KENWOOD

HI/FI STEREO COMPONENTS

SERVICE MANUAL

This Service Manual is Applicable to Units
Bearing Serial No. 030001 and Higher

TK-140X

SOLID STATE
AM-FM STEREO RECEIVER

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PARTS DESCRIPTION LIST

MAIN CHASSIS (AE5K) SECTION

Printed Circuit

—	FM-RF	Block	UA1122K
—	IF	Block	UA1220K
—	MPX	Block	UA1405K2
—	PRE	Block	UA1342K1
—	NF TONE	Block	UA13443C
—	MAIN AMP	Block	UA1384J
—	POWER-SUPPLY	Block	UA10013

Symbol No.	Description	Part No.	Remarks

CAPACITORS

C1	Mylar	0.22μF	±20%	
C2	Ceramic	0.02μF	+80%	−20%
C3	Ceramic	0.001μF	+100%	−0%
C4	Ceramic	5pF	±0.5pF	
C131, 132	Mylar	2 200pF	±20%	
C133, 134	Mylar	0.1μF	±20%	
C135, 136	Mylar	0.047μF	±20%	
C137, 138	Mylar	0.0056μF	±20%	
C139, 140	Electrolytic Tubular	3.3μF	16WV	
C143, 144	Electrolytic Tubular	2.2μF	16WV	
C171, 172	Electrolytic Block	2 000μF	75WV	
C173, 174	Mylar	0.22μF	±20%	
C301, 302	Ceramic	0.02μF	±20%	
C303	Electrolytic Tubular	470pF	35WV	
C304	Electrolytic Tubular	220μF	25WV	
C305, 306	Electrolytic Tubular	220μF	16WV	
C307	Ceramic	0.01μF	+100%	−0%
C308	Electrolytic Block	2 000μF	100WV	
C309	Electrolytic Block	1 000μF	50WV	
C310	Electrolytic Tubular	1 000μF	35WV	
C311	Electrolytic Tubular	100μF	25WV	
C312	Electrolytic Tubular	1 000μF	16WV	
C313	Electrolytic Tubular	100μF	16WV	
C314	Electrolytic Tubular	470μF	25WV	
C315	Electrolytic Tubular	47μF	3.15WV	

RESISTORS

R1	Fixed Carbon Composition	100kΩ	±10%	1/4W
R2	Fixed Carbon Composition	2.2kΩ	±10%	1/2W
R3	Fixed Carbon Composition	22Ω	±10%	1/2W
R4	Fixed Carbon Composition	1MΩ	±10%	1/2W
R111, 112	Fixed Carbon Composition	18kΩ	±10%	1/2W
R113, 114	Fixed Carbon Composition	10kΩ	±10%	1/2W
R115, 116	Fixed Carbon Composition	47Ω	±10%	1/2W
R131, 132	Fixed Carbon Composition	3.3kΩ	±10%	1/2W
R133, 134	Fixed Carbon Composition	33kΩ	±10%	1/2W
R135, 136	Fixed Carbon Composition	22kΩ	±10%	1/2W
R137, 138	Fixed Carbon Composition	27kΩ	±10%	1/4W
R171	Fixed Carbon Composition	56Ω	±10%	1/2W
R172, 173	Fixed Carbon Composition	1kΩ	±10%	1/2W
R174, 175	Fixed Carbon Composition	560Ω	±10%	1/2W

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Symbol No.	Description				Part No.	Remarks
R176, 177	Fixed Carbon Composition	3.9Ω	±10%	1/2W		
R178, 179	Fixed Carbon Composition	4.7Ω	±10%	1/4W		
R181 ~ 183	Resin Coated Wire Wound	0.47Ω	±5%	2W		
R201, 202	Fixed Carbon Composition	100kΩ	±10%	1/2W		
R203, 204	Fixed Carbon Composition	390kΩ	±10%	1/2W		
R205 ~ 208	Fixed Carbon Composition	100kΩ	±10%	1/2W		
R301	Fixed Carbon Composition	47Ω	±10%	1/2W		
R302	Fixed Carbon Composition	1.5kΩ	±10%	1/2W		
R303	Insulated Carbon Film	1kΩ	±5%	8W		
R304	Metallic Oxide Film	2.2kΩ	±10%	3W		
R305	Fixed Carbon Composition	180Ω	±10%	1/2W		
R306	Fixed Carbon Composition	4.7kΩ	±10%	1/2W		
R307	Fixed Carbon Composition	680Ω	±10%	1/2W		
R308	Fixed Carbon Composition	820Ω	±10%	1/2W		
R309	Fixed Carbon Composition	33Ω	±10%	1/2W		
TRANSISTOR/DIODE/VARISTOR						
Q5 ~ 8	2SD213					
Q9	ST-303					
D1	1S338-T					
D2	1S1850					
D3	SD1Y					
D4, 5	1N60					
D6, 7	STV-3					
SWITCHES						
S1	SELECTOR	(Rotary)	F – 5. 13. 6		S04-5002-25	
S2	TAPE MON.	(Lever)			S10-225B	
S3	MODE	(Rotary)	F – 2. 3. 5		S07-157	
S4	HIGH FIL.	(Lever)			S10-225B	
S5	LOUDNESS	(Lever)			S10-225B	
S6	LOW FIL.	(Lever)			S10-225B	
S7	OUTPUT	(Rotary)	F – 1. 4. 5		S05-1012-05	
S8	AC SELECT	(Slide)			S60-22D	
POTENTIOMETERS						
VRi1, 2	BASS, TREBLE	100kΩ (B)	Dual		R04-0217	
VR3, 4	VOLUME, BALANCE	50kΩ (G)	50kΩ (B)	Triple	R09-8007	
MISCELLANEOUS						
–	Case				A01-AC5K	
–	Panel				A05-AC0K	
–	Dial Scale				A07-AC5K	
–	Sole Board	(53 x 284 x 3t)			A08-AC5K	
–	Chassis				A10-0013-01	
–	Shield Board				A13-AC5KA	
–	Shield Board				A13-AC5KB	
–	Shield Board				A13-AC5KC	
–	Shield Board				A13-AC0K	
–	Panel Framework				A20-0027-02	
–	Front Glass	(50 x 273 x 3t)			A20-AC5K	
–	Rear Panel				A23-0009-02	
–	Radiator				A26-31	
–	Radiator				A26-43	

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Symbol No.	Description	Part No.	Remarks
—	Dial Board	A30-0003-02	
—	Reflector	A90-AC5K	
—	Dial Board Holder x 2	A3792	
—	Lamp Cover	A3799	
—	Amp Holder	A3882	
—	Meter Holder	A5015	
—	Dial Cover	A5016	
—	Transistor Cover	A5017	
—	Dial Scale Holder (L)	A5018	
—	Dial Scale Holder (R)	A5018	
—	Antenna Fixture	A5065	
—	Badge (Kenwood, TK140x)	B07-140	
—	Name Plate	B09-190	
—	L.A. Standard Name Plate	B09-192	
—	Name Plate	B09-226	
—	Destination Name Plate	B40-0016-04	
—	Name Plate	B42-0005-03	
—	Certification	B42-0009-04	
—	Badge (Sunwood Mark)	B43-0004-04	
—	Instruction Manual	B50-0045-00	
—	Schematic Diagram	B52-0006-00	
—	Pulley	D04-89	
—	Flywheel	D05-52B	
—	Dial Spring	D06-02	
—	Dial String	D07-01	
—	Dial Shaft	D08-95	
—	Small Pulley x 3	D10-05	
—	Small Bush	D10-09	
—	Small Bush	D10-09	
—	Dial Point Metal Fittings	D11-18	
—	Dial Pointer	D12-09	
—	AC Socket (UL Standard) x 2	D02-06	
—	P.L. Socket x 3	E03-02H	
—	Lug	E04-040	
—	Lug x 7	E04-101	
—	Lug x 7	E04-101C	
—	Lug x 7	E04-202	
—	Lug x 2	E04-202D	
—	5P Connector Socket	E07-35B	
—	18P Connector	E07-418D	
—	1P Pin Jack	E08-11C	
—	2P Pin Jack	E08-12J	
—	4P Pin Jack	E08-14G	
—	8P Pin Jack	E08-18E	
—	Gripe	E13-36	
—	Terminal	E11-18	
—	2P Jack x 2	E16-13	
—	2P Terminal Board x 4	E20-0201-03	
—	4P Terminal Board	E20-0402-03	
—	Beaded Band x 9	E40-97	
—	GND Lug	E4046	
—	T Type 5P Terminal Board	E4076	

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PARTS DESCRIPTION LIST

Symbol No.	Description	Part No.	Remarks
—	Transistor Socket x 4	E4082	
—	Rubber Bushing	G02-020	
—	Rubber Packing x 2	G03-24	
—	Rubber Packing	G03-29	
—	Legs x 4	G10-02	
—	Cord Bushing	G11-19	
—	AC Cord Bushing (SR-2P-1)	G11-25	
—	Corrugated Cardboard Case	H01-AC5K	
—	Accessory of Corrugated Cardboard Case	H09-AC0KA	
—	Accessory of Corrugated Cardboard Case	H09-AC0KB	
—	Accessory of Corrugated Cardboard Case (Protective Board)	H09-AC0KC	
—	Accessory of Corrugated Cardboard Case (Fixture)	H09-AC0KD	
—	Polyethylene Bag	H13-02	
—	Polyethylene Bag (110 x 230 x 0.07t)	H13-21	
—	Protection Cover	H13-22	
—	Protection BAG	H20-0009-03	
—	Warranty Card	H26-02	
—	Pasteboard (for Accessory)	H32-03	
—	Corrugated Cardboard Case	H02-0057-03	
—	Instructions (Case)	H4068	
—	Varistor Holder x 2	J19-0010-04	
—	Soft Tape (Gray, 8 x 50 x 10t) x 2	K11-98	
—	Soft Tape (Gray, 5 x 50 x 35) x 4	K11-213	
ANT	F M Antenna	L10-04	
ANT	Loop Stick Antenna	L15-39	
L	Choke Coil 1μH x 2	L20-010	
L	Choke Coil 3μH	L20-030	
—	Decorative Screw ISO x 4	N11-68	
—	Knob x 3	S14-259	
—	Knob	S14-330	
—	Knob x 3	S14-807	
—	Knob x 3	S14-808	
—	Fuse Holder x 4	S15-09	
—	Fuse Holder x 3	S15-13	
—	Pilot Lamp x 4	S16-06	
—	Pilot Lamp	S16-69	
—	Pilot Lamp	S16-22	
F	Fuse (4A)	S17-04	
F	Fuse (5A) x 2	S17-05	
—	Feeder Holder	S21-29	
—	Slider	S4132	
—	Switch Stopper	S4136	
P.T	Power Transformer	T01-215W	
T	Transformer	T09-33	
M	Meter	T11-88	
—	Tinned Wire (0.8φ) 0.3m	W03-08	
—	Tinned Wire (1.2φ) 0.05m	W03-12	
—	Tinned Wire (1.6φ) 0.14m	W03-16	
—	Vinyl Tube (Transparency 3φ) 0.87m	W07-03Z	
—	Vinyl Tube (Transparency 6φ) 0.13m	W07-06Z	
—	Vinyl Tube (Transparency 7φ) 0.38m	W07-07Z	
—	Vinyl Tube (Transparency 1φ) 0.28m	W07-14	

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PARTS DESCRIPTION LIST

Symbol No.	Description	Part No.	Remarks
—	Insulating Sleeve	W07-20	
—	AC Cord (with Plug)	W09-15	
—	Low Capacitance Shielded Wire 0.095m	W11-012	
—	Coaxial Cable (1.5C 2V)	W13-06	
—	Reticular Wire 0.2m	W14-01	
—	Wire (#101 Blue)	W18-15	
—	Wire (#101 Blue)	W18-17	
—	Audio Cord x 2	W18-20	
—	Flexible Wire (6ϕ)	W19-612	
—	Flexible Wire (6ϕ)	W19-622	
—	P.V.C. Insulated Wire (Black) 5m	W32-50	
—	P.V.C. Insulated Wire (Red) 7.2m	W32-52	
—	P.V.C. Insulated Wire (Yellow) 5m	W32-54	
—	P.V.C. Insulated Wire (Blue) 5m	W32-56	
—	P.V.C. Insulated Wire (White) 5m	E32-59	
—	Single-Core Shielded Wire (Black) 0.3m	W51-010C	
—	Single-Core Shielded Wire (Red) 0.28m	W51-012C	
—	Single-Core Shielded Wire (Brown) 1.1m	W51-011C	
—	Singel-Core Shielded Wire (Yellow) 2.5m	W51-14C	
—	Single-Core Shielded Wire (Blue) 3.0m	W51-16C	
—	Single-Core Shielded Wire (Gray) 0.76m	W51-18C	
—	Double-Core Shielded Wire 1.6m	W51-020	
—	Pan Head Screw (⊕ 2.6 x 6 — B) x 4		
—	Pan Head Screw (⊕ P3 x 4 — F — ISO) x 2		
—	Pan Head Screw (⊕ P3 x 6 — F — ISO) x 85		
—	Pan Head Screw (⊕ P3 x 8 — F — ISO) x 14		
—	Pan Head Screw (⊕ P3 x 10 — F — ISO) x 22		
—	Pan Head Screw (⊕ P3 x 12 — F — ISO) x 8		
—	Pan Head Screw (⊕ P3 x 20 — F — ISO)		
—	Pan Head Screw (⊕ P4 x 25 — F — ISO)		
—	Truss Screw (Black, T3 x 6 — B·K — ISO) x 4		
—	Flat Head Screw (⊕ S3 x 6 — F — ISO) x 10		
—	Hexagon Nut (N3 — F — ISO) x 18		
—	Hexagon Nut (N3 — F — ISO)		
—	Tapping Screw (⊕ TM3 x 6 — F) x 41		
—	Tapping Screw (⊕ TM3 x 8 — F) x 2		
—	Tapping Screw (⊕ TM3 x 10 — F) x 4		
—	Tapping Screw (⊕ TM4 x 8 — F) x 4		
—	Tapping Screw (⊕ TM4 x 10 — F) x 4		
—	Tapping Screw (⊕ TM4 x 6 — F) x 10		
—	Flat Head Washer (W4-F)		
—	Spring Washer (SW4-F)		
—	Spring Washer (SW3-F) x 2		

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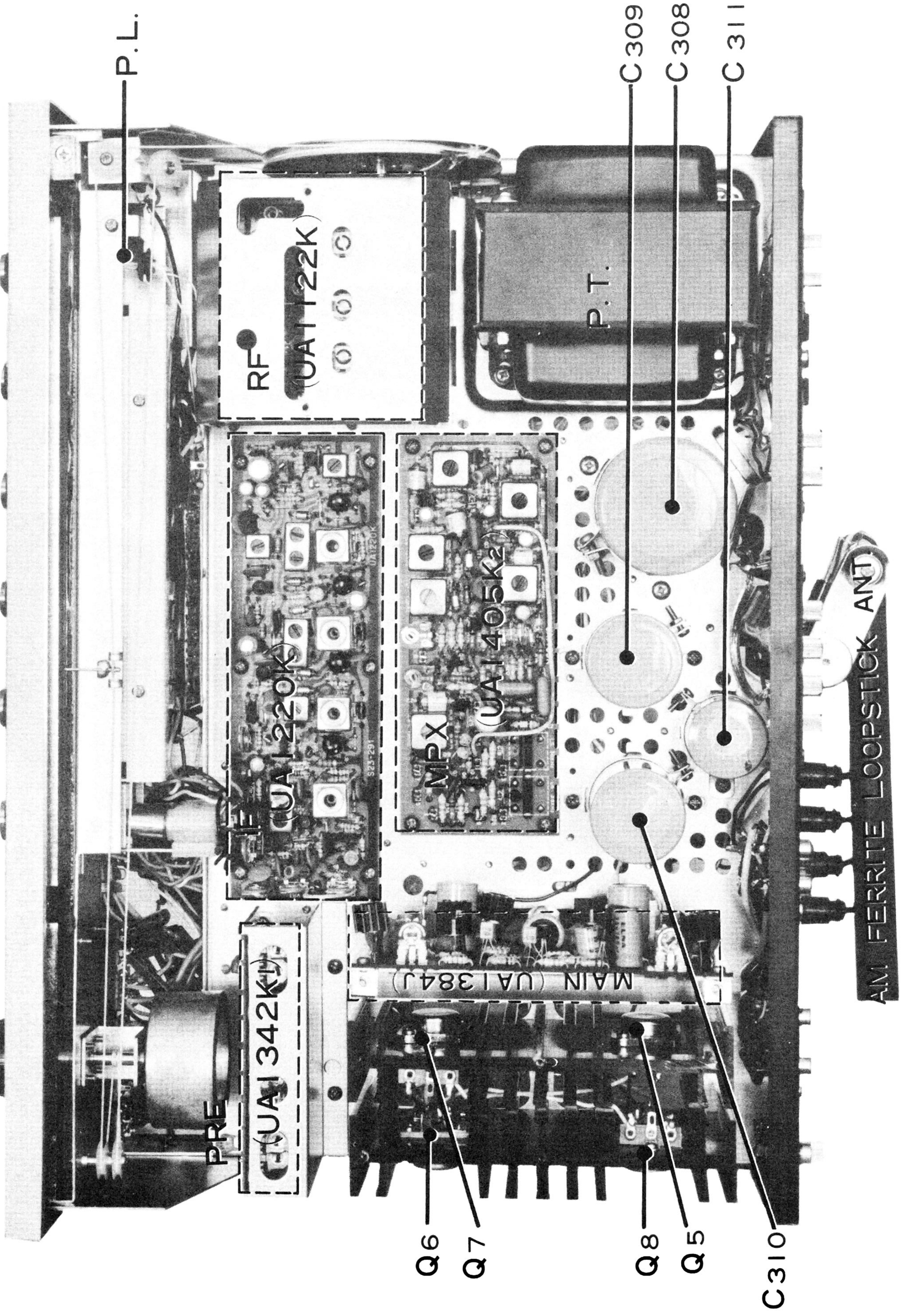
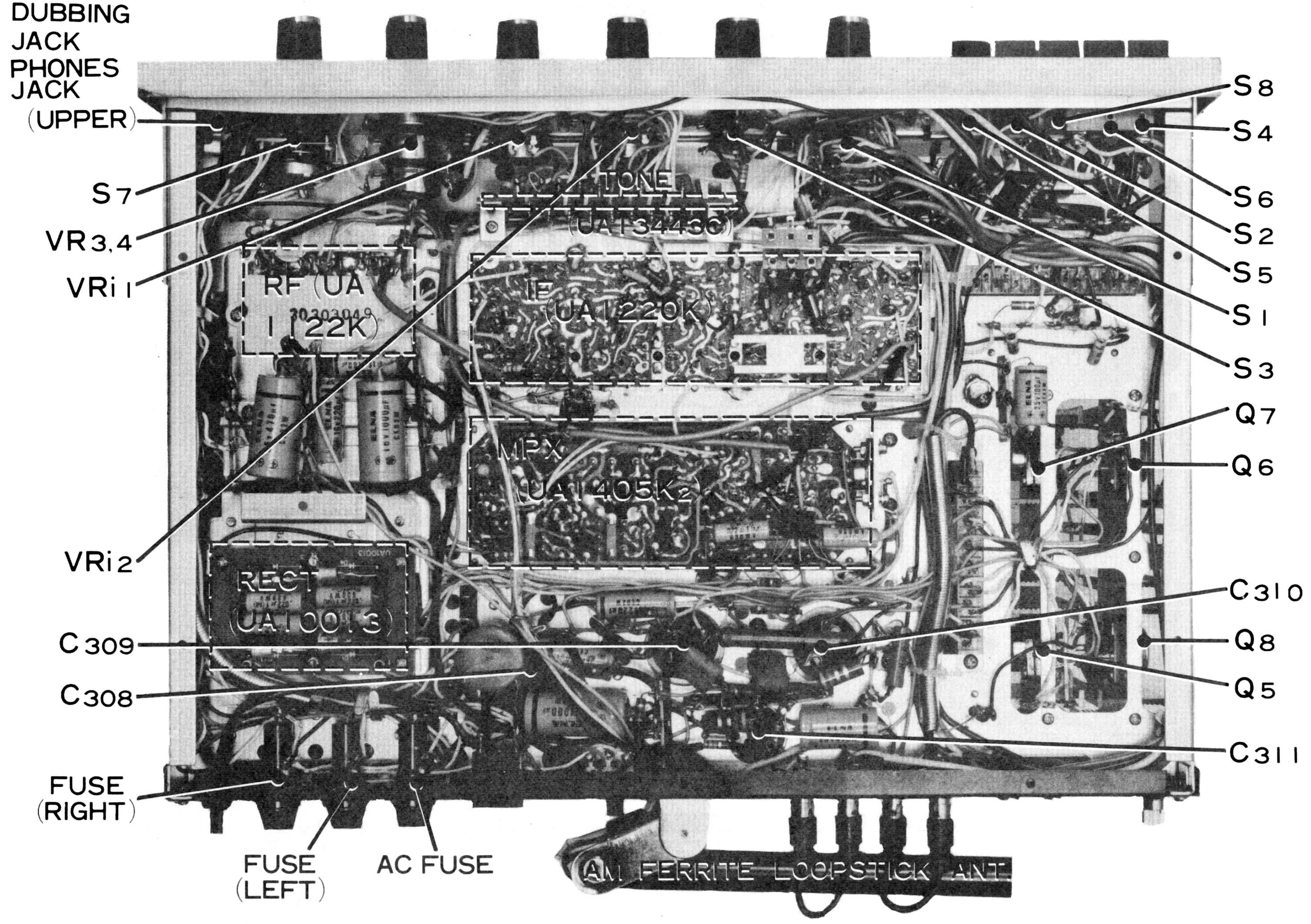
CHASSIS TOP VIEW





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SCHEMATIC DIAGRAM

RF "UAI122K"

IF "UAI220K" Qb1,3 2SC377 Qb2 2SC378 Qb4 2SC381 Qb5 2SA495(Y) ICb1~3 SL-20575 Db1-11 IN60

MPX "UAI405K2" Qc1 2SC458L(B)or(C) Qc2~6,8,9 2SC458(B)or(C) Dc1~9 IN60 Dc9 SM-150

Qc7 2SC458(C)

PRE AMP "UAI342K1"

Qd1,2 2SC458LG Qd3~6 2SC871(E)or(F)

NF TONE "UAI3443C"

Qi1~4 2SC871(E)or(F)

MAIN AMP "UAI384J"

RECT "UAI0013"

Qe1~4 2SC693U(E)or(F) Qe5,6 2SC627 Q5,6,7,8 2SD213

Qe7,8 2SC960(1)(L)or(M) Qe11 2SA607 Qe14 2SC734Y

Qe12,13 2SC715

Db1,2 IN60 De3~5 SM-150S

Qe9,10 2SA607(1)(L)or(M)

TK-140X(BK)

ALIGNMENT PROCEDURE

TUNER SECTION

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	Tuning Indicator	(UA1122K) Ta1 (UA1220K) Tb2 ~ 4 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 of TAPE REC	(UA1220K) Tb5 Top & Bottom	Maximum Deflection
3	RF AMP CIRCUIT	300 ohm carbon Resistor	FM Antenna Terminal	90 MHz 400 Hz (Mod.) 75 kHz (Dev.) 1.5μV ~ 2μV (Input)	90 MHz	VTVM & Xtal earphone at LEFT output jack of TAPE REC	(UA1122K) La1 ~ 4	Maximum Deflection
4	RF AMP CIRCUIT	300 ohm Carbon Resistor	FM Antenna Terminal	105 MHz 400 Hz (Mod.) 75 kHz (Dev.) 1.5μV ~ 2μV (Input)	105 MHz	VTVM & Xtal earphone at LEFT output jack of TAPE REC	(UA1122K) 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 of TAPE REC	(UA1220K) VRb5	Set the output level to 1 V
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 of TAPE REC	Tuning Indicator	(UA1220K) Tb9 VRb2	"4" indicated

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ALIGNMENT PROCEDURE

ADJUSTING THE SQUELCH

(MUTING)

When the MUTING SWITCH is set to "ON" position with ANT input at 10 μV, the audio (AF) output should be within ±1 dB of the value at ANT input of 1 mV.

At ANT input of 3 μV with MUTING SWITCH set to "ON" position, adjust VRb2 (UA1220K) so that the audio frequency voltage is attenuated to below −40 dB.

Be sure that the set is inoperative when MUTING SWITCH is at "OFF" position.

FM MPX ALIGNMENT PROCEDURE

(a) SCA FILTER

Instruments: MPX SG, AC VTVM & Oscilloscope.
Selector sw: Always place in FM AUTO position.
VR: VR4 in IF unit UA1220K Turned clockwise to get the maximum output.
Warm-up: Allow 30 minutes warm-up period for Receiver and equipment.
Mode sw: Place in STEREO position. (In MONO, Beacon Circuit is not working)

STEP	Audio Signal Generator Coupling	Audio Signal Generator Frequency	AC VTVM & Oscilloscope Coupling	Adjust	Remarks
1	High side to (B) Low side to chassis	72 kHz (0.7V)	High side to (C) Low side to chassis	(UA1405K2) Lc7	Minimum Deflection
2	High side to (B) Low side to chassis	66 kHz (0.7V)	High side to (C) Low side to chassis	(UA1405K2) TCc1	Minimum Deflection

(b) BEACON LAMP

Instruments: MPX SG, AC VTVM & Oscilloscope.
Selector sw: Always place in FM AUTO position.
Warm-up: Allow 30 minutes warm-up period for Receiver and equipment.

STEP	FM SSG		AC VTVM & Oscilloscope Connection	Tuning Dial Setting	Adjust	Remarks
	Coupling	Input Signal				
1	FM Antenna terminal	98 MHz 400 Hz (Mod.) L+R 67.5 kHz (Dev.) 1mV (Ant. Input)	TAPE REC.	Maximum	VRc1 (UA1405K2) VRc2 (UA1405K2)	Stereo lamp illuminates
2	FM Antenna terminal	98 M Hz 400 Hz (Mod.) L+R 67.5 kHz (Dev.) 6.5μV (Ant. Input)	TAPE REC.	Maximum	VRc1 (UA1405K2)	Stereo lamp illuminates
3	FM Antenna terminal	98 MHz 400 Hz (Mod.) L+R 37.5 kHz (Dev.) 1mV (Ant. Input)	TAPE REC.	Maximum	VRc2 (UA1405K2)	Stereo lamp illuminates

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ALIGNMENT PROCEDURE

(C) MPX

Instruments: FM SG, Audio SG, AC VTVM & Oscilloscope.
Selector sw: Always place in FM AUTO position.
VR: VR4 in IF unit UA1220K Turned clockwise to get the maximum output.
Warm-up: Allow 30 minutes warm-up period for Receiver and equipments.
Mode sw: Place in STEREO position. (In MONO, Beacon Circuit is not working)

STEP	Align	FM SSG				AC VTVM & Oscilloscope Connection	Adjust	Remarks
		Coupling	Modulation Frequency	Input Selector	19 kHz Pilot Carrier Switch			
1	19 kHz STAGE	FM Antenna terminal	OFF	OFF	ON	High side to (D) Low side to chassis	(UA1405K2) Lc1, Lc2 Lc3	Maximum Deflection
2	38 kHz STAGE	FM Antenna terminal	400 Hz (Mod.)	L+R or REVERSE	ON	Left or Right output jack of TAPE REC.	(UA1405K2) Lc3	To obtain a stable wave form at 400 Hz on Oscilloscope
3	SEPARATION CONTROL	FM Antenna terminal	98 MHz 2kHz (Mod.) 67.5 kHz (Dev.) 1mV (Input)	LEFT	ON	Right TAPE REC. output	(UA1342K1) VRd5	Minimum Deflection
4	SEPARATION CONTROL	FM Antenna terminal	98 MHz 2kHz (Mod.) 67.5 kHz (Dev.) 1mV (Input)	RIGHT	ON	Left TAPE REC. output	(UA1342K1) VRd5	Minimum Deflection
5	Repeat steps 3 & 4 until no further improvement is possible.							

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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 equipment.

STEP	Align	Dummy Antenna	AM SG		Tuning Dial Setting	Output Indicator	Adjust	Remarks
			Coupling	Frequency				
1	IFT	Direct	AM ANT Terminals	455 kHz (400 Hz 30% AM)	Any non-interfering setting	Tuning Indicator, VTVM & Oscilloscope	(UA1220K) Tb6 ~ 8 Top & Bottom	Maximum Deflection
2	OSC		AM ANT terminals	600 kHz (400 Hz 30% AM)	600 kHz	Tuning Indicator, VTVM & Oscilloscope	(UA1220K) Tb10	Maximum Deflection
3	OSC		AM ANT terminals	1,400 kHz (400 Hz 30% AM)	1,400 kHz	Tuning Indicator, VTVM & Oscilloscope	(UA1122K) CTa8	Maximum Deflection
4	Repeat steps 2 & 3 until no further improvement is possible.							
5	RF Amp.		AM ANT terminals	600 kHz (400 Hz 30% AM)	600 kHz	Tuning Indicator, VTVM & Oscilloscope	(UA1220K) Tb1	Maximum Deflection
6	RF Amp.		AM ANT terminals	1,400 kHz (400 Hz 30% AM)	1,400 kHz	Tuning Indicator, VTVM & Oscilloscope	(UA1122K) CTa7	Maximum Deflection
7	ANT CIRCUIT		AM ANT terminals	600 kHz (400 Hz 30% AM)	600 kHz	Tuning Indicator, VTVM & Oscilloscope	(UA1220K) Tb1 Ferrite Bar ANT	Maximum Deflection
8	ANT CIRCUIT		AM ANT terminals	1,400 kHz (400 Hz 30% AM)	1,400 kHz	Tuning Indicator, VTVM & Oscilloscope	(UA1122K) CTa6, 7	Maximum Deflection
9	Repeat steps 5 ~ 8 until no further improvement is possible.							

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ALIGNMENT PROCEDURE

AMPLIFIER SECTION

ADJUSTING THE EQUALIZERS

PHONO (RIAA) PRE AMP BLOCK (UA1342K1)

With the input at MAG LEFT-CH (RIGHT-CH), set the selector at PHONO 1 or 2 position.

With the output at TAPE REC LEFT-CH (RIGHT-CH), set main VR to zero (0).

Adjust input level at input frequency of 1,000 Hz.

After this procedure, set the output to 316 mV. Assuming the value at this point to be 0 dB, switch the input frequency to 30 Hz and set LEFT-CH/VRd4 (RIGHT-CH/VRd3) to +18.6 dB.

TAPE HD (NAB) PRE AMP BLOCK (UA1342K1)

Place input to TAPE HD LEFT-CH (RIGHT-CH) and set selector to TAPE HD position.

With output at TAPE REC LEFT-CH (RIGHT-CH), set main VR to zero (0).

Adjust input level at input frequency of 1,000 Hz and set output to 316 mV. At this point where the value is 0 dB, switch the input frequency to 10 kHz and set LEFT-CH/VRd2 (RIGHT-CH/VRd1) to −10.0 dB.

PROTECTION ADJUSTMENT PROCEDURES

The protection circuit in "UA1384J" 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 "TK-140X" in their normal positions.

Apply a signal of 1,000 Hz to the input and adjustment the volume control until "UA1384J" 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, Qe11 ~ 14 and Diodes, De1,2 whether they are good or not.

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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, 2SD213 (Sanken), 2SD16 (Sanken), 2N-3055 (RCA).

Adjusting Procedures:

Connect dummy load to 16 Ω output terminals, and connect to the oscilloscope input in parallel. Inject 1,000 Hz audio signal from an audio generator with the level of 200 mV to the AUX terminals. Advance the front panel volume control until the sine-wave just begins to clip on the oscilloscope. Adjust DC balance control VRe1 (Left) or VRe2 (Right) on the printed circuit board "UA1384J" until clipping is symmetrical.

Testing Procedures:

Until replacement is completed, do not operate the set without first testing. Perform the test according to the following procedures.

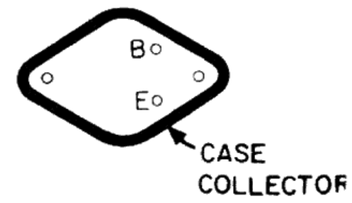
1. Using variable transformer, lower the AC line voltage to approximately 30 V.

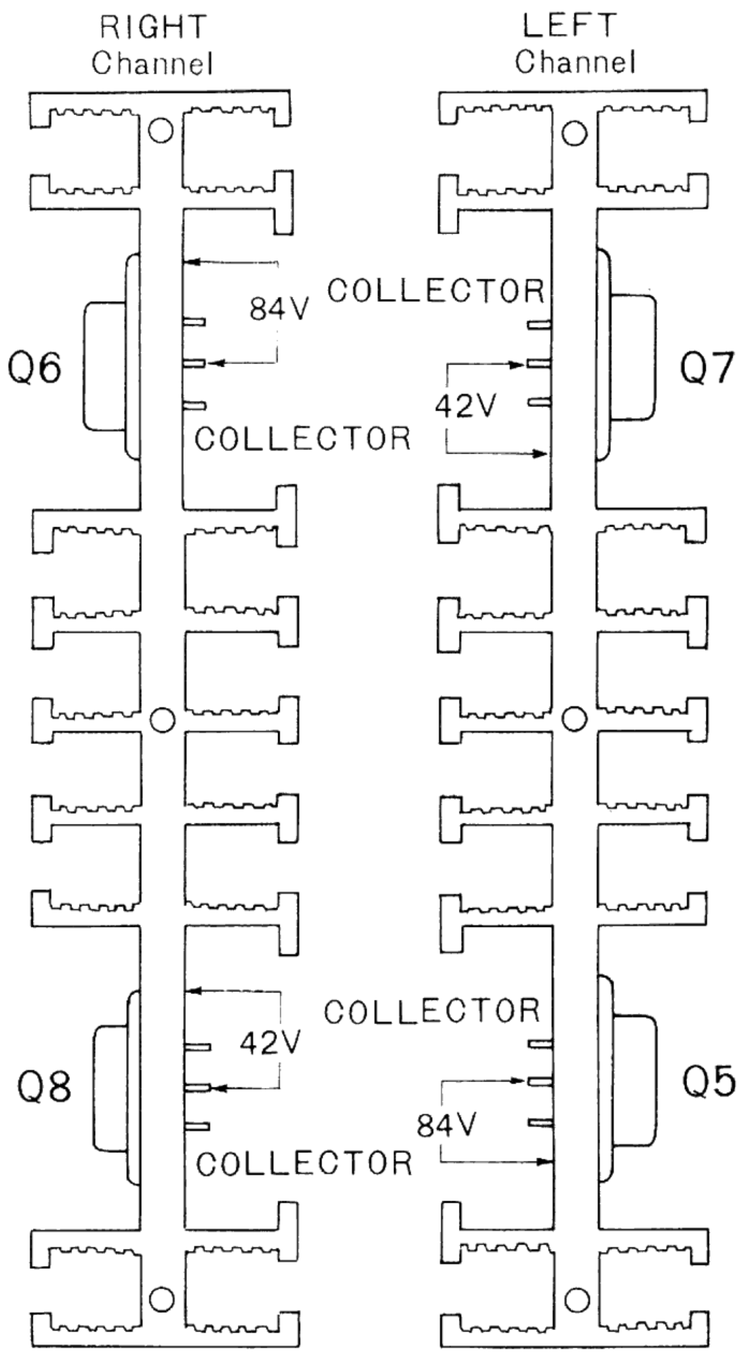
2. Also measure the voltage between the chassis and collector of the power transistor Q7 or Q8.
   If a tester indicates approximately 42 V, it is normal.

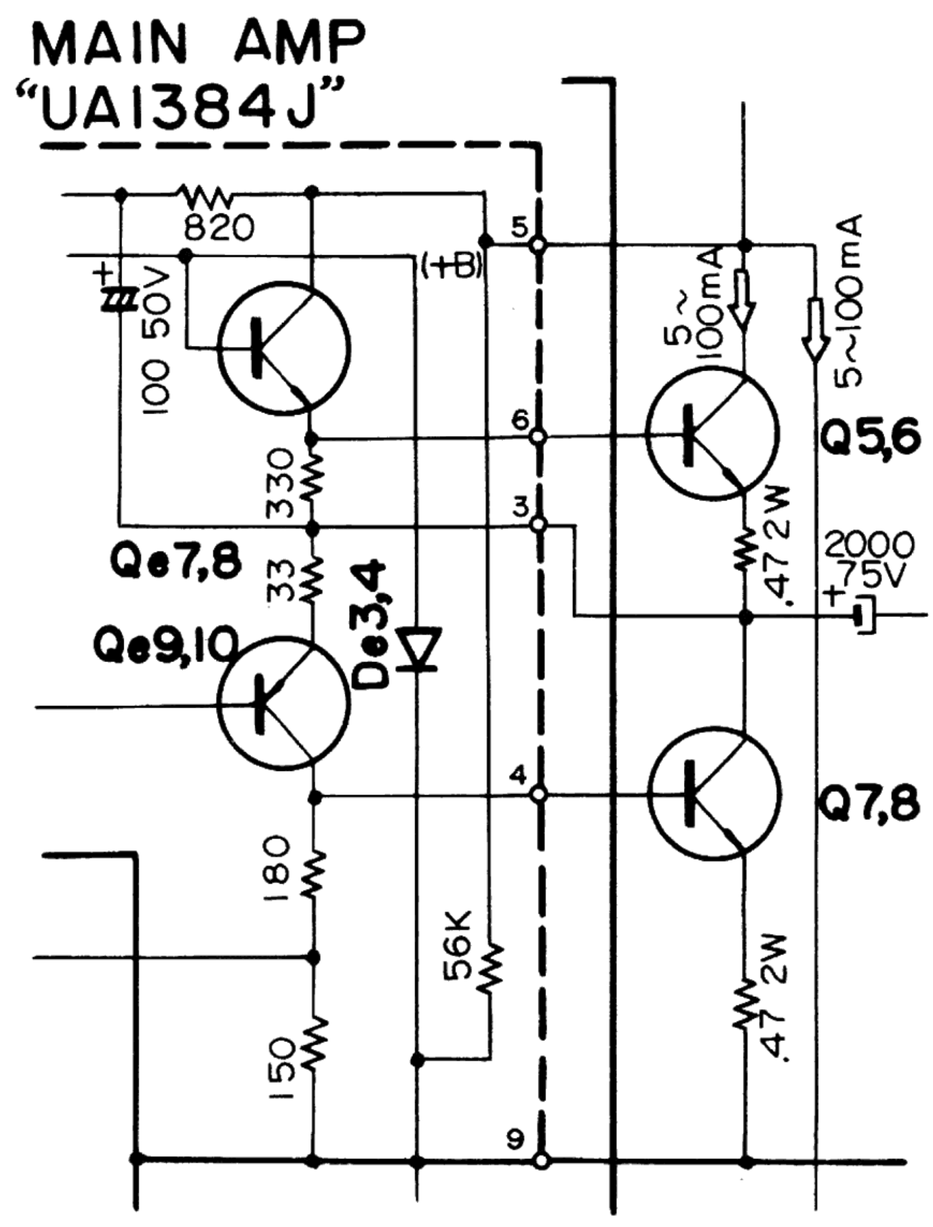
3. Using a tester, measure the voltage between the chassis and collector of the power transistor Q5 or Q6.
   If a tester indicates approximately 84 V, it is normal.

BOTTOM VIEW OF TRANSISTORS

ST303
2SD213







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KENWOOD®

FM RF(UA1122K) SECTION

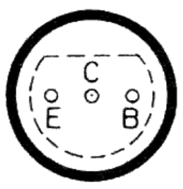
(KR-6160) (TX-140X)

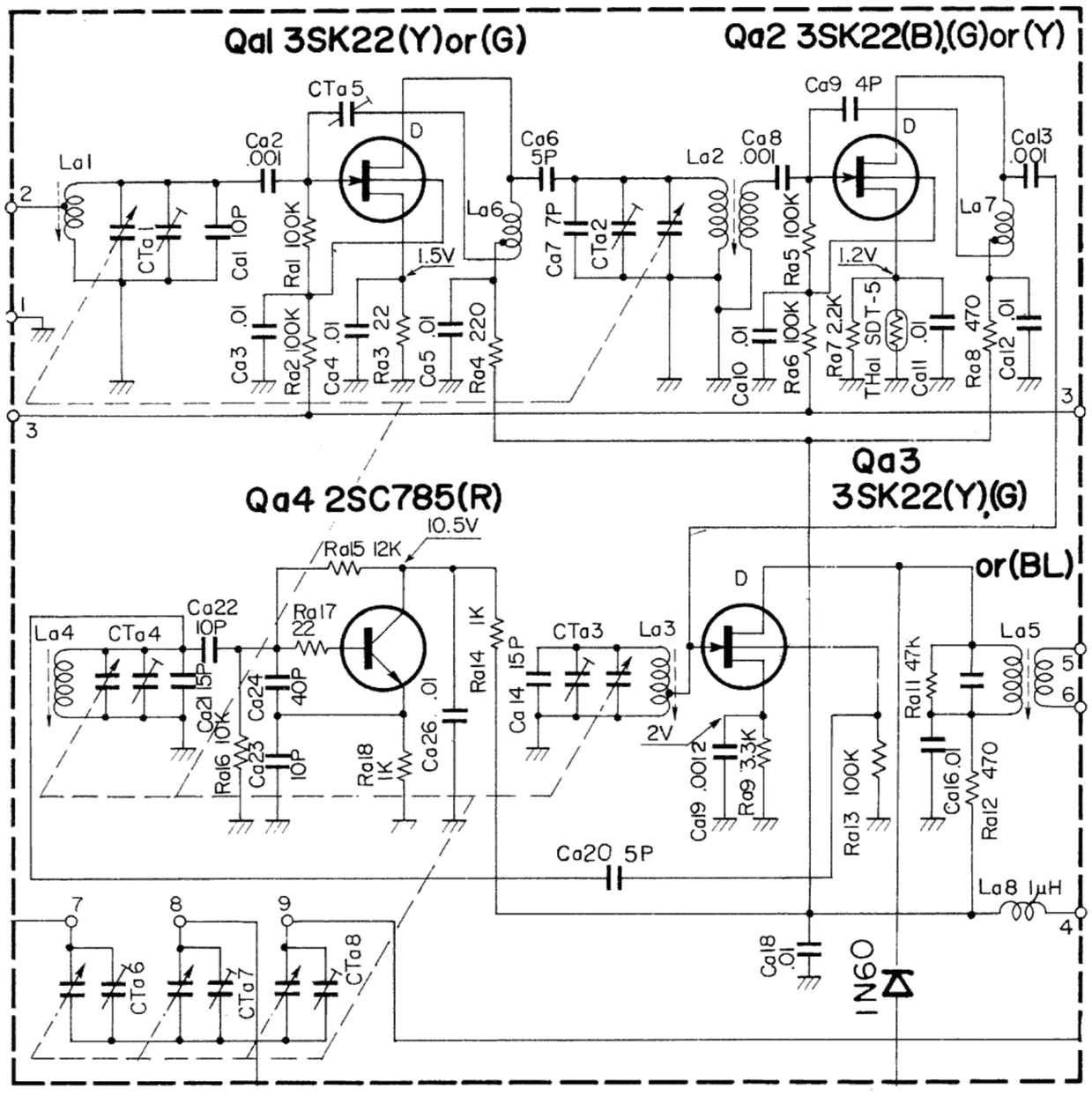
SCHEMATIC DIAGRAM

BOTTOM VIEW OF TRANSISTORS

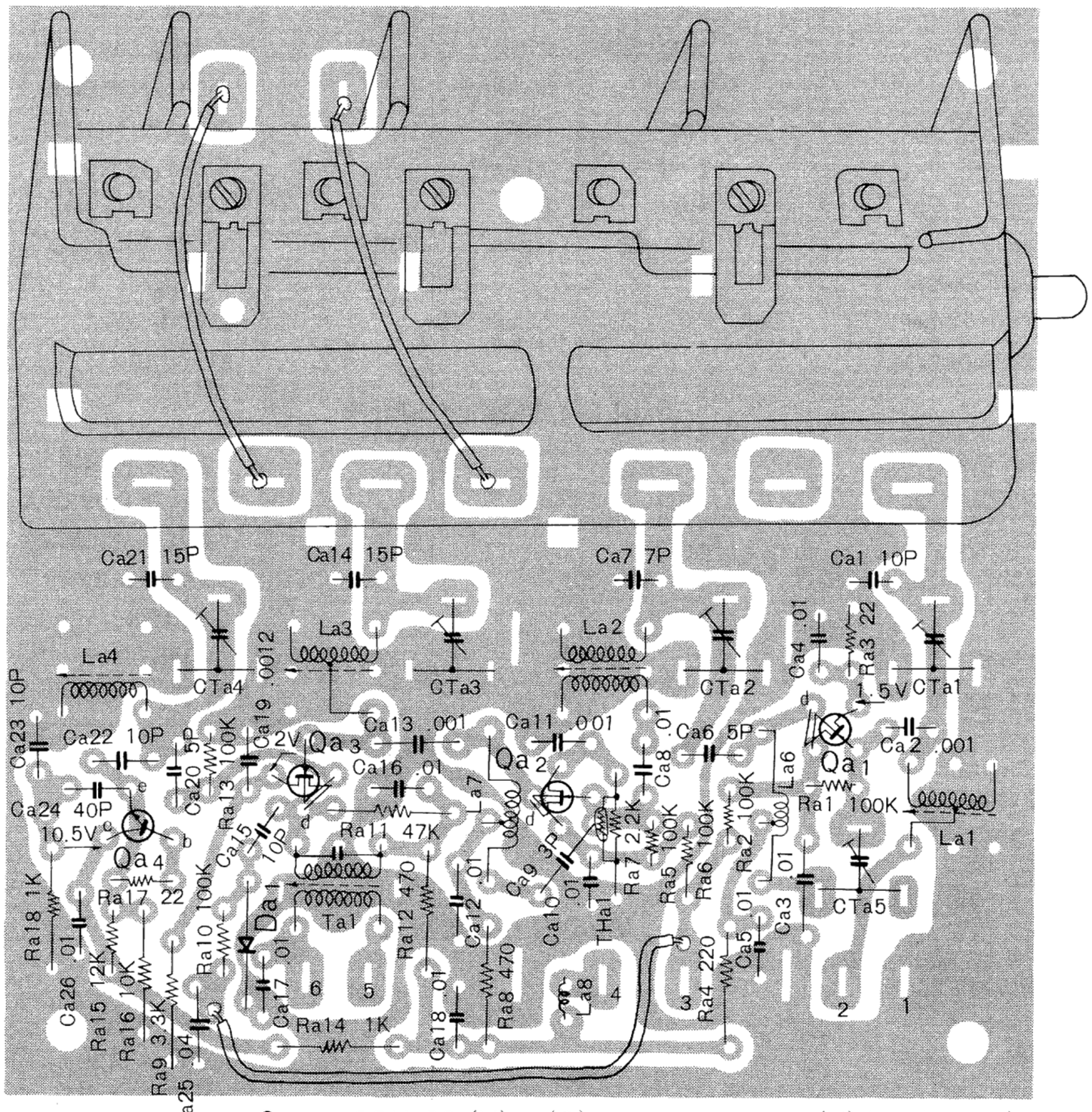
3SK22 (Y)

2SC785





SEALED CIRCUIT ASSEMBLIES-PHANTOM VIEWS



Qa1 3SK-22 (Y) or (G), Qa3 3SK22 (Y)(BL) or (G)

THa1 SDT-65 Qa2 3SK-22 (Y)(B) or (G), Qa4 2SC785 Da1 1N60

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PARTS DESCRIPTION LIST

Symbol No.	Description				Part No.	Remarks
	RESISTORS					
Ra1, 2	Fixed Carbon Composition	100kΩ	±10%	1/4W	PD14CY2E104K	
Ra3	Fixed Carbon Composition	22Ω	±10%	1/4W	PD14CY2E220K	
Ra4	Fixed Carbon Composition	220Ω	±10%	1/4W	RC05GF2E221K	
Ra5, 6	Fixed Carbon Composition	100kΩ	±10%	1/4W	PD14CY2E104K	
Ra7	Fixed Carbon Composition	2.2kΩ	±10%	1/4W	RC05GF2E222K	
Ra8	Fixed Carbon Composition	470Ω	±10%	1/4W	RC05GF2E471K	
Ra9	Fixed Carbon Composition	3.3kΩ	±10%	1/4W	RC05GF2E332K	
Ra11	Fixed Carbon Composition	47kΩ	±10%	1/4W	RC05GF2E473K	
Ra12	Fixed Carbon Composition	470Ω	±10%	1/4W	RC05GF2E471K	
Ra13	Fixed Carbon Composition	100kΩ	±10%	1/4W	PD14CY2E104K	
Ra14	Fixed Carbon Composition	1kΩ	±10%	1/4W	RC05GF2E102K	
Ra15	Fixed Carbon Composition	12kΩ	±5%	1/4W	PD14CY2E123J	
Ra16	Fixed Carbon Composition	10kΩ	±5%	1/4W	RC05GF2E103J	
Ra17	Fixed Carbon Composition	22Ω	±10%	1/4W	PD14CY2E220K	
Ra18	Fixed Carbon Composition	1kΩ	±5%	1/4W	RC05GF2E102J	
	CAPACITORS/TRIMMERS					
Ca1	Ceramic	10pF	±0.5pF		CC94TH1E100D	
Ca2	Ceramic	0.001μF	±20%		CK94YR1E102M	
Ca3 ~ 5	Ceramic	0.01μF	+30%,	−80%	CK94YG1E103	
Ca6	Ceramic	5pF	±0.5pF		CC94SH1E050D	
Ca7	Ceramic	7pF	±0.5pF		CC94SH1E070D	
Ca8	Ceramic	0.001μF	±20%		CK94YR1E102M	
Ca9	Ceramic	3pF	±0.25pF		CC94SL1E030C	
Ca10 ~ 12	Ceramic	0.01μF	+30%,	−80%	CK94YG1E103	
Ca13	Ceramic	0.001μF	±20%		CK94YR1E102M	
Ca14	Ceramic	15pF	±5%		CC94SH1E150J	
Ca16, 18	Ceramic	0.01μF	+30%,	−80%	CK94YG1E103	
Ca19	Mica	0.0012μF	±10%		CM93F1H122K	
Ca20	Ceramic	5pF	±0.25pF		CC94TH1E050C	
Ca21	Ceramic	15pF	±5%		CC94TH1E150J	
Ca22, 23	Ceramic	10pF	±0.5pF		CC94TH1E100D	
Ca24	Ceramic	40pF	±5%		CC94TH1E400J	
Ca26	Ceramic	0.01μF	+30%,	−80%	CK94YG1E103	
CTa1 ~ 4	Ceramic Trimmer				C4036	
CTa5	Ceramic Trimmer				C4035	
V.C	Variable Capacitor				D01-159	
	COILS/TRANSFORMER					
La1	FM ANT Coil				L24-UA1124A	
La2	FM RF1 Coil				L24-UA1122KRA	
La3	FM RF2 Coil				L24-UA1122KRB	
La4	FM OSC Coil				L24-UA1122KS	
La5	FM 1FT				L52-10	
La6, 7	Choke Coil				L20-010D	
La8	Ferrite Core Inductor				EL5H-1ROM	
	TRANSISTORS/DIODE/THERMISTOR					
Qa1 ~ 3	2SK22 (FET)					
Qa4	2SC785-R					
THa1	SDT-65					
	MISCELLANEOUS					
—	Printed Circuit Board				S24-253	
—	Front Chassis				A03-UA1129J	
—	Front Back Panel				A08-UA1129J	
—	Front Cover				A91-UA1124J	
—	Front Shield Board				A13-UA1122K	

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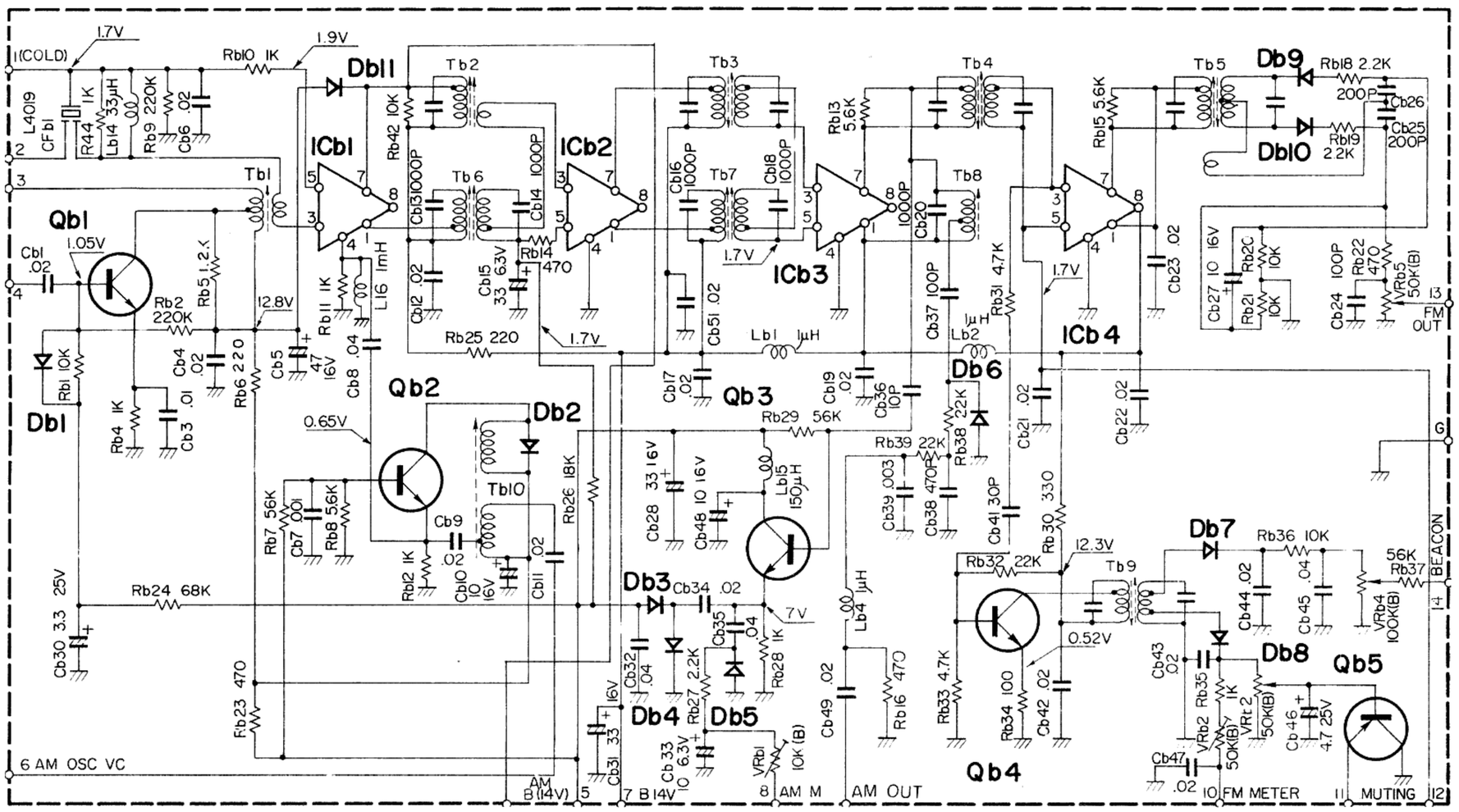
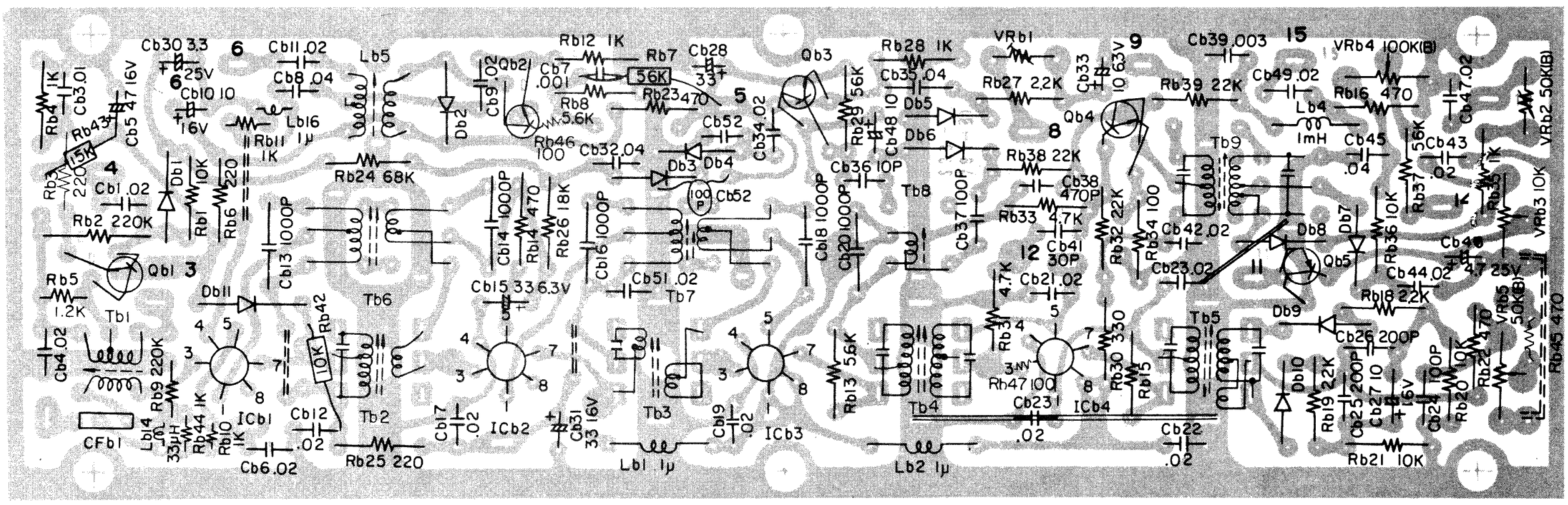
SCHEMATIC DIAGRAM



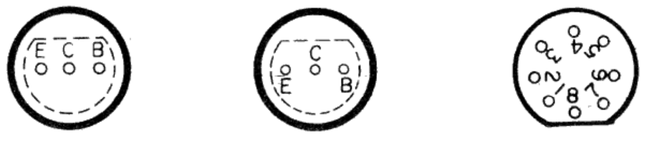
SEALED CIRCUIT ASSEMBLIES-PHANTOM VIEWS



Qb1, 3 2SC377, Qb2 2SC378, Qb4 2SC381, Cb5 2SA495 (Y), 1Cb1~4 SL-20575 Db1 ~11 1N60

BOTTOM VIEW OF TRANSISTORS

2SC381
2SC381 (R)
2SC377
2SA495 (Y) 2SC378 SL-20575



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PARTS DESCRIPTION LIST

Symbol No.	Description	Part No.	Remarks
	CAPACITORS		
Cb1	Ceramic 0.02μF +80%, −20%		
Cb3	Ceramic 0.01μF +80%, −20%		
Cb4	Ceramic 0.02μF +80%, −20%		
Cb5	Electrolytic Tubular 47μF 16WV		
Cb6	Ceramic 0.02μF +80%, −20%		
Cb7	Ceramic 0.001μF +80%, −20%		
Cb8	Ceramic 0.04μF +80%, −20%		
Cb9	Ceramic 0.02μF +80%, −20%		
Cb10	Electrolytic Tubular 10μF 16WV		
Cb11, 12	Ceramic 0.02μF +80%, −20%		
Cb13, 14	Polyester 1000pF ±10%		
Cb15	Electrolytic Tubular 33μF 6.3WV		
Cb16	Polyester 1000pF ±10%		
Cb17	Ceramic 0.02μF +80%, −20%		
Cb18	Polyester 1000pF ±10%		
Cb19	Ceramic 0.02μF +80%, −20%		
Cb20	Polyester 1000pF ±10%		
Cb21 ~ 23	Ceramic 0.02μF +80%, −20%		
Cb24	Ceramic 100pF ±10%		
Cb25, 26	Ceramic 200pF ±10%		
Cb27	Electrolytic Tubular 10μF 16WV		
Cb28	Electrolytic Tubular 33μF 16WV		
Cb30	Electrolytic Tubular 3.3μF 25V		
Cb31	Electrolytic Tubular 33μF 16WV		
Cb32	Ceramic 0.04μF +80%, −20%		
Cb33	Electrolytic Tubular 33μF 6.3WV		
Cb34	Ceramic 0.02μF +80%, −20%		
Cb35	Ceramic 0.04μF +80%, −20%		
Cb36	Ceramic 10pF ±0.5pF		
Cb37	Ceramic 100pF ±10%		
Cb38	Ceramic 470pF ±20%		
Cb39	Ceramic 0.003μF ±20%		
Cb41	Ceramic 30pF ±10%		
Cb42 ~ 44	Ceramic 0.02μF +80%, −20%		
Cb45	Ceramic 0.04μF +80%, −20%		
Cb46	Electrolytic Tubular 4.7μF 25V		
Cb47	Ceramic 0.02μF +80%, −20%		
Cb48	Electrolytic Tubular 10μF 16WV		
Cb49	Ceramic 0.04μF +80%, −20%		
Cb51	Ceramic 0.02μF +80%, −20%		
Cb52	Ceramic 100pF ±10%		
	RESISTORS		
Rb1	Insulated Carbon Film 10kΩ ±5% or ±10% 1/8W		
Rb2	Insulated Carbon Film 220kΩ ±5% or ±10% 1/4W		
Rb4	Insulated Carbon Film 1kΩ ±5% or ±10% 1/8W		
Rb5	Insulated Carbon Film 1.2kΩ ±5% or ±10% 1/8W		
Rb6	Insulated Carbon Film 220Ω ±5% or ±10% 1/8W		
Rb7	Insulated Carbon Film 56kΩ ±5% or ±10% 1/8W		
Rb8	Insulated Carbon Film 5.6kΩ ±5% or ±10% 1/8W		
Rb9	Insulated Carbon Film 220kΩ ±5% or ±10% 1/8W		
Rb10 ~ 12	Insulated Carbon Film 1kΩ ±5% or ±10% 1/8W		
Rb13	Insulated Carbon Film 5.6kΩ ±5% or ±10% 1/8W		
Rb14	Insulated Carbon Film 470Ω ±5% or ±10% 1/8W		
Rb15	Insulated Carbon Film 5.6kΩ ±5% or ±10% 1/8W		
Rb18, 19	Insulated Carbon Film 2.2kΩ ±5% or ±10% 1/8W		
Rb20, 21	Insulated Carbon Film 10kΩ ±5% or ±10% 1/8W		
Rb22, 23	Insulated Carbon Film 470Ω ±5% or ±10% 1/8W		
Rb24	Insulated Carbon Film 68kΩ ±5% or ±10% 1/8W		
Rb25	Insulated Carbon Film 220Ω ±5% or ±10% 1/8W		
Rb26	Insulated Carbon Film 18kΩ ±5% or ±10% 1/8W		
Rb27	Insulated Carbon Film 2.2kΩ ±5% or ±10% 1/8W		
Rb28	Insulated Carbon Film 1kΩ ±5% or ±10% 1/8W		
Rb29	Insulated Carbon Film 56kΩ ±5% or ±10% 1/8W		
Rb30	Insulated Carbon Film 330Ω ±5% or ±10% 1/8W		
Rb31	Insulated Carbon Film 4.7kΩ ±5% or ±10% 1/8W		
Rb32	Insulated Carbon Film 22kΩ ±5% or ±10% 1/8W		
Rb33	Insulated Carbon Film 4.7kΩ ±5% or ±10% 1/8W		
Rb34	Insulated Carbon Film 100Ω ±5% or ±10% 1/8W		
Rb35	Insulated Carbon Film 1kΩ ±5% or ±10% 1/8W		
Rb36	Insulated Carbon Film 10kΩ ±5% or ±10% 1/8W		
Rb37	Insulated Carbon Film 56kΩ ±5% or ±10% 1/8W		
Rb38, 39	Insulated Carbon Film 22kΩ ±5% or ±10% 1/8W		
Rb42	Insulated Carbon Film 10kΩ ±5% or ±10% 1/8W		
Rb43	Insulated Carbon Film 15kΩ ±5% or ±10% 1/8W		
Rb44	Insulated Carbon Film 1kΩ ±5% or ±10% 1/8W		
Rb45	Insulated Carbon Film 470Ω ±5% or ±10% 1/8W		
Rb46	Insulated Carbon Film 100Ω ±5% or ±10% 1/8W		
Rb47	Insulated Carbon Film 100Ω ±5% or ±10% 1/4W		
	TRANSISTORS/DIODES/IC's		
Qb1	2SC377		
Qb2	2SC378		
Qb3	2SC377		
Qb4	2SC381 (R) or (D)		
Qb5	2SA495 (Y)		
Db1 ~ 11	1N60		
ICb1, 2	SL-20575 (B)		
ICb3, 4	SL-20575 (R)		
	COILS/TRANSFORMERS		
Tb1	AM RF Coil	L12-61	
Tb2	FM IFT	L02-109	
Tb3, 4	FM IFT	L02-104	
Tb5	FM IFT (Discriminator)	L02-64	
Tb6, 7	AM IFT	L01-88	
Tb8	AM IFT	L01-89	
Tb9	FM IFT (Muting)	L02-95	
Cb1 ~ 4	Chock Coil 1μH	L20-010C	
L14	Ferri-Inductor FL5H-330k		
L15	Ferri-Inductor FL5H-151k		
–	Ceramic Filter	L4019	
–	AM OSC Coil	L11-70	
	POTENTIOMETERS		
VRb1	10kΩ (B)	R10-114	
VRb2	50kΩ (B)	R10-58	
VRb3	10kΩ (B)	R10-63	
VRb4	100kΩ (B)	R10-91	
VRb5	50kΩ (B)	R10-64	
	MISCELLANEOUS		
–	Printed Circuit Board	S23-291	
–	Shielding Board	A13-UA1219K	
–	Terminal	N4085	
–	P. V. C. Insulated Wire (0.5φ) 0.05m	W02-50	
–	Tinned Wire (0.5φ) 0.1m	W03-05	
–	Insulating Sleeve 0.02m	W06-154	
–	Vinyl Tube (1φ) 0.05m	W07-014	

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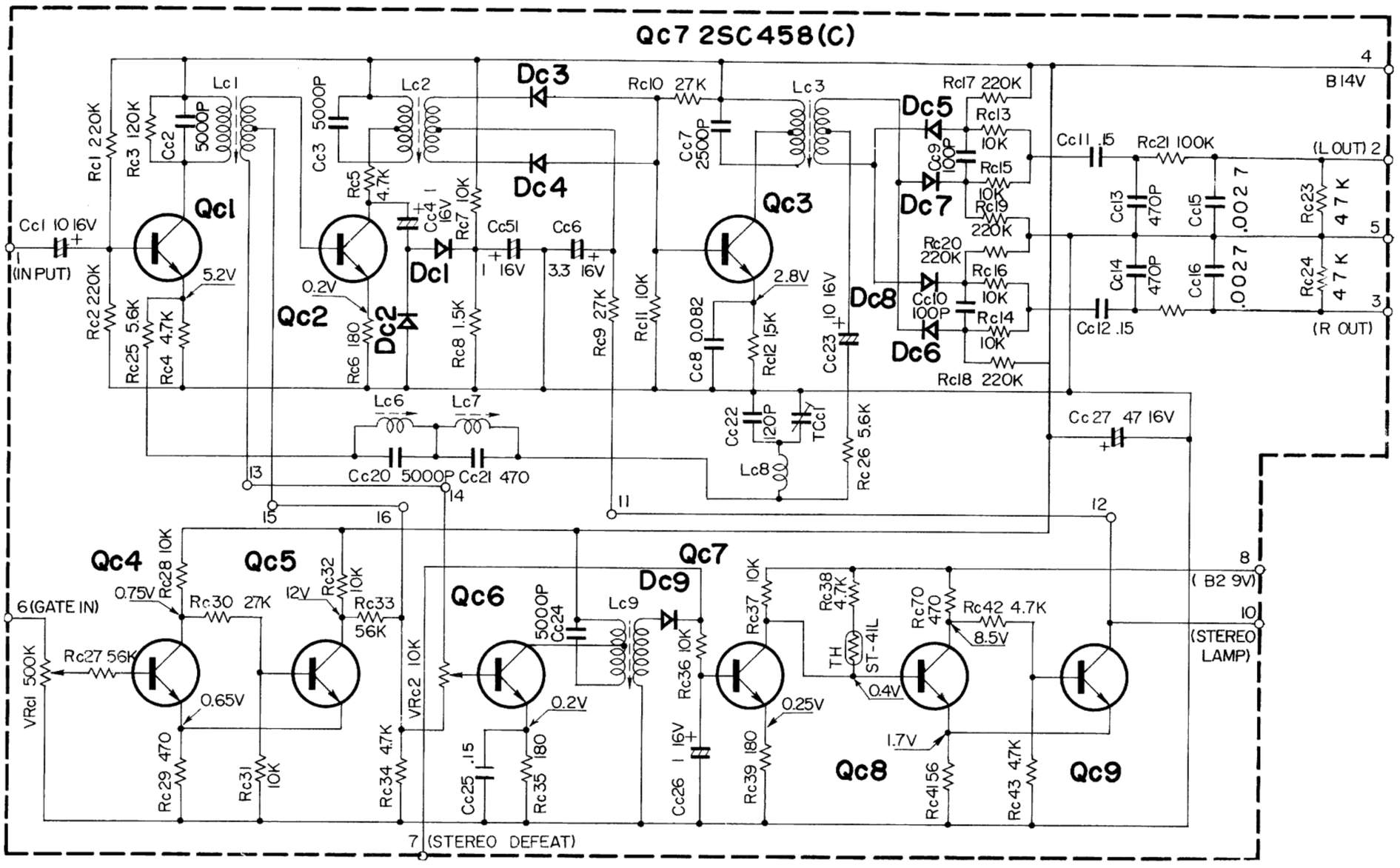
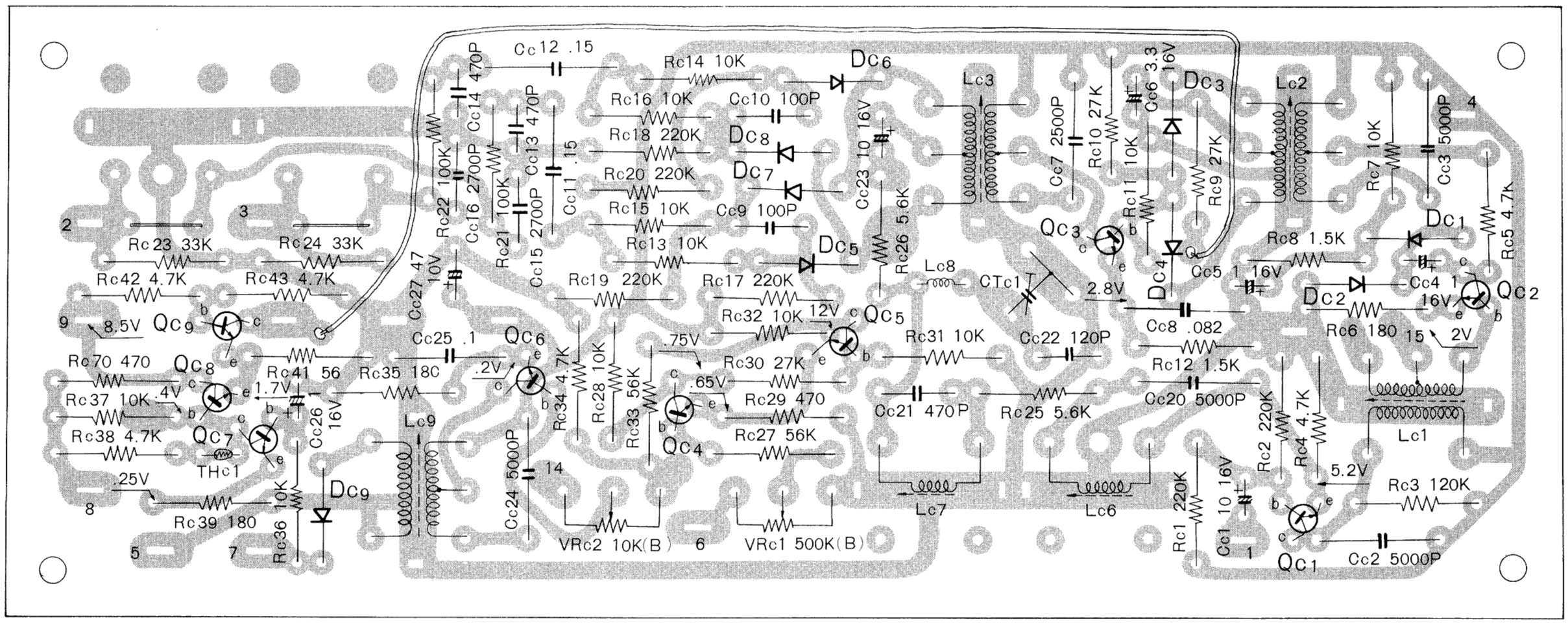
MPX (UA1405K2) SECTION

(TK-140X)

SCHEMATIC DIAGRAM



SEALED CIRCUIT ASSEMBLIES-PHANTOM VIEWS



BOTTOM VIEW OF TRANSISTOR

2SC458L(B)or(C)

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MPX (UA1405K2) SECTION

SCHEMATIC DIAGRAM

Symbol No.	Description				Part No.	Remarks
	RESISTORS					
Rc1, 2	Special Insulated Carbon Film	220kΩ	±10%	1/4W		
Rc3	Special Insulated Carbon Film	120kΩ	±10%	1/4W		
Rc4, 5	Special Insulated Carbon Film	4.7kΩ	±10%	1/4W		
Rc6	Special Insulated Carbon Film	180Ω	±10%	1/4W		
Rc7	Special Insulated Carbon Film	10kΩ	±10%	1/4W		
Rc8	Special Insulated Carbon Film	1.5kΩ	±10%	1/4W		
Rc9, 10	Special Insulated Carbon Film	27kΩ	±10%	1/4W		
Rc11	Special Insulated Carbon Film	10kΩ	±10%	1/4W		
Rc12	Special Insulated Carbon Film	1.5kΩ	±10%	1/4W		
Rc13～16	Special Insulated Carbon Film	10kΩ	±5%	1/4W		
Rc17～20	Special Insulated Carbon Film	220kΩ	±5%	1/4W		
Rc21, 22	Special Insulated Carbon Film	100kΩ	±5%	1/4W		
Rc23, 24	Special Insulated Carbon Film	33kΩ	±5%	1/4W		
Rc25, 26	Special Insulated Carbon Film	5.6kΩ	±10%	1/4W		
Rc27	Special Insulated Carbon Film	56kΩ	±10%	1/4W		
Rc28	Special Insulated Carbon Film	10kΩ	±10%	1/4W		
Rc29	Special Insulated Carbon Film	470Ω	±10%	1/4W		
Rc30	Special Insulated Carbon Film	27kΩ	±10%	1/4W		
Rc31, 32	Special Insulated Carbon Film	10kΩ	±10%	1/4W		
Rc33	Special Insulated Carbon Film	56kΩ	±10%	1/4W		
Rc34	Special Insulated Carbon Film	4.7kΩ	±10%	1/4W		
Rc35	Special Insulated Carbon Film	180Ω	±10%	1/4W		
Rc36, 37	Special Insulated Carbon Film	10kΩ	±10%	1/4W		
Rc38	Special Insulated Carbon Film	4.7kΩ	±10%	1/4W		
Rc39	Special Insulated Carbon Film	180Ω	±10%	1/4W		
Rc41	Special Insulated Carbon Film	56Ω	±10%	1/4W		
Rc42, 43	Special Insulated Carbon Film	4.7kΩ	±10%	1/4W		
Rc70	Special Insulated Carbon Film	470Ω	±10%	1/4W		
	CAPACITORS					
Cc1	Electrolytic Tubular	10μF	16WV			
Cc2, 3	Polystyrene Film	5000PF	±5%			
Cc4, 5	Electrolytic Tubular	1μF	16WV			
Cc6	Electrolytic Tubular	3.3μF	16WV			
Cc7	Polystyrene Film	2500pF	±5%			
Cc8	Mylar	0.082μF	±10%			
Cc9, 10	Polystyrene Film	100pF	±5%			
Cc11, 12	Mylar	0.15μF	±10%			
Cc13, 14	Ceramic	470pF	±10%			
Cc15, 16	Polystyrene Film	0.0033μF	±5%			
Cc20	Polystyrene Film	5000pF	±5%			
Cc21	Polystyrene Film	470pF	±5%			
Cc22	Polystyrene FIlm	120pF	±5%			
Cc23	Electrolytic Tubular	10μF	16WV			
Cc24	Polystyrene Film	5000pF	±5%			
Cc25	Mylar	0.1μF	±10%			
Cc26	Electrolytic Tubular	1μF	16WV			
Cc27	Electrolytic Tubular	47μF	16WV			
TCc1	Trimmer	40pF			C4047	
	POTENTIOMETERS					
VRc1	500kΩ (B)				R10-105	
VRc2	10kΩ (B)				R10-54	
	COILS					
Lc1, 2	19kHz Tuning Coil				L17-45	
Lc3	38kHz Tuning Coil				L17-43	
Lc6	19kHz Tuning Coil				L17-45	
Lc7	72kHz Trap Coil				L17-44	
Lc8	Inductor (FL11H-393J)					
Lc9	19kHz Tuning Coil				L17-46	
	TRANSISTORS/DIODES/THERMISTOR					
Qc1	2SC 458L (B) or (C)					
Qc2～9	2SC 458 (B) or (C)					
Dc1～8	1N60					
Dc9	SM-150					
THc1	Thermistor (5T-41L)					
	MISCELLANEOUS					
–	Printed Circuit Board				S23-236	
–	P.V.C. Insulated Wire (white)	0.5φ	(0.6m)		W32-59	
–	Vinyl Tube	1φ	(0.1m)		W07-01	
–	Terminal x 12				N4085	

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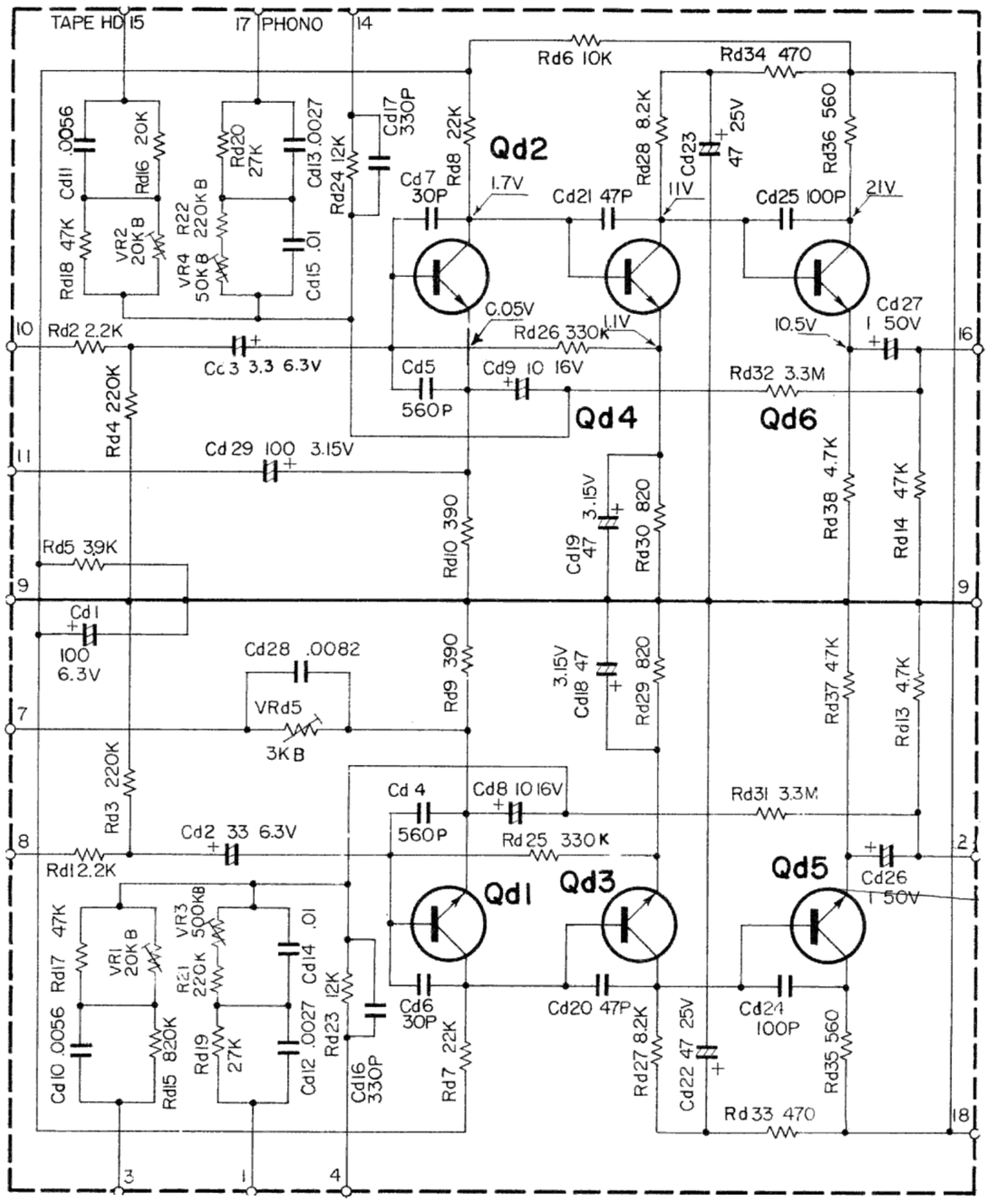
KENWOOD

PRE AMP (UA1342K1) SECTION

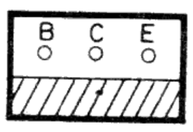
(TK-140X)

SCHEMATIC DIAGRAM

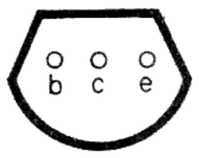


BOTTOM VIEW OF TRANSISTORS

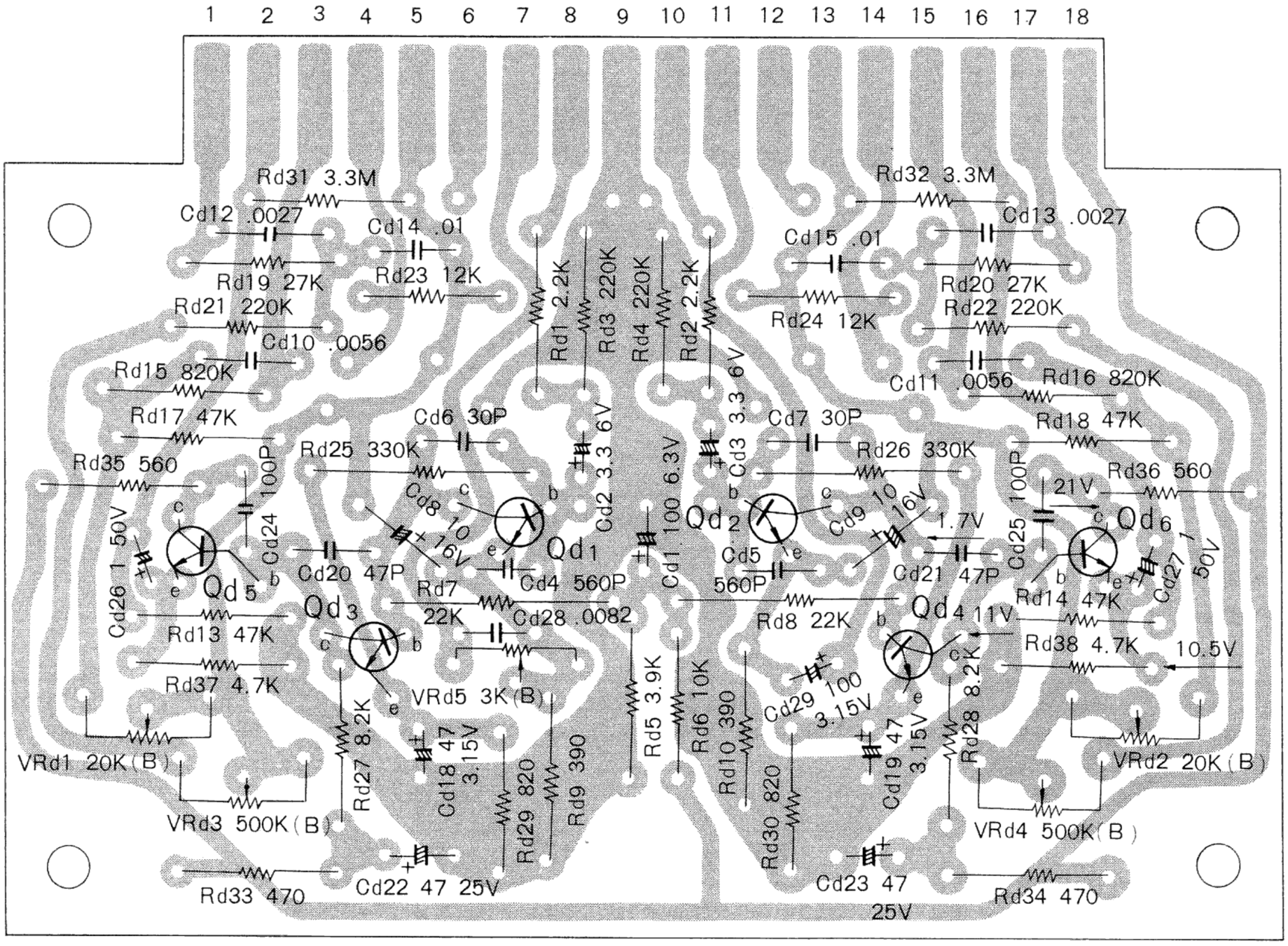
2SC458LG



2SC871



SEALED CIRCUIT ASSEMBLIES-PHANTOM VIEWS



Qd1, 2 2SC458LG Qd3 ~ 6 2SC871 (E) or (F)

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PARTS DESCRIPTION LIST

Symbol No.	Description			Part No.	Remarks
	RESISTORS				
Rd1, 2	Special Insulated Carbon Film	2.2kΩ	±10% 1/4W		
Rd3, 4	Special Insulated Carbon Film	220kΩ	±10% 1/4W		
Rd5	Special Insulated Carbon Film	3.9kΩ	±10% 1/4W		
Rd6	Special Insulated Carbon Film	10kΩ	±10% 1/4W		
Rd7, 8	Insulated Carbon Film (low noise)	22kΩ	±5% 1/4W		
Rd9, 10	Special Insulated Carbon Film	390Ω	±5% 1/4W		
Rd13, 14	Special Insulated Carbon Film	47kΩ	±10% 1/4W		
Rd15, 16	Fixed Carbon Composition	820kΩ	±5% 1/2W		
Rd17, 18	Special Insulated Carbon Film	47kΩ	±10% 1/4W		
Rd19, 20	Special Insulated Carbon Film	27kΩ	±5% 1/4W		
Rd21, 22	Special Insulated Carbon Film	220kΩ	±10% 1/4W		
Rd23, 24	Special Insulated Carbon Film	12kΩ	±5% 1/4W		
Rd25, 26	Insulated Carbon Film (low noise)	330kΩ	±5% 1/4W		
Rd27, 28	Special Insulated Carbon Film	8.2kΩ	±10% 1/4W		
Rd29, 30	Special Insulated Carbon Film	820Ω	±10% 1/4W		
Rd31, 32	Fixed Carbon Composition	3.3MΩ	±5% 1/2W		
Rd33, 34	Special Insulated Carbon Film	470Ω	±10% 1/4W		
Rd35, 36	Special Insulated Carbon Film	560Ω	±10% 1/4W		
Rd37, 38	Special Insulated Carbon Film	4.7kΩ	±10% 1/4W		
	CAPACITORS				
Cd1	Electrolytic Tubular	100μF	6.3WV		
Cd2, 3	Solid Aluminum Electrolytic	3.3μF	6WV		
Cd4, 5	Ceramic	560pF	±20%		
Cd6, 7	Ceramic	30pF	±10%		
Cd8, 9	Electrolytic Tubular	10μF	16WV		
Cd10, 11	Mylar	0.0056μF	±5%		
Cd12, 13	Mylar	0.0027μF	±5%		
Cd14, 15	Mylar	0.01μF	±5%		
Cd16, 17	Mylar	330pF	±20%		
Cd18, 19	Electrolytic Tubular	47μF	3.15WV		
Cd20, 21	Ceramic	47pF	±10%		
Cd22, 23	Electrolytic Tubular	47μF	25WV		
Cd24, 25	Ceramic	100pF	±10%		
Cd26, 27	Electrolytic Tubular	1μF	50WV		
Cd28	Mylar	0.0082μF	±10%		
Cd29	Electrolytic Tubular	100μF	3.15WV		
Cd30, 31	Ceramic	330pF	±20%		
	POTENTIOMETER				
VRd1, 2	20kΩ (B)			R10-75	
VRd3, 4	500kΩ (B)			R10-78	
VRd5	3kΩ (B)			R10-106	
	TRANSISTORS				
Qd1, 2	2SC 458LG (C)				
Qd3 ~ 6	2SC871 (E) or (F)				
	MISCELLANEOUS				
—	Printed Circuit Board			S23-178	
—	Vinyl Tube 1.0φ (0.07m)			W07-01Z	

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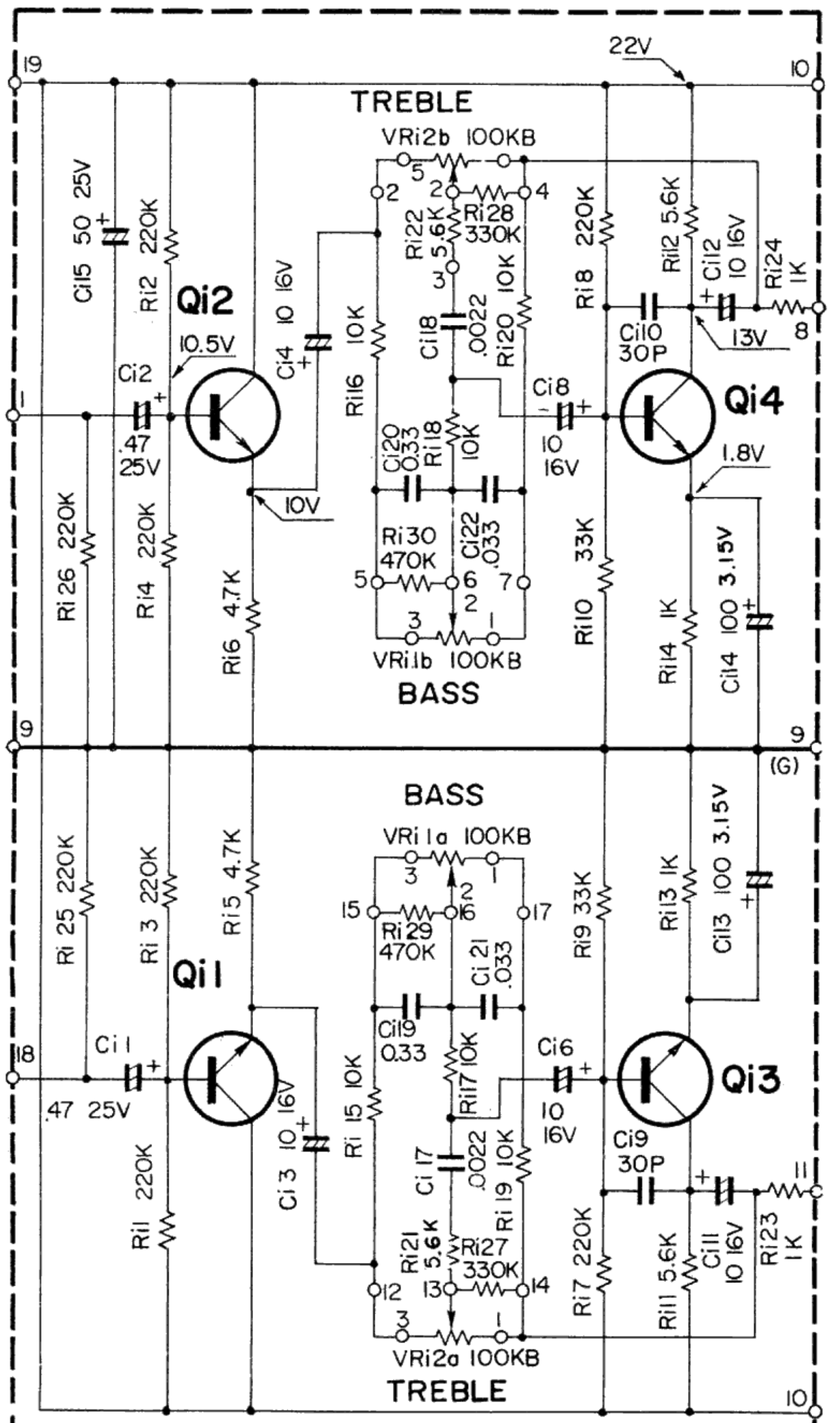
KENWOOD NF TONE AMP (UA13443C) SECTION

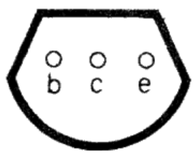
(TK-140X)

SCHEMATIC DIAGRAM

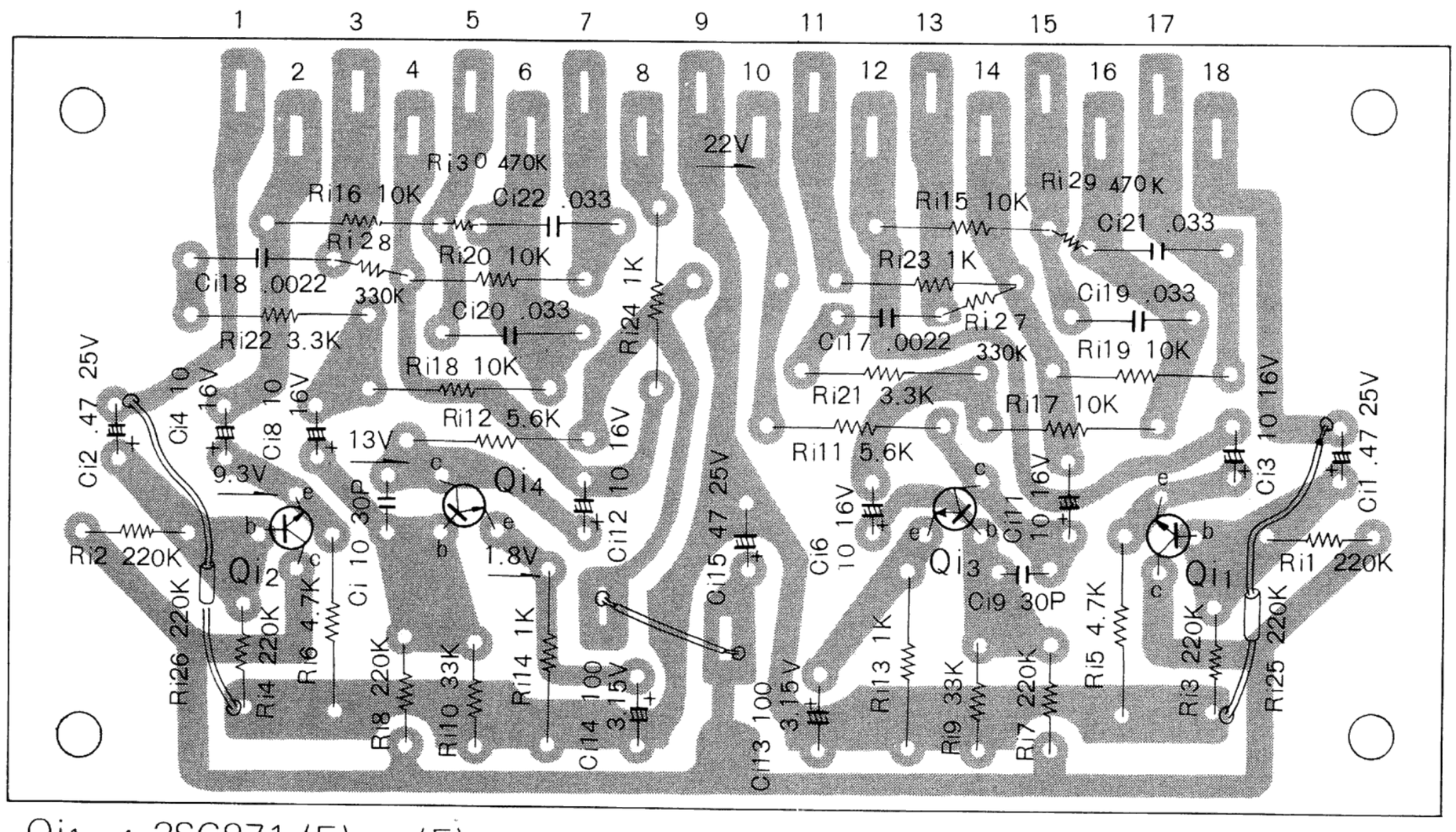


BOTTOM VIEW OF TRANSISTOR

2SC871



SEALED CIRCUIT ASSEMBLIES-PHANTOM VIEWS



Qi1~4 2SC871 (E) or (F)

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PARTS DESCRIPTION LIST

Symbol No.	Description			Part No.	Remarks
		RESISTORS			
Ri1～4	Insulated Carbon Film	220kΩ	±10% 1/4W		
Ri5, 6	Special Insulated Carbon Film	4.7kΩ	±10% 1/4W		
Ri7, 8	Insulated Carbon Film	220kΩ	±10% 1/4W		
Ri9, 10	Insulated Carbon Film	33kΩ	±10% 1/4W		
Ri11, 12	Special Insulated Carbon Film	5.6kΩ	±10% 1/4W		
Ri13, 14	Special Insulated Carbon Film	1kΩ	±10% 1/4W		
Ri15～20	Special Insulated Carbon Film	10kΩ	±10% 1/4W		
Ri21, 22	Special Insulated Carbon Film	5.6kΩ	±10% 1/4W		
Ri23, 24	Special Insulated Carbon Film	1kΩ	±10% 1/4W		
Ri25, 26	Special Insulated Carbon Film	220kΩ	±10% 1/4W		
Ri27, 28	Special Insulated Carbon Film	330kΩ	±10% 1/4W		
Ri29, 30	Special Insulated Carbon Film	470kΩ	±10% 1/4W		
		CAPACITORS			
Ci1, 2	Solid Aluminum Electrolytic	0.47μF	25WV		
Ci3, 4	Electrolytic Tubular	10μF	16WV		
Ci6, 8	Electrolytic Tubular	10μF	16WV		
Ci9, 10	Ceramic	30pF	±10%		
Ci11, 12	Electrolytic Tubular	10μF	16WV		
Ci13, 14	Electrolytic Tubular	100μF	3.15WV		
Ci15	Electrolytic Tubular	47μF	25WV		
Ci17, 18	Mylar	0.0022μF	±10%		
Ci19～22	Mylar	0.033μF	±10%		
		TRANSISTORS			
Qi1～4	2SC871 (E) or (F)				
		MISCELLANEOUS			
–	Printed Circuit Board			S23-182	
–	L Type Metal Fittings	x 2		A5014	
–	Terminal	x 18		N4085	
–	Vinyl Tube	1φ	(0.05m)	W07-01Z	
–	Screw (⊕ P3 x 6 – F)	x 2			

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KENWOOD

MAIN AMP (UA1384J) SECTION

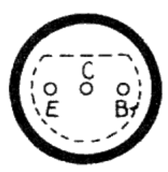
(TK-140X)

SCHEMATIC DIAGRAM

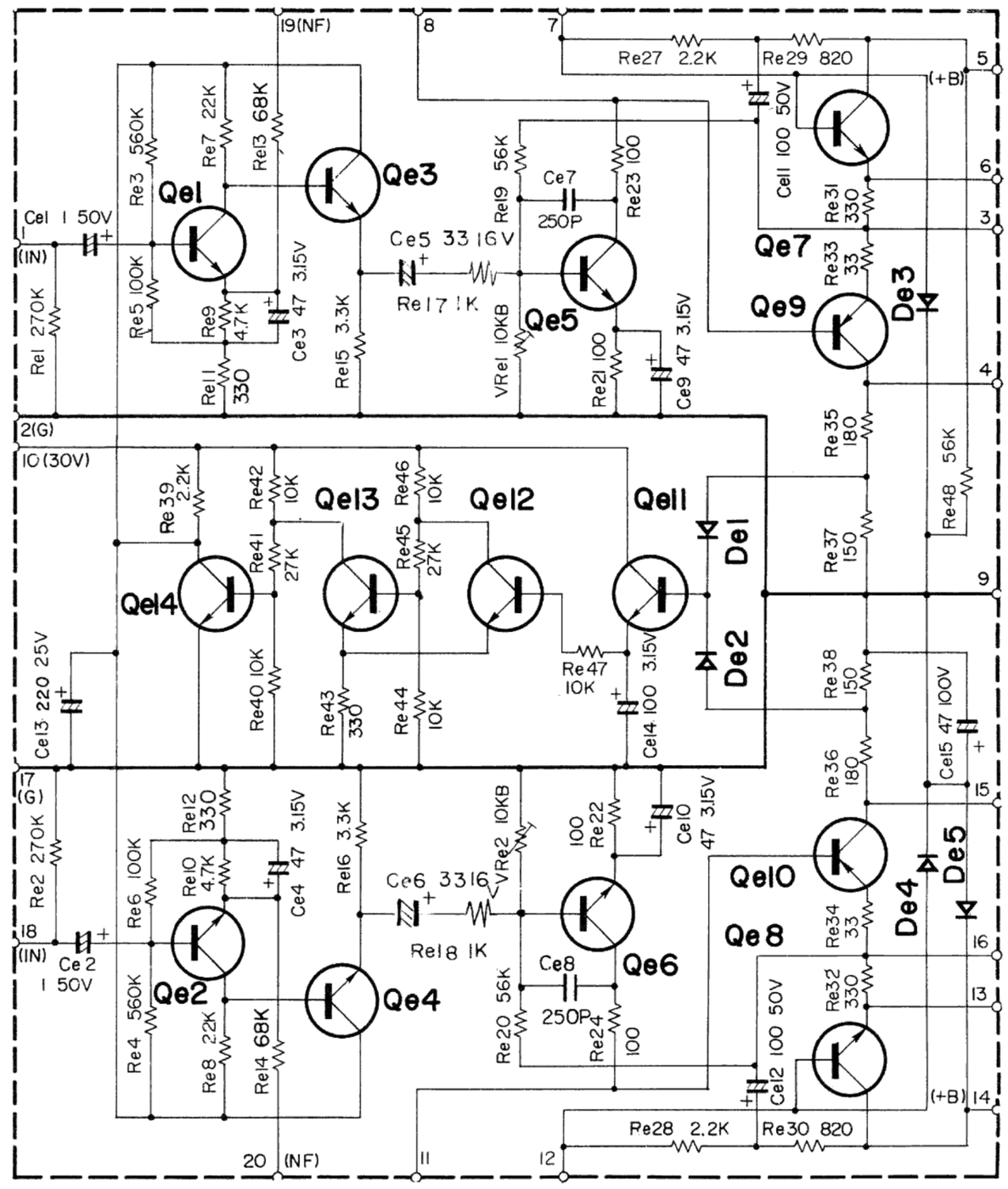
BOTTOM VIEW OF TRANSISTORS

2SC693

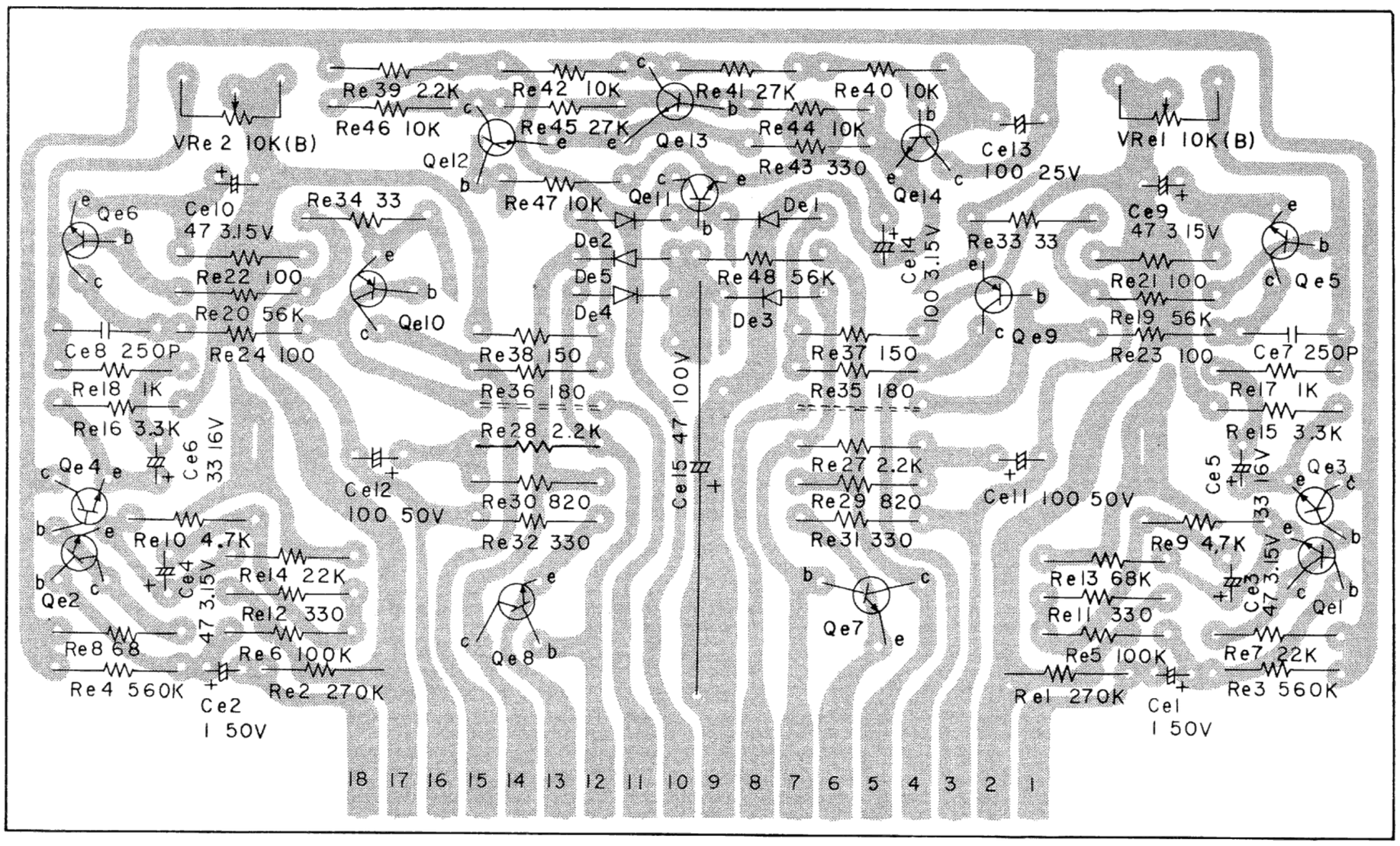
2SC734(Y)



2SC627
2SC960
2SC607



SEALED CIRCUIT ASSEMBLIES-PHANTOM VIEWS



Qe1～4 2SC693U (E) or (F)　Qe5, 6 2SC627　Qe7, 8 2SC960 (1) (M) or (N)　Qe9, 10 2SA607 (1) (M) or (N)
Qe11 2SC734 (Y)　Qe12, 13 2SC458LG (C)　Qe14 2SC734 (Y)　De1, 2 1N60　De3～5 SM-150-S

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KENWOOD R

MAIN AMP (UA1384J) SECTION

PARTS DESCRIPTION LIST

Symbol No.	Description				Part No.	Remarks
			CAPACITORS			
Ce1, 2	Electrolytic Tubular	1μF	50WV			
Ce3, 4	Electrolytic Tubular	47μF	3.15WV			
Ce5, 6	Electrolytic Tubular	33μF	16WV			
Ce7, 8	Ceramic	250pF	±10%			
Ce9, 10	Electrolytic Tubular	47μF	3.15WV			
Ce11, 12	Electrolytic Tubular	100μF	50WV			
Ce13	Electrolytic Tubular	220μF	25WV			
Ce14	Electrolytic Tubular	100μF	3.15WV			
Ce15	Electrolytic Tubular	47μF	100WV			
			RESISTORS			
Re1, 2	Special Insulated Carbon Film	270kΩ	±5%	1/4W		
Re3, 4	Special Insulated Carbon Film	560kΩ	±5%	1/4W		
Re5, 6	Special Insulated Carbon Film	100kΩ	±5%	1/4W		
Re7, 8	Special Insulated Carbon Film	22kΩ	±5%	1/4W		
Re9, 10	Special Insulated Carbon Film	4.7kΩ	±5%	1/4W		
Re11, 12	Special Insulated Carbon Film	330Ω	±5%	1/4W		
Re13, 14	Special Insulated Carbon Film	68kΩ	±5%	1/4W		
Re15, 16	Special Insulated Carbon Film	3.3kΩ	±5%	1/4W		
Re17, 18	Special Insulated Carbon Film	1kΩ	±5%	1/4W		
Re19, 20	Special Insulated Carbon Film	56kΩ	±5%	1/4W		
Re21～24	Special Insulated Carbon Film	100Ω	±5%	1/4W		
Re27, 28	Fixed Carbon Composition	2.2kΩ	±5%	1/2W		
Re29, 30	Fixed Carbon Composition	820Ω	±5%	1/2W		
Re31, 32	Special Insulated Carbon Film	330Ω	±5%	1/4W		
Re33, 34	Special Insulated Carbon Film	33Ω	±5%	1/4W		
Re35, 36	Special Insulated Carbon Film	150Ω	±5%	1/4W		
Re39	Fixed Carbon Composition	2.2kΩ	±5%	1/2W		
Re40	Special Insulated Carbon Film	10kΩ	±5%	1/4W		
Re41	Special Insulated Carbon Film	27kΩ	±5%	1/4W		
Re42	Special Insulated Carbon Film	10kΩ	±5%	1/4W		
Re43	Special Insulated Carbon Film	330Ω	±5%	1/4W		
Re44	Special Insulated Carbon Film	10kΩ	±5%	1/4W		
Re45	Special Insulated Carbon Film	27kΩ	±5%	1/4W		
Re46, 47	Special Insulated Carbon Film	10kΩ	±5%	1/4W		
Re48	Special Insulated Carbon Film	56kΩ	±5%	1/4W		
			POTENTIOMETERS			
VRe1, 2	10kΩ (B)				R10-63	
			TRANSISTORS/DIODES			
Qe1～4	2SC 693U (E) or (F)					
Qe5, 6	2SC 627					
Qe7, 8	2SC 960 (I) M or N					
Qe9, 10	2SA 607 (I) M or N					
Qe11	2SC 734 (Y)					
Qe12, 13	2SC 458L (C)					
Qe14	2SC 734 (Y)					
De1, 2	1N60					
De3～5	SM-150-S					
			MISCELLANEOUS			
—	Printed Circuit Board				J25-0011-03	
—	Radiator				A27-02	
—	Lug (for Printed Circuit Board)				N4092	

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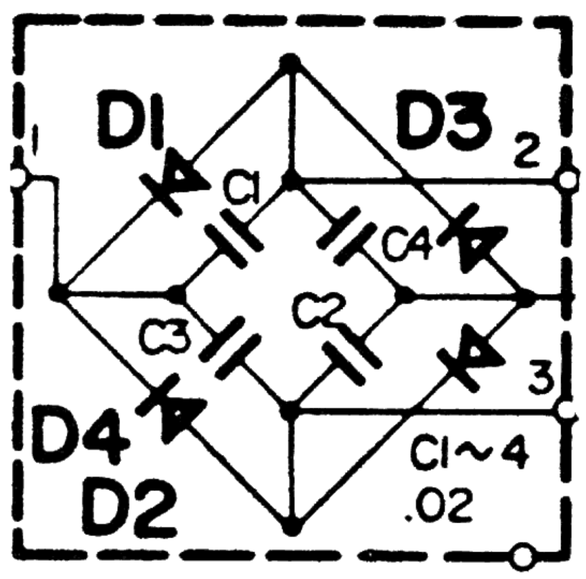
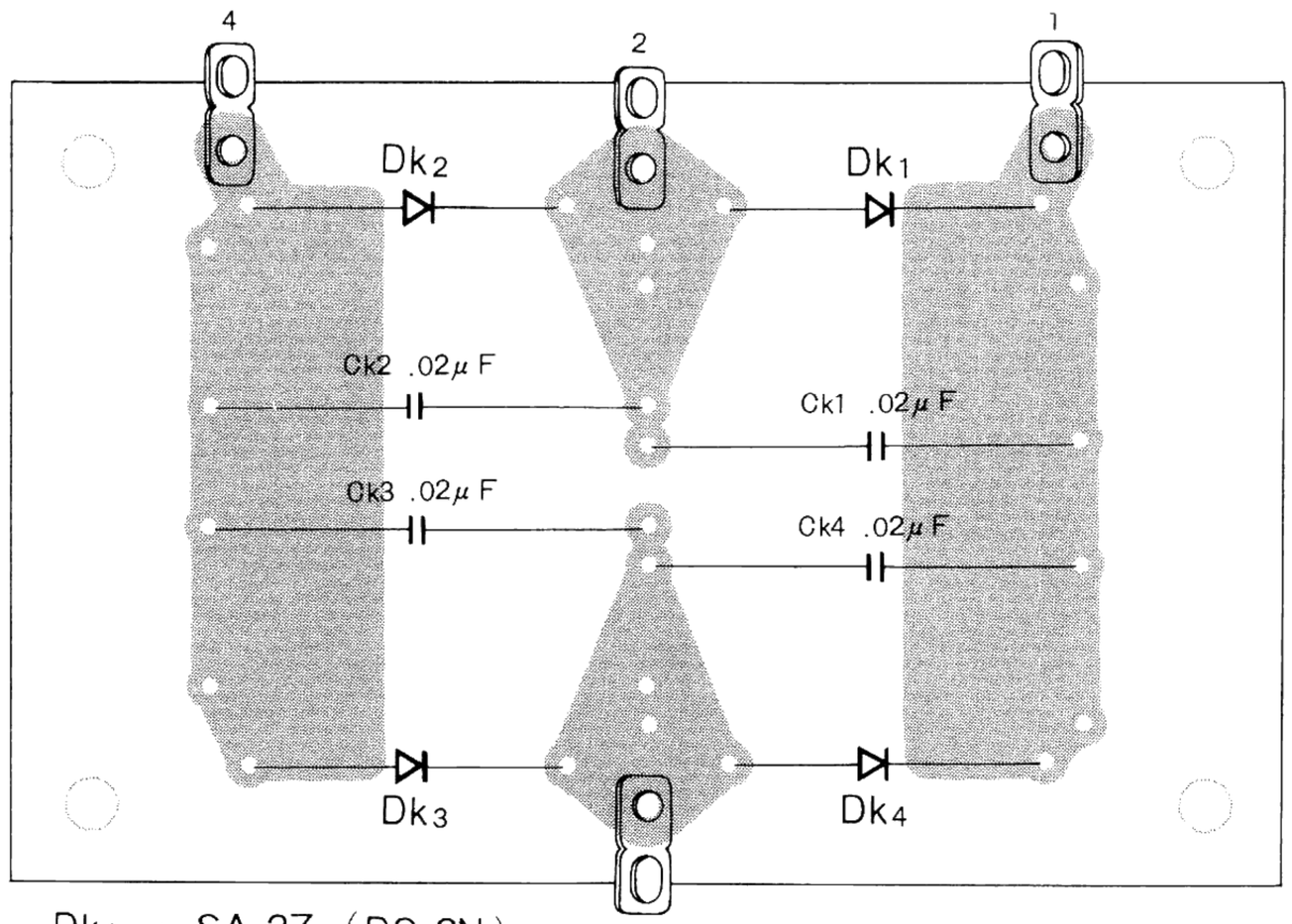
SCHEMATIC DIAGRAM



SEALED CIRCUIT ASSEMBLIES-PHANTOM VIEWS



Dk1~4 SA-2Z (DS-2N)

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PARTS DESCRIPTION LIST

Symbol No.	Description	Part No.	Remarks
	CAPACITORS		
Ck1 ~4	Oil Impregnated Paper 0.02μF ±20%		
	DIODES		
Dk1 ~4	SA-2Z or DS-2N		
	MISCELLANEOUS		
—	Printed Circuit Board	S23-147	
—	Eyelet (with Lug) x 4	N4037	
—	Insulating Sleeve (0.16m)	W06-154	

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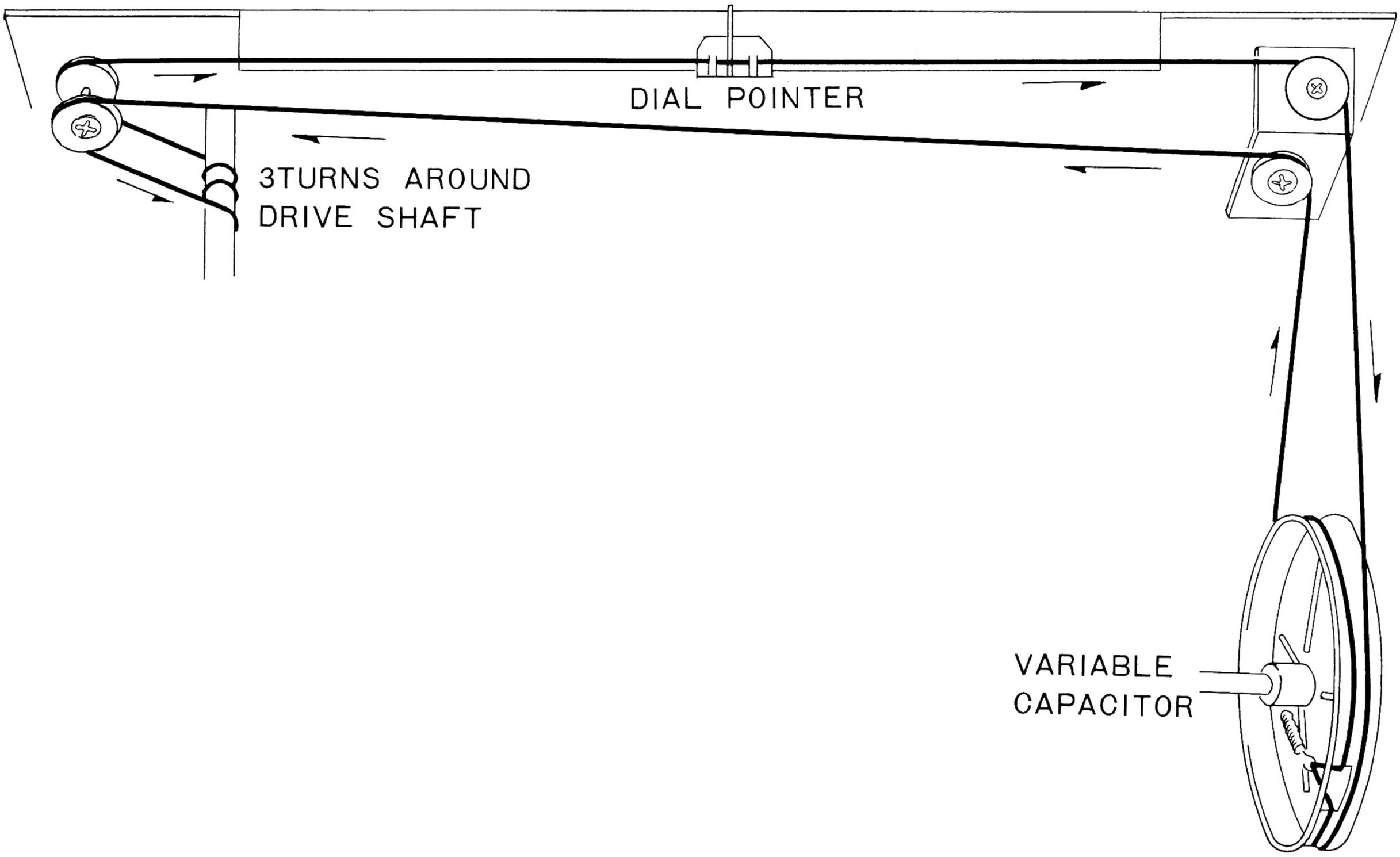
DIAL CORD STRINGING



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TK-140X (AK)

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KENWOOD

SOLID STATE AM-FM STEREO RECEIVER

TK-140X

SPECIFICATIONS

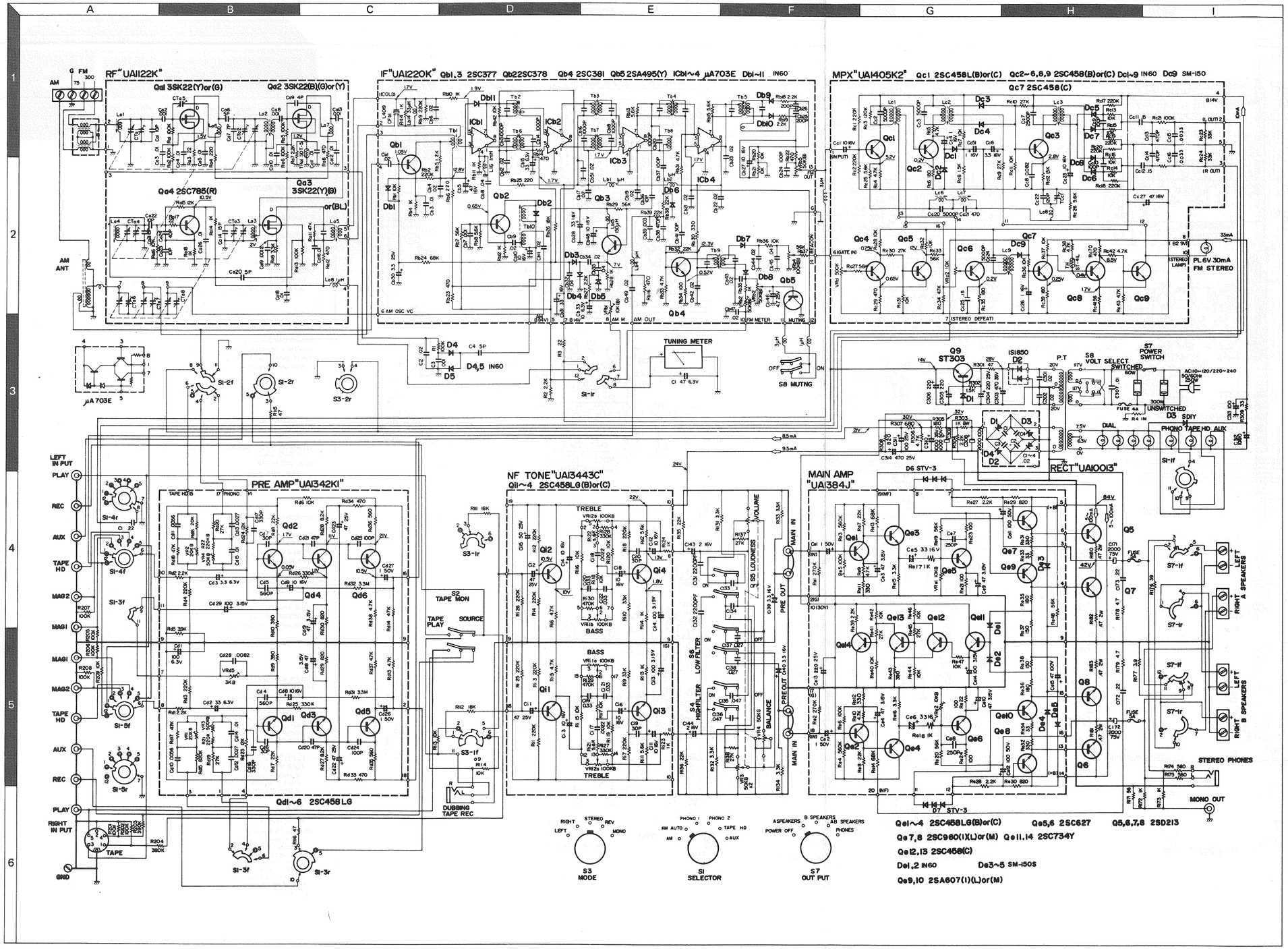
AMPLIFIER SECTION

OUTPUT POWER:	250 watts ±1dB at 4 ohms 210 watts ±1 dB at 8 ohms
DYNAMIC POWER (IHF):	200 watts at 4 ohms 170 watts at 8 ohms
CONTINUOUS POWER:	
EACH CHANNEL DRIVEN:	80 watts/80 watts at 4 ohms 60 watts/60 watts at 8 ohms
BOTH CHANNELS DRIVEN:	53 watts/53 watts at 8 ohms
DISTORTION:	
HARMONIC DISTORTION:	Less than .5% at rated output
INTERMODULATION DISTORTION:	Less than .5% at rated output Less than .2% at −3dB rated output
FREQUENCY RESPONSE:	
MAIN INPUT:	8 Hz to 120,000 Hz ±1.5 dB
AUX INPUT:	20 Hz to 30,000 Hz ±1.5 dB
POWER BANDWIDTH (IHF):	15 Hz to 30,000 Hz
CHANNEL SEPARATION:	Better than 50 dB
INPUT SENSITIVITY & INPUT IMPEDANCE:	
(For rated output):	MAG 1.2. . . 2mV (50K ohms) TAPE HD. . . 2.2 mV (100K ohms) AUX. . . 160 mV (100K ohms) TAPE PLAY. . (Pin Jack) 160mV (100K ohms) (R.P. Connector)160 mV (100K ohms)
RECORDING OUTPUT:	MAIN IN. . . 100 mV (100K ohms) (Pin Jack) 160 mV (Dubbing) 160 mV (R.P. Connector) 32 mV
MAXIMUM INPUT SIGNAL: (at MAG Input)	180 mV (P-P 1,000 Hz)
HUM AND NOISE:	PHONO 1.2 (MAG) 65 dB .
(Below rated output)	TAPE HD 63 dB
	AUX 75 dB
	TAPE PLAY 75 dB
	Noise at minimum volume control . . . Less than 1.5 mV at 8 ohms or .28 micro watts (83 dB)
DAMPING FACTOR:	28 at 8 ohms (output impedance of speaker is .286 ohms.)
SPEAKER IMPEDANCE:	4,8 and 16 ohms
BASS CONTROL:	±10 dB at 100 Hz
TREBLE CONTROL:	±10 dB at 10,000 Hz
HIGH FILTER:	3,000 Hz Cutoff
LOW FILTER:	200 Hz Cutoff
LOUDNESS CONTROL:	+10 dB at 100 Hz, +5 dB at 10xHz (at −30 dB)
OUTPUT SWITCH:	Power Off, A speakres, B speakers, A-B speakers and Phones
MODE SWITCH:	Left, Right, Stereo, Rev. & Mono
SELECTOR SWITCH:	AM, FM, PHONO, TAPE HD & AUX
KEYBOARD TYPE SWITCHES:	Loudness, Tape Monitor, Muting, Low Filter and High Filter
OUTPUTS:	2 pairs of stereo speaker terminals, Center channel output (low level), Pre-amp. output, Tape recording output, Head phone jack, AC outlet.

TUNER SECTION

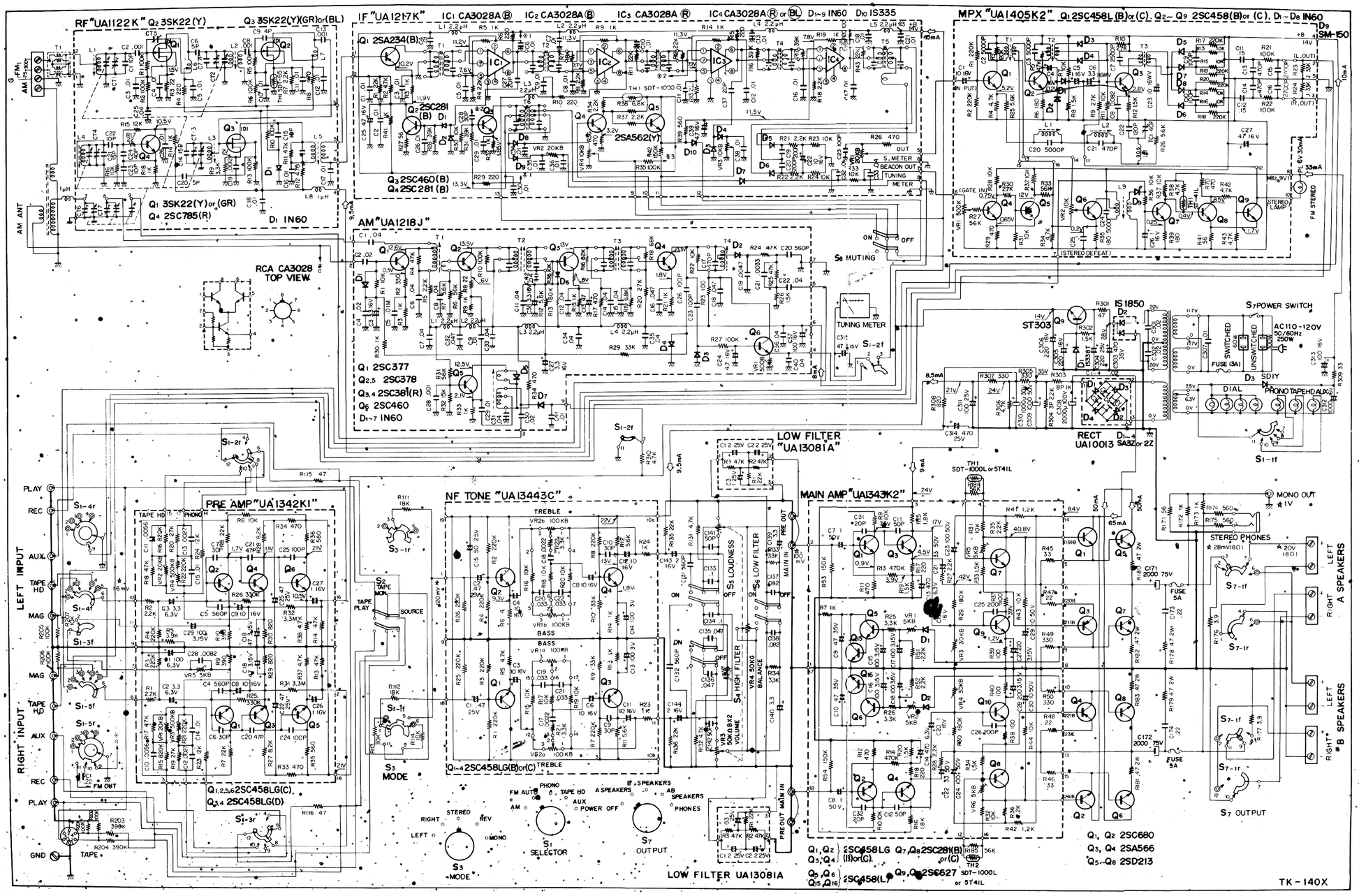
FM:	
ANTENNA IMPEDANCE:	300 ohms balanced 75 ohms unbalanced
SENSITIVITY (IHF):	1.7 μV
HARMONIC DISTORTION:	Less than .5% 400 Hz 100% Mod.
SIGNAL TO NOISE RATIO:	Better than 65 dB
CAPTURE RATIO:	1.0 dB
IMAGE REJECTION:	Better than 100 dB
HARMONIC SPURIOUS RESPONSE:	Better than 100 dB
IF REJECTION:	Better than 100 dB
SELECTIVITY (Alt. channel):	45 dB
FM IF STAGE:	4 IC's. (Integrated Circuits)
FM FRONT-END:	3 FET's, 4 gang tuning condenser
INTER STATION MUTING:	Keyboard switch
FM SPURIOUS RADIATION:	Less than 34 dB
AM:	
SENSITIVITY (IHF):	15μV at 1,000 kHz
IMAGE REJECTION:	90 dB at 1,000 kHz
SELECTIVITY:	Better than 25 dB
SPECIAL FEATURES:	IC's & Mechanical Filter IF Circuit, 3 FET's 4 Gang Tuning Condenser Super Sensitive Front-End Inter Station Muting Circuit, Heavy Fly-Wheel Tuning Dial, New Large Tuning Dial, New Large Tuning Meter, 300 ohms and 75 ohms Antenna Inputs, Unique Keyboard Type Control Switches. Power Transistor Protection Circuit Separate Pre-amp. Output and Main amp. Input, Illuminated Smoked Glass Dial, Low Filter and High Filter, Tape Monitor, Stereo Phone Jack. 2 Set of Speaker Systems. Dubbing Tape Recording Jack on Front Panel.
SEMICONDUCTORS:	4 IC's, 3 FET's 44 Transistors, 33 Diodes, 2 Thermisters.
POWER CONSUMPTION:	250 watts at full power. 34 watts at no signal.
DIMENSIONS:	16½" W, 5¼" H, 12¼" D.
WEIGHT:	28.5 Lbs Net weight 33.0 Lbs Shipping weight

TK-140X TK-140X



42 42

TK-140X SCHEMATIC DIAGRAM

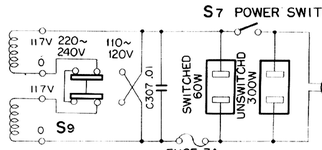


NOTE

The schematic diagram for receivers made for operation in AC 110-120V power source areas is shown at the left.
Revised power transformer circuits for those receivers made for operation in other areas with different line voltages are shown below.
Also please note the MPX and AM unit changes explained below for receivers sold in Europe.

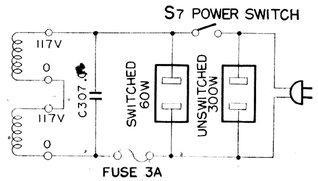
For AC 110~120V / 220~240V Sets

Power Transformer Circuit



For AC 220~240V Sets

Power Transformer Circuit



(MPX Unit)

The MPX unit number for receivers sold in Europe is UA1405J2. The values of C15 and C16 are 1800 P.

(AM Unit)

Since the IFT frequency is different, the AM unit number for all receivers sold in Europe except for England is UA1218E. The circuit remains unchanged, however.

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