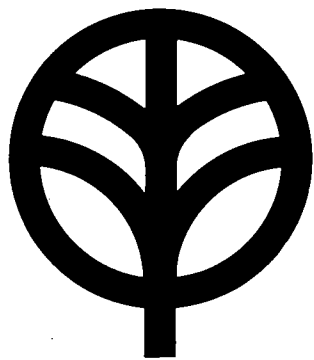


119

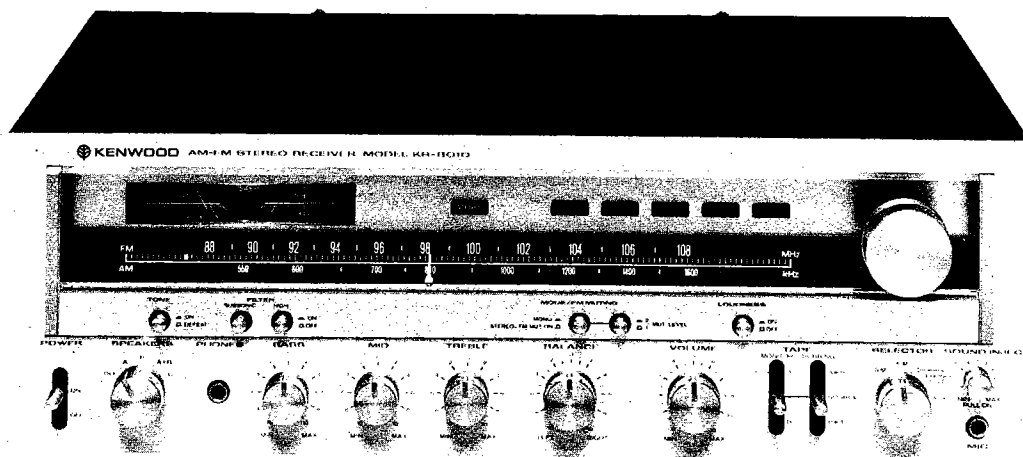


KENWOOD
HI/FI STEREO COMPONENTS

8118

SERVICE MANUAL

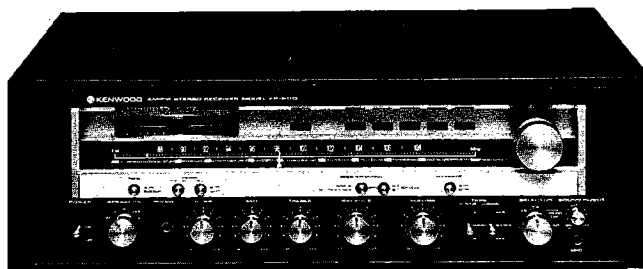
**KR-8010
(KR-8110)**



AM-FM STEREO RECEIVER

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EXTERNAL VIEW.....	3
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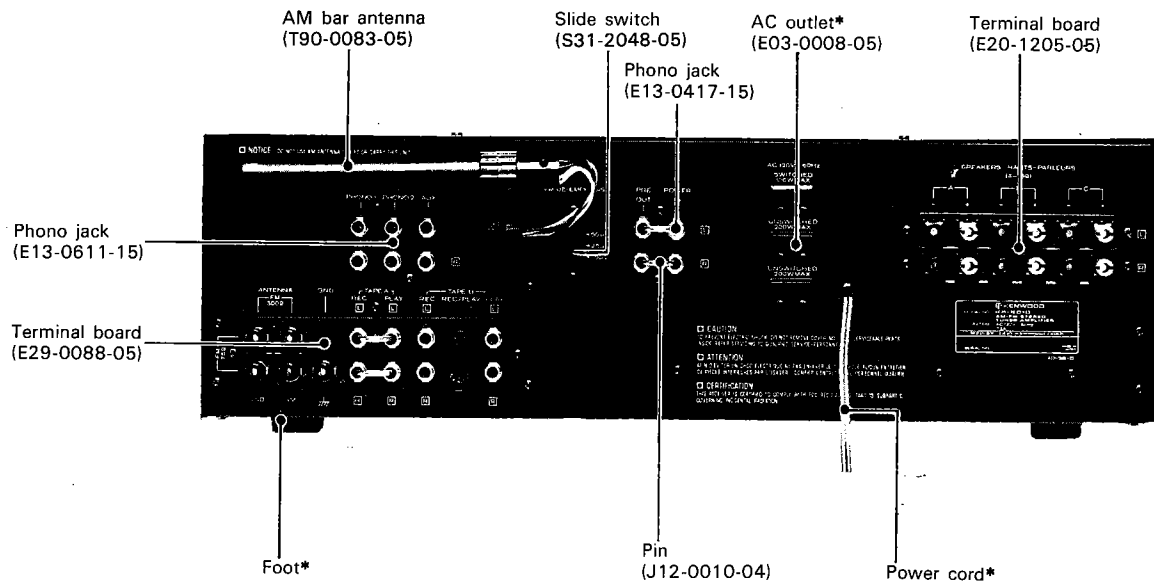
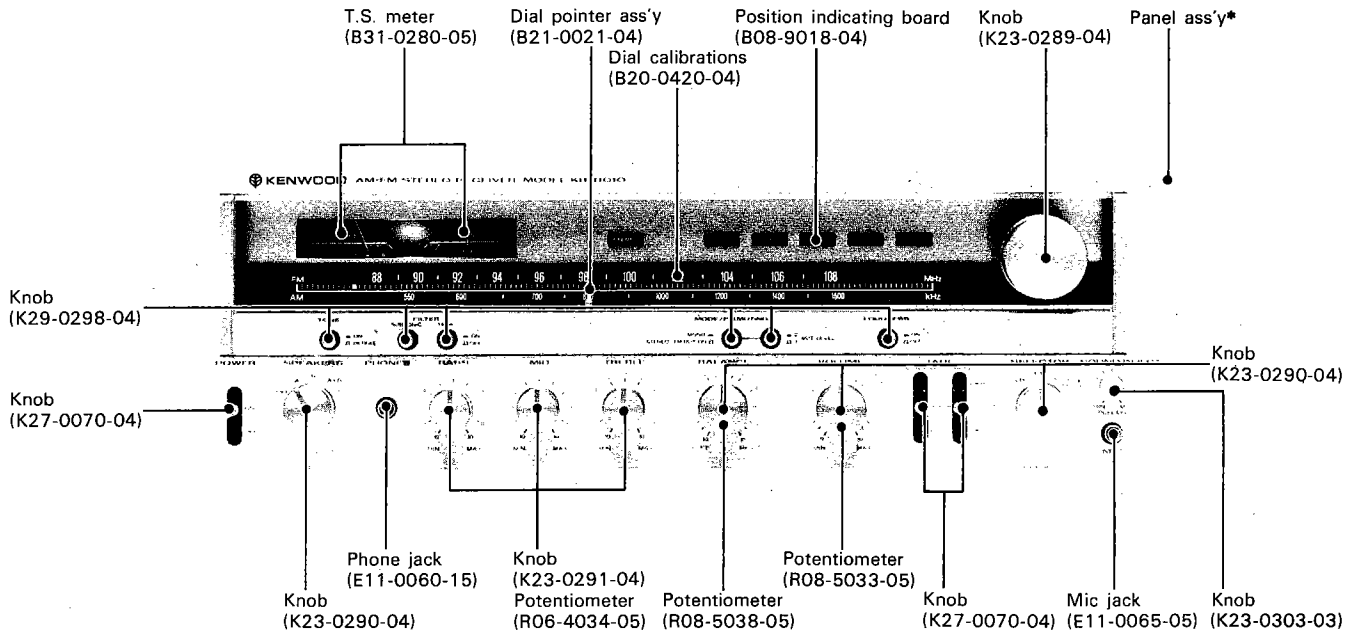
KR-8110

Note:

The products are subject to modification in components and circuits in different countries and regions. This is because each product must be used under the best condition. This manual provides information of modification based on the standard in the U.S., for the convenience of ordering associated components and parts.

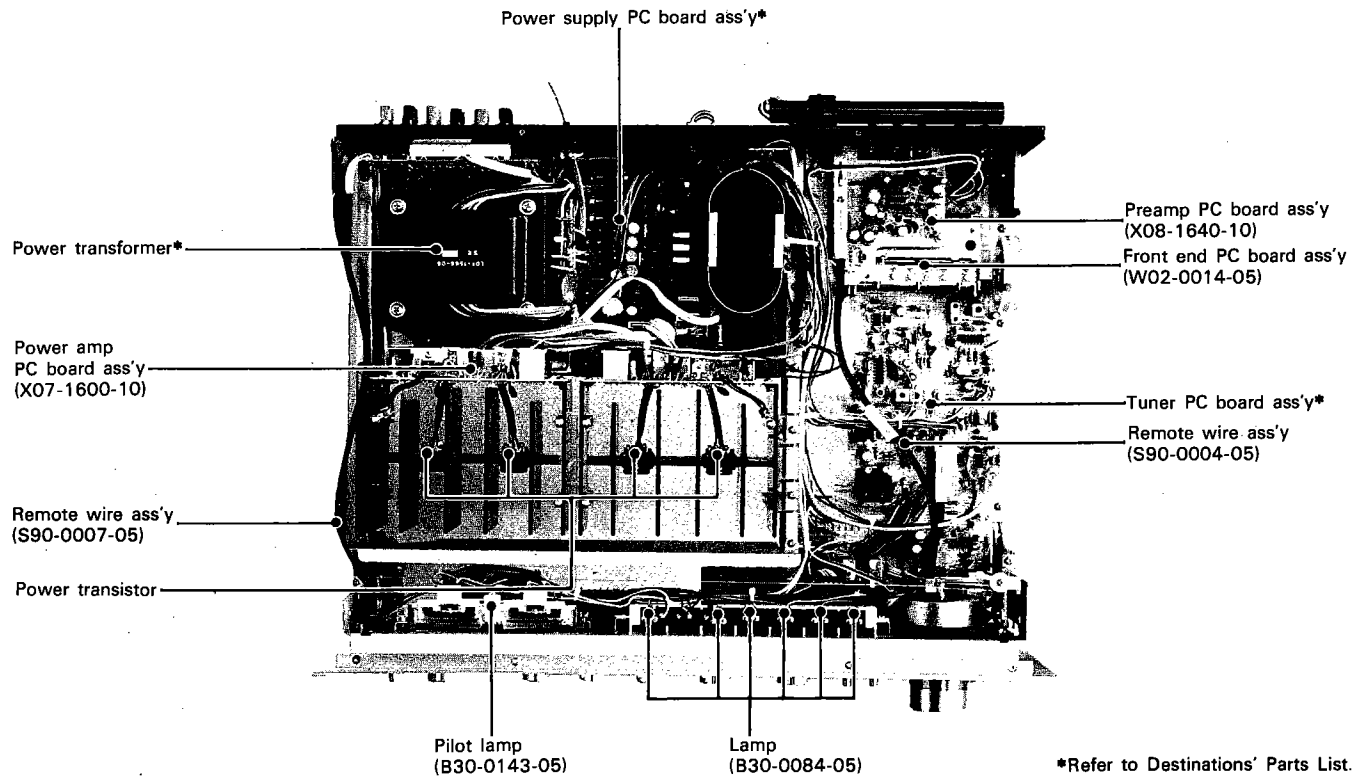
U.S.A.....	K
Canada.....	P
PX.....	U
Europe.....	W
England.....	T
Scandinavia.....	L
Other Areas.....	M ₁
Audio Club.....	KR-8110 (M ₂)

EXTERNAL VIEW



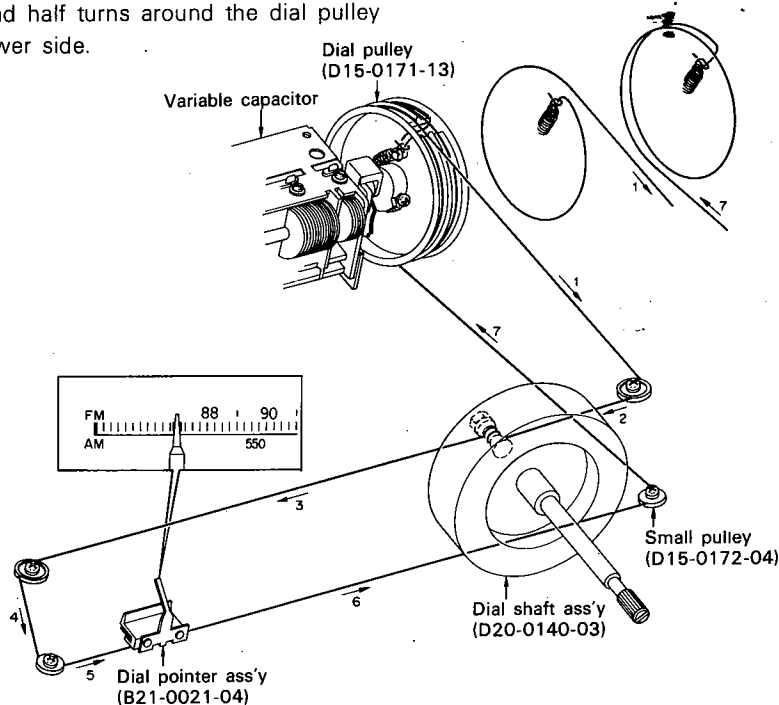
*Refer to Destinations' Parts List.

INTERNAL VIEW/DIAL CORD STRINGING

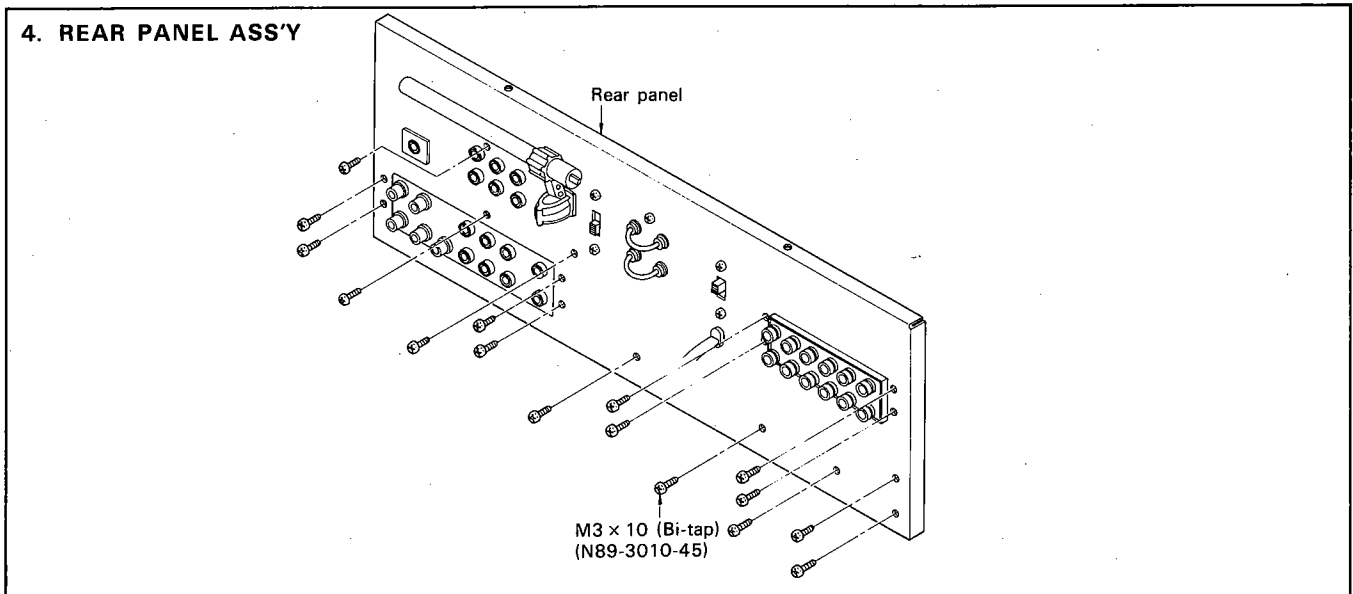
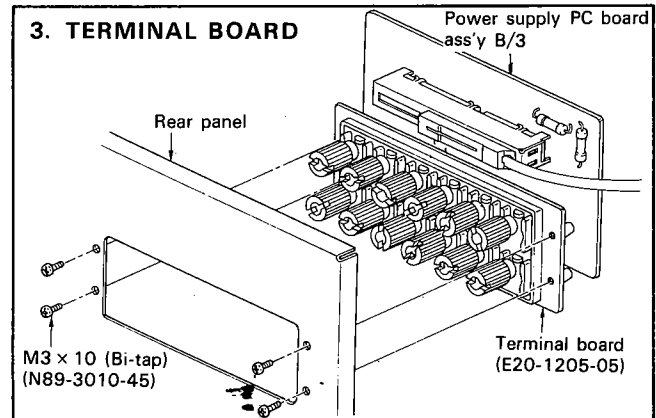
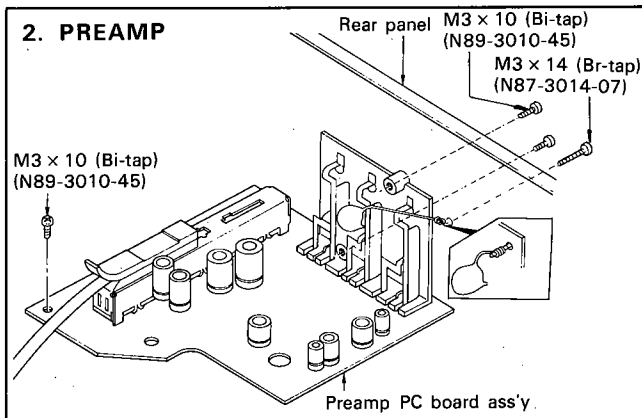
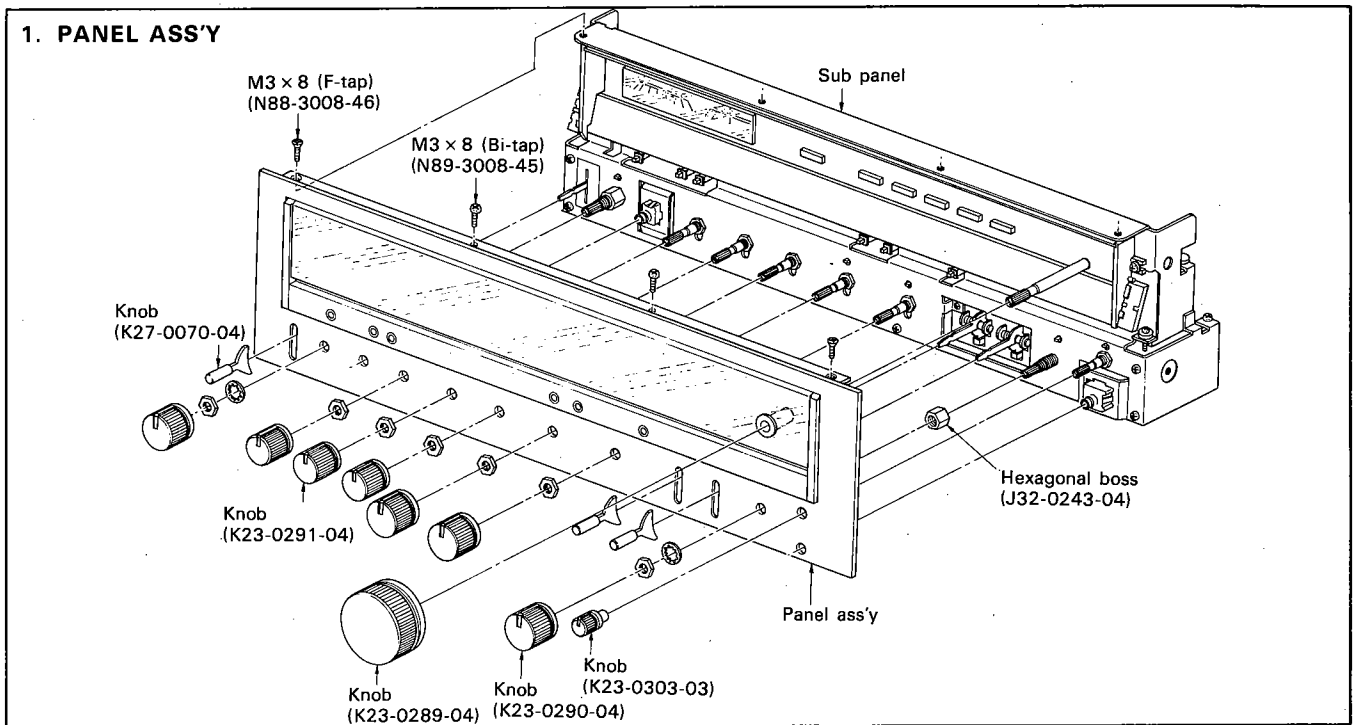


DIAL CORD STRINGING

1. Fully open the variable capacitor.
2. Set the dial pulley as illustrated, and fix it with a screw.
3. Tie the end of the dial cord and the dial spring, giving a margin of about 10 cm.
4. Hook the spring on the boss.
5. Dress the dial cord in the direction of "1" to "2", and wind it 2 turns around the dial shaft clockwise.
6. Dress the dial cord in the direction of "3" through "7", and wind it one and half turns around the dial pulley starting from its lower side.
7. Tie the dial cord rigidly with the margin cord (about 10 cm, described in 3, above) without permitting any slack.
8. Cut off the unnecessary part of the cord, and release the dial spring from the boss.
9. Fully close the variable capacitor.
10. Mount the dial pointer in position as illustrated. This setting should be checked by receiving a suitable broadcast station actually.

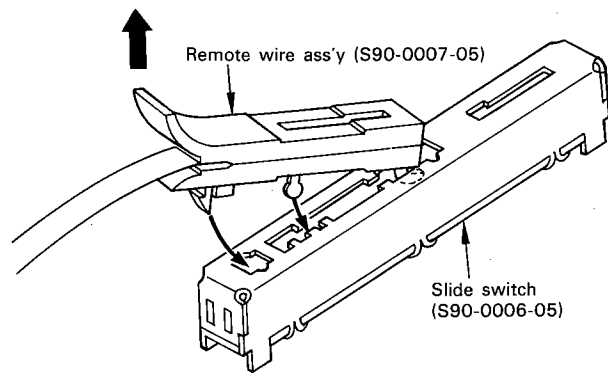


DISASSEMBLY FOR REPAIR



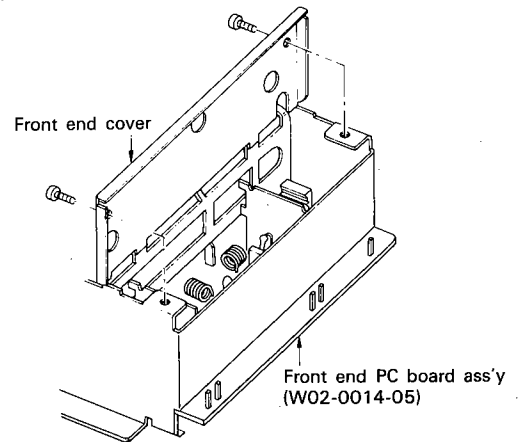
DISASSEMBLY FOR REPAIR

5. REMOTE WIRE ASS'Y



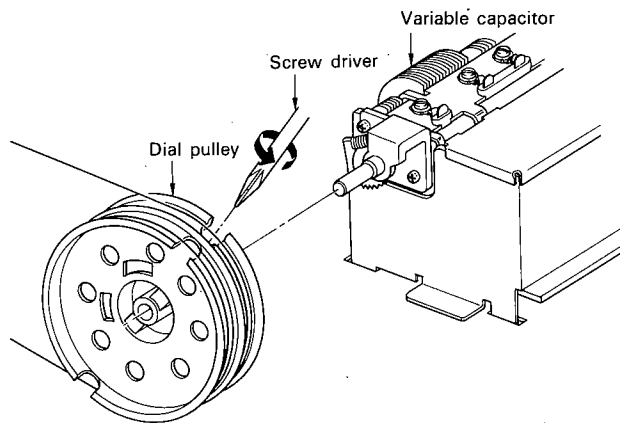
6. FRONT END COVER

Remove Preamp PC board ass'y
Front end section can be checked by opening the front end cover.



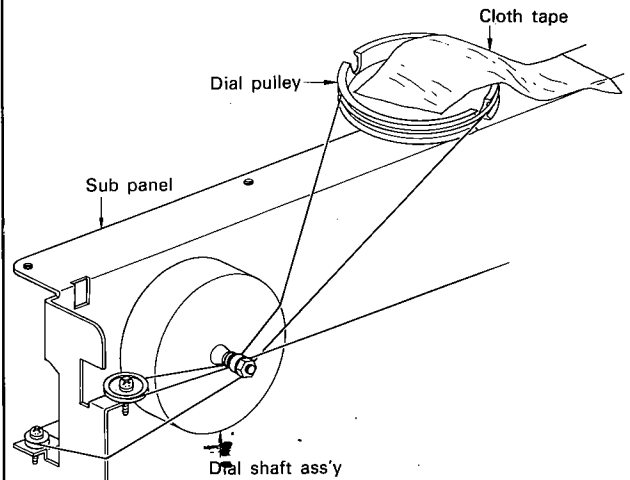
7a. REPLACEMENT OF FRONT END ASS'Y

(1) Remove the dial pulley from the shaft of the variable capacitor.



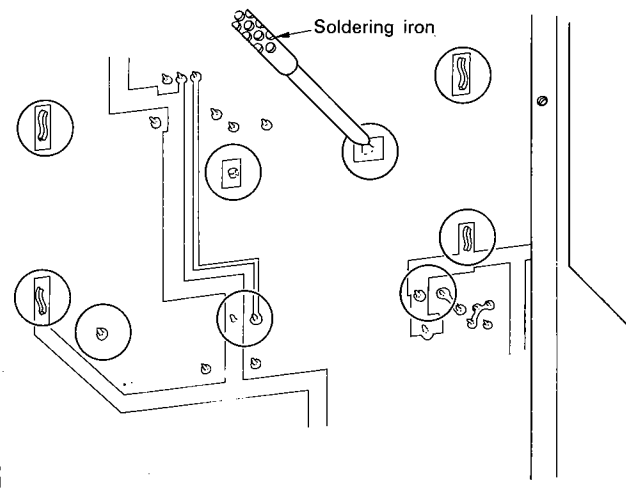
7b. REPLACEMENT OF FRONT END ASS'Y

(2) Fix the dial pulley on the sub panel by a cloth tape.



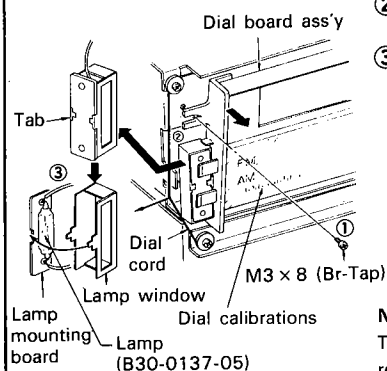
7c. REPLACEMENT OF FRONT END ASS'Y

(3) Unsolder the circled sections, front end ass'y can be replaced.



8. DIAL CALIBRATIONS' LAMP

- ① Remove the screw.
- ② Take out the lamp window.
- ③ Extend the tab, and the lamp can be replaced.

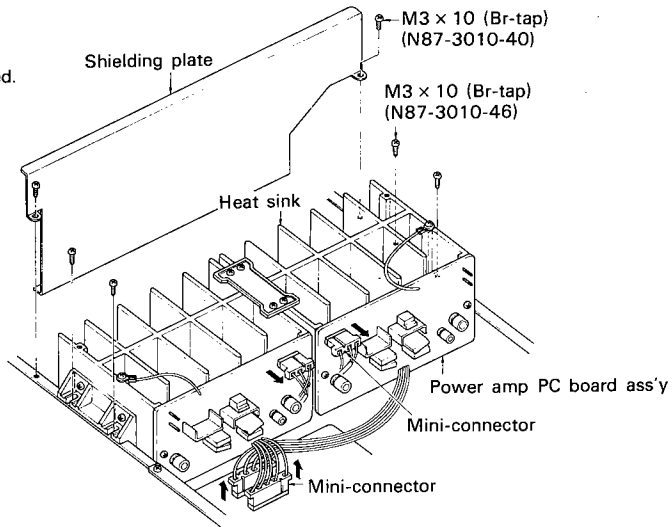


Note:
The dial calibrations can be removed by removing the dial board ass'y and the lamp window.

DISASSEMBLY FOR REPAIR

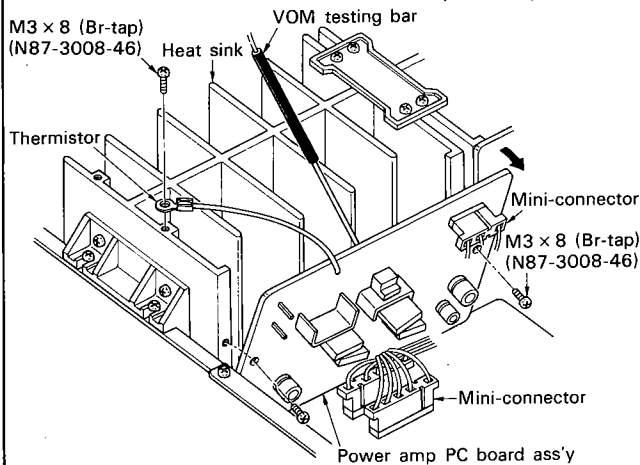
9a. POWER AMP

- (1) Remove the mini-connectors.
 - (2) Remove screws.
- Power amp block can be removed.



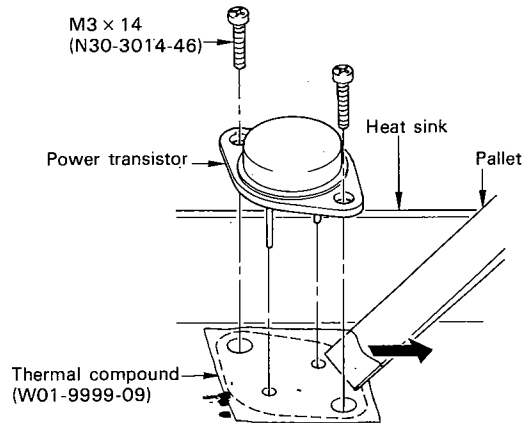
9b. POWER AMP

- Power amp section can be checked as illustrated.
- NOTE:** The heat sink is connected to the power amp output.



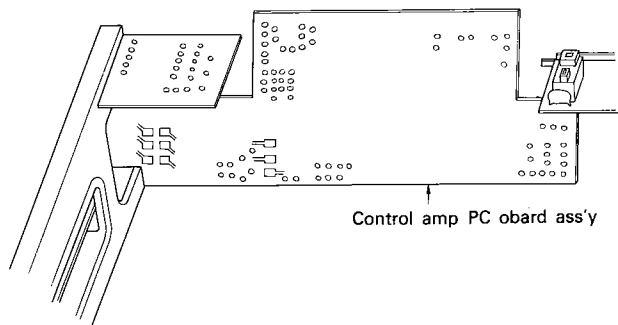
10. REPLACEMENT OF POWER TRANSISTOR

- (1) Paint thermal compound on the contact area of the heat sink.
- (2) After mounting the power transistor, clear away the remainder of thermal compound.



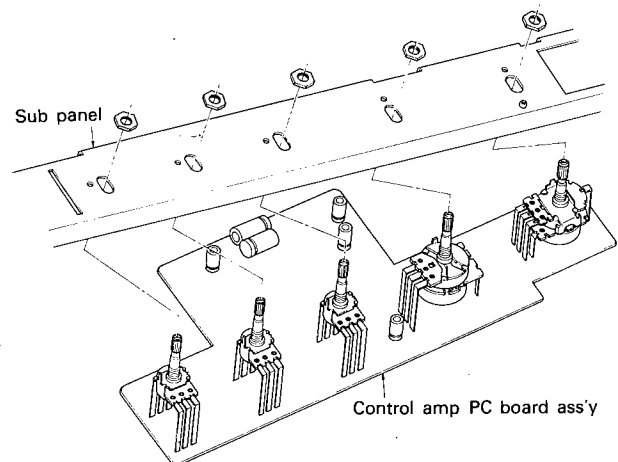
11a. CONTROL AMP

- Control amp PC board ass'y can be checked by removing power amp block.



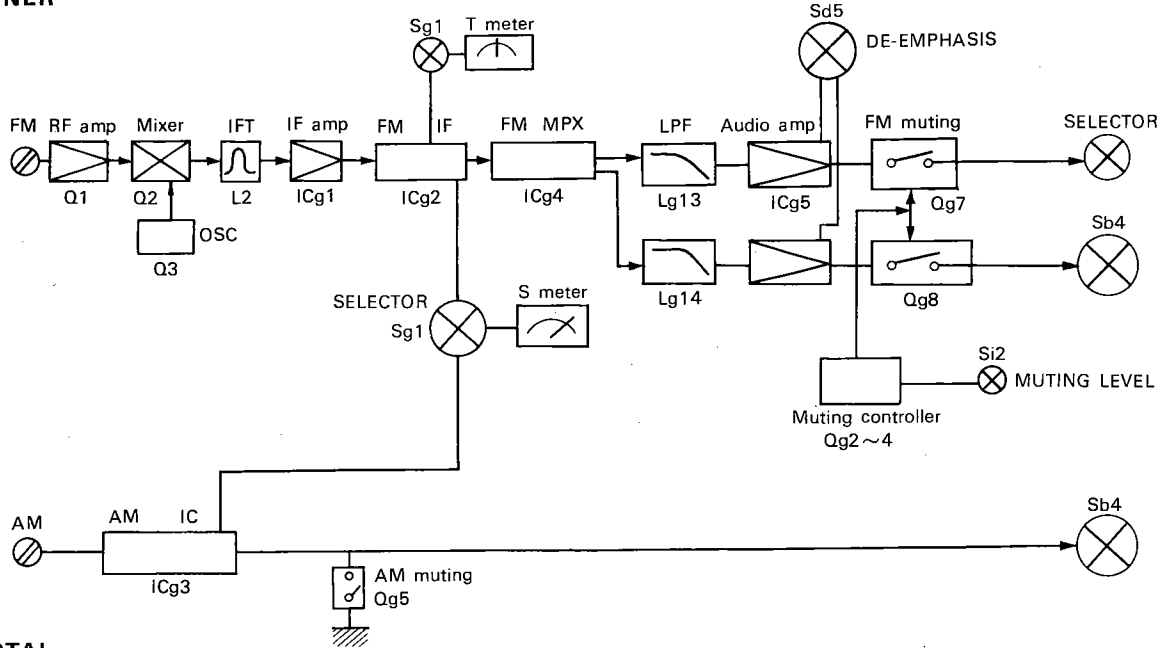
11b. CONTROL AMP

- Control amp PC board can be removed as illustrated.

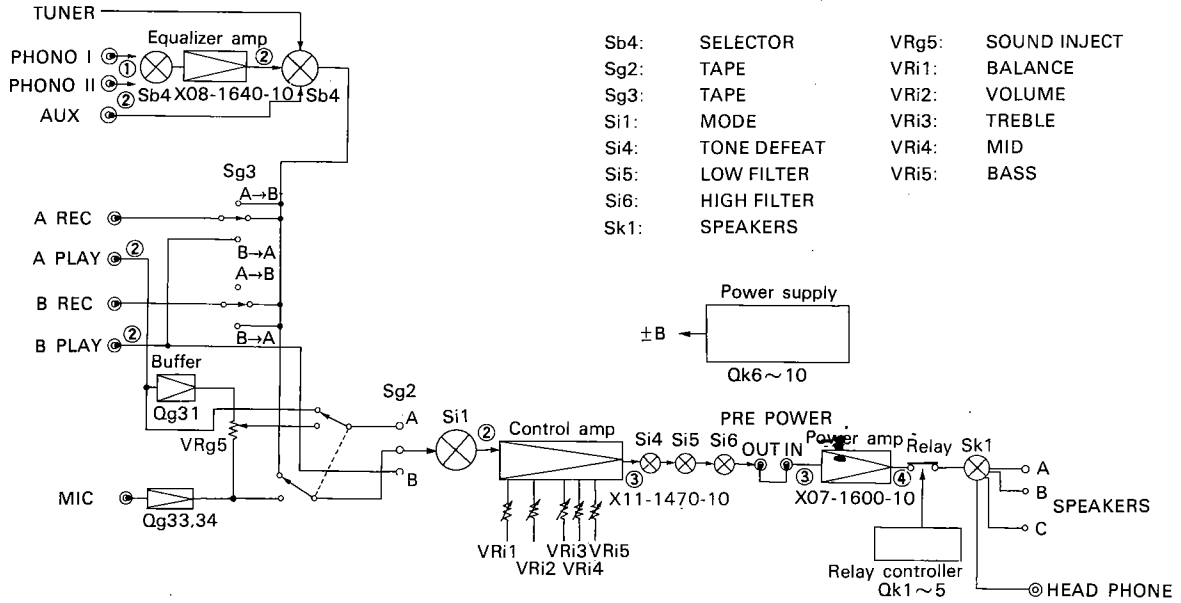


BLOCK & LEVEL DIAGRAM

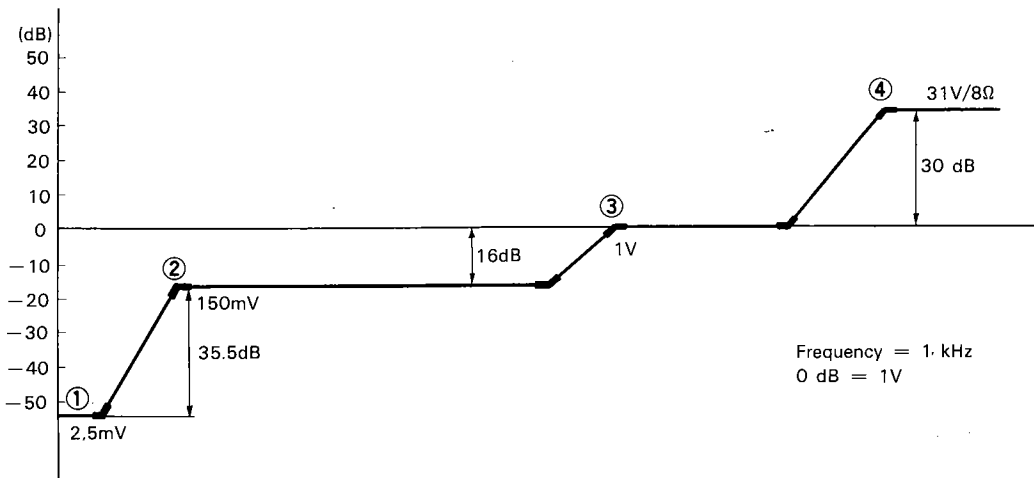
TUNER



TOTAL



- | | | | |
|------|-------------|-------|--------------|
| Sb4: | SELECTOR | VRg5: | SOUND INJECT |
| Sg2: | TAPE | VRi1: | BALANCE |
| Sg3: | TAPE | VRi2: | VOLUME |
| Si1: | MODE | VRi3: | TREBLE |
| Si4: | tone DEFEAT | VRi4: | MID |
| Si5: | LOW FILTER | VRi5: | BASS |
| Si6: | HIGH FILTER | | |
| Sk1: | SPEAKERS | | |



CIRCUIT DESCRIPTION

FM SUPPORT CIRCUITRY

In addition to the ordinary muting circuit, KR-8010's FM section has a special support feature which switches a weak and noisy stereo broadcast into mono automatically. When the input signal is too weak, the voltage on pin 12 of ICg2 increases to 1.7V from, say, 0.2V in a normal tuned-in situation; and when the receiver is off-tuned, the voltage increases up to, say, 4.5V. And these two cases other than the tuned-in situation causes the collector voltage of Qg3 to rise to, say, approximately 10V. Qg2 and Qg3 constitute a schumit circuit, with Qg2 being set in the ON state, and Qg3 set in the OFF state. When the MUTING LEVEL selector Si2 is set to position "1" (consequently pin 11 of ICg2 is grounded.), an input level of less than $2\mu\text{V}$ turns Qg2 ON. When the MUTING LEVEL selector Si2 is set to position "2" coupling pin 11 of ICg2 to nowhere, an input level of less than $10\mu\text{V}$ turns Qg2 ON. Qg4's base is controlled by the collector voltages of Qg3 and Qg1. When the collector voltage of Qg3 is "high", Qg4 is turned OFF. As a result, the gate voltage of Qg7 (Qg8) goes down below 0V, turning Qg7 OFF. Consequently, the signal line is cut out. Qg1 combines a weak and noisy stereo signal into mono, and is turned OFF for less than $15\mu\text{V}$ of input voltage. When Qg1 is turned OFF, its collector voltage is set high to, say, 7V. Qg1's collector is coupled to Qg9's base via Dg3. Therefore, Qg9 is turned ON, whereas Qg6 is turned OFF, switching ICg4 into the mono mode. Where Qg6 is turned OFF, the STEREO indicator goes off. The operation of Qg1 does not affect that of Qg4. Qg10's base potential is 0V when the MODE switch Si1 is set to the STEREO position, and 0.65V when it is set to the MONO position. In other words, Qg10 turns ON when the MODE switch is set to the MONO position, turning Qg4 ON and Qg6 OFF, and shorting Qg7.

Dg4 and 5, Cg9, and Rg30 constitute a pop noise cancelling circuit for power ON/OFF operations. They momentarily turn Qg4 OFF to bring Qg7 (Qg8) into the OFF state.

HA11223

Adoption of newly developed stereo demodulator IC HA11223.

(1) Features of HA11223

- * Monolithic IC with DIL 16 pins.
- * Built-in pilot cancelling function.
- * Low distortion (0.01% at 300mV mono) with 100% negative feedback circuit.
- * High input impedance (75k Ω).
- * High S/N (86 dB at 300mV input).
- * Improved PLL circuit to minimize stereo distortion in high frequency range. (0.06% at 10 kHz Main-ch input).

(2) Operating Principle

The composite signal is fed to the No. 2 pin of IC. This signal passes through the preamplifier and is applied to the pilot canceller, 100% NFB amplifier and sync detector; also, it is applied to the phase detector $\angle 90^\circ$ via Cg39. When the control voltage is absent, VCO oscillates a frequency of approximately 76 kHz to produce an output of 19 kHz at FF 38 kHz and FF 19 kHz $\angle 0^\circ$, which is compared in phase with the pilot signal by the phase detector $\angle 90^\circ$. In practice, this phase detector is a multiplier from which an output proportional to the product of the 2 input signals (19 kHz pilot and 19 kHz VCO) is produced, provided the phase difference is not 90° .

This output, after the unwanted components are removed by the low-pass filter (Cg42, Cg43, Rg81), is applied to the DC amplifier and is fed to VCO where the output is controlled so that the phase difference between the output and the pilot signal reaches 90° . As a result, a 38 kHz phase-locked subcarrier is obtained, which passes through the stereo/mono circuit and is fed to the sync detector as a switching signal.

In the stereo/mono circuit, the 38 kHz signal becomes in-phase state and the demodulated audio signal is forcedly switched to a mono signal during reception of mono broadcast or stereo broadcast of weak signals. The function of the stereo/mono circuit is such that the pilot signal is multiplied by the 19 kHz signal (no phase difference with respect to the pilot signal) by the sync detector $\angle 0^\circ$ which produces a DC output voltage proportional to the pilot signal amplitude. This output voltage is fed to the DC amplifier to drive the lamp circuit through the switch and, the same time, it allows the stereo/mono circuit to feed the 38 kHz signal to the sync detector.

The special feature of this IC is that it has a built-in pilot canceller circuit. The 19 kHz signal leading 90° in phase with respect to the pilot signal obtained from the VCO is applied to the gain control.

Also, the output from the phase detector $\angle 0^\circ$ is sampled and fed to the gain control amplifier via the DC amplifier.

Thus, a triangle waveform which is in-phase with the pilot signal is developed since the output of the gain control amplifier contains Cg50. This triangle waveform is level adjusted by VRg3 and is fed to the No. 4 pin so that it is phase inverted by the pilot canceller circuit and is added to the pilot signal to minimize the 19 kHz component in the composite signal.

The 19 kHz switch functions to shut out the output of the gain control amplifier during reception of mono broadcast.

DESTINATIONS' PARTS LIST

Ref. No.	U.S.A. (K)	Canada (P)	PX (U)	Europe (W)	Scandinavia (L)	England (T)	Other Area (M)	KR-8110 (M ₂)	Descriptions
C1.2 C1~3	C90-0145-05	C91-0025-05	C91-0023-05	CK45E3D103 PMU	CK45E3D103 PMU	CK45E3D103 PMU	C91-0023-05	C91-0023-05	Ceramic or film capacitor 0.01μF Ceramic capacitor 0.01μF
—	A01-0339-03	A01-0339-03	—	A01-0339-03	A01-0339-03	A01-0339-03	A01-0339-03	—	Case ☆
—	—	—	A03-0231-02	—	—	—	—	A03-0231-02	Cabinet (A) ☆
—	—	—	A03-0232-02	—	—	—	—	A03-0232-02	Cabinet (B) ☆
—	A20-1280-03	A20-1280-03	A20-1280-03	A20-1280-03	A20-1280-03	A20-1281-03	A20-1280-03	A20-1282-03	Panel ass'y ☆
—	B46-0061-10	B46-0055-20	B46-0062-10	—	—	B46-0060-00	—	B46-0062-10	Warranty card
—	—	—	B46-0063-00	—	—	—	—	—	Warranty card
—	B50-1720-00	B50-1721-00	B50-1720-00	B50-1720-00	B50-1720-00	B50-1722-00	B50-1721-00	B50-1723-00	Instruction manual ☆
—	—	—	D32-0075-04	D32-0075-04	D32-0075-04	—	D32-0075-04	D32-0075-04	Switch stopper (AC voltage selector)
—	E03-0008-05	E03-0008-05	E03-0008-05	—	—	—	E03-0008-05	E03-0008-05	AC outlet x 3
—	—	—	—	E04-0004-05	E04-0004-05	E04-0004-05	—	—	DIN type coaxial connector
—	E30-0181-05	E30-0181-05	E30-0545-05	E30-0580-05	E30-0292-05	E30-0602-05	E30-0545-05	E30-0580-05	Power cord
—	H01-1800-04	H01-1801-04	H01-1803-04	H01-1800-04	H01-1800-04	H01-1802-04	H01-1800-04	H01-1807-04	Carton box ☆
—	H10-1514-02	H10-1514-02	H10-1516-02	H10-1514-02	H10-1514-02	H10-1514-02	H10-1514-02	H10-1516-02 x 2	Polystyrene foamed fixture ☆
—	H10-1515-02	H10-1515-02	—	H10-1515-02	H10-1515-02	H10-1515-02	H10-1515-02	—	Polystyrene foamed fixture ☆
—	H20-0442-04	H20-0442-04	H20-0442-04	H20-0442-04	H20-0442-04	H20-0442-04	H20-0443-04	H20-0442-04	Polyethylene cover
—	—	—	—	—	—	—	H40-0004-04	—	Anti-rust paper
—	J02-0094-05	J02-0095-05	J02-0049-14	J02-0095-05	J02-0095-05	J02-0095-05	J02-0095-05	J02-0049-14	Foot x 4 ☆
—	J41-0034-05	J41-0034-05	J41-0034-05	J41-0033-05	J41-0033-05	J41-0024-15	J41-0034-05	J41-0033-05	Power cord bushing
—	—	—	—	J61-0038-05	—	—	—	—	Cord band
—	L01-1561-05	L01-1561-05	L01-1566-05	L01-1566-05	L01-1566-05	L01-1562-05	L01-1566-05	L01-1566-05	Power transformer ☆
—	N08-0125-05	N08-0125-05	N08-0125-05	N08-0125-05	N08-0125-05	N08-0125-05	N08-0125-05	—	Dress screw (case, 4 x 8) x 6
—	—	—	N08-0127-05	—	—	—	—	N08-0127-05	Dress screw (cabinet, 4 x 30) x 4
—	—	—	N61-4116-46	—	—	—	—	N61-4116-46	Round head screw (foot) x 4
—	S33-4012-05	S33-4012-05	S31-2001-05	S31-2001-05	S31-2001-05	—	S31-2001-05	S31-2001-05	Slide switch
S1	—	—	S33-4014-05	S33-4013-05	S33-4013-05	S33-4013-05	S33-4014-05	S33-4014-05	Lever switch (POWER) ☆
—	X00-1990-10	X00-1990-10	X00-1990-81	X00-1990-61	X00-1990-61	X00-1990-51	X00-1990-81	X00-1990-81	Power supply PC board ass'y
—	X05-1550-10	X05-1550-10	X05-1550-10	X05-1550-61	X05-1550-61	X05-1550-61	X05-1550-10	X05-1550-10	Tuner PC board ass'y

☆ : New parts

PARTS LIST

☆ : New parts
 RD: Carbon film resistor
 RC: Carbon composition resistor
 RW: Wire wound power resistor
 RN: Meter film resistor
 RS: Metal oxide film resistor

Note:
 Resistors except the special type (example: cement, metal film, etc.) are not detailed in PARTS LIST. With regard to the value, refer to the schematic diagram or the PC board illustration.
 Resistors not detailed are carbon type (1/4W or 1/8W).

TOTAL

☆ : New parts

Ref. No.	Parts No.	Description	Re- marks
MISCELLANEOUS			
—	A21-0288-02	Dress Panel	☆
—	A30-0144-04	Dial back board	☆
—	B01-0116-14	Side escutcheon L (panel ass'y)	☆
—	B01-0117-14	Side escutcheon R (panel ass'y)	☆
—	B07-0230-04	Escutcheon (shaft)	☆
—	B07-0233-04	Lever escutcheon (dual gang)	☆
—	B07-0235-04	Lever escutcheon (single gang)	☆
—	B07-0236-03	Push switch ring (panel ass'y) × 2	☆
—	B08-9018-04	Position indicating board	☆
—	B10-0236-03	Front glass	☆
—	B20-0420-04	Dial calibrations	☆
—	B21-0021-04	Dial pointer ass'y	☆
—	B30-0137-05	Pilot lamp 8V 0.2A × 2	☆
—	B30-0143-05	Pilot lamp 8V 0.3A Blue	☆
—	B31-0280-05	T.S meter	☆
—	B42-0009-04	Passed sticker	☆
—	D15-0171-13	Dial pulley	☆
—	D15-0172-04	Small pulley × 4	☆
—	D20-0140-03	Dial shaft ass'y	☆
—	D32-0084-04	Switch stopper (DE-EMPHASIS)	☆
—	E14-0107-05	Closed circuit phono plug × 2	☆
—	G01-0045-24	Dial spring	☆
—	G01-0362-04	Spring × 6 (panel ass'y)	☆
—	G10-0016-04	Dust sheet (PS)	☆
—	G10-0017-04	Dust sheet (TAPE) × 2	☆
—	H25-0078-00	Instruction bag	☆
—	J12-0010-04	Pin (closed circuit) × 4	☆
—	J19-0507-05	Antenna holder	☆
—	J32-0243-04	Hexagonal boss × 2	☆
—	K23-0289-04	Knob (TUNING)	☆
—	K23-0290-04	Knob (SELECTOR, VOL) × 4	☆
—	K23-0291-04	Knob (TONE) × 3	☆
—	K23-0303-03	Knob (MIC)	☆
—	K27-0070-04	Knob (LEVER) × 3	☆
—	K29-0298-04	Knob (PUSH, panel ass'y) × 6	☆
—	N09-0293-05	Screw (small pulley) × 4	☆
—	S90-0001-05	Remote switch shaft (INPUT SEL.)	☆
—	S90-0004-05	Remote wire ass'y (two wires, INPUT SEL)	☆

Ref. No.	Parts No.	Description	Re- marks
—	S90-0005-05	Remote switch shaft (SPKR SEL.)	☆
—	S90-0007-05	Remote wire ass'y (one wire, SPKR SEL.)	☆
—	T90-0083-05	AM bar antenna	☆
—	T90-0202-05	FM indoor antenna	☆
—	X07-1600-10	Power amp PC board ass'y	☆
—	X08-1640-10	Preamp PC board ass'y	☆
—	X11-1470-10	Control amp PC board ass'y	☆
—	351-0003-14	Dial string (φ0.5)	☆

POWER SUPPLY (X00-1990-)

Ref. No.	Parts No.	Description	Re- marks
CAPACITOR			
Ck1.2	CQ93M2A104M	Mylar 0.1μF ±20%	
Ck3	CE04BW1A470M	Electrolytic 47μF 10WV	
Ck4	CE04AW1C470M	Electrolytic 47μF 16WV	
Ck6	CE04W1E101	Electrolytic 100μF 25WV	
Ck7.8	CQ93M1H104M	Mylar 0.1μF ±20%	
Ck9	CE04W1E102	Electrolytic 1000μF 25WV	
Ck10.11	CE04W1E101	Electrolytic 100μF 25WV	
Ck16.17	C90-0370-05	Electrolytic 18000μF 80WV	☆
Ck18~21	C91-0039-05	Metalized polyester 0.1μF 250WV	
RESISTOR			
Rk1.2	RS14GB3A100J	Flame-proof RS 10Ω ±5% 1W	
Rk3~6	RS14GB3F100J	Flame-proof RS 10Ω ±5% 3W	
Rk19	RS14GB3A221J	Flame-proof RS 220Ω ±5% 1W	
Rk20	RS14GB3A151J	Flame-proof RS 150Ω ±5% 1W	
Rk21	RS14GB3F102J	Flame-proof RS 1kΩ ±5% 3W	
Rk23	RD14GY2E272J	Flame-proof RD 2.7kΩ ±5% 1/4W	
Rk25	RS14GB3D221J	Flame-proof RS 220Ω ±5% 2W	
Rk26	RS14GB3D471J	Flame-proof RS 470Ω ±5% 2W	
Rk27	RS14GB3A562J	Flame-proof RS 5.6kΩ ±5% 1W	
Rk28	RS14GB3D221J	Flame-proof RS 220Ω ±5% 2W	
Rk29	RS14GB3D681J	Flame-proof RS 680Ω ±5% 2W	
Rk30	RS14GB3A562J	Flame-proof RS 5.6kΩ ±5% 1/4W	
Rk31	R29-0173-05	RC 2.2MΩ 1/2W (X00-1990-10)	
Rk32.33	RS14GB3A561J	Flame-proof RS 560Ω ±5%	
SEMICONDUCTOR			
Qk1	V01-0084-05	Transistor 2SA733(Q, R)	
Qk2.3	V03-0270-05	Transistor 2SC945(Q, R)	
Qk4	V03-1890-10	Transistor 2SC1890(E, F)	
Qk5	V03-2003-00	Transistor 2SC2003 or	
	V03-2274-20	2SC2274K(E, F)	
Qk6.7	V03-0270-05	Transistor 2SC945(Q, R)	
Qk8.9	V04-0330-20	Transistor 2SD330(D, E, F)	
Qk10	V02-0514-10	Transistor 2SB514(D, E, F)	☆
Dk1	V11-0295-05	Diode W06B	
Dk2	V11-4101-80	Zener diode XZ-127	
Dk3.4	V11-0295-05	Diode W06B	
Dk5.6	V11-4100-20	Zener diode WZ-300	
Dk7	V11-2100-80	Diode M4C51-13 × 2	☆
FUSE			
Fk1	F05-1521-05	Fuse 1.5A (X00-1990-81)	
	F05-1524-05	Fuse 1.5A (X00-1990-10)	

PARTS LIST

Ref. No.	Parts No.	Description	Re- marks
Fk2	F06-1622-05	Fuse 1.6A (X00-1990-51, -61)	
	F05-4022-05	Fuse 4A (X00-1990-81)	
	F05-4024-05	Fuse 4A (X00-1990-51, -61)	
	F05-8022-05	Fuse 8A (X00-1990-10)	
Fk3	F05-4022-05	Fuse 4A (X00-1990-81)	
	F05-4024-05	Fuse 4A (X00-1990-61)	
COIL/INDUCTOR			
Lk1,2	L39-0080-15	Fuse compensation coil	
Lk3,4	L40-1021-03	Inductor 1 mH	
SWITCH			
RLk1	S51-4033-05	Relay	
Sk1	S90-0006-05	Slide switch	☆
MISCELLANEOUS			
—	E11-0060-15	Phone jack	
—	E20-1205-05	Terminal board	☆
—	J13-0055-05	Fuse clip × 4 (X00-1990-10, -51)	
—	J13-0055-05	Fuse clip × 6 (X00-1990-61, -81)	

TUNER (X05-1550-)

Ref. No.	Parts No.	Description	Re- marks
CAPACITOR			
Cg1	CC45SL1H470K	Ceramic 47pF ±10%	
Cg2	CC45SL1H470K	Ceramic 47pF ±10% (X05-1550-61)	
Cg3~8	CK45F1H103Z	Ceramic 0.01μF +80%—20%	
Cg9	CE04W1H010	Electrolytic 1μF 50WV	
Cg10	CK45F1H473Z	Ceramic 0.047μF +80%—20%	
Cg11	CC45SL1H101K	Ceramic 100pF ±10%	
Cg12~14	CK45F1H103Z	Ceramic 0.01μF +80%—20%	
Cg15,16	CK45F1H473Z	Ceramic 0.047μF +80%—20%	
Cg17,18	CE04W1H010	Electrolytic 1μF 50WV	
Cg19	CE04W1E100	Electrolytic 10μF 25WV	
Cg20	CC45UJ1H180K	Ceramic 18pF ±10%	
Cg21	CQ09FS1H361J	Polystyrene 360pF ±5%	
Cg22	CK45B1H102K	Ceramic 1000pF ±10%	
Cg23	CE04W1E100	Electrolytic 10μF 25WV	
Cg24	C90-0245-05	Semiconductor type ceramic	
Cg25,26	CK45F1H103Z	Ceramic 0.01μF ±20%	
Cg27	CK45F1H473Z	Ceramic 0.047μF +80%—20%	
Cg28	CE04W1E100	Electrolytic 10μF 25WV	
Cg29	CK45B1H102K	Ceramic 1000pF ±10%	
Cg30	CE04W1H010	Electrolytic 1μF 50WV	
Cg31,32	C90-0245-05	Semiconductor type ceramic	
Cg33	CQ93M1H104M	Mylar 0.1μF ±20%	
Cg34	C90-0245-05	Semiconductor type ceramic	
Cg35	CE04W1E100	Electrolytic 10μF 25WV	
Cg36	CE04W1V4R7	Electrolytic 4.7μF 35WV	
Cg37	CE04W1C101	Electrolytic 100μF 16WV	
Cg38	CE04W1E100	Electrolytic 10μF 25WV	
Cg39	CQ93M1H473K	Mylar 0.047μF ±10%	
Cg40	CQ09FS1H102J	Polystyrene 1000pF ±5%	
Cg41	CK45B1H222K	Ceramic 0.0022μF ±10%	
Cg42	CE04AW1HR47M	Electrolytic 0.47μF 50WV	
Cg43	CE04AW1H3R3M	Electrolytic 3.3μF 50WV	

Ref. No.	Parts No.	Description	Re- marks
Cg44	CK45B1H152K	Ceramic 1500pF ±10%	
Cg45,46	CE04W1E100	Electrolytic 10μF 25WV	
Cg47	CE04AW1H3R3M	Electrolytic 3.3μF 50WV	
Cg48,49	CE04W1H010	Electrolytic 1μF 50WV	
Cg50	CQ93M1H103K	Mylar 0.01μF ±10%	
Cg51~54	CE04AW1HR22M	Electrolytic 0.22μF 50WV	
Cg55,56	CQ93M1H272J	Mylar 2700pF ±5%	
Cg57~61	CE04W1E100	Electrolytic 10μF 25WV	
Cg62	CK45F1H103Z	Ceramic 0.01μF +80%—20%	
Cg63	CE04W0J101	Electrolytic 100μF 6.3WV	
Cg64	CE04W1H010	Electrolytic 1μF 50WV	
Cg65,66	CE04W1E100	Electrolytic 10μF 25WV	
Cg141,142	CE04AW1H010M	Electrolytic 1μF 50WV	
Cg143,144	CC45SL1H101K	Ceramic 100pF ±10%	
Cg145,146	CE04W1E100	Electrolytic 10μF 25WV	
Cg147	CE04AW1H010M	Electrolytic 1μF 50WV	
Cg148	CE04W1E100	Electrolytic 10μF 25WV	
Cg149	CC45SL1H101K	Ceramic 100pF ±10%	
Cg150	CC45SL1H470K	Ceramic 47pF ±10%	
Cg151	CK45B1H152K	Ceramic 1500pF ±10%	
Cg152	CE04W1E100	Electrolytic 10μF 25WV	
Cg153,154	CE04W1V101	Electrolytic 100μF 35WV	
Cg155~158	CK45F1H473Z	Ceramic 0.047μF +80%—20%	
RESISTOR			
Rg3	RD14GY2E470J	Flame-proof RD 47Ω ±5% 1/4W	
Rg37,39	RD14GY2E101J	Flame-proof RD 100Ω ±5% 1/4W	
Rg49	RD14GY2E220J	Flame-proof RD 22Ω ±5% 1/4W	
Rg69,70	RC05GF2H106M	RC 10MΩ ±20% 1/2W	
Rg73	RS14GB3A101J	Flame-proof RS 100Ω ±5% 1W	
Rg176,177	RD14GY2E331J	Flame-proof RD 330Ω ±5% 1/4W	
SEMICONDUCTOR			
Qg1~3	V03-0270-05	Transistor 2SC945(Q, R)	
Qg4	V01-0084-05	Transistor 2SA733(Q, R)	
Qg5,6	V03-0377-05	Transistor 2SC945(Q, R)	
Qg7,8	V09-0126-20	FET 2SK117(Y, GR, BL)	
	V09-0092-05	or 2SK68A(L, M, N)	
Qg9,10	V03-0270-05	Transistor 2SC945(Q, R)	
Qg31,32	V03-0408-05	Transistor 2SC1222(E, F)	
Qg33	V01-0146-05	Transistor 2SA640(E, F)	
Qg34	V03-0408-05	Transistor 2SC1222(E, F)	
ICg1	V30-0215-05	IC LA1222	
ICg2	V30-0275-20	IC LA1231	☆
ICg3	V30-0245-10	IC LA1240	
	V30-0196-05	or HA1197	
ICg4	V30-0266-10	IC HA11223	
ICg5	V30-0217-05	IC NJM4558D(A, B)	
Dg~11	V11-0076-05	Diode 1S1555	
	V11-0271-05	or 1S2076	
TRANSFORMER/COIL/INDUCTOR/FILTER			
Lg1	L19-0009-05	Balun transformer	
Lg3,4	L40-1092-44	Inductor 1μH	
Lg5	L40-2292-44	Inductor 2.2μH	
Lg6	L40-2205-25	Inductor 22μH	

PARTS LIST

Ref. No.	Parts No.	Description	Re- marks
Lg7	L30-0305-05	FM IFT	
Lg8	L30-0306-05	FM IFT	
Lg9	L32-0205-15	AM OSC coil	
Lg10	L30-0284-05	AM IFT	
Lg11	L40-1021-45	Inductor 1mH	
Lg13,14	L79-0060-05	Low pass filter	
CFg1~4	L79-0067-05	FM ceramic filter ass'y (CFg1,2: L72-0052-05, CFg3,4: L72-0056-05)	☆
CFg5	L72-0045-05	AM ceramic filter	
POTENTIOMETER			
VRg1	R12-3046-05	Trimming 47k Ω ST SENSOR	
VRg2	R12-1041-05	Trimming, metal glazed 3.3k Ω VCO	☆
VRg3	R12-5030-05	Trimming 100k Ω PILOT CANCEL	
VRg4	R12-3046-05	Trimming 47k Ω SEP	
VRg5	R06-4037-05	Variable, with switch 50k Ω (B) x 2 MIXING	☆
SWITCH			
Sg1	S90-0003-05	4 pole, 3 positions SELECTOR	☆
Sg2,3	S33-4018-05	4 pole, 5 positions TAPE	
MISCELLANEOUS			
—	B30-0084-05	Lamp 8V 0.05A x 6	
—	E11-0065-05	Mic jack	
—	E29-0088-05	Terminal board	
—	W02-0014-05	Front end PC board ass'y	

FRONT END (W02-0014-05)

Ref. No.	Parts No.	Description	Re- marks
CAPACITOR			
C1	CC45SL1H180J	Ceramic 18pF $\pm 5\%$	
C2,3	CC45SL1H101K	Ceramic 100pF $\pm 10\%$	
C4,5	CK45F1H223Z	Ceramic 0.022 μ F +80%—20%	
C6	CC45CH1H180J	Ceramic 18pF $\pm 5\%$	
C7	CC45CH1H150J	Ceramic 15pF $\pm 5\%$	
C8	CC45SL1H060D	Ceramic 6pF ± 0.5 pF	
C9	CC45SL1H250J	Ceramic 25pF $\pm 5\%$	
C10	CC45SL1H101K	Ceramic 100pF $\pm 10\%$	
C11~14	CK45F1H223Z	Ceramic 0.022 μ F +80%—20%	
C15	CC45SL1H1R5C	Ceramic 1.5pF ± 0.25 pF	
C16	CC45LG1H220J	Ceramic 22pF $\pm 5\%$	
C17	CC45PH1H180K	Ceramic 18pF $\pm 10\%$	
C18	CC45CH1H080D	Ceramic 8pF ± 0.5 pF	
C19	CC45CH1H470K	Ceramic 47pF $\pm 10\%$	
C20	CC45CH1H150K	Ceramic 15pF $\pm 10\%$	
C21	CK45F1H223Z	Ceramic 0.022 μ F +80%—20%	
SEMICONDUCTOR			
Q1	V09-0074-05	Transistor 3SK45(B)	
Q2	V03-0065-05	Transistor 2SC535	
Q3	V03-0170-05	Transistor 2SC461(B)	
COIL/TRANSFORMER			
L1	L33-0273-00	Choke coil 2.2 μ H	☆
L2	L30-0308-00	FM IFT	☆
LA	L31-0423-00	ANT coil	☆
LR1	L31-0425-00	RF coil	☆

Ref. No.	Parts No.	Description	Re- marks
LR2,3	L31-0424-00	RF coil	☆
LO	L32-0216-00	OSC coil	☆
MISCELLANEOUS			
—	C01-0210-00	Variable capacitor	☆
—	C05-0069-00	Trimmer capacitor	☆

POWER AMP (X07-1600-10)

Ref. No.	Parts No.	Description	Re- marks
CAPACITOR			
Ce1,2	CE04W1E3R3M	Electrolytic 3.3 μ F 25WV	
Ce3,4	CC45SL1H221K	Ceramic 220pF $\pm 10\%$	
Ce5,6	CE04W1A470	Electrolytic 47 μ F 10WV	
Ce7,8	CC45SL1H030C	Ceramic 3pF ± 0.25 pF	
Ce9,10	CC45SL1H100D	Ceramic 10pF ± 0.5 pF	
Ce11,12	CC45SL1H101K	Ceramic 100pF $\pm 10\%$	
Ce13,14	CC45SL1H470K	Ceramic 47pF $\pm 10\%$	
Ce15~18	CE04W1H4R7	Electrolytic 4.7 μ F 50WV	
Ce19~22	CE04W2A4R7	Electrolytic 4.7 μ F 100WV	
Ce23~26	CE04W1H4R7	Electrolytic 4.7 μ F 50WV	
Ce27,28	CE04W1E100	Electrolytic 10 μ F 25WV	
Ce29~32	CQ93M1H473M	Mylar 0.047 μ F $\pm 20\%$	
RESISTOR			
Re13~16	RD14GY2E222J	Flame-proof RD 2.2k Ω $\pm 5\%$ 1/4W	
Re17,18	RD14GY2E101J	Flame-proof RD 100 Ω $\pm 5\%$ 1/4W	
Re25,26	RD14GY2E103J	Flame-proof RD 10k Ω $\pm 5\%$ 1/4W	
Re27~38	RD14GY2E221J	Flame-proof RD 220 Ω $\pm 5\%$ 1/4W	
Re39~42	RD14GY2E100J	Flame-proof RD 10 Ω $\pm 5\%$ 1/4W	
Re43~46	RD14GY2E4R7J	Flame-proof RD 4.7 Ω $\pm 5\%$ 1/4W	
Re47~54	R92-0171-05	Wire wound 1 Ω 3W	☆
Re63~66	RD14GY2E102J	Flame-proof RD 1k Ω $\pm 5\%$ 1/4W	
Re75,76	RS14GB3A682J	Flame-proof RS 6.8k Ω $\pm 5\%$ 1W	
SEMICONDUCTOR			
Qe1~4	V01-0921-20	Transistor 2SA921(S, T)	
	V01-0200-05	or 2SA872A(E, F)	
Qe5~8	V03-0460-05	Transistor 2SC1904(B, V)	
Qe9,10	V03-0408-05	Transistor 2SC1222(E)	
Qe11,12	V01-0199-05	Transistor 2SA899(B, V)	
Qe13,14	V03-0468-05	Transistor 2SC1913(Q, R)	
Qe15,16	V01-0188-05	Transistor 2SA913(Q, R)	
Qe17,18	V01-0893-10	Transistor 2SA893(D, E, F)	
Qe19,20	V03-1890-30	Transistor 2SC1890A(D, E, F)	
Qe21,22	V03-0270-05	Transistor 2SC945(Q, R)	
Qe23,24	V01-0084-05	Transistor 2SA733(Q, R)	
Qe25,26	V02-0600-00	Transistor 2SB600	☆
Qe27,28	V04-0555-00	Transistor 2SD555	☆
De1~10	V11-0271-05	Diode 1S2076	
	V11-0076-05	or 1S1555	
De11,12	V11-0254-05	Zener diode YZ-140	

PARTS LIST

Ref. No.	Parts No.	Description	Re- marks
De13~ 16	V11-4101-90	Zener diode CZ-060	
Thel,2	V22-0027-05	Thermistor 5TP-41L	
POTENTIOMETER			
VRe1,2	R12-1007-05	Trimming 1k Ω (B) BIAS ADJUSTER	
MISCELLANEOUS			
—	E02-0209-05	Transistor socket x 4	

PRE AMP (X08-1640-10)

Ref. No.	Parts No.	Description	Re- marks
Cd101, 102	CK45B1H471K	Ceramic 470pF \pm 10%	
Cd103, 104	CE04W0J471	Electrolytic 470 μ F 6.3WV	
Cd105, 106	CE04W1H4R7	Electrolytic 4.7 μ F 50WV	
Cd107, 108	CC45SL1H270K	Ceramic 27pF \pm 10%	
Cd109, 110	CE04W1A101	Electrolytic 100 μ F 10WV	
Cd111, 112	CE04W1E330	Electrolytic 33 μ F 25WV	
Cd113, 114	CE04W1H2R2	Electrolytic 2.2 μ F 50WV	
Cd115, 118	CQ93AP2A393G	Polypropylene 0.039 μ F \pm 2%	
Cd117, 118	CQ93AP2A113G	Polypropylene 0.011 μ F \pm 2%	
Cd119, 120	CE04W1V101	Electrolytic 100 μ F 35WV	
Cd121, 122	CQ93M1H562J	Mylar 5600pF \pm 5%	
Cd123, 124	CQ93M1H272J	Mylar 2700pF \pm 5%	
Cd125, 126	CC45SL1H331K	Ceramic 330pF \pm 10%	
Cd127, 128	CK45F1H473Z	Ceramic 0.047 μ F +80%—20%	
RESISTOR			
Rd133, 134	RD14GY2E331J	Flame-proof RD 330 Ω \pm 5% 1/4W	
SEMICONDUCTOR			
Qd21,22	V09-0096-05	FET 2SK68A(L, M, N)	
Qd23~ 26	V09-0126-20	or 2SK117(Y, GR, BL)	☆
Qd27,28	V02-0725-00	Transistor 2SB725	☆
		or 2SA1023	☆
Qd29,30	V04-0767-00	Transistor 2SD767	☆
		or 2SC2378	☆
Dd41~ 44	V02-0725-00	Transistor 2SB725	☆
		or 2SA1023	☆
	V11-0271-05	Diode 1S2076	
	V11-0076-05	or 1S1555	
SLIDE SWITCH			
Sd4	S90-0002-05	6 pole 5 positions SELECTOR	☆
Sd5	S31-2048-05	2 pole 3 positions DE-EMPHASIS	
MISCELLANEOUS			
—	E13-0611-15	Phono jack	

CONTROL AMP (X11-1470-10)

Ref. No.	Parts No.	Description	Re- marks
CAPACITOR			
Ci1,2	CC45SL1H101K	Ceramic 100pF \pm 10%	
Ci3,4	CQ93M1H333J	Mylar 0.033 μ F \pm 5%	
Ci7,8	CE04W0J331	Electrolytic 330 μ F 63WV	
Ci9,10	CE04W1A101	Electrolytic 100 μ F 10WV	
Ci11,12	CE04AW1E100M	Electrolytic 10 μ F 25WV	
Ci13,14	CK45B1H391K	Ceramic 390pF \pm 10%	
Ci15,16	CQ93M1H472J	Mylar 0.0047 μ F \pm 5%	
Ci17,18	CE04AW1H010M	Electrolytic 1 μ F 50WV	
Ci19,20	CE04AW1E100M	Electrolytic 10 μ F 25WV	
Ci21,22	CE04W1A221	Electrolytic 220 μ F 10WV	
Ci23,24	CQ93M1H472	Mylar 0.0047 μ F \pm 5%	
Ci25,26	CQ93M1H273J	Mylar 0.0027 μ F \pm 5%	
Ci27,28	CE04AW1H010M	Electrolytic 1 μ F 50WV	
Ci29,30	CE04AW1E100M	Electrolytic 10 μ F 25WV	
Ci31,32	CQ93M1H393J	Mylar 0.039 μ F \pm 5%	
Ci33,34	CE04W1A221	Electrolytic 220 μ F 10WV	
Ci35,36	CQ93M1H393J	Mylar 0.039 μ F \pm 5%	
Ci37,38	CE04AW1HR47M	Electrolytic 0.47 μ F 50WV	
Ci39,40	CE02W1E221	Electrolytic 220 μ F 25WV	
Ci41~ 44	CE04AW1HR47M	Electrolytic 0.47 μ F 50WV	
RESISTOR			
Ri69,70	RS14GB3A271J	Flame-proof RS 270 Ω \pm 5% 1W	
SEMICONDUCTOR			
Qi1,2	V09-0126-20	FET 2SK117(GR, BL)	
	V09-0096-05	or 2SK68A(M, N)	
Qi3,4	V01-0146-05	Transistor 2SA640(E)	
	V01-0152-05	or 2SA750(II) E	
Qi5,6	V03-0270-05	Transistor 2SC945(O, R)	
Qi7~10	V03-0424-05	Transistor 2SC1400(E, U)	
	V03-0500-05	or 2SC1775(E, F)	
POTENTIOMETER			
VRi1	R08-5038-05	200k Ω (BH) BALANCE	☆
VRi2	R08-5033-05	100k Ω (B) x 2 MAIN VR	
VRi3~5	R06-4034-05	50k Ω (B) TONE	
PUSH SWITCH			
Si1,2	S42-2021-05	2-gang MODE, MUTING LEVEL	☆
Si3	S40-2089-05	Single LOUDNESS	☆
Si4~6	S42-3021-05	3-gang TONE DEFEAT, LOW FILTER, HIGH FILTER	☆
MISCELLANEOUS			
—	E13-0417-15	Phono jack	

ADJUSTMENT

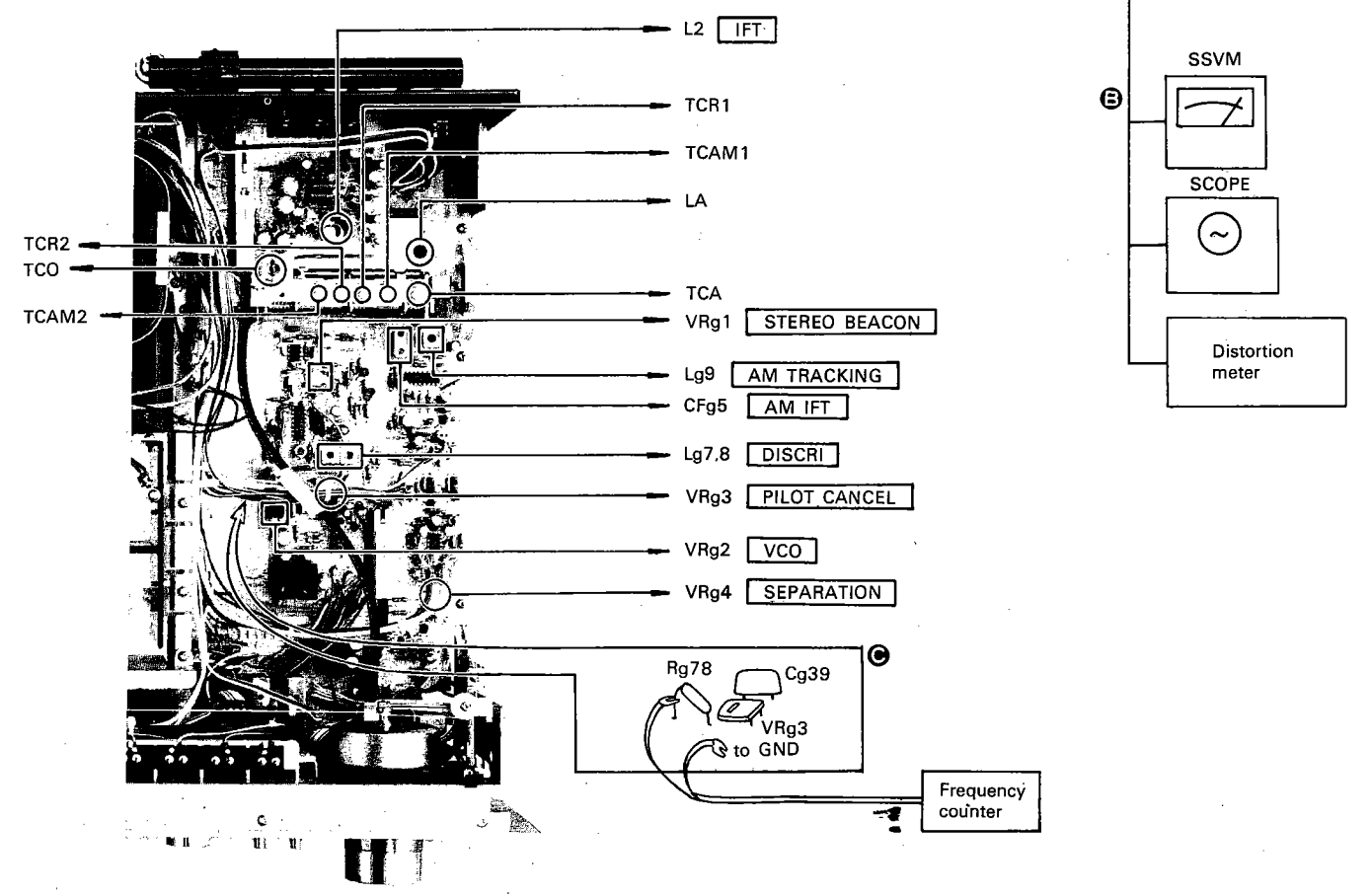
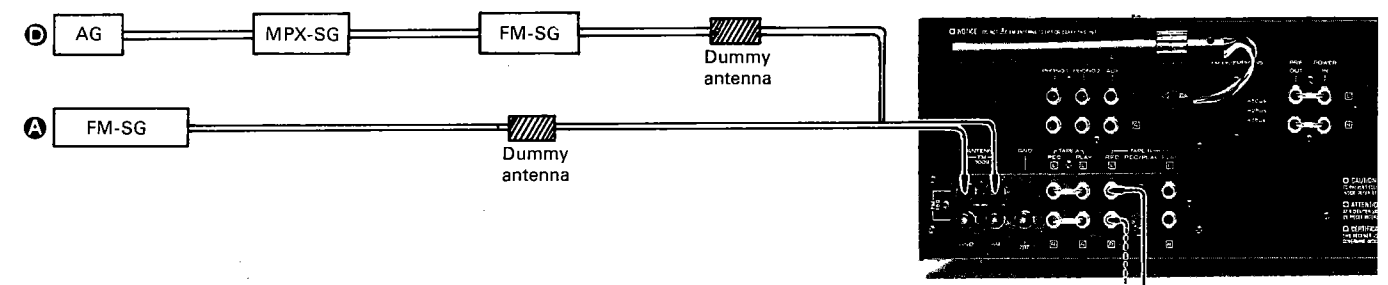
INSTRUMENTS USED

Oscilloscope SCOPE
 AM signal generator..... AM-SG
 FM signal generator..... FM-SG
 Audio generator AG
 Solid state voltmeter SSMV
 FM multiplex generator FM-MPX
 Frequency counter.....

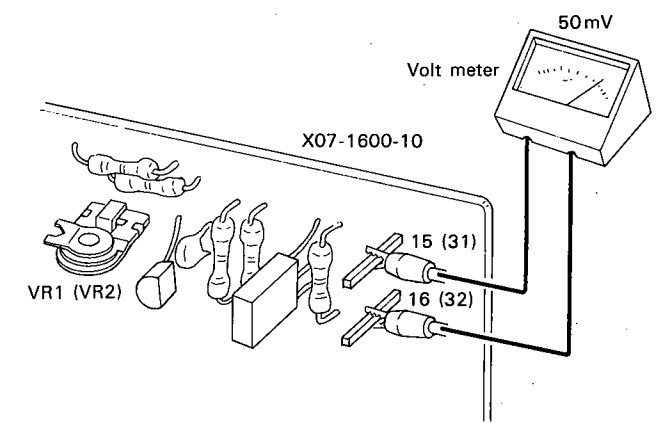
NOTES FOR ADJUSTMENTS

*Use moderate instrument outputs at all times.
 *The output level of RF-SG means ANT input level.
 *0 dB = 1 μ V

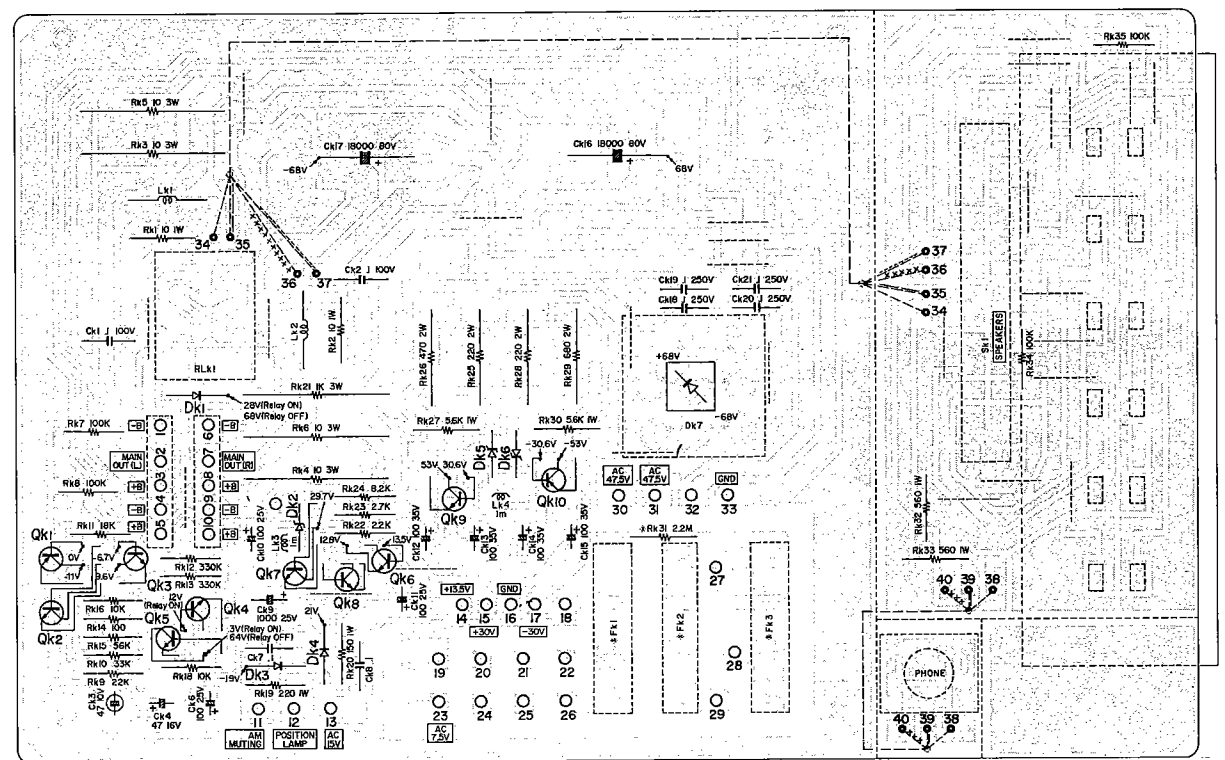
OR- DER	ITEM	INSTRUMENT		RECEIVER SETTING	OUTPUT	ADJUSTMENT POINTS	ADJUSTMENT METHOD
		CONNECTION	SETTING				
FM SECTION							
1	DISCRI	-	-	FM MODE: MONO Noise (between local stations)	T meter	Lg7	Meter indication in the center.
2		A	95 MHz 60 dB (ANT INPUT) 1 kHz (Mod) 75 kHz (Dev)	FM 95 MHz MODE: MONO	E	Lg8	Minimum distortion.
Repeat the alignments of 1 and 2 a few times.							
3	VCO	A	95 MHz 60 dB (ANT INT) 0 (Dev)	FM 95 MHz MODE: STEREO MUTING LEVEL: 1	C Frequency counter to VCO CHECK (Rg78)	VRg2	Adjusted to 76 kHz \pm 200 Hz
4	19 KHz CANCEL	D	FM-MPX: PILOT SIGNAL FM-SG: 60 dB (ANT INPUT)	- ditto -	SSVM to Pin 5 or Pin 6 of ICg4	VRg3	Minimum output. If any difference is found, the output levels should be adjusted to the average value.
5	SEPARATION	D	FM-MPX: SELECTOR L or R 1 kHz (Mod) PILOT (6.75 kHz Dev) FM-SG: 95 MHz 60 dB 68.25 kHz (Dev)	- ditto -	E R out (SELECTOR-L) L out (SELECTOR-R)	VRg4	Minimum output. L and R are reversed and the same adjust- ment is performed. If any difference is found, the output levels should be adjusted to the average value.
6	STEREO BEACON	D	FM-MPX: SELECTOR L+R 1 kHz (Mod) PILOT (6.75 kHz Dev) FM-SG: 95 MHz 23.5 dB (15 μ V) 68.25 kHz (Dev)	- ditto -	Stereo indicator	VRg1	Stereo indicator lights.
7	IFT	D	FM-MPX: SELECTOR L+R 1 kHz (Mod) PILOT (6.75 kHz Dev) FM-SG: 95 MHz 60 dB 68.25 kHz (Dev)	FM 95 MHz MODE: STEREO	E	L2	Minimum distortion. Adjust slightly.
8	S METER	A	FM-SG: 95 MHz 100 dB 0 (Dev)	FM 95 MHz	S meter	-	Pointer within meter scale. If it overswings, remove Rg18.
<p>REFERENCE: FM FRONT END This section is exactly adjusted. You had better not readjust except L2. If you move trimmer capacitors or coils by any reasons, follow the next procedure.</p> <p>a. When you have moved trimmer capacitor (1) Set the receiver to 108 MHz. (2) Connect FM-SG 108 MHz, 1 kHz (Mod), 75 kHz (Dev) to the antenna terminal. (3) Adjust TCO so that T meter points the center. (4) Adjust TCA, TCR1 and TCR2 so that the maximum output is derived.</p> <p>b. When you have moved coils Since OSC coil is fixed type, it cannot be readjusted. If 88 MHz signal cannot be received when the dial pointer is almost 88 MHz position, replace OSC coil. After the receiver is adjusted to receive the signal, adjust the gaps of LA, LR1 and LR2 by a screwdriver so that the maximum output is derived. If this does not solve the trouble, replace coils.</p> <p>c. When you have replaced front end PC board ass'y (1) Connect FM-SG 90 MHz, 1 kHz (Mod), 75 kHz (Dev) to the antenna terminal. (2) Set the receiver so that 90 MHz signal can be received. (3) Mount the dial pointer. (4) Adjust TCA and L2.</p>							
AM SECTION							
1	IFT	E	1000 kHz 400 Hz 30% (Mod) 100 dB	AM 100 kHz	E	CFg5	Maximum optimum waveform.
2	TRACKING	E	600 kHz 400 Hz 30% (Mod) 100 dB	AM 600 kHz	E	Lg9 Bar antenna	Maximum optimum waveform.
			1400 kHz 400 Hz 30% (Mod) 100 dB	AM 1400 kHz		TCAM1, TCAM2	
Repeat the alignments of 2 and 3 a few times.							
AUDIO SECTION							
1	BIAS	-	-	Volume to minimum position	-	VRe1, 2	50 mV



BIAS

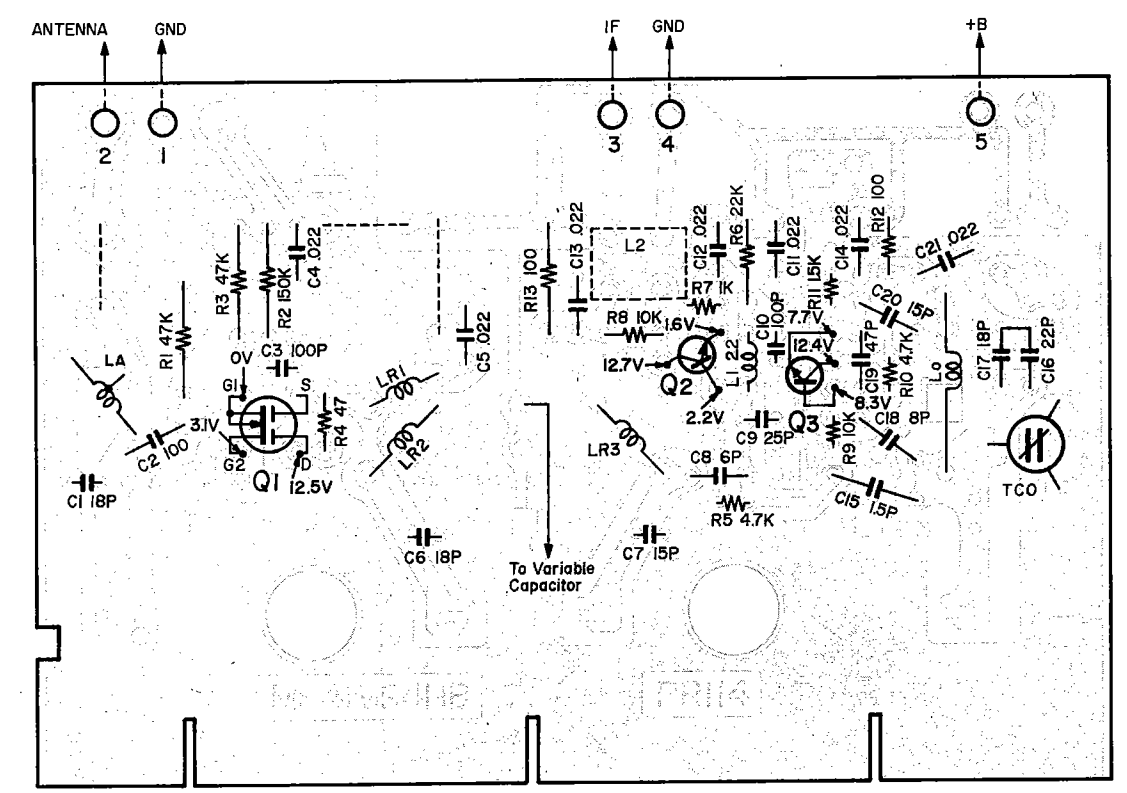


POWER SUPPLY (X00-1990-10)



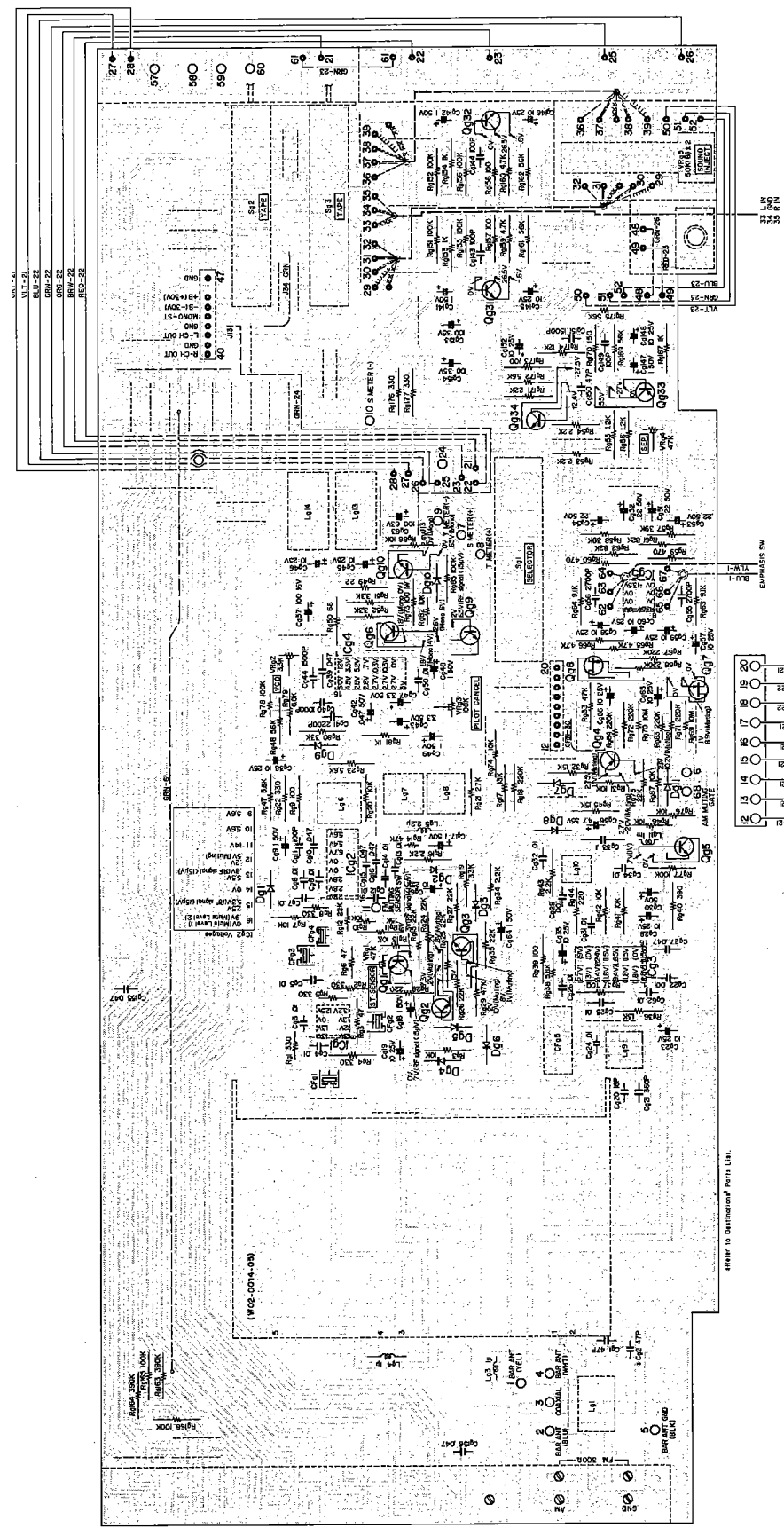
Qk1 : 2SA733, Qk2, 3, 6, 7 : 2SC945, Qk4 : 2SC1890, Qk5 : 2SC2003 or 2SC2274(K), Qk8, 9 : 2SD330
 Qk10 : 2SB514, Dk1, 3, 4 : W06B, Dk2 : XZ-127, Dk5, 6 : WZ-300, Dk7 : M4C-51-13-2

FRONT END (W02-0014-05)



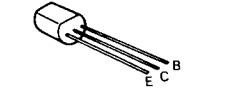
Q1 : 3SK45B, Q2 : 2SC535, Q3 : 2SC461B

TUNER (X05-1550-10)

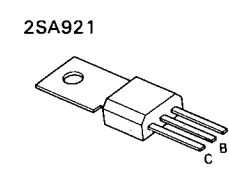
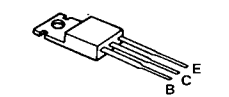


Qg1 ~ 6, 9, 10 : 2SC945(Q) or (R), Qg4 : 2SA733(Q) or (R), Qg7, 8 : 2SK117(Y), (GR) or (BL) or 2SK68A(L), (M) or (N), Qg31, 32, 34 : 2SC1222(E) or (F)
 Qg33 : 2SA640(E) or (F), ICg1 : LA1222, ICg2 : LA1231, ICg3 : LA1240 or HA1197, ICg4 : HA11223, ICg5 : NJM4558D(A) or (B)

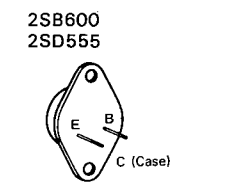
- 2SA872
- 2SA640
- 2SA733
- 2SA750
- 2SC945
- 2SC1890
- 2SC1222
- 2SC1400
- 2SC1775
- 2SC2274
- 2SD767
- 2SC2003
- 2SB725



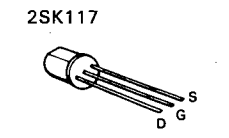
- 2SB514
- 2SD330
- 2SC1913
- 2SA893



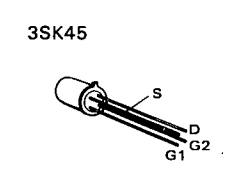
- 2SC1904
- 2SA899



- 2SC461
- 2SC535



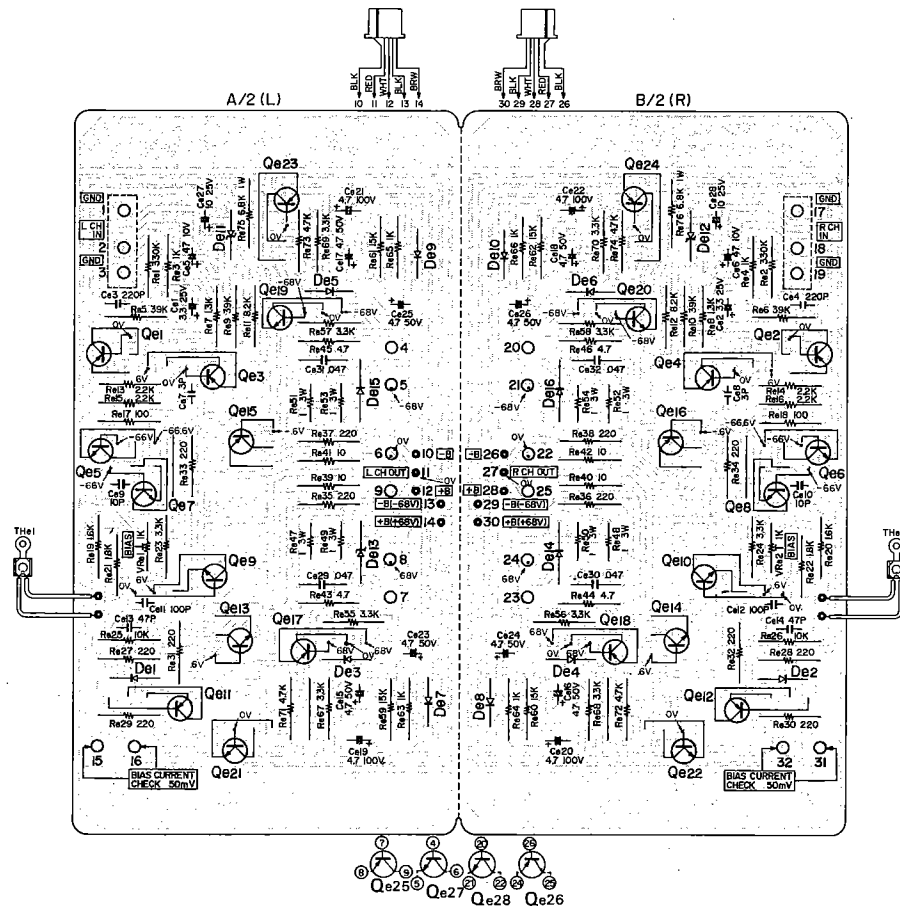
- 2SK117
- 2SK68A



- 3SK45

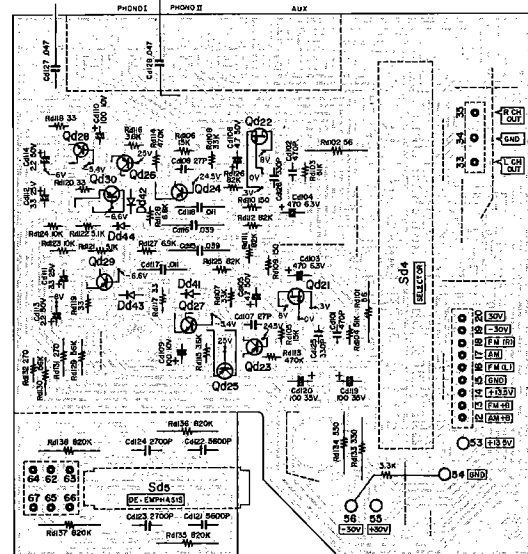
PC BOARD/SEMICONDUCTOR SUBSTITUTIONS

ER AMP (X07-1600-10)



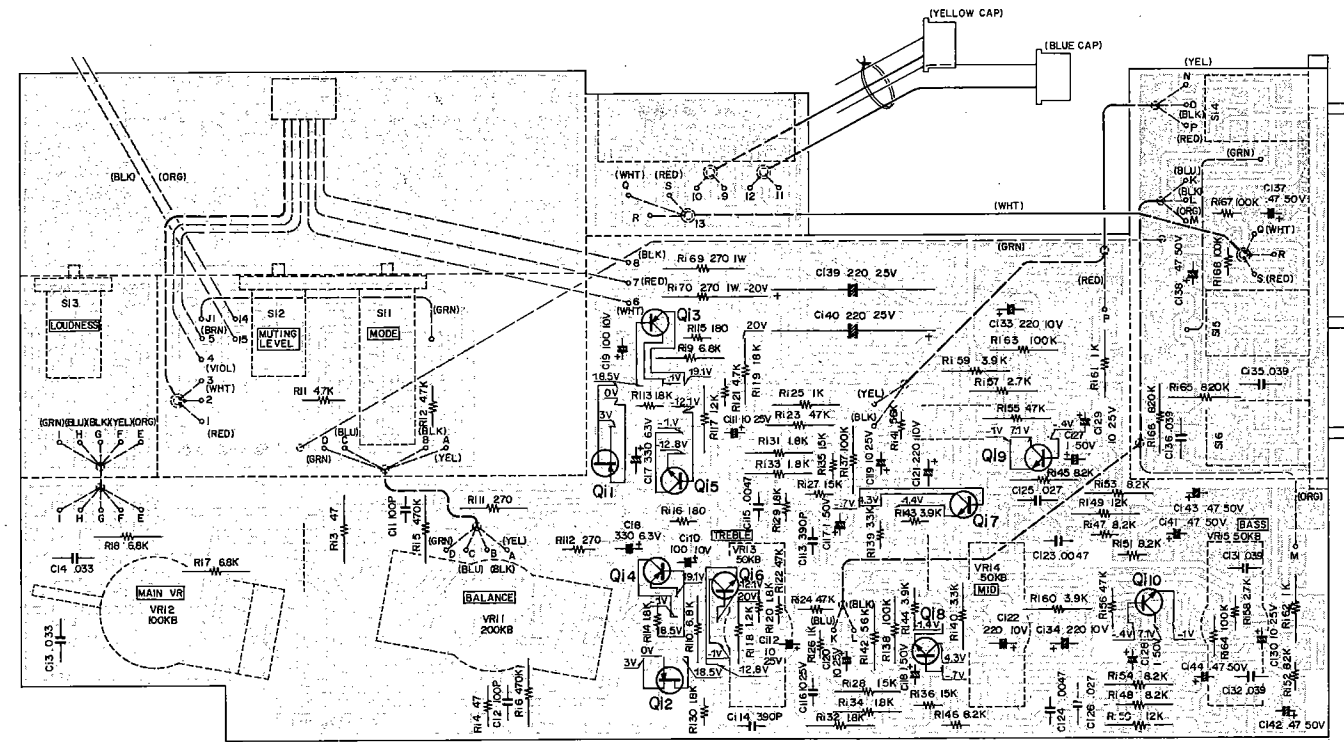
Qe1 ~ 4 : 2SA921 or 2SA872A, Qe5 ~ 8 : 2SC1904, Qe9, 10 : 2SC1222, Qe11, 12 : 2SA899, Qe13, 14 : 2SC1913
 Qe15, 16 : 2SA913, Qe17, 18 : 2SA893A, Qe19, 20 : 2SC1890A, Qe21, 22 : 2SC945, Qe23, 24 : 2SA733
 Qe25, 26 : 2SB600, Qe27, 28 : 2SD555, De1 ~ 10 : 1S2076 or 1S1555, De11, 12 : YZ-140

AMP



Qd21, 22 : 2SK68A(L), (M) or (N) or 2SK117(Y), (GR) or (BL), Qd23 ~ 26, 29, 30 : 2SB725 or 2SA1023
 Qd27, 28 : 2SD767 or 2SC2378

CONTROL AMP (X11-1470-10)

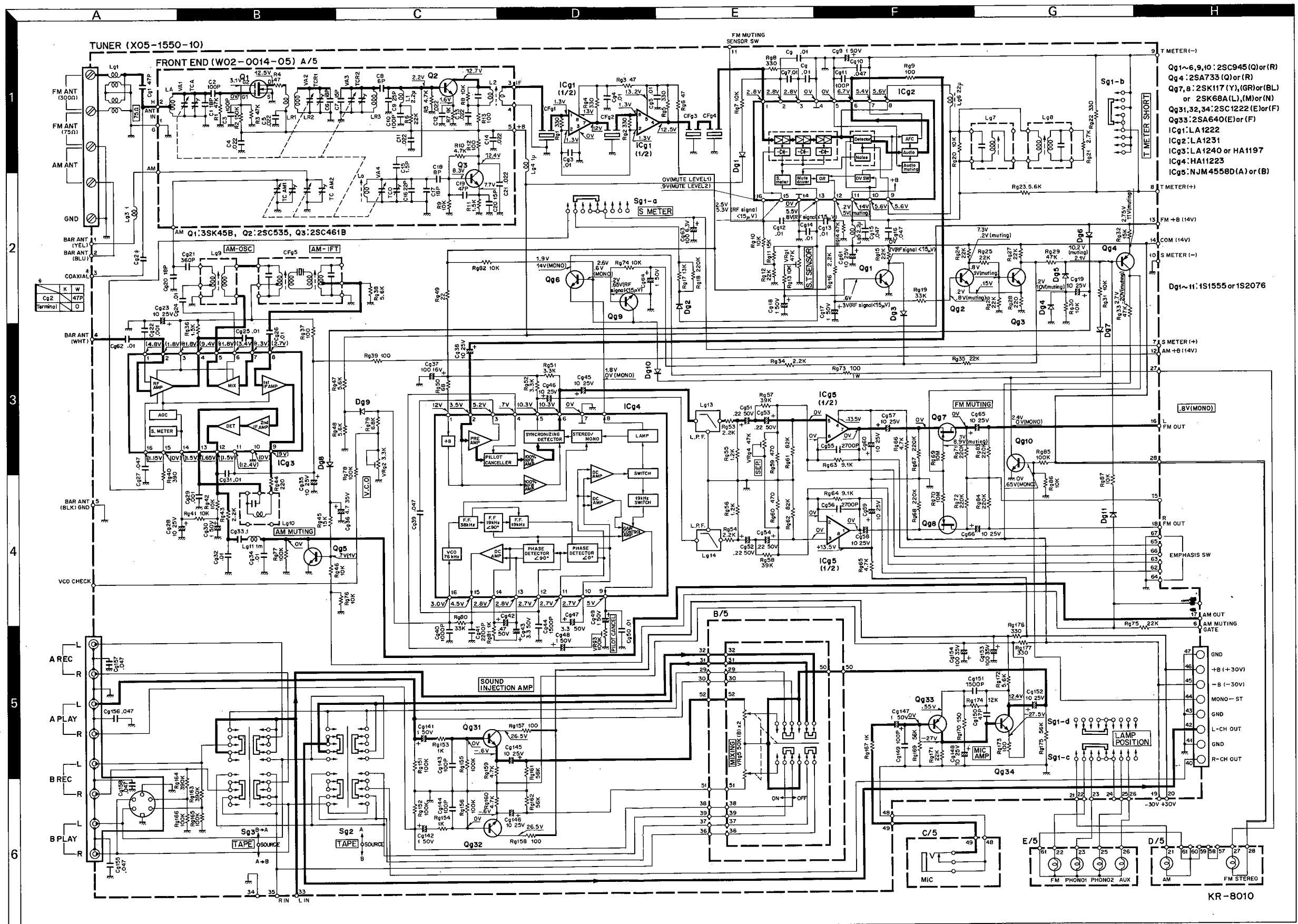


Qi1, 2 : 2SK117(GR) or (BL) or 2SK68A(M) or (N), Qi3, 4 : 2SA640(E) or 2SA750(1)(E), Qi5, 6 : 2SC945(Q) or (R)
 Qi7 ~ 10 : 2SC1400(E) or (U) or 2SA1775(E) or (F)

PC BOARD ASS'Y	REF. NO.	SEMICONDUCTOR	SUBSTITUTIONS
X00-1990-	Qk1	2SA733 (Q,R)	2SA561, 2SA564A, 2SA539, 2SA673A, 2SA720, 2SA720A Pc ≥ 250mW Ic ≥ 50mA, Vcb ≥ 30V
	Qk2,3,6,7	2SC945 (Q,R)	2SC734, 2SC984, 2SC1213A, 2SC1318, 2SC1318A Pc ≥ 250mW, Ic ≥ 50mA, Vcb ≥ 30V
	Qk4	2SC1890 (E,F)	2SC1775, 2SC1775A, 2SC1890A, 2SC2089 Pc ≥ 250mW, Vcb ≥ 70V
	Qk5	2SC2274K (E,F)	2SC1509, 2SD438, 2SC1735 Pc ≥ 600mW, Vcb ≥ 70V
	Qk8,9	2SD330 (E,E,F)	2SD525, 2SC789, 2SC1827
	Qk10	2SB514 (D,E,F)	2SB596
X05-1550-	Qg1~3,5,6,9,10	2SC945 (Q,R)	2SC734, 2SC984, 2SC1213A, 2SC1318, 2SC1318A
	Qg4	2SA733 (Q,R)	2SA561, 2SA564A, 2SA539, 2SA673A, 2SA720, 2SA720A
	Qg7,8	2SK117 (Y,GR,BL)	2SK68, 2SK68A, 2SK105, 2SK30
	Qg31,32,34 Qg33	2SC1222 (E,F) 2SA640 (E,F)	2SC1400, 2SC1775 2SA872, 2SA921
X07-1600-10	Qe1~4	2SA921 (S,T)	2SA872, 2SA872A, 2SA750 (I), 2SA992
	Qe5~8	2SC1904 (B,V)	2SC1885
	Qe9,10	2SC1222 (E)	2SC1400 (E), 2SC1775 (E), 2SC1775A (A), 2SC1890 (E)
	Qe11,12	2SA899 (B,V)	2SA912
	Qe13,14	2SC1913 (Q,R)	2SD381 (I), 2SC1669
	Qe15,16	2SA913 (Q,R)	2SB536 (I), 2SA839
	Qe17,18	2SA893 (D,E,F)	2SA872, 2SA872A, 2SA893A
	Qe19,20	2SC1890A (D,E,F)	2SC1775A, 2SC1439
	Qe21,22	2SC945 (Q,R)	2SC734, 2SC984, 2SC1213A, 2SC1318, 2SC1318A
	Qe23,24	2SA733 (Q,R)	2SA561, 2SA564A, 2SA539, 2SA673A, 2SA720, 2SA720A
	Qe25,26	2SB600	Pc ≥ 200W, Ic ≥ 10A, Vcb ≥ 160V
Qe27,28	2SD555	Pc ≥ 200W, Ic ≥ 10A, Vcb ≥ 160V	
X08-1640-10	Qd21,22	2SK68A (L,M,N)	2SK117
	Qd23~26,29,30	2SB725	Vcbo ≥ 60V
	Qd27,28	2SD767	Vcbo ≥ 60V
X11-1470-10	Qi1,2	2SK68A (M,N)	-
	Qi3,4	2SA640 (E)	2SA872, 2SA921, 2SA992
	Qi5,6	2SC945 (Q,R)	2SC734, 2SC984, 2SC1213A, 2SC1318, 2SC1318A
	Qi7~10	2SC1400 (E,U)	2SC1775, 2SC1775A, 2SC1980, 2SC2088, 2SC2089

KR-8010 KR-8010

SCHEMATIC DIAGRAM (1)



- Qg1~6,9,10: 2SC945(Q)or(R)
- Qg4: 2SA733(Q)or(R)
- Qg7,8: 2SK117(Y),(GR)or(BL) or 2SK68A(L),(M)or(N)
- Qg31,32,34: 2SC1222(E)or(F)
- Qg33: 2SA640(E)or(F)
- ICg1: LA1222
- ICg2: LA1231
- ICg3: LA1240 or HA1197
- ICg4: HA11223
- ICg5: NJM4558D(A) or (B)

Dg1~11: 1S1555 or 1S2076

[BV(MONO)]

AM MUTING GATE

AMP POSITION

MIC AMP

MIC

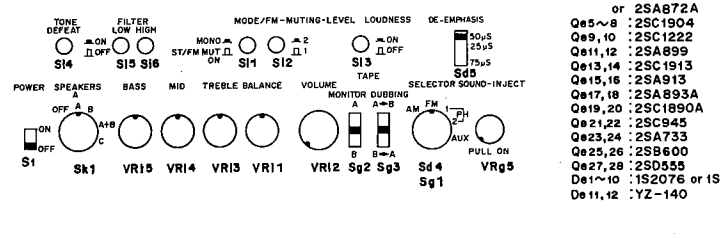
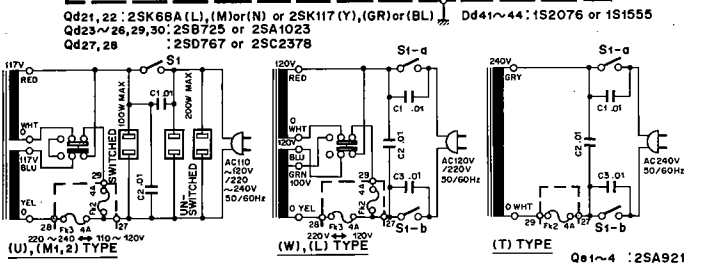
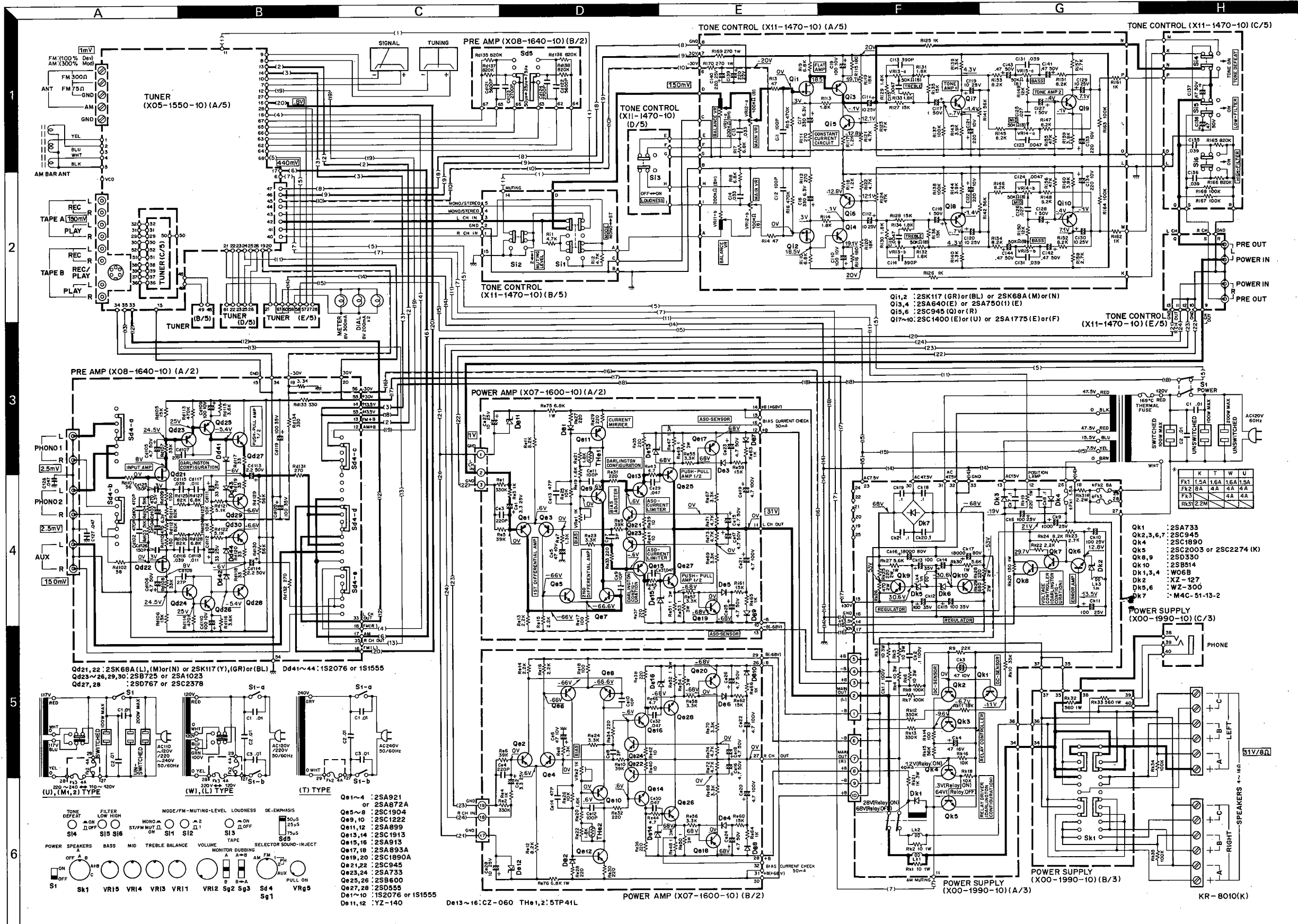
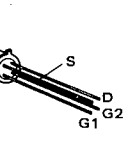
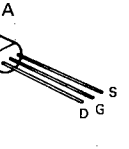
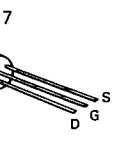
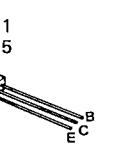
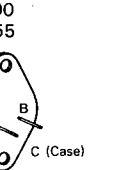
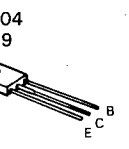
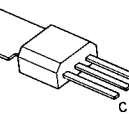
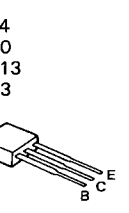
FM STEREO

KR-8010

DC measured with 20kΩV VOM under stereo broadcast reception.

SCHEMATIC DIAGRAM (2)

- 2 2SC1400
- 3 2SC1775
- 4 2SC2274
- 5 2SD767
- 6 2SC2003
- 7 2SB725



- Qe1~4 : 2SA921 or 2SA872A
- Qe5~8 : 2SC1904
- Qe9,10 : 2SC1222
- Qe11,12 : 2SA899
- Qe13,14 : 2SC1913
- Qe15,16 : 2SA913
- Qe17,18 : 2SA893A
- Qe19,20 : 2SC1890A
- Qe21,22 : 2SC945
- Qe23,24 : 2SA735
- Qe25,26 : 2SB600
- Qe27,28 : 2SD555 or 1S1555
- De1~10 : 1S2076 or 1S1555
- De11,12 : 1Z-140

- Q1,2 : 2SK117 (GR) or (BL) or 2SK68A (M) or (N)
- Q3,4 : 2SA640 (E) or 2A750 (I) (E)
- Q5,6 : 2SC945 (Q) or (R)
- Q7~10 : 2SC1400 (E) or (U) or 2SA1775 (E) or (F)

- Qk1 : 2SA735
- Qk2,3,6,7 : 2SC945
- Qk4 : 2SC1890
- Qk5 : 2SC2003 or 2SC2274 (K)
- Qk8,9 : 2SD330
- Qk10 : 2SB54
- Dk1,3,4 : WOB
- Dk2 : XZ-127
- Dk5,6 : WZ-300
- Dk7 : MAC-51-13-2

KR-8010(K)

DC voltage measured with 20kΩ/V VOM under no signal.

SPECIFICATIONS

FR AMPLIFIER SECTION

Output
 Watts* per channel, minimum RMS both
 channels driven, at 8 ohms from 20 to 20,000
 Hz with no more than 0.03% total harmonic
 distortion.

Channels Driven	130 + 130W 8Ω at 1 kHz 135 + 135W 4Ω at 1 kHz
Power Output	360W 4Ω
Harmonic Distortion	0.03% at rated power into 8Ω 0.02% at 1/2 rated power into 8Ω
Intermodulation Distortion	0.03% at rated power into 8Ω 0.02% at 1/2 rated power into 8Ω
Frequency Response	5 Hz to 70,000 Hz
Dynamic Response	5 Hz to 100,000 Hz — 1 dB
Signal to Noise Ratio	120 dB (short circuited)
Distortion Factor	35 (1 kHz 8Ω)
Input Sensitivity/Impedance	1V/40 kΩ

AMPLIFIER SECTION

Input Sensitivity/Impedance	
Channels 1 and 2	2.5 mV/50 kΩ
Radio Tape	150 mV/50 kΩ
	2.0 mV/50 kΩ
Signal to Noise Ratio (IHF A curve)	
Channels 1 and 2	84 dB for 2.5 mV input 90 dB for 5.0 mV input
Radio Tape	105 dB for 150 mV input 73 dB for 2.0 mV input
Maximum Input Level	250 mV (RMS), T.H.D. 0.03% at 1 kHz
Frequency Response	
	RIAA standard curve ±0.2 dB
Radio Tape	10 Hz to 100,000 Hz — 1.0 dB
Distortion Control	
	±12 dB at 50 Hz ±12 dB at 800 Hz ±12 dB at 15 kHz
Volume Control (Vol. — 30 dB)	+10 dB at 100 Hz
Filter	18 Hz 6 dB/oct. 5 kHz 6 dB/oct.
Input Level/Impedance	
REC (Pin)	150 mV/300Ω
REC (DIN)	30 mV/80 kΩ
Output	1.0V/1 kΩ

FM TUNER SECTION

Usable Sensitivity	9.8 dBf (1.7 μV)
50 dB Quieting Sensitivity	
Mono	14.1 dBf (2.8 μV)
Stereo	36.3 dBf (36 μV)
Signal to Noise Ratio at 65 dBf	
Mono	80 dB
Stereo	72 dB 75 dB at 10 mV
Total Harmonic Distortion	
Mono	0.1%
Stereo	0.15%
Frequency Response	20 Hz to 15,000 Hz + 0.2, — 2.0 dB 30 Hz to 15,000 Hz + 0.2, — 0.5 dB
Capture Ratio	1.0 dB
Image Rejection Ratio	85 dB
Spurious Response Ratio	105 dB
IF Response Ratio	90 dB
Alternate Channel Selectivity	85 dB
AM Suppression Ratio	60 dB
Stereo Separation Ratio	45 dB at 1,000 Hz 30 dB at 50 Hz to 15,000 Hz
Sub Carrier Product Ratio	67 dB
Antenna Impedance	300Ω balances and 75Ω unbalanced
FM Frequency Range	88 MHz to 108 MHz

AM TUNER SECTION

Usable Sensitivity	10 μV (250 μV/m)
Signal to Noise Ratio	50 dB
Image Rejection	50 dB
Selectivity	35 dB

GENERAL

Power Consumption	850W at full power
AC Outlet	Switched 1, Unswitched 2
Dimensions	W 21-1/32" (534 mm) H 6-19/32" (167.5 mm) D 18-1/16" (459 mm)
Weight (Net)	40.3 lb (18.3 kg)
(Gross)	47.4 lb (21.5 kg)

Note:

Kenwood follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

A product of

TRIO-KENWOOD CORPORATION

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