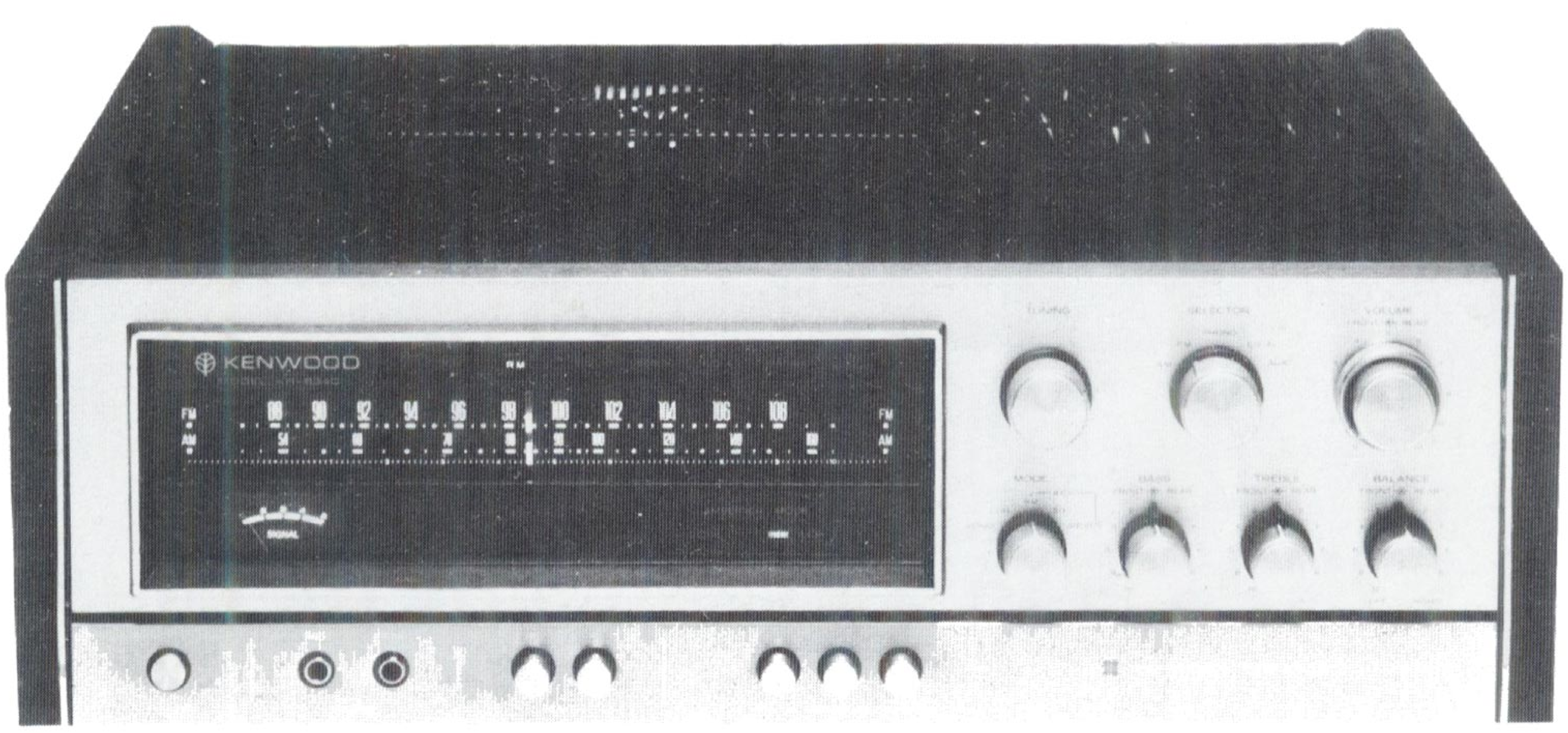
KENWOOD

HI/FI STEREO COMPONENTS

SERVICE MANUAL

KR-6340



TWO-FOUR RECEIVER

CONTENTS

EXTERNAL VIEW

* Wooden side board

* Dial calibrations

Signal meter
(B31-0162-05)

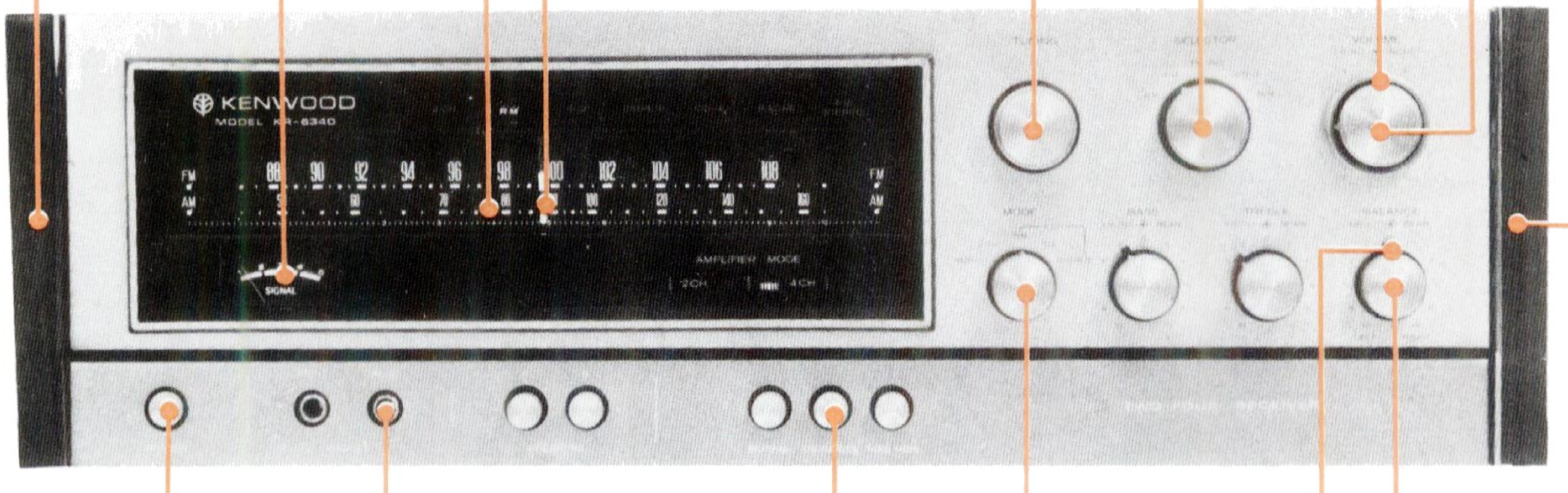
Dial pointer
(B21-2018-05)

Knob
(K23-0121-13)

Knob
(K23-0124-03)

Knob
(K23-0139-04)

Knob
(K23-0138-03)



Knob
(K29-0165-04)

Phone jack
(E11-0002-05)

Knob
(K29-0131-05)

Knob
(K23-0119-03)

Knob
(K23-0133-03)

Knob
(K23-0140-03)

* Wooden side baord

Pin jack
(E13-0604-03)

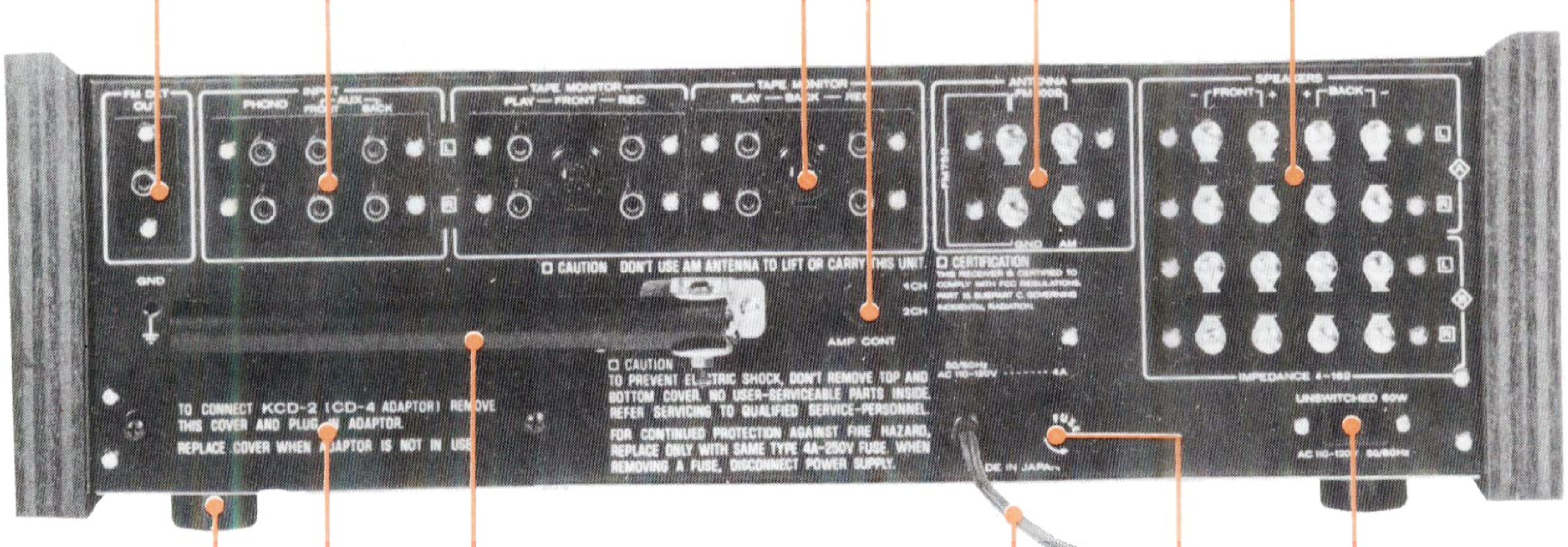
Pin jack
(E13-0104-05)

Knob
(K20-0086-04)

Pin jack
(E13-0409-15)

Terminal strips
(E20-0418-03)

Terminal strips
(E20-0807-03)



Leg
(J02-0049-14)

Ferrite antenna
(T90-0026-15)

Cover plate
(A44-0013-04)

* Power cord

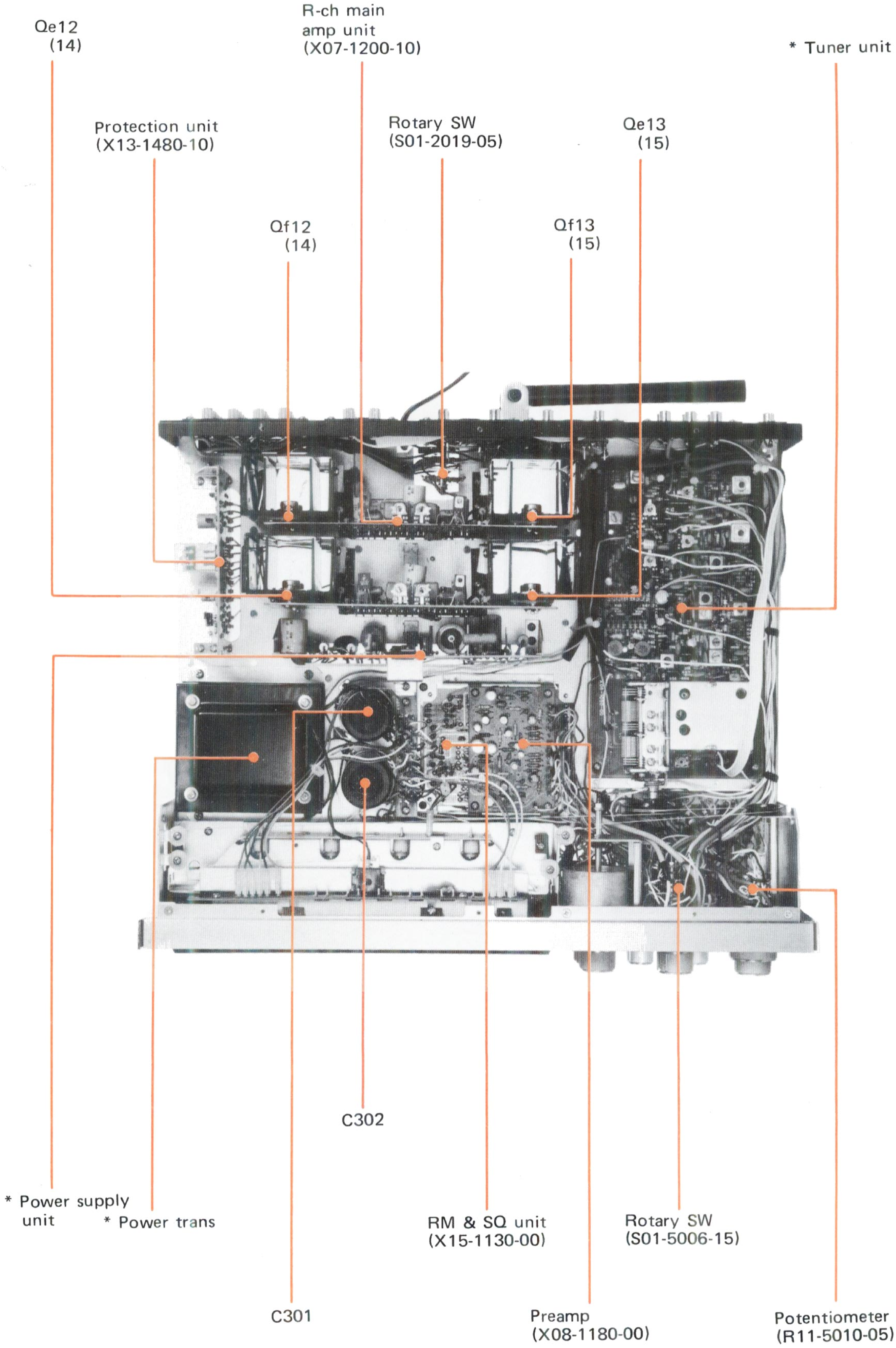
* Fuse holder

AC outlet
(E08-0221-05)

The unit for Europe (W)
has AC outlet cover.

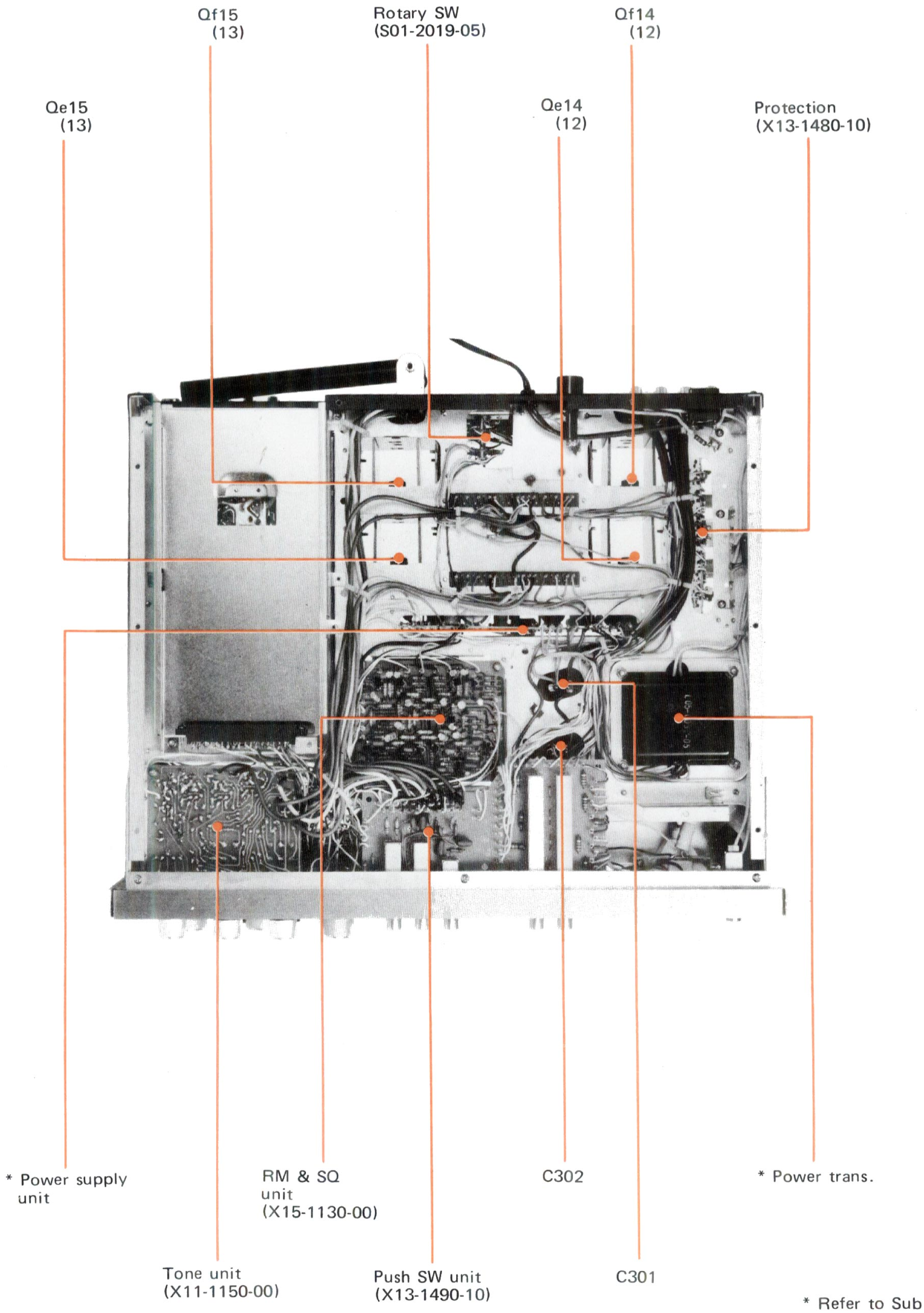
* Refer to Sub parts list

TOP CHASSIS VIEW



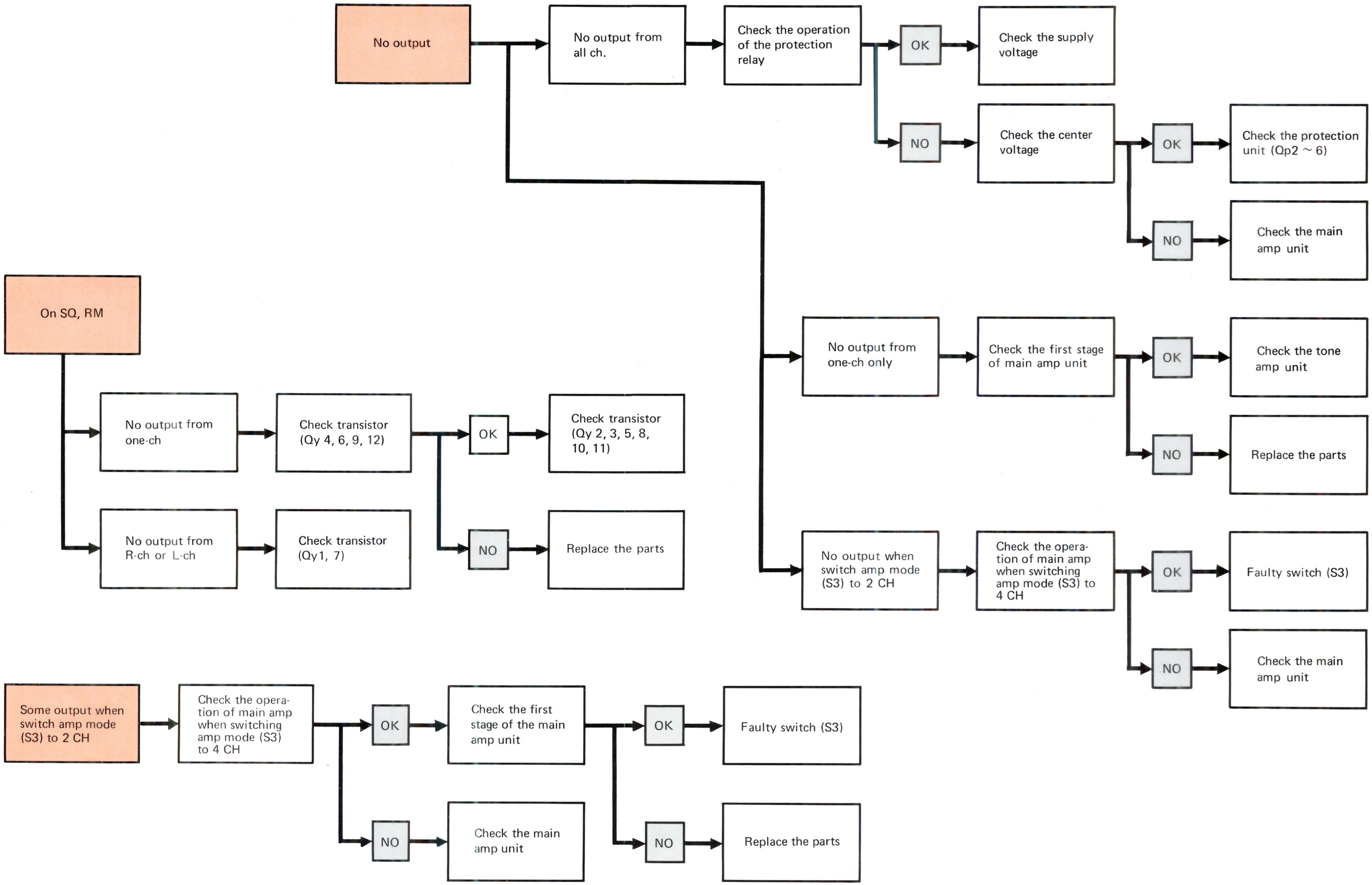
* Refer to Sub parts list

BOTTOM CHASSIS VIEW

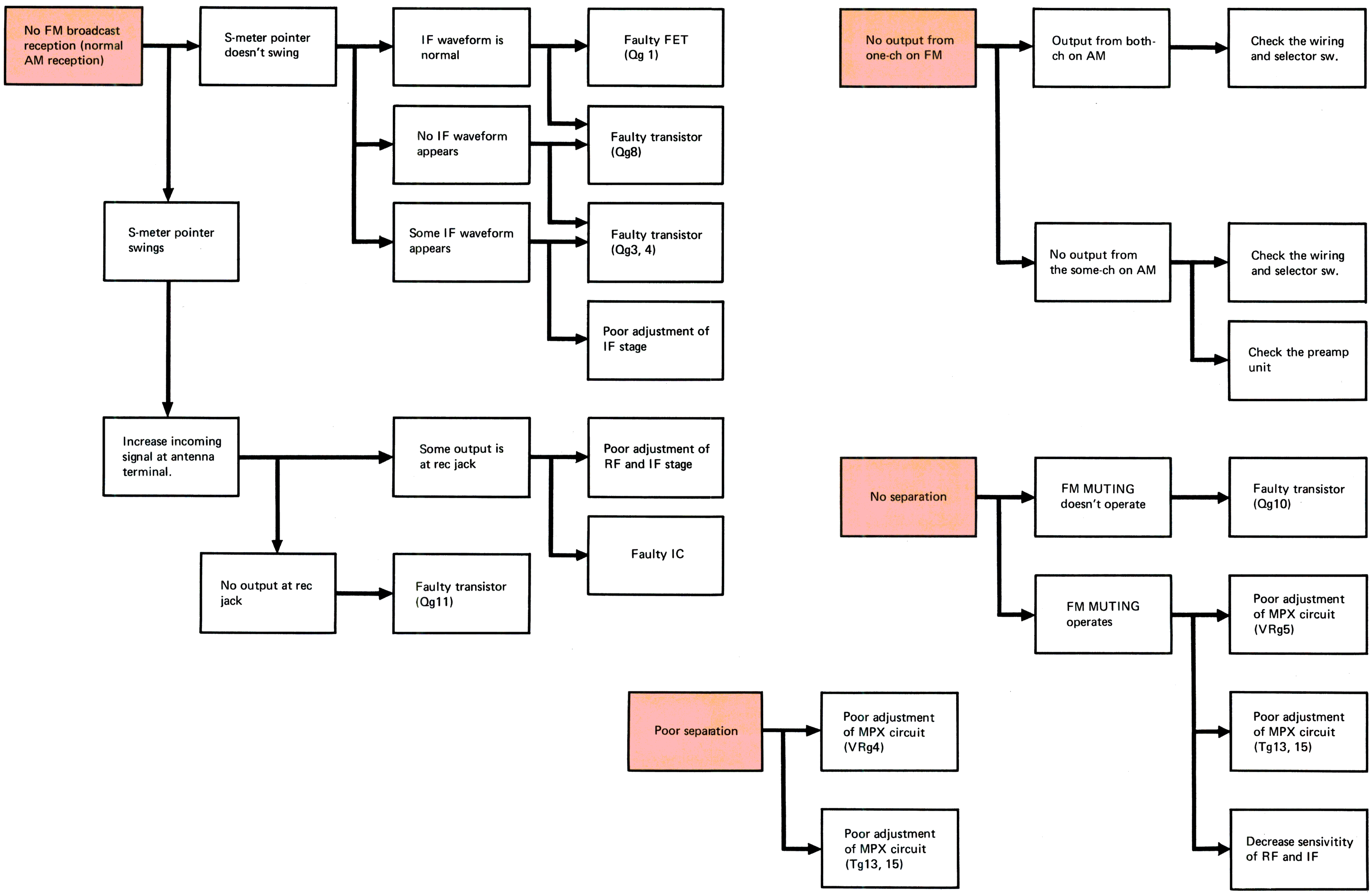


* Refer to Sub parts list

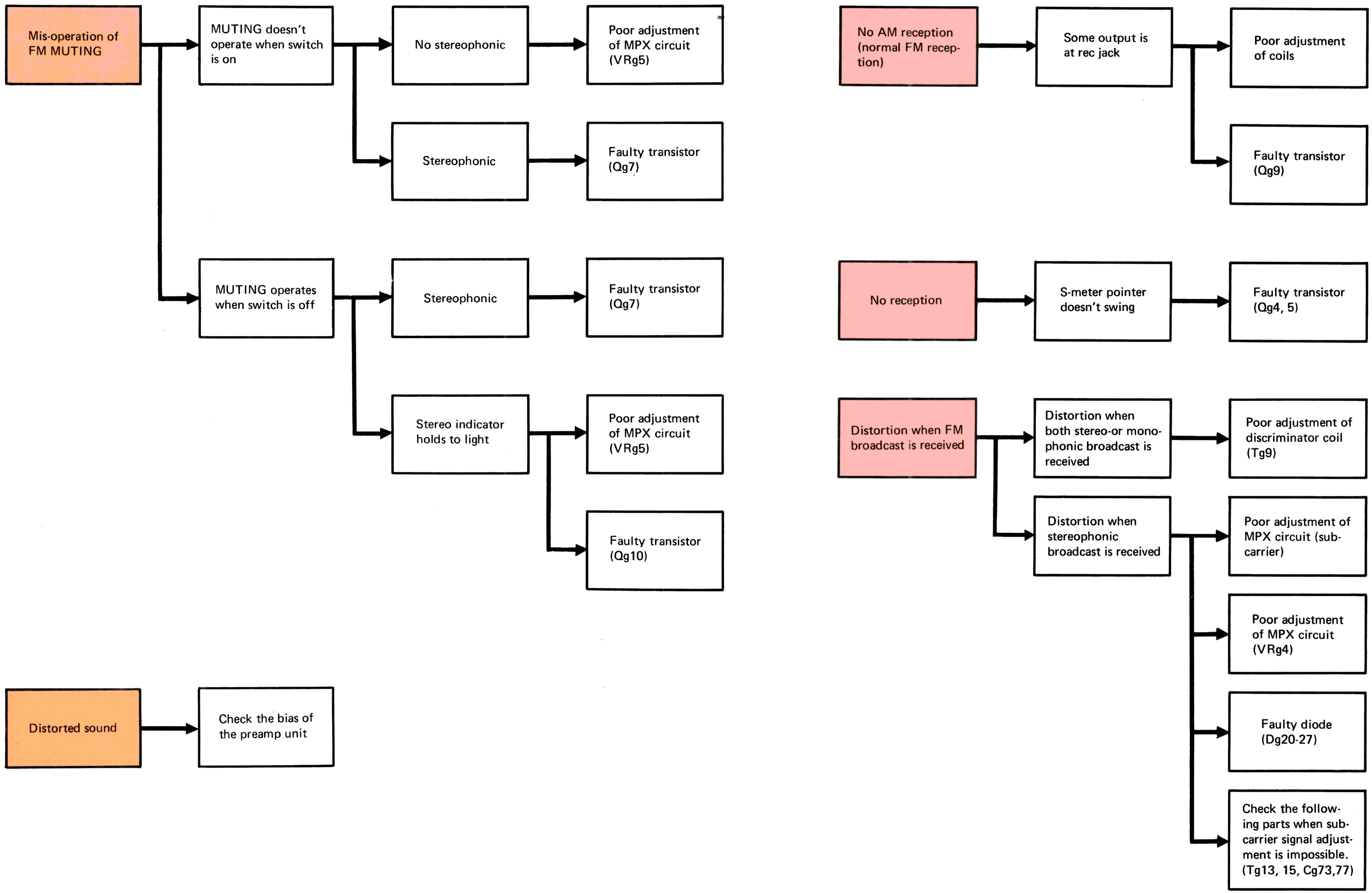
TROUBLESHOOTING



TROUBLESHOOTING



TROUBLESHOOTING



CIRCUIT DESIGN

BTL

This circuit is used when the 4-channel main amplifier is utilized as the 2-channel main amplifier. When a 2-channel source is reproduced with a 4-channel amplifier, the main amplifiers for the rear CH2 and CH4 are unnecessary to work. In order to avoid such wasteful usage, the BTL (balanced transformerless) circuit is used.

FUNCTION OF THE BTL CIRCUIT

When anti-phase signals are applied to the 2 main amplifiers as shown in Fig. 1, output voltage will be doubled on the output side if the loudspeaker is connected as illustrated in the same figure. This corresponds to the fact that output power is 4 times, as is understood from the relationship $P = E^2/R_L$. When making anti-phase signals, the transistorized C-E phase-inverter circuit (Fig. 2) is generally used. This circuit easily generates anti-phase signals by making collector resistance equal to emitter resistance roughly.

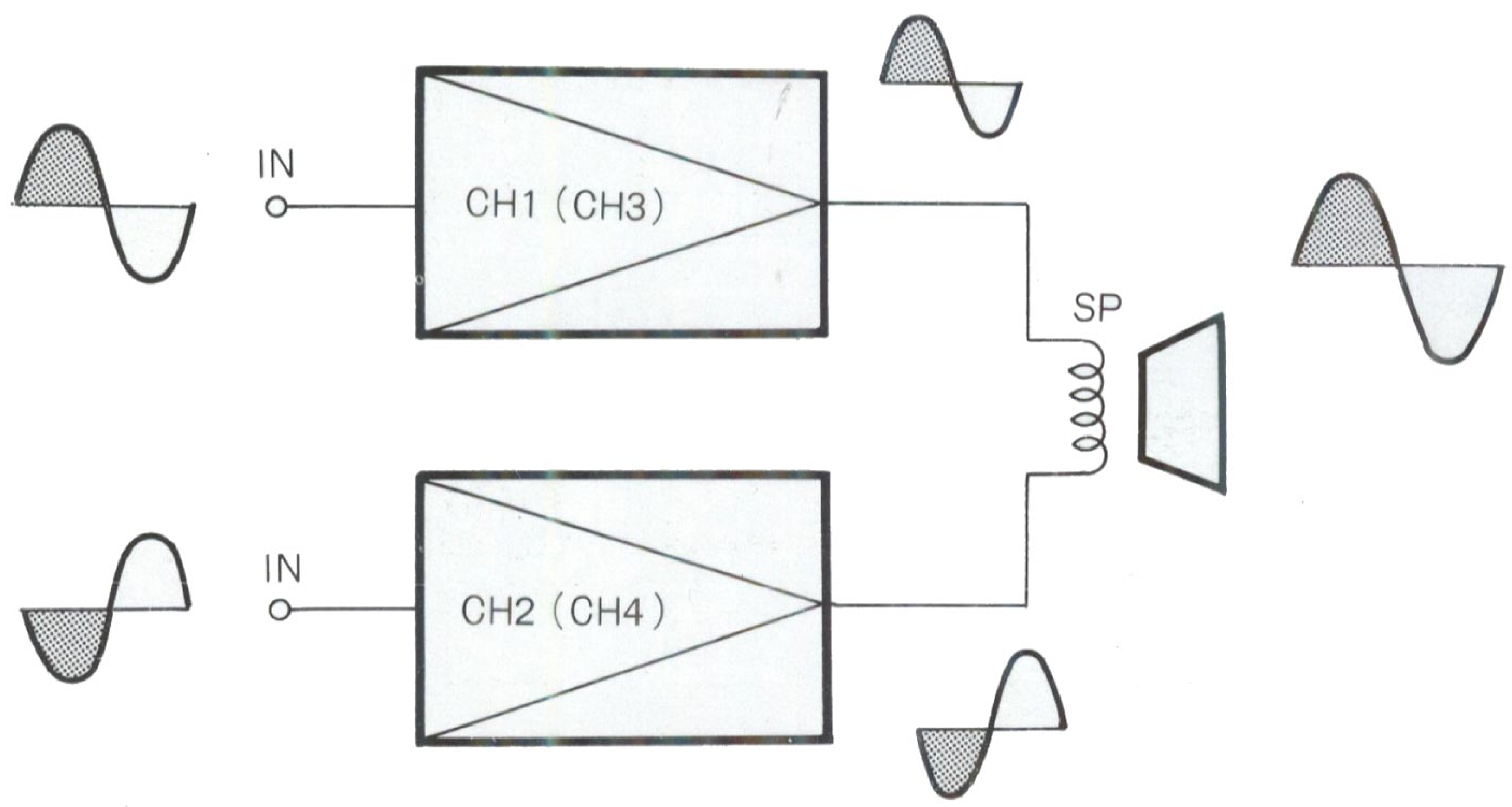


Fig. 1

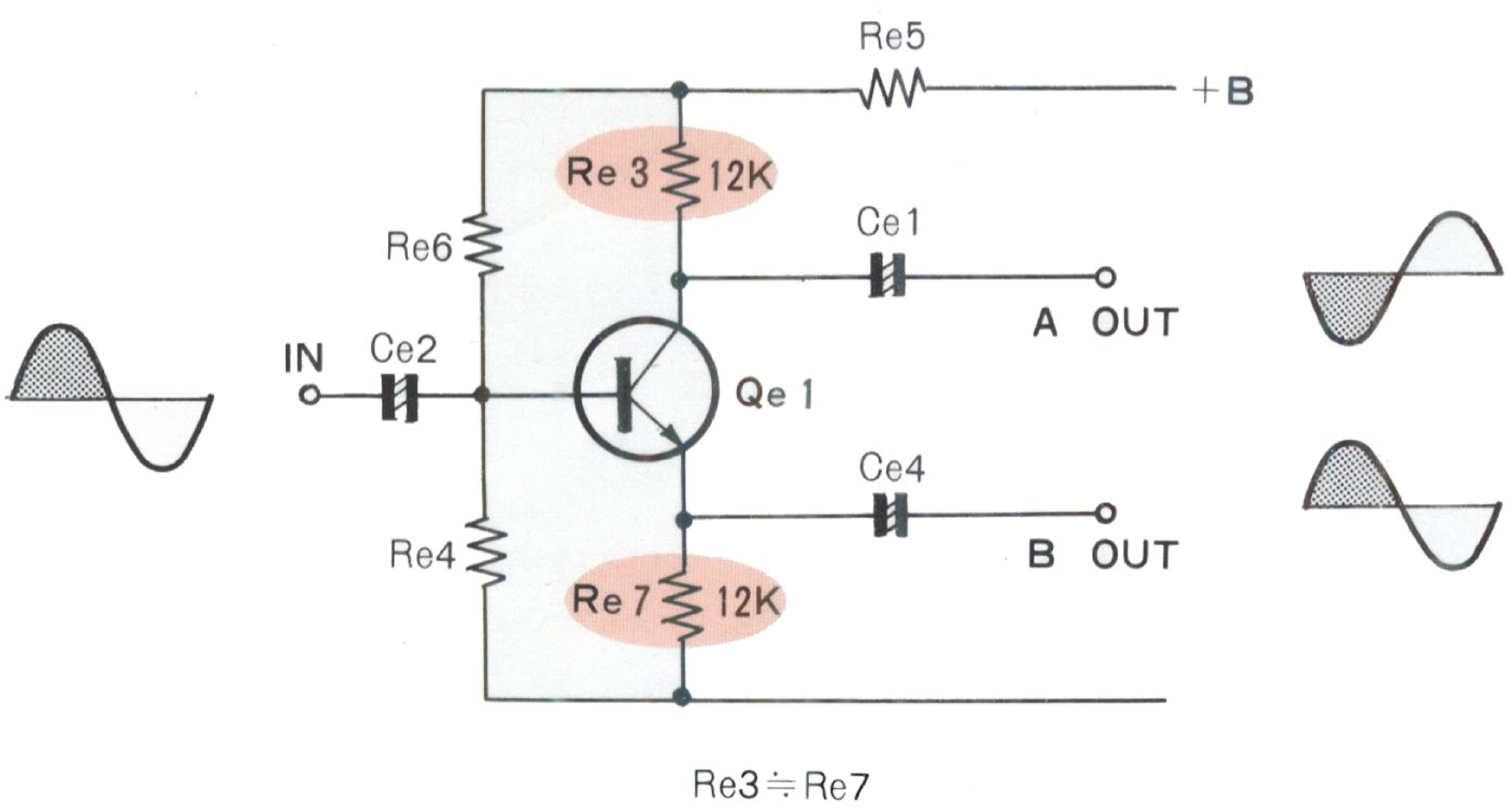
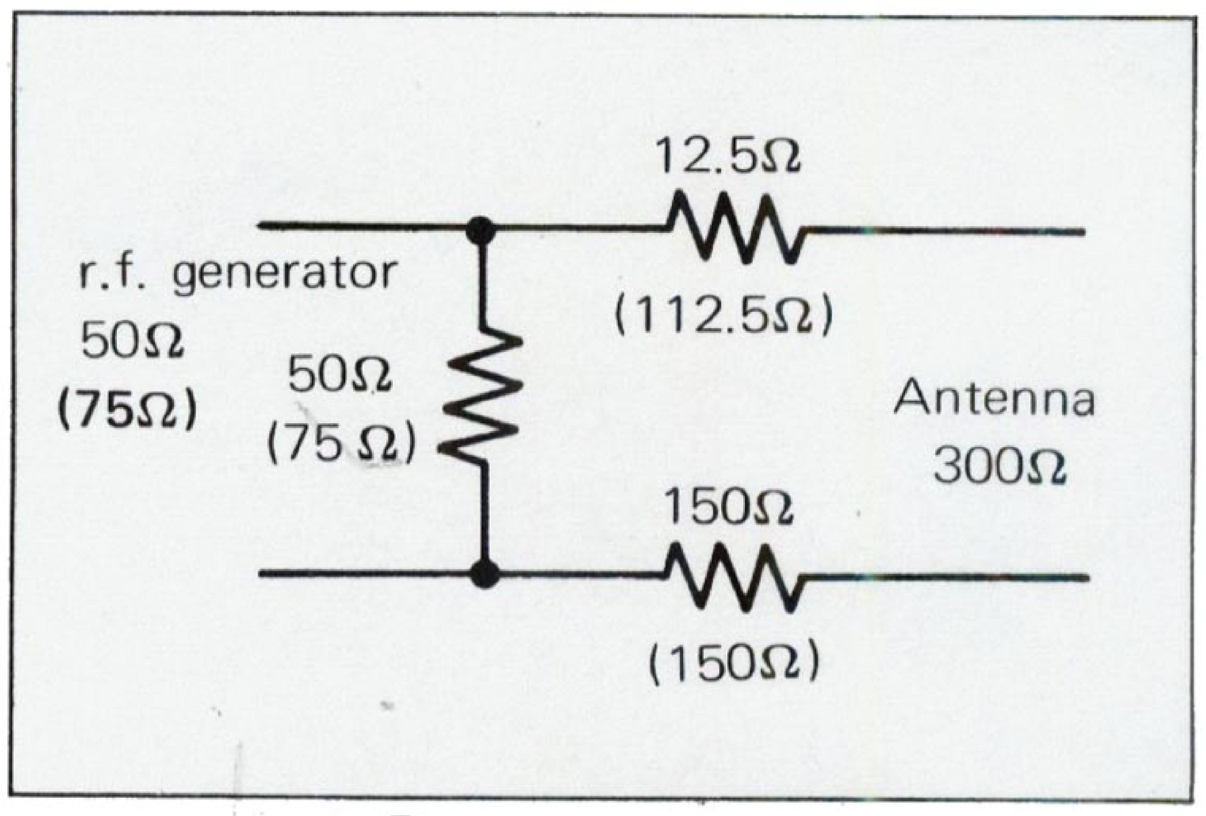


Fig. 2

ADJUSTMENT OF TUNER SECTION



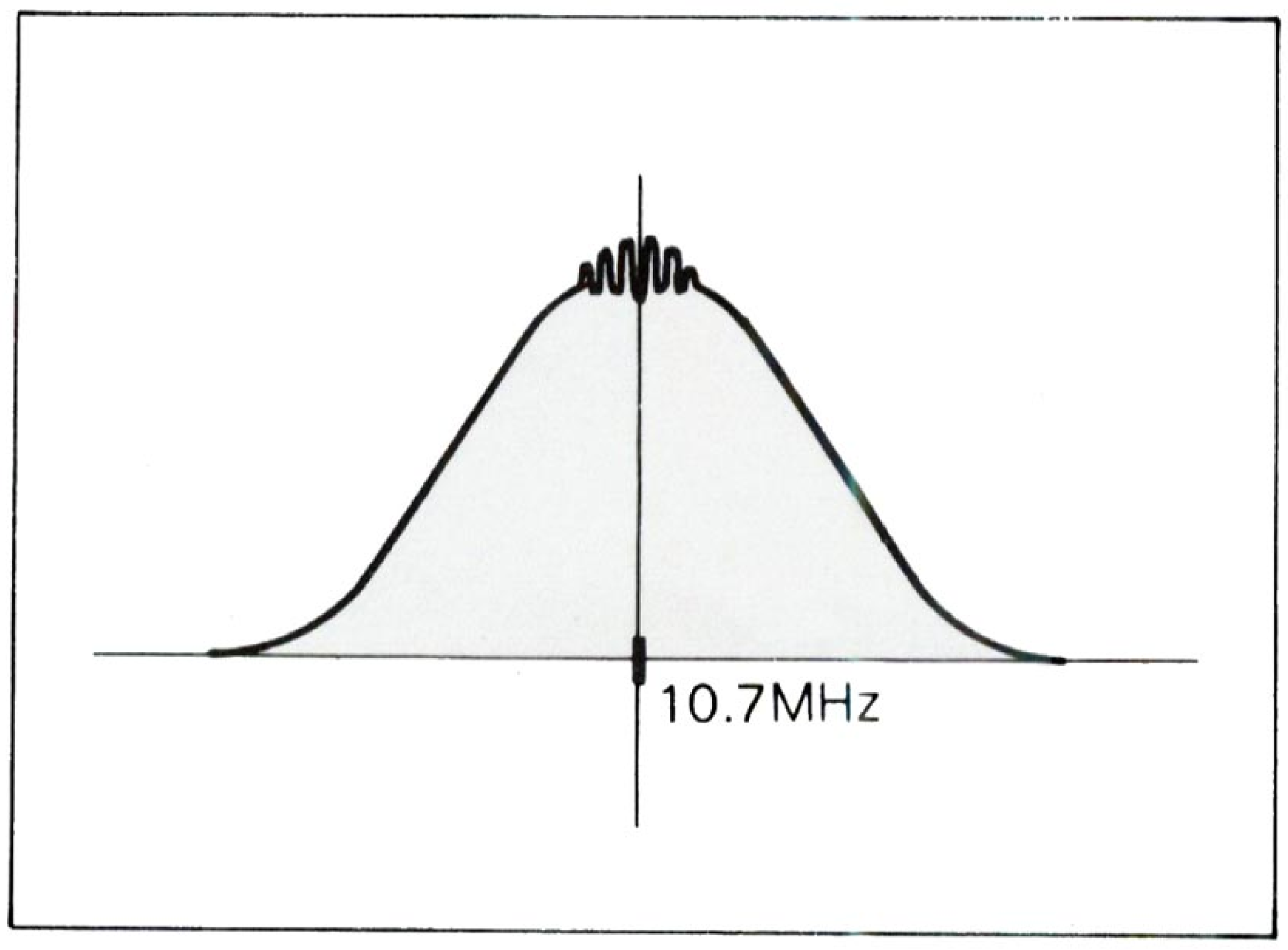
▲ Dummy antenna

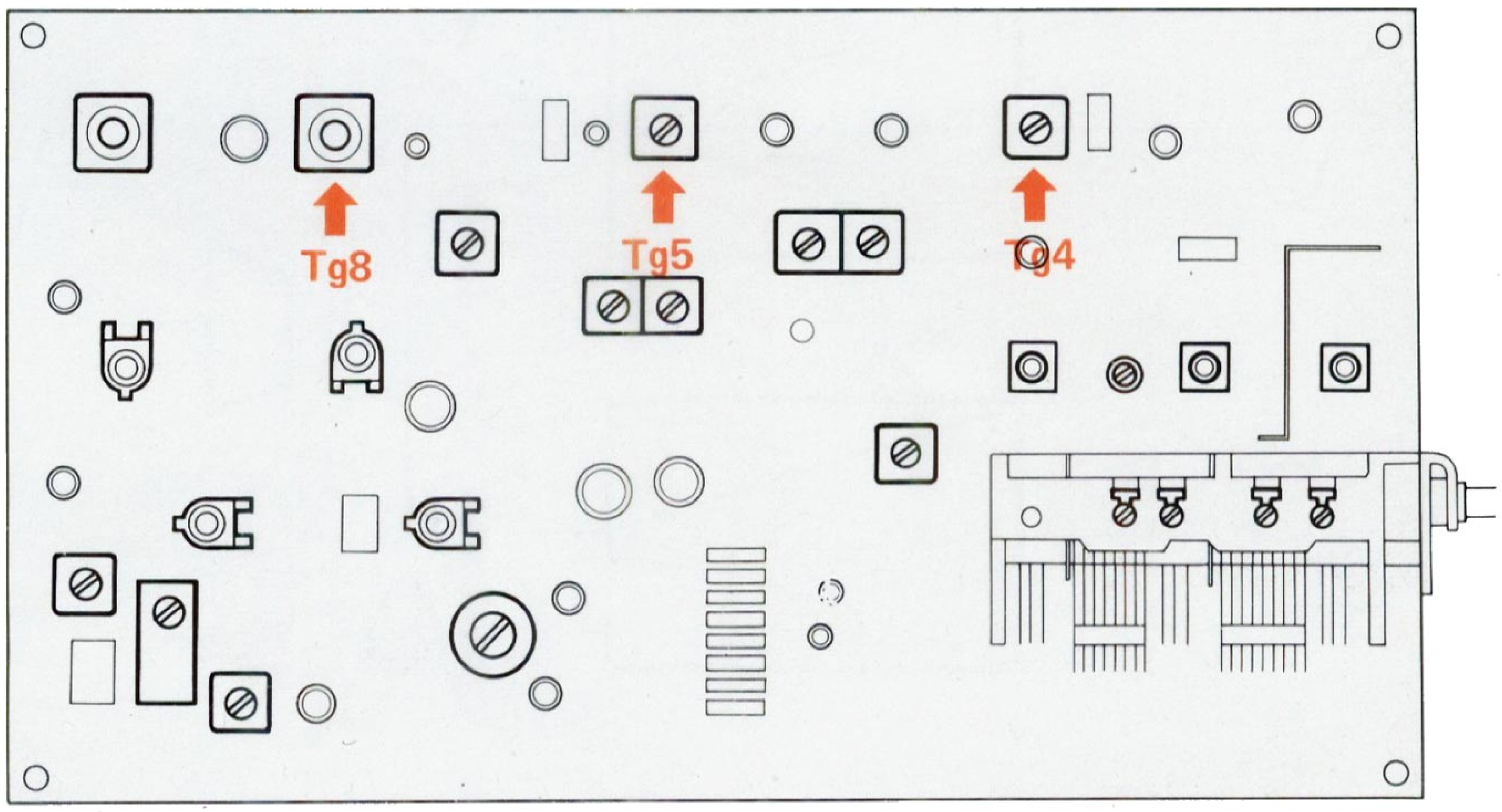
BEFORE ADJUSTMENT

* Tuning dial is set to the proper point corresponding to no radio stations.
* The sweep and the r.f. generator are set to the lowest response possible on oscilloscope.
* When connecting the r.f. generator to the antenna terminal using the dummy antenna . . . . refer to figure.
* Use the insulated screwdriver adjusting the i.f.t..
* SELECTOR is FM position.
* FM MUTING is OFF position unless it is required.
* Test point shown in the schematic diagram.

ADJUSTING FM-IFT

1. Connect the sweep generator set to 10.7 MHz to test point 1 (TP1) through a capacitor 5pF.
2. Connect the oscilloscope to test point 2.
3. Adjust i. f. t. Tg4, 5, 8 so that the output is at maximum.





ADJUSTING DISCRIMINATOR

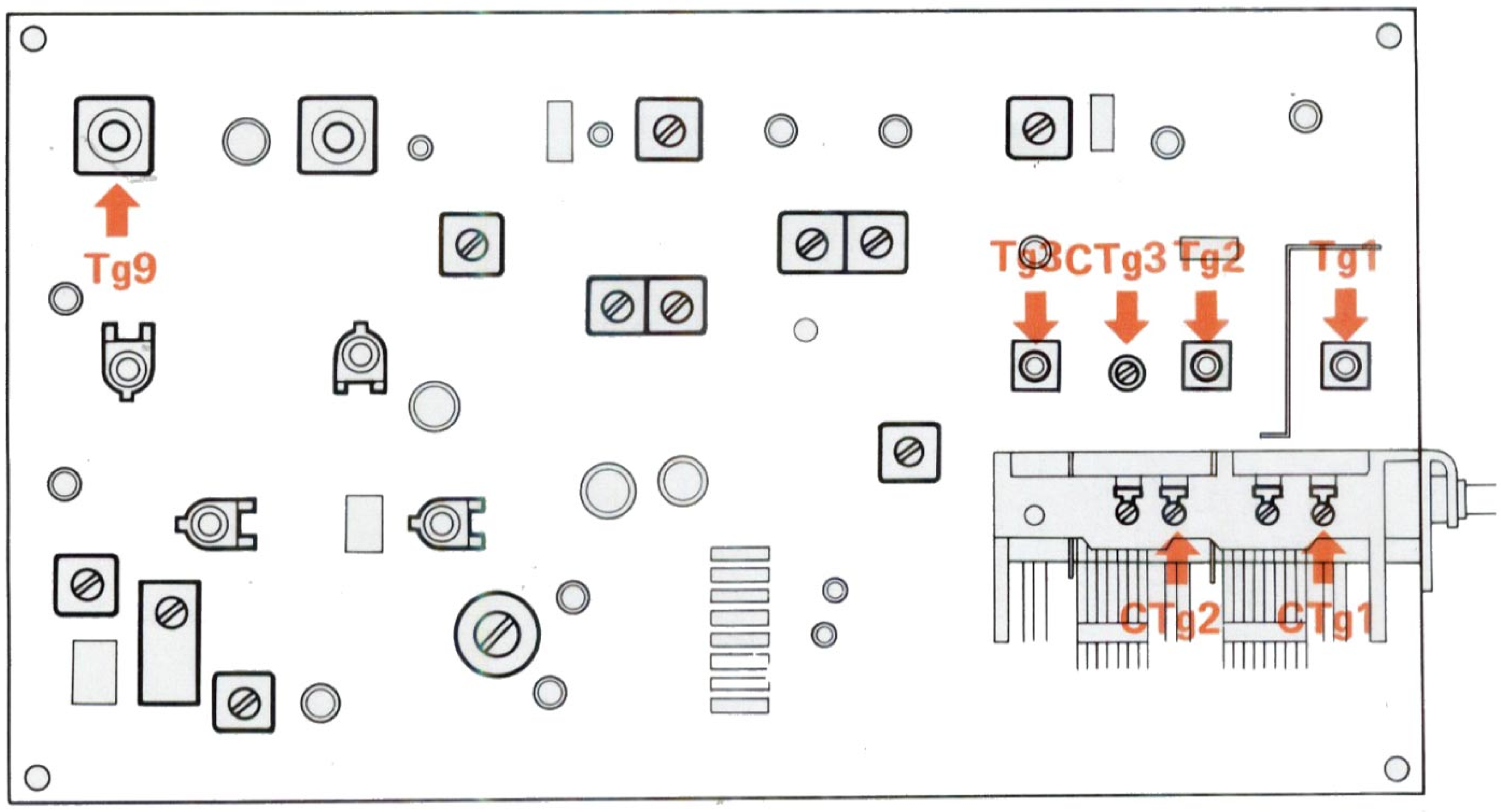
1. Connect the sweep generator set to 10.7 MHz to test point 1 through a capacitor.
2. Connect the oscilloscope to test point 3.
3. Adjust the discriminator coil Tg9 of the secondary so that the output is symmetrical.

ADJUSTING TRACKING

1. Connect the r.f. generator to antenna terminal through a dummy antenna.
2. Set the r.f. generator to 90 MHz, the modulation of 400 Hz, the deviation of 75 kHz, and the input of 10 μV.
3. Connect the VTVM to rec jack.
4. Set the dial pointer to 90 MHz on the dial calibrations.
5. Adjust the core of r. f. t. Tg1, 2 and local oscillator coil Tg3 so that the output is at maximum.

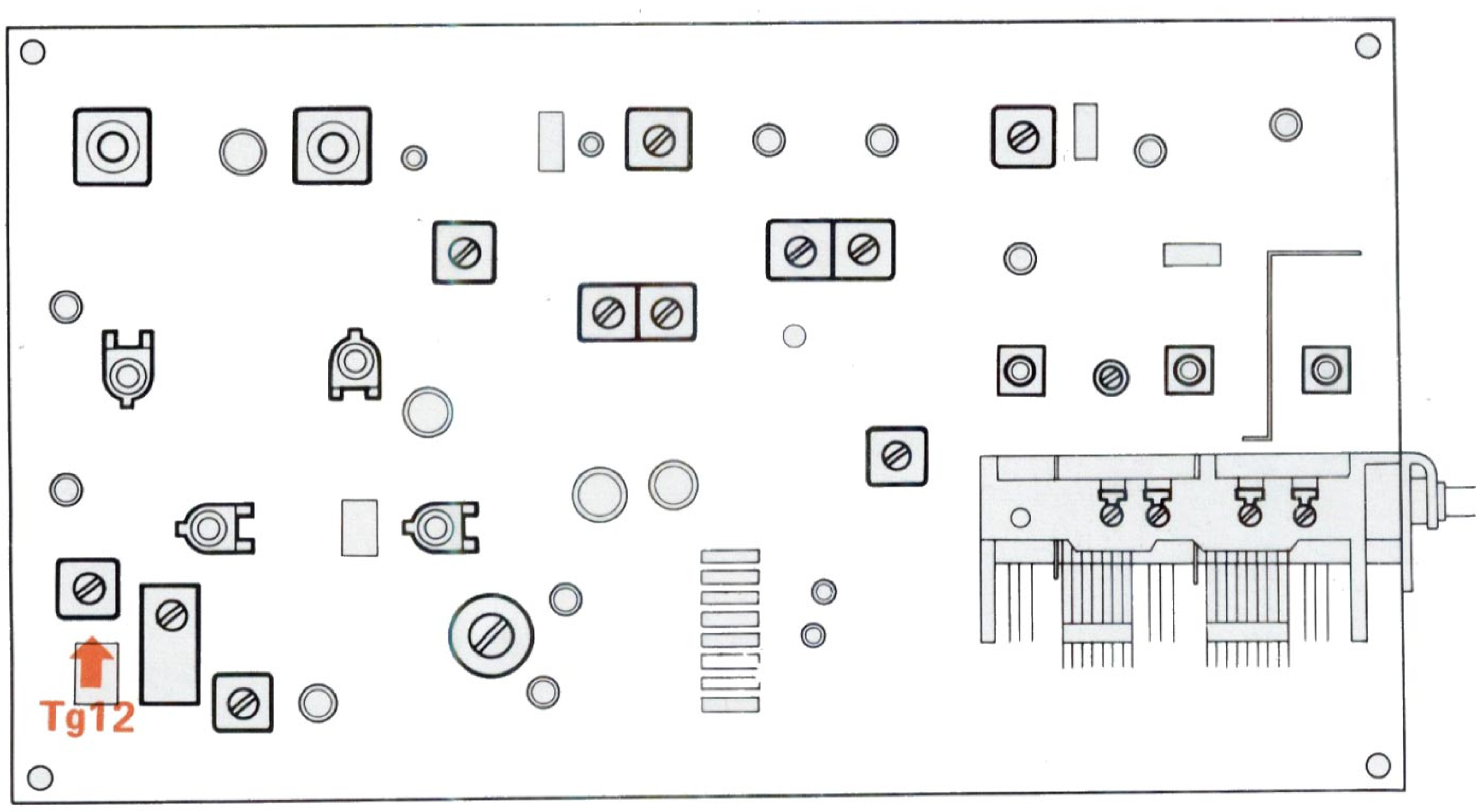
ADJUSTMENT OF TUNER SECTION

1. Set the r.f. generator to 106 MHz, the modulation of 400 Hz, the deviation of 75 kHz and input of 10 μV.
2. Set the dial pointer to 106 MHz on the dial calibrations.
3. Adjust trimmers CTg1 ~ 3 so that the output is at maximum.



ADJUSTING SCA FILTER

1. Connect the audio generator set to 67 kHz to test point 3.
2. Connect the VTVM to test point 4.
3. Adjust the core of Tg12 so that the output is at minimum.



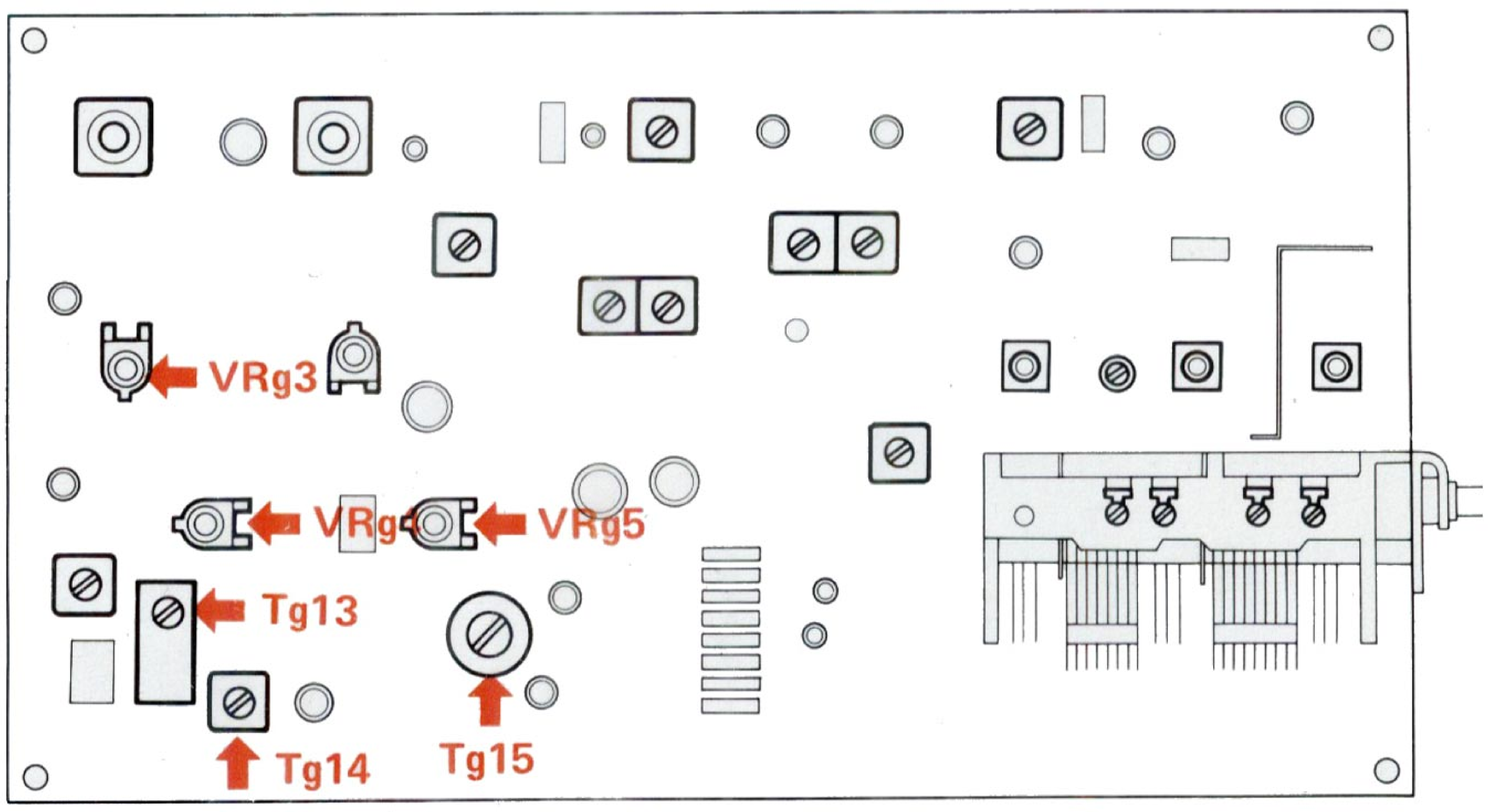
ADJUSTMENT OF TUNER SECTION

ADJUSTING OUTPUT LEVEL

1. Connect the r.f. generator set to 98 MHz, modulation of 400 Hz, deviation of 75 kHz, to antenna terminal through a dummy antenna and VTVM to rec jack.
2. Adjust the potentiometer VRg3 so that the output is 1.5V.

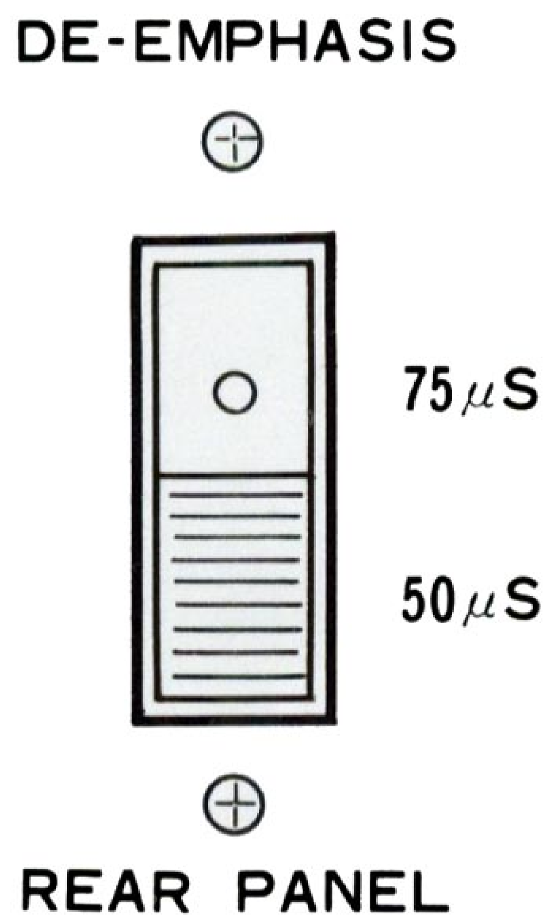
ADJUSTING MPX

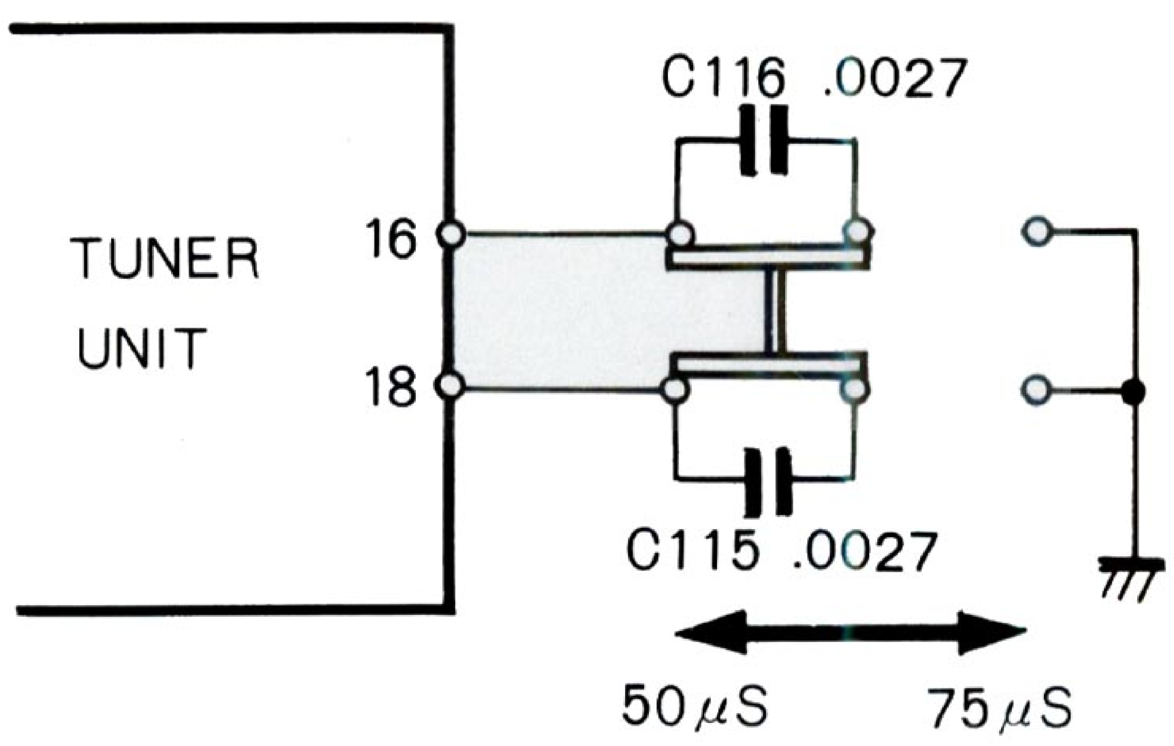
1. Set the MPX generator to the followings.
   SELECTOR → A + B   PHASE → NORMAL
   MODULATION → 400 Hz   DEVIATION → 67.5 kHz
   OUTPUT → EXT jack of r.f. generator
2. Connect the r.f. generator to antenna terminal and the VTVM to test point 5.
3. Adjust the core of Tg13, 14 so that the output is at maximum.
4. Switch the selector of MPX generator to A − B (reverse).
5. Remove the VTVM to rec jack.
6. Adjust the core of Tg15 so that the output is at maximum.
7. Switch the selector and deviation of MPX generator to A + B and 40 kHz.
8. Adjust potentiometer VRg5 so that the stereo indicator is on.
9. Switch the selector of the MPX generator to A (R).
10. Adjust the potentiometer VRg4 so that left output is at minimum.
11. Switch the selector of the MPX generator to B (L).
12. Adjust the potentiometer VRg4 so that the right output is at minimum.



NOTE: In case of difference between right and left channel, set the potentiometer VRg4 to average.

ON DE-EMPHASIS SWITCH: Some receiver have been set at the factory to work according to DE-EMPHASIS generally available in the area happens to differ, adjustment can be made simply by switching the DE-EMPHASIS switch as follows.





ADJUSTING AM-IFT

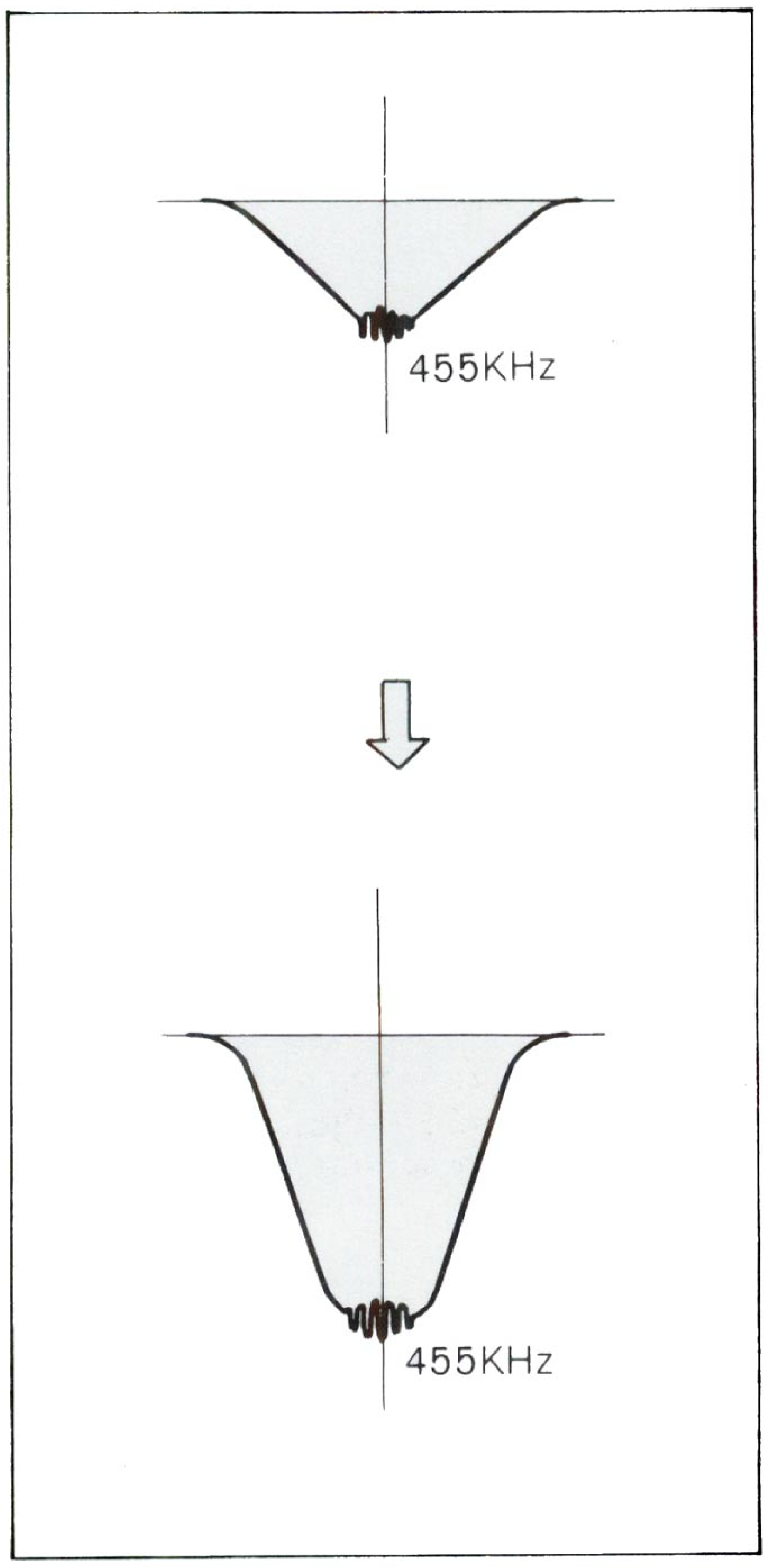
1. Connect the sweep generator set to 455 kHz to test point 6.
2. Connect the oscilloscope to the test point 7.
3. Adjust the core of i. f. t. Tg10, 6, 7 so that the output is at maximum.

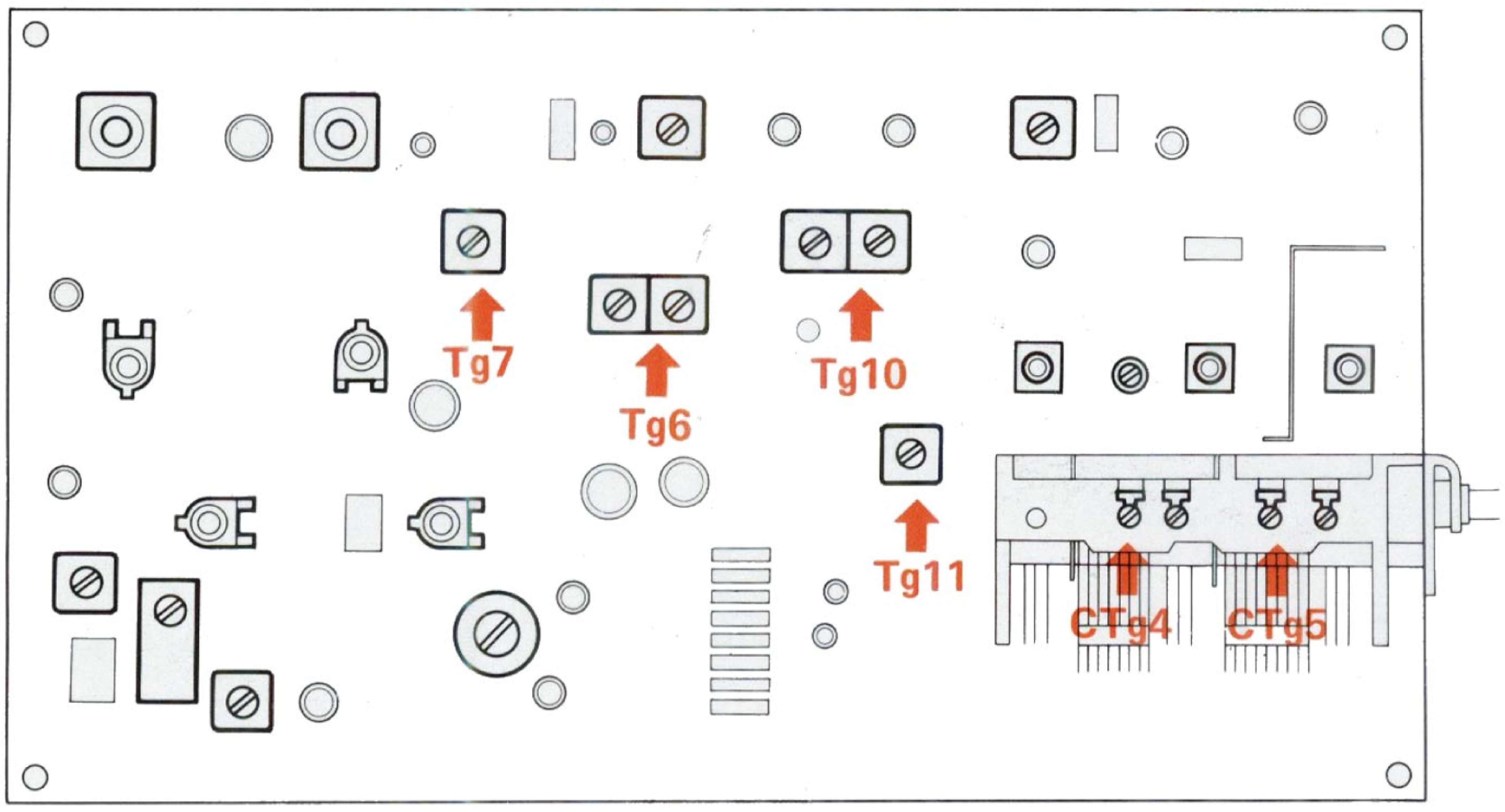
ADJUSTMENT OF TUNER SECTION

ADJUSTING TRACKING

1. Connect the r.f. generator set to 600 kHz, modulation of 30% at 400 Hz to antenna terminal.
2. Connect the VTVM to the rec jack.
3. Set the dial pointer to the 600 kHz on the dial calibrations.
4. Adjust the OSC-trans, Tg11 and ferrite antenna so that the output is at maximum.

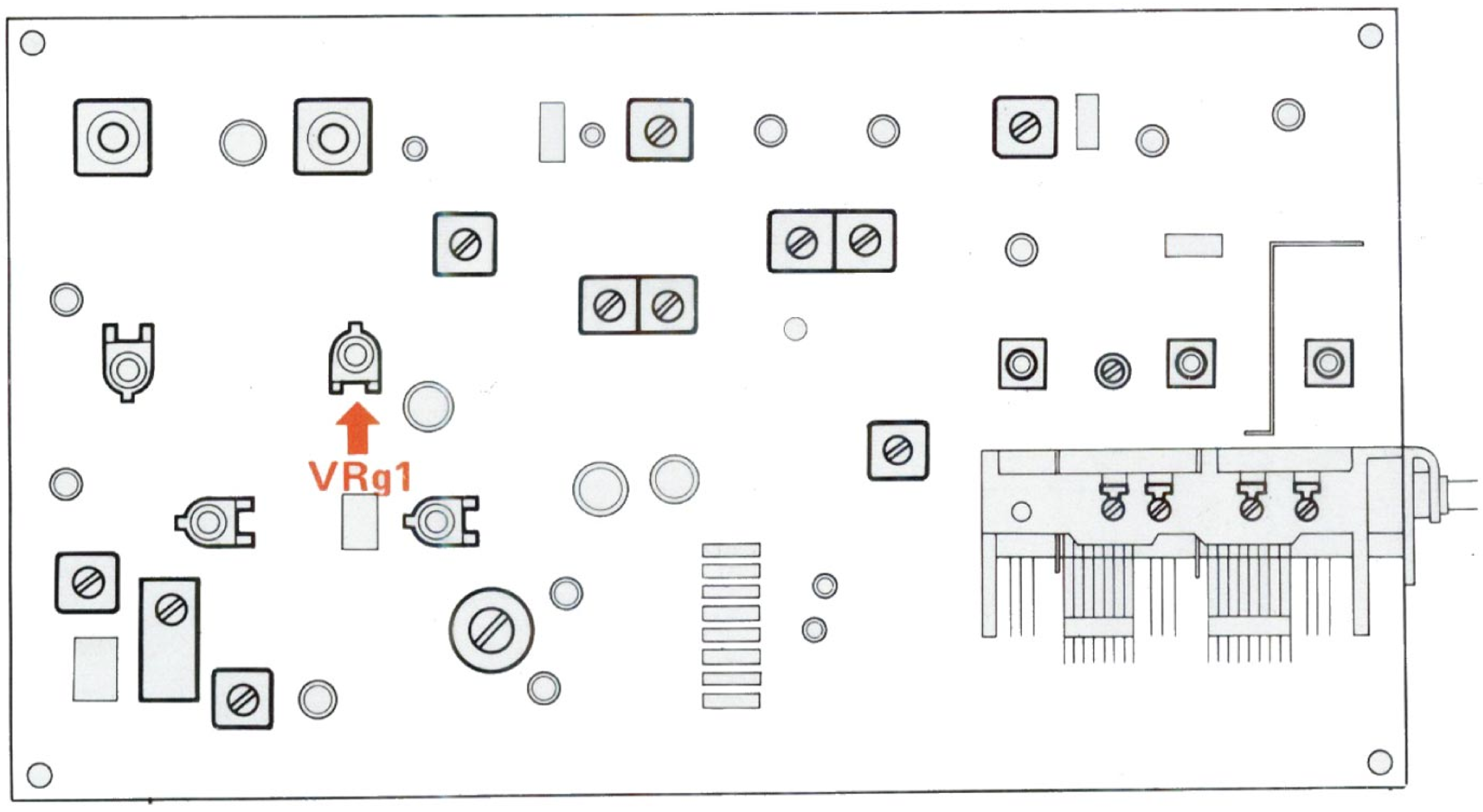
1. Connect the r.f. generator set to 1,400 kHz, modulation of 30% at 400 Hz to antenna terminal.
2. Connect the VTVM to the rec jack.
3. Set the dial pointer to the 1,400 kHz on the dial calibrations.
4. Adjust the trimmer CTg4, 5 so that the output is at maximum.





ADJUSTING METER

1. Connect the r.f. generator to antenna terminal.
2. Set the dial pointer to the 1,000 kHz on the dial calibrations.
3. Adjust potentiometer VRg1 so that the signal meter indicates "5".



ADJUSTMENT OF AUDIO SECTION

SQ CIRCUIT

In this set the logic system is replaced by the blend system for the SQ circuit. The amount of blending is 10% for the front and 40% for the rear. The cross-talk between channels is 20 dB for the front and 8 dB for the rear. The cross-talk is improved by 0 to more than 5 dB between the front center and the rear center.

LEVEL CHECK FOR RM AND SQ

1. Set the balance and tone controls to the center position respectively.
2. Connect AG to L or R of the AUX terminal and apply output of 200 mV at 1 kHz.
3. Connect VTVM to the loudspeaker terminal and adjust the main volume control so that the output level can be maintained at 2V/8Ω (0 dB).
4. Operation is perfect if the output level at each loudspeaker terminal is maintained at the tabulated value.

▼RM

MODE	input jack (1KHz, 200mV)	output level (2V/8Ω = 0 dB)
RM	AUX Lch	L_F ● ; R_F −7.7±1.5dB ; L_R 0±1.5dB ; R_R −7.7±1.5dB
	AUX Rch	L_F −7.7±1.5dB ; R_F ● ; L_R −7.7±1.5dB ; R_R 0±1.5dB

▼SQ

MODE	input jack (1KHz, 200mV)	output level (2V/8Ω = 0 dB)
SQ	AUX Lch	L_F ● ; R_F −20±3 dB ; L_R −4.5±1.5dB ; R_R −4.5±1.5dB
	AUX Rch	L_F −20±3 dB ; R_F ● ; L_R −4.5±1.5dB ; R_R −4.5±1.5dB

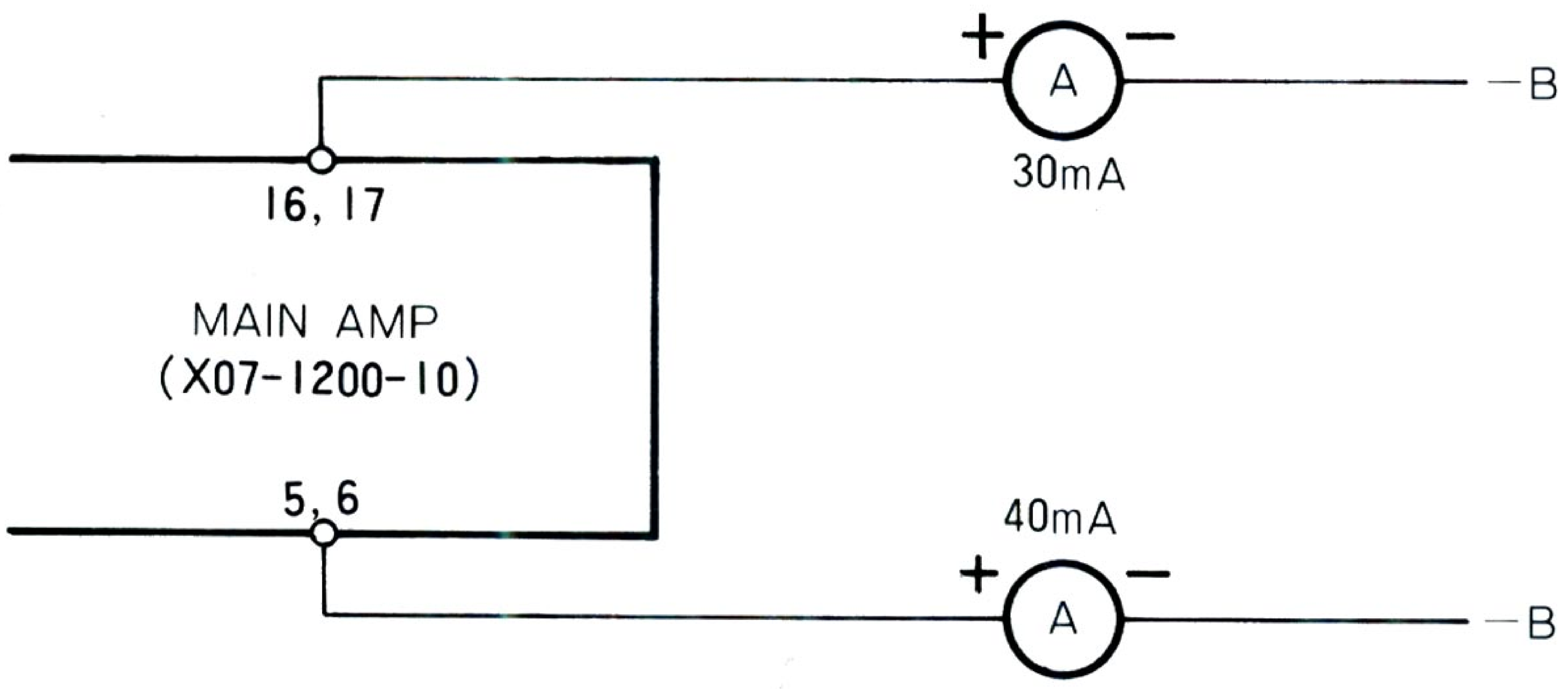
● input jack

ADJUSTMENT OF AUDIO SECTION/REPLACEMENT OF POWER TRANSISTOR

BIAS ADJUSTMENT

WHEN USING TESTER AS AMMETER

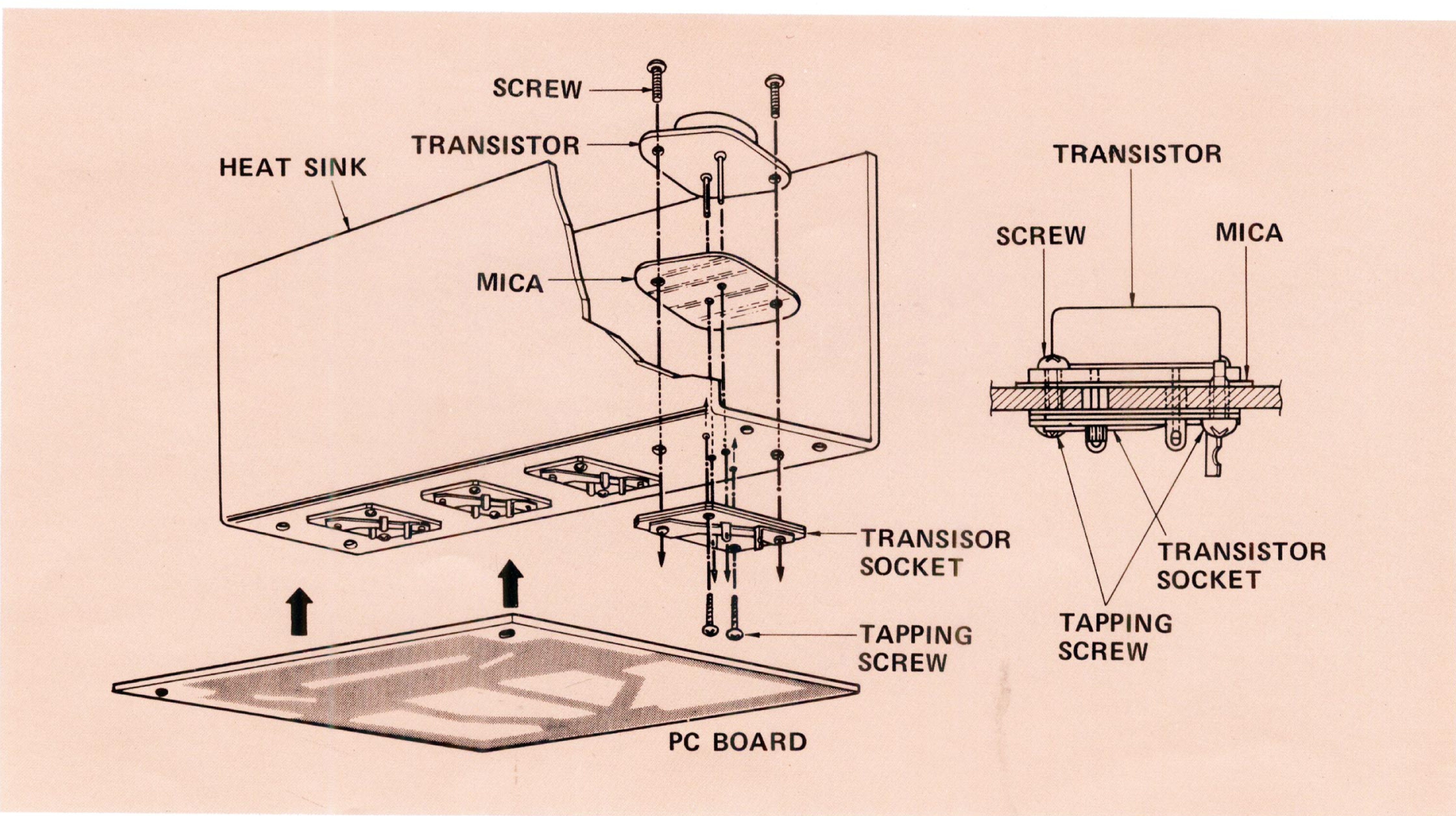
1. Set PC trimmer potentiometer VRe1, 2 to its min.
2. Couple tester (as ammeter) to terminal 5 or 6 and negative power supply lead.
3. Adjust PC trimmer potentiometer VRe2 so that tester reading is 40mA.
4. Remove tester to terminal 16 or 17 and negative power supply lead.
5. Adjust PC trimmer potentiometer VRe1 so that tester reading is 30mA.



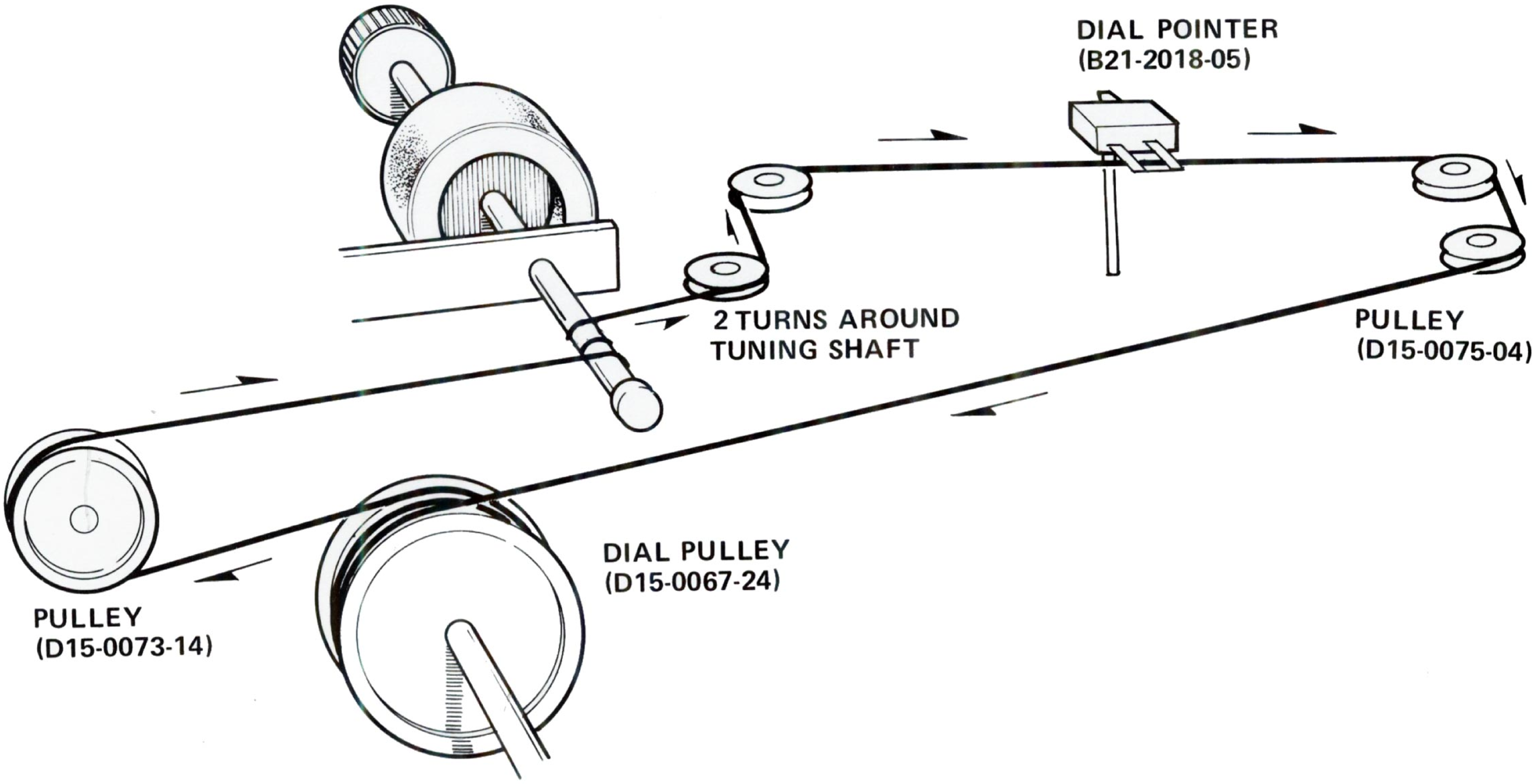
REPLACEMENT OF POWER TRANSISTOR

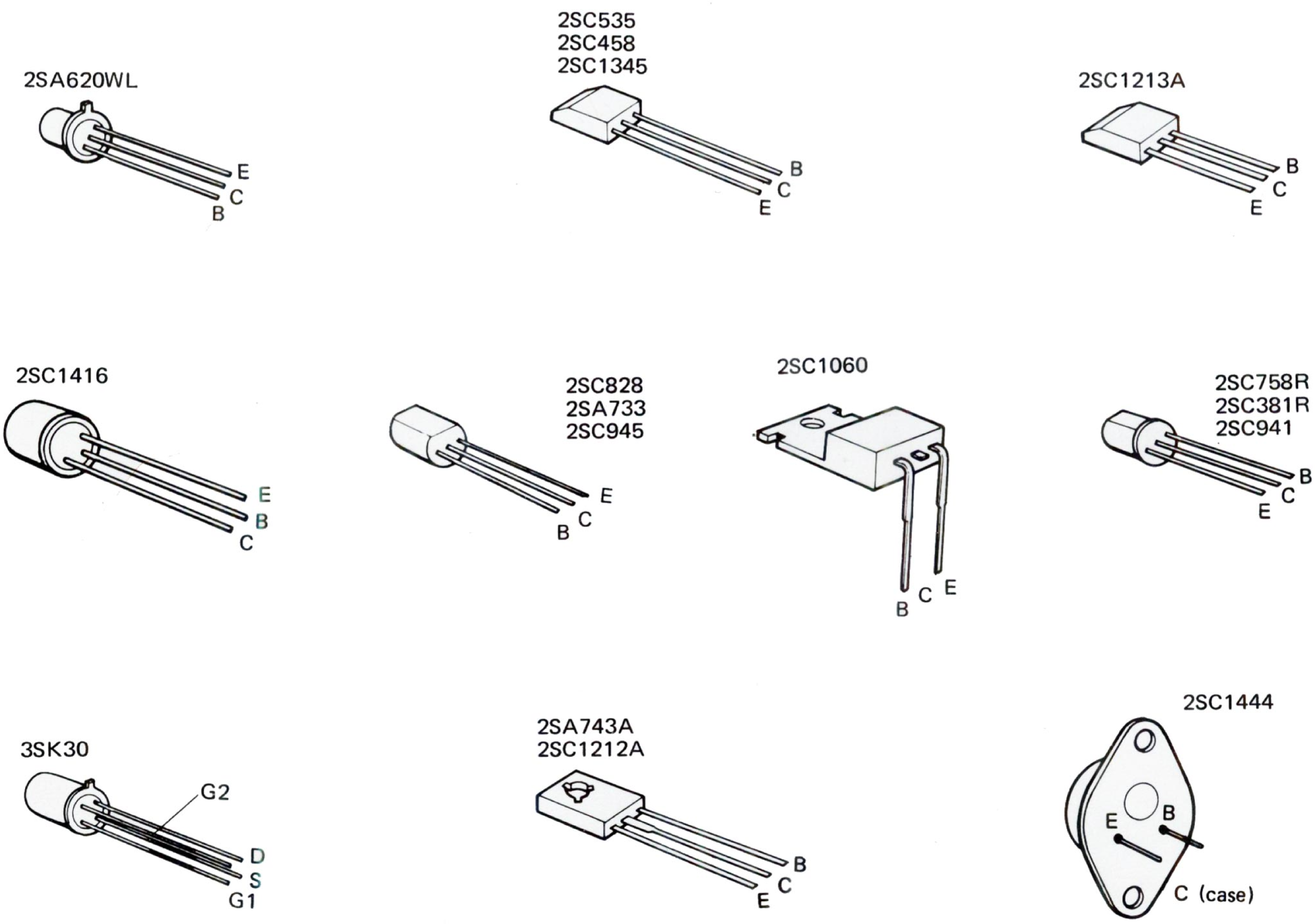
1. Remove screws (not tapping screw).
2. Replace the power transistor with the new.
   At this time, don't forget to spread silicone grease on faces of mica.
3. Fix the power transistor with screw on the heat sink.
4. Check the transistor is not in contact with heat sink.

NOTES:
1. Tapping screw holds the transistor socket. Don't remove it without necessity.
2. Before fixing the transistor, in the case of replacing transistor socket, fix the transistor socket.



CORD STRINGING/SEMICONDUCTOR LEADS





SUBSTITUTION SEMICONDUCTOR

Semiconductor	Substitution semiconductor
(X00-1340-10)	
2SC1212A	2SC497, 2SC484
2SC1060	–
2SC945 (Q)	2SC1213A (C), 2SC984 (C)
(X05-1080-14)	
μPC555A	μA703C, CS5995
3SK30 (B) or (C)	2SK-19
2SC785 (R)	–
2SC381 (R)	2SC535 (A) or (B), 2SC460, SE-3001, 2SC380
2SC941 (O)	2SC381 (O)
2SC945 (Q) or (R)	2SC1213A
2SC458 (D)	2SC1000 (GR), 2SC1345 (D)
2SA733 (Q) or (R)	2SA620WL (4) or (5)
2SC1213A (C)	2SC734 (Y), 2SC984 (C)
2SC535 (B)	2SC381 (R)
(X07-1200-10)	
2SA743A (B) or (C)	2SA497, 2SA484
2SA620WL (5)	2SA493BL
2SC1345 (D)	2SC1000 (GR), 2SC1416A (GR)
2SC1212A (B) or (C)	2SC484, 2SC497, 2SC708A
2SC1213A (B) or (C)	2SC984, 2SC734, 2SC1212A
2SC1444	–
(X08-1180-00)	
2SC1416A (GR)	2SC1000 (GR), 2SC1345 (D)
2SC1416A (GR) or (BL)	2SC1000 (GR) or (BL), 2SC1345 (E) or (D)
(X11-1150-00)	
2SC1345 (D) or (E)	2SC1000 (GR) or (BL), 2SC1416A (GR) or (BL)
(X13-1480-10)	
2SC1416 (GR) or (BL)	2SC1000 (GR) or (BL), 2SC1345 (D) or (E)
2SA733 (Q) or (R)	2SA673A (B) or (C)
2SC828A (B) or (R)	2SC1213A (B) or (C)
(X15-1130-00)	
2SC1345 (D) or (E)	2SC1000 (GR) or (BL), 2SC1416A (GR) or (BL)

PARTS LIST

Ref. No.	Parts No.	Description	Remarks
		CAPACITOR	
C101	CE04W0J221	Electrolytic 220μF 6.3WV	
C102	CQ93M1H224M	Mylar 0.22μF ±20%	
C301, 302	C90-0176-05	Electrolytic 8200μF 35WV	
C303	C90-0145-05	Polyester 0.01μF ±20% (UL), (CSA)	
C304	CE02W1H471	Electrolytic 470μF 50WV	
–	CK45F1H103Z	Ceramic 0.01μF +80%, –20% x 6	
		RESISTOR	
R302	RC05GF2H270K	Carbon 27Ω ±10% 1/2W	
R303	RC05GF2H332K	Carbon 3.3kΩ ±10% 1/2W	
R401~404	PD14BY2E123J	Carbon 12kΩ ±5% 1/4W	
R405	PD14BY2E103J	Carbon 10kΩ ±5% 1/4W	
R406~409	PD14BY2B104J	Carbon 100kΩ ±5% 1/8W	
R410~413	PD14BY2B394J	Carbon 390kΩ ±5% 1/8W	
R414~417	PD14BY2B222J	Carbon 2.2kΩ ±5% 1/8W	
R418	PD14BY2E103J	Carbon 10kΩ ±5% 1/4W	
R419, 420	PD14BY2E562J	Carbon 5.6kΩ ±5% 1/4W	
R421~424	PD14BY2E101J	Carbon 100Ω ±5% 1/4W	
		SEMICONDUCTOR	
D1, 2		V05B	
D3		V06B	
		SWITCH	
S1	S01-5006-15	Rotary (INPUT)	
S2	S01-5007-05	Rotary (MODE)	
S3	S01-2019-05	Rotary (AMP MODE)	
		MISCELLANEOUS	
–	A01-0210-12	Case	
–	A10-0369-11	Chassis	
–	A20-0693-12	Panel	
–	A21-0150-22	Dress panel	
–	A22-0133-11	Sub panel	
–	A30-0077-13	Dial back board	
–	A33-0024-03	Reflector	
–	A33-0025-04	Reflector (small)	
–	A40-0119-13	Bottom plate	
–	A44-0013-04	Cover plate	
–	A70-0071-05	Pilot lamp assembly unit	
–	A70-0073-05	Pilot lamp assembly unit (for Dial)	
–	B01-0077-02	Escutcheon	
–	B07-0084-04	Space x 6	
–	B21-2018-05	Dial pointer	
–	B23-3007-04	Selector position board	
–	B23-6001-04	Mode position board	
–	B30-0067-15	Pilot lamp (150mA) x 2	
–	B30-0075-05	Pilot lamp (300mA) x 4	
–	B30-0084-05	Pilot lamp (50mA) x 7	
–	B31-0162-05	Signal meter	
–	B42-0009-04	Passed sticker	
–	B52-0154-00	Schematic diagram	
–	B58-0172-04	Volatile matter caution card	
–	D01-0009-15	Flywheel	
–	D15-0067-24	Dial pulley	
–	D15-0073-14	Pulley	

PARTS LIST

Ref. No.	Parts No.	Description	Remarks
–	D15-0075-04	Pulley (small) x 4	
–	D20-0097-13	Dial shaft	
–	D20-0099-03	Dial shaft assembly	
–	E08-0221-05	AC outlet	
–	E09-0209-05	Mini-connector (2P)	
–	E09-0407-05	Mini-connector (4P)	
–	E09-0607-05	Mini-connector (6P)	
–	E10-1810-05	PC board connector	
–	E10-2205-05	PC board connector x 2	
–	E11-0002-05	Phone jack x 2	
–	E13-0104-05	Pin jack (1P)	
–	E13-0409-15	Pin jack (with DIN) x 2	
–	E13-0604-03	Pin jack (6P)	
–	E20-0418-03	Terminal strips (4P)	
–	E20-0807-03	Terminal strips (8P)	
–	F10-0319-04	Shield plate	
–	F10-0324-04	Shield plate	
–	F11-0185-03	Shield case	
–	G01-0044-04	Dial spring	
–	J02-0049-14	Leg x 4	
–	J19-0351-03	Front glass stopper	
–	J19-0352-04	Meter stopper	
–	J19-0353-14	Dial calibrations stopper (L)	
–	J19-0354-14	Dial calibrations stopper (R)	
–	J19-0355-04	Power supply unit stopper	
–	J21-0192-04	Amp stopper x 2	
–	J21-0806-14	Ant. mounting hardware	
–	J21-1137-04	Switch mounting hardware	
–	J21-1138-04	Socket mounting hardware	
–	J21-1139-04	Phone jack mounting hardware	
–	J21-1141-04	L shaped hardware x 2	
–	J25-0768-14	PC board (DIN) x 2	
–	J25-0921-04	PC board	
–	J25-0927-05	PC board	
–	J25-0928-05	PC board (Dial)	
–	K20-0086-04	Knob (BTL)	
–	K23-0119-03	Knob (MODE)	
–	K23-0121-13	Knob (TUNING)	
–	K23-0124-03	Knob (INPUT)	
–	K23-0133-04	Knob (TONE, outside) x 3	
–	K23-0138-03	Knob (VOLUME, inside)	
–	K23-0139-03	Knob (VOLUME, outside)	
–	K23-0140-03	Knob (TONE, inside) x 3	
–	K29-0131-04	Knob (Pushbutton switch) x 5	
–	K29-0165-04	Knob (POWER)	
VR1	R11-5010-05	Potentiometer 100kΩ (B) x 4	
–	T90-0002-05	FM indoor antenna	
–	T90-0026-15	Ferrite antenna	
–	X07-1200-10	Main amp unit x 2	
–	X08-1180-00	Preamp unit	

Ref. No.	Parts No.	Description	Remarks
–	X11-1150-00	Tone amp unit	
–	X13-1480-10	Protection unit	
–	X13-1490-10	Pushbutton SW unit	
–	X15-1130-00	SQ, RM unit	

SUB PARTS LIST

Ref. No.	U. S. A. (K)	Canada (P)	PX (U)	Australia (X)	Europe (W)	England (T)	South Africa (S)	Other area (M)	Description
–	A20-0691-22	A20-0691-22	A20-0691-22	A20-0691-22	A20-0691-22	A20-0697-22	A20-0691-22	A20-0691-22	Panel assembly
–	A23-0413-22	A23-0413-22	A23-0414-22	A23-0416-22	A23-0415-22	A23-0416-22	A23-0416-22	A23-0414-22	Rear panel
–	B10-0125-13	B10-0125-13	B10-0125-13	B10-0125-13	B10-0125-13	B10-0126-13	B10-0125-13	B10-0125-13	Front glass
–	B20-0283-13	B20-0283-13	B20-0283-13	B20-0283-13	B20-0283-13	B20-0283-13	B20-0284-13	B20-0283-13	Dial calibrations
–	B40-0827-04	B40-0828-04	B40-0829-04	B40-0830-04	B40-0831-04	B40-0832-04	B40-0830-04	B40-0830-04	Model name plate
–	–	–	–	–	B42-0024-04	–	–	–	SEV sticker
–	–	–	–	–	B42-0262-24	–	–	–	SEV sticker
–	B42-0359-04 x 2	B42-0359-04	–	–	–	–	–	–	Caution sticker
–	B46-0002-00	B46-0021-00	B46-0022-00	–	–	–	–	–	Warranty card
–	–	–	B46-0023-00	–	–	–	–	–	Warranty card
–	B47-0043-00	B47-0043-00	B47-0043-00	B47-0043-00	B47-0043-00	B47-0044-00	B47-0043-00	B47-0043-00	Four channel card
–	B50-1029-00	B50-1029-00	B50-1030-00	B50-1030-00	B50-1030-00	B50-1031-00	B50-1030-00	B50-1030-00	Instruction manual
–	B58-0043-00	B58-0043-00	–	–	–	–	–	–	Carton case caution card
–	–	–	B58-0139-00	B58-0003-00	B58-0156-00	B58-0003-00	B58-0003-00	B58-0003-00	Power supply caution card
–	–	–	B58-0144-00	B58-0101-00	B58-0157-00	B58-0101-00	B58-0101-00	B58-0101-00	Power voltage selector caution card
–	–	–	B58-0146-00	B58-0108-00	B58-0108-00	B58-0108-00	B58-0108-00	B58-0108-00	Spare fuse caution card
–	–	–	B59-0018-00	–	–	–	–	–	KENWOOD service stations' list
–	–	–	D32-0021-04	D32-0021-04	D32-0021-04x2	D32-0021-04	D32-0021-04	D32-0021-04	Switch stopper
–	E30-0181-05	E30-0181-05	E30-0034-05	E30-0185-05	E30-0176-05	–	–	E30-0034-05	Power cord
–	F05-4021-05	F05-4022-05	F05-4022-05	F05-4022-05	F05-4025-05	F05-4022-05	F05-4022-05	F05-4022-05	Fuse (4A)
–	–	F05-4026-05	–	–	F05-4024-05x8	–	–	–	Fuse (4A)
–	–	–	F05-2023-05	F05-2023-05	F06-2021-05	F05-2023-05	F05-2023-05	F05-2023-05	Fuse (2A)
–	–	–	–	–	F07-0314-04	–	–	–	AC outlet cover
–	–	F19-0131-13	F19-0131-13	F19-0131-13	F19-0131-13	F19-0131-13	F19-0131-13	F19-0131-13	Wooden side board (L)
–	–	F19-0132-13	F19-0132-13	F19-0132-13	F19-0132-13	F19-0132-13	F19-0132-13	F19-0132-13	Wooden side board (R)
–	H01-1020-04	H01-1021-04	H01-1021-04	H01-1021-04	H01-1021-04	H01-1022-04	H01-1021-04	H01-1021-04	Carton case
–	H03-0257-04	H03-0258-04	–	H03-0258-04	H03-0259-04	H03-0260-04	H03-0258-04	H03-0258-04	Carton case
–	J13-0033-15	J13-0033-15	J13-0033-15	J13-0033-15	J13-0031-05	J13-0033-15	J13-1033-15	J13-0033-15	Fuse holder
–	–	–	–	–	J13-0027-05	–	–	–	Fuse holder x 8
–	L03-0087-05	L05-0031-05	L03-0087-05	L03-0087-05	L06-0020-05	L03-0087-05	L03-0087-05	L03-0087-05	Power transformer
–	R90-0097-05	–	R90-0097-05	R90-0097-05	–	R90-0097-05	R90-0097-05	R90-0097-05	Spark killer
–	–	–	S31-2001-05	S31-2001-05	S31-2001-05	S31-2001-05	S31-2001-05	S31-2001-05	Slide switch (Power voltage selector)
–	–	–	–	–	S31-2007-05	–	–	–	Slide switch (DE-EMPHASIS)
S9	S59-2022-05	S59-2022-05	S59-2024-05	S59-2024-05	S59-2023-05	S59-2024-05	S59-2024-05	S59-2024-05	Pushbutton SW (POWER)
–	X00-1340-10	X00-1340-10	X00-1340-10	X00-1340-10	X00-1340-61	X00-1340-10	X00-1340-10	X00-1340-10	Power supply unit
–	X05-1080-14	X05-1080-14	X05-1080-14	X05-1080-14	X05-1080-64	X05-1080-64	X05-1080-45	X05-1080-14	Tuner unit
C115, 116	–	–	–	–	CQ93M1H272J	–	–	–	Mylar capacitor 0.0027μF ±20%
R301	RC05GF2H225K	RC05GF2H225K	RC05GF2H225K	–	–	–	–	–	Carbon resistor 2.2MΩ ±10% 1/2W

POWER SUPPLY (X00-1340-10) PARTS LIST

Ref. No.	Parts No.	Description	Remarks
		CAPACITOR	
Ck1～4	CK45E2H103P	Ceramic 0.01µF +100% −0%	
Ck5	CE02W1J471	Electrolytic 470µF 63WV	
Ck6	CE04W1C101	Electrolytic 100µF 16WV	
Ck7	CE04W1H4R7	Electrolytic 4.7µF 50WV	
Ck8	CE04W1C100	Electrolytic 10µF 16WV	
Ck9	CE04W1C102	Electrolytic 1000µF 16WV	
Ck10	CE04W1J101	Electrolytic 100µF 63WV	
Ck11	CE04W1H4R7	Electrolytic 4.7µF 50WV	
Ck12	CE04W1V101	Electrolytic 100µF 35WV	
Ck13, 14	CE04W1H101	Electrolytic 100µF 50WV	
		RESISTOR	
Rk1	R92-0108-05	Metal film 4.7Ω ±10% 2W	
Rk2	PD14BY2E472J	Carbon 4.7kΩ ±5% 1/4W	
Rk3	PD14BY2E392J	Carbon 3.9kΩ ±5% 1/4W	
Rk4	PD14BY2E334J	Carbon 330kΩ ±5% 1/4W	
Rk5	PD14BY2E472J	Carbon 4.7kΩ ±5% 1/4W	
Rk6	PD14BY2E123J	Carbon 12kΩ ±5% 1/4W	
Rk7	PD14BY2E682J	Carbon 6.8kΩ ±5% 1/4W	
Rk8	RN14AB3H151K	Metal film 150Ω ±10% 5W	
Rk9	RN14AB3H271K	Metal film 270Ω ±10% 5W	
Rk10, 11	RC05GF2H101K	Carbon 100Ω ±10% 1/2W	
Rk12	PD14BY2E273J	Carbon 27kΩ ±5% 1/4W	
		SEMICONDUCTOR	
Qk1		2SC1212A	
Qk2		2SC1060	
Qk3		2SC945 (Q) or (R)	
Dk1		SIRB-10	
Dk3, 4		U05B	
Dk6～8		W06B	
Dk9		YZ-140	
Dk10～12		W06B	
		MISCELLANEOUS	
–	F01-0140-04	Heat sink	
–	F06-1023-05	Fuse (1A, UL lead type)	(X00-1340-10)
–	F06-2022-05	Fuse (2A, UL lead type)	(X00-1340-10)
–	F06-1021-05	Fuse (1A, 5 x 20, SEMKO)	(X00-1340-61)
–	F05-2029-05	Fuse (2A, 5 x 20, SEMKO)	(X00-1340-61)
–	J13-0032-05	Fuse holder x 2	(X00-1340-61)
–	J21-1003-14	PC board mounting hardware (L)	
–	J21-1004-14	PC board mounting hardware (R)	

TUNER (X05-1080-14) PARTS LIST

Ref. No.	Parts No.	Description				Remarks
CAPACITOR						
Cg1	CC45SL1H150K	Ceramic	15pF	±10%		
Cg2	CC45SL1H101K	Ceramic	100pF	±10%		
Cg3	CK45F1H103Z	Ceramic	0.01μF	+80%	–20%	
Cg4	CC45SL1H030C	Ceramic	3pF	±0.25pF		
Cg5, 6	CK45F1H103Z	Ceramic	0.01μF	+80%	–20%	
Cg7	CC45SL1H180K	Ceramic	18pF	±10%		
Cg8	CC45SL1H270K	Ceramic	27pF	±10%		
Cg9	CC45SL1H100D	Ceramic	10pF	±0.5pF		
Cg10	CC45SL1H221K	Ceramic	220pF	±10%		
Cg11	CK45F1H103Z	Ceramic	0.01μF	+80%	–20%	
Cg12	CC45SL1H100D	Ceramic	10pF	±0.5pF		
Cg13	CC45TH1H020C	Ceramic	2pF	±0.25pF		
Cg14	CK45F1H223Z	Ceramic	0.022μF	+80%	–20%	
Cg15	CC45SG1H220K	Ceramic	22pF	±10%		X05-1080-14, -64
–	CC45TH1H220K	Ceramic	22pF	±10%		X05-1080-45
Cg16	CC45SG1H470K	Ceramic	47pF	±10%		
Cg17	CC45SG1H220K	Ceramic	22pF	±10%		X05-1080-14, -64
	CC45TH1H220K	Ceramic	22pF	±10%		X05-1080-45
Cg18	CC45TH1H150K	Ceramic	15pF	±10%		X05-1080-14, -64
	CC45UH1H050D	Ceramic	5pF	±0.5pF		X05-1080-45
Cg19~26	CK45F1H223Z	Ceramic	0.022μF	+80%	–20%	
Cg27, 28	CM93D1H102J(Z)	Mica	1000pF	±5%		
Cg32	CC45SL1H100D	Ceramic	10pF	±0.5pF		
Cg33	CQ93M1H223K	Mylar	0.022μF	±10%		
Cg34	CM93D1H102J(Z)	Mica	1000pF	±5%		
Cg35	CK45F1H223Z	Ceramic	0.022μF	+80%	–20%	
Cg36	CK45F1H103Z	Ceramic	0.01μF	+80%	–20%	
Cg37	CQ93M1H102K	Mylar	0.001μF	±10%		
Cg38	CK45F1H223Z	Ceramic	0.022μF	+80%	–20%	
Cg39	CQ93M1H472J	Mylar	0.0047μF	±5%		
Cg40	CC45SL1H050D	Ceramic	5pF	±0.5pF		
Cg41	CK45B1H471K	Ceramic	470pF	±10%		
Cg42~44	CK45F1H223Z	Ceramic	0.022μF	+80%	–20%	
Cg45, 46	CC45SL1H221K	Ceramic	220pF	±10%		
Cg47	CE04W1E100	Electrolytic	10μF	25WV		
Cg49	CE04W1C101	Electrolytic	100μF	16WV		
Cg50	CC45SL1H101K	Ceramic	100pF	±10%		
Cg52, 53	CQ93M1H103K	Mylar	0.01μF	±10%		
Cg54	CE04W1H3R3	Electrolytic	3.3μF	50WV		
Cg56	CK45F1H223Z	Ceramic	0.022μF	+80%	–20%	
Cg58	CE04W1E100	Electrolytic	10μF	25WV		
Cg59~62	CK45F1H223Z	Ceramic	0.022μF	+80%	–20%	
Cg63	CE04W1E100	Electrolytic	10μF	25WV		
Cg64	CQ93M1H472J	Mylar	0.0047μF	±5%		
Cg65, 66	CQ93M1H103K	Mylar	0.01μF	±10%		
Cg67	CK45B1H361K	Ceramic	360pF	±10%		
Cg68	CC45SL1H180K	Ceramic	18pF	±10%		
Cg69	CE04W1E100	Electrolytic	10μF	25WV		
Cg70	CM93D1H391J(Z)	Mica	390pF	±5%		
Cg71	CE04W1H010	Electrolytic	1μF	50WV		
Cg72	CQ93M1H223K	Mylar	0.022μF	±10%		
Cg73	CQ08S1H472J	Polystyrene	0.0047μF	±5%		
Cg75	CQ93M1H822J	Mylar	0.0082μF	±5%		
Cg76	CE04W1H010	Electrolytic	1μF	50WV		
Cg77	CQ08S1H472J	Polystyrene	0.0047μF	±5%		
Cg78	CE04W1E100	Electrolytic	10μF	25WV		

TUNER (X05-1080-14) PARTS LIST

Ref. No.	Parts No.	Description				Remarks
Cg79	CE04W0J470	Electrolytic	47μF	6.3WV		
Cg80	CS04E1ER47M	Tantalum	0.47μF	25WV		
Cg81, 82	CQ93M1H682J	Mylar	0.0068μF	±5%		X05-1080-14, -45
	CQ93M1H472J	Mylar	0.0047μF	±5%		X05-1080-64
Cg83	CS04E1ER47M	Tantalum	0.47μF	25WV		
Cg85	CQ93M1H223K	Mylar	0.022μF	±10%		
Cg86, 87	CQ08S1H102J	Polystyrene	0.001μF	±5%		
Cg88	CS04E1ER22M	Tantalum	0.22μF	25WV		
VC	C01-0172-05	Variable capacitor				
CTg3	C05-0009-15	Ceramic trimmer (6pF)				
		RESISTOR				
Rg1	PD14BY2B104J	Carbon	100kΩ	±5%	1/8W	
Rg2	PD14BY2B330J	Carbon	33Ω	±5%	1/8W	
Rg3	PD14BY2B471J	Carbon	470Ω	±5%	1/8W	
Rg4	PD14BY2B104J	Carbon	100kΩ	±5%	1/8W	
Rg5	PD14BY2B562J	Carbon	5.6kΩ	±5%	1/8W	
Rg6	PD14BY2B472J	Carbon	4.7kΩ	±5%	1/8W	
Rg7	PD14BY2B223J	Carbon	22kΩ	±5%	1/8W	
Rg8	PD14BY2B102J	Carbon	1kΩ	±5%	1/8W	
Rg9	PD14BY2B562J	Carbon	5.6kΩ	±5%	1/8W	
Rg10	PD14BY2B392J	Carbon	3.9kΩ	±5%	1/8W	
Rg11	PD14BY2B223J	Carbon	22kΩ	±5%	1/8W	
Rg12	PD14BY2B391J	Carbon	390Ω	±5%	1/8W	
Rg13	PD14BY2B331J	Carbon	330Ω	±5%	1/8W	
Rg14	PD14BY2B102J	Carbon	1kΩ	±5%	1/8W	
Rg15	PD14BY2B391J	Carbon	390Ω	±5%	1/8W	
Rg16	PD14BY2B393J	Carbon	39kΩ	±5%	1/8W	
Rg17	PD14BY2B103J	Carbon	10kΩ	±5%	1/8W	
Rg18	PD14BY2B223J	Carbon	22kΩ	±5%	1/8W	
Rg19	PD14BY2B332J	Carbon	3.3kΩ	±5%	1/8W	
Rg20	PD14BY2B221J	Carbon	220Ω	±5%	1/8W	
Rg21, 22	PD14BY2B102J	Carbon	1kΩ	±5%	1/8W	
Rg23	PD14BY2B222J	Carbon	2.2kΩ	±5%	1/8W	
Rg24	PD14BY2B223J	Carbon	22kΩ	±5%	1/8W	
Rg25	PD14BY2B562J	Carbon	5.6kΩ	±5%	1/8W	
Rg26	PD14BY2B183J	Carbon	18kΩ	±5%	1/8W	
Rg29	PD14BY2B470J	Carbon	47Ω	±5%	1/8W	
Rg30, 31	PD14BY2B561J	Carbon	560Ω	±5%	1/8W	
Rg32	PD14BY2B332J	Carbon	3.3kΩ	±5%	1/8W	
Rg33	PD14BY2B223J	Carbon	22kΩ	±5%	1/8W	
Rg34	PD14BY2B221J	Carbon	220Ω	±5%	1/8W	
Rg35	PD14BY2B562J	Carbon	5.6kΩ	±5%	1/8W	
Rg36	PD14BY2B561J	Carbon	560Ω	±5%	1/8W	
Rg37	PD14BY2B562J	Carbon	5.6kΩ	±5%	1/8W	
Rg38	PD14BY2B103J	Carbon	10kΩ	±5%	1/8W	
Rg39	PD14BY2B221J	Carbon	220Ω	±5%	1/8W	
Rg40	PD14BY2B682J	Carbon	10kΩ	±5%	1/8W	
Rg41, 42	PD14BY2B333J	Carbon	33kΩ	±5%	1/8W	
Rg43, 44	PD14BY2B222J	Carbon	2.2kΩ	±5%	1/8W	
Rg45, 46	PD14BY2B682J	Carbon	6.8kΩ	±5%	1/8W	
Rg48	PD14BY2B102J	Carbon	1kΩ	±5%	1/8W	
Rg49, 50	PD14BY2B221J	Carbon	220Ω	±5%	1/8W	
Rg51	PD14BY2B562J	Carbon	5.6kΩ	±5%	1/8W	
Rg52	PD14BY2B223J	Carbon	22kΩ	±5%	1/8W	
Rg53	PD14BY2B104J	Carbon	100kΩ	±5%	1/8W	
Rg54	PD14BY2B103J	Carbon	10kΩ	±5%	1/8W	
Rg55	PD14BY2B563J	Carbon	56kΩ	±5%	1/8W	

TUNER (X05-1080-14) PARTS LIST

Ref. No.	Parts No.	Description				Remarks
Rg56	PD14BY2B562J	Carbon	5.6kΩ	±5%	1/8W	
Rg57	PD14BY2B222J	Carbon	2.2kΩ	±5%	1/8W	
Rg58	PD14BY2B682J	Carbon	6.8kΩ	±5%	1/8W	
Rg59	PD14BY2B102J	Carbon	1kΩ	±5%	1/8W	
Rg60	PD14BY2B103J	Carbon	10kΩ	±5%	1/8W	
Rg61	PD14BY2B221J	Carbon	220Ω	±5%	1/8W	
Rg62	PD14BY2B473J	Carbon	47kΩ	±5%	1/8W	
Rg63	PD14BY2B103J	Carbon	10kΩ	±5%	1/8W	
Rg64	PD14BY2B221J	Carbon	220Ω	±5%	1/8W	
Rg65	PD14BY2B102J	Carbon	1kΩ	±5%	1/8W	
Rg66	PD14BY2B563J	Carbon	56kΩ	±5%	1/8W	
Rg67	PD14BY2B124J	Carbon	120kΩ	±5%	1/8W	
Rg68	PD14BY2B471J	Carbon	470Ω	±5%	1/8W	
Rg69	PD14BY2B330J	Carbon	33Ω	±5%	1/8W	
Rg70	PD14BY2B101J	Carbon	100Ω	±5%	1/8W	
Rg71	PD14BY2B102J	Carbon	1kΩ	±5%	1/8W	
Rg72	PD14BY2B101J	Carbon	100Ω	±5%	1/8W	
Rg74	PD14BY2B471J	Carbon	470Ω	±5%	1/8W	
Rg75	PD14BY2B222J	Carbon	2.2kΩ	±5%	1/8W	
Rg76	PD14BY2B330J	Carbon	33Ω	±5%	1/8W	
Rg77~84	PD14BY2B103J	Carbon	10kΩ	±5%	1/8W	
Rg85~87	PD14BY2B823J	Carbon	82kΩ	±5%	1/8W	
Rg89	PD14BY2B823J	Carbon	82kΩ	±5%	1/8W	
Rg90, 91	PD14BY2B153J	Carbon	15kΩ	±5%	1/8W	
Rg92, 93	PD14BY2B123J	Carbon	12kΩ	±5%	1/8W	X05-1080-14, -45
	PD14BY2B113J	Carbon	11kΩ	±5%	1/8W	X05-1080-64
Rg101	PD14BY2B101J	Carbon	100Ω	±5%	1/8W	
		SEMICONDUCTOR				
Qg1		3SK30 (B) or (C)				
Qg2~4		2SC381 (R)				
Qg5, 6		2SC535 (B)				
Qg7		2SC945 (Q) or (R)				
Qg8		2SC785 (R)				
Qg9		2SC941 (O)				
Qg10		2SA733 (Q) or (R)				
Qg11, 12		2SC458 (D)				
Qg13		2SC1213A (C)				
Qg14		2SC941 (O)				
ICg1		μPC555A (R) or (B)				
Dg1		1N60				
Dg3, 4		1S1555 or 1S2076				
Dg5~12		1N60				
Dg13		1S1555 or 1S2076				
Dg14~18		1N60				
Dg19		1S1555 or 1S2076				
Dg20~27		1N60				
Dg29, 30		MV-13				
Zg1		DZ-140				
		TRANS/COIL/FILTER				
Tg1	L34-0410-05	FM-ANT coil				
Tg2	L34-0408-05	FM-RF coil				
Tg3	L34-0409-05	FM-OSC coil				X05-1080-14, -64
	L34-0412-05	FM-OSC coil				X05-1080-45
Tg4	L30-0176-05	FM-IFT				
Tg5	L30-0247-05	FM-IFT				
Tg6	L30-0250-05	AM-IFT				
Tg7	L30-0052-05	AM-IFT				

TUNER (X05-1080-14) PARTS LIST

Ref. No.	Parts No.	Description	Remarks
Tg8	L30-0248-05	FM-IFT	
Tg9	L30-0207-15	Discriminator coil	
Tg10	L30-0249-05	AM-IFT	
Tg11	L30-0082-05	AM-OSC coil	
Tg12	L35-0054-05	MPX coil	
Tg13	L35-0052-05	MPX coil	
Tg14	L35-0054-05	MPX coil	
Tg15	L35-0053-05	MPX coil	
Lg1	L33-0086-05	Ferri-inductor	
Lg2	L33-0027-04	Choke coil	
Lg3, 4	L33-0026-04	Choke coil	
Lg5	L33-0190-05	Ferri-inductor	
Lg6~9	L33-0086-05	Ferri-inductor	
Lg10, 11	L33-0179-05	Ferri-inductor	
CFg1, 2	L72-0014-05	Ceramic filter	
		POTENTIOMETER	
VRg1	R12-2016-05	PC trimmer (AM-METER) 5kΩ (B)	
VRg3	R12-3029-05	PC trimmer (FM-OUTPUT) 30kΩ (B)	
VRg4	R12-0047-05	PC trimmer (SEPARATION) 500Ω (B)	
VRg5	R12-4019-05	PC trimmer (BEACON) 50kΩ (B)	
		MISCELLANEOUS	
–	F10-0279-14	Shield plate	
–	F10-0280-03	Shield plate	

MAIN AMP (X07-1200-10) PARTS LIST

Ref. No.	Parts No.	Description				Remarks
CAPACITOR						
Ce1, 2	CE04W1H010MBR	Electrolytic	1μF	50WV		
Ce3	CE04W1E470	Electrolytic	47μF	25WV		
Ce4	CE04W1E100MBR	Electrolytic	10μF	25WV		
Ce5, 6	CC45SL1H221K	Ceramic	220pF	±10%		
Ce7, 8	CE04W1H010MBR	Electrolytic	1μF	50WV		
Ce9, 10	CE04W0J221	Electrolytic	220μF	6.3WV		
Ce11, 12	CC45SL1H330K	Ceramic	33pF	±10%		
Ce13, 14	CC45SL1H100D	Ceramic	10pF	±0.5pF		
Ce15, 16	CC45SL1H330K	Ceramic	33pF	±10%		
Ce17, 18	CE04W1V470	Electrolytic	47μF	35WV		
Ce19, 20	CE04W0J101	Electrolytic	100μF	6.3WV		
Ce21, 22	CQ93M1H224M	Mylar	0.22μF	±20%		
Ce23	CE04W1H221	Electrolytic	220μF	50WV		
Ce24	CE04W1E100	Electrolytic	10μF	25WV		
Ce25~28	CC45SL1H101K	Ceramic	100pF	±10%		
RESISTOR						
Re1	PD14BY2E224J	Carbon	220kΩ	±5%	1/4W	
Re2	PD14BY2E223J	Carbon	22kΩ	±5%	1/4W	
Re3	PD14BY2E123J	Carbon	12kΩ	±5%	1/4W	
Re4	PD14BY2E823J	Carbon	82kΩ	±5%	1/4W	
Re5	PD14BY2E682J	Carbon	6.8kΩ	±5%	1/4W	
Re6	PD14BY2E184J	Carbon	180kΩ	±5%	1/4W	
Re7	PD14BY2E103J	Carbon	10kΩ	±5%	1/4W	
Re8	PD14BY2E224J	Carbon	220kΩ	±5%	1/4W	
Re9	PD14BY2E333J	Carbon	33kΩ	±5%	1/4W	
Re10, 11	PD14BY2E562J	Carbon	5.6kΩ	±5%	1/4W	
Re12, 13	PD14BY2E223J	Carbon	22kΩ	±5%	1/4W	
Re14, 15	PD14BY2E152J	Carbon	1.5kΩ	±5%	1/4W	
Re16, 17	PD14BY2E472J	Carbon	4.7kΩ	±5%	1/4W	
Re18, 19	PD14BY2E151J	Carbon	150Ω	±5%	1/4W	
Re20, 21	PD14BY2E223J	Carbon	22kΩ	±5%	1/4W	
Re22, 23	PD14BY2E222J	Carbon	2.2kΩ	±5%	1/4W	
Re24, 25	PD14BY2E101J	Carbon	100Ω	±5%	1/4W	
Re26, 27	PD14BY2E271J	Carbon	270Ω	±5%	1/4W	
Re28, 29	PD14BY2E472J	Carbon	4.7kΩ	±5%	1/4W	
Re30, 31	RN14AB3A331K-B	Metal film	330Ω	±10%	1W	
Re32, 33	RN14AB3A330K-B	Metal film	33Ω	±10%	1W	
Re34, 35	RN14AB3A331K-B	Metal film	330Ω	±10%	1W	
Re36~39	R92-0110-05	Wire wound	0.47Ω	±10%	1W	
Re40, 41	RN14AB3D4R7K-B	Metal film	4.7Ω	±10%	2W	
Re42, 43	PD14BY2E272J	Carbon	2.7kΩ	±5%	1/4W	
Re44, 45	PD14BY2E102J	Carbon	1kΩ	±5%	1/4W	
Re46	PD14BY2E560J-B	Carbon	56Ω	±5%	1/4W	
Re47	PD14BY2E222J	Carbon	2.2kΩ	±5%	1/4W	
SEMICONDUCTOR						
Qe1		2SC1345 (D)				
Qe2~5		2SA620WL (5)				
Qe6, 7		2SC1213A (B) or (C)				
Qe8, 9		2SC1212A (B) or (C)				
Qe10, 11		2SA743A (B) or (C)				
Qe12~15		2SC1444				
De1, 2		STV-3H				
De3, 4		1S2076				
De5		WZ-081				

MAIN AMP (X07-1200-10) PARTS LIST

Ref. No.	Parts No.	Description	Remarks
		POTENTIOMETER	
VRe1, 2	R12-0048-05	PC trimmer 100Ω (B) BIAS ADJ.	
		MISCELLANEOUS	
–	F01-0148-14	Heat sink x 2	
–	F01-0159-14	Heat sink x 2	
–	F02-0210-05	Transistor socket x 4	
–	F20-0067-05	Mica plate x 4	

PREAMP (X08-1180-00) PARTS LIST

Ref. No.	Parts No.	Description				Remarks
		CAPACITOR				
Cd1, 2	CS15E1C2R2M	Tantalum	2.2μF	16WV		
Cd3, 4	CC45SL1H330K	Ceramic	33pF	±10%		
Cd5, 6	CC45SL1H220K	Ceramic	22pF	±10%		
Cd7, 8	CE04W0J470	Electrolytic	47μF	6.3WV		
Cd9, 10	CC45SL1H150K	Ceramic	15pF	±10%		
Cd11, 12	CQ09S1H681J	Polystyrene	680pF	±5%		
Cd13, 14	CQ93M1H222J	Mylar	0.0022μF	±5%		
Cd15, 16	CE04W0J330	Electrolytic	33μF	6.3WV		
Cd17, 18	CE04W1H100MBR	Electrolytic	10μF	50WV		
Cd19	CE04W1H470	Electrolytic	47μF	50WV		
Cd20	CE04W1C470	Electrolytic	47μF	16WV		
Cd21, 22	CC45SL1H470K	Ceramic	47pF	±10%		
		RESISTOR				
Rd1, 2	PD14BY2E222J	Carbon	2.2kΩ	±5%	1/4W	
Rd3, 4	PD14BY2E334J	Carbon	330kΩ	±5%	1/4W	
Rd5, 6	PD14BY2E224J	Carbon	220kΩ	±5%	1/4W	
Rd7, 8	PD14BY2E182J	Carbon	1.8kΩ	±5%	1/4W	
Rd9, 10	PD14BY2E473J	Carbon	47kΩ	±5%	1/4W	
Rd11, 12	PD14BY2E154J	Carbon	150kΩ	±5%	1/4W	
Rd13, 14	PD14BY2E564J	Carbon	560kΩ	±5%	1/4W	
Rd15, 16	PD14BY2E155J	Carbon	1.5MΩ	±5%	1/4W	
Rd17, 18	PD14BY2E103J	Carbon	10kΩ	±5%	1/4W	
Rd19, 20	PD14BY2E154J	Carbon	150kΩ	±5%	1/4W	
Rd21, 22	PD14BY2E563J	Carbon	56kΩ	±5%	1/4W	
Rd23, 24	PD14BY2E182J	Carbon	1.8kΩ	±5%	1/4W	
Rd25, 26	PD14BY2E562J	Carbon	5.6kΩ	±5%	1/4W	
Rd27, 28	PD14BY2E563J	Carbon	56kΩ	±5%	1/4W	
Rd29	PD14BY2E103J	Carbon	10kΩ	±5%	1/4W	
Rd30	PD14BY2E332J	Carbon	3.3kΩ	±5%	1/4W	
		SEMICONDUCTOR				
Qd1~4		2SC1416A (GR)				
Qd5, 6		2SC1416 (GR) or (BL)				

TONE AMP (X11-1150-00) PARTS LIST

Ref. No.	Parts No.	Description	Remarks
		CAPACITOR	
Ci1~4	CS04E1ER47M	Tantalum 0.47μF 25WV	
Ci5~8	CC45SL1H101K	Ceramic 100pF ±10%	
Ci9~12	CE04W0J221	Electrolytic 220μF 6.3WV	
Ci13~16	CE04W1E100	Electrolytic 10μF 25WV	
Ci17~20	CQ93M1H222K	Mylar 0.0022μF ±10%	
Ci21~24	CQ93M1H273K	Mylar 0.027μF ±10%	
Ci25~28	CQ93M1H103K	Mylar 0.01μF ±10%	
Ci29~32	CQ93M1H104K	Mylar 0.1μF ±10%	
Ci33	CE04W1E221	Electrolytic 220μF 25WV	
Ci34	CC45SL1H101K	Ceramic 100pF ±10%	
Ci35	CK45B1H102K	Ceramic 0.001μF ±10%	
Ci36	CC45SL1H101K	Ceramic 100pF ±10%	
Ci37	CK45B1H102K	Ceramic 0.001μF ±10%	
Ci38	CC45SL1H101K	Ceramic 100pF ±10%	
Ci39	CK45B1H102K	Ceramic 0.001μF ±10%	
Ci40	CC45SL1H101K	Ceramic 100pF ±10%	
Ci41	CK45B1H102K	Ceramic 0.001μF ±10%	
		RESISTOR	
Ri1~4	PD14CY2E684J	Carbon 680kΩ ±5% 1/4W	
Ri5~8	PD14CY2E124J	Carbon 120kΩ ±5% 1/4W	
Ri9~12	PD14CY2E562J	Carbon 5.6kΩ ±5% 1/4W	
Ri13~16	PD14CY2E821J	Carbon 820Ω ±5% 1/4W	
Ri17~20	PD14CY2E271J	Carbon 270Ω ±5% 1/4W	
Ri21, 22	PD14CY2E562J	Carbon 5.6kΩ ±5% 1/4W	
Ri23, 24	PD14BY2E562J	Carbon 5.6kΩ ±5% 1/4W	
Ri25~28	PD14CY2E681J	Carbon 680Ω ±5% 1/4W	
Ri29, 30	PD14CY2E103J	Carbon 10kΩ ±5% 1/4W	
Ri31, 32	PD14BY2E103J	Carbon 10kΩ ±5% 1/4W	
Ri33 ~36	PD14CY2E152J	Carbon 1.5kΩ ±5% 1/4W	
Ri37	PD14BY2E221J	Carbon 220Ω ±5% 1/4W	
		SEMICONDUCTOR	
Qi1~4		2SC1345 (D) or (E)	
		POTENTIOMETER	
VRi1, 2	R11-4021-05	Potentiometer 50kΩ (A) x 4 TONE	
VRi3	R08-5022-05	Potentiometer 200kΩ (W) x 2 BALANCE	

PROTECTION (X13-1480-10) PARTS LIST

Ref. No.	Parts No.	Description				Remarks
		CAPACITOR				
Cp1	CK45F1H103Z	Ceramic	0.01μF	+80%, −20%		
Cp2, 3	CE04W1A470(NP)	Electrolytic	47μF	10WV		
Cp4	CE04W1H100MBR	Electrolytic	10μF	50WV		
		RESISTOR				
Rp1, 2	PD14BY2E103J	Carbon	10kΩ	±5%	1/4W	
Rp3	PD14BY2E332J	Carbon	3.3kΩ	±5%	1/4W	
Rp4~7	PD14BY2E682J	Carbon	6.8kΩ	±5%	1/4W	
Rp8	PD14BY2E103J	Carbon	10kΩ	±5%	1/4W	
Rp9	PD14BY2E332J	Carbon	3.3kΩ	±5%	1/4W	
Rp10	PD14BY2E103J	Carbon	10kΩ	±5%	1/4W	
Rp11	PD14BY2E151J	Carbon	150Ω	±5%	1/4W	
Rp12	PD14BY2E104J	Carbon	100kΩ	±5%	1/4W	
Rp13, 14	PD14BY2E223J	Carbon	22kΩ	±5%	1/4W	
Rp15, 16	PD14BY2E183J	Carbon	18kΩ	±5%	1/4W	
Rp17	PD14BY2E101J	Carbon	100Ω	±5%	1/4W	
Rp18	PD14BY2E223J	Carbon	22kΩ	±5%	1/4W	
Rp19	PD14BY2E222J	Carbon	2.2kΩ	±5%	1/4W	
Rp20	PD14BY2E223J	Carbon	22kΩ	±5%	1/4W	
Rp21~23	RC05GF2H151K	Carbon	150Ω	±10%	1/2W	
		SEMICONDUCTOR				
Qp1, 2		2SC1416 (GR) or (BL)				
Qp3		2SA733 (Q) or (R)				
Qp4, 5		2SC828A (Q) or (R)				
Qp6		2SA733 (Q) or (R)				
Dp1~6		1S2076				
Dp7, 8		W06B				
		RELAY				
Ry	S51-4027-05	Relay				

PUSH SWITCH (X13-1490-10) PARTS LIST

Ref. No.	Parts No.	Description				Remarks
		CAPACITOR				
Ch1	CK45B1H821K	Ceramic	820pF	±10%		
Ch2	CQ93M1H473K	Mylar	0.047μF	±10%		
Ch3	CK45B1H821K	Ceramic	820pF	±10%		
Ch4	CQ93M1H473K	Mylar	0.047μF	±10%		
Ch5	CK45B1H821K	Ceramic	820pF	±10%		
Ch6	CQ93M1H473K	Mylar	0.047μF	±10%		
Ch7	CK45B1H821K	Ceramic	820pF	±10%		
Ch8	CQ93M1H473K	Mylar	0.047μF	±10%		
		RESISTOR				
Rh1～4	PD14BY2E153J	Carbon	15kΩ	±5%	1/4W	
Rh5～8	PD14BY2E822J	Carbon	8.2kΩ	±5%	1/4W	
Rh9～12	RC05GF2H102K	Carbon	1kΩ	±10%	1/2W	
Rh13～16	RC05GF2H331K	Carbon	330Ω	±10%	1/2W	
		SWITCH				
S4～8	S41-5010-05	Pushbutton switch (5 keys)				

SQ & RM DECODER (X15-1130-00) PARTS LIST

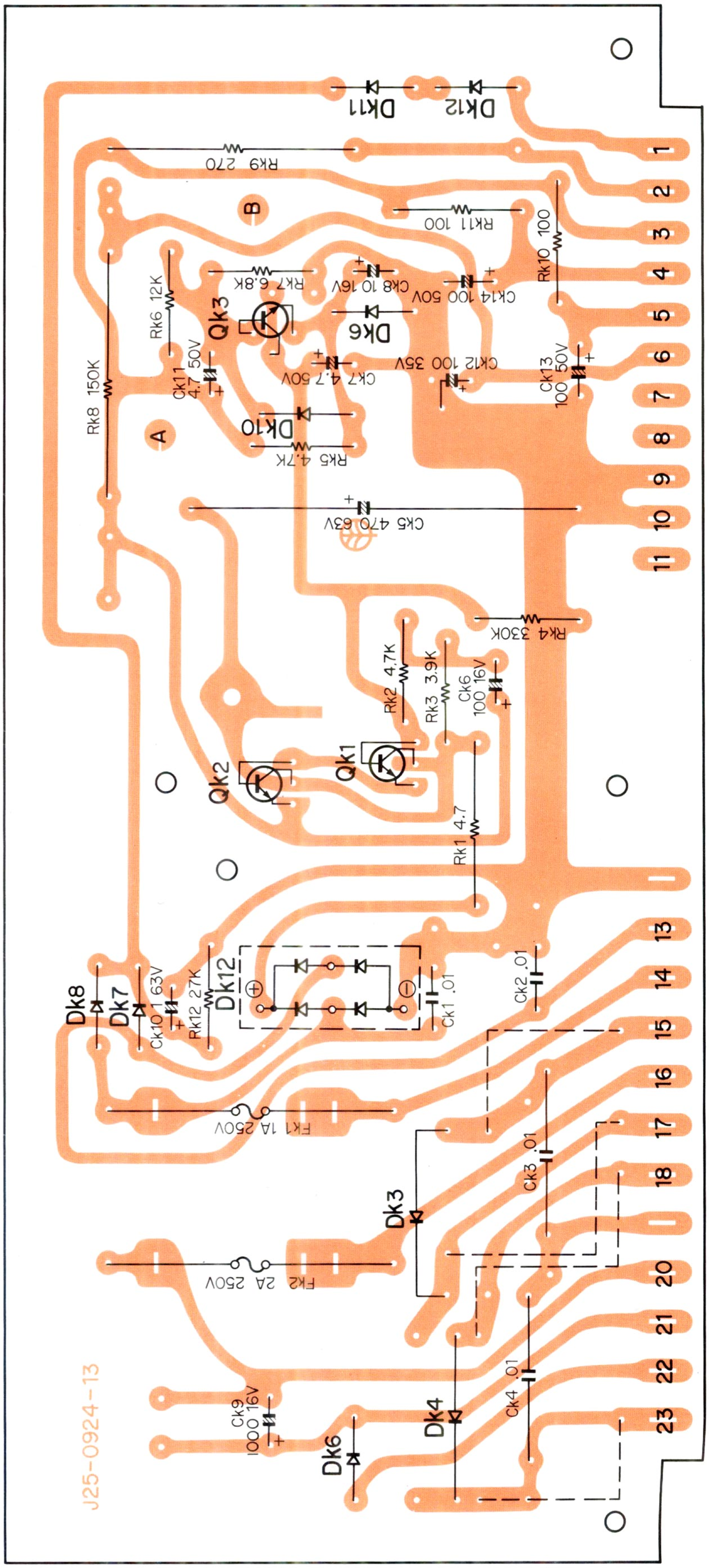
Ref. No.	Parts No.	Description				Remarks
		CAPACITOR				
Cy1	CE04W1H010MBR	Electrolytic	1μF	50WV		
Cy2	CQ93M1H393J	Mylar	0.039μF	±5%		
Cy3	CQ93M1H123J	Mylar	0.012μF	±5%		
Cy4~7	CE04W1H010MBR	Electrolytic	1μF	50WV		
Cy8	CQ93M1H682J	Mylar	0.0068μF	±5%		
Cy9	CQ93M1H222J	Mylar	0.0022μF	±5%		
Cy10~13	CE04W1H010MBR	Electrolytic	1μF	50WV		
Cy14	CQ93M1H682J	Mylar	0.0068μF	±5%		
Cy15	CQ93M1H222J	Mylar	0.0022μF	±5%		
Cy16, 17	CE04W1H010MBR	Electrolytic	1μF	50WV		
Cy18	CQ93M1H393J	Mylar	0.039μF	±5%		
Cy19	CQ93M1H123J	Mylar	0.012μF	±5%		
Cy20~23	CE04W1H010MBR	Electrolytic	1μF	50WV		
Cy24	CE04W1H010NP	Electrolytic	1μF	50WV		
		RESISTOR				
Ry1	PD14BY2E104J	Carbon	100kΩ	±5%	1/4W	
Ry2	PD14BY2E334J	Carbon	330kΩ	±5%	1/4W	
Ry3	PD14BY2E184J	Carbon	180kΩ	±5%	1/4W	
Ry4, 5	PD14BY2E392J	Carbon	3.9kΩ	±5%	1/4W	
Ry6	PD14BY2E433J	Carbon	43kΩ	±5%	1/4W	
Ry7, 8	PD14BY2E332J	Carbon	3.3kΩ	±5%	1/4W	
Ry9	PD14BY2E622J	Carbon	6.2kΩ	±5%	1/4W	
Ry10	PD14BY2E823J	Carbon	82kΩ	±5%	1/4W	
Ry11	PD14BY2E392J	Carbon	3.9kΩ	±5%	1/4W	
Ry12	PD14BY2E332J	Carbon	3.3kΩ	±5%	1/4W	
Ry13	PD14BY2E393J	Carbon	39kΩ	±5%	1/4W	
Ry14	PD14BY2E473J	Carbon	47kΩ	±5%	1/4W	
Ry15	PD14BY2E104J	Carbon	100kΩ	±5%	1/4W	
Ry16	PD14BY2E683J	Carbon	68kΩ	±5%	1/4W	
Ry17	PD14BY2E224J	Carbon	220kΩ	±5%	1/4W	
Ry18	PD14BY2E184J	Carbon	180kΩ	±5%	1/4W	
Ry19	PD14BY2E824J	Carbon	820kΩ	±5%	1/4W	
Ry20	PD14BY2E472J	Carbon	4.7kΩ	±5%	1/4W	
Ry21	PD14BY2E152J	Carbon	1.5kΩ	±5%	1/4W	
Ry22	PD14BY2E104J	Carbon	100kΩ	±5%	1/4W	
Ry23	PD14BY2E473J	Carbon	47kΩ	±5%	1/4W	
Ry24	PD14BY2E332J	Carbon	3.3kΩ	±5%	1/4W	
Ry25	PD14BY2E622J	Carbon	6.2kΩ	±5%	1/4W	
Ry26	PD14BY2E332J	Carbon	3.3kΩ	±5%	1/4W	
Ry27, 28	PD14BY2E823J	Carbon	82kΩ	±5%	1/4W	
Ry29	PD14BY2E683J	Carbon	68kΩ	±5%	1/4W	
Ry30	PD14BY2E154J	Carbon	150kΩ	±5%	1/4W	
Ry31	PD14BY2E393J	Carbon	39kΩ	±5%	1/4W	
Ry32	PD14BY2E274J	Carbon	270kΩ	±5%	1/4W	
Ry33	PD14BY2E513J	Carbon	51kΩ	±5%	1/4W	
Ry34	PD14BY2E273J	Carbon	27kΩ	±5%	1/4W	
Ry35	PD14BY2E184J	Carbon	180kΩ	±5%	1/4W	
Ry36	PD14BY2E824J	Carbon	820kΩ	±5%	1/4W	
Ry37	PD14BY2E152J	Carbon	1.5kΩ	±5%	1/4W	
Ry38	PD14BY2E104J	Carbon	100kΩ	±5%	1/4W	
Ry39	PD14BY2E472J	Carbon	4.7kΩ	±5%	1/4W	
Ry40	PD14BY2E104J	Carbon	100kΩ	±5%	1/4W	
Ry41	PD14BY2E334J	Carbon	330kΩ	±5%	1/4W	
Ry42	PD14BY2E184J	Carbon	180kΩ	±5%	1/4W	
Ry43, 44	PD14BY2E392J	Carbon	3.9kΩ	±5%	1/4W	

SQ & RM DECODER (X15-1130-00) PARTS LIST

Ref. No.	Parts No.	Description				Remarks
Ry45	PD14BY2E473J	Carbon	47kΩ	±5%	1/4W	
Ry46, 47	PD14BY2E332J	Carbon	3.3kΩ	±5%	1/4W	
Ry48	PD14BY2E622J	Carbon	6.2kΩ	±5%	1/4W	
Ry49	PD14BY2E683J	Carbon	68kΩ	±5%	1/4W	
Ry50	PD14BY2E154J	Carbon	150kΩ	±5%	1/4W	
Ry51	PD14BY2E184J	Carbon	180kΩ	±5%	1/4W	
Ry52	PD14BY2E824J	Carbon	820kΩ	±5%	1/4W	
Ry53	PD14BY2E472J	Carbon	4.7kΩ	±5%	1/4W	
Ry54	PD14BY2E152J	Carbon	1.5kΩ	±5%	1/4W	
Ry55	PD14BY2E104J	Carbon	100kΩ	±5%	1/4W	
Ry56	PD14BY2E433J	Carbon	43kΩ	±5%	1/4W	
Ry57, 58	PD14BY2E332J	Carbon	3.3kΩ	±5%	1/4W	
Ry59	PD14BY2E622J	Carbon	6.2kΩ	±5%	1/4W	
Ry60	PD14BY2E104J	Carbon	100kΩ	±5%	1/4W	
Ry61	PD14BY2E823J	Carbon	82kΩ	±5%	1/4W	
Ry62, 63	PD14BY2E332J	Carbon	3.3kΩ	±5%	1/4W	
Ry64	PD14BY2E363J	Carbon	36kΩ	±5%	1/4W	
Ry65	PD14BY2E683J	Carbon	68kΩ	±5%	1/4W	
Ry66	PD14BY2E224J	Carbon	220kΩ	±5%	1/4W	
Ry67	PD14BY2E184J	Carbon	180kΩ	±5%	1/4W	
Ry68	PD14BY2E824J	Carbon	820kΩ	±5%	1/4W	
Ry69	PD14BY2E472J	Carbon	4.7kΩ	±5%	1/4W	
Ry70	PD14BY2E152J	Carbon	1.5kΩ	±5%	1/4W	
Ry71	PD14BY2E104J	Carbon	100kΩ	±5%	1/4W	
Ry72~75	PD14BY2E222J	Carbon	2.2kΩ	±5%	1/4W	
		SEMICONDUCTOR				
Qy1~12		2SC1345 (D) or (E)				

PC BOARD

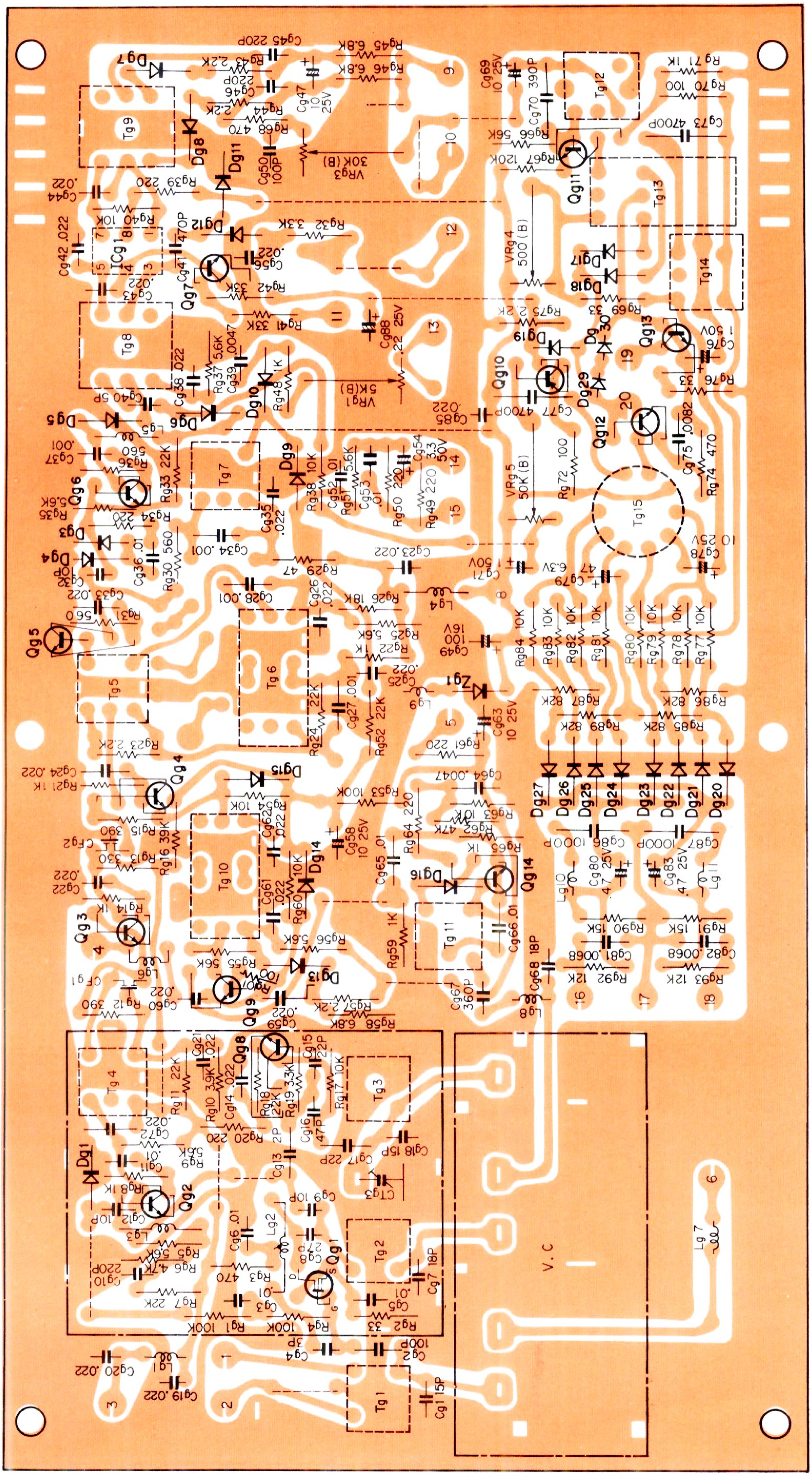
▶ POWER SUPPLY (X00-1340-10)



Qk1: 2SC1212A, Qk2: 2SC1060, Qk3: 2SC945 (Q or R), Dk1: SIRB-10, Dk3, 4: U05B, Dk6~8, 10~12: W06B, Dk9: YZ-140

PC BOARD

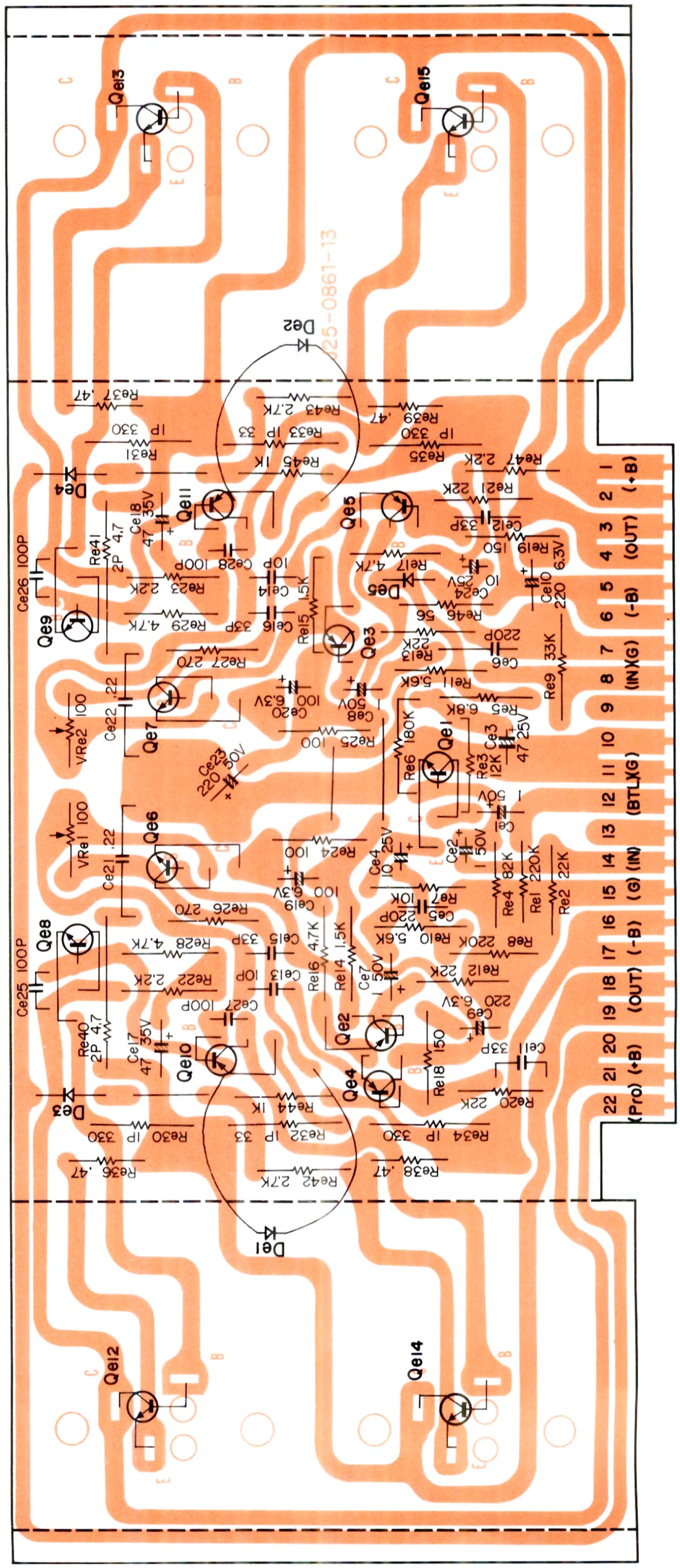
▶ **TUNER (X05-1080-14)**



Qg1: 3SK30 (B) or (C),
Qg2~4: 2SC381 (R),
Qg5, 6: 2SC535 (B),
Qg7: 2SC945 (Q) or (R),
Qg8: 2SC785 (R),
Qg9, 14: 2SC941 (O),
Qg10: 2SA733 (Q) or (R),
Qg11, 12: 2SC458 (D),
Qg13: 2SC1213 (A) or (C),
ICg1: μPC555A (R) or (B),
Dg1, 2, 5~12, 14~18, 20~27: 1N60,
Dg3, 4, 13, 19, 28: 1S1555 or 1S2076

PC BOARD

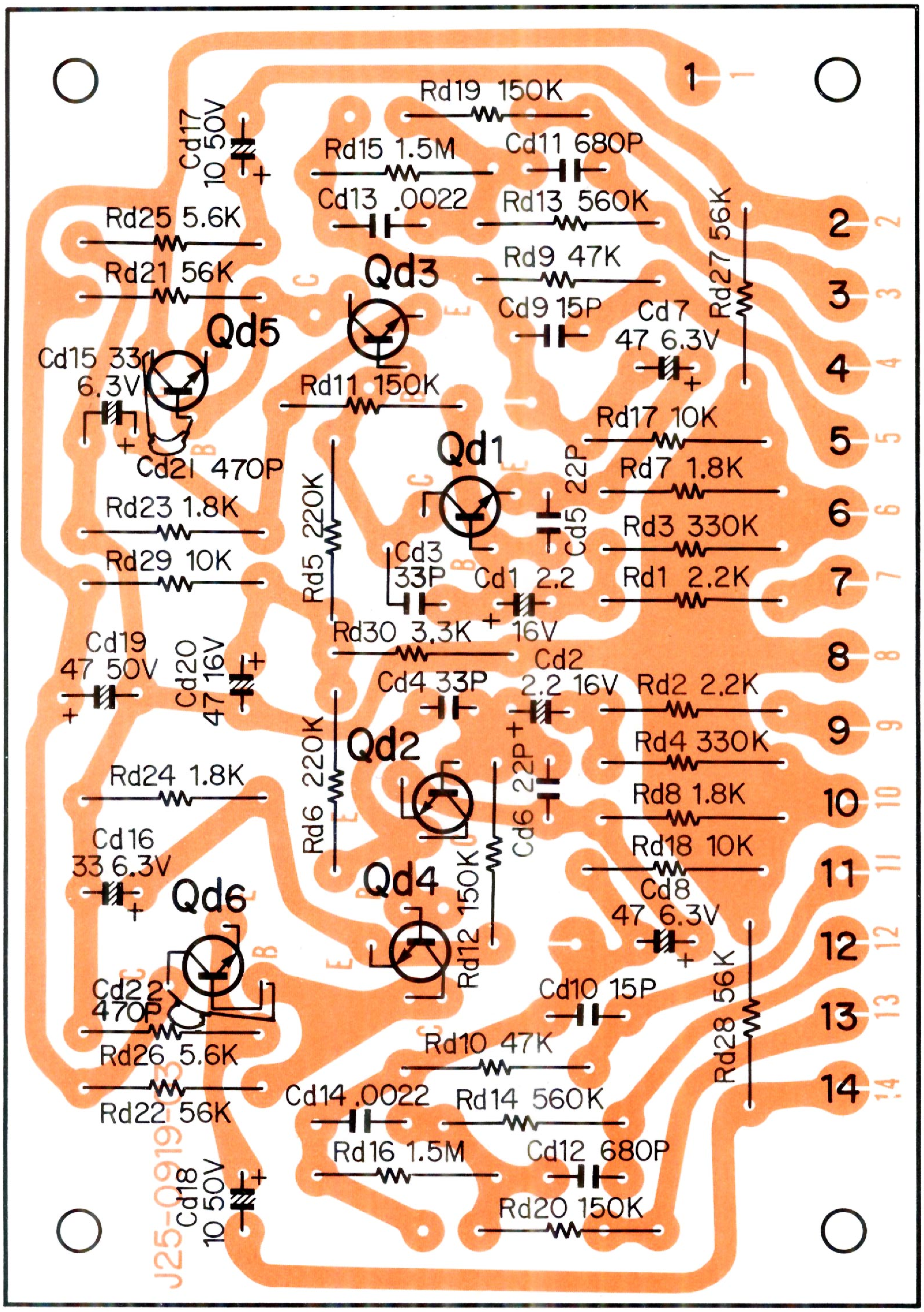
▶ MAIN AMP (X07-1200-10)



Qe1: 2SC1345 (D), Qe2~5: 2SA620WL5, Qe6, 7: 2SC1213A (B) or (C), Qe8, 9: 2SC1212A (B) or (C), Qe10, 11: 2SA743 A (B) or (C),
De1, 2: STV-3-H, De3, 4: 1S2076, De5: WZ081

PC BOARD

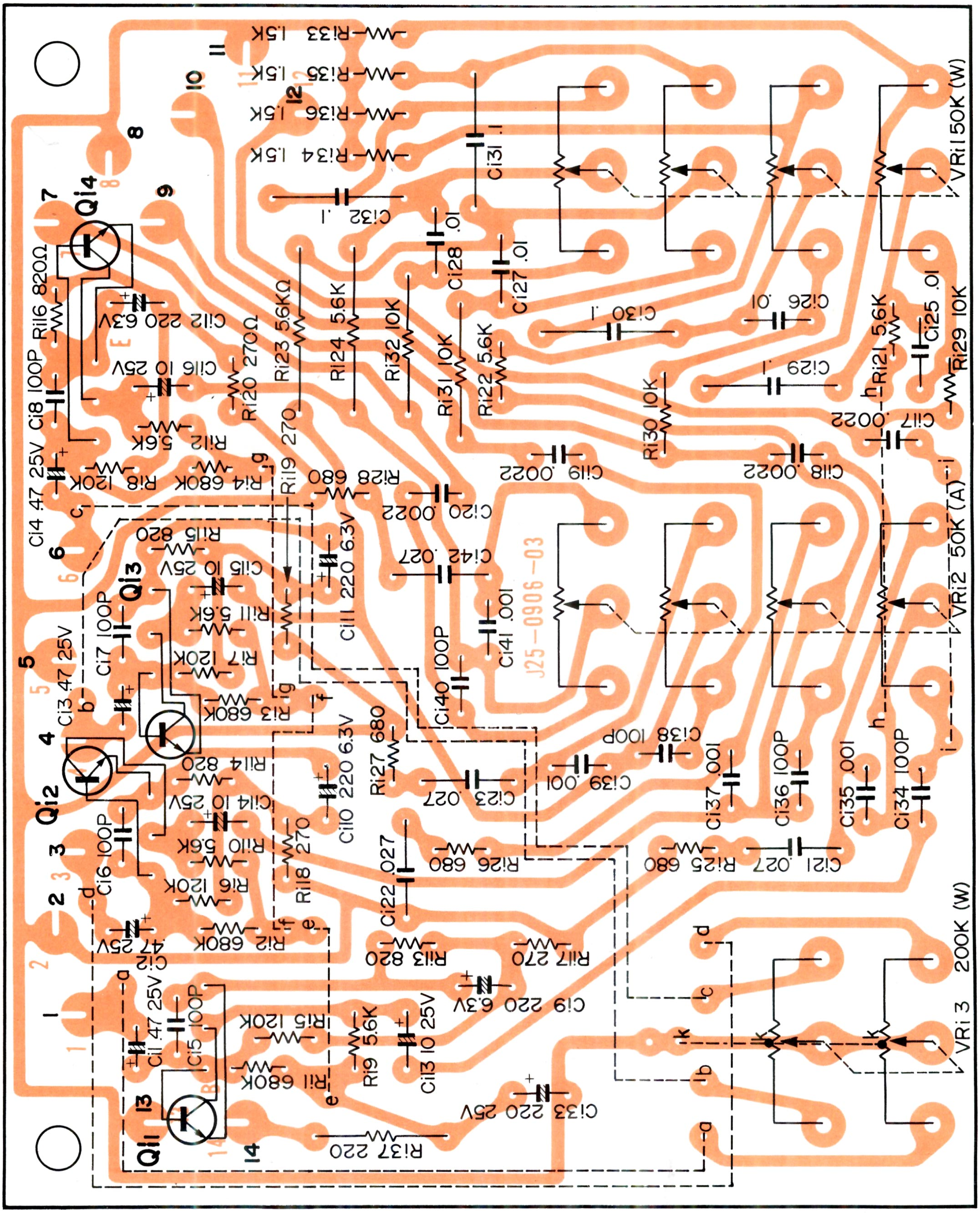
▶ PREAMP (X08-1180-00)



Qd1 ~ 4: 2SC1416A (GR), Qd5, 6: 2SC1416 (GR or BL)

PC BOARD

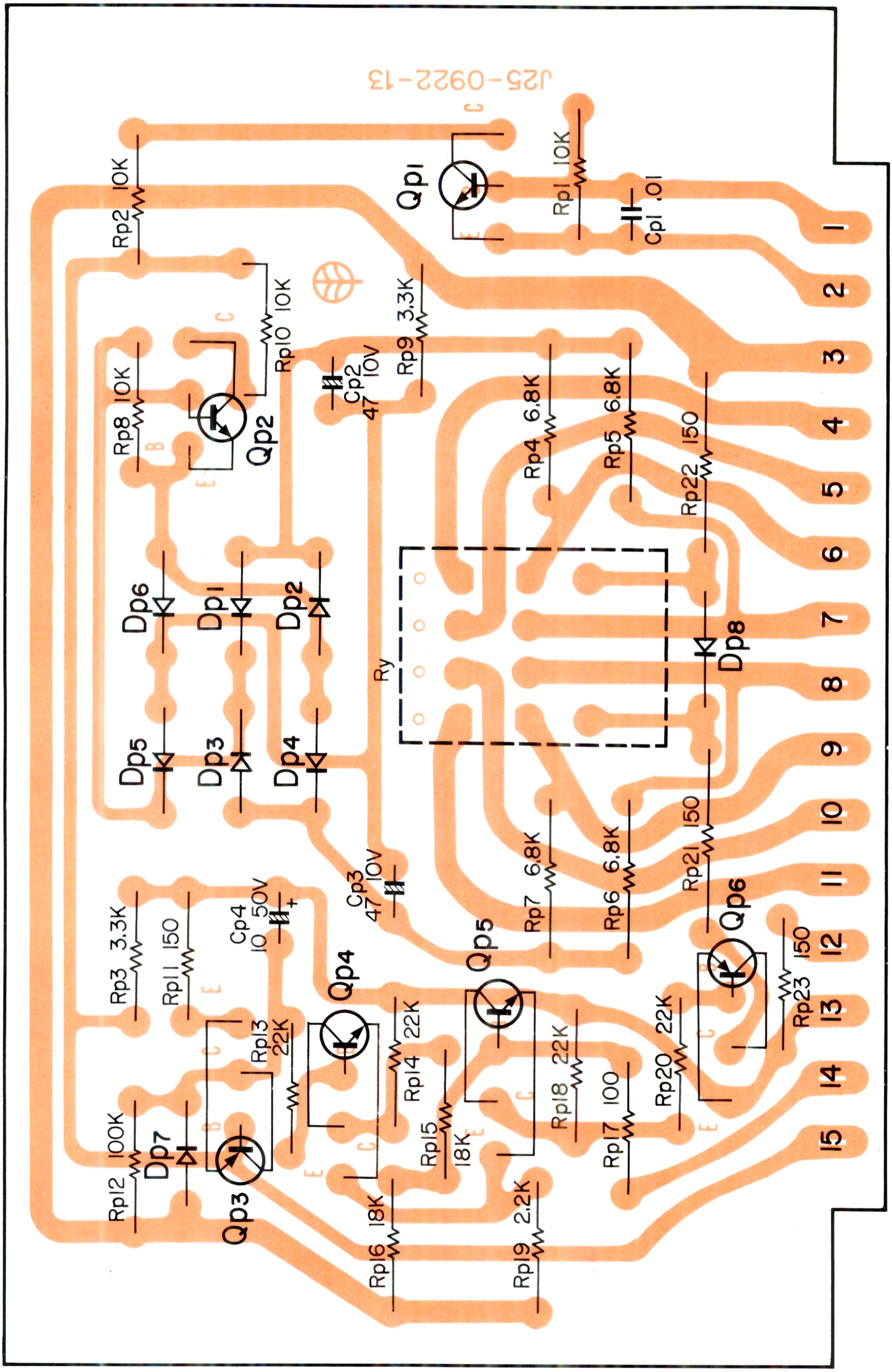
▼ TONE AMP (X11-1150-00)



Qi1 ~ 4: 2SC1345 (D) or (E)

PC BOARD

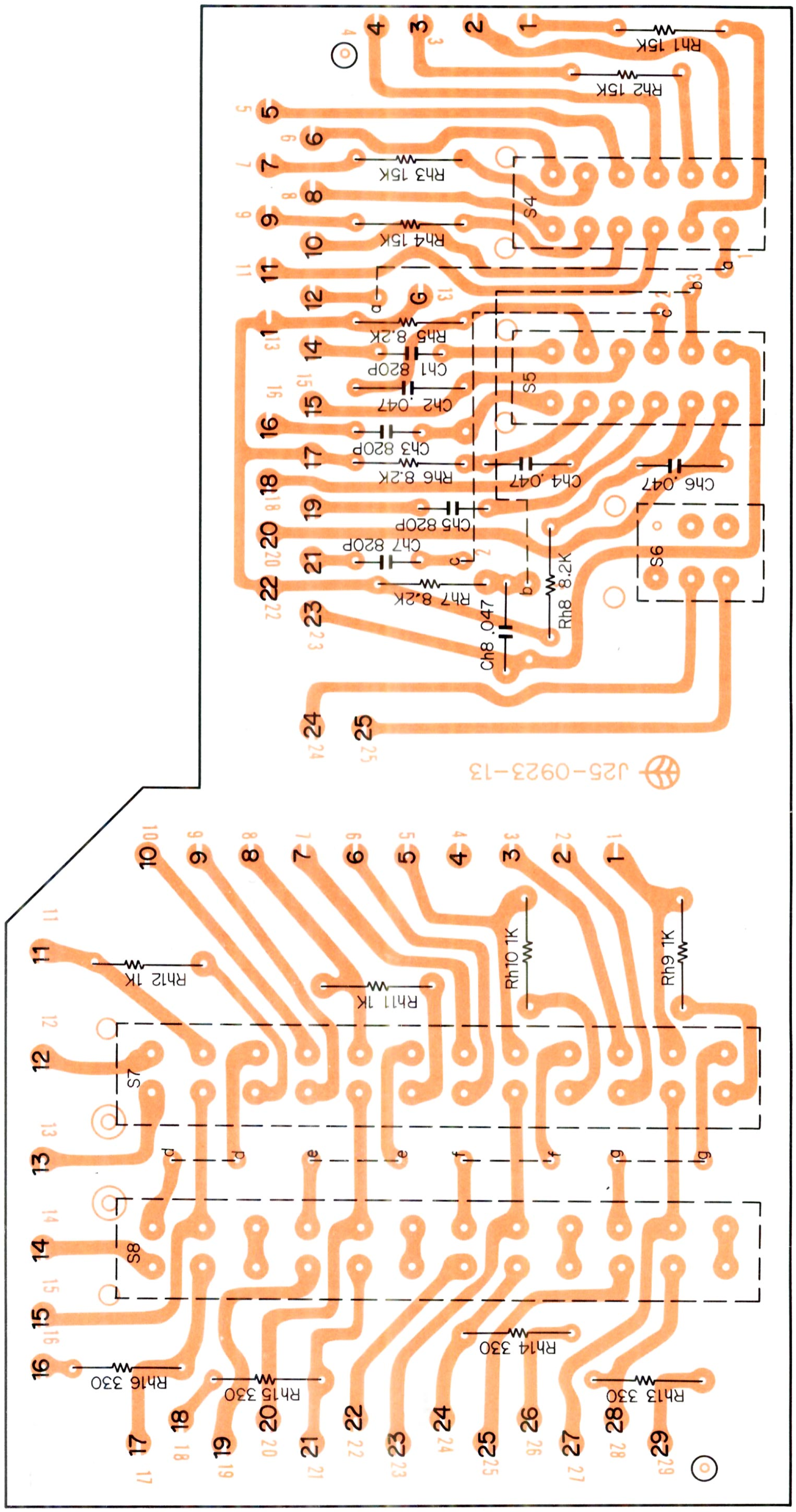
▼ PROTECTION (X13-1480-10)



Qp1, 2: 2SC1416 GR or BL, Qp3, 6: 2SA733 Q or R, Qp4, 5: 2SC828A Q or R, Dp1~6: 1S2076, Dp7, 8: W06B

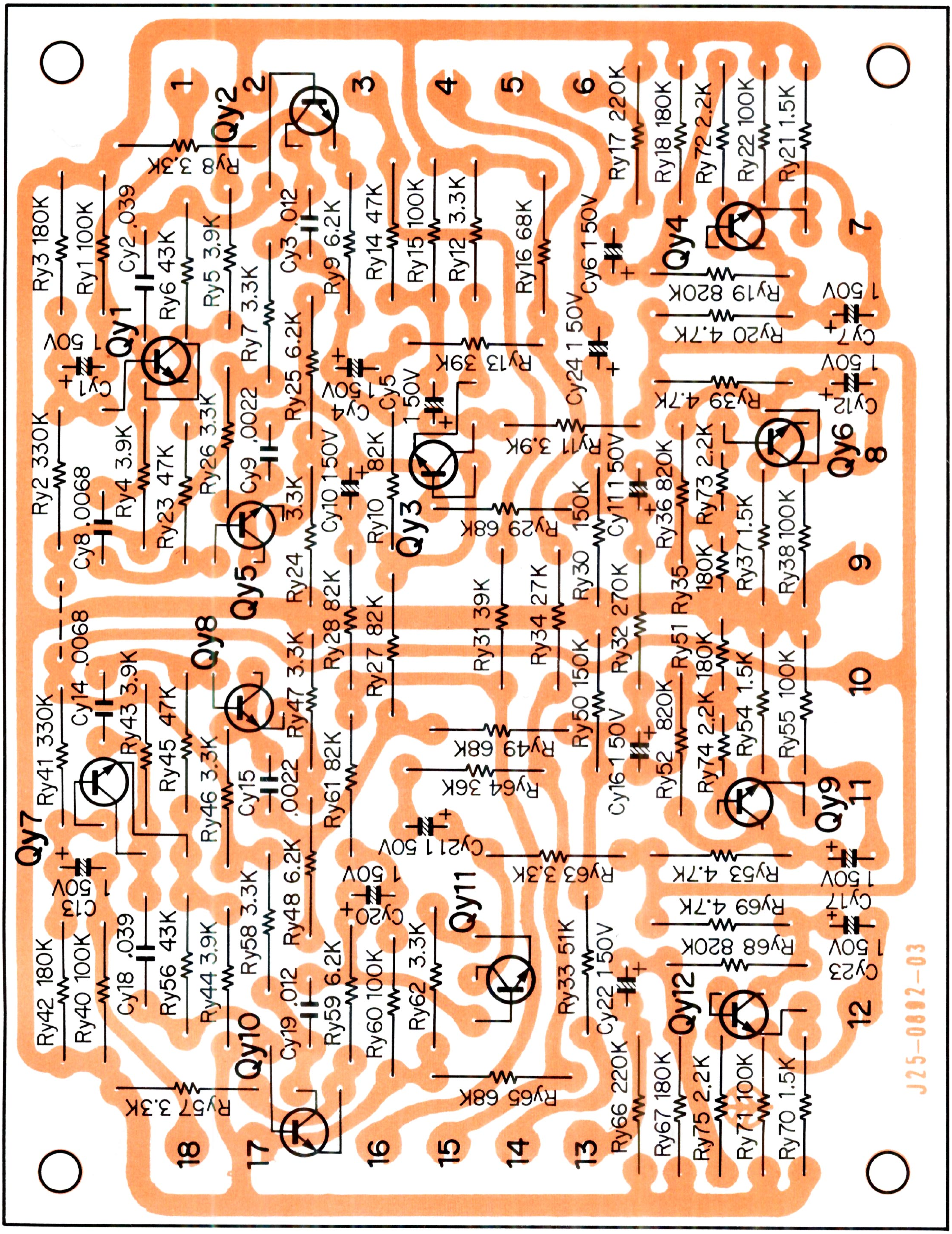
PC BOARD

▶ PUSH SWITCH (X13-1490-10)



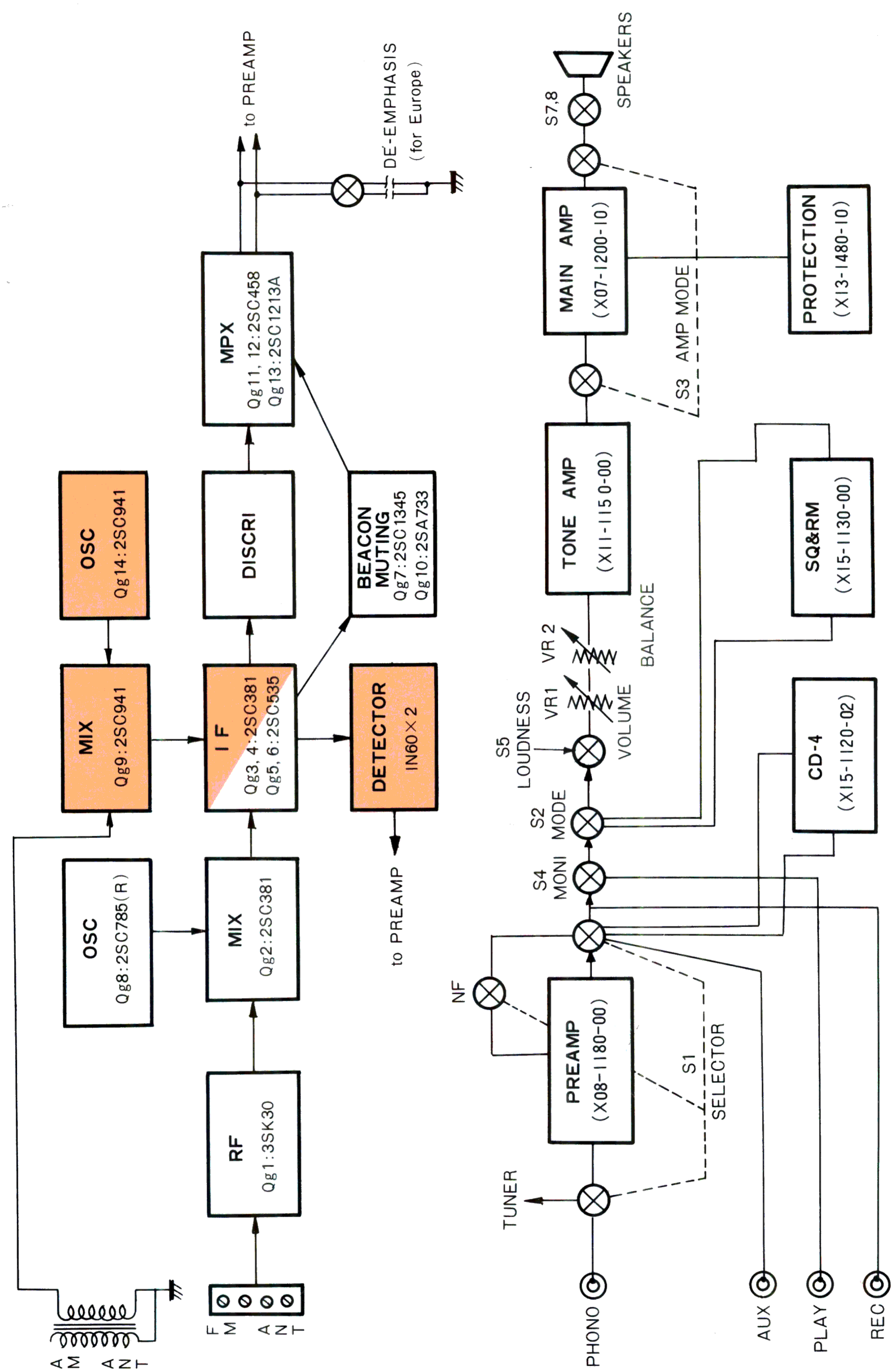
PC BOARD

▼ SQ & RM DECODER (X15-1130-00)



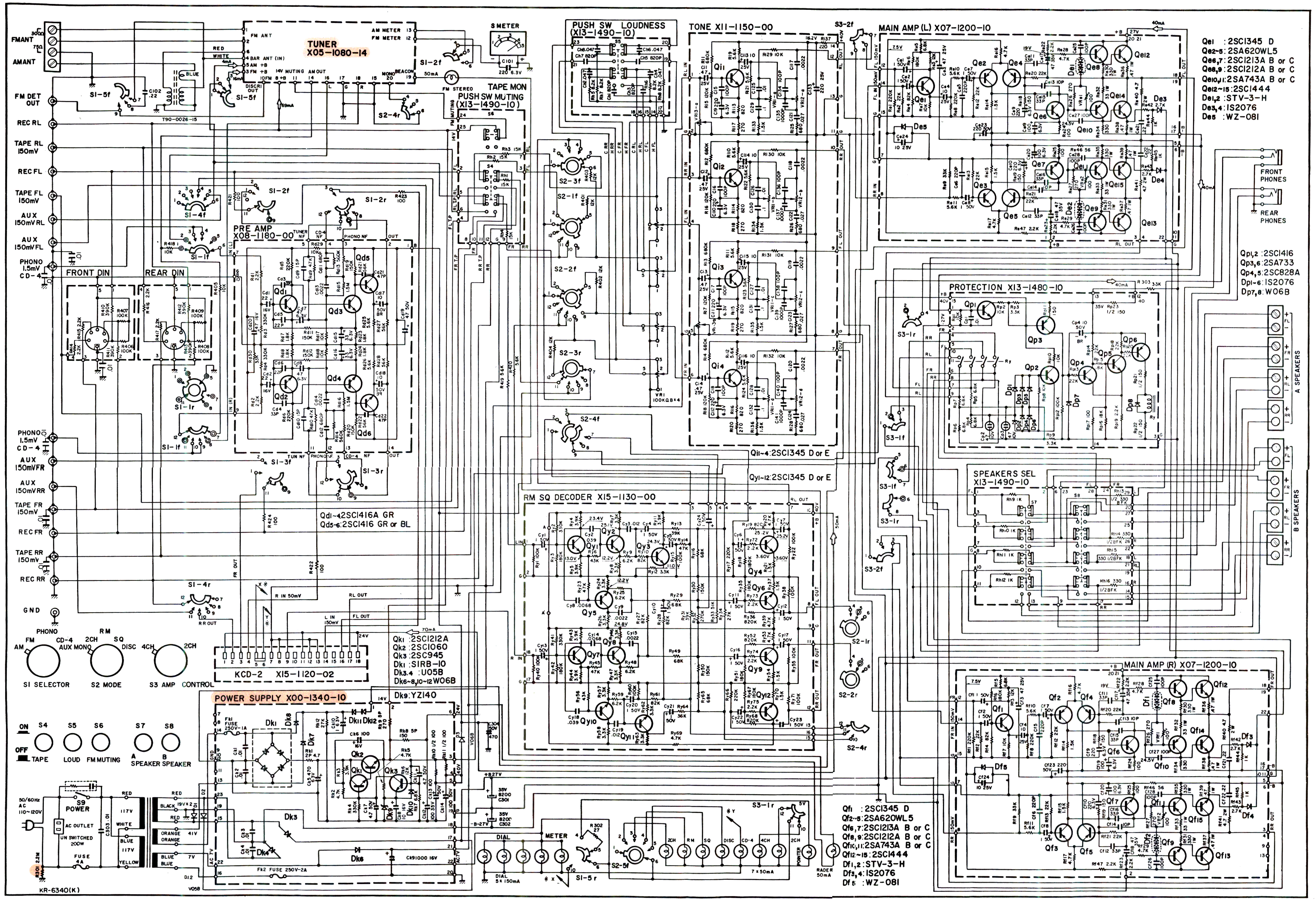
Qy1 ~ 12: 2SC1345 (D) or (E)

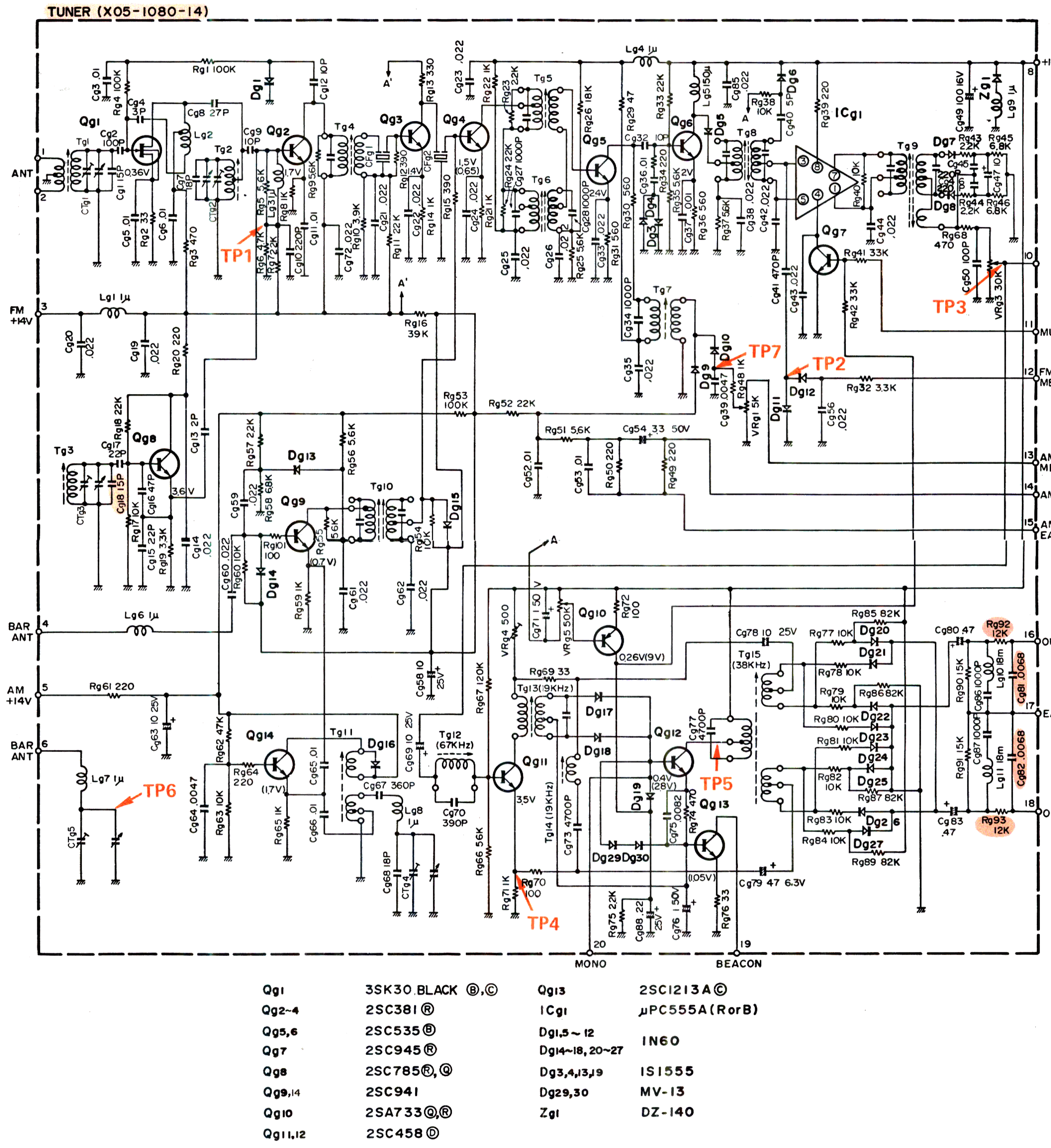
BLOCK DIAGRAM



SCHEMATIC DIAGRAM

Caution: The red screen in schematic diagram means that the unit is different for every country, therefore refer to the SUB PARTS LIST in this manual.





SPECIFICATIONS

FM TUNER SECTION

Usable Sensitivity (IHF)	2.0 μV
Frequency Response	20 Hz – 15,000 Hz ±1.2 dB
Harmonic Distortion	0.5% Mono (at 400 Hz 100% modulation) 0.8% Stereo (at 400 Hz 100% modulation)
Signal to Noise Ratio	63 dB at 1 mV input
Image Rejection	60 dB
Selectivity (IHF ALT. channel)	50 dB
IF Rejection	90 dB
Spurious Signal Rejection	90 dB
AM Suppression	60 dB
Capture Ratio	3.0 dB
Stereo Separation	40 dB at 1,000 Hz 20 dB at 10,000 Hz
Sub Carrier Suppression	45 dB
Antenna Impedance	300 ohms Balanced & 75 ohms Unbalanced

AM TUNER SECTION

Usable Sensitivity (IHF)	25 μV
Signal to Noise Ratio	45 dB at 1 mV input
Image Rejection	45 dB
Selectivity (IHF)	30 dB
IF Rejection	35 dB
Antenna	Built-in ferrite bar antenna, External antenna terminals

MAIN-AMPLIFIER SECTION

RMS Power Output	4 CHANNEL	2 CHANNEL
Full channel driven		
into 8 ohms at 20 Hz – 20,000 Hz	15 x 4 watts	40 x 2 watts
into 8 ohms at 1,000 Hz	20 x 4 watts	50 x 2 watts
into 4 ohms at 1,000 Hz	23 x 4 watts	45 x 2 watts
Dynamic Power Output		
into 8 ohms	120 watts	170 watts
into 4 ohms	152 watts	
Total Harmonic Distortion	0.8% at rated power into 8 ohms 0.3% at ½ rated power into 8 ohms at 1,000 Hz	
Intermodulation Distortion (60 Hz : 7 kHz = 4 : 1)	0.8% at rated power into 8 ohms. 0.3% at ½ rated power into 8 ohms	
Power Bandwidth	20 Hz – 40,000 Hz	
Damping Factor	20 at 8 ohms (4 channel operation)	
Speaker Impedance	Accept 4 ohms to 16 ohms	

PREAMPLIFIER SECTION

Input Sensitivity and Impedance	
Phono	1.5 mV, 100 k ohms
AUX	150 mV, 50 k ohms
Tape Play	150 mV, 50 k ohms
Maximum Input Voltage (rms)	
Phono	100 mV, T.H.D. 0.8% at 1,000 Hz
Signal to Noise Ratio	
Phono	60 dB
AUX	75 dB
Tape Play	75 dB
Output Voltage and Impedance	
Tape Rec. (Pin)	150 mV, 100 ohms
(Din connector)	40 mV
Frequency Response	
Phono	RIAA Standard curve ±1 dB
Tuner, AUX, Tape Play	20 Hz – 20,000 Hz ±1 dB
Tone Controls	
Bass	±10 dB at 100 Hz
Treble	±10 dB at 10,000 Hz
Loudness Control (–30 dB)	+10 dB at 100 Hz + 5 dB at 10,000 Hz

GENERAL

Switches	
Speaker Selector	A, B Push Switch
Input Selector	AM, FM, PHONO, CD-4, AUX
Mode	MONO, 2ch, FM, SQ, Discrete
Tape Monitor	Push Switch
Others	Loudness, AMP Control, FM Muting, Power
AC Outlet	Unswitched 1
Power Consumption	320 watts at full power, 35 watts at no signal
Dimensions	W 21-27/32" (555mm), H 6-5/16" (160mm) D 14-3/16" (360mm)
Weight	33 lbs. (15 kg)

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