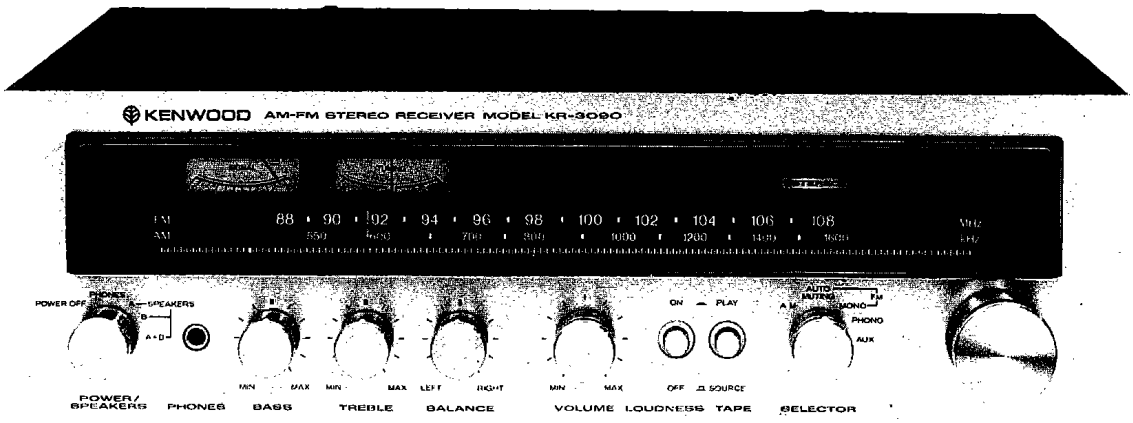
KENWOOD

HI/FI STEREO COMPONENTS

SERVICE MANUAL

KR-2090
KR-3090



AM-FM STEREO RECEIVER

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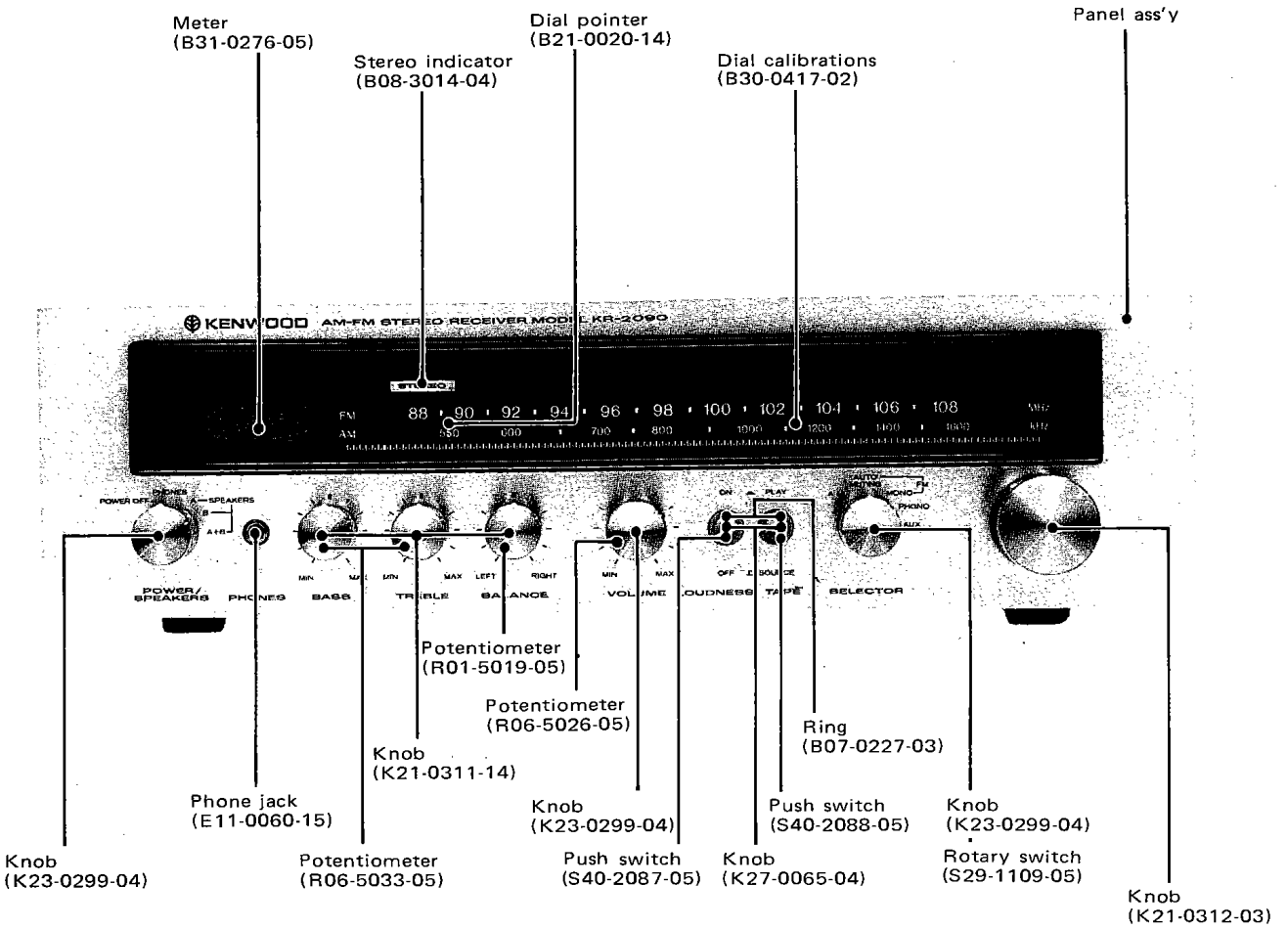
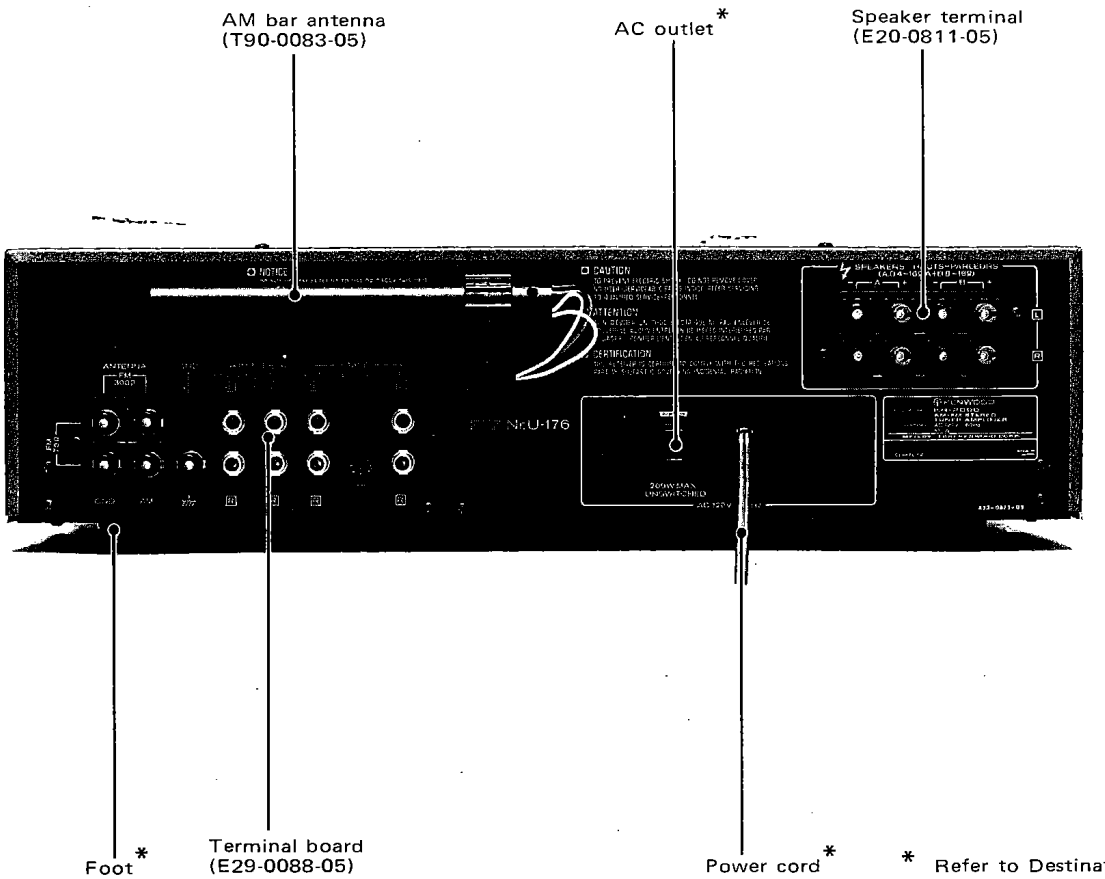
Note:
The products are subject to modification in components and circuits in different countries and regions. This is because each product must be used under the best condition. This manual provides information of modification based on the standard in the U.S. for the convenience of ordering associated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

U.S.A.	K
Canada	P
PX	U
Australia	X
Europe	W
England	T
Scandinavia	L
South Africa	S
Other areas	M

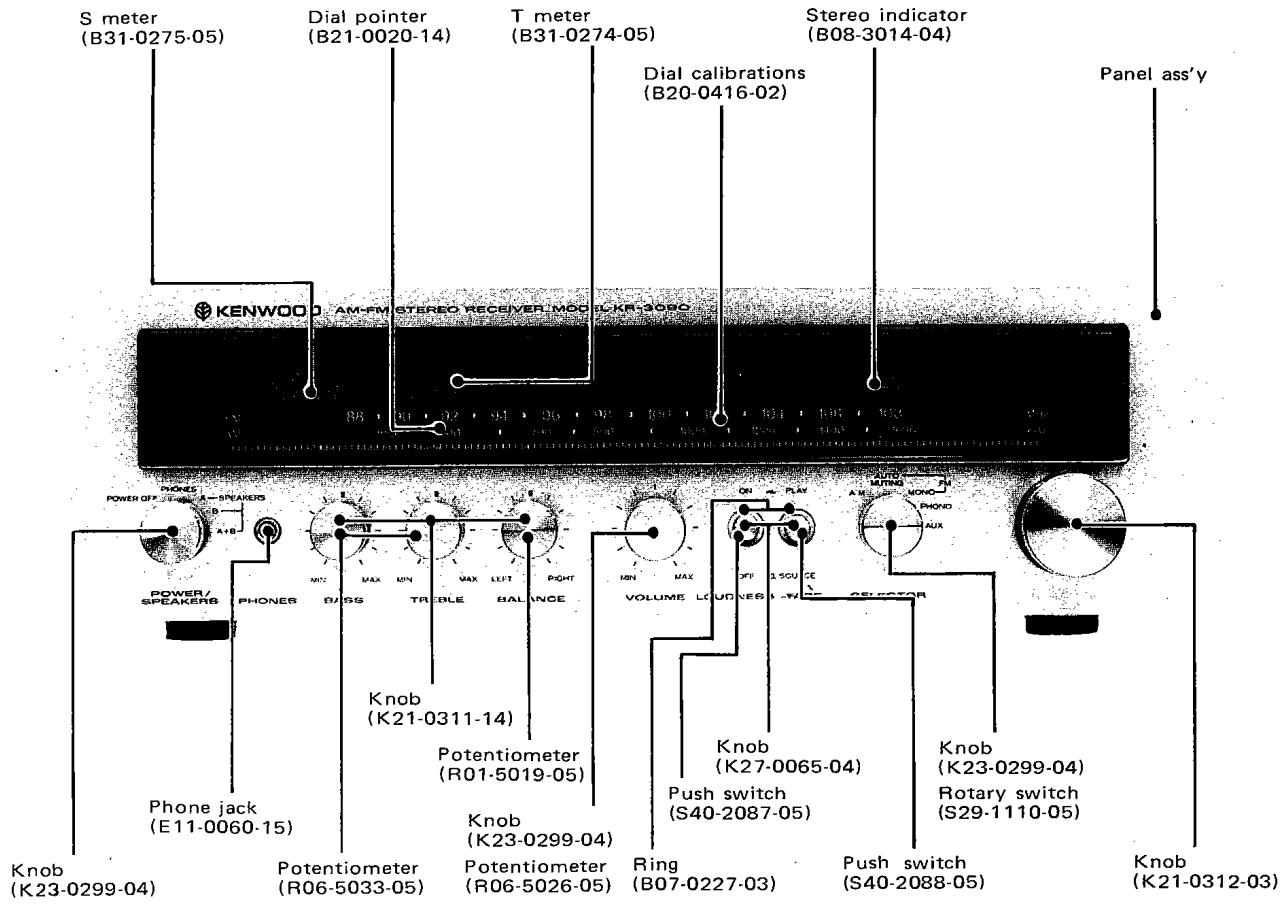
EXTERNAL VIEW(KR-2090)

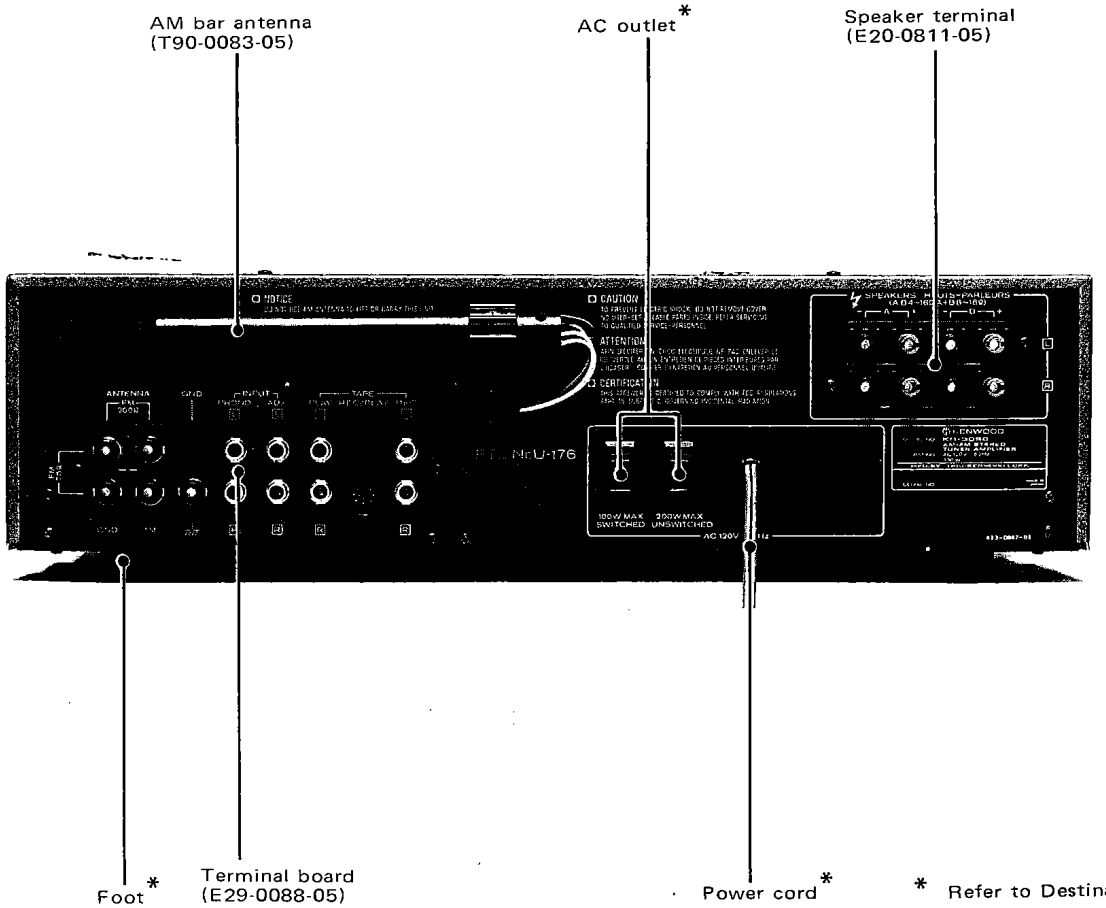




* Refer to Destinations' Parts List.

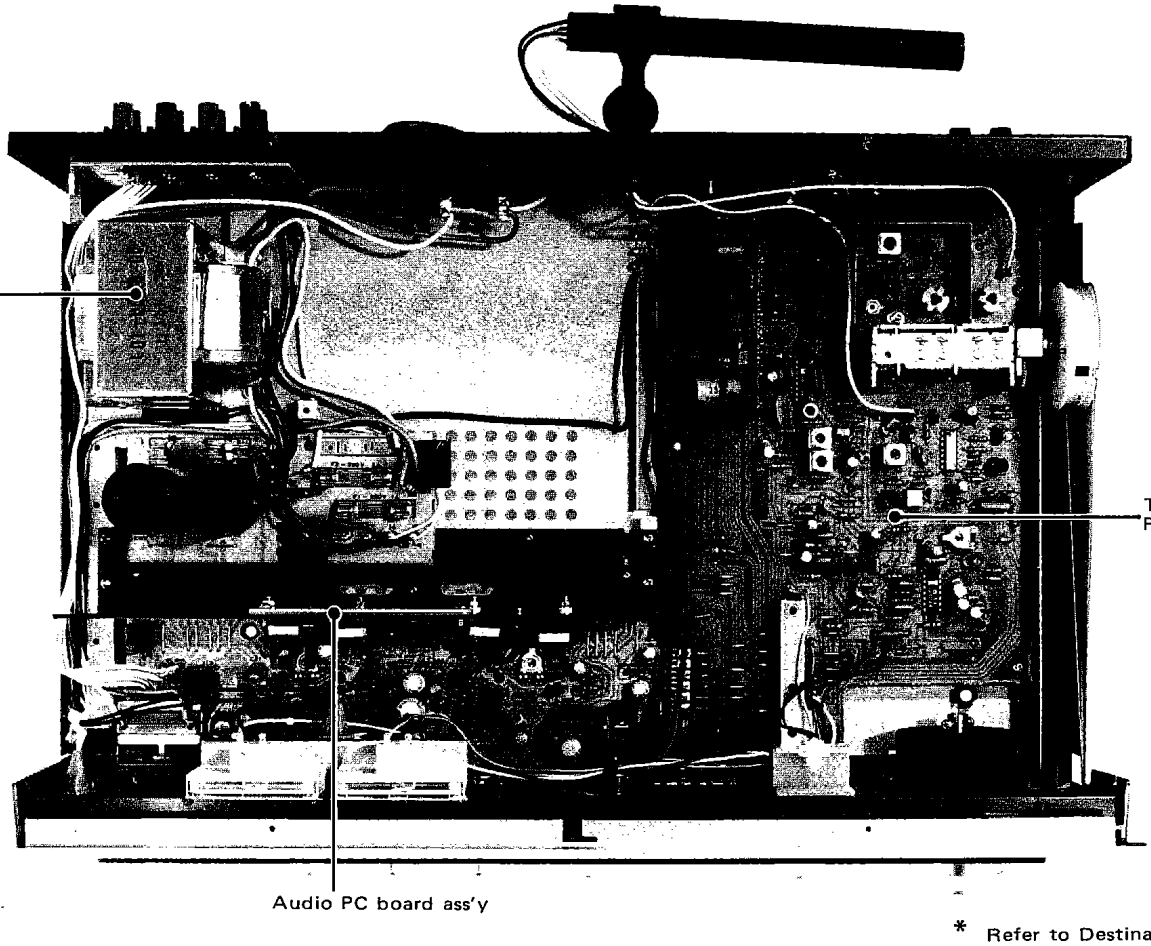
EXTERNAL VIEW(KR-3090)





* Refer to Destinations' Parts List.

INTERNAL VIEW/DIAL CORD STRINGING

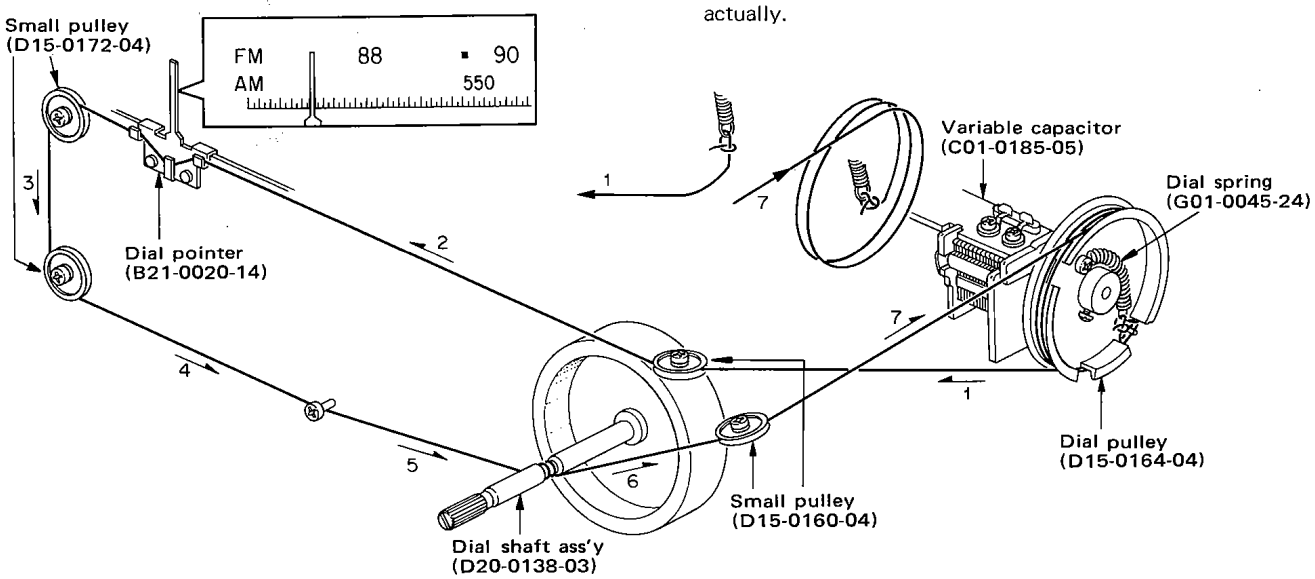


* Refer to Destinations' Parts List.

Photo is KR-3090.

DIAL CORD STRINGING

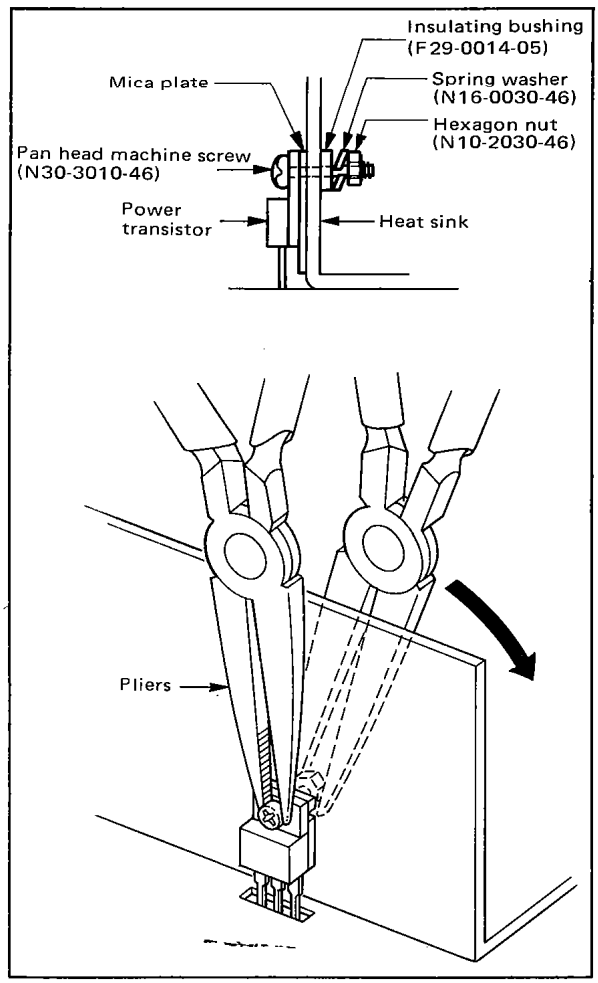
1. Fully close the variable capacitor.
2. Set the dial pulley as illustrated, and fix it with a screw.
3. Tie the end of the dial cord at the dial spring, giving a margin of about 10 cm.
4. Hook the spring on the boss.
5. Dress the dial cord in the direction of "1" to "5", and wind it 2 turns around the dial shaft counterclockwise.
6. Dress the dial cord in the direction of "6" to "7", and wind it two and half turns around the dial pulley starting from its upper 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. Mount the dial pointer in position as illustrated. This setting should be checked by receiving a suitable broadcast station actually.

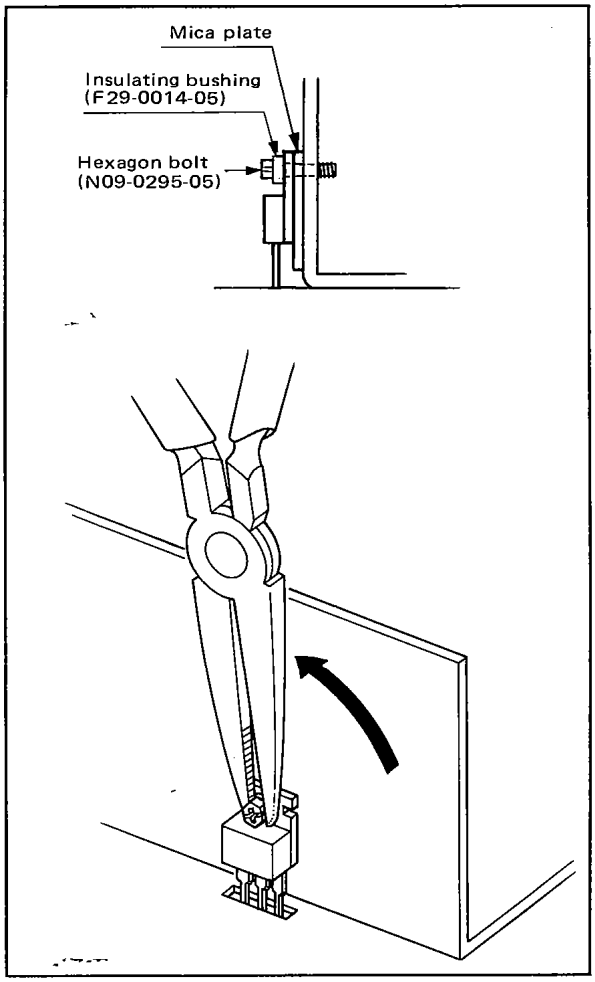


DISASSEMBLY FOR REPAIR

POWER TRANSISTOR REPLACEMENT

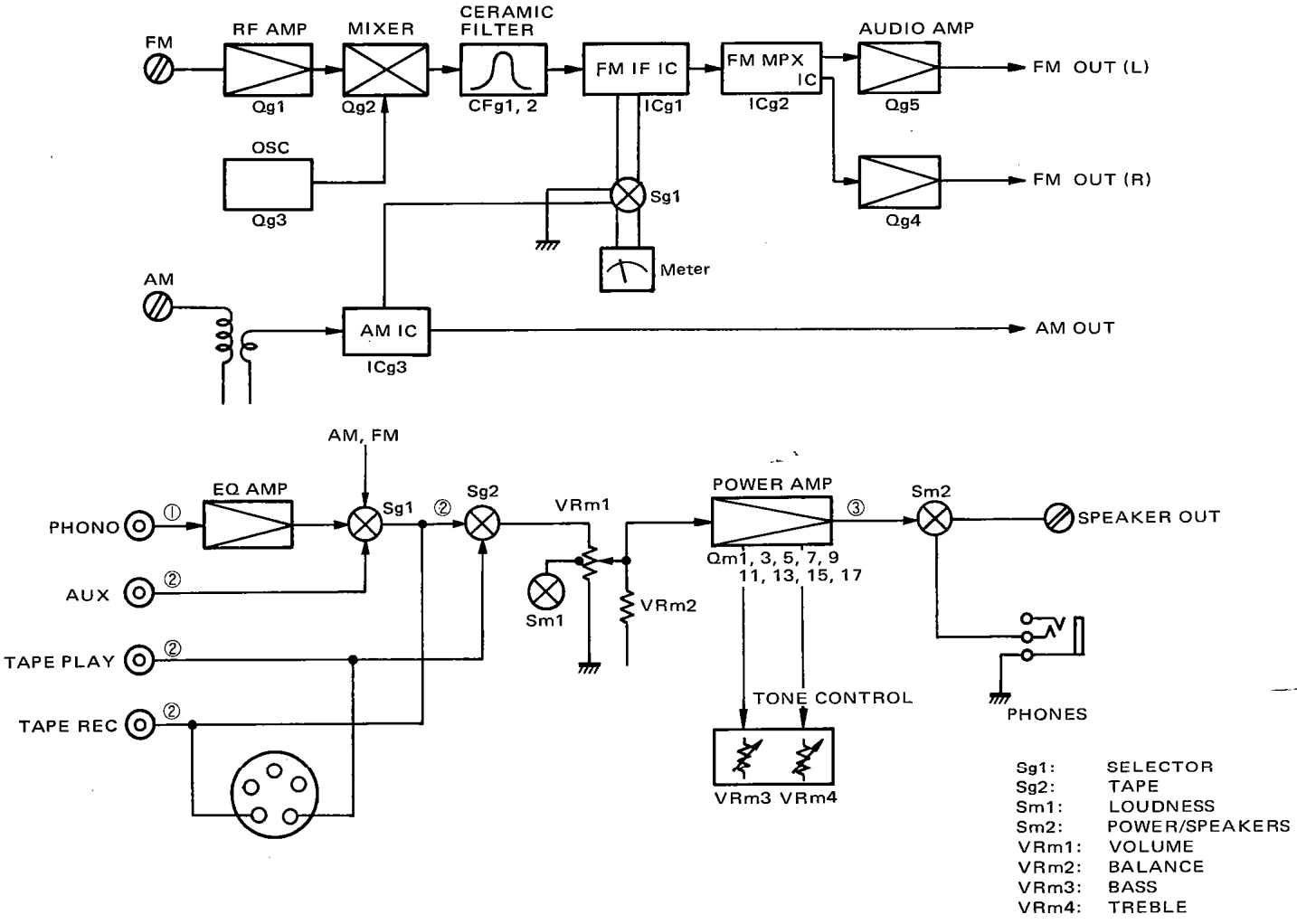
There are two way of fixing the power transistors as illustrated. The power transistor can be removed by using the pliers.





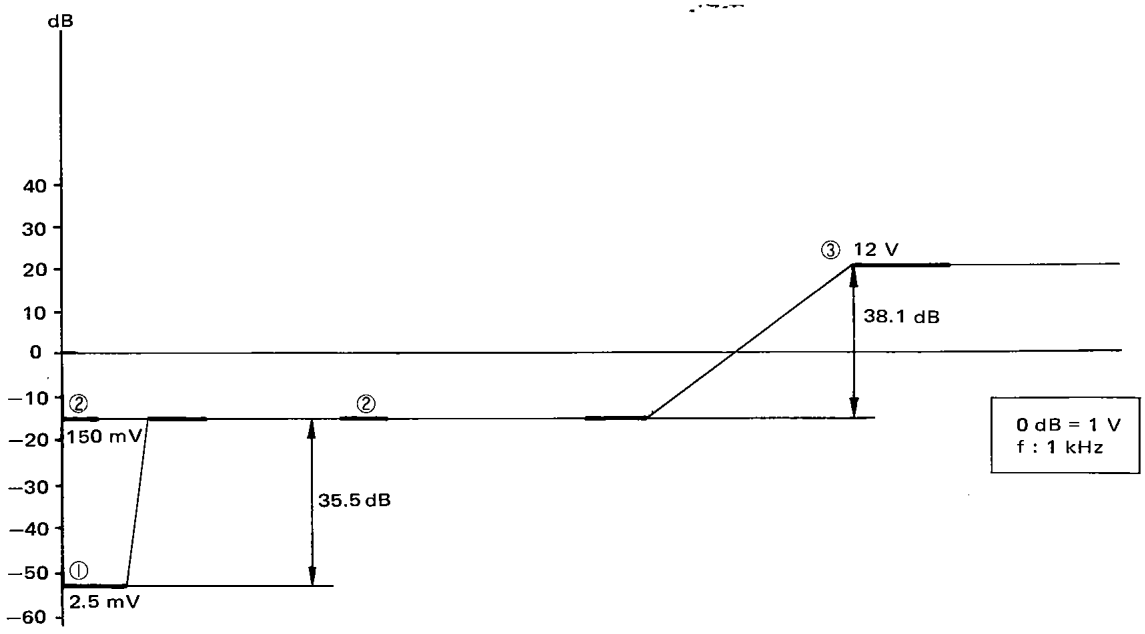
BLOCK & LEVEL DIAGRAM(KR-2090)

BLOCK DIAGRAM



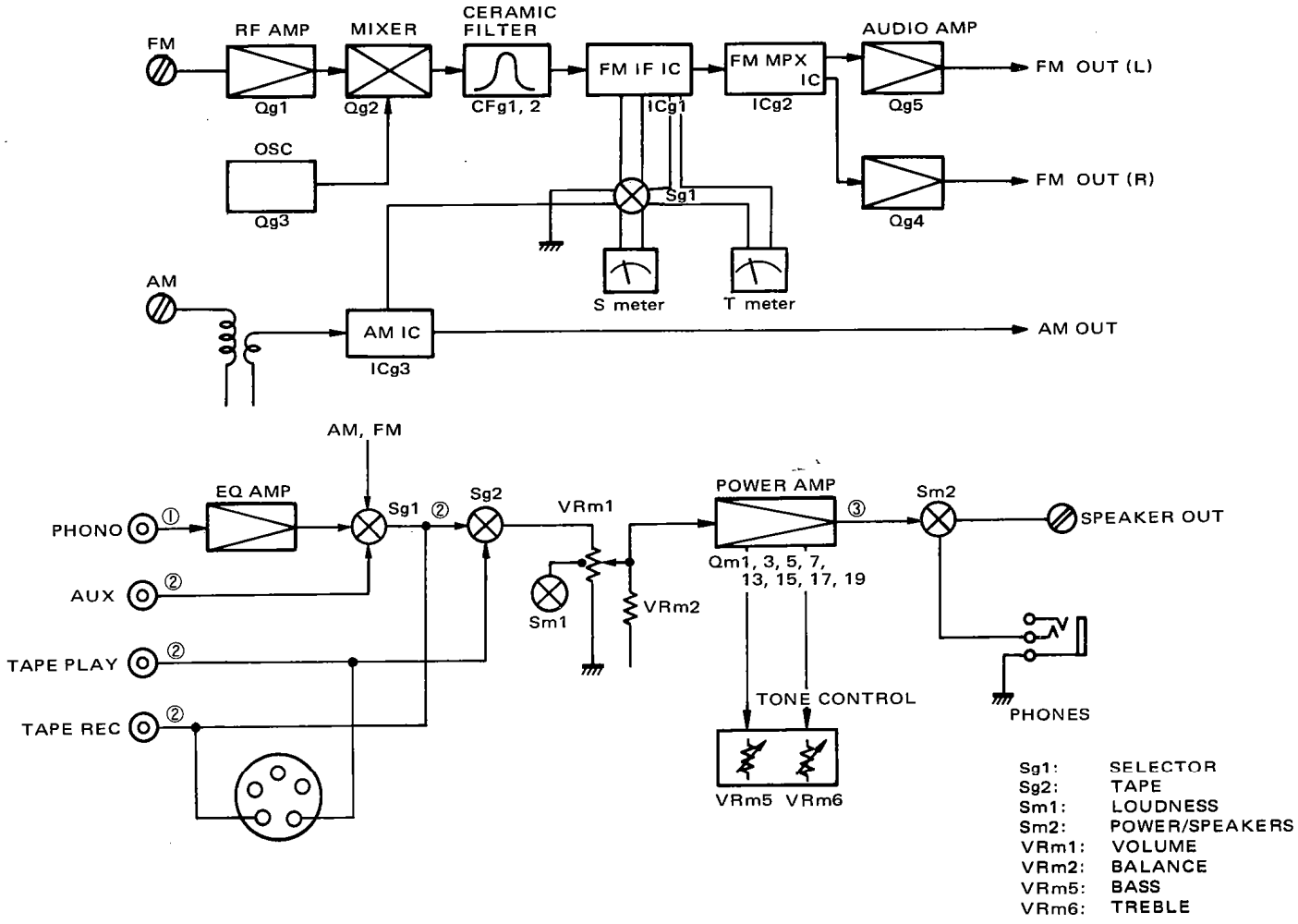
Sg1: SELECTOR
Sg2: TAPE
Sm1: LOUDNESS
Sm2: POWER/SPEAKERS
VRm1: VOLUME
VRm2: BALANCE
VRm3: BASS
VRm4: TREBLE

LEVEL DIAGRAM

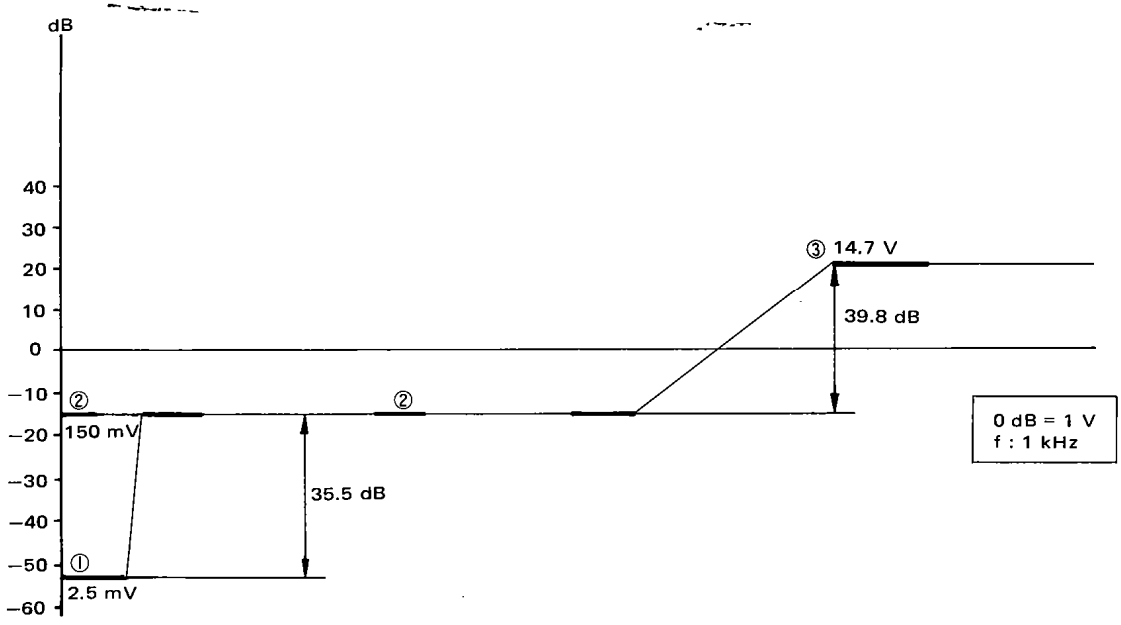


BLOCK & LEVEL DIAGRAM(KR-3090)

BLOCK DIAGRAM



LEVEL DIAGRAM



☆ : New Parts

Model	Ref. No.	U.S.A. (K)	Canada (P)	Australia (X)	Europe (W)	Scandinavia (L)	England (T)	South Africa (S)	Other Area (M)	Description
KR-2090	–	A20-1259-03	A20-1259-03	A20-1259-03	A20-1259-03	A20-1259-03	A20-1260-03	A20-1259-03	A20-1259-03	Panel ass'y ☆
	–	B46-0061-10	B46-0055-20	B46-0064-00☆	–	–	B46-0060-00	–	–	Warranty card
	–	B50-1710-00	B50-1712-00	B50-1710-00	B50-1710-00	B50-1710-00	B50-1711-00	B50-1710-00	B50-1712-00	Instruction manual ☆
	–	–	–	D32-0075-04	D32-0075-04	D32-0075-04	–	D32-0075-04	D32-0075-04	Switch stopper (Voltage selector)
	–	E03-0008-05	E03-0008-05	E03-0008-05	–	–	–	E03-0008-05	E03-0008-05	AC outlet
	–	–	–	–	E04-0004-05	E04-0004-05	E04-0004-05	–	–	DIN type coaxial connector plug
	–	E30-0181-05	E30-0181-05	E30-0185-05	E30-0459-05	E30-0292-05	E30-0602-05	E30-0602-05	E30-0545-05	Power cord
	–	H01-1788-04	H01-1789-04	H01-1788-04	H01-1788-04	H01-1788-04	H01-1790-04	H01-1788-04	H01-1788-04	Carton box ☆
	–	H20-0394-04	H20-0394-04	H20-0394-04	H20-0394-04	H20-0394-04	H20-0394-04	H20-0394-04	H20-0416-04	Polyethylene cover
	–	–	–	–	–	–	–	–	H40-0004-04	Anti-rust paper
	–	J02-0088-05	J02-0089-05	J02-0089-05	J02-0089-05	J02-0089-05	J02-0089-05	J02-0089-05	J02-0089-05	Foot X 4
	–	J41-0034-05	J41-0034-05	J41-0024-15	J41-0033-05	J41-0033-05	J41-0024-15	J41-0024-15	J41-0034-05	Power cord bushing
	–	–	–	–	–	J61-0038-05	–	–	–	Power cord band
	–	L01-1511-05	L01-1518-05	L01-1515-05	L01-1516-05	L01-1516-05	L01-1517-05	L01-1515-05	L01-1515-05	Power transformer ☆
	–	–	–	S31-2001-05	S31-2001-05	S31-2001-05	–	S31-2001-05	S31-2001-05	Slide switch (Voltage selector)
	–	X05-1540-11	X05-1540-11	X05-1540-62	X05-1540-62	X05-1540-62	X05-1540-62	X05-1540-62	X05-1540-82	Tuner PC board ass'y ☆
	–	X09-1280-10	X09-1281-01	X09-1280-81	X09-1280-61	X09-1280-61	X09-1281-71	X09-1280-81	X09-1280-81	Audio PC board ass'y ☆
KR-3090	–	A20-1256-03	A20-1256-03	A20-1256-03	A20-1256-03	A20-1256-03	A20-1257-03	A20-1256-03	A20-1256-03	Panel ass'y ☆
	–	B46-0061-10	B46-0055-20	B46-0064-00	–	–	B46-0060-00	–	–	Warranty card
	–	B50-1707-00	B50-1709-00	B50-1707-00	B50-1707-00	B50-1707-00	B50-1708-00	B50-1707-00	B50-1709-00	Instruction manual ☆
	–	–	–	D32-0075-04	D32-0075-04	D32-0075-04	–	D32-0075-04	D32-0075-04	Switch stopper (Voltage selector)
	–	E03-0008-05	E03-0008-05	E03-0008-05	–	–	–	E03-0008-05	E03-0008-05	AC outlet X 2
	–	–	–	–	E04-0004-05	E04-0004-05	E04-0004-05	–	–	DIN type coaxial connector plug
	–	E30-0181-05	E30-0181-05	E30-0185-05	E30-0459-05	E30-0292-05	E30-0602-05	E30-0602-05	E30-0545-05	Power cord
	–	H01-1775-04	H01-1776-04	H01-1775-04	H01-1775-04	H01-1775-04	H01-1777-04	H01-1775-04	H01-1775-04	Carton box ☆
	–	H20-0394-04	H20-0394-04	H20-0394-04	H20-0394-04	H20-0394-04	H20-0394-04	H20-0394-04	H20-0416-04	Polyethylene cover
	–	–	–	–	–	–	–	–	H40-0004-04	Anti-rust paper
	–	J02-0088-05	J02-0089-05	J02-0089-05	J02-0089-05	J02-0089-05	J02-0089-05	J02-0089-05	J02-0089-05	Foot X 4
	–	J41-0034-05	J41-0034-05	J41-0024-15	J41-0033-05	J41-0033-05	J41-0024-15	J41-0024-15	J41-0034-05	Power cord bushing
	–	–	–	–	–	J61-0038-05	–	–	–	Power cord band
	–	L01-1501-05	L01-1508-05	L01-1505-05	L01-1506-05	L01-1506-05	L01-1507-05	L01-1505-05	L01-1505-05	Power transformer ☆
	–	–	–	S31-2001-05	S31-2001-05	S31-2001-05	–	S31-2001-05	S31-2001-05	Slide switch (Voltage selector)
	–	X05-1540-10	X05-1540-10	X05-1540-61	X05-1540-61	X05-1540-61	X05-1540-61	X05-1540-61	X05-1540-81	Tuner PC board ass'y ☆
	–	X09-1290-10	X09-1291-01	X09-1290-81	X09-1290-61	X09-1290-61	X09-1291-71	X09-1290-81	X09-1290-81	Audio PC board ass'y ☆

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

KR-2090 TOTAL

Ref. No.	Parts No.	Description	Remarks
		MISCELLANEOUS	
—	A01-0335-03	Case	
—	A30-0136-05	Dial back board ass'y	☆
—	B01-0115-02	Dial escutcheon	
—	B07-0227-03	Ring X 2 (push switch)	
—	B08-3014-04	Stereo indicator	
—	B20-0417-02	Dial calibrations	☆
—	B21-0020-14	Dial pointer	
—	B30-0132-05	Pilot lamp 8V, 300mA (Black)	
—	B30-0147-05	Pilot lamp 8V, 300mA (White)	
—	B30-0149-05	Pilot lamp 8V, 50mA	☆
—	B31-0276-05	Meter	☆
—	D15-0160-04	Small pulley X 2	
—	D15-0164-04	Dial pulley	
—	D15-0172-04	Small pulley X 2	
—	D20-0138-03	Dial shaft ass'y	
—	G01-0045-24	Dial spring	
—	G01-0358-04	Spring X 2 (push switch)	
—	H10-1508-02	Polystyrene foamed fixture	
—	H10-1509-02	Polystyrene foamed fixture	
—	H25-0078-00	Instruction bag	
—	J19-0306-05	Lead holder X 2	
—	J19-0506-05	PC board supporter X 2	
—	J19-0507-05	Antenna holder	
—	J19-0518-04	Lead stopper board	
—	K21-0311-14	Knob X 3 TONE, BAL	
—	K21-0312-03	Knob TUNING	
—	K23-0299-04	Knob X 3 SEL, VOL, SPKR	
—	K27-0065-04	Knob X 2 Push switch	
—	T90-0083-05	AM bar antenna	
—	T90-0202-05	FM indoor antenna	
—	351-0003-14	Dial string (ϕ0.5)	

KR-3090 TOTAL

Ref. No.	Parts No.	Description	Remarks
		MISCELLANEOUS	
—	A01-0355-03	Case	☆
—	A30-0135-05	Dial back board ass'y	☆
—	B01-0115-02	Dial escutcheon	☆
—	B07-0227-03	Ring X 2 (push switch)	☆
—	B08-3014-04	Stereo indicator	☆
—	B20-0416-02	Dial calibrations	☆
—	B21-0020-14	Dial pointer	☆
—	B30-0132-05	Pilot lamp 8V, 300mA (Black)	☆
—	B30-0147-05	Pilot lamp 8V, 300mA (White)	☆
—	B30-0148-05	Pilot lamp 8V, 50mA	☆
—	B31-0274-05	T meter	☆
—	B31-0275-05	S meter	☆
—	D15-0160-04	Small pulley X 2	
—	D15-0164-04	Dial pulley	
—	D15-0172-04	Small pulley X 2	
—	D20-0138-03	Dial shaft ass'y	☆
—	G01-0045-24	Dial spring	
—	G01-0358-04	Spring X 2 (push switch)	☆
—	H10-1508-02	Polystyrene foamed fixture	☆
—	H10-1509-02	Polystyrene foamed fixture	☆
—	H25-0078-00	Instruction bag	
—	J19-0306-05	Lead holder X 2	
—	J19-0506-05	PC board supporter X 2	
—	J19-0507-05	Antenna holder	
—	J19-0518-04	Lead stopper board	
—	K21-0311-14	Knob X 3 TONE, BAL	
—	K21-0312-03	Knob TUNING	
—	K23-0299-04	Knob X 3 SEL, VOL, SPKR	
—	K27-0065-04	Knob X 2 Push switch	
—	T90-0083-05	AM bar antenna	
—	T90-0202-05	FM indoor antenna	
—	351-0003-14	Dial string	

TUNER (X05-1540-)

Ref. No.	Parts No.	Description	Remarks
		CAPACITOR	
Cg1	CC45SL1H150K	Ceramic 15pF ±10%	
Cg2	CK45F1H103Z	Ceramic 0.01μF +80%,−20%	
Cg3	CC45SL1H100D	Ceramic 10pF ±0.5pF	
Cg4	CC45SL1H221K	Ceramic 220pF ±10%	
Cg5	CK45F1H103Z	Ceramic 0.01μF +80%,−20%	
Cg6	CC45PG1H220J (Lg4:L32-0187-05)	Ceramic 22pF ±5% (Yel/Red)	
	CC45RG1H220J (Lg4:L32-0210-05)	or 22pF ±5% (Yel)	
Cg7	CC45SH1H080D	Ceramic 8pF ±0.5pF	
Cg8	C91-0037-05	Low capacitive 0.47pF	
Cg9	CC45CH1H150K	Ceramic 15pF ±10%	
Cg10	CC45CH1H390K	Ceramic 39pF ±10%	
Cg11~14	CK45F1H103Z	Ceramic 0.01μF +80%,−20%	
Cg15	CE04W1E4R7CC	Electrolytic 4.7μF 25WV	
Cg16	CE04AW1HR47MCC	Electrolytic 0.47μF 50WV	
Cg17	CK45F1H473Z	Ceramic 0.047μF +80%,−20%	
Cg18	CC45SL1H101K	Ceramic 100pF ±10%	
Cg19~21	CK45F1H103Z	Ceramic 0.01μF +80%,−20%	
Cg22, 23	CK45F1H473Z	Ceramic 0.047μF +80%,−20%	
Cg24	CE04W1H010CC	Electrolytic 1μF 50WV	
Cg25	CC45UJ1H180K	Ceramic 18pF ±10%	
Cg26	CQ09FS1H361J	Polystyrene 360pF ±5%	
Cg27	CK45F1H103Z	Ceramic 0.01μF +80%,−20%	
Cg28	C90-0245-05	Semiconductor type ceramic 0.01μF ±20%	
Cg29, 30	CK45F1H103Z	Ceramic 0.01μF +80%,−20%	
Cg31	CC45SL1H470K	Ceramic 47pF ±10%	
Cg32	CE04W1C100CC	Electrolytic 10μF 16WV	
Cg33	CE04W1H010CC	Electrolytic 1μF 50WV	
Cg34	CK45B1H102K	Ceramic 1000pF ±10%	
Cg35, 36	C90-0245-05	Semiconductor type ceramic 0.01μF ±20%	
Cg37	CQ93M1H104M	Mylar 0.1μF ±20%	
Cg38	C90-0245-05	Semiconductor type ceramic 0.01μF ±20%	
Cg39	CE04W1C100CC	Electrolytic 10μF 16WV	

PARTS LIST

Ref. No.	Parts No.	Description	Remarks
Cg40	CQ09FS1H471J	Polystyrene 470pF ±5%	
Cg41	CQ93M1H473K	Mylar 0.047μF ±10%	
Cg42~44	CE04W1C100CC	Electrolytic 10μF 16WV	
Cg45	CE04AW1HR47MCC	Electrolytic 0.47μF 50WV	
Cg46	CE04AW1HR22MCC	Electrolytic 0.22μF 50WV	
Cg47	CE04AW1HR47MCC	Electrolytic 0.47μF 50WV	
Cg48, 49	CQ93M1H333J	Mylar 0.033μF ±5% **(X05-1540-10, -11, -81, -82)**	
Cg48, 49	CQ93M1H223J	Mylar 0.022μF ±5% **(X05-1540-61, -62)**	
Cg50, 51	CQ93M1H272K	Mylar 2700pF ±10%	
Cg52, 53	CK45B1H391K	Ceramic 390pF ±10%	
Cg54, 55	CQ93M1H272K	Mylar 2700pF ±10%	
Cg56, 57	CE04W1H010CC	Electrolytic 1μF 50WV	
Cg58, 59	CS15E1A3R3MCC	Tantalum 3.3μF 10WV	
Cg60~63	CC45SL1H101K	Ceramic 100pF ±10%	
Cg64, 65	CE04W1A101CC	Electrolytic 100μF 10WV	
Cg66, 67	CC45SL1H220K	Ceramic 22pF ±10%	
Cg68, 69	CQ93M1H123J	Mylar 0.012μF ±5%	
Cg70, 71	CQ93M1H332J	Mylar 3300pF ±5%	
Cg72, 73	CE04W1H010CC	Electrolytic 1μF 50WV	
Cg74	CE04W1E330CC	Electrolytic 33μF 25WV **(X05-1540-10, -61, -81)**	
Cg75	CE04W1V221CC	Electrolytic 220μF 35WV **(X05-1540-10, -61, -81)**	
Cg74, 75	CE04W1E470CC	Electrolytic 47μF 25WV **(X05-1540-11, -62, -82)**	
Cg76	CC45SL1H150K	Ceramic 15pF ±10%	
Cg77~ 79	CK45F1H103Z	Ceramic 0.01μF +80%,−20%	
Cg80	CE04W1C100CC	Electrolytic 10μF 16WV	
RESISTOR			
Rg9, 10,34	RD14GY2E101J	Flame-proof RD 100Ω ±5% 1/4W	
Rg38	RD14GY2E330J	Flame-proof RD 33Ω ±5% 1/4W	
Rg55	RS14GB3A121J	RS 120Ω ±5% 1W	
Rg76	RD14GY2E101J	Flame-proof RD 100Ω ±5% 1/4W	
Rg77	RD14GY2E391J	Flame-proof RD 390Ω ±5% 1/4W **(X05-1540-10, -61, -81)**	
SEMICONDUCTOR			
Qg1	V09-0124-10	FET 2SK61 (Y), (GR)	
Qg2	V03-0098-05	Transistor 2SC535(B)	
Qg3	V03-0357-05	Transistor 2SC1342(A), (B)	
Qg4, 5	V01-0146-05	Transistor 2SA640(E)	
	V01-0190-05	or 2SA841(BL)	
ICg1	V30-0133-05	IC HA1137W	
ICg2	V30-0160-05	IC HA1156W (B)	
ICg3	V30-0134-05	IC HA1151	
ICg4, 5	V30-0264-10	IC HA1457	
Dg1~5	V11-0271-05	Diode 1S2076	
	V11-0076-05	or 1S1555 **(X05-1540-10, -61, -81)**	
Dg1,2,4,5	V11-0271-05	Diode 1S2076	
	V11-0076-05	or 1S1555 **(X05-1540-11, -62, -82)**	
Dg6, 7	V11-0051-05	Diode 1N60	
VC/TRIMMER/POTENTIOMETER			
—	C01-0185-05	Variable capacitor	
TCg1	C05-0055-05	Ceramic trimmer (6 P, Red)	
VRg1	R12-2016-05	Trimming potentiometer 5kΩ(B)	
COIL/INDUCTOR/IFT/FILTER			
Lg1	L31-0412-05	FM ANT coil	☆
Lg2	L31-0410-05	FM RF coil	
Lg3	L40-1091-41	Inductor 1μH	
Lg4	L32-0187-05	FM OSC coil	
—	(Cg6:CC45PG1H220J) L32-0210-05	or (Cg6:CC45RG1H220J)	
Lg5	L30-0282-05	FM IFT	
Lg6	L40-2205-25	Inductor 22μH	
Lg7	L30-0305-05	FM IFT	☆
Lg8	L30-0306-05	FM IFT	☆
Lg9	L40-2292-44	Inductor 2.2μH	
Lg10	L40-1092-44	Inductor 1μH	
	L40-1092-03	or 1μH	
Lg11	L32-0205-15	AM OSC coil	
Lg12	L30-0307-05	AM IFT	☆
Lg13	L30-0300-05	AM IFT	
Lg14	L40-1021-45	Inductor 1mH	
	L40-1021-03	or 1mH	
CFg1, 2	L72-0052-05	FM ceramic filter **(X05-1540-10, -11, -81, 82)**	
CFg1, 2	L72-0058-05	FM ceramic filter **(X05-1540-61, 62)**	
CFg3	L72-0054-05	AM ceramic filter	☆
SWITCH			
Sg1	S29-1110-05	Slide rotary switch SELECTOR **(X05-1540-10, -61, -81)**	☆
Sg1	S29-1109-05	Slide rotary switch SELECTOR **(X05-1540-11, -62, -82)**	☆
Sg2	S40-2088-05	Push switch TAPE	☆
MISCELLANEOUS			
—	E29-0088-05	Terminal board	

KR-2090 AUDIO (X09-1280, -1281-)

Ref. No.	Parts No.	Description	Remarks
CAPACITOR			
Cm1, 2	CQ93M1H183K	Mylar 0.018μF ±10%	
Cm3, 4	CE04AW1H010M	Electrolytic 1μF 50WV	
Cm5, 6	CC45SL1H221K	Ceramic 220pF ±10%	
Cm7~10	CE04W1E100	Electrolytic 10μF 25WV	
Cm11, 12	CC45SL1H470K	Ceramic 47pF ±10%	
Cm13, 14	CC45SL1H101K	Ceramic 100pF ±10%	
Cm15, 16	CC45SL1H100D	Ceramic 10pF ±0.5pF	
Cm17, 18	CC45SL1H220K	Ceramic 22pF ±10%	
Cm19, 20	CE04W1E330	Electrolytic 33μF 25WV	
Cm21, 22	CE04W1A470	Electrolytic 47μF 10WV	
Cm23, 24	CE04BW1C100M	Non-pole electrolytic 10μF 16WV	
Cm25, 26	CQ93M1H153K	Mylar 0.015μF ±10%	
Cm27, 28	CQ93M1H683K	Mylar 0.068μF ±10%	
Cm29, 30	CQ93M1H472K	Mylar 4700pF ±10%	
Cm31, 32	CQ93M1H223K	Mylar 0.022μF ±10%	
Cm33, 34	CQ93M1H224M	Mylar 0.22μF ±20%	
Cm35	CE04W1C100	Electrolytic 10μF 16WV	
Cm36	CE04W1V221	Electrolytic 220μF 35WV	
Cm37	CE04W1V101	Electrolytic 100μF 35WV	
Cm38	CE04W1C221	Electrolytic 220μF 16WV	
Cm39	CE04W1C470	Electrolytic 47μF 16WV	
Cm40, 41	C90-0368-05	Electrolytic 4700μF 35WV	
Cm42, 43	CK45E2H103P	Ceramic 0.01μF +100%,−0%	
Cm44	C90-0145-05	Film capacitor 0.01μF 125WV	
	C91-0001-05	or Ceramic 0.01μF 125WV **(X09-1280-10)**	
Cm44	C91-0025-05	Ceramic 0.01μF 125WV **(X09-1281-01)**	
Cm44	C91-0023-05	Ceramic 0.01μF 250WV **(X09-1280-81)**	
Cm44	CK45E3D103PMU	Ceramic 0.01μF 2KWV **(X09-1280-61, -1281-71)**	

PARTS LIST

Ref. No.	Parts No.	Description	Remarks
		RESISTOR	
Rm17, 18	RD14GY2E221J	Flame-proof RD 220Ω ±5% 1/4W	
Rm31, 32	RD14GY2E101J	Flame-proof RD 100Ω ±5% 1/4W	
Rm39~42	RD14GY2E331J	Flame-proof RD 330Ω ±5% 1/4W	
Rm43~46	R92-0110-05	Cement 0.47Ω 1W	
Rm57, 58	RS14GB3A3R3J	Flame-proof RS 3.3Ω ±5% 1W	
Rm59, 60	RC05GF2H271K	RC 270Ω ±10% 1/2W	
Rm61	RD14GY2E560J	Flame-proof RD 56Ω ±5% 1/4W	
Rm62	RD14GY2E391J	Flame-proof RD 390Ω ±5% 1/4W	
Rm64	RD14GY2E821J	Flame-proof RD 820Ω ±5% 1/4W	
Rm65	RS14GB3A220J	RS 22Ω ±5% 1W	
Rm66	RS14GB3A331J	RS 330Ω ±5% 1W	
Rm67	RC05GF2H225M	RC 2.2MΩ ±20% 1/2W **(X09-1280-10, -1281-01)**	
		SEMICONDUCTOR	
Qm1~4	V01-0146-05	Transistor 2SA640(E), (F)	
	V01-0190-05	or 2SA841(GR), (BL)	
Qm5~8	V03-1890-20	Transistor 2SC1890(E), (F)	
	V03-0424-05	or 2SC1400(U)	
Qm9, 10	V03-1890-20	Transistor 2SC1890(F)	
Qm11, 12	V03-2274-20	Transistor 2SC2274K(E), (F)	
	V03-0215-05	or 2SC1213A(C), (D)	
Qm13, 14	V01-0984-30	Transistor 2SA984K(E), (F)	
	V01-0073-05	or 2SA673A(C), (D)	
Qm15, 16	V02-0690-10	Transistor 2SB690(B), (C)	☆
	V02-0507-10	or 2SB507V(D), (E)	☆
Qm17, 18	V04-0726-10	Transistor 2SD726(B), (C)	☆
	V04-0313-20	or 2SD313V(D), (E)	☆
Qm19	V03-0270-05	Transistor 2SC945(Q), (R)	
Qm20	V04-0330-20	Transistor 2SD330(E)	
Dm1	V11-1300-60	Diode S2VC10	☆
	V11-1300-70	or S2VC20	☆
Dm2	V11-1300-80	Diode S2VC10R	☆
	V11-1300-90	or S2VC20R	☆
Dm3	V11-0076-05	Diode 1S1555	
	V11-0271-05	or 1S2076	
Dm4, 5	V11-0254-05	Zener diode YZ-140	
		POTENTIOMETER	
VRm1	R06-5026-05	Potentiometer 100kΩ(B) VOLUME	
VRm2	R01-5019-05	Potentiometer 200kΩ(M) BALANCE	
VRm3, 4	R06-5033-05	Potentiometer 100kΩ(C) TONE	
		SWITCH	
Sm1	S40-2087-05	LOUDNESS	
Sm2	S02-1011-05	POWER/SPEAKERS **(X09-1280-10, -1281-01)**	
Sm2	S02-1012-05	Rotary switch POWER/SPEAKERS **(X09-1280-81)**	
Sm2	S02-1013-05	Rotary switch POWER/SPEAKERS **(X09-1280-61, -1281-71)**	
		FUSE	
Fm1	F05-1021-05	Fuse 1A, 250V **(X09-1280-10, -1280-01)**	
Fm1, 3	F05-1023-05	Fuse 1A, 250V **(X09-1280-81)**	
Fm1, 3	F06-1021-05	Fuse 1A, 250V **(X09-1280-61, -1281-71)**	
Fm2	F05-2021-05	Fuse 2A, 250V **(X09-1280-10, -1281-01)**	
Fm2	F05-2023-05	Fuse 2A, 250V **(X09-1280-81)**	
Fm2	F05-2029-05	Fuse 2A, 250V **(X09-1280-61)**	
		MISCELLANEOUS	
Lm1	L40-1021-03	Ferri-inductor	
–	E11-0060-15	Phone jack	
–	E20-0811-05	Speaker terminal board	
–	F29-0014-05	Insulating bushing X 4	
–	J13-0041-05	Fuse clip X 4 **(X09-1280-10, -1281-01)**	
–	J13-0041-05	Fuse clip X 6 **(X09-1280-81)**	
–	J13-0054-05	Fuse clip X 6 **(X09-1280-61)**	
–	J13-0054-05	Fuse clip X 4 **(X09-1281-71)**	

KR-3090 AUDIO (X09-1290, -1291-)

Ref. No.	Parts No.	Description	Remarks
		CAPACITOR	
Cm1, 2	CQ93M1H183K	Mylar 0.018μF ±10%	
Cm3, 4	CS15E1VR68M	Tantalum 0.68μF 35WV	
Cm5, 6	CC45SL1H221K	Ceramic 220pF ±10%	
Cm7, 8	CE04W1C220	Electrolytic 22μF 16WV	
Cm9, 10	CE04W1E100	Electrolytic 10μF 25WV	
Cm11, 12	CC45SL1H470K	Ceramic 47pF ±10%	
Cm13, 14	CC45SL1H100D	Ceramic 10pF ±0.5pF	
Cm15, 16	CC45SL1H150K	Ceramic 15pF ±10%	
Cm17, 18	CE04W1A470	Electrolytic 47μF 10WV	
Cm19, 20	CE04W1E330	Electrolytic 33μF 25WV	
Cm21, 22	CE04W1A470	Electrolytic 47μF 10WV	
Cm23, 24	CE04BW1C100M	Electrolytic 10μF 16WV	
Cm25, 26	CQ93M1H153K	Mylar 0.015μF ±10%	
Cm27, 28	CQ93M1H683K	Mylar 0.068μF ±10%	
Cm29, 30	CQ93M1H472K	Mylar 4700pF ±10%	
Cm31, 32	CQ93M1H223K	Mylar 0.022μF ±10%	
Cm33, 34	CQ93M1H104M	Mylar 0.1μF ±20%	
Cm50	CE04W1V101	Electrolytic 100μF 35WV	
Cm51	CE04W1V221	Electrolytic 220μF 35WV	
Cm52	CE04W1E100	Electrolytic 10μF 25WV	
Cm53	CE04W1C101	Electrolytic 100μF 16WV	
Cm54	CE04W1C470	Electrolytic 47μF 16WV	
Cm55, 56	C90-0369-05	Electrolytic 6800μF 44WV	☆
Cm57, 58	CK45E2H103P	Ceramic 0.01μF +100%,–0%	
Cm59	C90-0145-05	Film 0.1μF AC 125V	
	C91-0001-05	or Ceramic 0.1μF AC 125V **(X09-1290-10)**	
Cm59	C91-0025-05	Film 0.1μF AC 125V **(X09-1291-01)**	
Cm59	C91-0023-05	Ceramic 0.1μF AC 125V **(X09-1290-81)**	
Cm59	CK45E3D103PMU	Ceramic 0.01μF DC 2kV **(X09-1290-61, -1291-71)**	
		RESISTOR	
Rm15, 16	RD14GY2E221J	Flame-proof RD 220Ω ±5% 1/4W	
Rm17, 18	RD14GY2E101J	Flame-proof RD 100Ω ±5% 1/4W	
Rm33, 34	RD14GY2E161J	Flame-proof RD 160Ω ±5% 1/4W	
Rm35~38	RD14GY2E331J	Flame-proof RD 330Ω ±5% 1/4W	
Rm39~42	R92-0110-05	Cement 0.47Ω 1W	
Rm59, 60	RS14GB3A4R7J	RS 4.7Ω ±5% 1W	
Rm61, 62	RC05GF2H271K	RC 270Ω ±10% 1/2W	
Rm81	RD14GY2E560J	Flame-proof RD 56Ω ±5% 1/4W	
Rm82	RD14GY2E681J	Flame-proof RD 680Ω ±5% 1/4W	
Rm83	RS14GB3D680J	Flame-proof RS 68Ω ±5% 2W	
Rm84	RS14GB3A102J	Flame-proof RS 1kΩ ±5% 1W	
Rm85	RC05GF2H225M	RC 2.2MΩ ±20% 1/2W **(X09-1290-10, -1291-01)**	
		SEMICONDUCTOR	
Qm1~4	V01-0146-05	Transistor 2SA640(E), (F)	
	V01-0190-05	or 2SA841(GR), (BL)	

PARTS LIST

Ref. No.	Parts No.	Description	Remarks
Qm5~8	V03-1890-20	Transistor 2SC1890(E), (F)	
	V03-0424-05	or 2SC1400(U)	
Qm9, 10	V03-0270-05	Transistor 2SC945(R), (Q)	
Qm11, 12	V01-0084-05	Transistor 2SA733(R), (Q)	
Qm13, 14	V03-0452-05	Transistor 2SC1735(D), (E)	
	V03-0494-05	or 2SC1509(R), (Q) **(X09-1290-10, -61, -81, -1291-71)**	
Qm13, 14	V03-0494-05	Transistor 2SC1509(R), (Q) **(X09-1291-01)**	
Qm15, 16	V01-0173-05	Transistor 2SA850(D), (E)	
	V01-0208-05	or 2SA777(R), (Q) **(X09-1290-10, -61, -81, -1291-71)**	
Qm15, 16	V01-0208-05	Transistor 2SA777(R), (Q) **(X09-1291-01)**	
Qm17, 18	V04-0078-05	Transistor 2SD525	
Qm19, 20	V02-0059-05	Transistor 2SB595	
Qm21	V03-0270-05	Transistor 2SC945(R), (Q)	
Qm22	V04-0330-20	Transistor 2SD330	
Dm1, 2	V11-5100-10	Varistor STV-4H(W)	
Dm3~5	V11-0076-05	Diode 1S1555	
	V11-0271-05	or 1S2076	
Dm6	V11-4100-30	Zener diode WZ-197	
Dm7	V11-0254-05	Zener diode YZ-140	
Dm8~11	V11-2100-50	Diode U08C	
POTENTIOMETER			
VRm1	R06-5026-05	Potentiometer 100kΩ(B) VOLUME	
VRm2	R01-5019-05	Potentiometer 200kΩ(M) BALANCE	
VRm5, 6	R06-5033-05	Potentiometer 100kΩ(C) TONE	☆
SWITCH			
Sm1	S40-2087-05	Push switch LOUDNESS	☆
Sm2	S02-1011-05	Rotary switch POWER/SPEAKERS **(X09-1290-10, -1291-01)**	☆
Sm2	S02-1012-05	Rotary switch POWER/SPEAKERS **(X09-1290-81)**	☆
Sm2	S02-1013-05	Rotary switch POWER/SPEAKERS **(X09-1290-61, -1291-71)**	☆
FUSE			
Fm1	F05-1021-05	Fuse 1A, 250V **(X09-1290-10, -1291-01)**	
Fm1	F05-1023-05	Fuse 1A, 250V **(X09-1290-81)**	
Fm1	F06-1021-05	Fuse 1A, 250V **(X09-1290-61, -1291-71)**	
Fm2	F05-3021-05	Fuse 3A, 250V **(X09-1290-10, -1291-01)**	
Fm2	F05-3022-05	Fuse 3A, 250V **(X09-1290-81)**	
Fm2	F05-3122-05	Fuse 3.15A, 250V **(X09-1290-61)**	
Fm3	F05-1521-05	Fuse 1.5A, 250V **(X09-1290-81)**	
Fm3	F05-1622-05	Fuse 1.6A, 250V **(X09-1290-61, -1291-71)**	
MISCELLANEOUS			
Lm1	L40-1021-03	Ferri-inductor	
–	E11-0060-15	Phone jack	
–	E20-0811-05	Speaker terminal board	
–	F29-0014-05	Insulating bushing X 4	
–	J13-0041-05	Fuse clip X 4 **(X09-1290-10, -1291-01)**	
–	J13-0041-05	Fuse clip X 6 **(X09-1290-81)**	
–	J13-0054-05	Fuse clip X 6 **(X09-1290-61)**	
–	J13-0054-05	Fuse clip X 4 **(X09-1291-71)**	

Note:

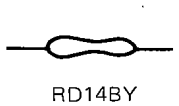
Resistors except the special type (example: cement, metal film, etc.) are not detailed in PARTS LIST. With regard to the value, refer to the schematic diagram or the PC board illustration.

Resistors not detailed are carbon type (1/4W or 1/8W).

You should give an order for the carbon resistors according to the ways described as follows:

A carbon resistor's part number is example RD-14BY 2E 222J.

1. Kinds of the carbon resistor



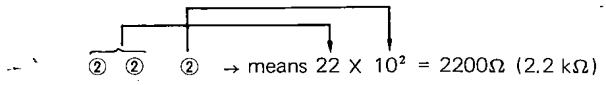
RD14BY

RD14CY

2. Wattage

1/4W	2E
1/8W	2B

3. Resistance value



Significant figure Multiplier

Example:		
	221	220Ω
	222	2.2kΩ
	223	22kΩ
	224	220kΩ
	225	2.2MΩ

4. Tolerance

J = ±5% (Gold color)

K = ±10% (Silver color)

ADJUSTMENT

INSTRUMENTS USED

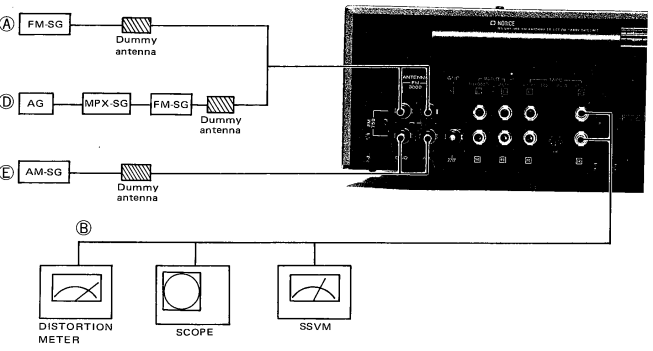
Oscilloscope . . . . . SCOPE
AM signal generator . . . . . AM-SG
FM signal generator . . . . . FM-SG
Audio generator . . . . . AG
Solid state voltmeter . . . . . SSVM
FM multiplex generator . . . . . FM-MPX
Frequency counter

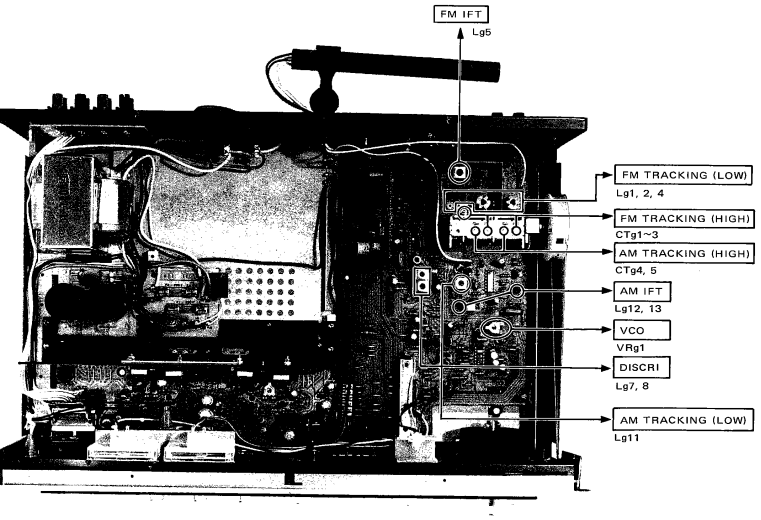
NOTES FOR ADJUSTMENTS

* Use moderate instrument outputs at all times.
* Repeat tracking adjustments 2 or 3 times and finally confirm the result using respective local stations.
* The output level of RF-SG is made a loss by the dummy antenna.
* 0 dB = 1 μV

ORDER	ITEM	INSTRUMENT		RECEIVER SETTING	OUTPUT	ADJUSTMENT POINTS	ADJUSTMENT METHOD
		CONNECTION	SETTING				
FM SECTION							
1	IFT	Ⓐ	95 MHz 1 kHz (Mod) 75 kHz (Dev)	FM 95 MHz	Ⓑ	Lg5	Maximum optimum waveform, minimum distortion.
2	DISCRI	—	—	FM Noise (between local stations)	T meter	Lg7	Meter indication in the center.
3		Ⓐ	95 MHz 60 dB 1 kHz (Mod) 75 kHz (Dev)	FM 95 MHz	Ⓑ	Lg8	Maximum optimum waveform, minimum distortion.
4	TRACKING	Ⓐ	90 MHz 1 kHz (Mod) 75 kHz (Dev)	FM 90 MHz FM MUTING OFF	Ⓑ	Lg1, 2, 4	Maximum optimum waveform.
5			106 MHz (Dev) 1 kHz (Mod) 75 kHz (Dev)	FM 106 MHz FM MUTING OFF		CTg1~3	
6	VCO	Ⓐ	95 MHz 60 dB 0 (Dev)	FM 95 MHz	Frequency counter to TP.	VRg1 (See schematic diagram)	Adjusted to 19 kHz.
7	IFT	Ⓓ	FM-MPX: SELECTOR L + R 1 kHz (Mod) FM-SG: 95 MHz 60 dB 68.25 kHz (Dev)	FM 95 MHz	Ⓑ	Lg5	Maximum optimum waveform. Minimum distortion.
AM SECTION							
1	IFT	Ⓔ	1000 kHz 400 Hz 30% (Mod) 100 dB	AM 1000 kHz	Ⓑ	Lg12, 13	Maximum optimum waveform.
2	TRACKING	Ⓔ	600 kHz 400 Hz 30% (Mod) 100 dB	AM 600 kHz	Ⓑ	Lg11 Bar antenna	Maximum optimum waveform.
3			1400 kHz 400 Hz 30% (Mod) 100 dB	AM 1400 kHz		CTg4, 5	

ADJUSTMENT / ABSOLUTE MAX. RATINGS

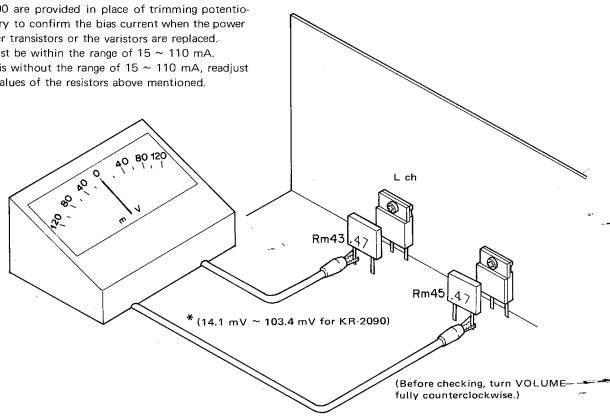




BIAS CURRENT

There is no adjustment to be made by trimming potentiometer in a conventional manner. Rm25 (Rm26) for KR-2090 and Rm33 (Rm34) for KR-3090 are provided in place of trimming potentiometers. It is necessary to confirm the bias current when the power transistors, the driver transistors or the varistors are replaced.
The bias current must be within the range of 15 ~ 110 mA.
If the bias current is without the range of 15 ~ 110 mA, readjust it by changing the values of the resistors above mentioned.

BIAS CURRENT CHECK

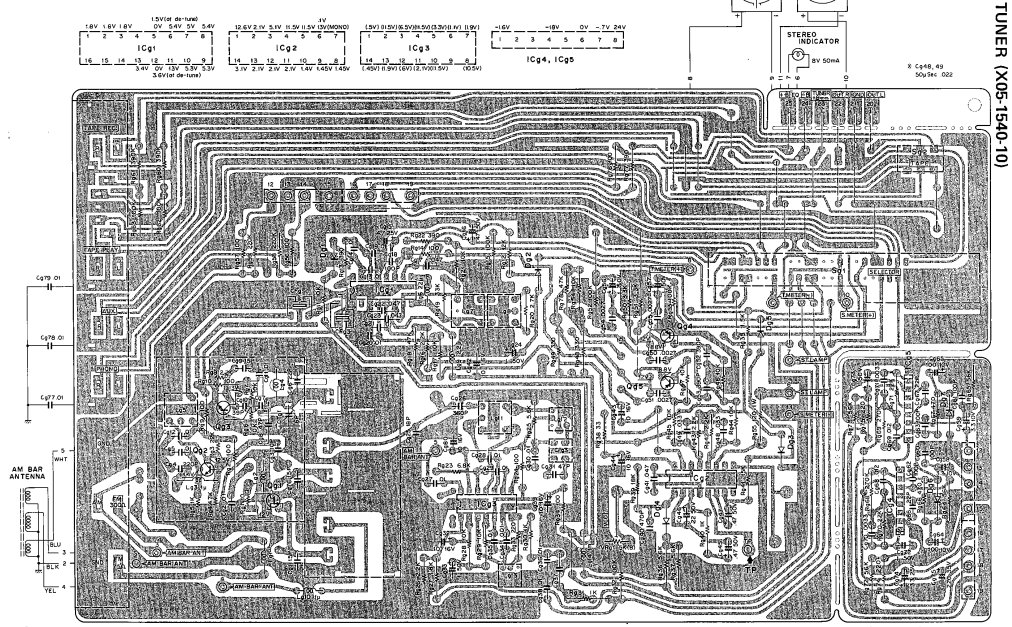


* (Rm43 + Rm45) X 15 mA ~ (Rm43 + Rm45) X 110 mA.

ABSOLUTE MAX. RATINGS

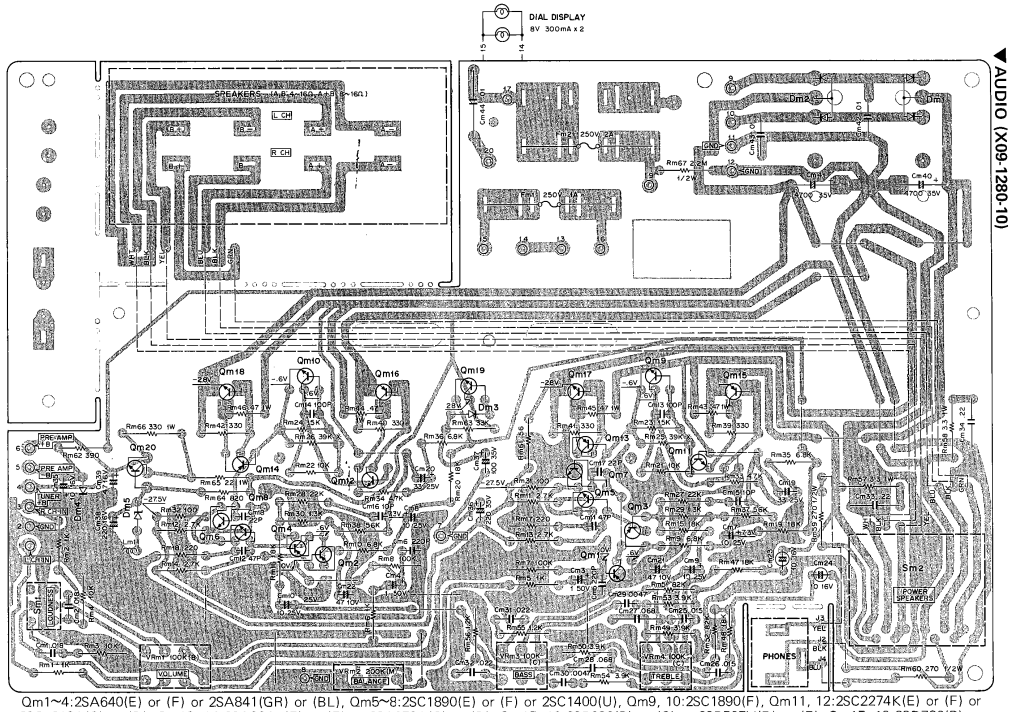
TRANSISTOR	V_{CBO}	V_{EBO}	V_{CEO}	I_C	P_C	T_j	T_{stg}	f_T
2SB507	–75V	–5V	–75V	–3A	30W (Tc = 25°C)	150°C	–40 ~ +150°C	8 MHz
2SB690	–100V	–5V	–80V	–4A	40W (Tc = 25°C)	150°C	–45 ~ +150°C	–
2SD313V	75V	5V	75V	3A	30W (Tc = 25°C)	150°C	–40 ~ +150°C	8 MHz
2SD726	100V	5V	80V	4A	40W (Tc = 25°C)	150°C	–45 ~ +150°C	–
DIODE	**V_{RM}**	**V_F**	**I_R**	**I_o**	**V_I**	**P**	**T_j**	**T_{stg}**
S2VC10	100V	1.05V	10 μA	2A	35V	–	150°C	–30 ~ +150°C
S2VC10R	100V	1.05V	10 μA	2A	35V	–	150°C	–30 ~ +150°C
S2VC20	200V	1.05V	10 μA	2A	70V	–	150°C	–30 ~ +150°C
S2VC20R	200V	1.05V	10 μA	2A	70V	–	150°C	–30 ~ +150°C

▼TUNER (X05-1540-10)



Qg1:2SK61(GR) or (Y), Qg2:2SC535(B), Qg3:2SC1342(A) or (B), Qg4; 5:2SA640(E) or 2SA841(BL), ICg1:HA1137W, ICg2:HA1156W(B), ICg3:HA1151, ICg4, 5:HA1457, Dg1~5:1S2076 or 1S1555, Dg6, 7:1N60

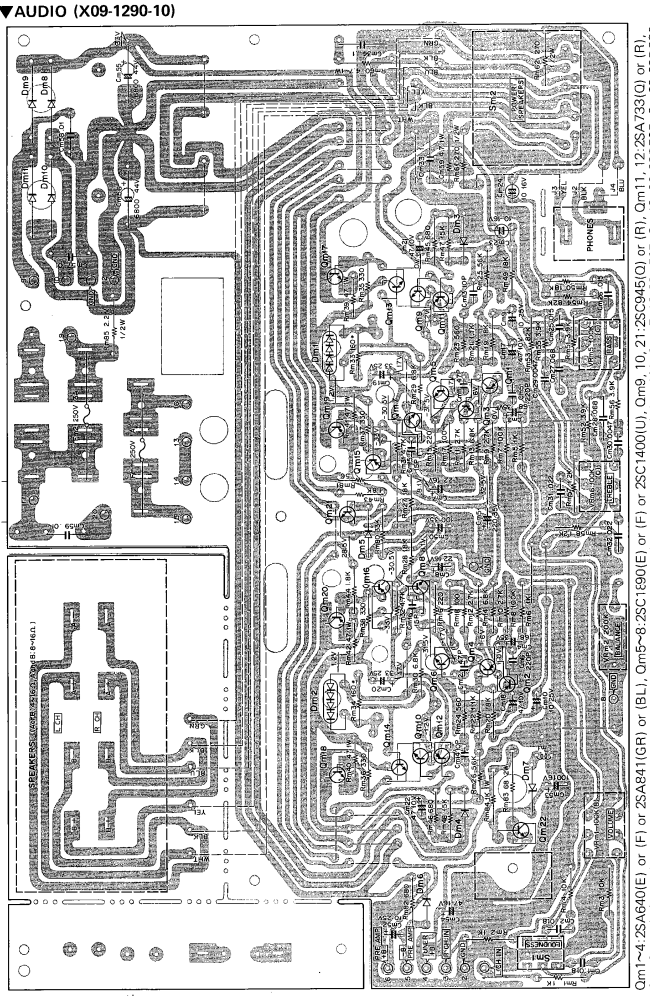
▼AUDIO (X09-1280-10)



Qm1~4:2SA640(E) or (F) or 2SA841(GR) or (BL), Qm5~8:2SC1890(E) or (F) or 2SC1400(U), Qm9, 10:2SC1890(F), Qm11, 12:2SC2274K(E) or (F) or 2SC1213A(C) or (D), Qm13, 14:2SA984K(E) or (F) or 2SA673A(C) or (D), Qm15, 16:2SB690(B) or (C) or 2SB507V(D) or (E), Qm17, 18:2SD726(B) or (C) or 2SD313V(D) or (E), Qm19:2SC945(Q) or (R), Qm20:2SD330(E), Dm1:S2VC10 or S2VC20, Dm2:S2VC10R or S2VC20R, Dm3:1S1555 or 1S2076, Dm4, 5:YZ-140

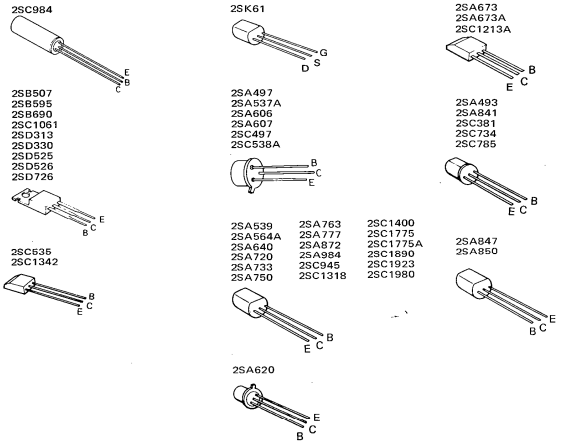
PC BOARD / SEMICONDUCTOR SUBSTITUTIONS

▼AUDIO (X09-1290-10)



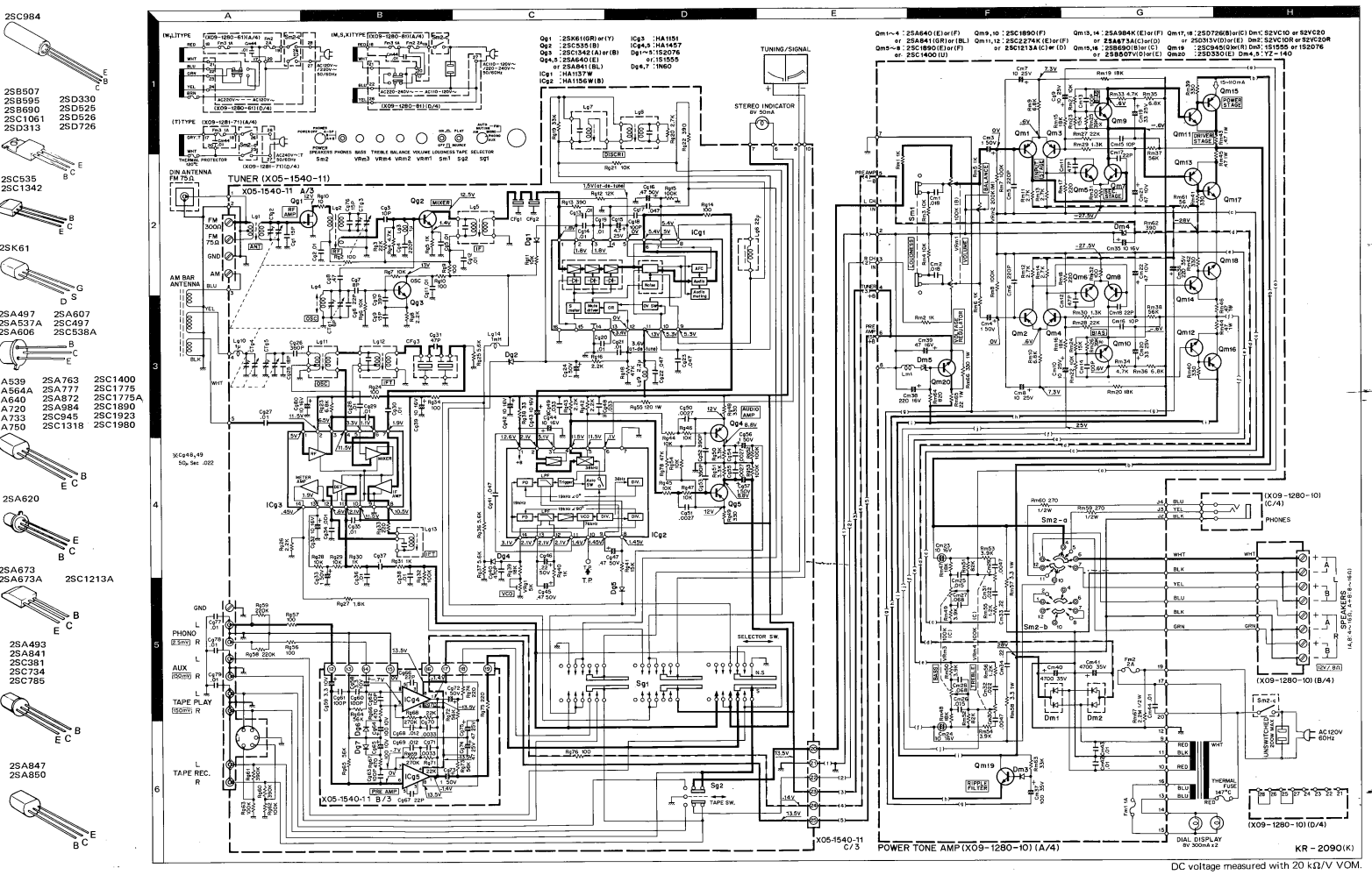
Qm1~4: 2SA640(E) or (F) or 2SA841(GR) or (BL), Qm5~8: 2SC1890(E) or (F) or 2SC1400(U), Qm9, 10, 21: 2SC945(Q) or (R), Qm11, 12: 2SA733(Q) or (R), Qm13, 14: 2SC1735(D) or (E) or 2SC1509(R) or (Q), Qm15, 16: 2SA850(D) or (E) or 2SA777(R) or (Q), Qm17, 18: 2SD525, Qm19, 20: 2SB595, Qm22: 2SD330, Dm1, 2: STV-4H(W), Dm3~5: 1S1555 or 1S2076, Dm6: WZ-197, Dm7: YZ-140, Dm8~11: U08C

* Refer to "BIAS CURRENT" on page 15.



PC board ass'y	Ref. No.	Semiconductor name	Substitutions
X05-1540-10	Qg1	2SK61(GR, Y)	–
	Qg2	2SC535(B)	2SC785(R, O), 2SC381(R, O), 2SC535(A), 2SC1342(A, B), 2SC1923(R)
	Qg3	2SC1342(A, B)	2SC785(R)
	Qg4, 5	2SA640(E), 2SA841(B, L)	2SA733(P, Q), 2SA564A
X09-1280-10	Qm1~4	2SA640A(E, F) , 2SA841(GR,BL)	2SA750(E, F), 2SA872(D,E,F), 2SA620WLH(5), 2SA493(GR), 2SA847(G, H),2SA620WL(5, 6), 2SA620WN(5), 2SA763WL
	Qm5~8	2SC1890(E, F), 2SC1400(U)	2SC1775(E, F), 2SC1775A(E, F), 2SC1980(S, T)
	Qm9, 10	2SC1890(F)	2SC1775(E, F), 2SC1775A(E, F), 2SC1980(S, T)
	Qm11, 12	2SC2274K(E,F), 2SC1213A(C, D)	2SC1318(Q, R), 2SC497(R)
	Qm13, 14	2SA984K(E, F), 2SA673A(C, D)	2SA497(Y)
	Qm15, 16	2SB690(B, C), 2SB507(D, E)	–
	Qm17, 18	2SD726(B, C), 2SD313V(D, E)	–
	Qm19	2SC945(Q, R)	2SC734(Y), 2SC538A, 2SC984(C), 2SC1213A(C), 2SC1318(Q,R)
	Qm20	2SD330(E)	2SC1061, 2SD525, 2SD526
X09-1290-10	Qm1~4	2SA640(E,F), 2SA841(GR, BL)	2SA750(E, F), 2SA872(D, E, F), 2SA620WLH(5), 2SA493(GR), 2SA620WL(5, 6), 2SA620WN(5), 2SA763WL(5, 6) 2SA847(G,H)
	Qm5~8	2SC1890(E, F), 2SC1400(U)	2SC1775(E, F), 2SC1775A(E, F), 2SC1980(S, T)
	Qm9, 10	2SC945(Q, R)	2SC734(Y), 2SC538(A), 2SC984(C), 2SC1213A(C), 2SC1318(Q, R)
	Qm11, 12	2SA733(Q, R)	2SA561, 2SA564A, 2SA539, 2SA720(Q, R), 2SA673A, 2SA673
	Qm13, 14	2SC1735(D, E), 2SC1509(R, B)	–
	Qm15, 16	2SA850(D, E), 2SA777(R, Q)	2SA537A(C), 2SA607(L, K), 2SA606(L)
	Qm17, 18	2SD525	–
	Qm19, 20	2SB595	–
	Qm21	2SC945(Q, R)	2SC734(Y), 2SC538A, 2SC984(C), 2SC1213A(C), 2SC1318(Q,R)
	Qm22	2SD330	2SC1061, 2SD525, 2SD526

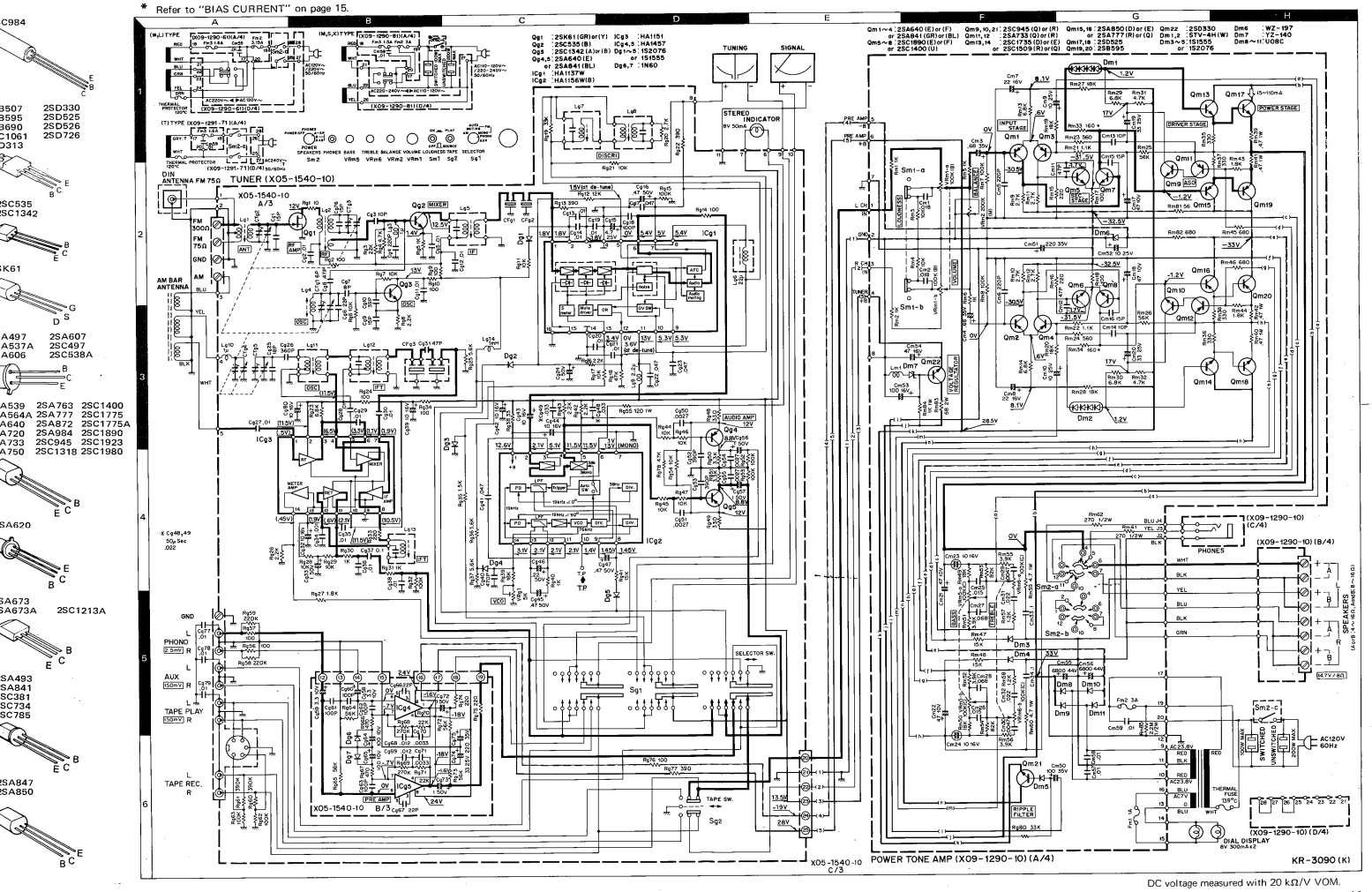
SCHEMATIC DIAGRAM(KR-2090)



DC voltage measured with 20 kΩ/V VOM.

SCHEMATIC DIAGRAM(KR-3090)

* Refer to "BIAS CURRENT" on page 15.



DC voltage measured with 20 kΩ/V VOM.

SPECIFICATIONS

090

AMPLIFIER SECTION

Power Output
16 watts* per channel, minimum RMS both channels driven, at 8 ohms from 20 to 20,000 Hz with no more than 0.1% total harmonic distortion.

Both Channel Driven	18 + 18 watts 8 ohms at 1,000 Hz
	22 + 22 watts 4 ohms at 1,000 Hz
Dynamic Power Output	90 watts 4 ohms
Total Harmonic Distortion	0.1% at rated power into 8 ohms
	0.05% at 1 watt into 8 ohms
Intermodulation Distortion (60 Hz : 7 kHz 4 : 1)	0.1% at rated power into 8 ohms
	0.05% at 1 watt into 8 ohms
Power Bandwidth	10 Hz to 60,000 Hz
Damping Factor	30 at 8 ohms
Speaker Impedance	Accept 4 ohms to 16 ohms
Input Sensitivity/Impedance/Signal to Noise Ratio (IHF A Curve)	
Phono	2.5 mV/50 k ohms/ 76 dB
AUX	150 mV/45 k ohms/100 dB
Tape	150 mV/45 k ohms/100 dB
Maximum Input Level for Phono	120 mV (RMS), T.H.D. 0.1% at 1,000 Hz
Output Level/Impedance	
Tape REC (Pin)	150 mV / 100 ohms
(DIN)	30 mV / 80 k ohms
Frequency Response	
Phono	RIAA standard curve ±0.5 dB
AUX & Tape	20 Hz to 50,000 Hz +0.5 dB −1.0 dB
Tone Control	
Bass	±8 dB at 100 Hz
Treble	±8 dB at 10 kHz
Loudness Control (−30 dB)	+10 dB at 100 Hz

FM TUNER SECTION (IHF)

Usable Sensitivity	11.2 dBf (2.0 μV)
50 dB Quieting Sensitivity	
Mono	15.6 dBf (3.3 μV)
Stereo	36.1 dBf (35 μV)
Signal to Noise Ratio at 65 dBf	
Mono	76 dB
Stereo	72 dB
Total Harmonic Distortion	
Mono	0.2%
Stereo	0.3%
Frequency Response	20 Hz to 15,000 Hz +1.0 dB −2.0 dB
Capture Ratio	1.5 dB
Image Response Ratio	60 dB
Spurious Response Ratio	75 dB
IF Response Ratio	90 dB
Alternate Channel Selectivity	54 dB
AM Suppression Ratio	55 dB
Stereo Separation Ratio	43 dB at 1,000 Hz
	35 dB at 50 Hz to 10,000 Hz
Sub Carrier Product Ratio	40 dB
Antenna Impedance	300 ohms balanced & 75 ohms unbalanced
FM Frequency Range	88 MHz to 108 MHz

AM SECTION

Usable Sensitivity	20 μV
Signal to Noise Ratio	50 dB
Image Rejection	50 dB
Selectivity	35 dB

GENERAL

Power Consumption	150 watts at full power
AC Outlet	Unswitched 1
Dimensions	W 18-7/16" (468 mm)
	H 5-1/2" (140 mm)
	D 13-11/16" (348 mm)
Weight (Net)	15.9 lb (7.2 kg)
(Gross)	18.3 lb (8.3 kg)

090

AMPLIFIER SECTION

Power Output
26 watts* per channel, minimum RMS both channels driven, at 8 ohms from 20 to 20,000 Hz with no more than 0.1% total harmonic distortion.

Both Channel Driven	27 + 27 watts 8 ohms at 1,000 Hz
	30 + 30 watts 4 ohms at 1,000 Hz
Dynamic Power Output	100 watts 4 ohms
Total Harmonic Distortion	0.1% at rated power into 8 ohms
	0.05% at 1 watt into 8 ohms
Intermodulation Distortion (60 Hz : 7 kHz 4 : 1)	0.1% at rated power into 8 ohms
	0.05% at 1 watt into 8 ohms
Power Bandwidth	10 Hz to 50,000 Hz
Damping Factor	40 at 8 ohms
Speaker Impedance	Accept 4 ohms to 16 ohms
Input Sensitivity/Impedance/Signal to Noise Ratio (IHF A Curve)	
Phono	2.5 mV/50 k ohms/ 77 dB
AUX	150 mV/45 k ohms/100 dB
Tape	150 mV/45 k ohms/100 dB
Maximum Input Level for Phono	160 mV (RMS), T.H.D. 0.1% at 1,000 Hz
Output Level/Impedance	
Tape REC (Pin)	150 mV / 100 ohms
(DIN)	30 mV / 80 k ohms
Frequency Response	
Phono	RIAA standard curve ±0.5dB
AUX & Tape	20 Hz to 50,000 Hz +0.5dB −1.0dB
Tone Control	
Bass	±8 dB at 100 Hz
Treble	±8 dB at 10 kHz
Loudness Control (−30 dB)	+10 dB at 100 Hz

FM TUNER SECTION (IHF)

Usable Sensitivity	11.2 dBf (2.0 μV)
50 dB Quieting Sensitivity	
Mono	15.6 dBf (3.3 μV)
Stereo	36.1 dBf (35 μV)
Signal to Noise Ratio at 65 dBf	
Mono	76 dB
Stereo	72 dB
Total Harmonic Distortion	
Mono	0.2%
Stereo	0.3%
Frequency Response	20 Hz to 15,000 Hz +1.0 dB −2.0 dB
Capture Ratio	1.5 dB
Image Response Ratio	60 dB
Spurious Response Ratio	75 dB
IF Response Ratio	90 dB
Alternate Channel Selectivity	54 dB
AM Suppression Ratio	55 dB
Stereo Separation Ratio	43 dB at 1,000 Hz
	35 dB at 50 Hz to 10,000 Hz
Sub Carrier Product Ratio	40 dB
Antenna Impedance	300 ohms balanced & 75 ohms unbalanced
FM Frequency Range	88 MHz to 108 MHz

AM SECTION

Usable Sensitivity	20 μV
Signal to Noise Ratio	50 dB
Image Rejection	50 dB
Selectivity	35 dB

GENERAL

Power Consumption	240 watts at full power
AC Outlet	Switched 1, Unswitched 1
Dimensions	W 18-7/16" (468 mm)
	H 5-1/2" (140 mm)
	D 13-11/16" (348 mm)
Weight (Net)	16.5 lb (7.5 kg)
(Gross)	18.7 lb (8.4 kg)

*asured pursuant to Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifier in U.S.A.
Kenwood follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

A product of
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