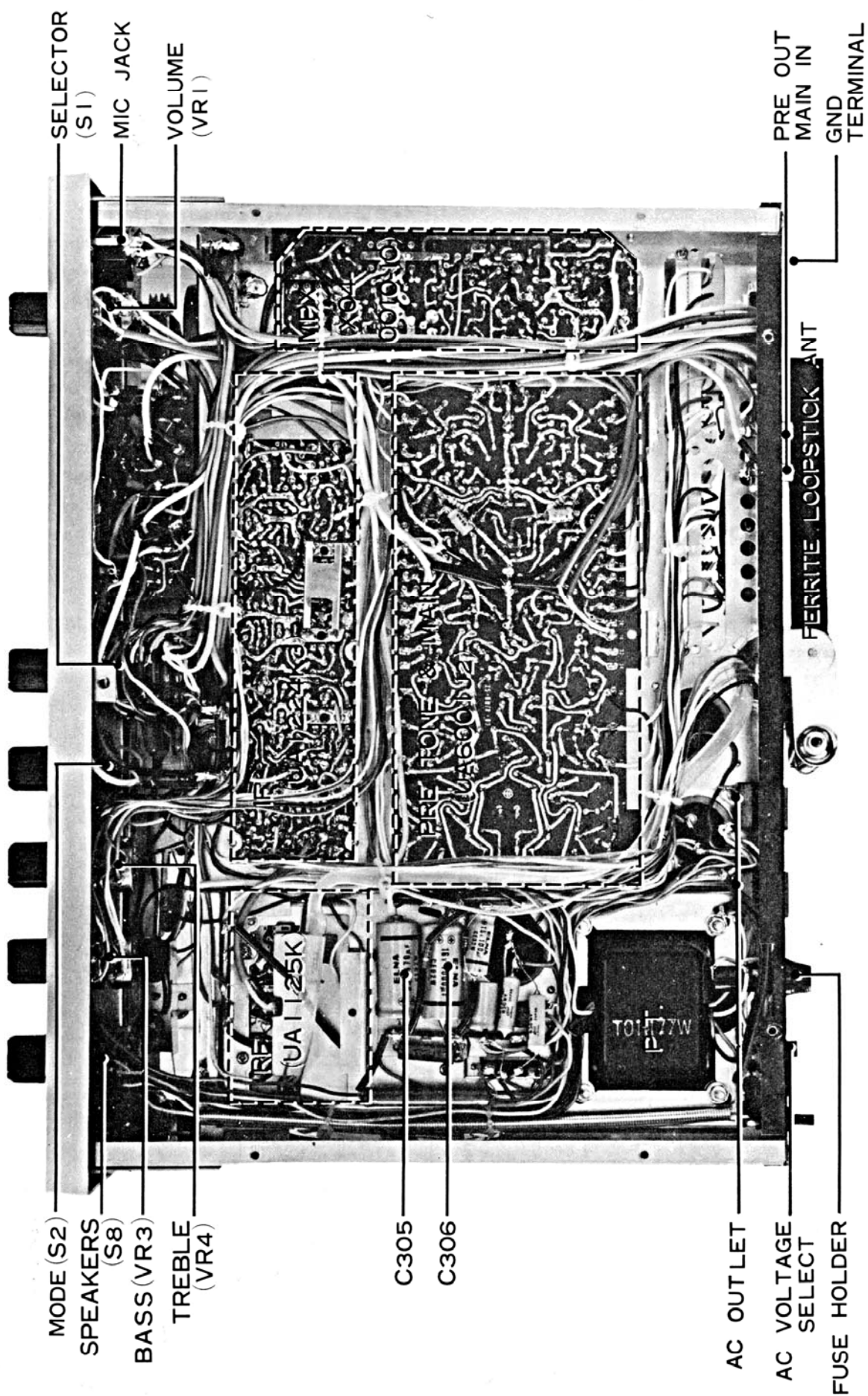
PARTS DESCRIPTION LIST

Symbol No.	Description	Part No.	Remarks
—	Case (K)	A01-0124-02	
—	Cabinet (U)	A03-0049-12	
—	Amp. Holder (K)	A3882	
—	Holey Plate (U)	B04-0017-14	
—	Instruction Manual (K)	B50-0455-00	
—	Instruction Manual (U)	B50-0469-00	
—	Caution Card (U)	B58-0003-00	
—	Pin Plug x 4 (U)	E09-410	
—	Dial Cover (U)	F07-0171-03	
—	Corrugated Cardboard Case (K)	H02-0108-03	
—	Warranty Card (U)	H26-17	
—	Caution Card (for Case) (K)	H4068	
—	Address (U)	H4156	
—	Caution Card (for AC VOLTAGE SELECT) (U)	H4190	
—	Decorated Screw x 4 (K)	N08-0003-04	
—	Decorated Screw x 4 (U)	N08-0005-04	

CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW



PROCEDURE FOR REPLACING OUTPUT TRANSISTOR

SYMPTOMS:

- A. When there is load hum at the speakers.
- B. When there is no output at all.
- C. When you cannot get rated output.

REPLACING METHOD:

Replace all the four transistors, 2SC1111.

TESTING PROCEDURES:

Until replacement is completed, do not operate the unit without first testing.

Perform the test according to the following procedures.

1. Using variable transformer, lower the AC line voltage to approximately 30 V.
2. Also measure the voltage between the chassis and Collector of the power transistor Q2 or Q3. If tester indicates approximately 35 V, it is normal.
3. Using a tester, measure the voltage between the chassis and Collector of the power transistor Q1 or Q4. If a tester indicates approximately 68 V, it is normal.

PROTECTION ADJUSTMENT PROCEDURES:

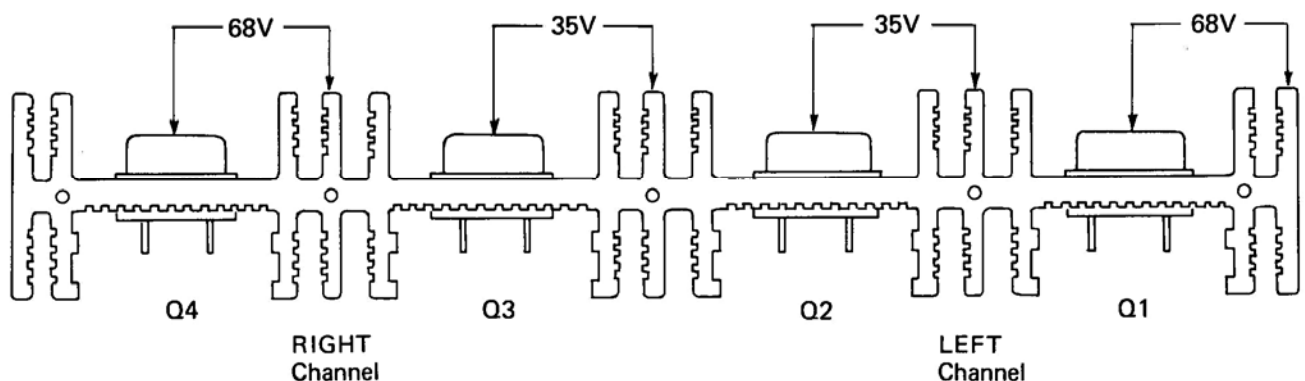
The protection circuit in "UA6001J2" is a non-adjustment circuit. But, check the circuit for normal operation as follows for cautions sake;

With a 8 ohms dummy load and an oscilloscope connected in parallel to the output terminal, place the controls on "KR5150" in their normal positions.

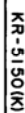
Apply a signal of 1,000 Hz to the input and adjustment the volume control until "UA6001J2" provides an output of 10 W as measured across the dummy load. Try to short across the dummy and then restore it to the normal connection under the above conditions and check to see that the scope sweeps with no waveform once and then with the waveform represented, thereby showing that the protection circuit is operated normally. If the protection circuit fails to operate, turn off the power switch immediately, otherwise the final stage transistors may be damaged. And then check transistors, Qe17 ~ 19 and Diodes, De5, 6 whether they are good or not.

BOTTOM VIEW OF TRANSISTOR

2SC1111



1



ALIGNMENT PROCEDURE

FM ALIGNMENT PROCEDURE

Instruments: FM SG, AC VTVM & Oscilloscope
 Warm-up: Allow 30 minutes warm-up period for receiver and equipments
 Selector SW: Always place in FM AUTO position
 Alignment tools: IF transformers require a plastic screwdriver-type alignment tool

STEP	Align	Dummy Antenna	FM SSG		Tuning Dial Setting	Output Indicator	Adjust	Remarks
			Coupling	Input Signal				
1	IFT	Direct	High side to (A) Low side to Chassis	10.7 MHz (Unmod.)	Any non-interfering setting	Signal Indicator	(UA1125K) Tal (UA1224K3) Lb2, 3, 5 Top & Bottom	Maximum Deflection
2	DISCRIMINATOR	300 ohm Carbon Resistor	FM Antenna Terminal	98 MHz 400 Hz (Mod.) 75 kHz (Dev.) 0.5 ~ 1 mV (Input)	Tune for maximum using tuning indicator	VTVM at LEFT output jack	(UA1224K3) Lb8 Top & Bottom	Maximum Deflection
3	RF AMP CIRCUIT	300 ohm Carbon Resistor	FM Antenna Terminal	90 MHz 400 Hz (Mod.) 75 kHz (Dev.) 1.5 ~ 2μV (Input)	90 MHz	VTVM & Xtal earphone at LEFT output jack	(UA1125K) La1 ~ 4	Maximum Deflection
4	RF AMP CIRCUIT	300 ohm Carbon Resistor	FM Antenna Terminal	106 MHz 400 Hz (Mod.) 75 kHz (Dev.) 1.5 ~ 2μV (Input)	106 MHz	VTVM & Xtal earphone at LEFT output jack	(UA1125K) CTa1 ~ 4	Maximum Deflection
5	Repeat steps 3 & 4 until no further improvement is possible.							
6	OUTPUT LEVEL	300 ohm Carbon Resistor	FM Antenna Terminal	98 MHz 400 Hz (Mod.) 75 kHz (Dev.) 1 mV (Input)	Tune for maximum using tuning indicator	VTVM & Xtal earphone at LEFT output jack	(UA1224K3) VRb1	Set the output level to 1V
7	METER SETTING	300 ohm Carbon Resistor	FM Antenna Terminal	98 MHz 400 Hz (Mod.) 75 kHz (Dev.) 1 mV (Input)	Tune for maximum deflection, VTVM & Xtal earphone at LEFT output jack	Signal Indicator	(UA1224K3) Lb7 VRb2	"4" indicated
8	METER SETTING	300 ohm Carbon Resistor	FM Antenna Terminal	98 MHz 400 Hz (Mod.) 75 kHz (Dev.) 1 mV (Input)	Tune for maximum deflection, VTVM & Xtal earphone at LEFT output jack	Tuning Indicator	(UA1244K3) Lb8	Center indicated

[illegible]

ALIGNMENT PROCEDURE

(c) BEACON LAMP

STEP	FM Stereo Signal Generator			19 kHz Pilot Carrier Switch	Selector Switch	AC VTVM Oscilloscope Connection	DC VTVM or Circuit Tester Connection	Adjust	Remarks
	Coupling	Modulation Frequency	Input Selector						
1	FM Antenna Terminal	DEV. 67.5 kHz 10 μ V	NORMAL	ON	FM AUTO	OFF	OFF	(UA1224K3) VRb4	Beacon Lamp "ON"
2	FM Antenna Terminal	DEV. 25 kHz $\pm$ 5 kHz	NORMAL	ON	FM AUTO	LEFT or RIGHT output jack	OFF	(X04-0010-10) VRc1	Beacon Lamp Threshold of light off

ADJUSTING THE SQUELCH (MUTING)

When the MUTING SW is set to "ON" position with ANT input at 1mV, Remember the audio output (AF). And then at ANT input of 3 μ V with MUTING SW set to the above, adjust VRb3 (UA1224K3) so that the audio output is attenuated to below -40dB.

Next at ANT input of 10 μ V with MUTING SW set to the same, check the audio output so as to be attenuated to within -1dB.

ALIGNMENT PROCEDURE

AM ALIGNMENT PROCEDURE

Alignment tools: IF transformers require a plastic screwdriver-type alignment tool.
 Instruments: AM SG, AC VTVM & Oscilloscope.
 Selector SW: Always place in AM position.
 Warm-up: Allow 30 minutes warm-up period for Receiver and equipments.

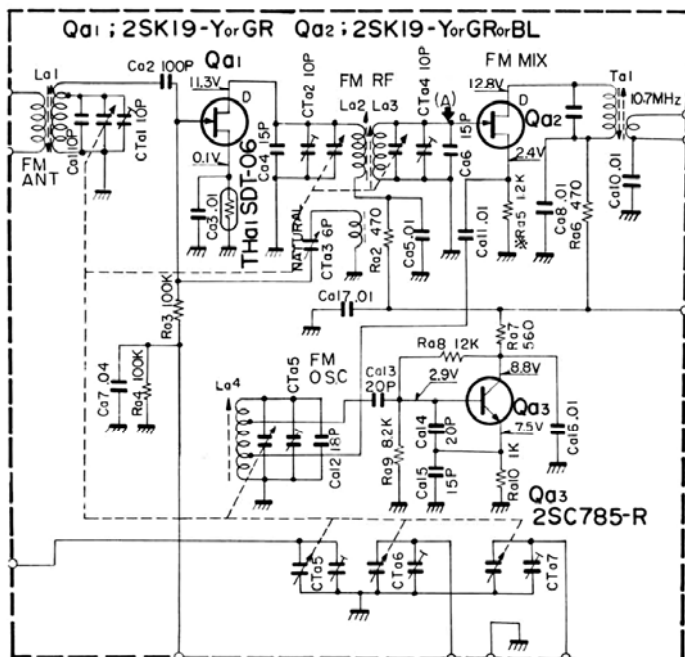
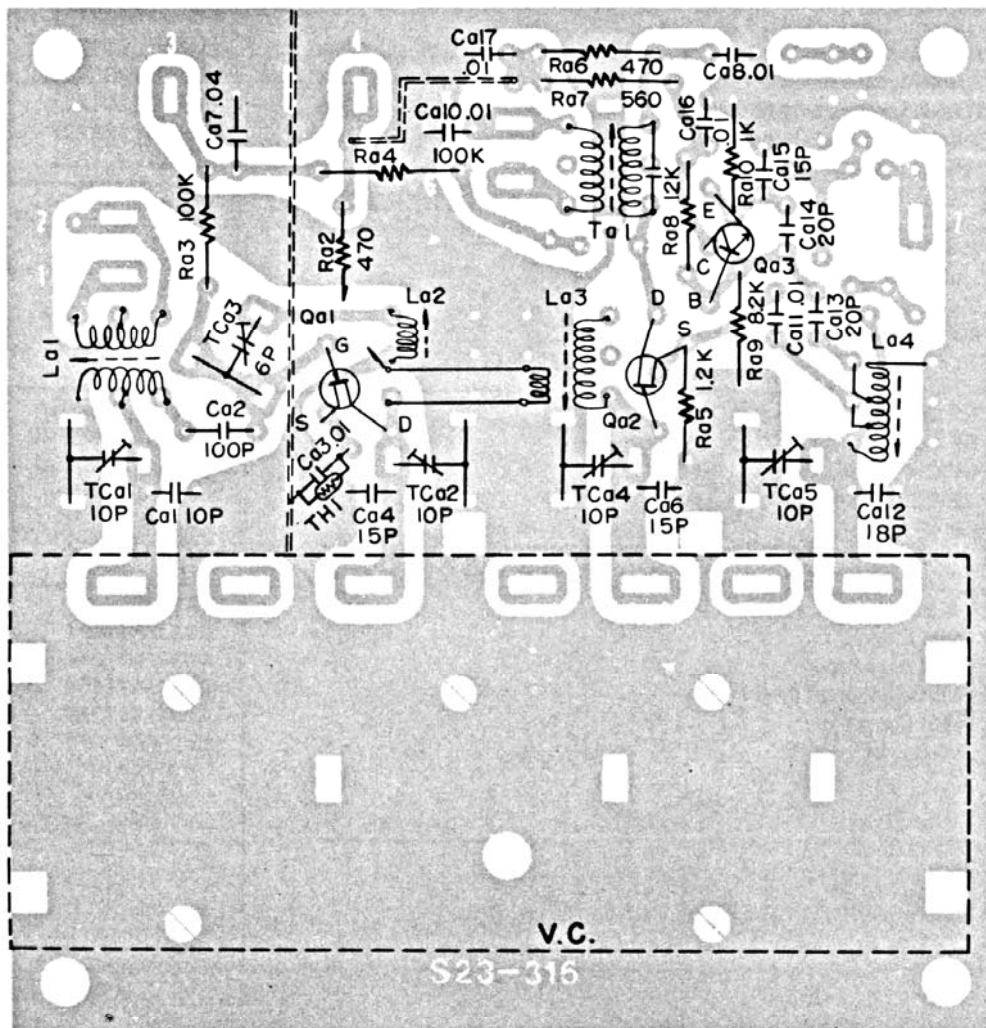
STEP	Dummy Antenna	AM Signal Generator Coupling	Signal Generator Frequency	Selector Switch	Tuning Dial Setting	Indicating Meter	Adjust	Remarks
1	Direct	High side to AM antenna terminal, Low side to chassis	455 kHz (400 Hz 30% AM)	AM	Any non-interfering setting	Tuning Indicator	(UA1224K3) Lb4, 6, 9	Maximum Deflection
2	Direct	Connect to short loop of wire, Radiate signal into ferrite loop stick antenna of receiver	600 kHz (400 Hz 30% AM)	AM	600 kHz	Tuning Indicator	(UA1224K3) Lb11 AM ANT.	Maximum Deflection
3	Direct	Connect to short loop of wire, Radiate signal into ferrite loop stick antenna of receiver	1400 kHz (400 Hz 30% AM)	AM	1400 kHz	Tuning Indicator	(UA1125K) CTa5 ~ 6	Maximum Deflection
4	Repeat steps 2 & 3 until no further improvement is possible							
5	Direct	AM Antenna Terminal	1000 kHz (400 Hz 30% AM)	AM	1000 kHz	Signal Indicator	(UA1224K3) VRb5	"3.5" indicated

SCHEMATIC DIAGRAM
BOTTOM VIEW OF TRANSISTOR

2SK19(GR)or(BL)



2SC785R


SEALED CIRCUIT ASSEMBLIES-PHANTOM VIEWS


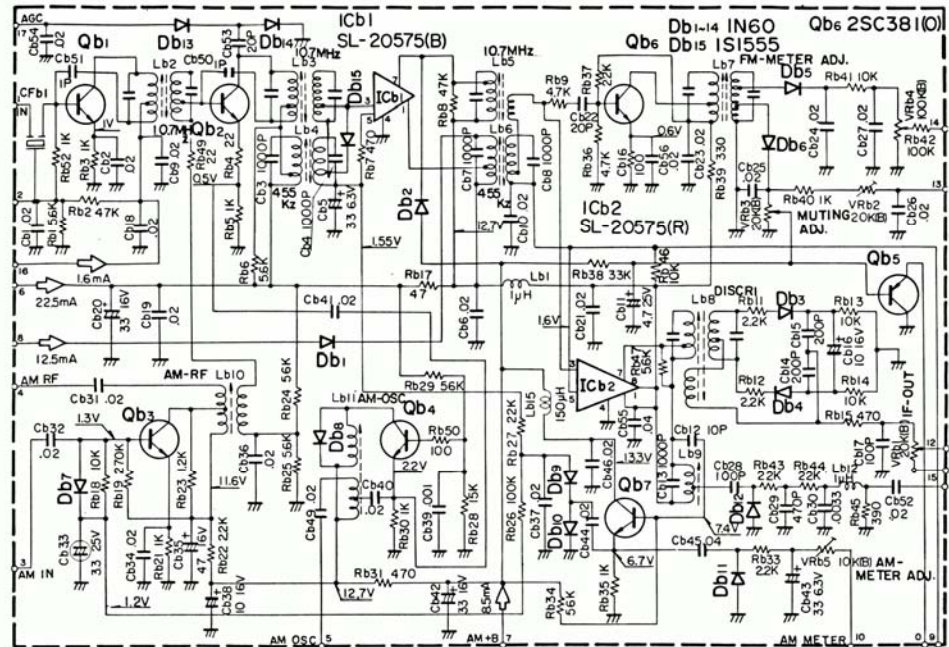
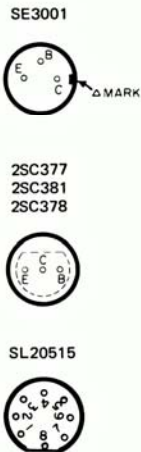
Qa1 2SK19-(Y)or(GR)
 Qa2 2SK19-(Y)or(BL)or(GR)
 Qa3 2SC785(R)

PARTS DESCRIPTION LIST

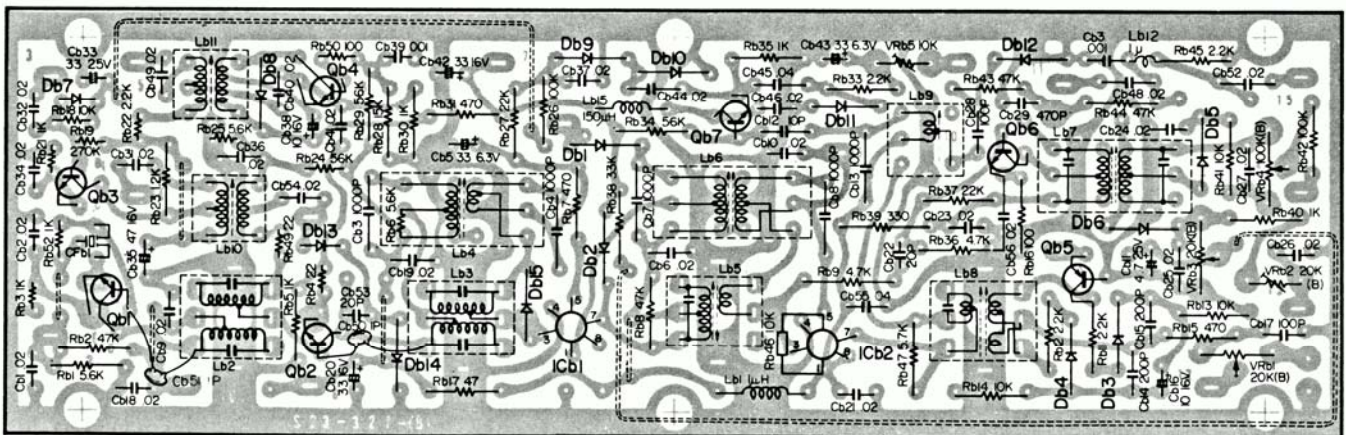
Symbol No.	Description	Part No.	Remarks
CAPACITORS			
Ca1	Ceramic 10pF $\pm 0.5\text{pF}$	CC94TH1H100D	
Ca2	Ceramic 100pF $\pm 10\%$	CC94SL1H101K	
Ca3	Ceramic 0.01 μF	CK94YG1E103	
Ca4	Ceramic 15pF $\pm 10\%$	CC94TH1H150K	
Ca5	Ceramic 0.01 μF	CK94YG1E103	
Ca6	Ceramic 15pF $\pm 10\%$	CC94TH1H150K	
Ca7	Ceramic 0.04 μF	CK94YG1E403	
Ca8	Ceramic 0.01 μF	CC94TH1H103	
Ca10, 11	Ceramic 0.01 μF	CC94TH1H103	
Ca12	Ceramic 18pF $\pm 5\%$	CC94TH1H180K	
Ca13, 14	Ceramic 20pF $\pm 5\%$	CC94CH1H200J	
Ca15	Ceramic 15pF $\pm 5\%$	CC94CH1H150J	
Ca16, 17	Ceramic 0.01 μF	CK94YG1E103	
CTa1, 2	Ceramic Trimmer	C4036	
CTa3	Ceramic Trimmer	C4035	
CTa4, 5	Ceramic Trimmer	C4036	
V. C.	Variable Capacitor	D01-146	
RESISTORS			
Ra2	Special Insulated Carbon Film 470 Ω $\pm 5\%$ or 10% 1/8W	PD14BY2B471J	
Ra3, 4	Special Insulated Carbon Film 100k Ω $\pm 5\%$ or 10% 1/8W	PD14BY2B104J	
Ra5	Special Insulated Carbon Film 1.2k Ω 1.8k Ω or 3.3k Ω $\pm 5\%$ or 10% 1/8W		
	2SK19-Y 1.2k Ω	PD14BY2B122J	
	2SK19-GR 1.8k Ω	PD14BY2B182J	
	2SK19-BL 3.3k Ω	PD14BY2B332J	
Ra6	Special Insulated Carbon Film 470 Ω $\pm 5\%$ or 10% 1/8W	PD14BY2B471J	
Ra7	Special Insulated Carbon Film 560 Ω $\pm 5\%$ or 10% 1/8W	PD14BY2B561J	
Ra8	Special Insulated Carbon Film 12k Ω $\pm 5\%$ or 10% 1/8W	PD14BY2B123J	
Ra9	Special Insulated Carbon Film 8.2k Ω $\pm 5\%$ or 10% 1/8W	PD14BY2B822J	
Ra10	Special Insulated Carbon Film 1k Ω $\pm 5\%$ or 10% 1/8W	PD14BY2B102J	
TRANSISTORS/THERMISTOR			
Qa1	2SK-19 (Y) or (GR)		
Qa2	2SK-19 (Y), (GR) or (BL)		
Qa3	2SC785-R		
THa1	SDT-06		
COILS/TRANSFORMERS			
La1	RF Coil	L24-UA1125KRA	
La2	RF Coil	L24-UA1125KRB	
La3	RF Coil	L24-UA1125KRC	
La4	VHF OSC Coil	L34-0002-04	
Ta1	FM IFT	L52-10	
MISCELLANEOUS			
—	P C Board	S23-316	
—	Front Chassis	A03-UA1129J	
—	Front Rear Panel	A08-UA1125K	
—	Front Shielding Board	A13-UA1125K	
—	Front Cover	A90-UA1125K	
—	Coil Spacer	J30-0009-14	

SCHEMATIC DIAGRAM

BOTTOM VIEW OF TRANSISTORS



SEALED CIRCUIT ASSEMBLIES-PHANTOM VIEWS



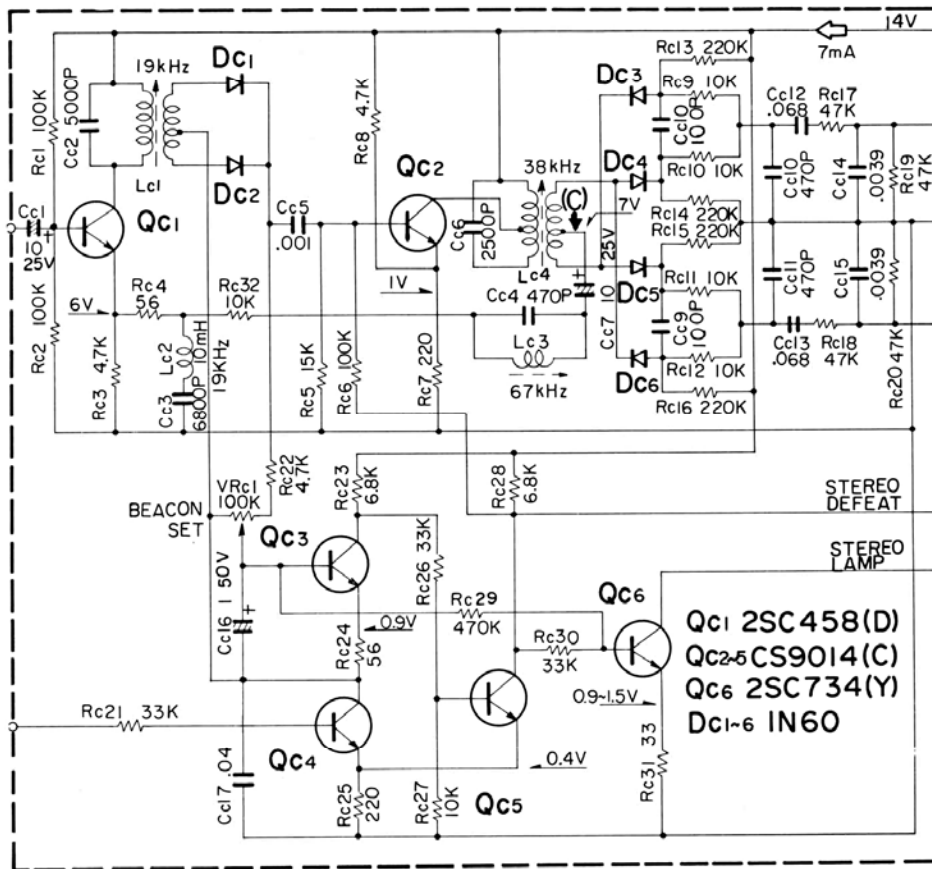
Qb1 SE300(W), Qb2 SE300(R), Qb3 2SC377, Qb4 2SC378, Qb5 2SA495(Y), Qb6 2SC381(O), Qb7 2SC377, ICb1 SL-20575(B), ICb2 SL-20575(R), Db1-4 IN60, Db5 IS1555

PARTS DESCRIPTION LIST

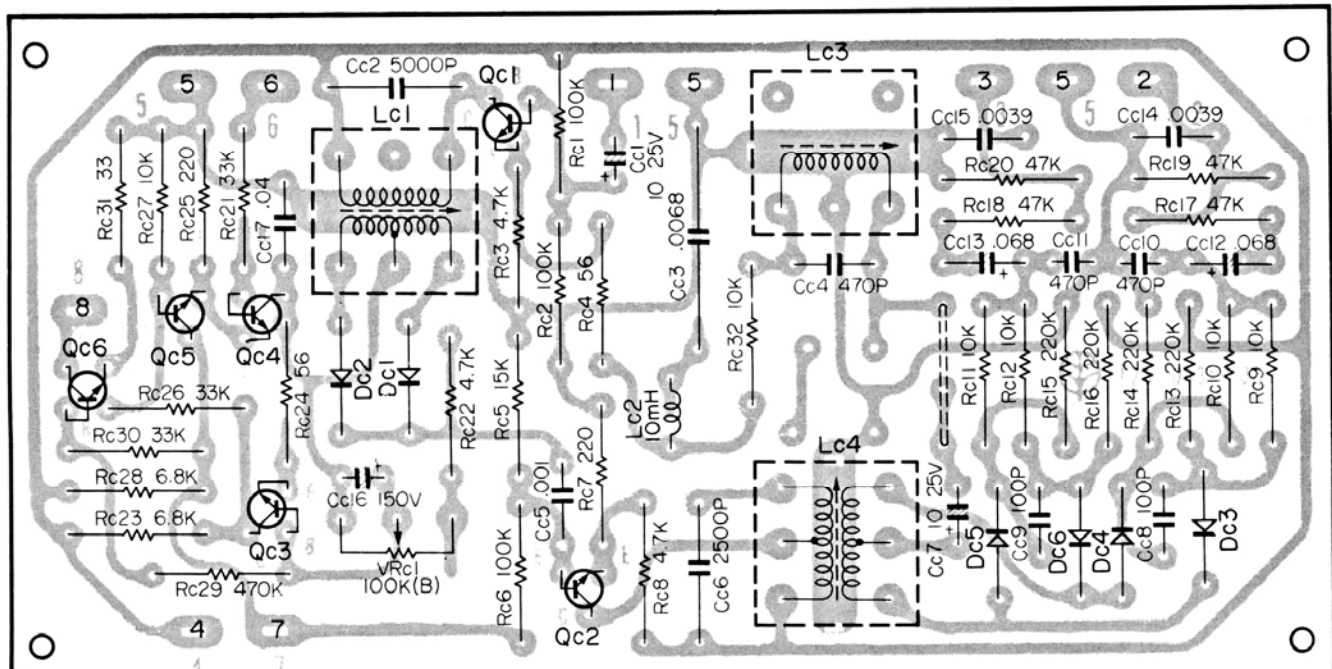
Symbol No.	Description	Part No.	Re- marks
CAPACITORS			
Cb1, 2	Ceramic 0.02μF +80% -20%	CK94YG1E203Z	
Cb3, 4	Polystyrene Film 1000pF ±10%	CQ08S1E102K03	
Cb5	Electrolytic Tubular 33μF 6.3WV	CE04W1J330	
Cb6	Ceramic 0.02μF +80% -20%	CK94YG1E203Z	
Cb7, 8	Polystyrene Film 1000pF ±10%	CQ08S1E102K03	
Cb9, 10	Ceramic 0.02μF +80% -20%	CK94YG1E203Z	
Cb11	Electrolytic Tubular 4.7μF 25WV	CE04W1E4R7	
Cb12	Ceramic 10pF ±0.5pF	CC94SL1H100D	
Cb13	Polystyrene Film 1000pF ±10%	CQ08S1E102K03	
Cb14, 15	Ceramic 200pF ±10%	CC94SL1H201K	
Cb16	Electrolytic Tubular 10μF 16WV	CE04W1C100	
Cb17	Ceramic 100pF ±10%	CC94SL1H101K	
Cb18, 19	Ceramic 0.02μF +80% -20%	CK94YG1E203Z	
Cb20	Electrolytic Tubular 33μF 16WV	CE04W1C330	
Cb21	Ceramic 0.02μF +80% -20%	CK94YG1E203Z	
Cb22	Ceramic 20pF ±10%	CC94SL1H200K	
Cb23 ~ 27	Ceramic 0.02μF +80% -20%	CK94YG1E203Z	
Cb28	Ceramic 100pF ±10%	CC94SL1H101K	
Cb29	Ceramic 470pF ±20%	CK94YY2E471M	
Cb30	Ceramic 0.033μF ±20%	CK94YY2E332M	
Cb31, 32	Ceramic 0.02μF +80% -20%	CK94YG1E203Z	
Cb33	Electrolytic Tubular 3.3μF 25WV	CE04W1E3R3NP	
Cb34	Ceramic 0.02μF +80% -20%	CK94YG1E203Z	
Cb35	Electrolytic Tubular 47μF 16WV	CE04W1C470	
Cb36, 37	Ceramic 0.02μF +80% -20%	CK94YG1E203Z	
Cb38	Electrolytic Tubular 10μF 16WV	CK94YG1E203Z	
Cb39	Ceramic 0.001μF +80% -20%	CK94YG1E102Z	
Cb40, 41	Ceramic 0.02μF +80% -20%	CK94YG1E203Z	
Cb42	Electrolytic Tubular 33μF 16WV	CE04W1C330	
Cb43	Electrolytic Tubular 33μF 6.3WV	CE04W1J330	
Cb44	Ceramic 0.02μF +80% -20%	CK94YG1E203Z	
Cb45	Ceramic 0.04μF +80% -20%	CK94YG1E403Z	
Cb46	Ceramic 0.02μF +80% -20%	CK94YG1E103Z	
Cb48, 49	Ceramic 0.02μF +80% -20%	CK94YG1E103Z	
Cb50, 51	Ceramic 1pF ±0.5pF	CC94SL1H010D	
Cb52	Ceramic 0.02μF +80% -20%	CK94YG1E203Z	
Cb53	Ceramic 20pF ±10%	CC94SL1H200K	
Cb54	Ceramic 0.02μF +80% -20%	CK94YG1E203Z	
Cb55	Ceramic 0.04μF +80% -20%	CK94YG1E403Z	
Cb56	Ceramic 0.02μF +80% -20%	CK94YG1E203Z	
RESISTORS			
Rb1	Insulated Carbon Film 5.6kΩ ±5% or ±10% 1/8W	PD14BY2B562J	
Rb2	Insulated Carbon Film 47kΩ ±5% or ±10% 1/8W	PD14BY2B473J	
Rb3	Insulated Carbon Film 1kΩ ±5% or ±10% 1/8W	PD14CY2B102J	
Rb4	Insulated Carbon Film 22Ω ±5% or ±10% 1/8W	PD14CY2B220J	
Rb5	Insulated Carbon Film 1kΩ ±5% or ±10% 1/8W	PD14BY2B102J	
Rb6	Insulated Carbon Film 5.6kΩ ±5% or ±10% 1/8W	PD14CY2B562J	
Rb7	Insulated Carbon Film 470Ω ±5% or ±10% 1/8W	PD14BY2B471J	
Rb8	Insulated Carbon Film 47kΩ ±5% or ±10% 1/8W	PD14BY2B473J	
Rb9	Insulated Carbon Film 4.7kΩ ±5% or ±10% 1/8W	PD14BY2E472K	
Rb11, 12	Insulated Carbon Film 2.2kΩ ±5% or ±10% 1/8W	PD14BY2B222J	
Rb13, 14	Insulated Carbon Film 10kΩ ±5% or ±10% 1/8W	PD14BY2B103J	
Rb15	Insulated Carbon Film 470Ω ±5% or ±10% 1/8W	PD14BY2B471J	
Rb16	Insulated Carbon Film 100Ω ±5% or ±10% 1/8W	PD14BY2B101J	
Rb	Insulated Carbon Film 47Ω ±5% or ±10% 1/8W	PD14BY2B470J	
Rb18	Insulated Carbon Film 10kΩ ±5% or ±10% 1/8W	PD14CY2B103J	
Rb19	Insulated Carbon Film 270Ω ±5% or ±10% 1/8W	PD14CY2B274J	
Rb21	Insulated Carbon Film 1kΩ ±5% or ±10% 1/8W	PD14CY2B102J	
Rb22	Insulated Carbon Film 2.2kΩ ±5% or ±10% 1/8W	PD14CY2B222J	
Rb23	Insulated Carbon Film 1.2kΩ ±5% or ±10% 1/8W	PD14BY2B122J	
Rb24	Insulated Carbon Film 56kΩ ±5% or ±10% 1/8W	PD14CY2B563J	
Rb25	Insulated Carbon Film 5.6kΩ ±5% or ±10% 1/8W	PD14CY2B562J	
Rb26	Insulated Carbon Film 100kΩ ±5% or ±10% 1/8W	PD14BY2B104J	
Rb27	Insulated Carbon Film 22kΩ ±5% or ±10% 1/8W	PD14BY2B223J	
Rb28	Insulated Carbon Film 15kΩ ±5% or ±10% 1/8W	PD14BY2B153J	
Rb29	Insulated Carbon Film 56kΩ ±5% or ±10% 1/8W	PD14BY2B563J	
Rb30	Insulated Carbon Film 1kΩ ±5% or ±10% 1/8W	PD14BY2B102J	
Rb31	Insulated Carbon Film 470Ω ±5% or ±10% 1/8W	PD14BY2B471J	
Rb33	Insulated Carbon Film 2.2kΩ ±5% or ±10% 1/8W	PD14BY2B222J	

Symbol No.	Description	Part No.	Re- marks
Rb34	Insulated Carbon Film 56kΩ ±5% or ±10% 1/8W	PD14BY2B563J	
Rb35	Insulated Carbon Film 1kΩ ±5% or ±10% 1/8W	PD14BY2B102J	
Rb36	Insulated Carbon Film 4.7kΩ ±5% or ±10% 1/8W	PD14BY2B472J	
Rb37	Insulated Carbon Film 22kΩ ±5% or ±10% 1/8W	PD14BY2B223J	
Rb38	Insulated Carbon Film 33kΩ ±5% or ±10% 1/8W	PD14BY2B333J	
Rb39	Insulated Carbon Film 330Ω ±5% or ±10% 1/8W	PD14BY2E331K	
Rb40	Insulated Carbon Film 1kΩ ±5% or ±10% 1/8W	PD14BY2B102J	
Rb41	Insulated Carbon Film 10kΩ ±5% or ±10% 1/8W	PD14BY2B103J	
Rb42	Insulated Carbon Film 100kΩ ±5% or ±10% 1/8W	PD14BY2B104J	
Rb43, 44	Insulated Carbon Film 22kΩ ±5% or ±10% 1/8W	PD14BY2B223J	
Rb45	Insulated Carbon Film 390Ω ±5% or ±10% 1/8W	PD14BY2B391J	
Rb46	Insulated Carbon Film 10kΩ ±5% or ±10% 1/8W	PD14CY2B103J	
Rb47	Insulated Carbon Film 5.6kΩ ±5% or ±10% 1/8W	PD14CY2B562J	
Rb49	Insulated Carbon Film 22Ω ±5% or ±10% 1/8W	PD14CY2B220J	
Rb50	Insulated Carbon Film 100Ω ±5% or ±10% 1/8W	PD14BY2B101J	
Rb52	Insulated Carbon Film 1kΩ ±5% or ±10% 1/8W	PD14BY2B102J	
IF TRANSFORMER/COIL			
Lb1	Choke Coil	L20-010C	
Lb2	FM IFT	L02-104	
Lb3	FM IFT	L02-104	
Lb4	AM IFT	L01-88	
Lb5	AM IFT	L02-109	
Lb6	AM IFT	L01-88	
Lb7	AM IFT (MUTING)	L02-95	
Lb8	FM IFT (DICS)	L02-64	
Lb9	AM IFT	L01-89	
Lb10	AM RF Coil	L12-61	
Lb11	AM OSC Coil	L11-70	
Lb12	Choke Coil	L20-010C	
Lb15	Ferri-Inductor (FL5H 151K)	L4019	
CFb1	Ceramic Filter		
TRANSISTOR/IC/DIODE			
Qb1	SE-3001-(W)		
Qb2	SE-3001-(R)		
Qb3	2SC377		
Qb4	2SC378		
Qb5	2SA495 (Y)		
Qb6	2SC381 (O)		
Qb7	2SC377		
Icb1	SC-20575 (B)		
Icb2	SL-20575 (R)		
Db1 ~ 14	1N60		
Db15	1S1555		
POTENTIOMETER			
VRb1	IF OUT 20kΩ (B)	R10-75	
VRb2	FM METER 20kΩ (B)	R10-115	
VRb3	MUTING 20kΩ (B)	R10-75	
VRb4	FM METER 100kΩ (B)	R10-91	
VRb5	AM METER 10kΩ (B)	R10-114	
MISCELLANEOUS			
-	P. C. Board	S23-327	
-	Shielding Board	F10-0002-04	

SCHEMATIC DIAGRAM



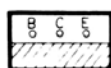
SEALED CIRCUIT ASSEMBLIES-PHANTOM VIEWS



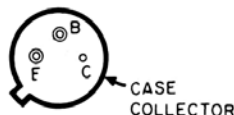
Qc1 2SC458(D), Qc2~5 CS9014(C), Qc6 2SC734(Y), Dc1~6 1N60

BOTTOM VIEW OF TRANSISTOR

2SC458



CS9014



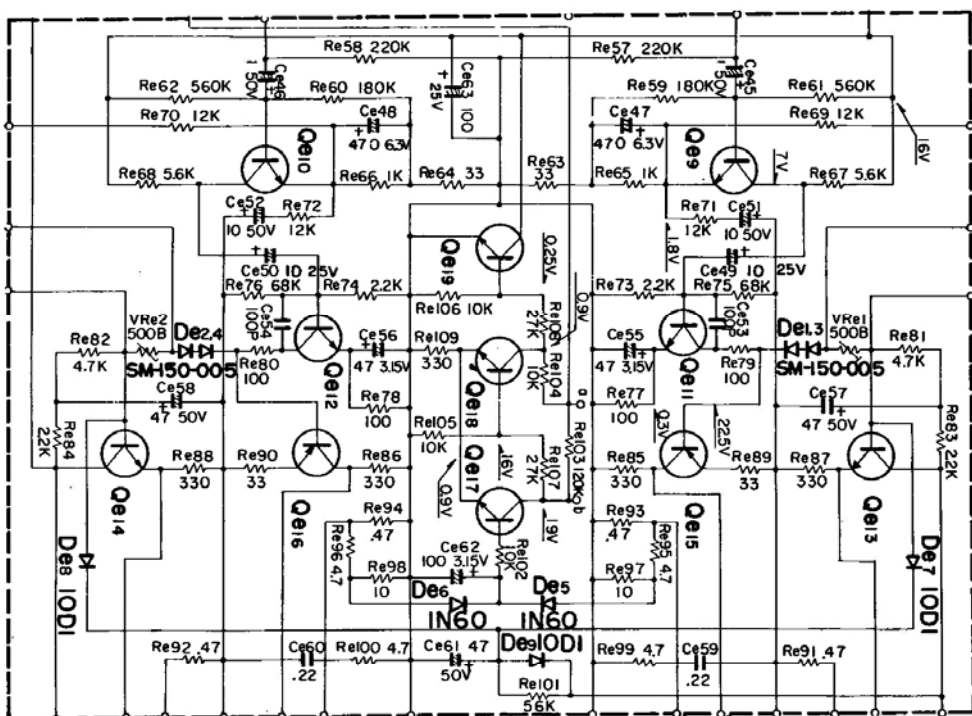
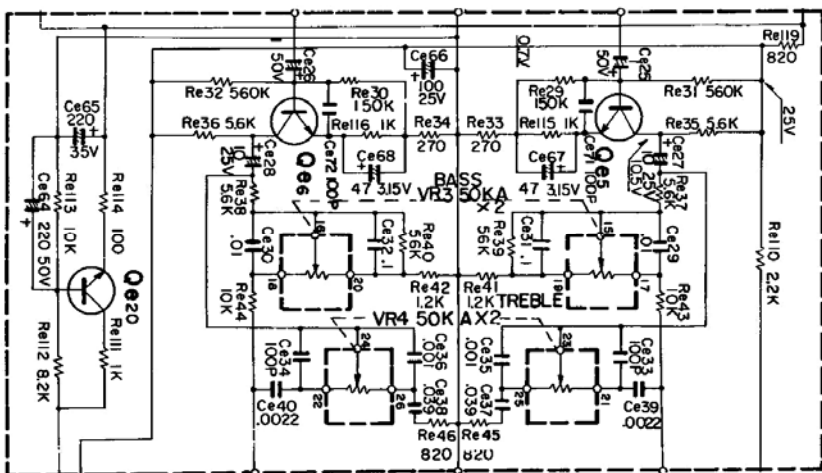
2SC734(Y)

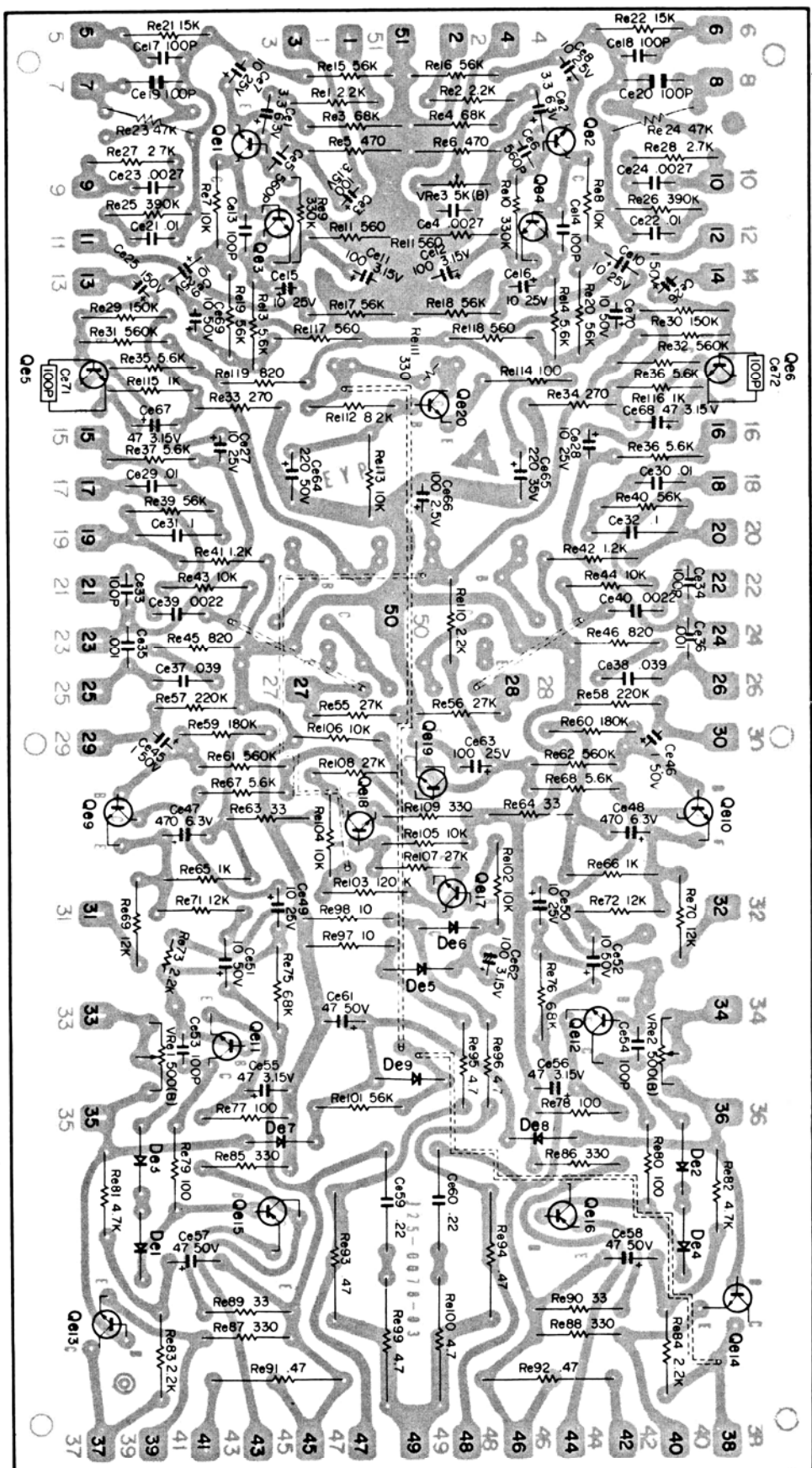


PARTS DESCRIPTION LIST

Symbol No.	Description				Part No.	Remarks
CAPACITOR						
Cc1	Electrolytic Tubular	10μF	25WV		CE04W1E100	
Cc2	Polyester	5000pF	±5%		CQ08S2B502J	
Cc3	Polyester	6800pF	±5%		CQ08S2B682J	
Cc4	Polyester	470pF	±5%		CQ08S2B471J	
Cc5	Ceramic	0.001μF	±10%		CK94YP1H102K	
Cc6	Polyester	2500pF	±5%		CQ08S2B252J	
Cc7	Electrolytic Tubular	10μF	25WV		CE04W1B100	
Cc8, 9	Mica	100pF	±5%		CM93F1H101J	
Cc10, 11	Ceramic	470pF	±10%		CK94YP1H471K	
Cc12, 13	Solid Aluminum	0.068μF	±20%		CA06E1ER068M	
Cc14, 15	Mylar	0.0039μF	±5%		CQ93M1H392J	
Cc16	Electrolytic Tubular	1μF	50WV		CE04W1H010	
RESISTOR						
Rc1, 2	Insulated Carbon Film	100kΩ	±10%	1/4W	PD14BY2E104K	
Rc3	Insulated Carbon Film	4.7kΩ	±10%	1/4W	PD14BY2E472K	
Rc4	Insulated Carbon Film	56Ω	±10%	1/4W	PD14BY2E560K	
Rc5	Insualted Carbon Film	15kΩ	±10%	1/4W	PD14BY2E153K	
Rc6	Insulated Carbon Film	100kΩ	±10%	1/4W	PD14BY2E104K	
Rc7	Insulated Carbon Film	220Ω	±10%	1/4W	PD14BY2E221K	
Rc8	Insulated Carbon Film	4.7kΩ	±10%	1/4W	PD14BY2E472K	
Rc9 ~ 12	Insulated Carbon Film	10kΩ	±5%	1/4W	PD14BY2E103J	
Rc13 ~ 16	Insulated Carbon Film	220kΩ	±5%	1/4W	PD14BY2E224J	
Rc17 ~ 20	Insulated Carbon Film	47kΩ	±5%	1/4W	PD14BY2E473J	
Rc21	Insulated Carbon Film	33kΩ	±10%	1/4W	PD14BY2E333K	
Rc22	Insulated Carbon Film	4.7kΩ	±10%	1/4W	PD14BY2E472K	
Rc23	Insulated Carbon Film	6.8kΩ	±10%	1/4W	PD14BY2E682K	
Rc24	Insulated Carbon Film	56Ω	±10%	1/4W	PD14BY2E560K	
Rc25	Insulated Carbon Film	220Ω	±10%	1/4W	PD14BY2E221K	
Rc26	Insulated Carbon Film	33kΩ	±10%	1/4W	PD14BY2E333K	
Rc27	Insulated Carbon Film	10kΩ	±5%	1/4W	PD14BY2E103K	
Rc28	Insulated Carbon Film	4.7kΩ	±10%	1/4W	PD14BY2E472K	
Rc29	Insulated Carbon Film	470kΩ	±10%	1/4W	PD14BY2E474K	
Rc30	Insulated Carbon Film	33kΩ	±10%	1/4W	PD14BY2E333K	
Rc31	Insulated Carbon Film	33Ω	±10%	1/4W	PD14BY2E330K	
Rc32	Insulated Carbon Film	10kΩ	±5%	1/4W	PD14BY2E103J	
TRANSISTOR/DIODE						
Qc1	2SC458 (D)					
Qc2 ~ 5	CS9014 (C)					
Qc6	2SC734 (Y)					
Dc1 ~ 6	1N60					
COIL/POTENTIOMETER						
Lc1	19kHz TUNING COIL				L17-49	
Lc2	Ferri-Inductor (FL9H-103J)				L33-0117-05	
Lc3	67kHz TUNING COIL				L17-44	
Lc4	38kHz TUNING COIL				L35-0038-05	
VRc1	100kΩ (B) BEACON SET				R10-65	
MISCELLANEOUS						
—	P C Board				J25-0435-03	

SCHEMATIC DIAGRAM

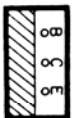




Qe1,2 2SC458LG
Qe3-6 2SC458LG
Qe9,10 2SC458LG
Qe11,12 2SC627 or 3
Qe13,14 2SC959
Qe15,16 2SA565 B or C
Qe17,18 2SC715 B or F
Qe19 2SC734 D or Y
Qe20 2SC971
Qe21-4 SM-150-005
De5,6 1N60
De7-9 10D1

BOTTOM VIEW OF TRANSISTOR

2SC458LG



2SC984



2SC971



2SC715



2SC959
2SA606
2SC627



2SC734

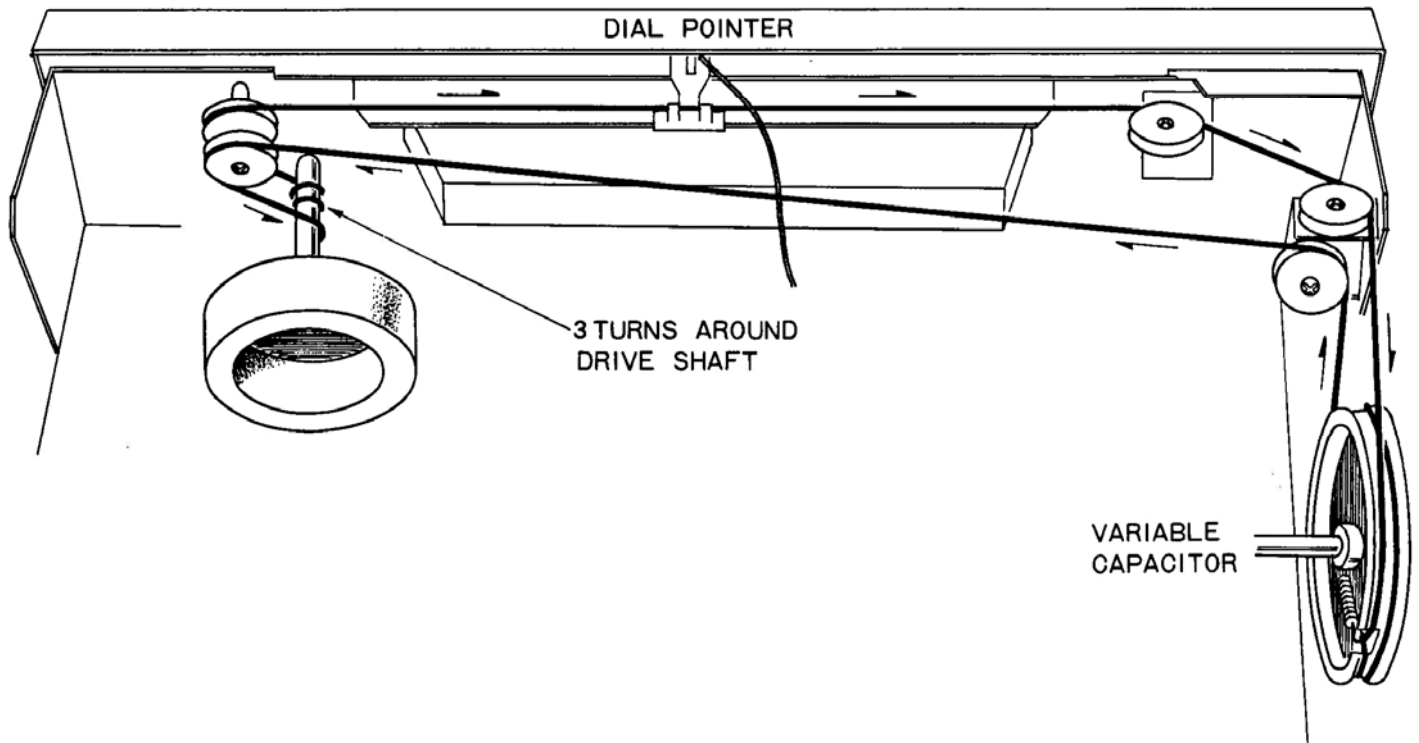


PARTS DESCRIPTION LIST

Symbol No.	Description	Part No.	Remarks
CAPACITOR			
Ce1, 2	Solid Aluminum	3.3μF 6.3WV	CA04E0J3RXT
Ce3	Electrolytic Tubular	100μF 3.15WV	CE04W0F101
Ce4	Mylar	0.0027μF ±10%	CQ93M1H272K
Ce5, 6	Ceramic	560pF ±20%	CK94YY1H561M
Ce7 ~ 10	Electrolytic Tubular	10μF 25WV	CE04W1E100
Ce11, 12	Electrolytic Tubular	100μF 3.15WV	CE04W0F101
Ce13, 14	Ceramic	100pF ±10%	CC94SL1H101K
Ce15, 16	Electrolytic Tubular	10μF 25WV	CE04W1E100
Ce17 ~ 20	Ceramic	100pF ±10%	CC94SL1H101K
Ce21, 22	Mylar	0.01μF ±10%	CQ93M1H103K
Ce23, 24	Mylar	0.0027μF ±10%	CQ93M1H272K
Ce25, 26	Electrolytic Tubular	1μF 50WV	CE04W1H010
Ce27, 28	Electrolytic Tubular	10μF 25WV	CE04W1E100
Ce29, 30	Mylar	0.01μF ±10%	CQ93M1H103K
Ce31, 32	Mylar	0.1μF ±10%	CQ93M1H104K
Ce33, 34	Ceramic	100pF ±10%	CC94SL1H101K
Ce35, 36	Mylar	0.001μF ±10%	CQ93M1H102K
Ce37, 38	Mylar	0.039μF ±10%	CQ93M1H393K
Ce39, 40	Mylar	0.0022μF ±10%	CQ93M1H222K
Ce45, 46	Electrolytic Tubular	1μF 50WV	CE04W1H010
Ce47, 48	Electrolytic Tubular	470μF 6.3WV	CE04W0J471
Ce49, 50	Electrolytic Tubular	10μF 25WV	CE04W1E100
Ce51, 52	Electrolytic Tubular	10μF 50WV	CE04W1H100
Ce53, 54	Ceramic	100pF ±10%	CC94SL1H101K
Ce55, 56	Electrolytic Tubular	47μF 3.15WV	CE04W0F470
Ce57, 58	Electrolytic Tubular	47μF 50WV	CE04W1H470
Ce59, 60	Mylar	0.22μF ±20%	CQ93M1H224M
Ce61	Electrolytic Tubular	47μF 50WV	CE04W1H470
Ce62	Electrolytic Tubular	100μF 3.15WV	CE04W0F101
Ce63	Electrolytic Tubular	100μF 25WV	CE04W1E101
Ce64	Electrolytic Tubular	220μF 50WV	CE04W1H221
Ce65	Electrolytic Tubular	220μF 35WV	CE04W1V221
Ce66	Electrolytic Tubular	100μF 25WV	CE04W1E101
Ce67, 68	Electrolytic Tubular	47μF 3.15WV	CE04W0F470
Ce69, 70	Electrolytic Tubular	10μF 50WV	CE04W1H100
Ce71, 72	Ceramic	100pF ±10%	CC94SL1H101K
RESISTOR			
Re1, 2	Insulated Carbon Film	2.2kΩ ±5% 1/4W	PD14BY2E222J
Re3, 4	Insulated Carbon Film	68kΩ ±5% 1/4W	PD14BY2E683J
Re5, 6	Insulated Carbon Film	470Ω ±5% 1/4W	PD14BY2E471J
Re7, 8	Insulated Carbon Film	10kΩ ±5% 1/4W	PD14BY2E103J
Re9, 10	Insulated Carbon Film	330kΩ ±5% 1/4W	PD14BY2E334J
Re11, 12	Insulated Carbon Film	560Ω ±5% 1/4W	PD14BY2E561J
Re13, 14	Insulated Carbon Film	5.6kΩ ±5% 1/4W	PD14BY2E562J
Re15 ~ 20	Insulated Carbon Film	56kΩ ±5% 1/4W	PD14BY2E563J
Re21, 22	Insulated Carbon Film	15kΩ ±5% 1/4W	PD14BY2E153J
Re23, 24	Insulated Carbon Film	47kΩ ±5% 1/4W	PD14BY2E473J
Re25, 26	Insulated Carbon Film	390kΩ ±5% 1/4W	PD14BY2E394J
Re27, 28	Insulated Carbon Film	27kΩ ±5% 1/4W	PD14BY2E273J
Re29, 30	Insulated Carbon Film	150kΩ ±5% 1/4W	PD14BY2E154J
Re31, 32	Insulated Carbon Film	560kΩ ±5% 1/4W	PD14BY2E564J
Re33, 34	Insulated Carbon Film	270Ω ±5% 1/4W	PD14BY2E271J
Re35 ~ 36	Insulated Carbon Film	5.6kΩ ±5% 1/4W	PD14BY2E562J
Re39, 40	Insulated Carbon Film	56kΩ ±5% 1/4W	PD14BY2E563J
Re41, 42	Insulated Carbon Film	1.2kΩ ±5% 1/4W	PD14BY2E122J
Re43, 44	Insulated Carbon Film	10kΩ ±5% 1/4W	PD14BY2E103J
Re45, 46	Insulated Carbon Film	820Ω ±5% 1/4W	PD14BY2E821J
Re57, 58	Insulated Carbon Film	220kΩ ±5% 1/4W	PD14BY2E224J
Re59, 60	Insulated Carbon Film	180kΩ ±5% 1/4W	PD14BY2E184J
Re61, 62	Insulated Carbon Film	560kΩ ±5% 1/4W	PD14BY2E564J
Re63, 64	Insulated Carbon Film	33Ω ±5% 1/4W	PD14BY2E330J
Re65, 66	Insulated Carbon Film	1kΩ ±5% 1/4W	PD14BY2E102J
Re67, 68	Insulated Carbon Film	5.6kΩ ±5% 1/4W	PD14BY2E562J
Re69 ~ 72	Insulated Carbon Film	12kΩ ±5% 1/4W	PD14BY2E123J
Re73, 74	Insulated Carbon Film	2.2kΩ ±5% 1/4W	PD14BY2E222J
Re75, 76	Insulated Carbon Film	68kΩ ±5% 1/4W	PD14BY2E683J
Re77 ~ 80	Insulated Carbon Film	100Ω ±5% 1/4W	PD14BY2E101J
Re81, 82	Insulated Carbon Film	4.7kΩ ±5% 1/4W	PD14BY2E472J
Re83, 84	Insulated Carbon Film	2.2kΩ ±5% 1/4W	PD14BY2E222J
Re85 ~ 88	Insulated Carbon Film	330Ω ±5% 1/4W	PD14BY2E331J
Re89, 90	Insulated Carbon Film	33Ω ±5% 1/4W	PD14BY2E330J
Re91 ~ 94	Metal Film	0.47Ω ±10% 2W	RN14AB3DR47K
Re95, 96	Fixed Carbon Composition	4.7Ω ±10% 1/2W	RC05GF2H4R7K
Re97, 98	Insulated Carbon Film	10Ω ±5% 1/4W	PD14BY2E100J
Re99, 100	Metal Film	4.7Ω ±10% 2W	RN14AB3DR47K
Re101	Insulated Carbon Film	56kΩ ±5% 1/4W	PD14BY2E563J
Re102	Insulated Carbon Film	10kΩ ±5% 1/4W	PD14BY2E103J
Re103	Insulated Carbon Film	120kΩ ±5% 1/4W	PD14BY2E124J
Re104 ~ 106	Insulated Carbon Film	10kΩ ±5% 1/4W	PD14BY2E103J
Re107, 108	Insulated Carbon Film	27kΩ ±5% 1/4W	PD14BY2E273J
Re109	Insulated Carbon Film	330Ω ±5% 1/4W	PD14BY2E331J
Re110	Insulated Carbon Film	2.2kΩ ±5% 1/4W	PD14BY2E222J
Re111	Metal Film	1kΩ ±10% 2W	RN14AB3D102K
Re112	Insulated Carbon Film	8.2kΩ ±5% 1/4W	PD14BY2E822J
Re113	Insulated Carbon Film	10kΩ ±5% 1/4W	PD14BY2E103J

Symbol No.	Description	Part No.	Remarks
Re114	Insulated Carbon Film 100Ω ±5% 1/4W	PD14BY2E101J	
Re115, 116	Insulated Carbon Film 1kΩ ±5% 1/4W	PD14BY2E102J	
Re117, 118	Insulated Carbon Film 560Ω ±5% 1/4W	PD14BY2E561J	
Re119	Insulated Carbon Film 820Ω ±5% 1/4W	PD14BY2E821J	
TRANSISTOR/DIODE			
Qe1, 2	2SC458LG (C)		
Qe3 ~ 6	2SC458LG (B) or (C)		
Qe9, 10	2SC458LG (B) or (C)		
Qe11, 12	2SC627 (2) or (3)		
Qe13, 14	2SC959		
Qe15, 16	2SA606 (B) or (C)		
Qe17, 18	2SC715 (E) or (F)		
Qe19	2SC734 (O) or (Y)		
Qe20	2SC971		
De1 ~ 4	SM-150-005		
De5, 6	1N60		
De7 ~ 9	10D1		
POTENTIOMETER			
VRe1, 2	500Ω (B) DC BALANCE	R10-69	
VRe3	5kΩ (B) SEPARATION CONTROL	R10-70	
MISCELLANEOUS			
—	P C Board	J25-0078-03	

DIAL CORD STRINGING



KENWOOD ELECTRONICS, INC.

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