

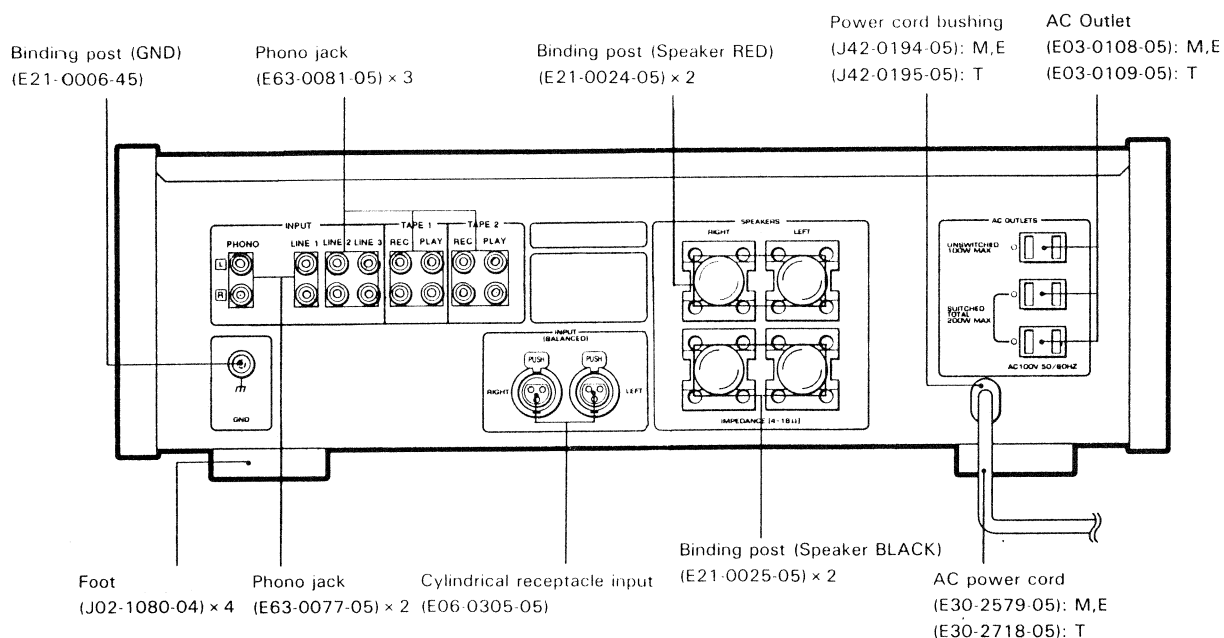
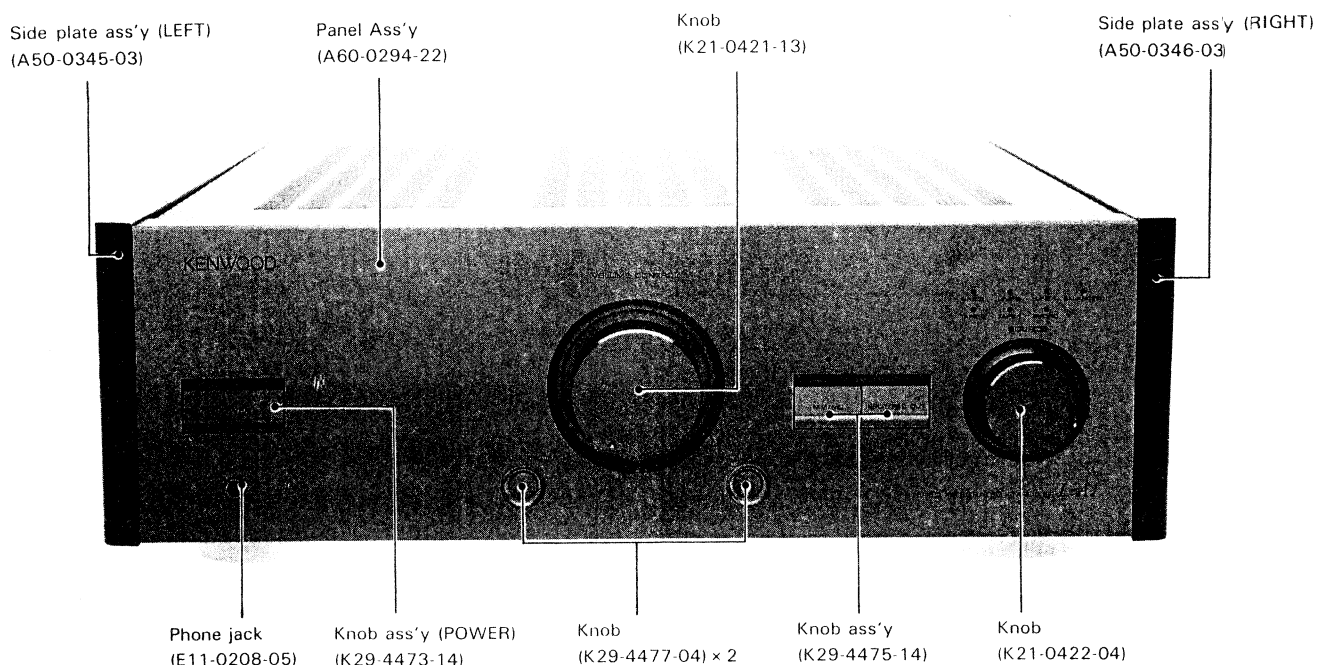
STEREO AMPLIFIER

# L-A1

## SERVICE MANUAL

# KENWOOD

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B51-4634-00(S)374

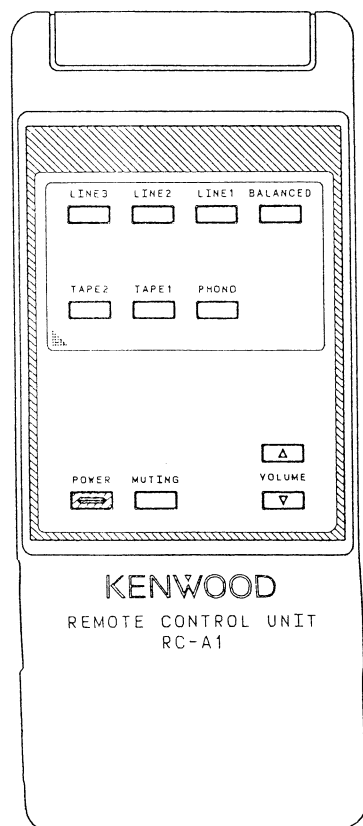


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## CONTROL UNIT

REMOTE CONTROL UNIT:  
(A70-0910-05)  
BATTERY COVER:(A09-0143-08)



INSTRUCTION MANUAL

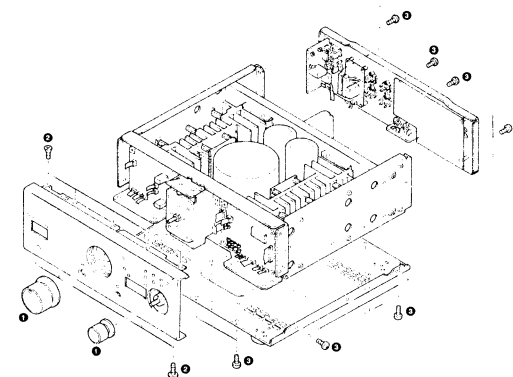
B60-0945-00

English

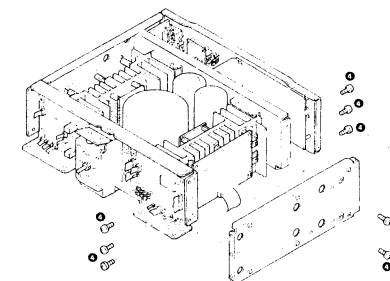
## DISASSEMBLY FOR REPAIR

Remove the case and the side panel in advance.

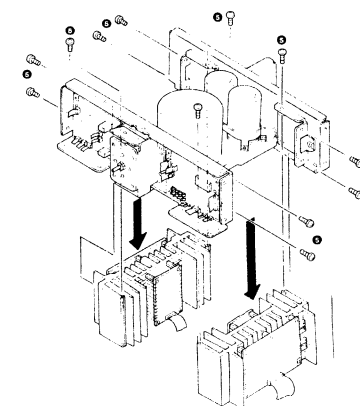
- (1) Remove the two knobs ❶ by loosening the Allen screws.
- (2) The circuit boards of X11 (A/11) (B/11) (C/11) (D/11) (E/11) (F/11) (J/11) (K/11) can be repaired when the nine screws ❷ of the upper and lower sides of the panel are removed.
- (3) The circuit boards of X08-(A/6) (B/6) (C/6) and X11-(G/11) (H/11) can be repaired when the rear panel and the bottom plate are removed by removing the 39 screws ❸ of the rear panel and bottom plate.



- (4) The circuit boards of X07 (A/4) (B/4) can be repaired when the side panel is removed by removing the 8 screws ❹ of the side panel.

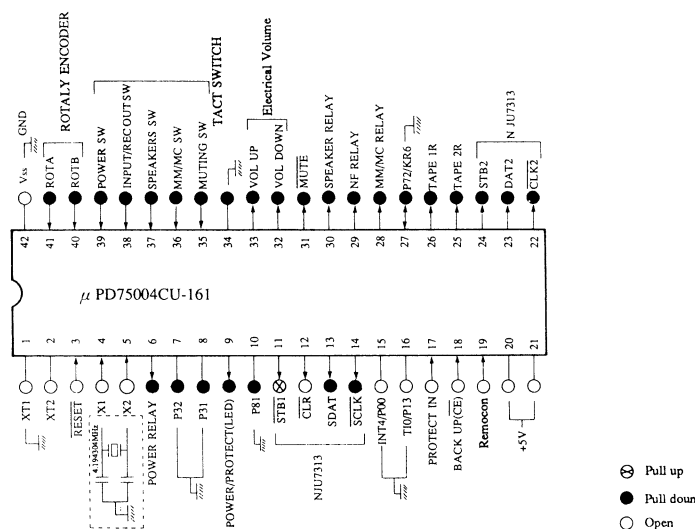


- (5) The radiator plates and the circuit boards X07-(C/4) (D/4) attached to the radiator plates can be removed downwards and can be repaired when the 12 screws ❺ fixing the 2 radiator plates are removed.



## CIRCUIT DESCRIPTION

## Pin connection



## TEST MODE

## 1. START/END OF THE TEST MODE

- ① To start the test mode, plug the AC power cord in the power outlet while pushing the SPEAKER OFF key.
- ② To end the test mode, turn the POWER OFF by means of the POWER key or unplug the AC power cord from the power outlet.

## 2. ALL ON MODE

- ① All LEDs light up simultaneously with the start of the test mode. (The INPUT SELECTOR indication lights up successively in the direction opposite to the clock, however. Repetition of the INPUT SELECTOR indication → REC OUT SELECTOR indication).
- ② The ALL ON MODE ends, with the current position of the INPUT SELECTOR and REC OUT SELECTOR indicated in red, when any key is pressed.

## 3. POWER/ASSISTED POTENTIOMETER UP/DOWN MODE

- ① The POWER-ASSISTED POTENTIOMETER is turned UP for 16 seconds and then it is turned DOWN for 16 seconds, when the INPUT/REC changeover switch is operated.

- ② The INPUT/REC indication LED lights up in amber when the power-assisted potentiometer is in operation.
- ③ This mode ends when the series of operations is finished. Turn the POWER OFF or unplug the AC POWER cord from the power outlet, however, when you want to suspend it in the midway.

## 4. INPUT SELECTOR/REC OUT SELECTOR CHANGE OVER

- ① The INPUT SELECTOR and the REC OUT SELECTOR have the same color (red indication) during the TEST MODE.
- ② The REC OUT SELECTOR OFF position can not be selected during the TEST MODE.

## 5. RESET OPERATION

- ① All states are initialized when the AC power cord is plugged into the power outlet while pushing the POWER key.

## 6. OPERATION OF OTHER KEYS

- ① All keys besides the aforementioned ones are operated in the same way as in the ordinary operation.

## CIRCUIT DESCRIPTION

## Pin description

Pin No.	Pin Name	I/O	Name	Terminal	Description
1	XT1			G	
2	XT2			OP	
3	RESET	I	RESET	OP	
4	X1	I	X1	OP	Oscillator (4.19 MHz)
5	X2	I	X2	OP	Oscillator (4.19 MHz)
6	P33	O	R. POWER	PD	POWER relay terminal
7	P32			G	Unused
8	P31			G	Unused
9	P30	O	L. POWER	PD	POWER/PROTECTION indication terminal
10	P81			PD	Unused
11	P80	O	STB1	PU	Strobe signal terminal for expansion IC (NJU3713)
12	SI/SB1/P03			OP	Unused
13	SO/SB0/P02	O	SDAT	PD	Data signal terminal for expansion IC (NJU3713)
14	SCK/P01	O	SCLK	PD	Clock signal terminal for expansion IC (NJU3713)
15	INT4/P00			OP	Unused
16	TI0/P13			OP	Unused
17	INT2/P12	I	PIN	OP	Protect detection signal input terminal
18	INT1/P11	I	CE	OP	Backup detection signal input terminal
19	INT0/P10	I	REMO	OP	Remote control signal input terminal
20	NC			B	Vdd (+5V)
21	Vdd		Vdd	B	Vdd (+5V)
22	P23/BUZ	O	CLK2	PD	Clock signal terminal for analog SW IC (NJU7313)
23	P22/PCL	O	DAT2	PD	Data signal terminal for analog SW IC (NJU7313)
24	P21	O	STB2	PD	Strobe signal terminal for analog SW IC (NJU7313)
25	P20/PT00	O	R. T2	PD	Oscillation inhibit relay
26	P73/KR7	O	R. T1	PD	Oscillation inhibit relay
27	P72/KR6			PD	Unused
28	P71/KR5	O	R. MM	PD	MM/MC changeover relay terminal (0: MC, 1: MM)
29	P70/KR4	O	R. NF	PD	NF relay changeover terminal
30	P63/KR3	O	R. SP	PD	SPEAKER ON/OFF relay terminal (0: OFF, 1: ON)
31	P62/KR2	O	MUTE	PD	Mute signal terminal (0: MUTE, 1: OFF)
32	P61/KR1	O	V. DOWN	PD	Volume down signal terminal
33	P60/KR0	O	V. UP	PD	Volume up signal terminal
34	P53			PD	Unused
35	P52	I	SW. MUTE	PD	Muting switch input terminal
36	P51	I	SW. MC	PD	MC/MM changeover switch input terminal
37	P50	I	SW. SP	PD	SPEAKER switch input terminal
38	P43	I	SW. REC	PD	INPUT/REC OUT changeover switch input terminal
39	P42	I	SW. PWR	PD	Power ON/OFF switch input terminal
40	P41	I	ROTB	PD	Rotary encoder B signal input terminal
41	P40	I	ROTA	PD	Rotary encoder A signal input terminal
42	Vss		GND	G	GND

(Terminal: OP = Open, G = Vss, B = Vdd, BE = +5V, PU = Pull Up, PD = Pull Down)

## CIRCUIT DESCRIPTION

## DIFFERENTIAL AMPLIFIER

## • OUTLINE OF THE NEW CIRCUIT (SUPER C4)

(1) Differential amplifier provided with cascode bootstrap, arranged in such a way that the current of the bias circuit of the cascode transistor does not flow through the constant current circuit of the common emitter of the differential amplifier.

Amplifier with further reduction of the in-phase component generated in the 2 loads of the differential amplifier is made possible through the addition of the cascode bootstrap to the transistor of the conventional constant current amplifier.

Figure 1 is an example for differential amplifier provided with cascode bootstrap. In this circuit the voltage required at the cascode bootstrap is generated by R5 and D1, and the current flowing through D1 is superposed on the common emitter current of the differential amplifier. When the emitters of Q1, Q2 fluctuates due to the in-phase component entered in the differential amplifier, the voltage generated between the two ends of R5 fluctuates as well. In other words, the sum of the emitter currents of the differential amplifier, that ought to be constant, fluctuates due to the input of the in-phase component. Under the circumstances, it is impracticable to give full play to the performance of the differential amplifier.

Moreover, the higher the frequency the worse the constant current performance of the constant current circuit consisting of Q5, R6, R7, D2 and D3, due to the influence of Cob of Q5.

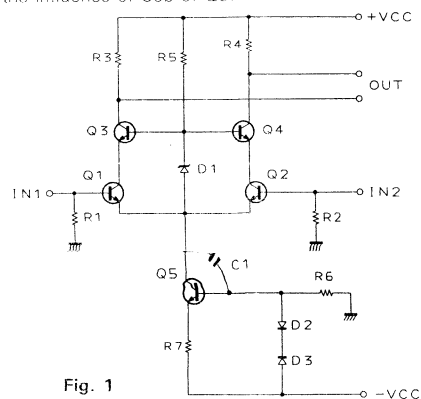


Fig. 1

- Q1, 2: Differential amplifier transistors  
 Q3, 4: Cascode transistors  
 Q5: Constant current control transistor  
 D1: Level standard for cascode bootstrap  
 D2: Temperature compensation diode for Q5  
 D3: Reference voltage diode for constant current  
 R1, 2: Bias resistors for Q1, 2  
 R3, 4: Load resistors  
 R5: Bias resistors of Q3, 4 and D1  
 R6: Bias resistors of Q5 and D3  
 R7: Resistor for constant current  
 C1: Cob of Q5

## • DESCRIPTION OF NEW CIRCUIT

Figure 2 shows the circuit of this equipment. Q5 is connected to the emitters of Q1, 2, and is used as an emitter follower. Furthermore, Q7 is connected to the emitter output of Q5, and is used as emitter follower of darlington. D1 is the level shift diode which determines the voltage  $V_{CE}$  of Q1, 2. By doing so, the bootstrap effect is realized without superposing the current of the cascode bootstrap of the differential amplifier on the constant current circuit. Moreover, the collector of Q6 is connected in series with the emitter of Q8.

As a result, Q8 composes a cascode bootstrap corresponding to Q6. Base bias of Q6 and Q8 is applied through level shift from the emitter of Q5 realized by means of D2, D3.

Cascode bootstrap consisting of Q3, 4 is applied on Q1, 2, in the same way in the conventional configuration, but thanks to the emitter follower consisting of Q5 and Q7 and D1, there is no other current that could become noise source in the constant current circuit of the differential amplifier, and as a consequence the in-phase components contained in the signal exert no influence on the constant current.

Since cascode bootstrap consisting of Q8 is working on Q6, the voltage  $V_{CE}$  of Q6 is kept constant, there is no influence of Cob of Q6, and the constant current characteristic can be kept in good conditions even at high frequencies.

Differential amplification in the strict sense of the word can be carried out in this circuit, because no current other than the common emitter circuit flows through the constant current circuit.

Moreover, the frequency characteristic of the differential amplifier is improved by improving the frequency characteristic of the constant current circuit.

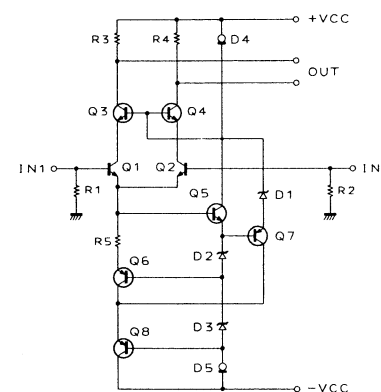


Fig. 2

## FUNCTIONS OF THE DEVICES OF FIGURE 2

- Q1, 2: Differential amplification transistors  
 Q3, 4: Cascode transistors of Q1, 2  
 Q5, 7: Emitter follower of bootstrap  
 Q6: Constant current control transistor  
 Q8: Cascode transistor of Q6  
 D1, 2, 3: Level shift diode  
 D4, 5: Constant current diodes  
 R1, 2: Bias resistors  
 R3, 4: Load resistors  
 R5: Resistor for determination of constant current

Figure 3 shows an example of simplified figure 2.

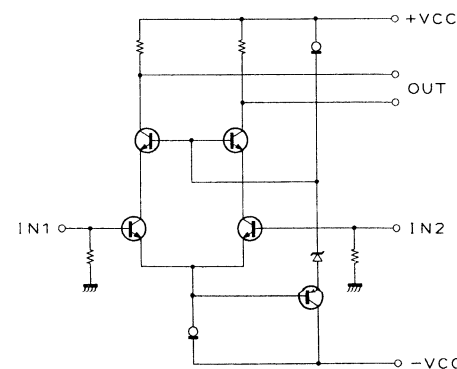
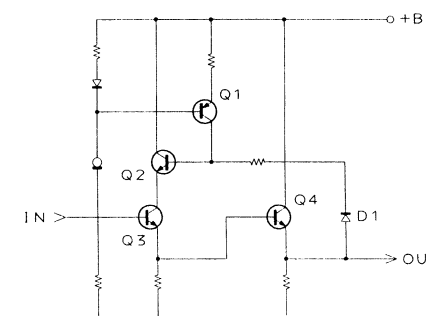


Fig. 3

## CIRCUIT DESCRIPTION

VIG circuit consisting of bootstrap and constant current is adopted in the pre-drive power supply with the object of eliminating the influence, of the power supply in the power stage. Refer to the service manual of KA-990D (Q51-3080-00) for details of the VIG circuit.



## VIG CIRCUIT

- Q1: Constant current circuit  
 Q2: Bootstrap  
 Q3: Pre-driver  
 Q4: Driver  
 D1: Bootstrap diode

ADJUSTMENT/REGLAGE/ABGLEICH

• ADJUSTMENT

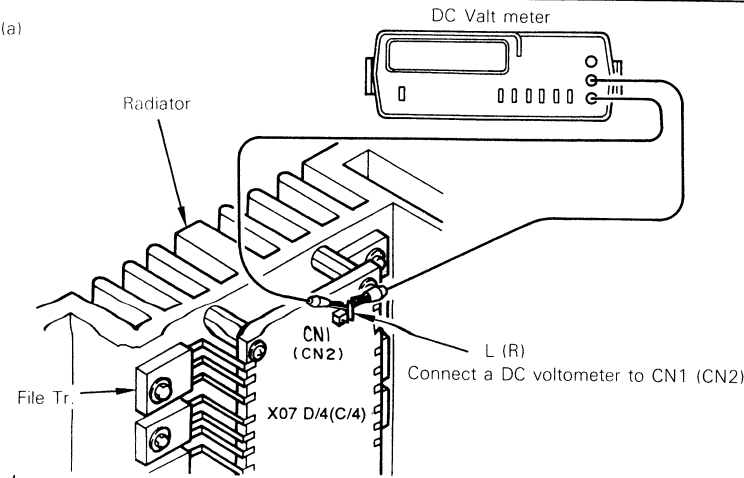
No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	AMPLIFIER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
Unless you have some special reason otherwise, please use the following settings for each awitch. POWER : ON    SPEAKER : B    REC OUT : OFF    SELECTOR : PHONO							
1	Idle current	—	Connect a DC voltmeter to CN1 (CN2)	VOLUME : 0	VR1. (L) VR2. (R)	6 mV	(a)

• REGLAGE

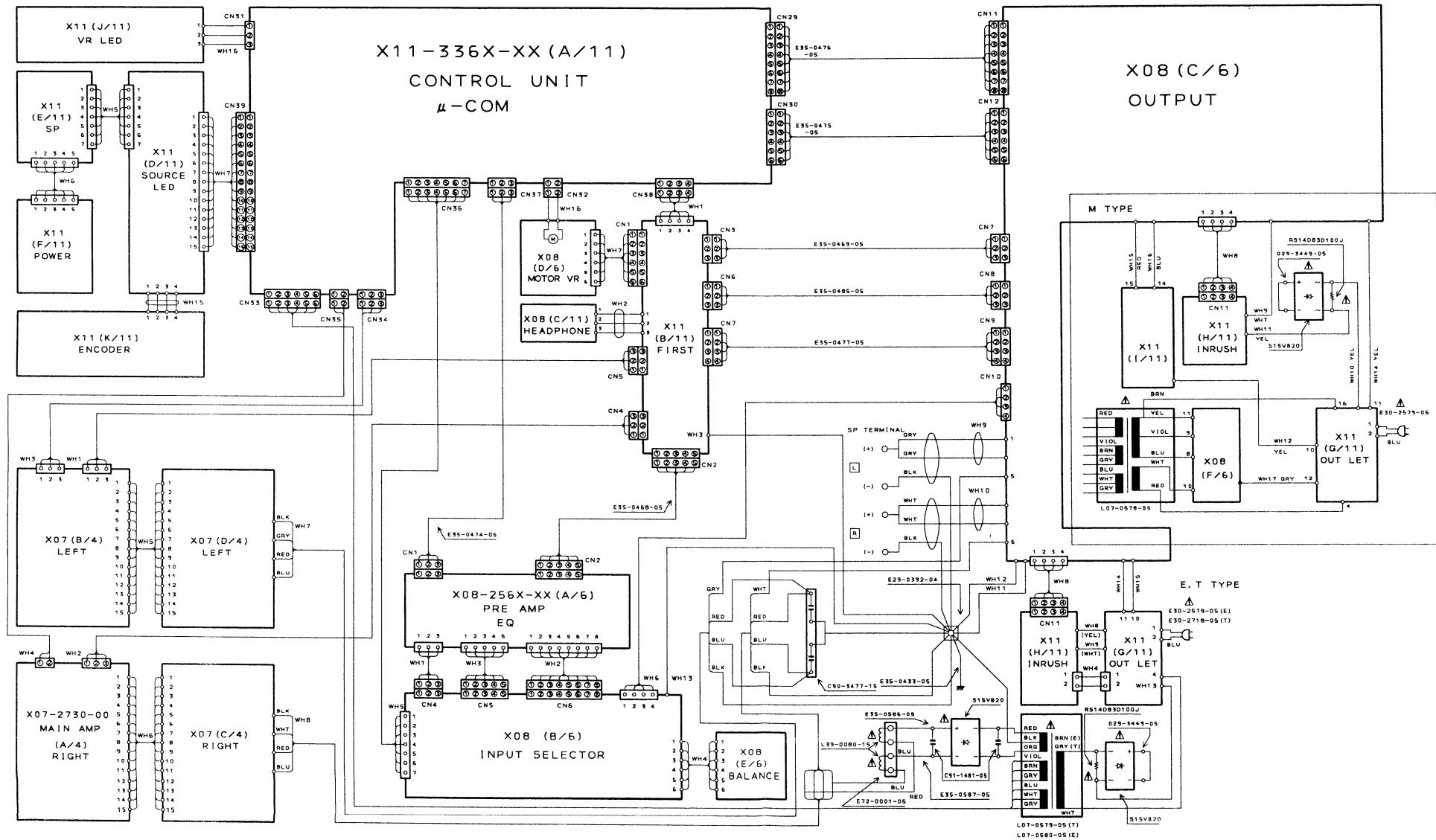
N°	ITEM	REGLAGE DE L'ENTREE	REGLAGE DE LA SORTIE	REGLAGE DE L'AMPLIFICATEUR	POINT L'ALIGNEMENT	ALIGNER POUR	FIG.
Chaque commutateur doit être réglé comme suit, moins d'indication contraire. POWER : ON    SPEAKER : B    RECOUT : OFF    SELECTOR : PHONO							
1	COURANT DE POLARISATION	—	Connecter un voltmètre de CC sur CN1 (CN2)	VOLUME : 0	VR1. (G) VR2. (D)	6 mV	(a)

• ABGLEICH

NR	GEGENSTAND	EINGANGSEINSTELLUNG	AUSGANGSEINSTELLUNG	VERSTÄRKEREINSTELLUNG	ABGLEICH-PUNKTE	ABGLEICHEN FÜR	ABB.
Falls nicht anders angegeben, müssen die einzelnen Schalter wie folgt eingestellt sein: POWER : ON    SPEAKER : B    RECOUT : OFF    SELECTOR : PHONO							
1	LEER-LAUFSTROM	—	Einen Gleichspannungsmesser über CN1 (CN2) anschließen	VOLUME : 0	VR1. (L) VR2. (R)	6 mV	(a)

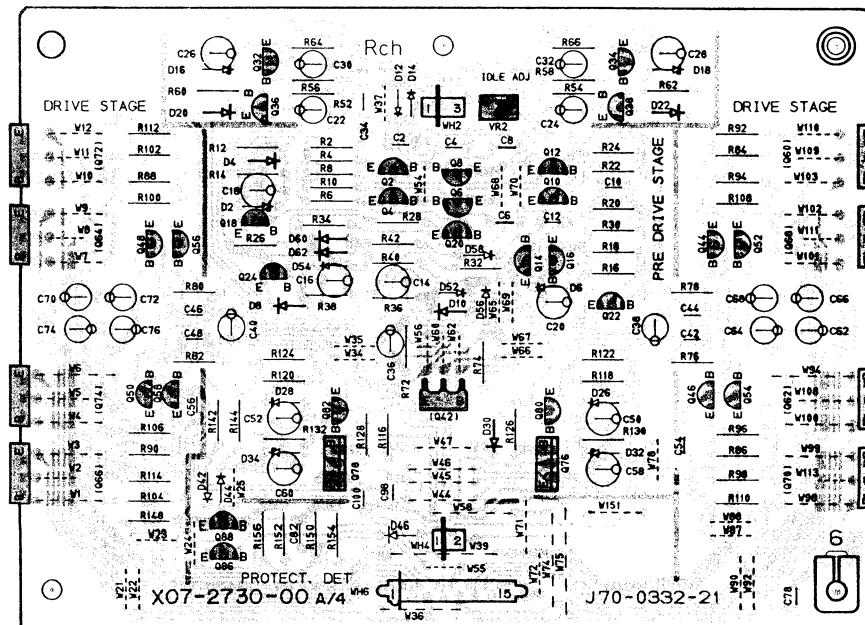
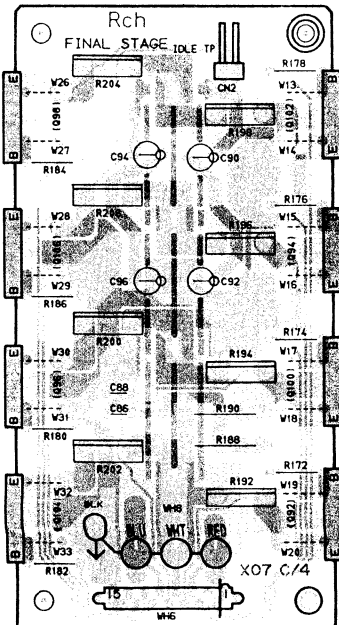
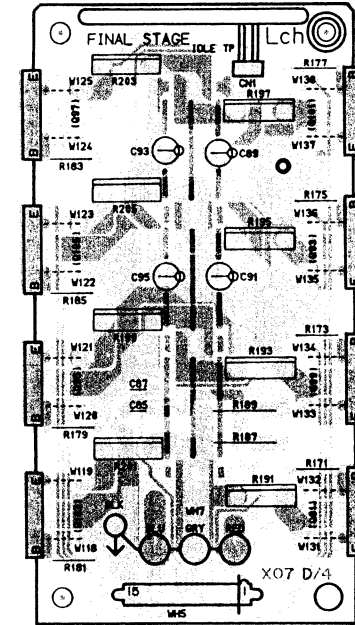
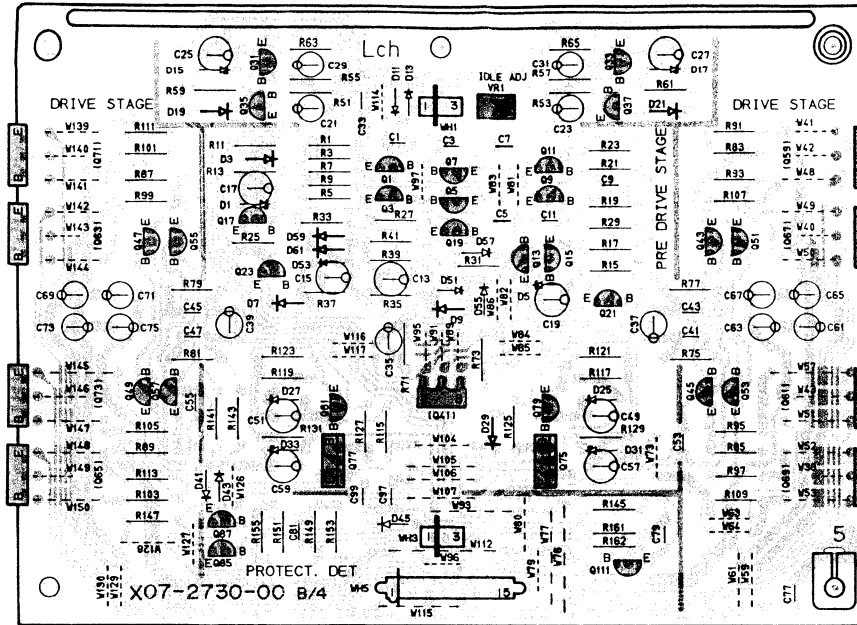


# L-A1 L-A1 WIRING DIAGRAM

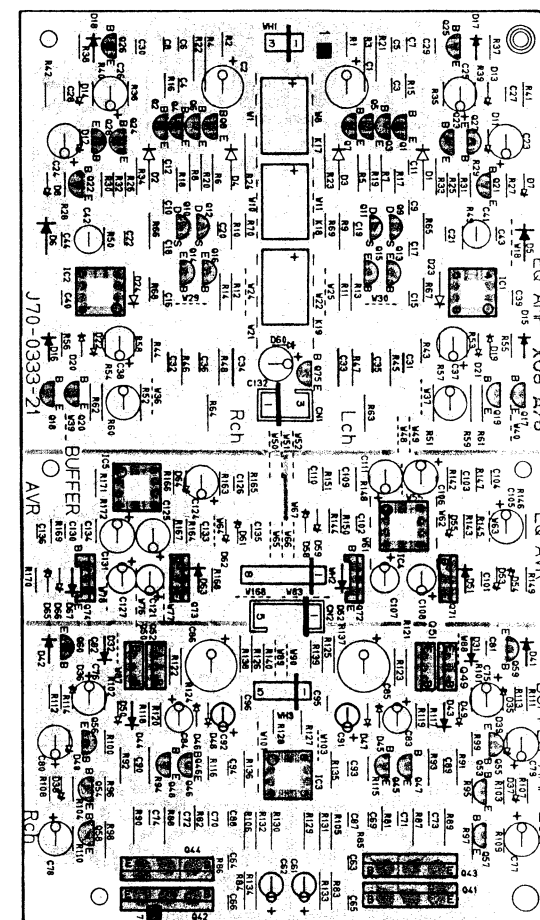
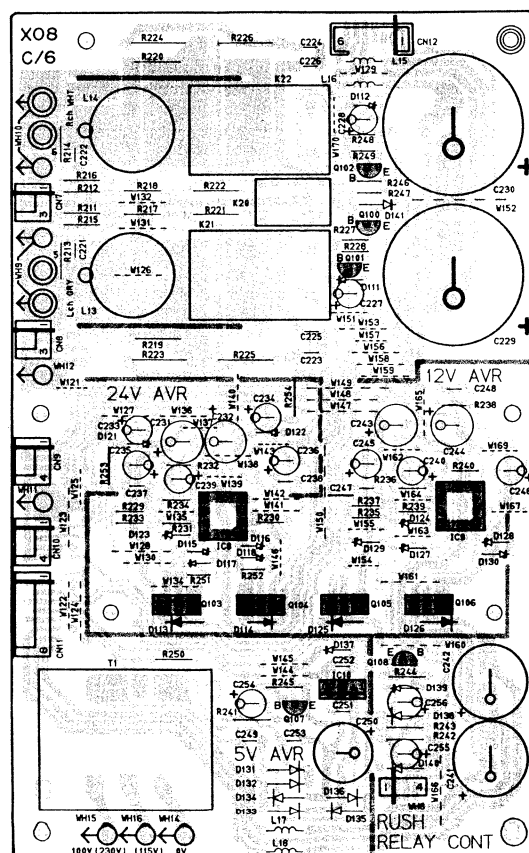
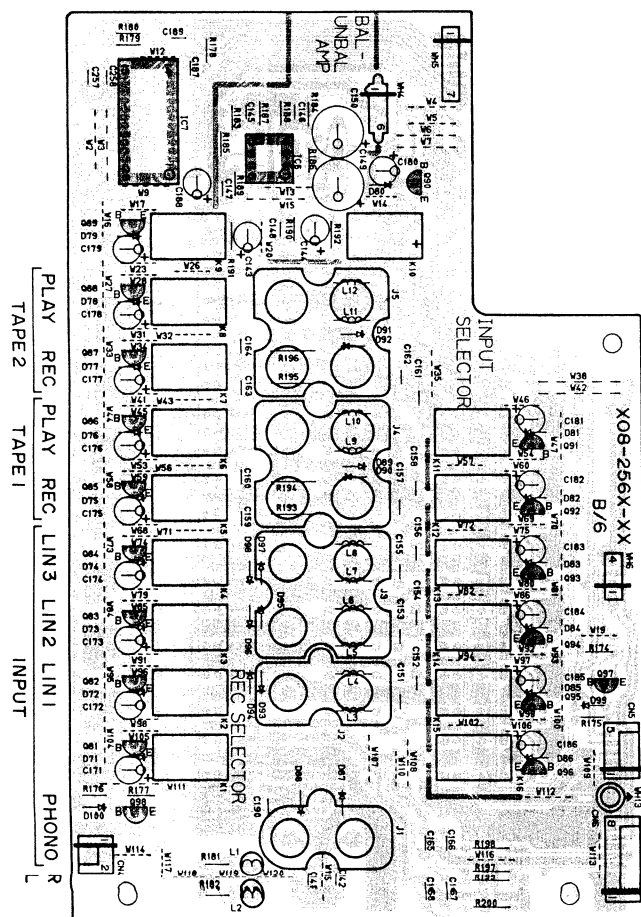
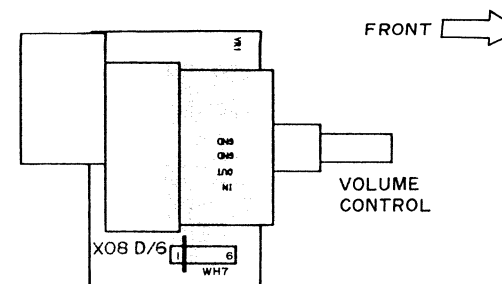
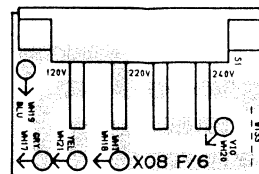
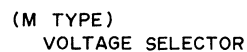


# PC BOARD (Component side view)

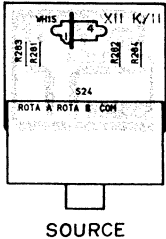
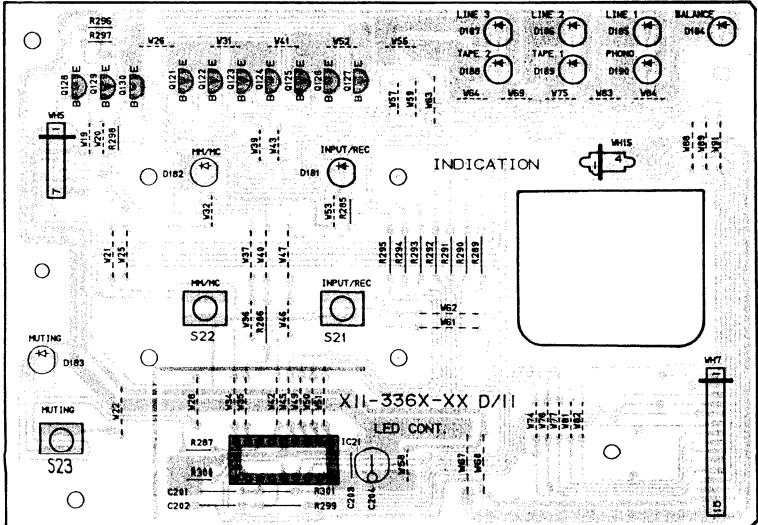
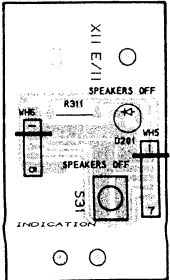
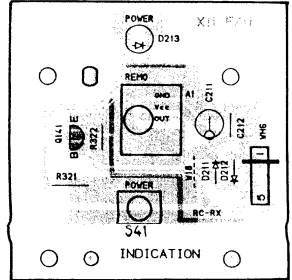
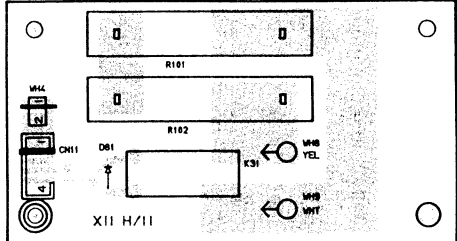
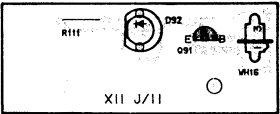
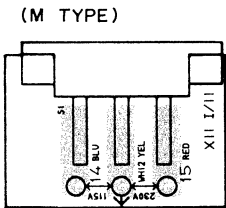
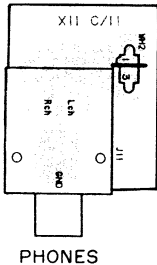
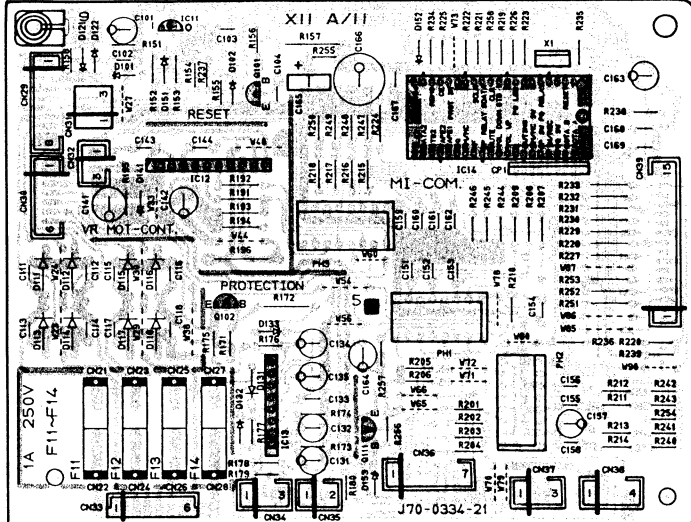
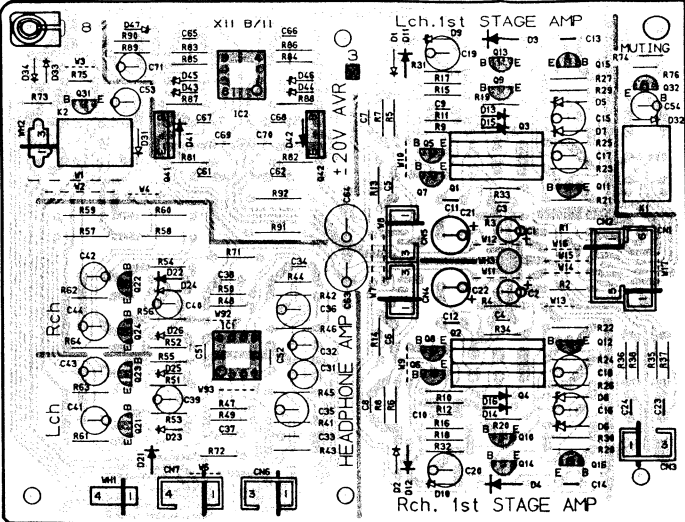
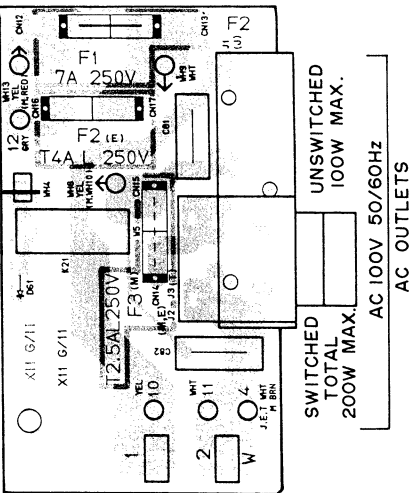
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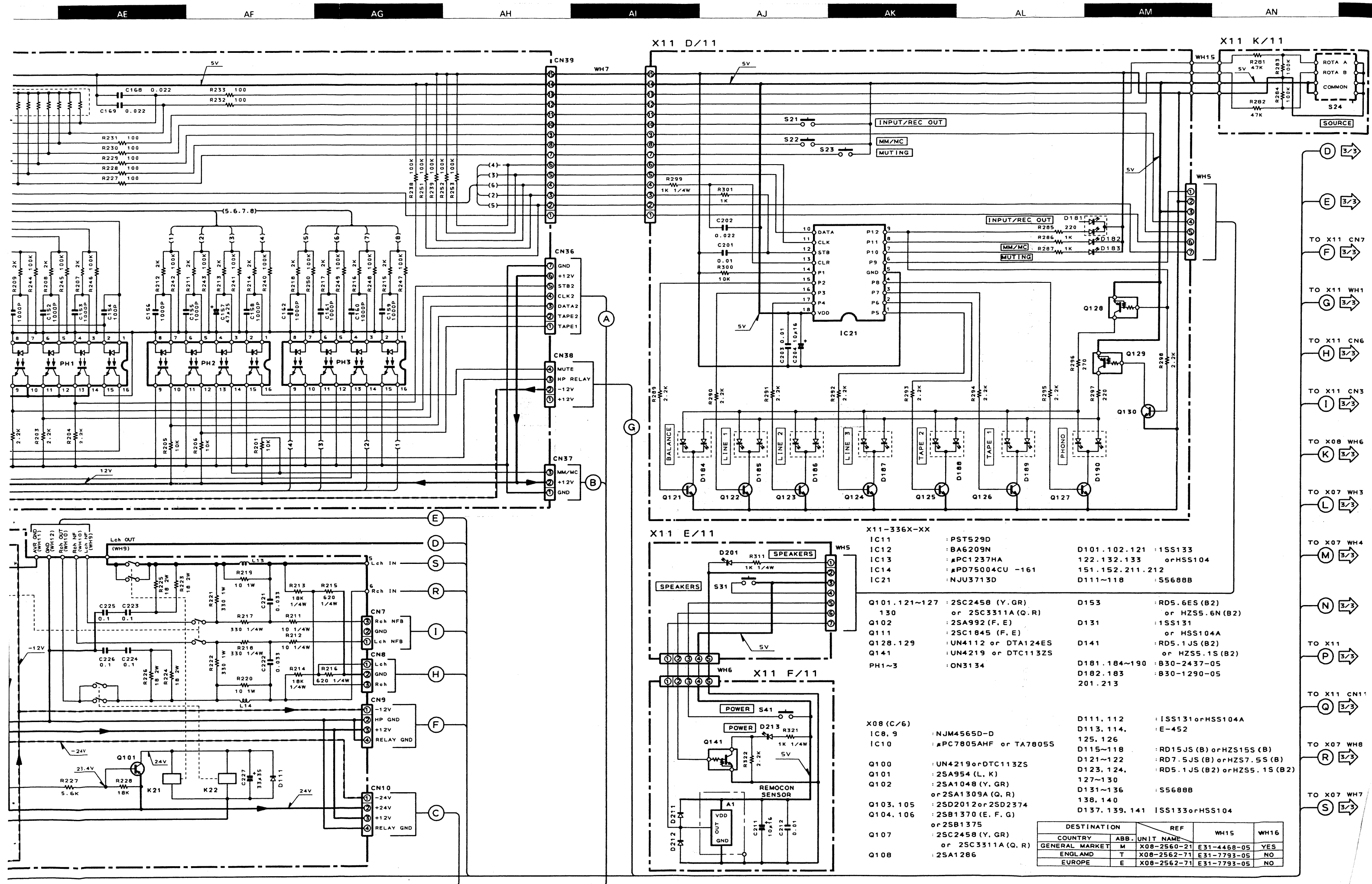
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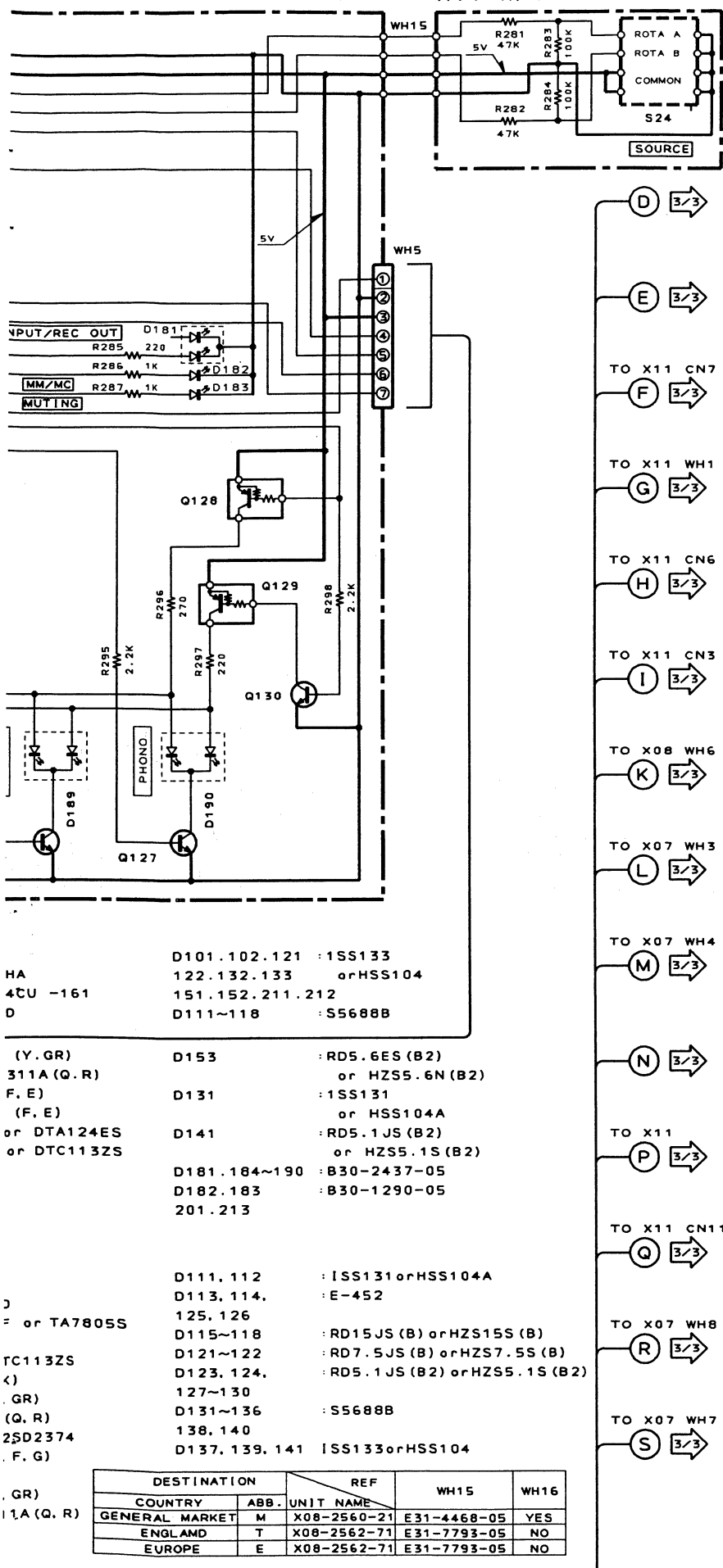


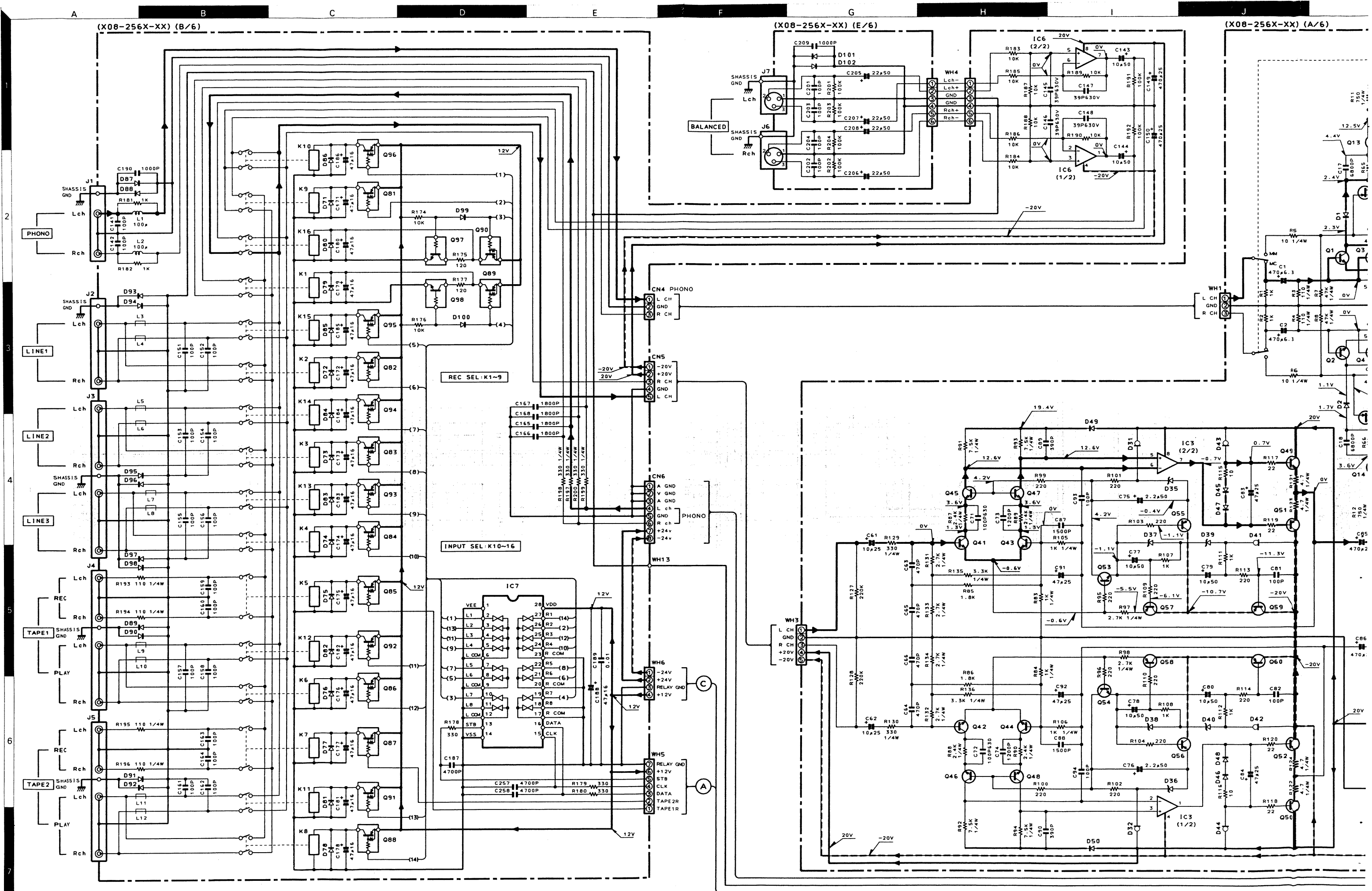




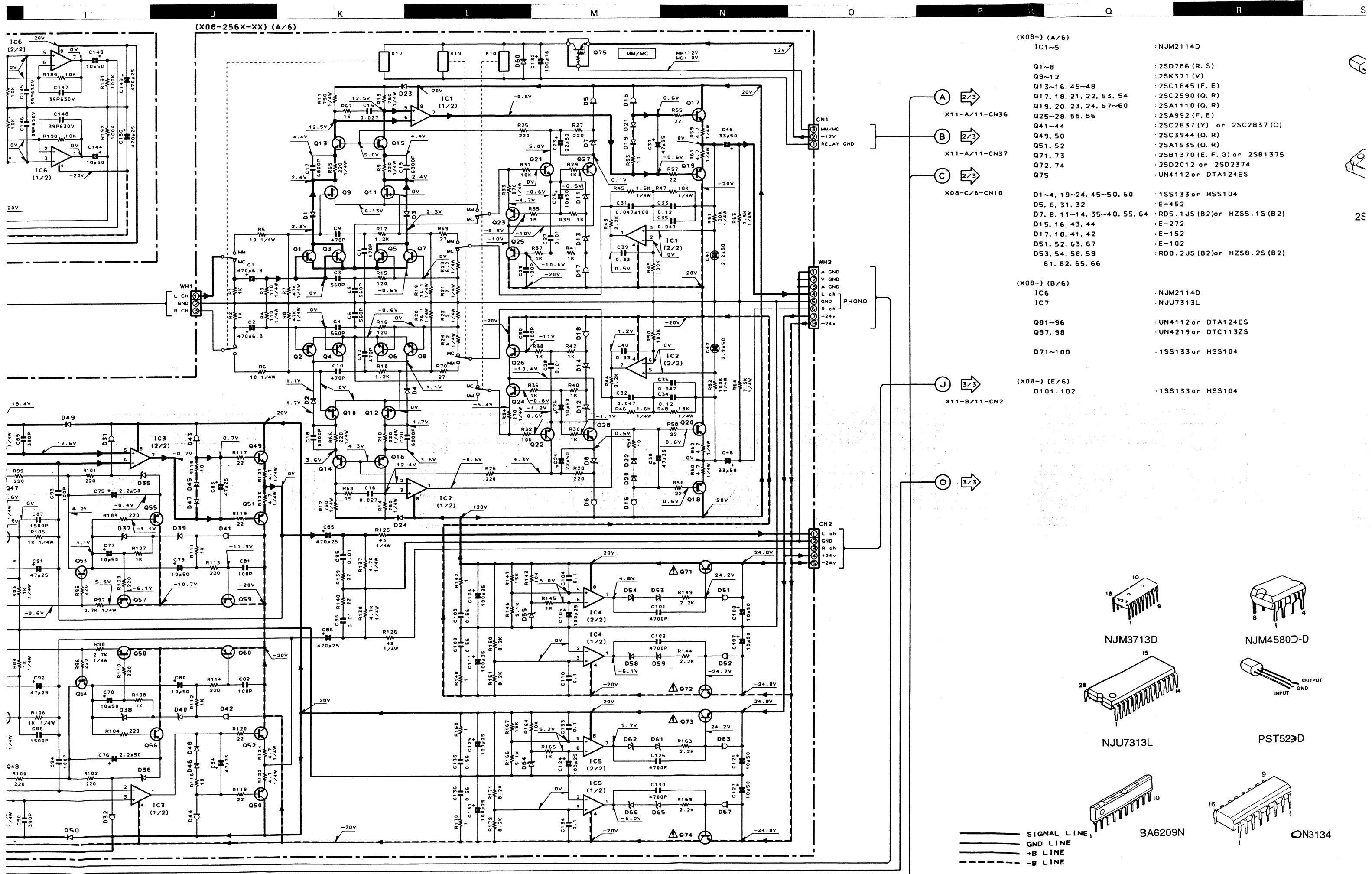


X11 K/11









→ (A/6)  
IC1~5

: NJM2114D

31~8  
39~12  
313~16, 45~48  
317, 18, 21, 22, 53, 54  
319, 20, 23, 24, 57~60  
325~28, 55, 56  
341~44  
349, 50  
351, 52  
371, 73  
372, 74  
375

: 2SD786 (R, S)  
: 2SK371 (V)  
: 2SC1845 (F, E)  
: 2SC2590 (Q, R)  
: 2SA1110 (Q, R)  
: 2SA992 (F, E)  
: 2SC2837 (Y) or 2SC2837 (O)  
: 2SC3944 (Q, R)  
: 2SA1535 (Q, R)  
: 2SB1370 (E, F, G) or 2SB1375  
: 2SD2012 or 2SD2374  
: UN4112 or DTA124ES

31~4, 19~24, 45~50, 60  
35, 6, 31, 32  
37, 8, 11~14, 35~40, 55, 64  
315, 16, 43, 44  
317, 18, 41, 42  
351, 52, 63, 67  
353, 54, 58, 59  
361, 62, 65, 66

: 1SS133 or HSS104  
: E-452  
: RD5.1JS (B2) or HZ55.1S (B2)  
: E-272  
: E-152  
: E-102  
: RD8.2JS (B2) or HZ58.2S (B2)

→ (B/6)  
C6  
C7

: NJM2114D  
: NJU7313L

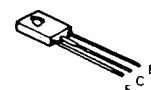
81~96  
97, 98  
71~100

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: 1SS133 or HSS104

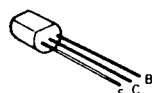
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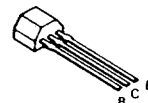
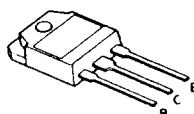
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2SA954



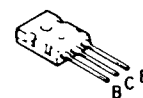
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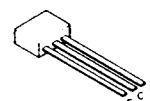
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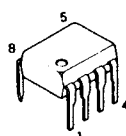
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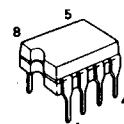
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2SA1309A  
2SC3311A



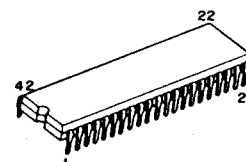
2SB1375  
2SD2012  
2SD2374



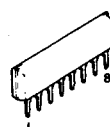
NJM2114D



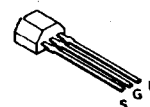
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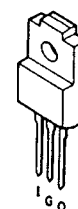
UPD75004CU-161



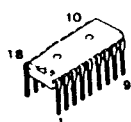
UPC1237HA



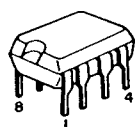
2SK371



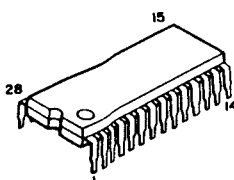
TA7805S



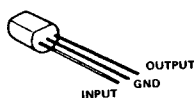
NJM3713D



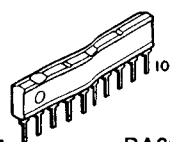
NJM4580D-D



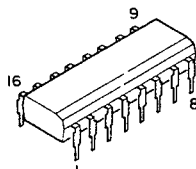
NJU7313L



PST529D



BA6209N



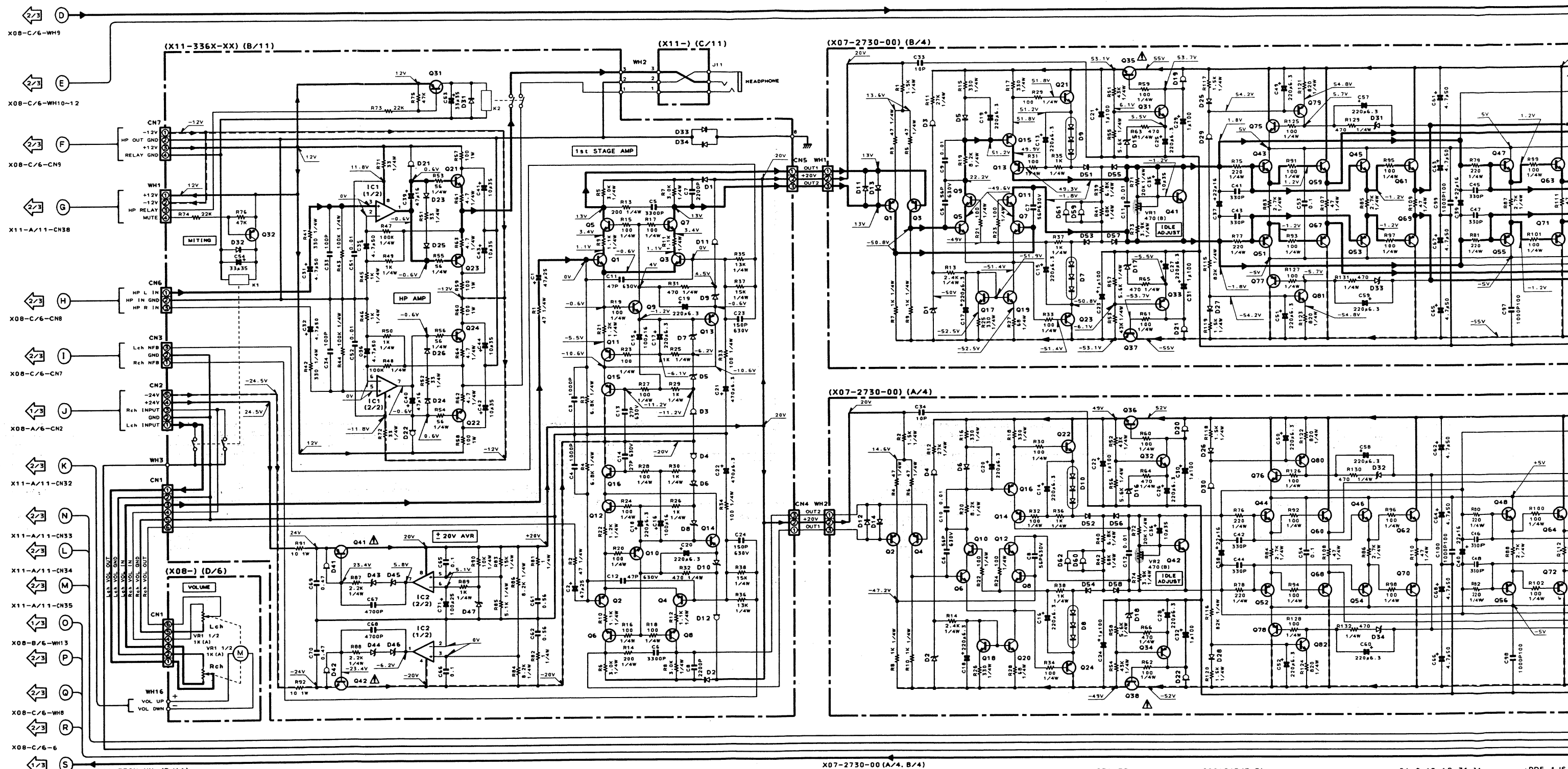
ON3134

DC voltages are as measured with a high impedance voltmeter with no signal input. Values may vary slightly due to variations between individual instruments or/and units.

Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance sans signal d'entrée. Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.

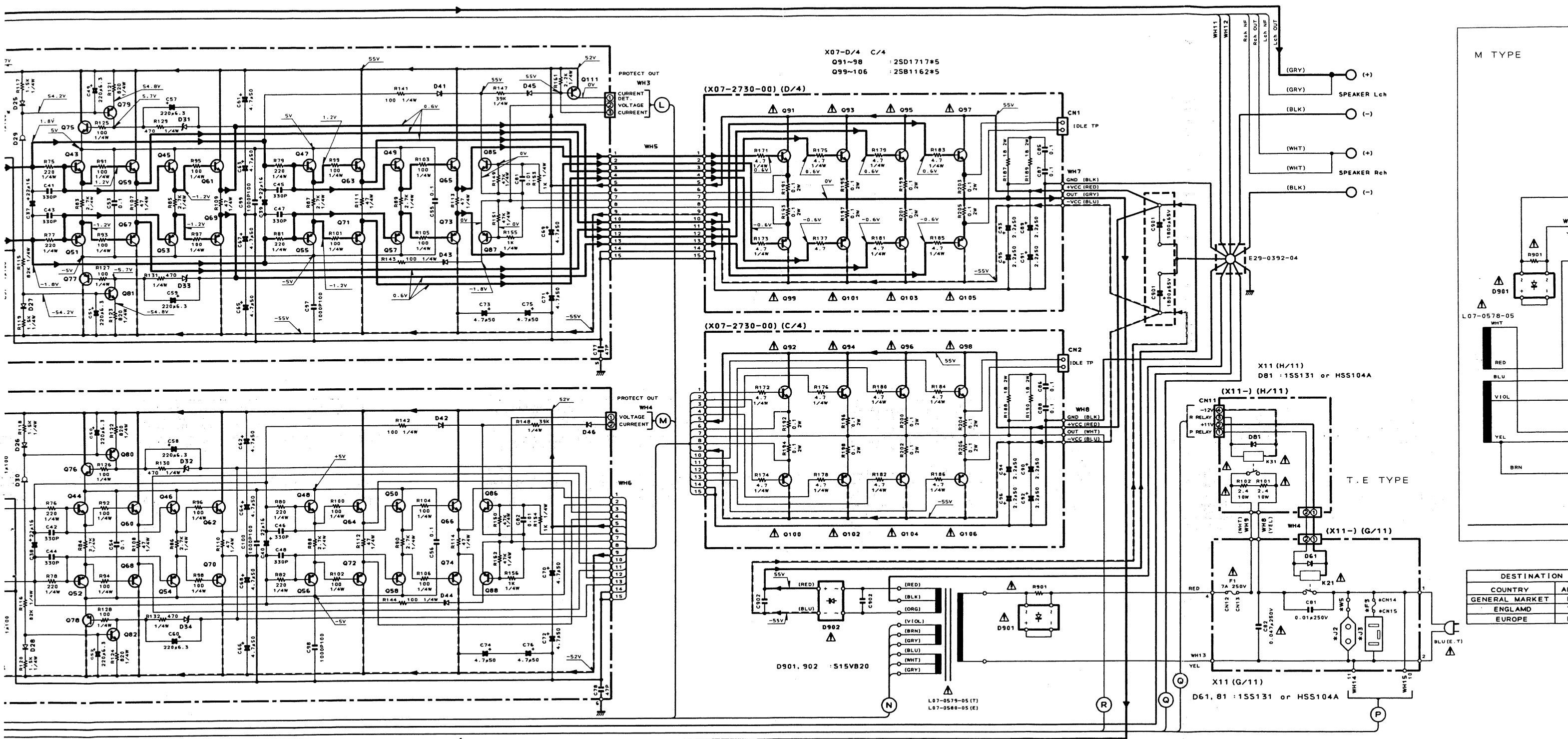
Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen Spannungsmesser ohne Eingangssignal gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u. U. geringfügig.

**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.



X08-C/6-5	X11-336X-XX (B/11)	Q13-16	2SA992 (F, E)	D1, 2, 23-26, 33, 34	15S133 or HSS104	X07-2730-00 (A/4, B/4)	Q1-4	2SA1124 (R, S)	Q31, 32	2SC1845 (F, E)	D1, 2, 15-18, 31-34	RD5, 1JS
	IC1 : NJM4580D-D	Q21, 22	2SC3940A (R, S)	03, 4, 41, 42	E-102		Q5-8	2SD2134 (Q, R)		2SA992 (F, E)	D3, 4, 59-62	E-272
	IC2 : NJM2114D	Q23, 24	2SA1534A (R, S)	D5-10, 47	RD5, 1JS (B2) or HZ55.1S (B2)		Q9-12, 35, 36	2SC2590 (Q, R)		2SC4137F19 (V, W)	D5, 6, 25-28, 45, 46, 51-58	15S133
		Q31, 32	2SA1048 (Y, GR)	D11, 12, 21, 22	E-272		Q13, 14	2SB1414 (Q, R)		2SC3944 (Q, R)	D7-10	MA27T (A)
			or 2SA1309A (Q, R)	D31, 32	15S131 or HSS104A		Q15, 16, 37, 38	2SA1110 (Q, R)		2SA1535 (Q, R)	D11-14	SD103A
			or 2SB1370 (E, F, G)	D43-46	RD8, 2JS (B2) or HZ58.2S (B2)		Q17-22, 43-50	2SC2458 (Y, GR)		2SA1123 (R, S)		
			or 2SB1375					or 2SC3311A (Q, R)		2SC2631 (R, S)		
			2SC2012 or 2SD2374					or 2SA1048 (Y, GR)				
								or 2SA1309A (Q, R)				





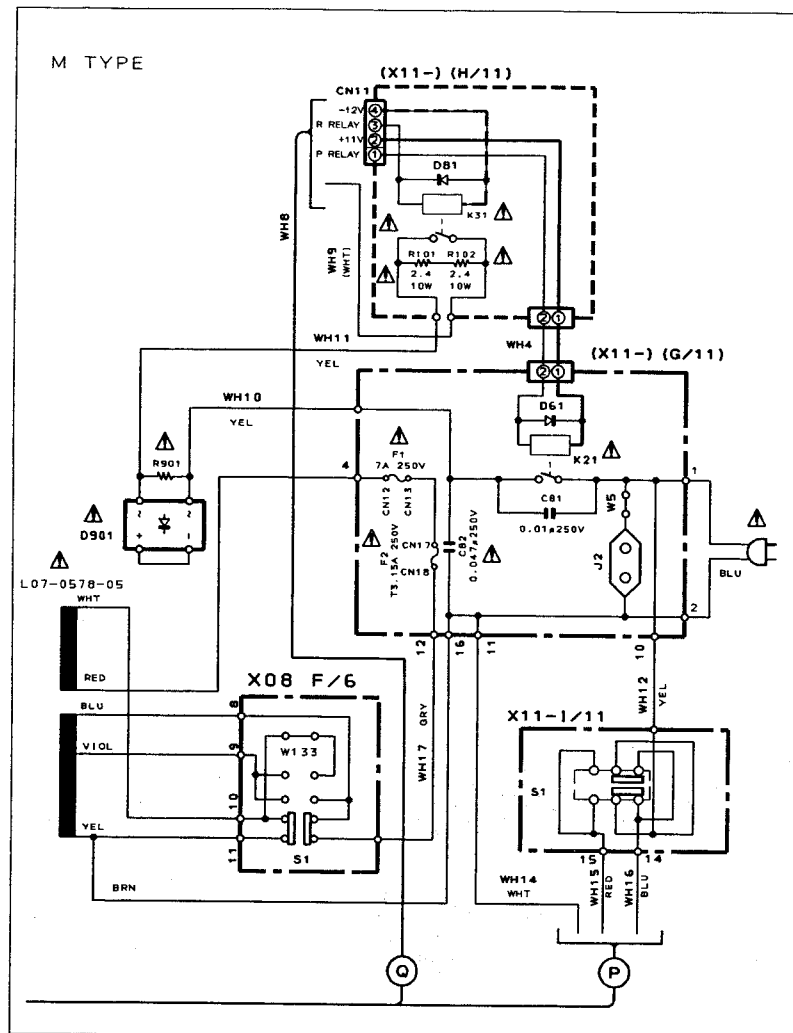
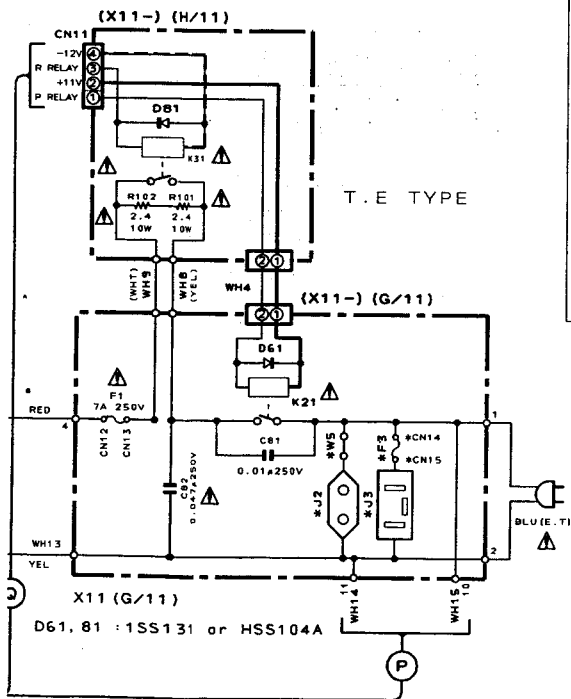
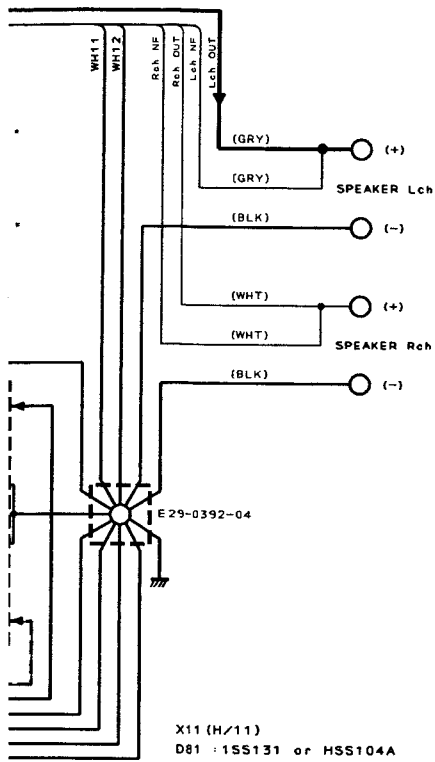
- 2SC1845 (F, E)  
2SA992 (F, E)  
2SC4137F19 (V, W)  
2SC3944 (Q, R)  
2SA1535 (Q, R)  
2SA1123 (R, S)  
2SC2631 (R, S)
- D1, 2, 15~18, 31~34  
D3, 4, 59~62  
D5, 6, 25~28, 45, 46, 51~58  
D7~10  
D11~14
- RD5, 1JS (B2) or HZ55, 1S (B2)  
E-272  
1SS133 or HSS104  
MA277 (A)  
SD103A
- D19~22  
D29, 30  
D41, 44
- E-102  
E-501  
1SS131 or HSS104A

DC voltages are as measured with a high impedance voltmeter with no signal input. Values may vary slightly due to variations between individual instruments or/and units.

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Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen Spannungsmesser ohne Eingangssignal gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u. U. geringfügig.

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

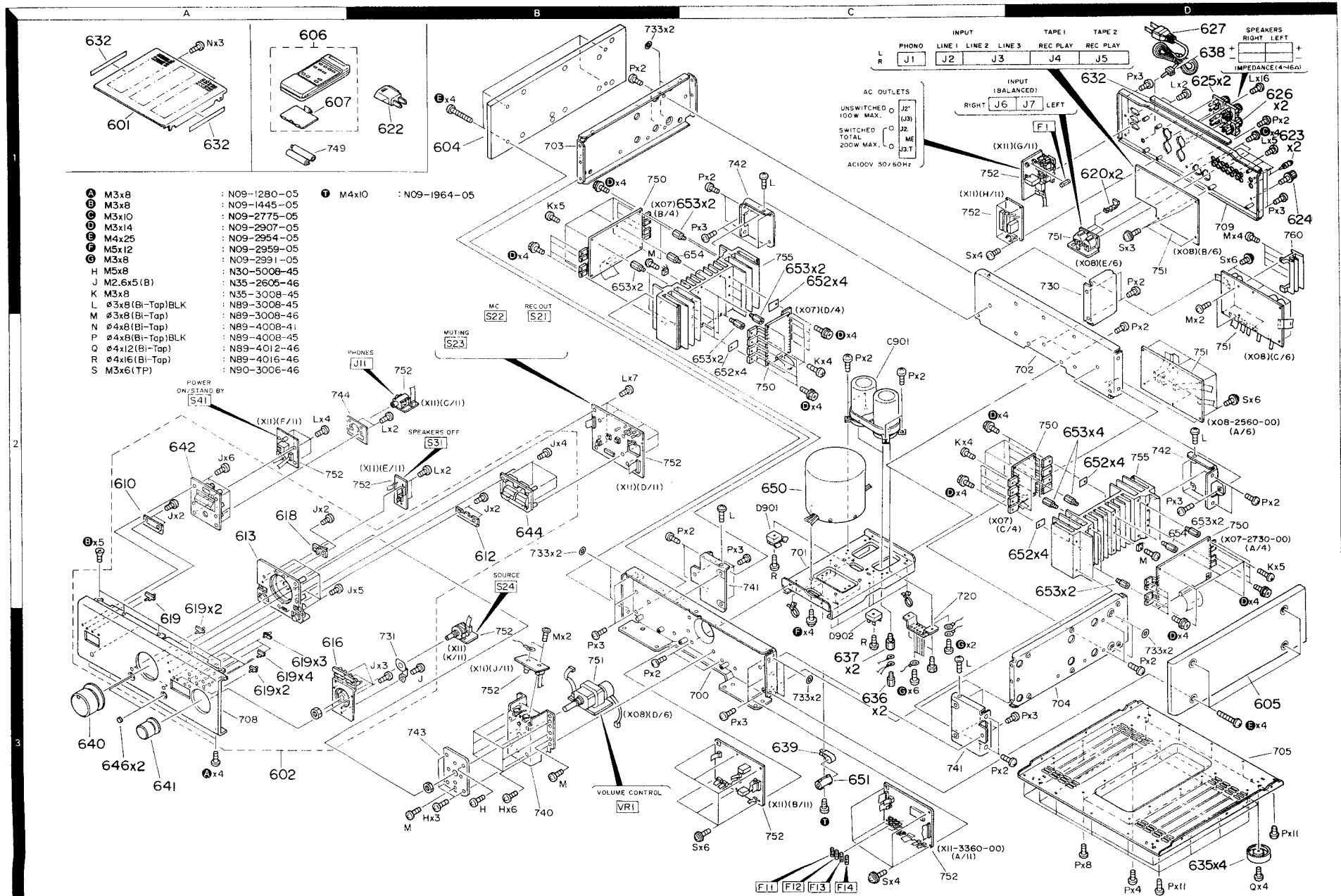


DESTINATION		REF. NO		J2	J3	CN14	CN15	F3	W5
COUNTRY	ABB.	UNIT NAME							
GENERAL MARKET	M	X11-3360-21		YES	NO	NO	NO	NO	YES
ENGLAND	T	X11-3360-51		NO	YES	NO	NO	NO	YES
EUROPE	E	X11-3362-71		YES	NO	YES	YES	YES	NO

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

**AUTION:** 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.

# L-A1 L-A1 EXPLODED VIEW (UNIT)



Parts with the exploded numbers larger than 700 are not supplied.

L-A1

L-A1

## PARTS LIST

\* New Parts

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕向	Re- marks 備考
L-A1						
601	1A		A01-2973-02	METALLIC CABINET		
602	3A	*	A60-0294-22	PANEL ASSY		
604	1B		A50-0345-03	SIDE PLATE ASSY LEFT		
605	3D		A50-0346-03	SIDE PLATE ASSY RIGHT		
606	1A		A70-0910-05	REMOTE CONTROLLER ASSY		
607	1A	*	A09-0143-08	BATTERY COVER		
610	2A		B03-2784-14	DRESSING PLATE POWER		
612	2B		B03-2785-04	DRESSING PLATE INPUT		
613	2A		B07-2220-12	ESCUTCHEON VOLUME		
616	3A		B07-2224-03	ESCUTCHEON SOURCE		
618	2A		B12-0208-04	INDICATOR		
619	3A		B12-0212-04	INDICATOR		
-			B46-0122-23	WARRANTY CARD	E	
-			B46-0143-13	WARRANTY CARD	T	
-		*	B60-0945-00	INSTRUCTION MANUAL (ENGLISH)		
620	1D		D10-2355-05	LEVER		
622	1B		E19-0207-05	AC PLUG ADAPTER	M	
623	1D		E14-0107-05	SHORT-CIRCUIT PHONO PLUG		
624	1D		E21-0006-45	BINDING POST GND		
625	1D		E21-0024-05	BINDING POST SPEAKER RED		
626	1D		E21-0025-05	BINDING POST SPEAKER BLACK		
627	1D		E30-2579-05	AC POWER CORD	ME	
627	1D		E30-2718-05	AC POWER CORD	T	
632	1A, 1D	*	G10-0176-04	NON-WOVEN FABRIC		
-			H50-0470-04	ITEM CARTON CASE		
-		*	H10-5364-01	POLYSTYRENE FOAMED FIXTURE L		
-		*	H10-5365-01	POLYSTYRENE FOAMED FIXTURE R		
-			H25-0029-04	PROTECTION BAG (60X110)	ME	
-			H25-0232-04	PROTECTION BAG (235X350X0.03)		
-			H25-0651-04	PROTECTION BAG (0232 PRINTED)	T	
-			H25-0692-04	PROTECTION BAG		
635	3D		J02-1080-04	FOOT		
636	3C	*	J32-0333-14	HEXAGON BOSS		
637	3C	*	J32-0337-04	HEXAGON BOSS		
638	1D		J42-0194-05	POWER CORD BUSHING	ME	
638	1D		J42-0195-05	POWER CORD BUSHING	T	
639	3C		J11-0189-05	CLAMPER		
-			J11-0141-05	WIRE CLAMPER		
-			J61-0070-05	WIRE BAND		
-			J61-0307-05	WIRE BAND		
640	3A	*	K21-0421-13	KNOB VOLUME CONTROL		
641	3A		K21-0422-04	KNOB SOURCE		
642	2A		K29-4473-14	KNOB ASSY POWER		
644	2B		K29-4475-14	KNOB ASSY MM/MC, INPUT/REC OUT		
646	3A		K29-4477-04	KNOB MUTE, SPEAKER OFF		
650	2C	*	L07-0578-05	POWER TRANSFORMER	M	
650	2C	*	L07-0579-05	POWER TRANSFORMER	T	
650	2C	*	L07-0580-05	POWER TRANSFORMER	E	
651	3C		L92-0039-05	FERRITE CORE		

L:Scandinavia K:USA P:Canada  
 Y:PX(Far East, Hawaii) T:England E:Europe  
 Y:AFES(Europe) X:Australia M:Other Areas

△ indicates safety critical components.

## PARTS LIST

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕向	Re- marks 備考
A	3A		N09-1280-05	TAPTITE SCREW (3X89)		
B	2A		N09-1445-05	SET SCREW (M3X8)		
C	1D		N09-2775-05	MACHINE SCREW		
E	1B, 3D		N09-2954-05	DRESSED SCREW (4X25)		
F	3C		N09-2959-05	SEMS (MACHINE SCREW)		
G	3C	*	N09-2991-05	SEMS (TAPTITE SCREW)		
H	3B	*	N30-5008-45	PAN HEAD MACHINE SCREW		
J	2A, 2B		N35-2605-46	BINDING HEAD MACHINE SCREW		
L	1B, 2D		N89-3008-45	BINDING HEAD TAPTITE SCREW		
M	1D, 2B		N89-3008-46	BINDING HEAD TAPTITE SCREW		
N	1D, 3B		N89-4008-41	BINDING HEAD TAPTITE SCREW		
P	3B, 3D		N89-4008-45	BINDING HEAD TAPTITE SCREW		
Q	3D		N89-4012-46	BINDING HEAD TAPTITE SCREW		
R	2C, 3C		N89-4016-46	BINDING HEAD TAPTITE SCREW		
S	1D, 3C		N90-3006-46	TP HEAD MACHINE SCREW		
T	3C		N09-1964-05	MACHINE SCREW		
MAIN AMPLIFIER UNIT(X07-2730-00)						
C5 -8			C91-1471-05	FILM 56PF	K	
C9 -12			CF92FV1H103J	MF 0.010UF	J	
C13 -20			CE04KW0J221M	ELECTRO 220UF	6.3WV	
C21 -24			CE04KW2A010M	ELECTRO 1.0UF	100WV	
C25 -28			CE04KW0J221M	ELECTRO 220UF	6.3WV	
C29 -32			CE04KW2A010M	ELECTRO 1.0UF	100WV	
C33 ,34			CC45FSL1H100D	CERAMIC 10PF	0	
C35 ,36			CE04KW1V100M	ELECTRO 10UF	35WV	
C37 -40			CE04KW1C220M	ELECTRO 22UF	16WV	
C41 -48			CF92FV1H331K	MF 330PF	K	
C49 -52			CE04KW0J221M	ELECTRO 220UF	6.3WV	
C53 -56			CF92FV1H104J	MF 0.10UF	J	
C57 -60			CE04KW0J221M	ELECTRO 220UF	6.3WV	
C61 -76			CE04KW1H4R7M	ELECTRO 4.7UF	50WV	
C77 ,78			CC45FSL1H470J	CERAMIC 47PF	J	
C81 ,82			CF92FV1H103J	MF 0.010UF	J	
C85 -88			CF92FV1H104J	MF 0.10UF	J	
C89 -96			CE04KW1H2R2M	ELECTRO 2.2UF	50WV	
C97 -100			CQ93HP2A102J	MYLAR 1000PF	J	
652	1C, 2D		F20-1284-05	INSULATING BOARD		
653	1C, 2D		J32-0329-05	HEXAGON BOSS		
654	1C, 2D	*	J32-0335-05	HEXAGON BOSS		
D	1B, 2C		N09-2907-05	SEMS (TAPTITE SCREW)(3X14)		
J	2A, 2B		N35-3008-46	BINDING HEAD MACHINE SCREW		
L	2B, 1D		N89-3008-45	BINDING HEAD TAPTITE SCREW		
R1 ,2		*	RN14BK2E1501FTS	RN 1.50K	F 1/4W	
R3 -6			RN14BK2E47R0FTS	RN 47.0	F 1/4W	
R7 -10			RN14BK2E1001FTS	RN 1.00K	F 1/4W	
R11 ,12		*	RN14BK2E2702FTS	RN 27.0K	F 1/4W	
R13 ,14			RN14BK2E2401FTS	RN 2.40K	F 1/4W	
R15 -18			RD14AB2E331JTS	FL-PROOF RD 330	J 1/4W	
R19 ,20			RD14AB2E822JTS	FL-PROOF RD 8.2K	J 1/4W	
R21 -24			RN14BK2E1000FTS	RN 100.0	F 1/4W	
R25 ,26			RD14AB2E331JTS	FL-PROOF RD 330	J 1/4W	
R27 ,28			RD14AB2E680JTS	FL-PROOF RD 68	J 1/4W	

L:Scandinavia K:USA P:Canada  
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-A1

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕向	Re- marks 備考
Q15, 16			2SA1110(Q,R)	TRANSISTOR		
Q17, 22			2SC2458(Y,GR)	TRANSISTOR		
Q17, 22			2SC3311A(Q,R)	TRANSISTOR		
Q23, 24			2SA1048(Y,GR)	TRANSISTOR		
Q23, 24			2SA1309A(Q,R)	TRANSISTOR		
Q31, 32			2SC1845(F,E)	TRANSISTOR		
Q33, 34			2SA992(F,E)	TRANSISTOR		
Q35, 36			2SC2590(Q,R)	TRANSISTOR		
Q37, 38			2SA1110(Q,R)	TRANSISTOR		
Q41, 42			2SC4137F19(V,W)	TRANSISTOR		
Q43, 50			2SC2458(Y,GR)	TRANSISTOR		
Q43, 50			2SC3311A(Q,R)	TRANSISTOR		
Q51, 58			2SA1048(Y,GR)	TRANSISTOR		
Q51, 58			2SA1309A(Q,R)	TRANSISTOR		
Q59, 66			2SC3944(Q,R)	TRANSISTOR		
Q67, 74			2SA1535(Q,R)	TRANSISTOR		
Q75, 76			2SC3944(Q,R)	TRANSISTOR		
Q77, 78			2SA1535(Q,R)	TRANSISTOR		
Q79, 80			2SA1123(R,S)	TRANSISTOR		
Q81, 82			2SC2631(R,S)	TRANSISTOR		
Q85, 86			2SC2631(R,S)	TRANSISTOR		
Q87, 88			2SA1123(R,S)	TRANSISTOR		
Q91, 98			2SD1717*5	TRANSISTOR		
Q99, 106			2SB1162*5	TRANSISTOR		
Q111			2SA1123(R,S)	TRANSISTOR		
PRE AMPLIFIER UNIT(X08-2560-21:M,2-71:T,E)						
C1, 2			CE04KW0J471M	ELECTRO	470UF 6.3WV	
C3, 6			CF92FV1H561J	MF	560PF J	
C9, 12			CF92FV1H471J	MF	470PF J	
C15, 16			CF92FV1H273J	MF	0.027UF J	
C17, 20			CF92FV1H682J	MF	6800PF J	
C23, 24			CE04KW1H220M	ELECTRO	22UF 50WV	
C25, 26			CE04KW1H100M	ELECTRO	10UF 50WV	
C27, 28			CF92FV1H103J	MF	0.010UF J	
C29, 30			CF92FV1H101K	MF	100PF K	
C31, 32		*	CQ93HP2A473G	MYLAR	0.047UF G	
C33, 34		*	CQ93HP2A124G	MYLAR	0.12UF G	
C35, 36		*	CQ93HP2A473G	MYLAR	0.047UF G	
C37, 38			CE04KW1E470M	ELECTRO	47UF 25WV	
C39, 40			CF92FV1H334J	MF	0.33UF J	
C41, 42			CE04HW1H2R2M	NP-ELEC	2.2UF 50WV	
C45, 46			CE04KW1H330M	ELECTRO	33UF 50WV	
C61, 62			C90-1920-05	ELECTRO	10UF 25WV	
C63, 66			CF92FV1H471J	MF	470PF J	
C71, 72			C91-1474-05	FILM	100PF J	
C73, 74			CF92FV1H122J	MF	1200PF J	
C75, 76			CE04KW1H2R2M	ELECTRO	2.2UF 50WV	
C77, 80			CE04KW1H100M	ELECTRO	10UF 50WV	
C81, 82			CF92FV1H101K	MF	100PF K	
C83, 84			CE04KW1E470M	ELECTRO	47UF 25WV	
C85, 86			CE04KW1E471M	ELECTRO	470UF 25WV	
C87, 88			CF92FV1H152J	MF	1500PF J	
C89, 90			CF92FV1H391K	MF	390PF K	
C91, 92			C90-1922-05	ELECTRO	47UF 25WV	
C93, 94			CF92FV1H101K	MF	100PF K	

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕向	Re- marks 備考
C95, 96			CF92FV1H103J	MF	0.010UF J	
C101, 102			CF92FV1H472J	MF	4700PF J	
C103			CF92FV1H564J	MF	0.56UF J	
C104			CF92FV1H104J	MF	0.10UF J	
C105, 106			CE04KW1E101M	ELECTRO	100UF 25WV	
C107, 108			CE04KW1H100M	ELECTRO	10UF 50WV	
C109			CF92FV1H564J	MF	0.56UF J	
C110			CF92FV1H104J	MF	0.10UF J	
C111			CE04KW1E101M	ELECTRO	100UF 25WV	
C121			CE04KW1H100M	ELECTRO	10UF 50WV	
C124, 125			CE04KW1E101M	ELECTRO	100UF 25WV	
C126			CF92FV1H472J	MF	4700PF J	
C127			CE04KW1H100M	ELECTRO	10UF 50WV	
C130			CF92FV1H472J	MF	4700PF J	
C131			CE04KW1E101M	ELECTRO	100UF 25WV	
C132			CE04KW1C101M	ELECTRO	100UF 16WV	
C133, 134			CF92FV1H104J	MF	0.10UF J	
C135, 136			CF92FV1H564J	MF	0.56UF J	
C141, 142			CF92FV1H101K	MF	100PF K	
C143, 144			CE04KW1H100M	ELECTRO	10UF 50WV	
C145-148			C91-1469-05	FILM	39PF K	
C149, 150			CE04KW1E471M	ELECTRO	470UF 25WV	
C151-164			CF92FV1H101K	MF	100PF K	
C165-168			CF92FV1H182J	MF	1800PF J	
C171-186			CE04KW1C470M	ELECTRO	47UF 16WV	
C187			CF92FV1H472J	MF	4700PF J	
C188			CE04KW1C470M	ELECTRO	47UF 16WV	
C189			CF92FV1H103J	MF	0.010UF J	
C190			CF92FV1H102J	MF	1000PF J	
C201-204			CF92FV1H101K	MF	100PF K	
C205-208			CE04KW1H220M	ELECTRO	22UF 50WV	
C209			CF92FV1H102J	MF	1000PF J	
C221, 222			CF92FV1H333J	MF	0.033UF J	
C223-226			CF92FV1H104J	MF	0.10UF J	
C227, 228			CE04KW1V330M	ELECTRO	33UF 35WV	
C229, 230			C90-1973-05	ELECTRO	2700UF 42WV	
C231, 232			CE04KW1E221M	ELECTRO	220UF 25WV	
C233, 234			CE04KW1V100M	ELECTRO	10UF 35WV	
C235, 236			CE04KW1H100M	ELECTRO	10UF 50WV	
C237, 238			CF92FV1H472J	MF	4700PF J	
C239			CE04KW1E470M	ELECTRO	47UF 25WV	
C240			CE04KW1C101M	ELECTRO	100UF 16WV	
C241, 242			CE04KW1E332M	ELECTRO	3300UF 25WV	
C243, 244			CE04KW1C331M	ELECTRO	330UF 16WV	
C245			CE04KW1C101M	ELECTRO	100UF 16WV	
C246			CE04KW1C101M	ELECTRO	100UF 16WV	
C247, 248			CF92FV1H472J	MF	4700PF J	
C249			CF92FV1H103J	MF	0.010UF J	
C250			CE04KW1E102M	ELECTRO	1000UF 25WV	
C251, 252			CF92FV1H104J	MF	0.10UF J	
C253			CF92FV1H103J	MF	0.010UF J	
C254			CE04KW1V4R7M	ELECTRO	4.7UF 35WV	
C255			CE04KW1V100M	ELECTRO	10UF 35WV	
C256			CE04KW1A101M	ELECTRO	100UF 10WV	
C257, 258			CF92FV1H472J	MF	4700PF J	

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L-A1

## PARTS LIST

- New Parts

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕向	Re- marks 備考
R29 -34			RN14BK2E1000FTS	RN 100.0 F 1/4W		
R35 -38			RN14BK2E1001FTS	RN 1.00K F 1/4W		
R39 ,40			RN14BK2E6801FTS	RN 6.80K F 1/4W		
R41 ,42		*	RN14BK2E6802FTS	RN 68.0K F 1/4W		
R51 -54		*	RN14BK2E4302FTS	RN 43.0K F 1/4W		
R55 -58		*	RN14BK2E5601FTS	RN 5.60K F 1/4W		
R59 -62			RD14AB2E101JTS	FL-PROOF RD 100 J 1/4W		
R63 -66		*	RN14BK2E4700FTS	RN 470.0 F 1/4W		
R71 ,72		*	RN14BK2E2002FTS	RN 20.0K F 1/4W		
R73 ,74		*	RN14BK2E3901FTS	RN 3.90K F 1/4W		
R75 -82			RD14AB2E221JTS	FL-PROOF RD 220 J 1/4W		
R83 -90			RD14AB2E272JTS	FL-PROOF RD 2.7K J 1/4W		
R91 -106			RD14AB2E101JTS	FL-PROOF RD 100 J 1/4W		
R107-114			RD14AB2E470JTS	FL-PROOF RD 47 J 1/4W		
R115,116		*	RN14BK2E8202FTS	RN 82.0K F 1/4W		
R117-120			RD14AB2E152JTS	FL-PROOF RD 1.5K J 1/4W		
R121-124			RD14AB2E821JTS	FL-PROOF RD 820 J 1/4W		
R125-128			RD14AB2E101JTS	FL-PROOF RD 100 J 1/4W		
R129-132			RN14BK2E4700FTS	RN 470.0 F 1/4W		
R141-144			RD14AB2E101JTS	FL-PROOF RD 100 J 1/4W		
R147,148		*	RN14BK2E3902FTS	RN 39.0K F 1/4W		
R149-152			RN14BK2E4702FTS	RN 47.0K F 1/4W		
R153-156			RD14AB2E102JTS	FL-PROOF RD 1.0K J 1/4W		
R161			RN14BK2E2201FTS	RN 2.20K F 1/4W		
R171-186			RD14AB2E4R7JTS	FL-PROOF RD 4.7 J 1/4W		
R187-190			RS140B3D180JTE	FL-PROOF RS 18 J 2W		
R191-206			R92-0205-05	METAL-PLATE 0.1 K 2W		
VR1 ,2			R12-6026-05	TRIMMING POT.(470) IDLE ADJST		
D1 ,2			HZS5.1S(B2)	ZENER DIODE		
D1 ,2			RD5.1JS(B2)	ZENER DIODE		
D3 ,4			E-272	CONSTANT CURRENT DIODE		
D5 ,6			HSS104	DIODE		
D5 ,6			1SS133	DIODE		
D7 -10			MA27T(A)	VARISTOR		
D11 -14			SD103A	DIODE		
D15 -18			HZS5.1S(B2)	ZENER DIODE		
D15 -18			RD5.1JS(B2)	ZENER DIODE		
D19 -22			E-102	CONSTANT CURRENT DIODE		
D25 -28			HSS104	DIODE		
D25 -28			1SS133	DIODE		
D29 ,30			E-501	CONSTANT CURRENT DIODE		
D31 -34			HZS5.1S(B2)	ZENER DIODE		
D31 -34			RD5.1JS(B2)	ZENER DIODE		
D41 -44			HSS104A	DIODE		
D41 -44			1SS131	DIODE		
D45 ,46			HSS104	DIODE		
D45 ,46			1SS133	DIODE		
D51 -58			HSS104	DIODE		
D51 -58			1SS133	DIODE		
D59 -62			E-272	CONSTANT CURRENT DIODE		
Q1 -4			2SA1124(R,S)	TRANSISTOR		
Q5 -8			2SD2134(Q,R)	TRANSISTOR		
Q9 -12			2SC2590(Q,R)	TRANSISTOR		
Q13 ,14			2SB1414(Q,R)	TRANSISTOR		

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J1 ,2 J3 ,5 J6 ,7		*	E29-0391-04 E29-0393-03 E63-0077-05 E63-0081-05 E06-0305-05	LEAD PLATE LEAD PLATE PHONE JACK PHONE LINE 1 PHONE JACK LINE 2,3/TAPE 1,2 CYLINDRICAL RECEPTACLE INPUT		
L1 ,2 L3 ,12 L13 ,14 L15 ,18 T1			L40-1011-47 L92-0017-05 L39-1311-05 L92-0017-05 L01-7653-05	SMALL FIXED INDUCTOR(100UH,K) FERRITE CORE PHASE COMPENSATION COIL FERRITE CORE POWER TRANSFORMER		
M	1D		N89-3008-45	BINDING HEAD TAPTITE SCREW		
R1 ,2 R3 ,4 R5 ,6 R7 ,8 R9 ,10		*	RN14BK2C1001FSTS RN14BK2E1100FSTS RN14BK2E10R0FSTS RN14BK2E4702FSTS RN14BK2E2200FSTS	RN 1.00K F 1/6W RN 110.0 F 1/4W RN 10.0 F 1/4W RN 47.0K F 1/4W RN 220.0 F 1/4W		
R11 ,14 R15 ,16 R17 ,18 R19 ,20 R21 ,22		*	RN14BK2E7500FSTS RN14BK2C1200FSTS RN14BK2C1201FSTS RN14BK2E26R1FSTS R92-1748-05	RN 750.0 F 1/4W RN 120.0 F 1/6W RN 1.20K F 1/6W RN 26.1 F 1/4W RN 2 K 1/4W		
R23 ,24 R25 ,28 R29 ,30 R31 ,32 R33 ,34		*	R92-1750-05 RN14BK2C2200FSTS RN14BK2C1001FSTS RN14BK2C1002FSTS RN14BK2E2700FSTS	RN 6.2 K 1/4W RN 220.0 F 1/6W RN 1.00K F 1/6W RN 10.0K F 1/6W RN 270.0 F 1/4W		
R35 ,42 R43 ,44 R45 ,46 R47 ,48 R49 ,50		*	RN14BK2C1001FSTS RN14BK2C2201FSTS RN14BK2E1601FSTS RN14BK2E1802FSTS RN14BK2C1003FSTS	RN 1.00K F 1/6W RN 2.20K F 1/6W RN 1.60K F 1/4W RN 18.0K F 1/4W RN 100K F 1/6W		
R51 ,52 R53 ,54 R55 ,58 R59 ,62 R63 ,64		*	RN14BK2E1003FSTS RN14BK2C10R0FSTS RN14BK2C22R0FSTS R92-1749-05 RN14BK2E7501FSTS	RN 100K F 1/4W RN 10.0 F 1/6W RN 22.0 F 1/6W RN 4.7 K 1/4W RN 7.50K F 1/4W		
R65 ,66 R67 ,68 R69 ,70 R83 ,84 R85 ,86		*	RN14BK2E2200FSTS RN14BK2C15R0FSTS RN14BK2C27R0FSTS RN14BK2E1001FSTS RN14BK2C1801FSTS	RN 220.0 F 1/4W RN 15.0 F 1/6W RN 27.0 F 1/6W RN 1.00K F 1/4W RN 1.80K F 1/6W		
R87 ,90 R91 ,94 R95 ,96 R97 ,98 R99 ,104		*	RN14BK2E2401FSTS RN14BK2E7501FSTS RN14BK2C2200FSTS RN14BK2E2701FSTS RN14BK2C2200FSTS	RN 2.40K F 1/4W RN 7.50K F 1/4W RN 220.0 F 1/6W RN 2.70K F 1/4W RN 220.0 F 1/6W		
R105 ,106 R107 ,108 R109 ,110 R111 ,112 R113 ,114		*	RN14BK2E1001FSTS RN14BK2C1001FSTS RN14BK2C2200FSTS RN14BK2C1001FSTS RN14BK2C2200FSTS	RN 1.00K F 1/4W RN 1.00K F 1/6W RN 220.0 F 1/6W RN 1.00K F 1/6W RN 220.0 F 1/6W		
R115 ,116 R117 ,120 R121 ,124		*	RN14BK2C10R0FSTS RN14BK2C22R0FSTS R92-1749-05	RN 10.0 F 1/6W RN 22.0 F 1/6W RN 4.7 K 1/4W		

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R125,126 R127,128 R129,130 R131-134 R135,136		*	RN14BK2E43R0FSTS RN14BK2C2203FSTS RN14BK2E3300FSTS RN14BK2E2701FSTS RN14BK2E3301FSTS	RN 43.0 F 1/4W RN 220K F 1/6W RN 330.0 F 1/4W RN 2.70K F 1/4W RN 3.30K F 1/4W		
R137,138 R139,140 R143 R144 R145		*	RN14BK2E4701FSTS RN14BK2C22R0FSTS RN14BK2C1002FSTS RN14BK2C2201FSTS RN14BK2C1001FSTS	RN 4.70K F 1/4W RN 22.0 F 1/6W RN 10.0K F 1/6W RN 2.20K F 1/6W RN 1.00K F 1/6W		
R146 R147 R149 R150,151 R163		*	RN14BK2C5101FSTS RN14BK2C1502FSTS RN14BK2C2201FSTS RN14BK2C8201FSTS RN14BK2C2201FSTS	RN 5.10K F 1/6W RN 15.0K F 1/6W RN 2.20K F 1/6W RN 8.20K F 1/6W RN 2.20K F 1/6W		
R164 R165 R166 R167 R169		*	RN14BK2C1002FSTS RN14BK2C1001FSTS RN14BK2C5101FSTS RN14BK2C1502FSTS RN14BK2C2201FSTS	RN 10.0K F 1/6W RN 1.00K F 1/6W RN 5.10K F 1/6W RN 15.0K F 1/6W RN 2.20K F 1/6W		
R171,172 R174 R175 R176 R177		*	RN14BK2C8201FSTS RN14BK2C1002FSTS RN14BK2C1200FSTS RN14BK2C1002FSTS RN14BK2C1200FSTS	RN 8.20K F 1/6W RN 10.0K F 1/6W RN 120.0 F 1/6W RN 10.0K F 1/6W RN 120.0 F 1/6W		
R181,182 R183-190 R191,192 R193-196 R197-200		*	RN14BK2C1001FSTS RN14BK2C1002FSTS RN14BK2C1003FSTS RN14BK2E1100FSTS RN14BK2E3300FSTS	RN 1.00K F 1/6W RN 10.0K F 1/6W RN 100K F 1/6W RN 110.0 F 1/4W RN 330.0 F 1/4W		
R201-204 R211,212 R213,214 R215,216 R217,218		*	RN14BK2C1003FSTS RN14BK2E10R0FSTS RN14BK2E1802FSTS RN14BK2E6200FSTS RN14BK2E3300FSTS	RN 100K F 1/6W RN 10.0 F 1/4W RN 18.0K F 1/4W RN 620.0 F 1/4W RN 330.0 F 1/4W		
R219,220 R221,222 R223-226 R227 R228,229		*	RS14KB3A100JTE RS14KB3A331JTE RS14KB3D180JTE RN14BK2C5601FSTS RN14BK2C1802FSTS	FL-PROOF RS 10 J 1W FL-PROOF RS 330 J 1W FL-PROOF RS 18 J 2W RN 5.60K F 1/6W RN 18.0K F 1/6W		
R230 R231 R232 R233 R234		*	RN14BK2C1002FSTS RN14BK2C4701FSTS RN14BK2C1002FSTS RN14BK2C1802FSTS RN14BK2C1001FSTS	RN 10.0K F 1/6W RN 4.70K F 1/6W RN 10.0K F 1/6W RN 18.0K F 1/6W RN 1.00K F 1/6W		
R235 R236 R237 R238 R239		*	RN14BK2C6801FSTS RN14BK2C1001FSTS RN14BK2C6801FSTS RN14BK2C5601FSTS RN14BK2C5101FSTS	RN 6.80K F 1/6W RN 1.00K F 1/6W RN 6.80K F 1/6W RN 5.60K F 1/6W RN 5.10K F 1/6W		
R240 R241 R242 R243 R244		*	RN14BK2C5601FSTS RN14BK2E1002FSTS RN14BK2E1201FSTS RN14BK2E4702FSTS RN14BK2E1003FSTS	RN 5.60K F 1/6W RN 10.0K F 1/4W RN 1.20K F 1/4W RN 47.0K F 1/4W RN 100K F 1/4W		

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R245		*	RN14BK2E4702FTS	RN 47.0K F 1/4W		
R246		*	RN14BK2C1200FTS	RN 120.0 F 1/6W		
R247		*	RN14BK2C1002FTS	RN 10.0K F 1/6W		
R248, 249		*	RN14BK2C1802FTS	RN 18.0K F 1/6W		
R250		*	RN14BK2E4701FTS	RN 4.70K F 1/4W		
R251, 252			RN14BK2C10R0FTS	RN 10.0 F 1/6W		
R253, 254			RD14GB2E221JTS	FL-PROOF RD 220 J 1/4W		
VR1			R29-1008-05	POTENTIOMETER(1K) VOLUME		
K1 -20			S76-0027-05	MAGNETIC RELAY		
K21 ,22			S51-2096-05	MAGNETIC RELAY		
S1			S31-2322-05	SLIDE SWITCH VOLTAGE SELECTOR	M	
D1 -4			HSS104	DIODE		
D1 -4			1SS133	DIODE		
D5 ,6			E-452	CONSTANT CURRENT DIODE		
D7 ,8			HZS5.1S(B2)	ZENER DIODE		
D7 ,8			RD5.1JS(B2)	ZENER DIODE		
D11 -14			HZS5.1S(B2)	ZENER DIODE		
D11 -14			RD5.1JS(B2)	ZENER DIODE		
D15 ,16			E-272	CONSTANT CURRENT DIODE		
D17 ,18			E-152	CONSTANT CURRENT DIODE		
D19 -24			HSS104	DIODE		
D19 -24			1SS133	DIODE		
D31 ,32			E-452	CONSTANT CURRENT DIODE		
D35 ,40			HZS5.1S(B2)	ZENER DIODE		
D35 -40			RD5.1JS(B2)	ZENER DIODE		
D41 ,42			E-152	CONSTANT CURRENT DIODE		
D43 ,44			E-272	CONSTANT CURRENT DIODE		
D45 -50			HSS104	DIODE		
D45 -50			1SS133	DIODE		
D51 ,52			E-102	CONSTANT CURRENT DIODE		
D53 ,54			HZS8.2S(B2)	ZENER DIODE		
D53 ,54			RD8.2JS(B2)	ZENER DIODE		
D55			HZS5.1S(B2)	ZENER DIODE		
D55			RD5.1JS(B2)	ZENER DIODE		
D58 ,59			HZS8.2S(B2)	ZENER DIODE		
D58 ,59			RD8.2JS(B2)	ZENER DIODE		
D60			HSS104	DIODE		
D60			1SS133	DIODE		
D61 ,62			HZS8.2S(B2)	ZENER DIODE		
D61 ,62			RD8.2JS(B2)	ZENER DIODE		
D63			E-102	CONSTANT CURRENT DIODE		
D64			HZS5.1S(B2)	ZENER DIODE		
D64			RD5.1JS(B2)	ZENER DIODE		
D65 ,66			HZS8.2S(B2)	ZENER DIODE		
D65 ,66			RD8.2JS(B2)	ZENER DIODE		
D67			E-102	CONSTANT CURRENT DIODE		
D71 -102			HSS104	DIODE		
D71 -102			1SS133	DIODE		
D111, 112			HSS104A	DIODE		
D111, 112			1SS131	DIODE		
D113, 114			E-452	CONSTANT CURRENT DIODE		
D115-118			HZS15S(B)	ZENER DIODE		
D115-118			RD15JS(B)	ZENER DIODE		
D121, 122			HZS7.5S(B)	ZENER DIODE		

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D121, 122			RD7.5JS(B)	ZENER DIODE		
D123, 124			HZS5.1S(B2)	ZENER DIODE		
D123, 124			RD5.1JS(B2)	ZENER DIODE		
D125, 126			E-452	CONSTANT CURRENT DIODE		
D127-130			HZS5.1S(B2)	ZENER DIODE		
D127-130			RD5.1JS(B2)	ZENER DIODE		
D131-136			S5688B	DIODE		
D137			HSS104	DIODE		
D137			1SS133	DIODE		
D138			S5688B	DIODE		
D139			HSS104	DIODE		
D139			1SS133	DIODE		
D140			S5688B	DIODE		
D141			HSS104	DIODE		
D141			1SS133	DIODE		
IC1 -6			NJM2114D	IC(OP AMP X2)		
IC7			NJU7313L	IC(ANALOG SWITCH)		
IC8 ,9			NJM4565D-D	IC(OP AMP X2)		
IC10			TA7805S	IC(VOLTAGE REGULATOR/ +5V)		
IC10			UPC7805AHF	IC(VOLTAGE REGULATOR/ +5V)		
Q1 -8			2SD786(R,S)	TRANSISTOR		
Q9 -12			2SK371(V)	FET		
Q13 -16			2SC1845(F,E)	TRANSISTOR		
Q17 ,18			2SC2590(Q,R)	TRANSISTOR		
Q19 ,20			2SA1110(Q,R)	TRANSISTOR		
Q21 ,22			2SC2590(Q,R)	TRANSISTOR		
Q23 ,24			2SA1110(Q,R)	TRANSISTOR		
Q25 -28			2SA992(F,E)	TRANSISTOR		
Q41 -44			2SC2837(O)	TRANSISTOR		
Q41 -44			2SC2837(Y)	TRANSISTOR		
Q45 -48			2SC1845(F,E)	TRANSISTOR		
Q49 ,50			2SC3944(Q,R)	TRANSISTOR		
Q51 ,52			2SA1535(Q,R)	TRANSISTOR		
Q53 ,54			2SC2590(Q,R)	TRANSISTOR		
Q55 ,56			2SA992(F,E)	TRANSISTOR		
Q57 -60			2SA1110(Q,R)	TRANSISTOR		
Q71			2SB1370(E,F,G)	TRANSISTOR		
Q71			2SB1375	TRANSISTOR		
Q72			2SD2012	TRANSISTOR		
Q72			2SD2374	TRANSISTOR		
Q73			2SB1370(E,F,G)	TRANSISTOR		
Q73			2SB1375	TRANSISTOR		
Q74			2SD2012	TRANSISTOR		
Q74			2SD2374	TRANSISTOR		
Q75			DTA124ES	DIGITAL TRANSISTOR		
Q75			UN4112	DIGITAL TRANSISTOR		
Q81 -96			DTA124ES	DIGITAL TRANSISTOR		
Q81 -96			UN4112	DIGITAL TRANSISTOR		
Q97 ,98			DTC113ZS	DIGITAL TRANSISTOR		
Q97 ,98			UN4219	DIGITAL TRANSISTOR		
Q100			DTC113ZS	DIGITAL TRANSISTOR		
Q100			UN4219	DIGITAL TRANSISTOR		
Q101			2SA954(L,K)	TRANSISTOR		
Q102			2SA1048(Y,GR)	TRANSISTOR		
Q102			2SA1309A(Q,R)	TRANSISTOR		

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕向	Re- marks 備考
Q103 Q103 Q104 Q104 Q105			2SD2012 2SD2374 2SB1370(E,F,G) 2SB1375 2SD2012	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
Q105 Q106 Q106 Q107 Q107			2SD2374 2SB1370(E,F,G) 2SB1375 2SC2458(Y,GR) 2SC3311A(Q,R)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
Q108			2SA1266	TRANSISTOR		
CONTROL UNIT(X11-3360-21:M,0-51:T,2-71:E)						
D92 D181 D182,183 D184-190 D201			B30-1080-05 B30-2437-05 B30-1290-05 B30-2437-05 B30-1290-05	LED(LN41YCPH(V)) LED(VRAY5614S) LED(LN21RCALSLX(U)-(TA4)) LED(VRAY5614S) LED(LN21RCALSLX(U)-(TA4))		
D213			B30-1290-05	LED(LN21RCALSLX(U)-(TA4))		
C1 ,2 C3 ,4 C5 ,6 C7 ,8 C11 ,12			CE04KW1E470M CF92FV1H102J CF92FV1H332J CF92FV1H222J C91-1470-05	ELECTRO 47UF 25WV MF 1000PF J MF 3300PF J MF 2200PF J FILM 47PF K		
C13 ,14 C15 ,16 C17 -20 C21 C22			C91-1467-05 CE04KW1C101M CE04KW0J221M CE04KW0J471M CE04KW0J471M	FILM 27PF K ELECTRO 100UF 16WV ELECTRO 220UF 6.3WV ELECTRO 470UF 6.3WV ELECTRO 470UF 6.3WV		
C23 ,24 C31 ,32 C33 ,34 C35 ,36 C39 ,40			C91-1476-05 CE04KW1H4R7M CF92FV1H101K CE04KW1H4R7M CE04KW1C470M	FILM 150PF J ELECTRO 4.7UF 50WV MF 100PF K ELECTRO 4.7UF 50WV ELECTRO 47UF 16WV		
C41 -44 C51 ,52 C53 ,54 C61 ,62 C65 ,66			CE04KW1V100M CF92FV1H103J CE04KW1V330M CF92FV1H564J CF92FV1H104J	ELECTRO 10UF 35WV MF 0.010UF J ELECTRO 33UF 35WV MF 0.56UF J MF 0.10UF J		
C67 ,68 C69 ,70 C71 C81 C82			CF92FV1H472J CF92FV1H474J CE04KW1E101M C91-1439-05 C91-1444-05	MF 4700PF J MF 0.47UF J ELECTRO 100UF 25WV FILM 0.01UF 250VAC MF 0.047UF 250VAC		
C101 C102 C103 C104 C111-118			CE04KW1V100M CK45FF1H103Z CF92FV1H474J CK45FF1H103Z CK45FF1H103Z	ELECTRO 10UF 35WV CERAMIC 0.010UF Z MF 0.47UF J CERAMIC 0.010UF Z CERAMIC 0.010UF Z		
C131 C132 C133 C134 C135			CE04KW1C220M CE04HW1A220M CK45FF1H103Z CE04KW1C470M CE04KW1H4R7M	ELECTRO 22UF 16WV NP-ELEC 22UF 10WV CERAMIC 0.010UF Z ELECTRO 47UF 16WV ELECTRO 4.7UF 50WV		

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C141 C142 C143, 144 C151-153 C154			CE04KW1E470M CE04KW1V100M CK45FF1H473Z CK45FB1H102K CC45FSL1H101J	ELECTRO 47UF 25WV ELECTRO 10UF 35WV CERAMIC 0.047UF Z CERAMIC 1000PF K CERAMIC 100PF J		
C155, 156 C157 C158-162 C163, 164 C165			CK45FB1H102K CE04KW1E470M CK45FB1H102K CE04KW1V100M C90-1826-05	CERAMIC 1000PF K ELECTRO 47UF 25WV CERAMIC 1000PF K ELECTRO 10UF 35WV BACKUP 0.047F 5.5WV		
C166 C167 C168, 169 C201 C202			CE04DW0J102M CF92FV1H104J CK45FF1H223Z C91-0769-05 C91-0085-05	ELECTRO 1000UF 6.3WV MF 0.10UF J CERAMIC 0.022UF Z CERAMIC 0.01UF K CERAMIC 0.022UF N		
C203 C204 C211 C212 C901			C91-0769-05 C90-3225-05 C90-3225-05 C91-0769-05 C90-3477-25	CERAMIC 0.01UF K ELECTRO 10UF 16WV ELECTRO 10UF 16WV CERAMIC 0.01UF K ALUMINIUM ELECTROLYTIC C.		
C902 C903			C91-1444-05 C91-1481-05	MF 0.047UF 250VAC MC C 0.1UF 250VAC		
△ J2 △ J3 J11			E03-0108-05 E03-0109-05 E11-0208-05	AC OUTLET AC OUTLET PHONE JACK HEAD PHONES	ME T	
△ F1 △ F3 △ F11 -14			F05-4025-05 F05-2525-05 F06-1022-05	FUSE (SEMKO) (250V T4A) FUSE (SEMKO) (250V T2.5A) FUSE (SEMKO) (250V T1A)	E	
CN12-15 CN12,13 CN16,17 CN21-28			J13-0075-05 J13-0075-05 J13-0075-05 J13-0075-05	FUSE CLIP FUSE CLIP FUSE CLIP FUSE CLIP	E MT M	
X1			L78-0267-05	RESONATOR 4.194MHz		
CP1 R1 ,2 R3 ,4 R5 -8 R9 -12			R90-0492-05 RN14BK2E47R0FTS RN14BK2E6801FTS RN14BK2E3001FTS RN14BK2E1101FTS	MULTI-COMP 100KX8 J 1/6W RN 47.0 F 1/4W RN 6.80K F 1/4W RN 3.00K F 1/4W RN 1.10K F 1/4W		
R13 ,14 R15 -20 R21 ,22 R23 ,24 R25 ,26			RN14BK2E2000FTS RN14BK2E1000FTS RN14BK2E1201FTS RN14BK2E1000FTS RN14BK2E1001FTS	RN 200.0 F 1/4W RN 100.0 F 1/4W RN 1.20K F 1/4W RN 100.0 F 1/4W RN 1.00K F 1/4W		
R27 ,28 R29 ,30 R31 ,32 R33 ,34 R35 ,36			RN14BK2E1000FTS RN14BK2E1001FTS RN14BK2E4700FTS RN14BK2E1000FTS RN14BK2E1302FTS	RN 100.0 F 1/4W RN 1.00K F 1/4W RN 470.0 F 1/4W RN 100.0 F 1/4W RN 13.0K F 1/4W		
R37 ,38 R41 ,42 R43 ,44 R45 ,46 R47 ,48			RN14BK2E1502FTS RN14BK2E3300FTS RN14BK2E1003FTS RN14BK2E1001FTS RN14BK2E1003FTS	RN 15.0K F 1/4W RN 330.0 F 1/4W RN 100K F 1/4W RN 1.00K F 1/4W RN 100K F 1/4W		

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R49 ,50 R51 ,52 R53 -56 R57 -60 R61 -64		*	RN14BK2E1001FTS RN14BK2E33R0FTS RN14BK2E56R0FTS RS14DB3A101JTE R92-1749-05	RN 1.00K F 1/4W RN 33.0 F 1/4W RN 56.0 F 1/4W FL-PROOF RS 100 J 1W RN 4.7 K 1/4W		
R71 ,72 R73 ,74 R75 ,76 R83 R84		*	RD14AB2E330JTS RN14BK2C2202FTS RN14BK2C4702FTS RN14BK2E1502FTS RN14BK2E8201FTS	FL-PROOF RD 33 J 1/4W RN 22.0K F 1/6W RN 47.0K F 1/6W RN 15.0K F 1/4W RN 8.20K F 1/4W		
R85 R86 R87 ,88 R89 R90		*	RN14BK2E5101FTS RN14BK2E8201FTS RN14BK2E2201FTS RN14BK2E1001FTS RN14BK2E1002FTS	RN 5.10K F 1/4W RN 8.20K F 1/4W RN 2.20K F 1/4W RN 1.00K F 1/4W RN 10.0K F 1/4W		
R91 ,92 R101, 102 R172 R196 R901			RS14DB3A100JTE R92-1751-05 RS14DB3A332JTE RS14DB3D100JTE RS14DB3D100J	FL-PROOF RS 10 J 1W RN 2.4 K 10W FL-PROOF RS 3.3K J 1W FL-PROOF RS 10 J 2W FL-PROOF RS 10 J 2W		
K1 ,2 K21 K31 S1 S21 -23			S76-0027-05 S76-0002-05 S76-0002-05 S62-0001-05 S70-0018-05	MAGNETIC RELAY MAGNETIC RELAY MAGNETIC RELAY SLIDE SWITCH TACT SWITCH INPUT/REC,MM/MC,MU	M	
S31 S41			S70-0018-05 S70-0018-05	TACT SWITCH SPEAKERS TACT SWITCH POWER		
S24			T99-0536-05	SPEED DETECTOR SOURCE		
D1 ,2 D1 ,2 D3 ,4 D5 -10 D5 -10			HSS104 1SS133 E-102 HZS5.1S(B2) RD5.1JS(B2)	DIODE DIODE CONSTANT CURRENT DIODE ZENER DIODE ZENER DIODE		
D11 ,12 D21 ,22 D23 -26 D23 -26 D31 ,32			E-272 E-272 HSS104 1SS133 HSS104A	CONSTANT CURRENT DIODE CONSTANT CURRENT DIODE DIODE DIODE DIODE		
D31 ,32 D33 ,34 D33 ,34 D41 ,42 D43 -46			1SS131 HSS104 1SS133 E-102 HZS8.2S(B2)	DIODE DIODE DIODE CONSTANT CURRENT DIODE ZENER DIODE		
D43 -46 D47 D47 D61 D61			RD8.2JS(B2) HZS5.1S(B2) RD5.1JS(B2) HSS104A 1SS131	ZENER DIODE ZENER DIODE ZENER DIODE DIODE DIODE		
D81 D81 D101, 102 D101, 102 D111-118			HSS104A 1SS131 HSS104 1SS133 S56888	DIODE DIODE DIODE DIODE DIODE		

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕向	Re- marks 備考
D121, 122 D121, 122 D131 D131 D132, 133			HSS104 1SS133 HSS104A 1SS131 HSS104	DIODE DIODE DIODE DIODE DIODE		
D132, 133 D141 D141 D151, 152 D151, 152			1SS133 HZS5.1S(B2) RD5.1JS(B2) HSS104 1SS133	DIODE ZENER DIODE ZENER DIODE DIODE DIODE		
D153 D153 D211, 212 D211, 212 D901, 902			HZS5.6N(B2) RD5.6ES(B2) HSS104 1SS133 S15VB20	ZENER DIODE ZENER DIODE DIODE DIODE DIODE		
IC1 IC2 IC11 IC12 IC13			NJM4580D-D NJM2114D PST529D BA6209N UPC1237HA	IC(OP AMP X2) IC(OP AMP X2) IC(SYSTEM RESET) IC(MOTOR DRIVER) IC(POWER AMP)		
IC14 IC21 PH1 -3 Q1 -4 Q1 -4			UPD75004CU-161 NJU3713D ON3134 2SC2837(B) 2SC2837(Y)	IC(MICROPROCESSOR) IC(SERIAL-PARALLEL CONVERTER) IC(OPTICAL ISOLATOR) TRANSISTOR TRANSISTOR		
Q5 -8 Q9 ,10 Q11 ,12 Q13 -16 Q21 ,22			2SC1845(F,E) 2SC2590(Q,R) 2SA1110(Q,R) 2SA992(F,E) 2SC3940A(R,S)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
Q23 ,24 Q31 ,32 Q31 ,32 Q41 Q41			2SA1534A(R,S) 2SA1048(Y,GR) 2SA1309A(Q,R) 2SB1370(E,F,G) 2SB1375	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
Q42 Q42 Q91 Q91 Q101			2SD2012 2SD2374 DTC124ES UN4212 2SC2458(Y,GR)	TRANSISTOR TRANSISTOR DIGITAL TRANSISTOR DIGITAL TRANSISTOR TRANSISTOR		
Q101 Q102 Q111 Q121-127 Q121-127			2SC3311A(Q,R) 2SA992(F,E) 2SC1845(F,E) 2SC2458(Y,GR) 2SC3311A(Q,R)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
Q128, 129 Q128, 129 Q130 Q130 Q141			DTA124ES UN4112 2SC2458(Y,GR) 2SC3311A(Q,R) DTC113ZS	DIGITAL TRANSISTOR DIGITAL TRANSISTOR TRANSISTOR TRANSISTOR DIGITAL TRANSISTOR		
Q141 A1			UN4219 W02-0975-05	DIGITAL TRANSISTOR ELECTRIC CIRCUIT MODULE		

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# L-A1

## SPECIFICATIONS

(For U. K. and Europe)

### Continuous rated power output

100 watts per channel minimum RMS, both channels driven, at 8  $\Omega$  from 20Hz to 20k Hz with no more than 0.005 % total harmonic distortion.

(DIN) 1kHz, at 8  $\Omega$  ..... 120W+120W  
at 4  $\Omega$  ..... 200W+200W

(IEC/NF) From 63 Hz to 12,500 Hz,  
0.7% T.H.D. at 8 $\Omega$  ..... 120W+200W  
at 4  $\Omega$  ..... 200W+200W

Dynamic power ..... 140 W (8 $\Omega$ ), 180 W (6 $\Omega$ )  
260 W (4 $\Omega$ ), 420 W (2 $\Omega$ )

Damping factor ..... 1,000 (50 Hz)

Total harmonic distortion .....  
0.005% (20 Hz-20kHz, 100W, 8  $\Omega$ )  
0.001% (1kHz, 100 W, 8  $\Omega$ )

Intermodulation distortion ..... 0.005% (100W, 8 $\Omega$ )  
(70Hz : 7kHz=4 : 1)

### Frequency response

LINE (1, 2, 3) ..... 3Hz-100kHz, +0dB-3dB

PHONO 'RIAA' response ..... 20Hz-20kHz, +0.5 dB -0.5dB

### Maximum input level

PHONO (MC) ..... 12mV, 0.03% T.H.D. at 1kHz

PHONO (MM) ..... 150mV, 0.03% T.H.D. at 1kHz

### Signal to noise ratio

PHONO (MM) ..... 92dB (IHF'66)/87dB (IHF'78)

PHONO (MC) ..... 78dB (IHF'66)/84dB (IHF'78)

LINE ..... 110dB (IHF'66)/100dB (IHF'78)

BALANCE ..... 95dB (IHF'66)/100dB (IHF'78)

PHONO (MM) ..... 73dB (DIN, 50 mW output)

LINE 1 ..... 75dB (DIN, 50 mW output)

BALANCE ..... 75dB (DIN, 50 mW output)

### Input sensitivity/impedance

PHONO (MM) ..... 2.5mV/47k $\Omega$

PHONO (MC) ..... 0.2mV/100 $\Omega$

LINE ..... 200mV/33k $\Omega$

### GENERAL

Power consumption ..... 400W (IEC)

Dimensions ..... W : 476 mm

H : 163 mm

D : 469 mm

Weight (Net) ..... 27.6kg

Kenwood follows a policy of continuous advancements in development

For this reason specifications may be changed without notice

Kenwood poursuit une politique de progrès constants en ce qui concerne le développement

Pour cette raison, les spécifications sont sujettes à modifications sans préavis

Kenwood strebt ständige Verbesserungen in der Entwicklung an

Daher bleiben Änderungen der technischen Daten jederzeit vorbehalten

### Note:

Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on the Europe (E) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

(For other countries)

### Continuous rated power output

100 watts per channel minimum RMS, both channels driven, at 8  $\Omega$  from 20 Hz to 20kHz with no more than 0.005 % total harmonic distortion.

(IEC/NF) From 63 Hz to 12,500 Hz,  
0.7% T.H.D. at 8 $\Omega$  ..... 120W+200W  
at 4  $\Omega$  ..... 200W+200W

Dynamic power ..... 140 W (8 $\Omega$ ), 180 W (6 $\Omega$ )  
260 W (4 $\Omega$ ), 420 W (2 $\Omega$ )

Damping factor ..... 1,000 (50 Hz)

Total harmonic distortion .....  
0.005% (20 Hz-20kHz, 100W, 8  $\Omega$ )  
0.001% (1kHz, 100 W, 8  $\Omega$ )

Intermodulation distortion ..... 0.005% (100W, 8 $\Omega$ )  
(70Hz : 7kHz=4 : 1)

### Frequency response

LINE (1, 2, 3) ..... 3Hz-100kHz, +0dB-3dB

PHONO 'RIAA' response ..... 20Hz-20kHz, +0.5 dB -0.5dB

### Maximum input level

PHONO (MM) ..... 150mV, 0.03% T.H.D. at 1kHz

PHONO (MC) ..... 12mV, 0.03% T.H.D. at 1kHz

### Signal to noise ratio

HONO (MM) ..... 92dB (IHF, '66)/87dB (IHF'78)

PHONO (MC) ..... 78dB (IHF, '66)/84dB (IHF'78)

LINE 1 ..... 110dB (IHF'66)/100dB (IHF'78)

BALANCE ..... 95 dB (IHF'66)/100dB (IHF'78)

### Input sensitivity/impedance

PHONO (MM) ..... 2.5mV/47k $\Omega$

PHONO (MC) ..... 0.2mV/100 $\Omega$

LINE ..... 200mV/33k $\Omega$

### Output/impedance

TAPE REC ..... 200mV/430 $\Omega$

## KENWOOD CORPORATION

Alive Mitake, 2-5, 1-chome Shibuya, Shibuya-ku, Tokyo 150, Japan

KENWOOD SERVICE CORPORATION

PO BOX 22745, 2201 East Dominguez St., Long Beach, CA 90801-5745, U.S.A.

KENWOOD ELECTRONICS CANADA INC.

6070 Kestrel Road, Mississauga, Ontario, Canada L5T 1S8

KENWOOD ELECTRONICS LATIN AMERICA S.A.

P.O. BOX 55-2791, Piso 6 Plaza Chase, Cl. 47 y Aquilino de la Guardia, Panama,

Republic de Panama

TRIO-KENWOOD U.K. LIMITED

Kenwood House, Dwight Road, Watford, Herts, WD1 8EB, United Kingdom

KENWOOD ELECTRONICS BENELUX N.V.

Michaelssteenvoeg 41B B-1930 Zaventem, Belgium

KENWOOD ELECTRONICS DEUTSCHLAND GMBH

Rembrucker Str. 15, 63150 Heusenstamm, Germany

TRIO-KENWOOD FRANCE S.A.

13 Boulevard Ney, 75018 Paris, France

KENWOOD ELECTRONICS ITALIA S.p.A.

Via G. Sirtori, 7/9 20129 Milano, Italy

KENWOOD ESPANA S.A.

Bolivia, 239 08020 Barcelona, Spain

KENWOOD ELECTRONICS AUSTRALIA PTY. LTD. (A.C.N. 001 499 074)

PO BOX 504, 8 Figtree Drive, Australia Centre, Homebush, N.S.W. 2140, Australia

KENWOOD & LEE ELECTRONICS, LTD.

Unit 37/12-3724, Level 37 Tower 1, Metroplaza, 223 Hing Fong Road,

Kwai Fong N.T., Hong Kong

KENWOOD ELECTRONICS SINGAPORE PTE LTD

No. 1 Genting Lane #07 00, Singapore, 1334