

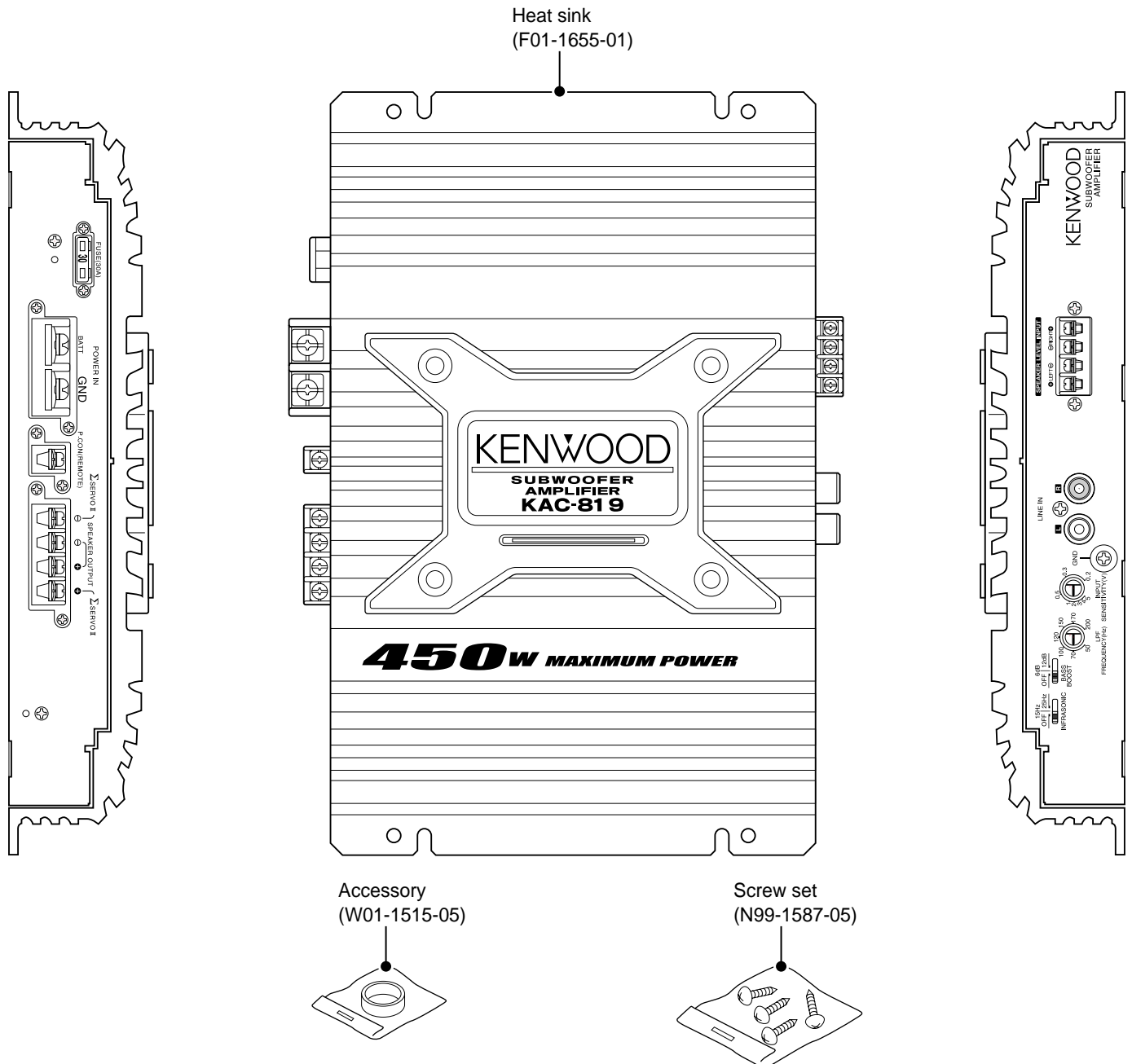
POWER AMPLIFIER

# KAC-819

## SERVICE MANUAL

# KENWOOD

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CIRCUIT DESCRIPTION

SP P-CON Switching Circuit

When the SP output from the head unit is connected to SP IN, the power can be switched ON/OFF based on the DC voltage of the SP output. However, As certain haed unit models output DC permanently or generate a click during switching OFF, it is required to provide the capability of previous P-CON switching. A circuit which can perform the switching without using a switch is described below.

This circuit performs switching by inhibiting the operation of the S-P-CON circuit when a voltage is applied to the P-CON pin.

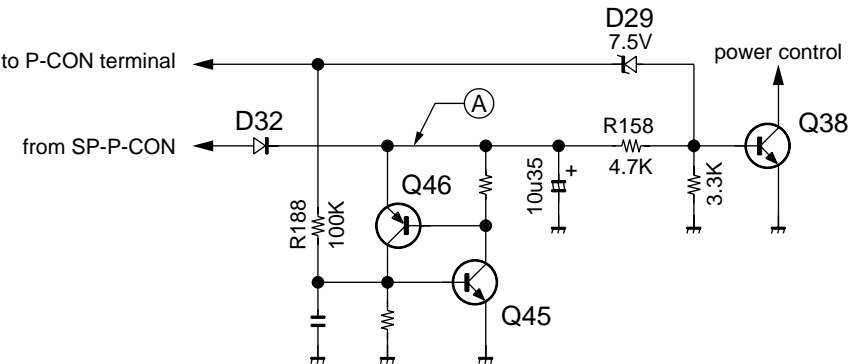
Circuit operation description

When the head unit is connected to SP-IN, the DC component in the SP output turns Q38 ON through D32 and R158.

When a voltage is applied to the P-CON pin under this condition, Q45 is turned ON via R188, positive feedback is applied by combination of Q45 and Q46, Q45 and Q46 are held at ON, so the voltage at point (A) is almost 0V and the SP-P-CON circuit is not activated.

This circuit holds the ON status while the DC voltage from SP is present.

Therefore, in this condition, the P-CON circuit continues functioning. To cancel the functioning, the voltage at the SP-IN pin should go 0V.

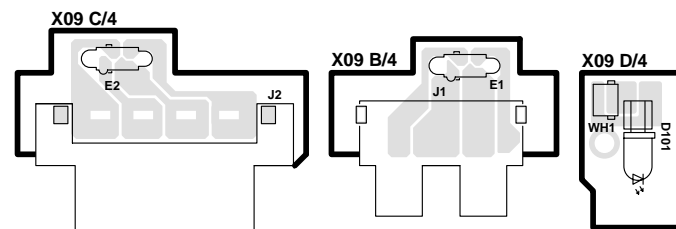
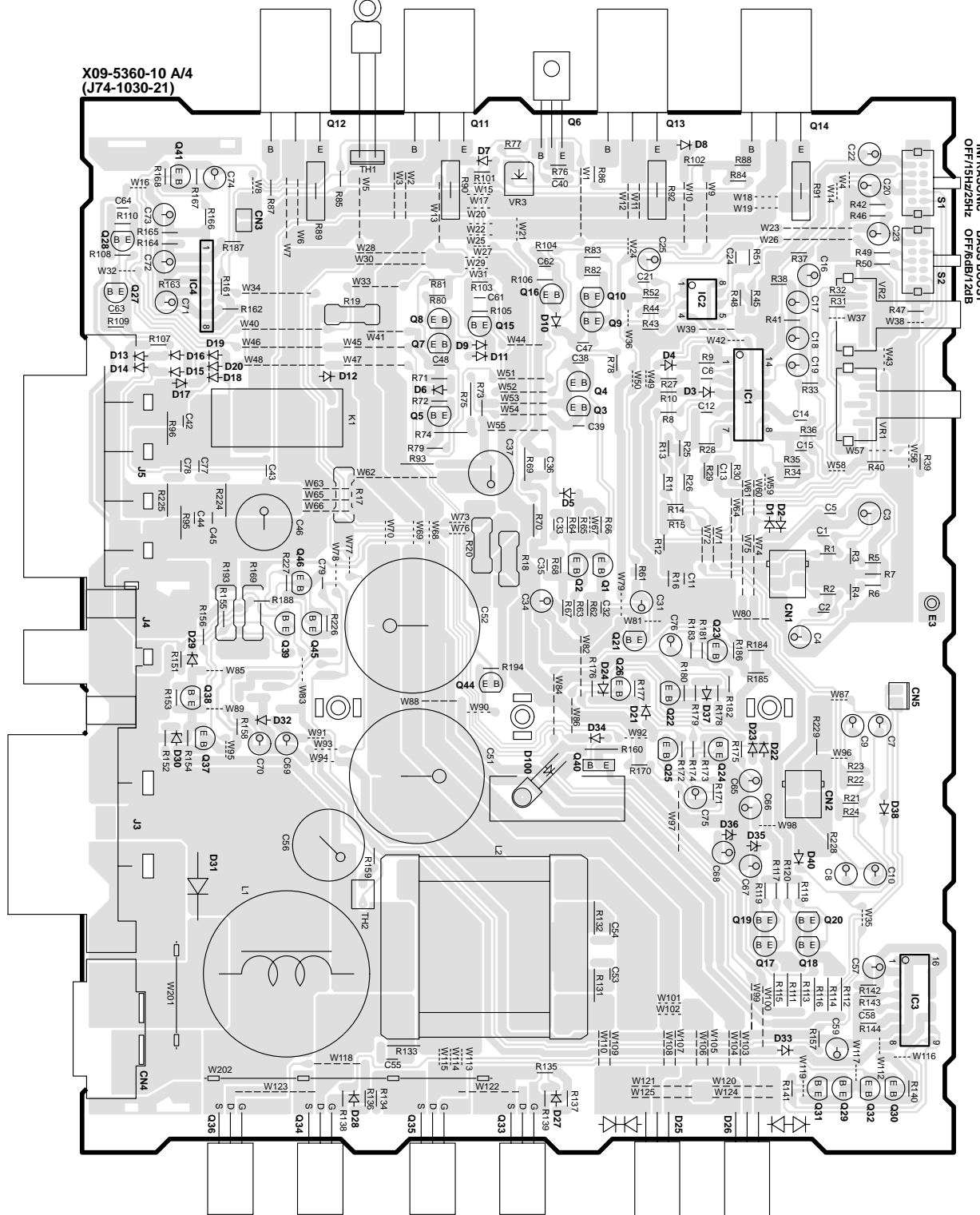


ADJUSTMENT

No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	TUNER (RECEIVER) SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
Connect a cassette receiver or other receiver.							
1	IDEL CURRENT	-	Connect a DC voltmeter to CN3	Volume : 0	VR3	After sufficient aging adjust to 2mV	-

# PC BOARD (Component side view)

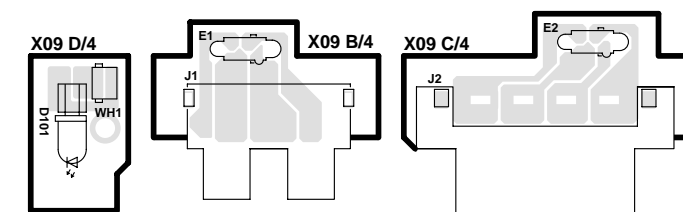
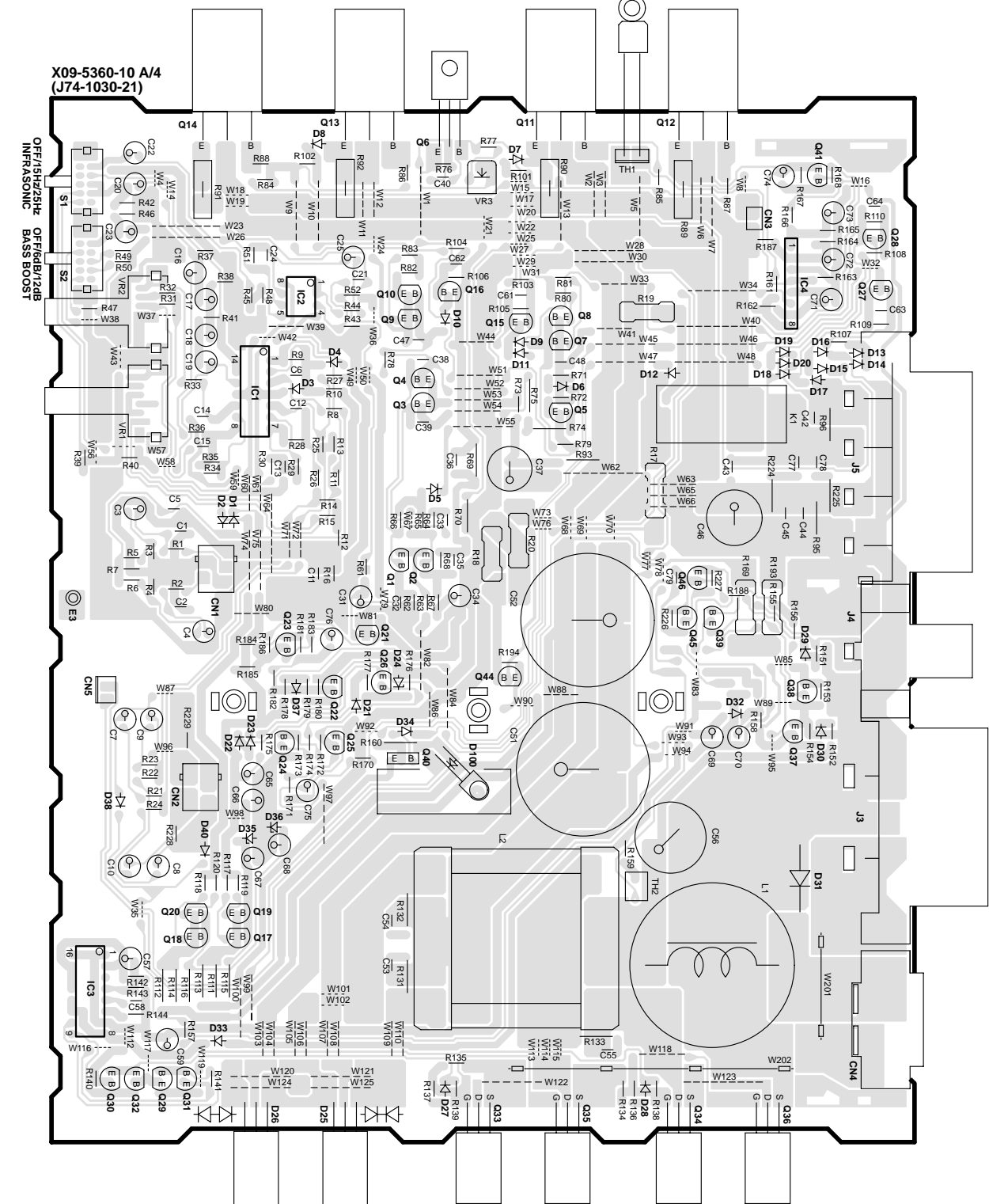
AUDIO UNIT (X09-5360-10)



Refer to the schematic diagram for the values of resistors and capacitors.

# PC BOARD (Foil side view)

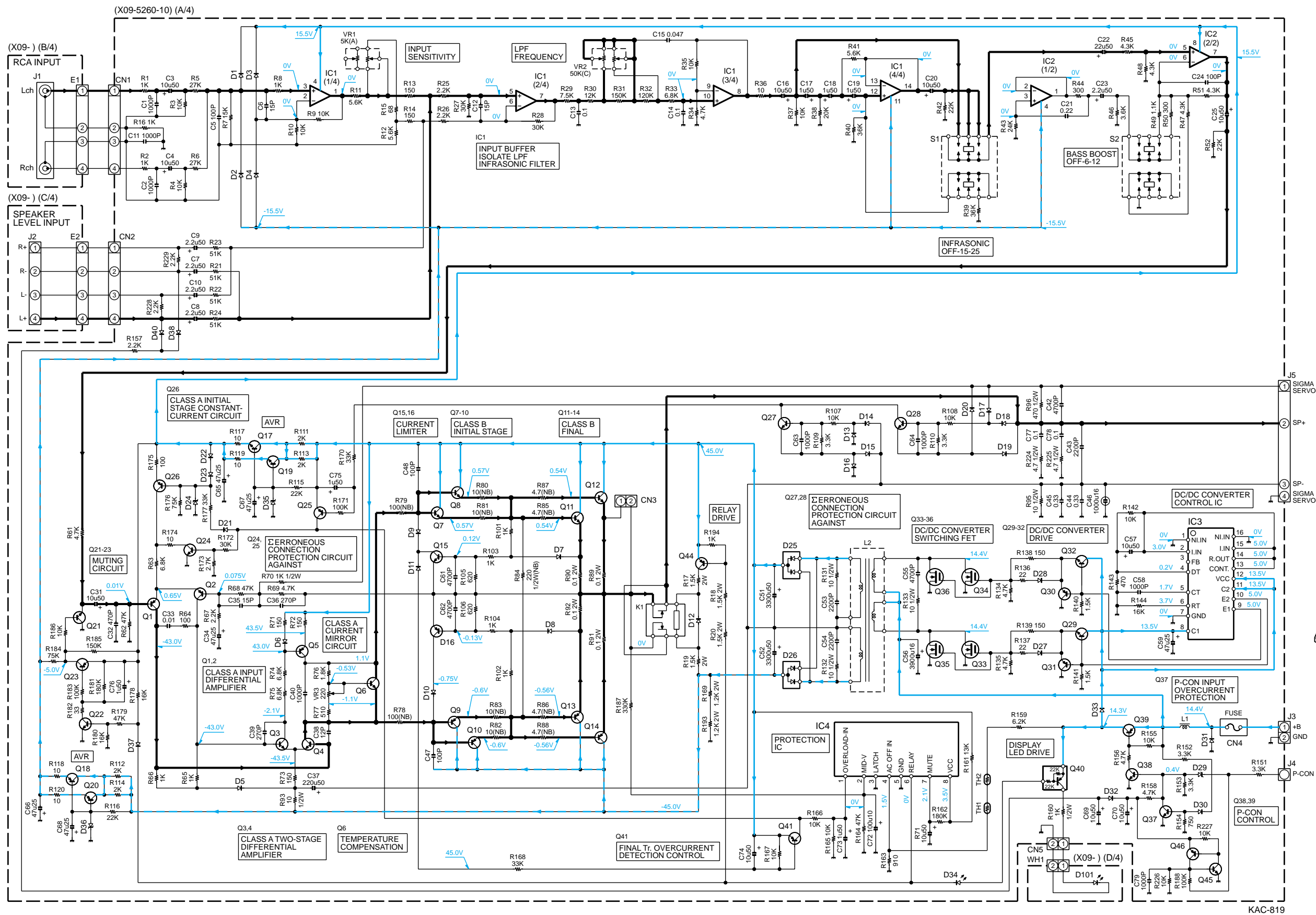
AUDIO UNIT (X09-5360-10)



Refer to the schematic diagram for the values of resistors and capacitors.

(X09-5360-10)	
Ref. No.	Address
IC1	3D
IC2	2D
IC3	5F
IC4	2B
Q1	3C
Q2	3C
Q3	3C
Q4	3C
Q5	3C
Q6	2C
Q7	2C
Q8	2C
Q9	2C
Q10	2C
Q11	2C
Q12	2B
Q13	2D
Q14	2D
Q15	2C
Q16	2C
Q17	5D
Q18	5D
Q19	5D
Q20	5D
Q21	4C
Q22	4D
Q23	4D
Q24	4D
Q25	4D
Q26	4C
Q27	2A
Q28	2A
Q29	6D
Q30	6E
Q31	6D
Q32	6D
Q33	6C
Q34	6B
Q35	6C
Q36	6B
Q37	4B
Q38	4B
Q39	4B
Q40	4C
Q41	2B
Q44	4C
Q45	4B
Q46	3B

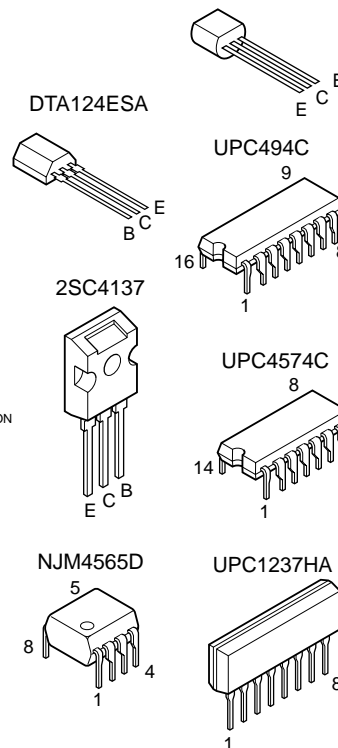
(X09-5360-10)	
Ref. No.	Address
IC1	3G
IC2	2G
IC3	5F
IC4	2I
Q1	3G
Q2	3G
Q3	3G
Q4	3G
Q5	3H
Q6	2G
Q7	2H
Q8	2H
Q9	2G
Q10	2G
Q11	2H
Q12	2H
Q13	2G
Q14	2F
Q15	2H
Q16	2H
Q17	5G
Q18	5F
Q19	5G
Q20	5F
Q21	4G
Q22	4G
Q23	4G
Q24	4G
Q25	4G
Q26	4G
Q27	2I
Q28	2I
Q29	6F
Q30	6F
Q31	6F
Q32	6F
Q33	6H
Q34	6I
Q35	6H
Q36	6I
Q37	4I
Q38	4I
Q39	4I
Q40	4G
Q41	2I
Q44	4H
Q45	4I
Q46	3H



- IC1 : UPC4574C  
 IC2 : NJM4565D  
 IC3 : UPC494C  
 IC4 : UPC1237HA
- Q1,2,16,25,26,41 : 2SA992(F,E)  
 Q3,4 : 2SC2631(Q,R)  
 Q5 : 2SA1123(Q,R)  
 Q6 : 2SC4137(V,W)  
 Q7,8 : 2SC2235  
 Q9,10 : 2SA965  
 Q11,12 : 2SC5101LB+5  
 Q13,14 : 2SA1909LB+5  
 Q15,24,27,28 : 2SC1845(F,E)  
 Q17,19 : 2SC1627A  
 Q18,20,39,44 : 2SA817A  
 Q21,22,29,32,37,38,45 : 2SC945(A) (Q,P)  
 Q23,30,31,46 : 2SA733(A) (Q,P)  
 Q33-36 : IRFIZ48NLF24  
 Q40 : DTA124ESA
- D1-4,6-23,27,28,32-34,37,38,40 : 1SS131  
 D24 : RD20JS(B)  
 D25 : FML22S+A  
 D26 : FML22R+A  
 D29 : RD7.5JS(B)  
 D31 : IN5406-M  
 D35,36 : RD16JS(B2)  
 D100 : B30-1613-05

— SIGNAL LINE  
 — GND LINE  
 — +B LINE  
 — -B LINE

- 2SA1123  
 2SA733(A)  
 2SA817A  
 2SA965  
 2SA992  
 2SC1627A  
 2SC1845  
 2SC2235  
 2SC2631  
 2SC945(A)



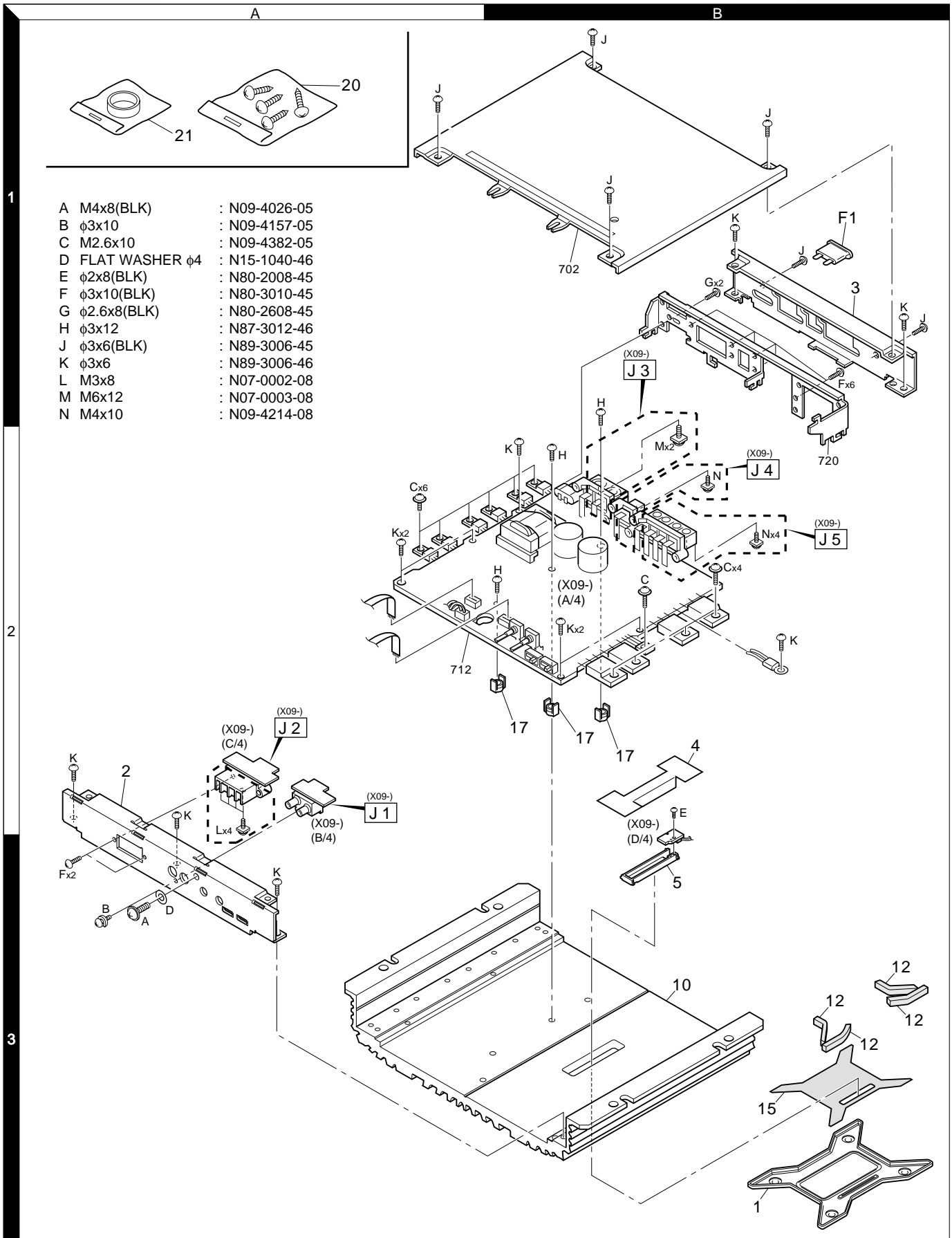
**CAUTION:** For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list).

⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

•DC voltages are as measured with a high impedance voltmeter.  
 Values may vary slightly due to variations between individual in struments or/and units.

**KAC-819**  
**KENWOOD**

## EXPLODED VIEW



PARTS LIST

\* New Parts  
Parts without **Parts No.** are not supplied.  
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.  
Teile ohne **Parts No.** werden nicht geliefert.

Ref. No.	A d d	N e w	Parts No.	Description	Des- tina- tion
KAC-819					
1	3B	*	A21-4086-02	DRESSING PANEL	
2	2A	*	A64-2333-02	PANEL	
3	1B	*	A84-0276-02	REAR PANEL	
4	2B		B11-1337-03	REFLECTION SHEET	
5	3B		B19-2083-03	LIGHTING BOARD	
-			B46-0100-50	WARRANTY CARD	
-		*	B64-1964-00	INSTRUCTION MANUAL E	KE1
-		*	B64-1965-00	INSTRUCTION MANUAL F,S	KE1
-		*	B64-1966-00	INSTRUCTION MANUAL G,D	E1
-		*	B64-1967-00	INSTRUCTION MANUAL I,P	E1
-		*	B64-1968-00	INSTRUCTION MANUAL E,T	M1
10	3B		F01-1655-01	HEAT SINK	
△ F1	1B		F52-0015-05	FUSE(BLADE TYPE)	
12	3B		G16-1190-04	SHEET	
15	3B		H30-0542-03	ADHESIVE DOUBLE-COATED TAPE	
-			H10-4642-03	POLYSTYRENE FOAMED FIXTURE	
-			H25-0321-04	PROTECTION BAG (600X315X0.03)	
-			H25-0336-04	PROTECTION BAG (170X250X0.03)	
-		*	H54-2064-03	ITEM CARTON CASE	
17	2B		J30-1066-04	SPACER	
20	1A		N99-1587-05	SCREW SET	
A	3A		N09-4026-05	TAPPING SCREW(4X8,TP,S)	
B	3A		N09-4157-05	SEMS (TAPTITE SCREW)	
C	2B		N09-4382-05	TAPTITE SCREW(2.6X10)	
D	3A		N15-1040-46	FLAT WASHER(φ4)	
E	2B		N80-2008-45	PAN HEAD TAPTITE SCREW	
F	1B		N80-3010-45	PAN HEAD TAPTITE SCREW	
H	2B		N87-3012-46	BRAZIER HEAD TAPTITE SCREW	
J	1B		N89-3006-45	BINDING HEAD TAPTITE SCREW	
K	1B		N89-3006-46	BINDING HEAD TAPTITE SCREW	
21	1A		W01-1515-05	ACCESSORY	
AUDIO UNIT (X09-5360-10)					
D101			B30-1613-05	LED(BLUE)	
C1 ,2			CK45FB1H102K	CERAMIC 1000PF K	
C3 ,4			CE04DW1H100M	ELECTRO 10UF 50WV	
C5			CC45FSL1H101J	CERAMIC 100PF J	
C6			CC45FCH1H150J	CERAMIC 15PF J	
C7 -10			CE04DW1H2R2M	ELECTRO 2.2UF 50WV	
C11			CF92FV1H102J	MF-C 1000PF J	
C12			CC45FCH1H150J	CERAMIC 15PF J	
C13 ,14			CF92FV1H104J	MF-C 0.10UF J	
C15			CF92FV1H473J	MF-C 0.047UF J	
C16			CE04DW1H100M	ELECTRO 10UF 50WV	
C17 -19			CE04DW1H010M	ELECTRO 1.0UF 50WV	
C20			CE04DW1H100M	ELECTRO 10UF 50WV	
C21			CF92FV1H224J	MF-C 0.22UF J	
C22			CE04DW1H220M	ELECTRO 22UF 50WV	
C23			CE04DW1H2R2M	ELECTRO 2.2UF 50WV	
C24			CC45FSL1H101J	CERAMIC 100PF J	

Ref. No.	A d d	N e w	Parts No.	Description	Des- tina- tion
C25			CE04DW1H100M	ELECTRO 10UF 50WV	
C31			CE04DW1H100M	ELECTRO 10UF 50WV	
C32			CK45FB1H471K	CERAMIC 470PF K	
C33			CF92FV1H103J	MF-C 0.010UF J	
C34			CE04DW1E470M	ELECTRO 47UF 25WV	
C35			CC45FSL1H150J	CERAMIC 15PF J	
C36			CC45FSL1H271J	CERAMIC 270PF J	
C37			CE04DW1H221M	ELECTRO 220UF 50WV	
C38			CC45FSL1H120J	CERAMIC 12PF J	
C39			CC45FSL1H271J	CERAMIC 270PF J	
C40			CF92FV1H102J	MF-C 1000PF J	
C42			CF92FV1H472J	MF-C 4700PF J	
C43			CF92FV1H222J	MF-C 2200PF J	
C44 ,45			CF92FV1H334J	MF-C 0.33UF J	
C46			C90-1630-05	NP-ELEC 1000UF 16WV	
C47 ,48			CC45FSL1H101J	CERAMIC 100PF J	
C51 ,52			C90-5305-05	ELECTRO 3300UF 50WV	
C53 ,54			CF92FV1H222J	MF-C 2200PF J	
C55			CF92FV1H472J	MF-C 4700PF J	
C56			C90-2921-05	ELECTRO 3900UF 16WV	
C57			CE04DW1H100M	ELECTRO 10UF 50WV	
C58			CF92FV1H102J	MF-C 1000PF J	
C59			CE04DW1E470M	ELECTRO 47UF 25WV	
C61 ,62			CF92FV1H472J	MF-C 4700PF J	
C63 ,64			CF92FV1H102J	MF-C 1000PF J	
C65 -68			CE04DW1E470M	ELECTRO 47UF 25WV	
C69 -71			CE04DW1H100M	ELECTRO 10UF 50WV	
C72			CE04DW1A101M	ELECTRO 100UF 10WV	
C73			CE04DW1H010M	ELECTRO 1.0UF 50WV	
C74			CE04DW1H100M	ELECTRO 10UF 50WV	
C75 ,76			CE04DW1H010M	ELECTRO 1.0UF 50WV	
C77 ,78			CF92FV1H104J	MF-C 0.10UF J	
C79			CF92FV1H102J	MF-C 1000PF J	
CN1 ,2			E40-4294-05	FLAT CABLE CONNECTOR	
CN3			E40-3640-05	PIN ASSY	
CN5			E40-3246-05	PIN ASSY	
J1	2A		E63-0834-05	PIN JACK	
J2	2A		E70-0824-05	SCREW TERMINAL BOARD	
△ J3	1B		E70-0820-05	SCREW TERMINAL BOARD	
J4	2B		E70-0818-05	SCREW TERMINAL BOARD	
J5	2B		E70-0808-05	SCREW TERMINAL BOARD	
WH1			E39-0417-05	WIRING HARNESS	
△ CN4			J13-0601-05	FUSE HOLDER	
E3			J19-4316-05	HOLDER	
L1			L33-1015-05	CHOKE COIL	
L2			L19-0587-05	TRANSFORMER FOR CONVERTER	
R17 -20			RS14KB3D152J	FL-PROOF RS 1.5K J 2W	
R70			RD14DB2H102J	SMALL-RD 1.0K J 1/2W	
R78 ,79			RD14NB2E101J	RD 100 J 1/4W	
R80 -83			RD14NB2E100J	RD 10 J 1/4W	
R84			RD14NB2E221J	RD 220 J 1/4W	
R85 -88			RD14NB2E4R7J	RD 4.7 J 1/4W	
R89 -92			R92-0205-05	METAL-PLATE 0.1 K 2W	

△ indicates safety critical components.

## PARTS LIST

\* New Parts

Parts without **Parts No.** are not supplied.Les articles non mentionnés dans le **Parts No.** ne sont pas fournis.Teile ohne **Parts No.** werden nicht geliefert.

Ref. No.	A d d	N e w	Parts No.	Description	Des- tina- tion
R93			RD14DB2H100J	SMALL-RD 10 J 1/2W	
R95			RD14DB2H100J	SMALL-RD 10 J 1/2W	
R96			RD14DB2H471J	SMALL-RD 470 J 1/2W	
R131-133			RD14DB2H100J	SMALL-RD 10 J 1/2W	
R160			RD14DB2H102J	SMALL-RD 1.0K J 1/2W	
R169			RS14KB3D122J	FL-PROOF RS 1.2K J 2W	
R193			RS14KB3D122J	FL-PROOF RS 1.2K J 2W	
R224,225			RD14DB2H4R7J	SMALL-RD 4.7 J 1/2W	
VR1			R31-0209-05	VARIABLE RESISTOR	
VR2			R31-0215-05	VARIABLE RESISTOR	
VR3			R32-0030-05	SEMI FIXED VARIABLE RESISTOR	
K1			S76-0804-05	MAGNETIC RELAY	
S1 ,2			S31-2630-05	SLIDE SWITCH	
D1 -23			1SS133	DIODE	
D24			RD20JS(B)	ZENER DIODE	
D25			FML22S*A	DIODE	
D26			FML22R*A	DIODE	
D27 ,28			1SS133	DIODE	
D29			RD7.5JS(B)	ZENER DIODE	
D30			RD15JS(B)	ZENER DIODE	
D31			1N5406-M	DIODE	
D32 -34			1SS133	DIODE	
D35 ,36			RD16JS(B2)	ZENER DIODE	
D37 ,38			1SS133	DIODE	
D40			1SS133	DIODE	
IC1			UPC4574C	IC(OP AMP X4)	
IC2			NJM4565D	ANALOGUE IC	
IC3			UPC494C	IC(SWITCHING REGULATOR)	
IC4			UPC1237HA	IC(POWER AMP)	
Q1 ,2			2SA992(F,E)	TRANSISTOR	
Q3 ,4			2SC2631(Q,R)	TRANSISTOR	
Q5			2SA1123(Q,R)	TRANSISTOR	
Q6			2SC4137(V,W)	TRANSISTOR	
Q7 ,8			2SC2235	TRANSISTOR	
Q9 ,10			2SA965	TRANSISTOR	
Q11 ,12			2SC5101LB*5	TRANSISTOR	
Q13 ,14			2SA1909LB*5	TRANSISTOR	
Q15			2SC1845(F,E)	TRANSISTOR	
Q16			2SA992(F,E)	TRANSISTOR	
Q17			2SC1627A	TRANSISTOR	
Q18			2SA817A	TRANSISTOR	
Q19			2SC1627A	TRANSISTOR	
Q20			2SA817A	TRANSISTOR	
Q21 ,22			2SC945(A)(Q,P)	TRANSISTOR	
Q23			2SA733(A)(Q,P)	TRANSISTOR	
Q24			2SC1845(F,E)	TRANSISTOR	
Q25 ,26			2SA992(F,E)	TRANSISTOR	
Q27 ,28			2SC1845(F,E)	TRANSISTOR	
Q29			2SC945(A)(Q,P)	TRANSISTOR	
Q30 ,31			2SA733(A)(Q,P)	TRANSISTOR	
Q32			2SC945(A)(Q,P)	TRANSISTOR	
Q33 -36			IRFIZ48N	FET	
Q37 ,38			2SC945(A)(Q,P)	TRANSISTOR	
Ref. No.	A d d	N e w	Parts No.	Description	Des- tina- tion
Q39			2SA817A	TRANSISTOR	
Q40			DTA124ESA	DIGITAL TRANSISTOR	
Q41			2SA992(F,E)	TRANSISTOR	
Q44			2SA817A	TRANSISTOR	
Q45			2SC945(A)(Q,P)	TRANSISTOR	
Q46			2SA733(A)(Q,P)	TRANSISTOR	
TH1			PTH9M04BD222T	POSITIVE RESISTOR	
TH2			PTH9L04BD222TS	POSITIVE RESISTOR	

SPECIFICATIONS

Audio Section

Max Power Ouput (4Ω)	300W
Max Power Ouput (2Ω)	450W
Rated Power Output (4Ω)	
(20Hz ~ 200Hz, 0.08% THD)	150W
(DIN45324, +B =14.4V)	150W
Rated Power Output (2Ω)	
(100Hz, 0.8% THD)	230W
Signal to Noise Ratio	100dB
Sensitivity (MAX) (rated output)	0.2V
Sensitivity (MIN) (rated output)	5.0V
Input Impedance	10kΩ
Low Pass Filter (18dB/oct.)	50Hz ~ 200Hz
Infrasonic Filter (18dB/oct.)	15/25Hz
Bass Boost Circuit (90Hz)	0,6,12dB
Damping Factor	over 2000 (at Sigma Connect)

General

Operating Voltage (11V ~ 16V allowable)	14.4V
Current Consumption	21A at rated power
Dimensions (W × H × D)	(mm) 290 × 56 × 200
	(in)11-7/16 × 2-3/16 × 7-7/8
Weight	3.1kg

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