

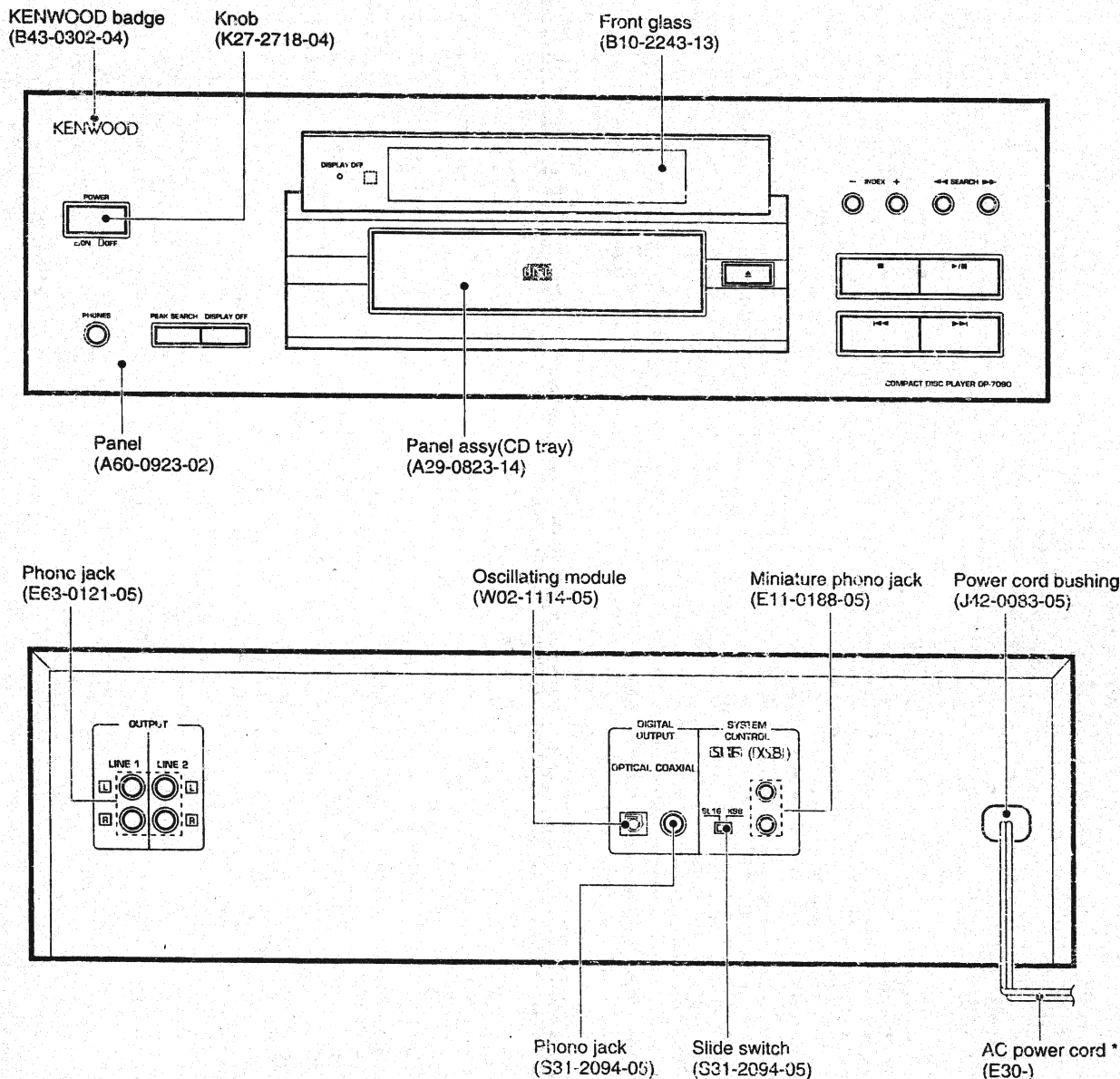
COMPACT DISC PLAYER

DP-7090

SERVICE MANUAL

KENWOOD

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* Refer to parts list on page 23.



In compliance with Federal Regulations, following are reproductions of labels on, or inside the product relating to laser product safety.

KENWOOD-Corp. certifies this equipment conforms to DHHS Regulations No. 21 CFR1040. 10, Chapter 1, Subchapter J.

DANGER : Laser radiation when open and interlock defeated. AVOID DIRECT EXPOSURE TO BEAM.

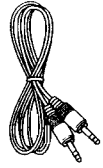
DP-7090

CONTENTS / ACCESSORIES / CAUTIONS

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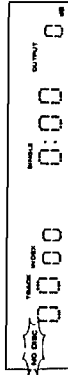
Accessories

Audio cord.....(1) (E30-0505-05)		System control cord.....(1) (E30-2733-05)		AC plug adaptor.....(1) (E03-0115-05) : M type only	
Remote control unit.....(1) (A70-1071-05 : RC-PQ707)		Batteries (R6/AA).....(2)		Accessories only for regions where use is necessary.	
Battery cover (A09-0170-08)					

Cautions

Note related to transportation and movement

- Before transporting or moving this unit, carry out the following operations:
1. Turn the power ON but do not load a disc.
 2. Wait a few seconds and verify that the display shown appears.
 3. Turn the power OFF.



Beware of condensation

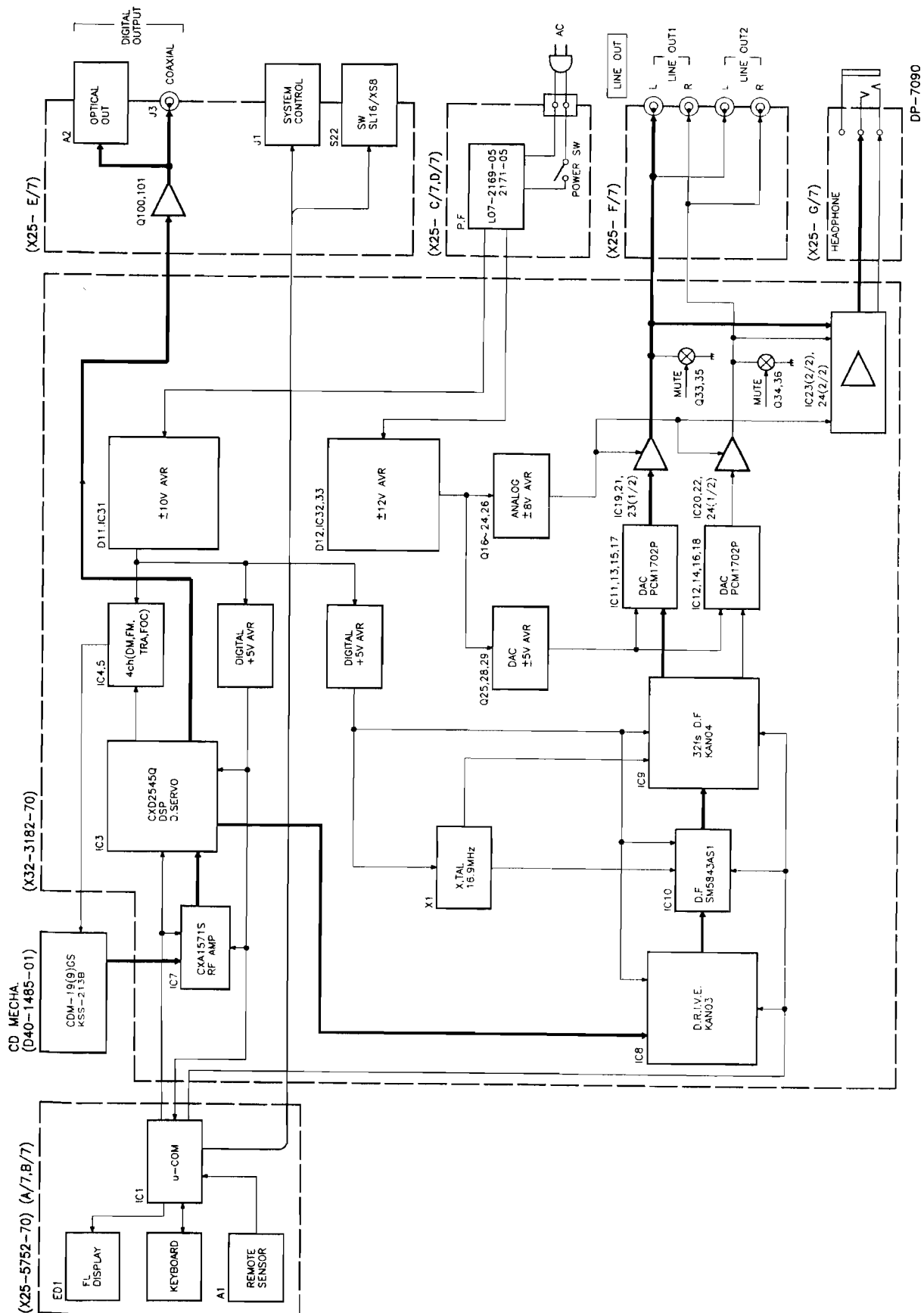
When water vapor comes into contact with the surface of cold electronic components, condensation occurs. If the unit is operated in such a state, correct operation may not be possible, and the unit should be dried. (To do this, turn the POWER switch ON and leave the unit for several hours.)

Be especially careful in the following conditions:

- When the unit is brought from a cold place to a warm place, condensation may occur.
- When a large temperature difference.
- When a heat source is nearby.
- Place of high temperature with high humidity.
- When there is a large difference between the internal temperature of the unit and the ambient temperature, or in conditions where condensation occurs easily.

DP-7090

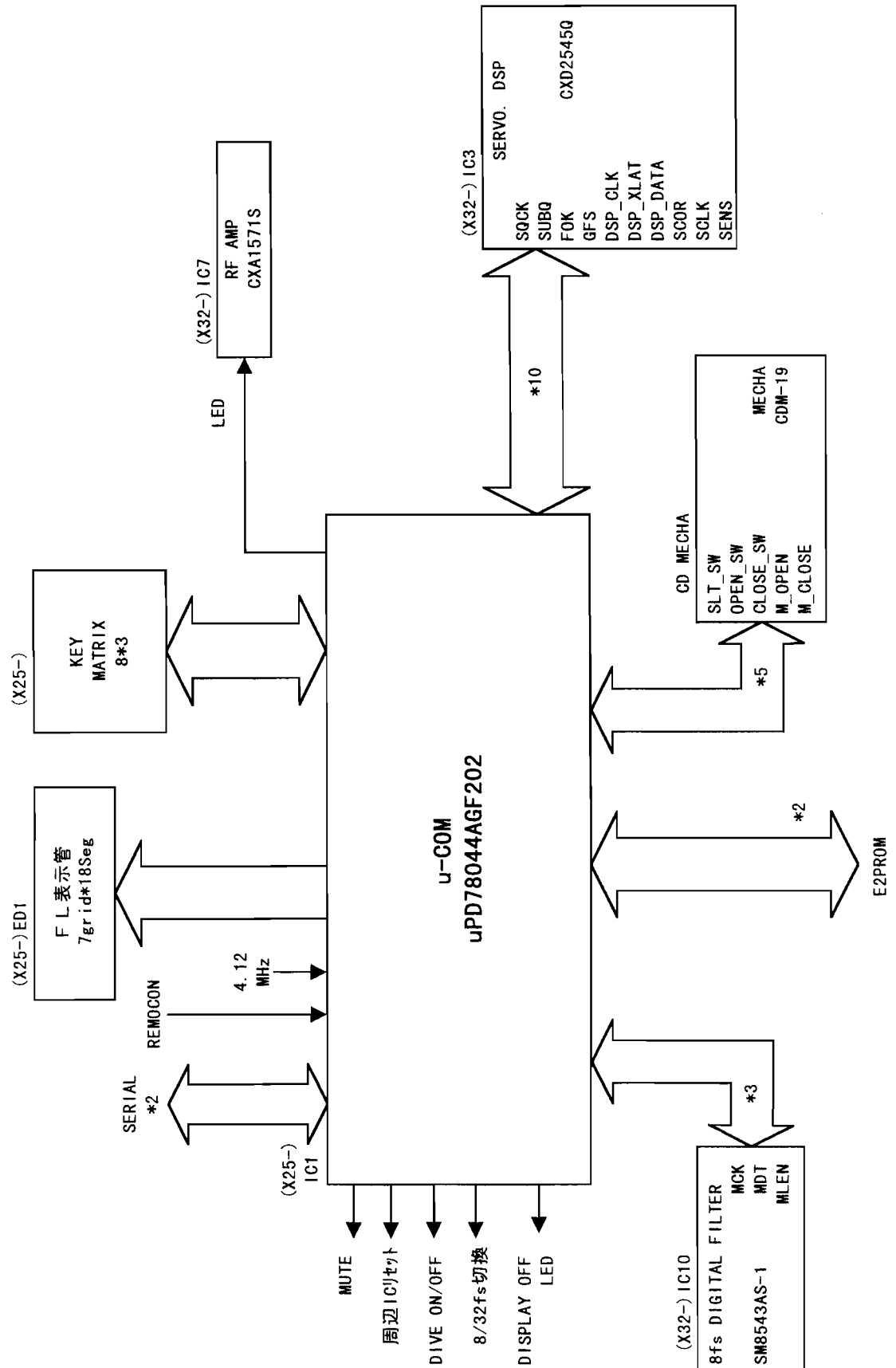
BLOCK DIAGRAM



DP-7090

CIRCUIT DESCRIPTION

1. Microprocessor uPD78044AGF202(X25- IC1)



CIRCUIT DESCRIPTION

2. Pin description

No.	Name	I/O	Description
1	GRID_1	O	FL grid signal output. Grid 1
2	GRID_3	O	FL grid signal output. Grid 3
3	GRID_4	O	FL grid signal output. Grid 4
4	GRID_7	O	FL grid signal output. Grid 7
5	GRID_6	O	FL grid signal output. Grid 6
6	GRID_5	O	FL grid signal output. Grid 5
7	GRID_2	O	FL grid signal output. Grid 2
8	Vdd		Power supply.
9	SOCK	O	Q data reading clock output to CXD2545Q.
10		O	No used.
11	SUBQ	I	Q data / RF filter value of CXD 2545Q is read.
12	DIG_SEL1	O	Digital input selector control of TC9245.
13	DIG_SEL2	O	Digital input selector control of TC9245.
14	EMPHASYS	I	Emphasys on / off detection of TC9245 .
15	FS_DET2	I	Sampling frequency detection of TC9245.
16	FS_DET1	I	Sampling frequency detection of TC9245.
17	RESET		Reset for u - COM
18	OPEN_SW	I	Tray open switch signal input.
19	CLOSE_SW	I	Tray close switch signal input.
20	AVss		No used (GND)
21	M_OPEN	O	Tray open motor drive signal output.
22	M_CLOSE	O	Tray close motor drive signal output.
23	SLT_SW	I	Start limit switch signal input from pick up
24	LDC	O	Laser output
25	CD_DI	O	CD / outside digital input switched.
26	MCK	O	Drive clock output.
27	MDT	O	Drive data output.
28	MLEN	O	Drive latch
29	Add		No uses (Vdd)
30	AVref		No used (GND)
31	ERROR	I	Error signal input from TC9245.
32			No used (OPEN)
33	Vss		GND
34	X1		4.19MHz system clock input.
35	X2		4.19MHz system clock input.
36	SDATA	I/O	Serial data signal input / output.
37	SBUSY	I/O	Serial busy signal input / output.
38	MUTE	O	Digital / Analog mute control output.
39	PROM_SDA	O	E2PROM data control.
40	PROM_SCL	O	E2PROM clock control.
14	EMPHASYS	I	Emphasys on / off detection of TC9245 .
15	FS_DET2	I	Sampling frequency detection of TC9245.
16	FS_DET1	I	Sampling frequency detection of TC9245.
17	RESET		Reset for u - COM
18	OPEN_SW	I	Tray open switch signal input.
19	CLOSE_SW	I	Tray close switch signal input.
20	AVss		No used (GND)
21	M_OPEN	O	Tray open motor drive signal output.
22	M_CLOSE	O	Tray close motor drive signal output.
23	SLT_SW	I	Start limit switch signal input from pick up
24	LDC	O	Laser output
25	CD_DI	O	CD / outside digital input switched.
26	MCK	O	Drive clock output.
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28	MLEN	O	Drive latch
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37	SBUSY	I/O	Serial busy signal input / output.
38	MUTE	O	Digital / Analog mute control output.
39	PROM_SDA	O	E2PROM data control.
40	PROM_SCL	O	E2PROM clock control.

CIRCUIT DESCRIPTION

No.	Name	I/O	Description
41	DSP_CLK	O	Clock output to CXD2545
42	DSP_XLAT	O	Data latch output to CXD2545
43	DSP_DATA	O	Data output to CXD2545
44	SOOR	I	Sub-code synchro detection signal input from CXD2545
45	SCLK	O	Clock output for SENS signal to CXD2545
46	XRST	O	Reset output to periphery IC.
47	REM_IN	I	Remote control signal input
48	IC		Connects to Vss
49	SER8_16	I	Serial 8 / 16 bit switching detection.
50	SENS	I	SENS signal input from CXD2545
51	T_8_32	O	Field test 1. 8 / 32fs switching
52	Vdd		Power supply
53	T_DR_OFF	O	Field test2. Drive circuit on / off switching
54	KR2	I	Key return 2
55	KR1	O	Key return 1
56	KR0	I	Key return 0
57	LOCK	I	LOCK signal input from CXD2545
58	FOK	I	FOK signal input from CXD 2545
59	S_D	O	FL segment d
60	S_Q	O	FL segment q
61	S_R/KS7	O	FL segment r and key scan 7 combined uses.
62	S_N/KS6	O	FL segment n and key scan 6 combined uses.
63	S_P/KS5	O	FL segment p and key scan 5 combined uses.
64	S_O/KS4	O	FL segment o and key scan 4 combined uses.
65	S_E/KS3	O	FL segment e and key scan 3 combined uses.
66	S_C/KS2	O	FL segment c and key scan 2 combined uses.
67	S_G/KS1	O	FL segment g and key scan 1 combined uses.
68	S_F/KS0	O	FL segment f and key scan0 combined uses.
69	S_B	O	FL segment b
70	S_A	O	FL segment a
71	Vload		Negative voltage supply for FL.
72	S_M	O	FL segment : m
73	S_H	O	FL segment : h
74	S_L	O	FL segment : l
75	S_K	O	FL segment : k
76	S_J	O	FL segment : j
77	S_I	O	FL segment : i
78	DIG_LED1		Digital in 1 / Display off LED display.
79	DIG_LED2		Digital in 2 LED display
80	DIG_LED3		Digital in 3 LED display

CIRCUIT DESCRIPTION

3. KEY MATRIX

5 6 K R 0		5 5 K R 1	5 4 K R 2
6 8 K . S C A N 0	D I G . I N S E L	P E A K S E A R C H	D I S P L A Y R E P E A T (7 0 9 0) (7 0 0 2 / 5 0 0 2)
6 7 K . S C A N 1	S T O P	P L A Y / P A U S E	I N D E X +
6 6 K . S C A N 2	S K I P D O W N	S K I P U P	I N D E X -
6 5 K . S C A N 3	F B	F F	O P E N / C L O S E
6 4 K . S C A N 4	D I O D E 1	D I O D E 2	
6 3 K . S C A N 5			
6 2 K . S C A N 6			

4. DIODE MATRIX (Model distinction)

5 6 K R 0 (D I O D E 1) (D 3 3)		5 5 K R 1 (D I O D E 2) (D 6)
6 4 S O	D P - 7 0 9 0	0
	D P F - 7 0 0 2	0
	D P F - 5 0 0 2	1
0 : n o n d i o d e / 1 : d i o d e		0

5. Test mode

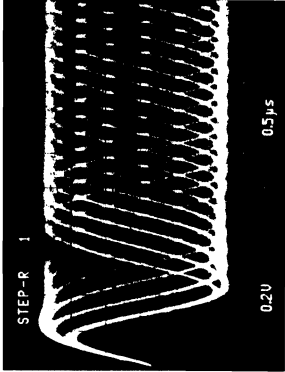
MODE : Adjustment/Inspection (Self adjustment confirmation)			
INPUT key	DIS-PLAY	Action	Note
1 The power supply is turned on while pressing PEAK SEARCH key.	0 1	Test mode	TIME display turn-off
2 PLAY/PAUSE key	0 5 ↓ 0 3	0 5 → 0 3 cyclic action with 05 mode	03 mode: Focus servo only on condition. 05 mode: Play condition without reading TOC.
3 UP key	—	All illumination All turn-offs (FL, LED)	When other key are pressed this mode is canceled.
4 DOWN key		Canceling a test mode it become usual play condition.	Only STOP condition is effective TIME display turn-off.
5 FF key	0 1	Feed	Only STOP condition is effective TIME display turn-off.
6 FB key	0 1	Feed	Only STOP condition is effective TIME display turn-off.
7 STOP key	0 7 ↓ 0 8 ↓ 0 9 ↓ 1 0	Doing STOP it becomes 07 mode conditions. (self adjustment completion condition) A display content changes a limit cyclically when STOP key is pressed consecutively. 07 → [07 FF : FB] 08 → [08 FG : TG] 09 → [09 FE : RF] 10 → [10 TE : VC] (07 → 08 → 09 → 10 → 07 cyclic)	* PGM.PGM CHECK * self adjustment is lighted at the time of NG determination and even NG item flickers. * EF.FB.FE excludes from OK/NG determination with hexadecimal number. (EF : EF balance FB : focus bias) 07 mode → — : — 08 mode → 0D ~7E : 09 ~7E 09 mode → — : 08 ~0D 10 mode → 3F ~00 : 19 ~E6
8 O / C		Open/close of a tray	A test mode does not cancel. A clear is done only as a result of self adjustment.

ADJUSTMENT

No.	ITEM	INPUT SETTING	OUTPUT SETTING	PLAYER SETTING	ALIGNMENT POINT	ALIGN FOR	FIG.
1	FOCUS ERROR BALANCE	Test disc Type 4	Connect an oscilloscope as follows. CH1 : RF(CN3 pin1)	Set the unit to test mode. Press the PLAY key, then display is "05".	FE BALANCE VR 1	Optimum eye pattern.	(a)

Note :
Type 4 disc : SONY YEDS-18 TEST Disc or equivalent.
Step 1 is In Test Mode. (Tesc Mode : Turn power on with pressing PEAK SEARCH key.)

FIG. (a)

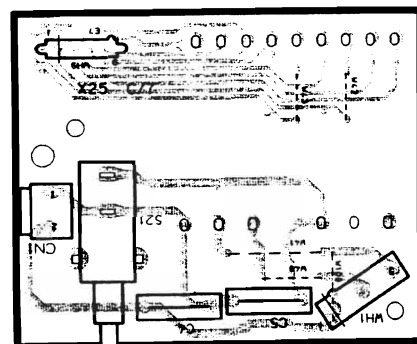


- RF signal in test mode (PLAY).
- Perform the tangential and focusing offset are focused into one point on the display. The crossing points above and below the center shall also be locked clearly. (FE BALANCE)

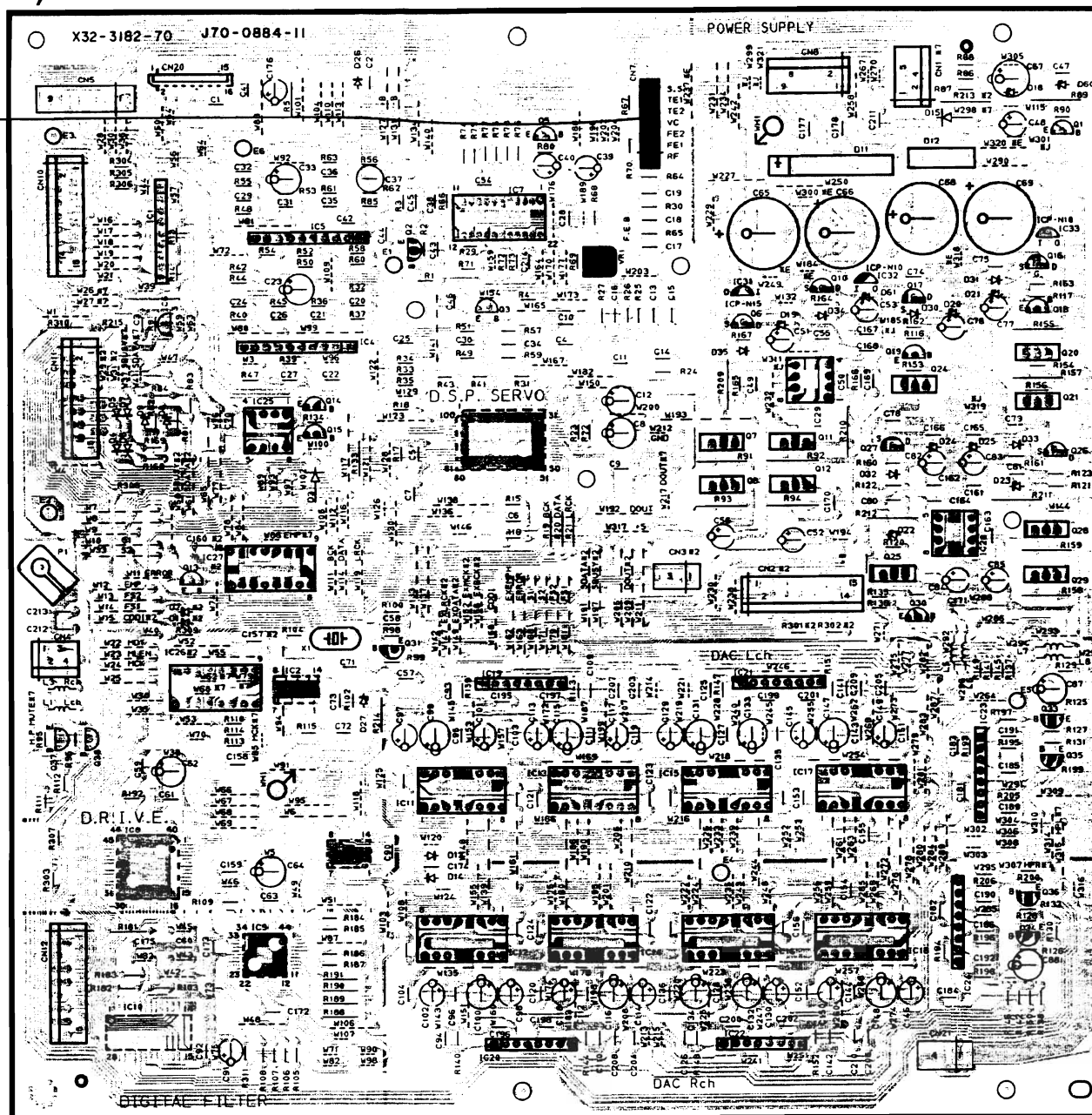
PC BOARD(COMPONENT SIDE VIEW)

CD PLAYER UNIT (X32-3182-70)

(a) Focus error balance :
Optimum eye pattern

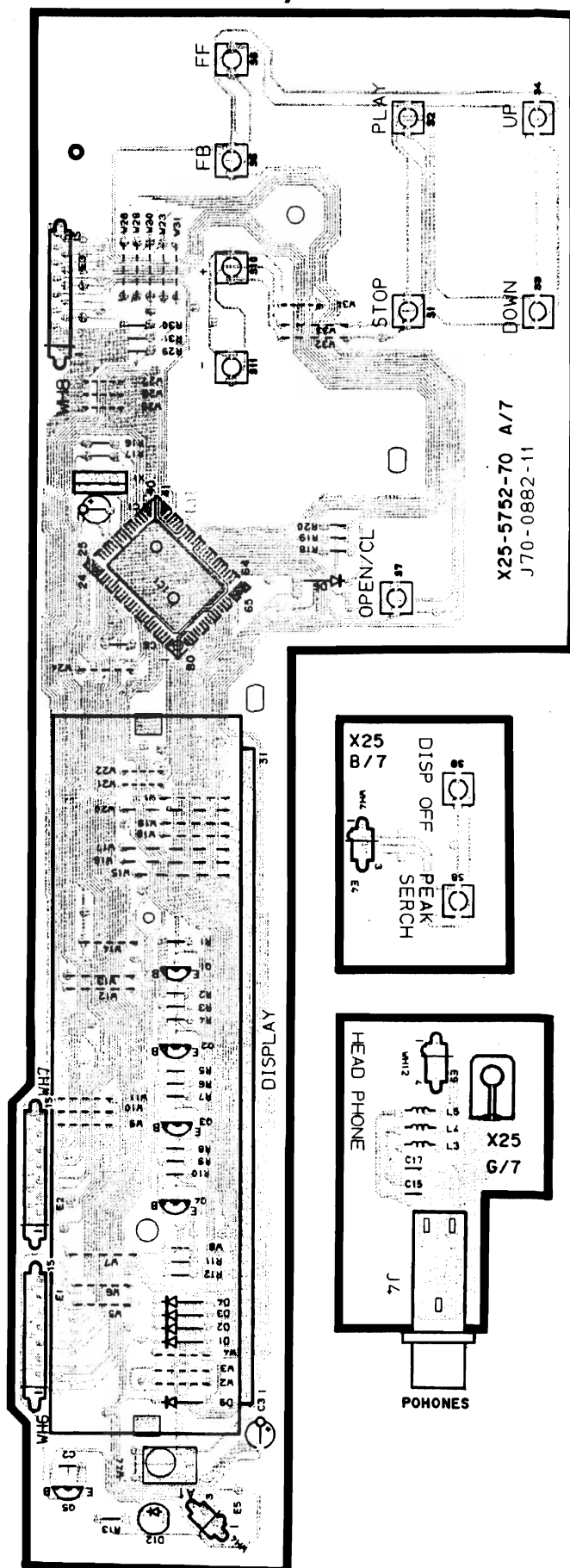
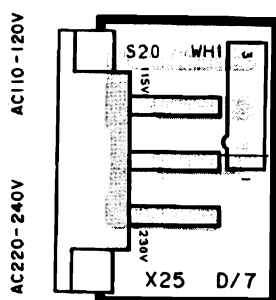
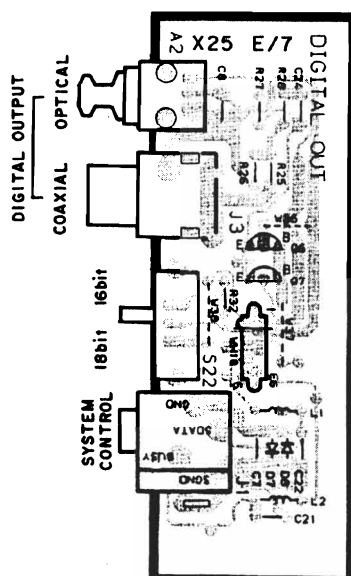
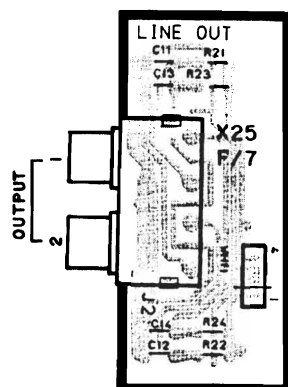


POWER



PC BOARD (COMPONENT SIDE VIEW)

DISPLAY UNIT (X25-5752-70)



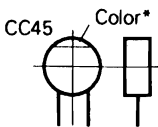
Refer to the schematic diagram for the value of resistors and capacitors.

DP-7090

PARTS DESCRIPTIONS

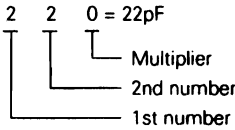
CAPACITORS

CC	45	TH	1H	220	J
1	2	3	4	5	6
1 = Type ... ceramic, electrolytic, etc.			4 = Voltage rating		
2 = Shape ... round, square, ect.			5 = Value		
3 = Temp. coefficient			6 = Tolerance		



• Capacitor value

010	= 1pF
100	= 10pF
101	= 100pF
102	= 1000pF = 0.001μF
103	= 0.01μF



• Temperature coefficient

1st Word	C	L	P	R	S	T	U
Color*	Black	Red	Orange	Yellow	Green	Blue	Violet
ppm/°C	0	-80	-150	-220	-330	-470	-750

2nd Word	G	H	J	K	L
ppm/°C	±30	±60	±120	±250	±500

Example : CC45TH = -470 ± 60ppm/°C

• Tolerance (More than 10pF)

Code	C	D	G	J	K	M	X	Z	P	No code
(%)	±0.25	±0.5	±2	±5	±10	±20	+40 -20	+80 -20	+100 -0	More than 10μF - 10 ~ +50 Less than 4.7μF -10 ~ +75

(Less than 10pF)

Code	B	C	D	F	G
(pF)	±0.1	±0.25	±0.5	±1	±2

• Voltage rating

2nd word \ 1st word	A	B	C	D	E	F	G	H	J	K	V
0	1.0	1.25	1.6	2.0	2.5	3.15	4.0	5.0	6.3	8.0	-
1	10	12.5	16	20	25	31.5	40	50	63	80	35
2	100	125	160	200	250	315	400	500	630	800	-
3	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	-

• Chip capacitors

(EX) C C 7 3 F S L 1 H 0 0 0 J

1 2 3 4 5 6 7

(Chip) (CH, RH, UJ, SL)

(EX) C K 7 3 F F 1 H 0 0 0 Z

1 2 3 4 5 6 7

(Chip) (B, F)

Refer to the table above.

1 = Type
2 = Shape
3 = Dimension
4 = Temp. coefficient
5 = Voltage rating
6 = Value
7 = Tolerance

Dimension (Chip capacitors)

Dimension code	L	W	T
Empty	5.6 ± 0.5	5.0 ± 0.5	Less than 2.0
A	4.5 ± 0.5	3.2 ± 0.4	Less than 2.0
B	4.5 ± 0.5	2.0 ± 0.3	Less than 2.0
C	4.5 ± 0.5	1.25 ± 0.2	Less than 1.25
D	3.2 ± 0.4	2.5 ± 0.3	Less than 1.5
E	3.2 ± 0.2	1.6 ± 0.2	Less than 1.25
F	2.0 ± 0.3	1.25 ± 0.2	Less than 1.25
G	1.6 ± 0.2	0.8 ± 0.2	Less than 1.0

RESISTORS

• Chip resistor (Carbon)

(EX) R K 7 3 E B 2 B 0 0 0 J

1 2 3 4 5 6 7

(Chip) (B, F)

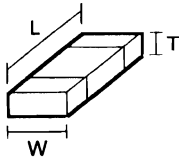
• Carbon resistor (Normal type)

(EX) R D 1 4 B B 2 C 0 0 0 J

1 2 3 4 5 6 7

- 1 = Type
2 = Shape
3 = Dimension
4 = Temp. coefficient
- 5 = Rating wattage
6 = Value
7 = Tolerance

Dimension



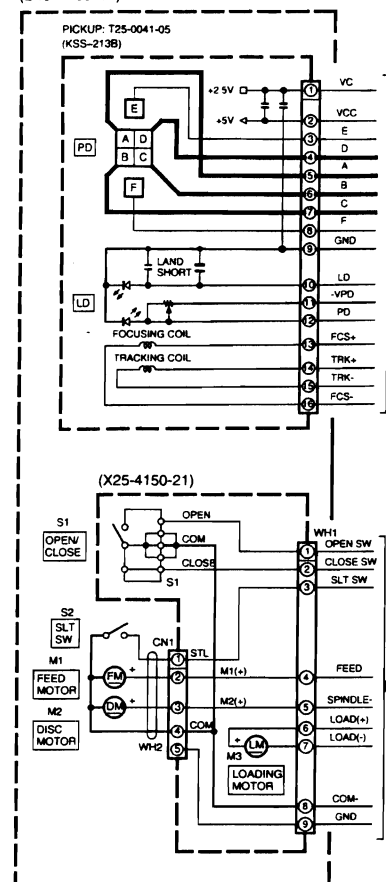
Dimension (Chip resistor)

Dimension code	L	W	T
E	3.2 ± 0.2	1.6 ± 0.2	1.0
F	2.0 ± 0.3	1.25 ± 0.2	1.0
G	1.6 ± 0.2	0.8 ± 0.2	0.5 ± 0.1

Rating wattage

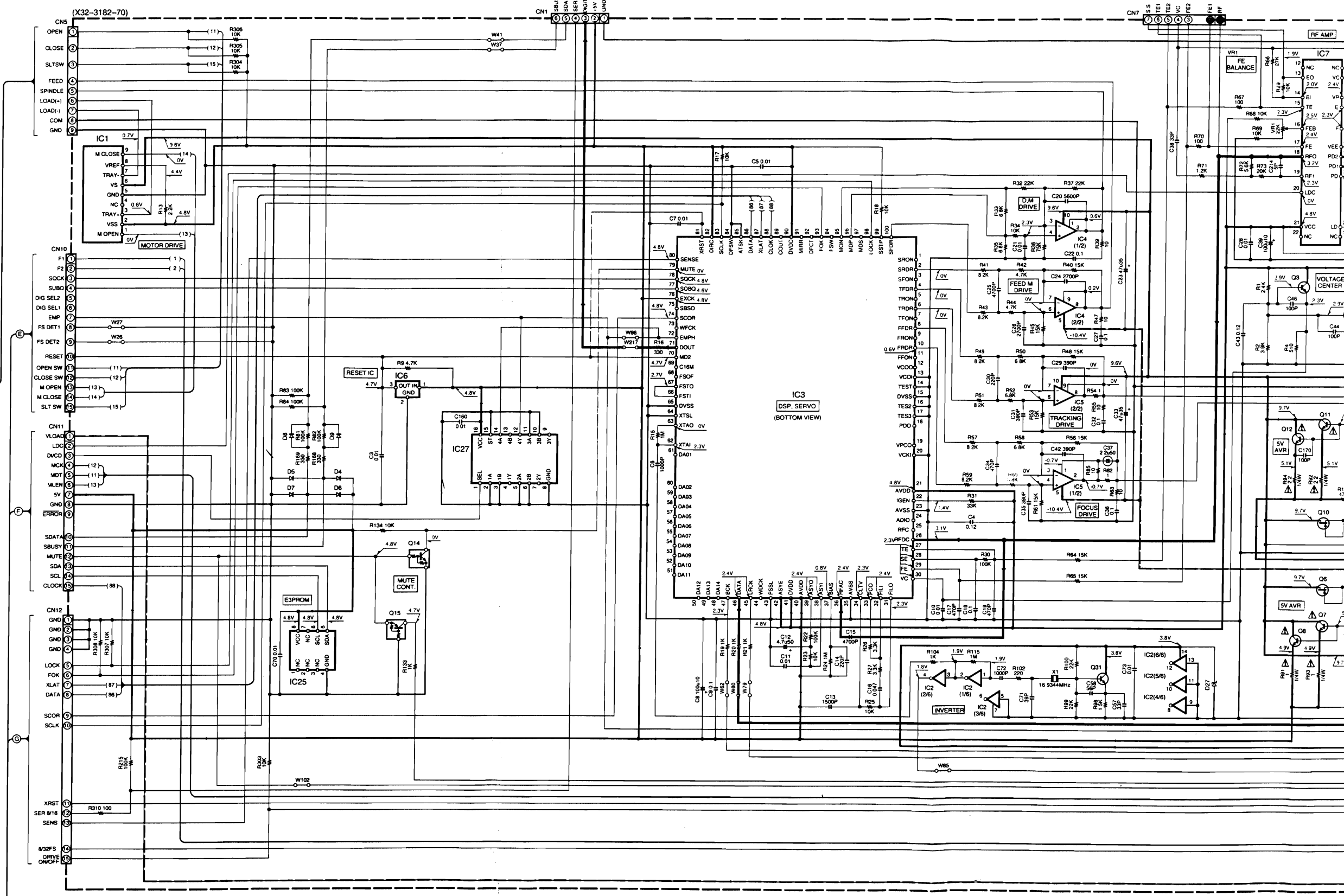
Code	Wattage	Code	Wattage	Code	Wattage
1J	1/16W	2C	1/6W	3A	1W
2A	1/10W	2E	1/4W	3D	2W
2B	1/8W	2H	1/2W		

MECHA. ASS'Y [CDM-19 (9) GS]
(D40-1485-01)



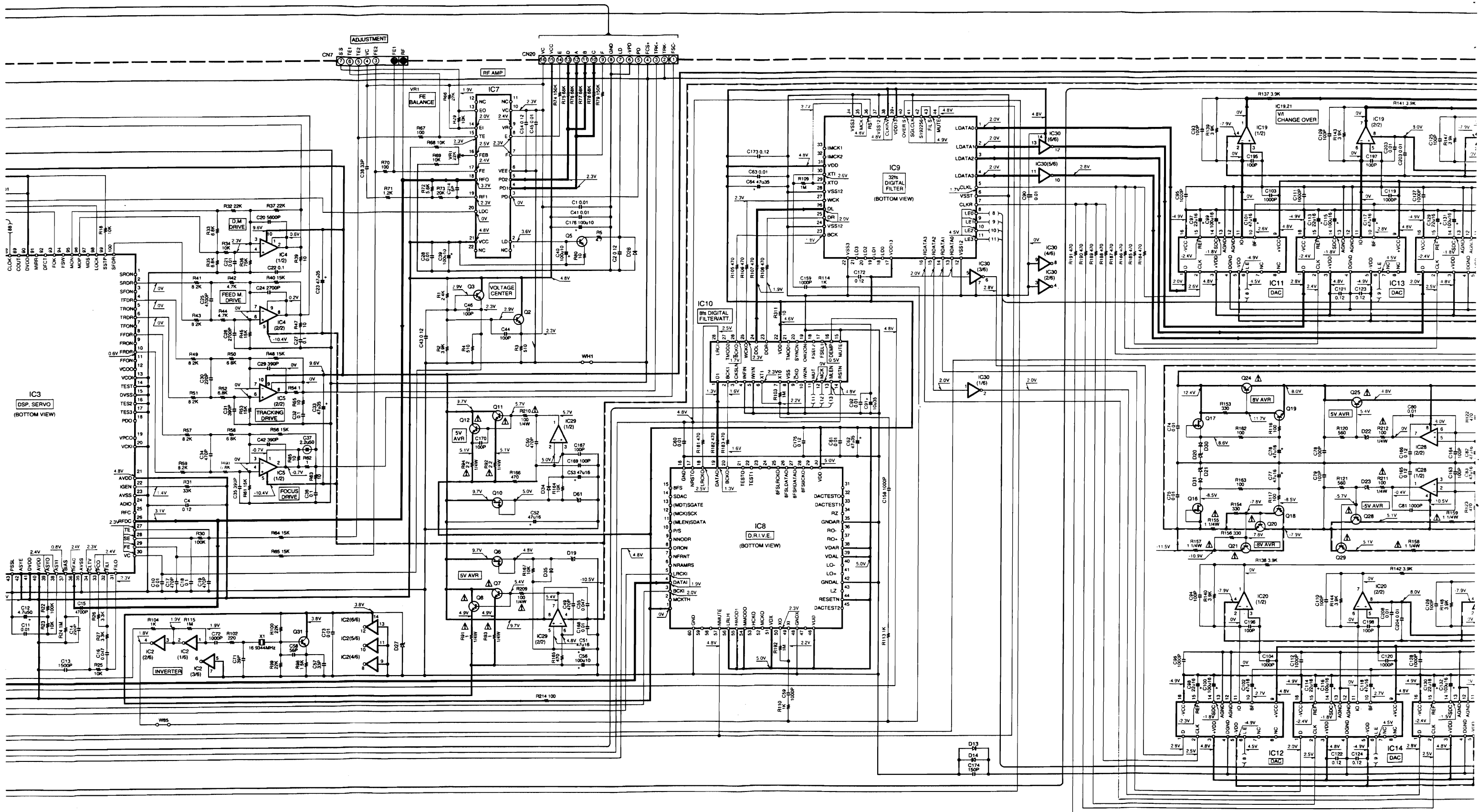
Q1	: 2SA1284	IC1	: TA8409S
Q2,3	: 2SC3940A	IC2,30	: TC74HC04AF
Q5	: 2SA954(L,K)	IC3	: CXD2545Q
Q6,10,16		IC4,5	: TA8410AK
17,26,27	: 2SK246(Y,GR)	IC6	: PST1993D-T
Q7,8	: 2SD2396(J,K)	IC7	: CXA1571S
Q11,12,20		IC8	: KAN03
21,25	: 2SD2012	IC9	: KAN04
Q14,30	: DTC124ESA or UN4212	IC10	: SM5843AS1
Q15	: DTA124ESA or UN4112	IC11-18	: PCM1702P
Q18	: 2SA992(F,E)	IC19-24	: NJM4580L
Q19	: 2SC1845(F,E)	IC25	: X24COOP
Q24,28,29	: 2SB1375	IC27	: TC74HC157AP
Q31	: 2SC1923(R,O)	IC28,29	: NJM4558D
Q33-36	: 2SC2878(B)	IC31	: ICP-N115
Q37,38	: 2SD1450(S,T)	IC32,33	: ICP-N110

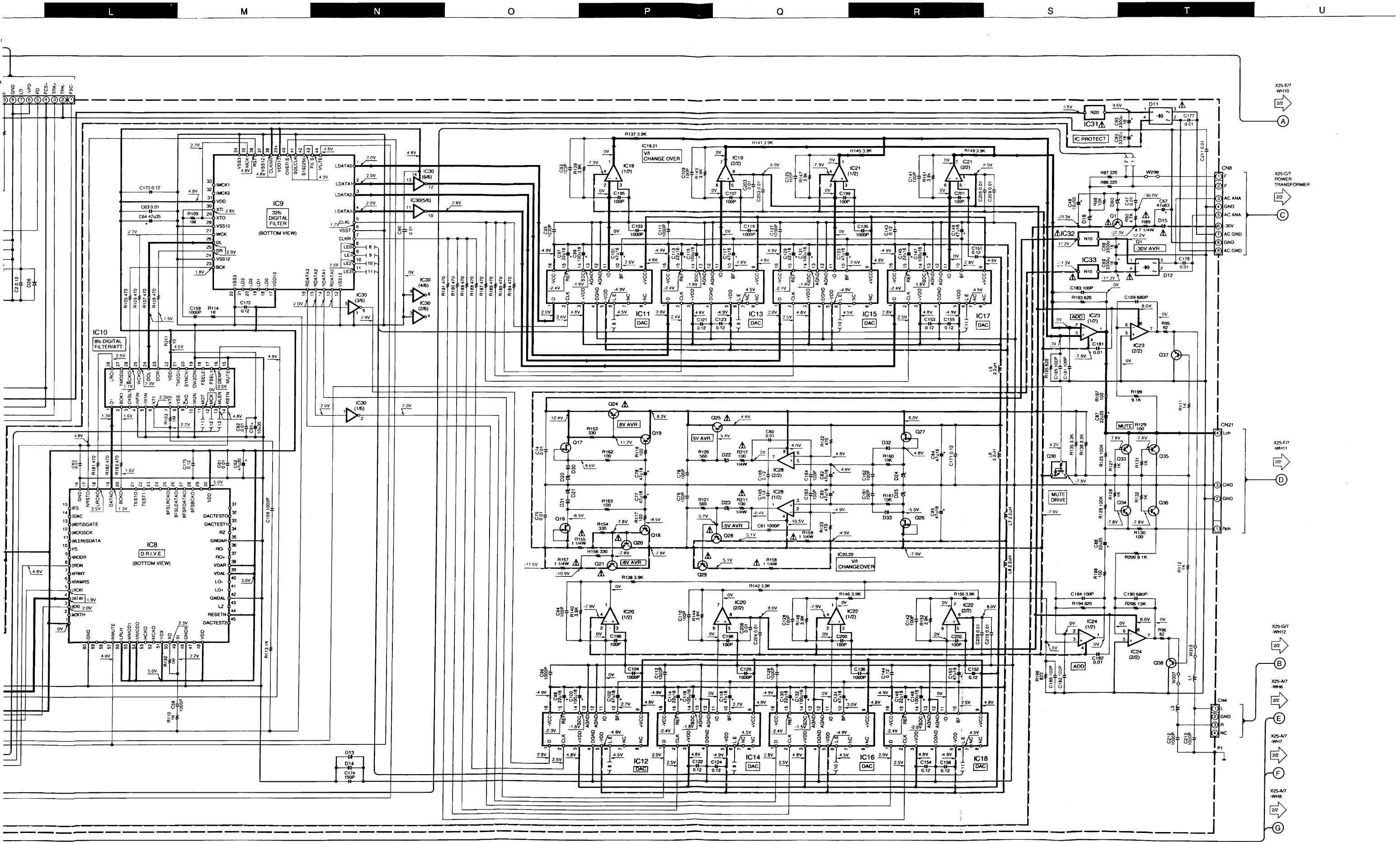
— SIGNAL LINE
— GND LINE
— +B LINE
— -B LINE



CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Δ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). 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.

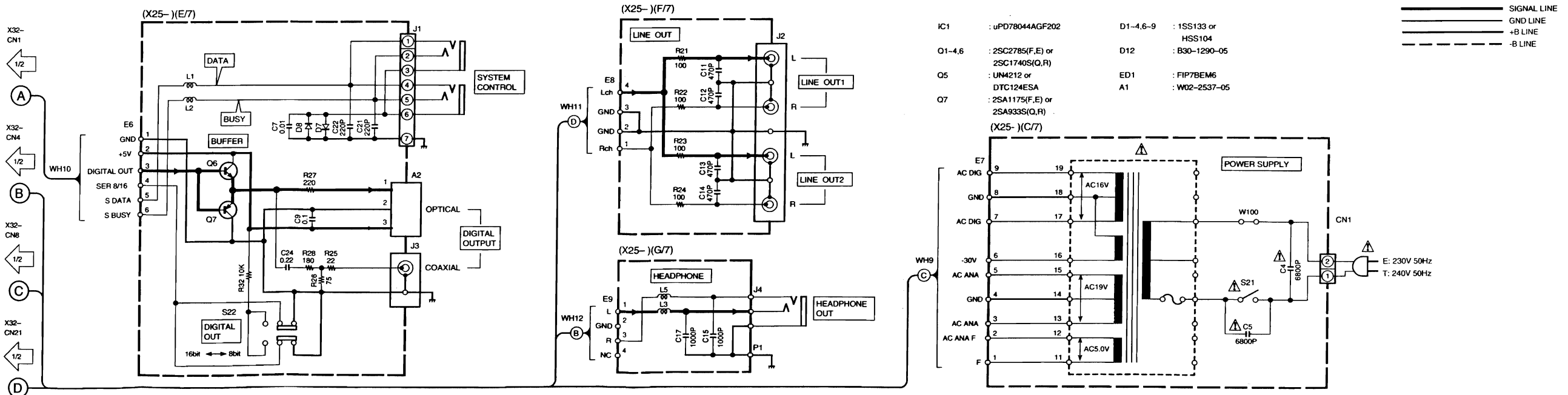
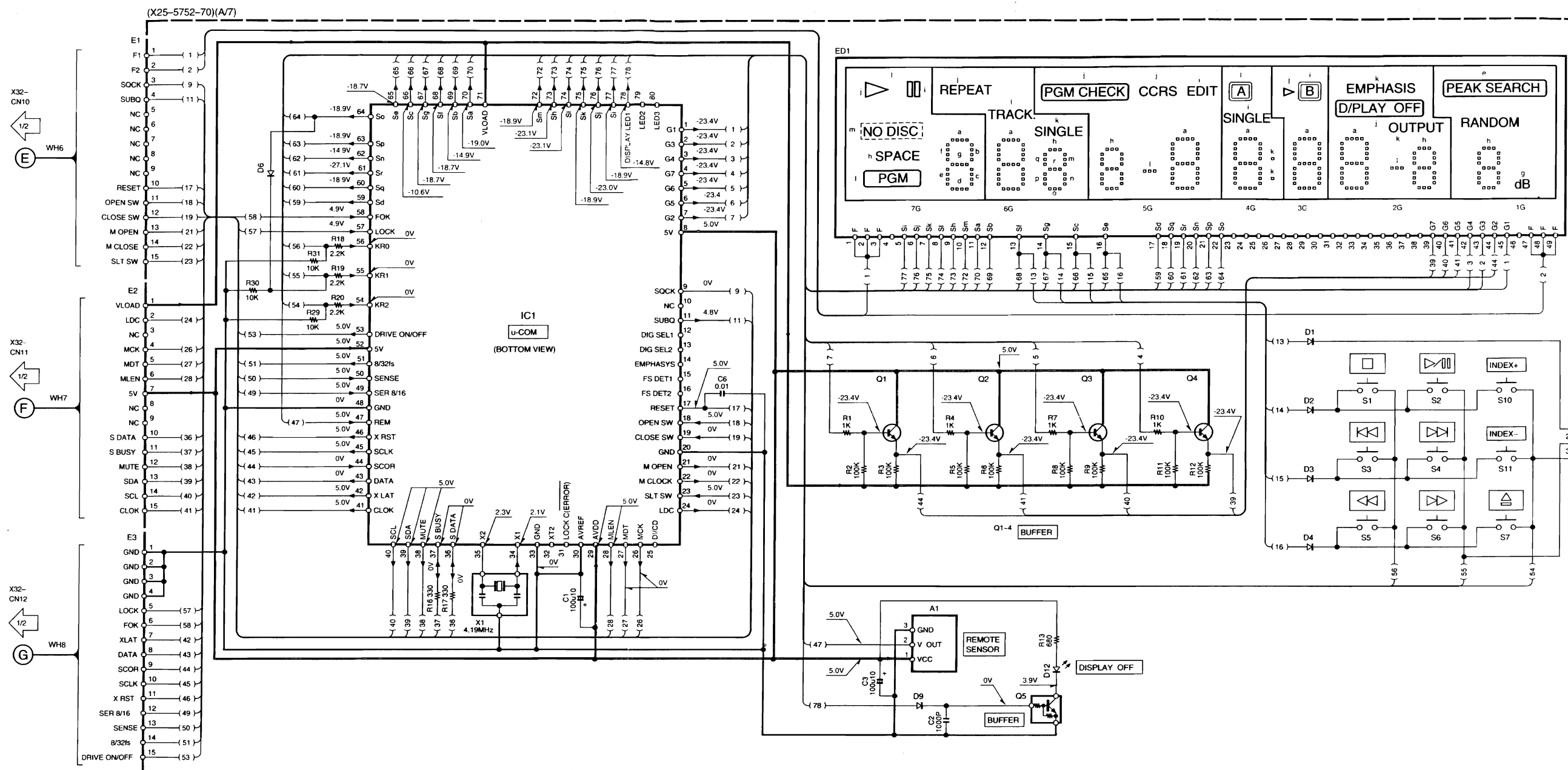
The DC voltage is an actual reading measured with a high impedance type voltmeter. The measurement value may vary depending on the measuring instruments used or on the product. Refer to the voltage during PLAY unless otherwise specified; The value shown in () is the voltage measured at the moment of STOP.



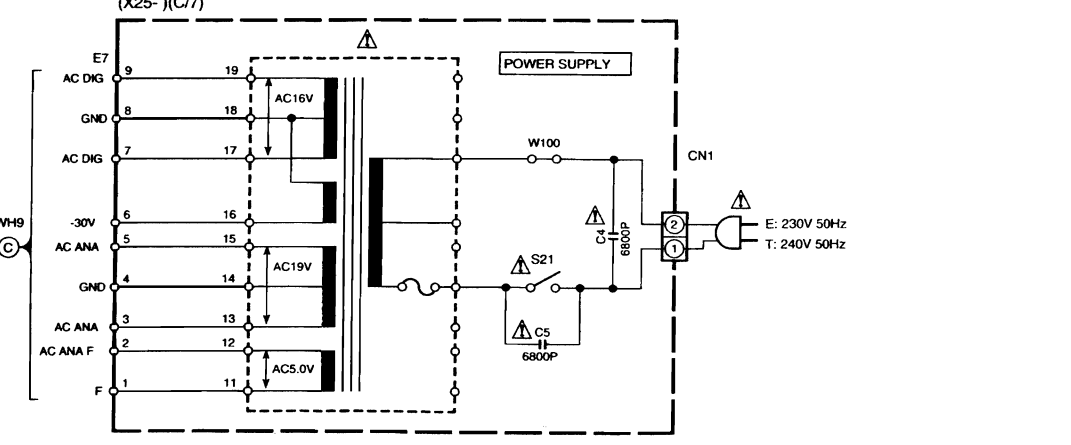


DP-7090(E) 1/2

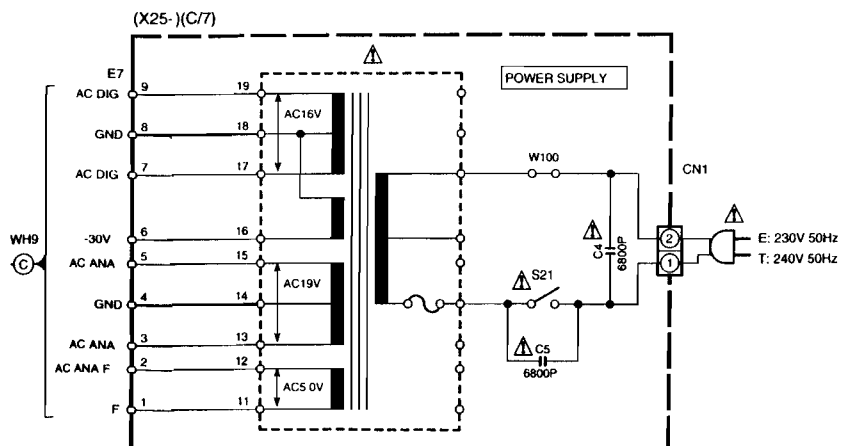
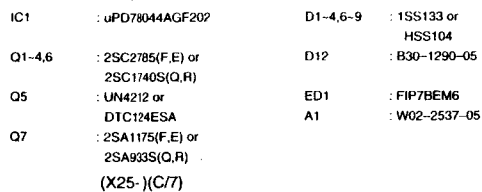
DP-7090
Y22-4602-70
KENWOOD



- IC1 : uPD78044AGF202
 Q1-4,6 : 2SC2785(F,E) or 2SC1740S(Q,R)
 Q5 : UN4212 or DTC124ESA
 Q7 : 2SA1175(F,E) or 2SA933S(Q,R)
- D1-4,6-9 : 1SS133 or HSS104
 D12 : B30-1290-05
 ED1 : FIP7BEM6
 A1 : W02-2537-05



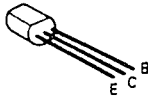
SIGNAL LINE
 GND LINE
 +B LINE
 -B LINE



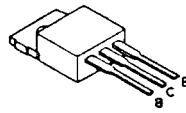
CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Δ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, 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.

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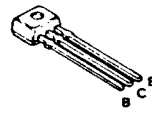
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2SA954
2SA992
2SC1845
2SC1923
2SC2878
2SC3940A



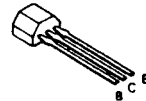
2SD2396



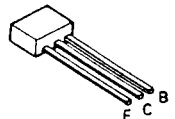
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2SC2785



DTA124ESA
DTC124ESA
UN4112
2SC1740S



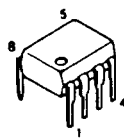
UN4212



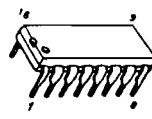
2SB1375
2SD2012



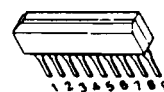
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X24C00P



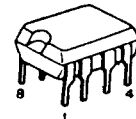
PCM1702P



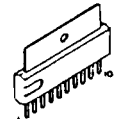
TA8409S



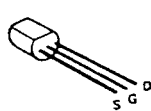
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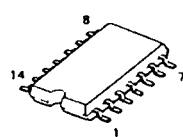
TA8410AK



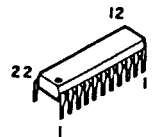
2SK246



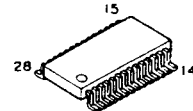
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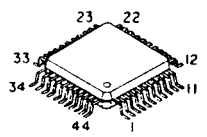
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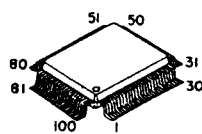
SM5843AS1



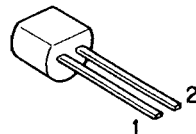
KAN04



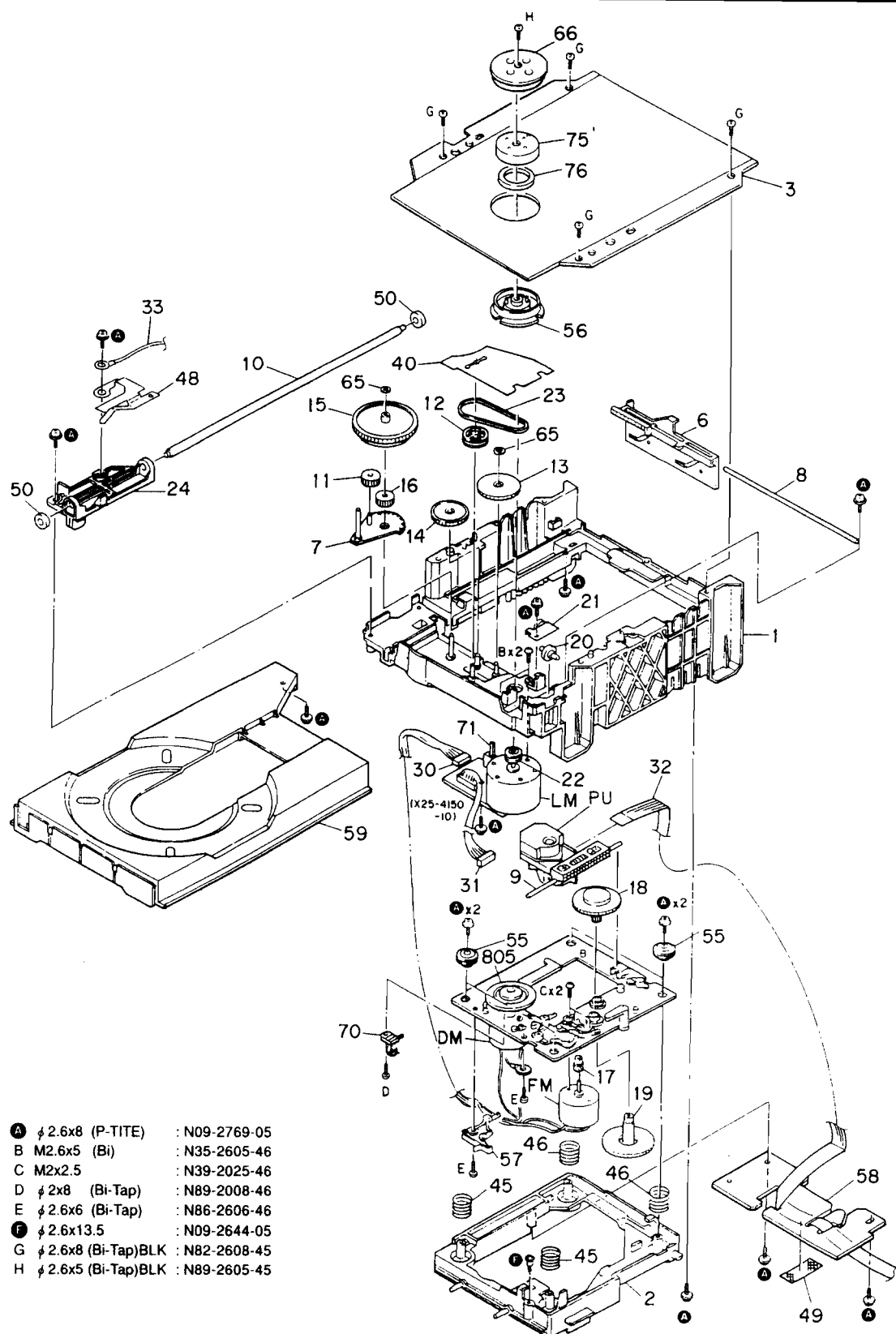
CXD2545Q



ICP-N10

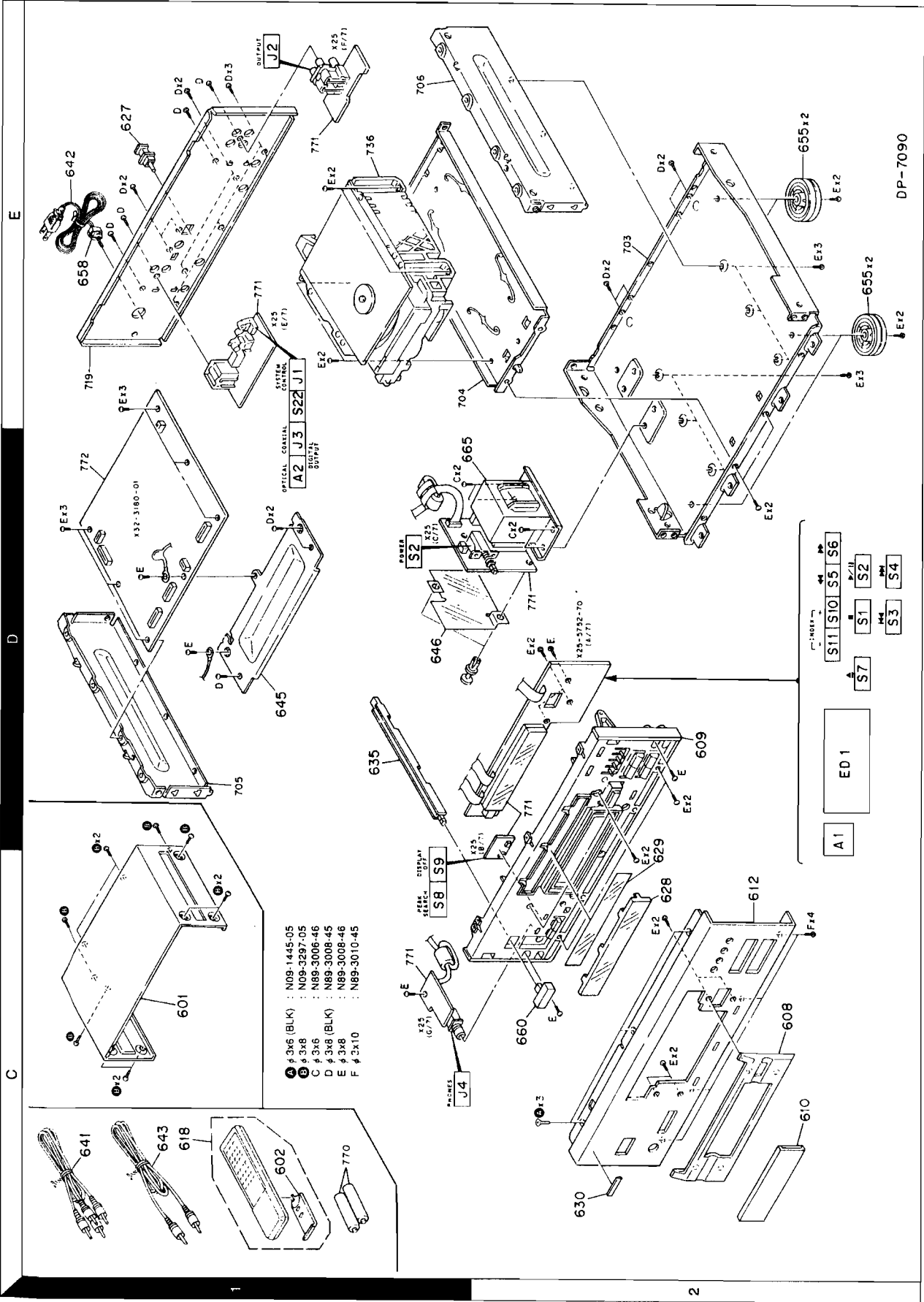


EXPLODED VIEW (MECHANISM)



DP-7090

EXPLODED VIEW (UNIT)



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

PARTS LIST

1						2					
* 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.						* 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	Add- ress	New Parts	Parts No.	Description	Dep't- nation	Ref. No	Add- ress	New Parts	Parts No.	Description	Dep't- nation
DP-7090						CD PLAYER UNIT (X32-3182-70)					
601	1C	*	A01-3325-01	METALLIC CABINET		C1			CE04KW1A101M	ELECTRO	
602	1C	*	A09-0170-08	BATTERY COVER		C2			CO93FMG1H102J	MYLAR	
608	2C	*	A21-1906-03	DRESSING PANEL		C3			CE04KW1A101M	ELECTRO	
609	2D	*	A21-1911-03	DRESSING PANEL ASSY		C4 .5			C91-1488-05	MF	10WV
610	2C	*	A22-1723-21	SUB PANEL		C6			CO93FMG1H103J	MYLAR	250VAC
612	2C	*	A29-0823-14	PANEL ASSY		C7			CK45FF1H103Z	CERAMIC	0.010UF
618	1C	*	A60-0923-02	PANEL		C8			CO93FMG1H104J	MYLAR	0.010UF
627	1E	*	B07-2306-04	REMOTE CONTROLLER ASSY		C11 -14			CO93FMG1H471J	MYLAR	470PF
629	2C	*	B09-0097-05	ESCUICHEON		C15			CK45FB1H102K	CERAMIC	1000PF
630	2C	*	B10-2243-13	ESCUICHEON		C17			CK45FB1H102K	CERAMIC	1000PF
635	1D	*	B11-0322-03	OPTICAL OUTPUT TERMINAL CAP		C21 .22			CC45FSL1H221J	CERAMIC	220PF
641	1C	*	B43-0302-04	FRONT GLASS		C24			CF92FV1H224J	MF-C	0.22UF
642	1E	*	B46-0310-03	COLOR FILTER		CN1			E40-4245-05	PIN ASSY	
643	1C	*	B58-0985-13	KENWOOD BADGE		J1			E11-0188-05	MINIATURE PHONE JACK(2P LENGTH	
645	1D	*	B58-0986-13	WARRANTY CARD		J2			E63-0121-05	PHONO JACK	
646	1D	*	B60-2732-00	CAUTION CARD (PL SENTENCE)		J3			E63-0185-05	PHONO JACK	
655	2E	*	B60-2753-00	CAUTION CARD (PL SENTENCE)		J4			E11-0190-05	PHONE JACK (3P)	
658	1E	*	B60-2753-00	INSTRUCTION MANUAL(ENGLISH)		685			J19-3672-03	HOLDER	
660	1C	*	D21-1447-03	INSTRUCTION MANUAL(F.G.D.I.)		L1 -3			L92-0064-05	FERRITE CORE	
665	1D	*	D29-1618-04	EXTENSION SHAFT		L5			L92-0067-05	FERRITE CORE	
666	1D	*	E29-1618-04	LEAD PLATE		X1			L92-0017-05	FERRITE CORE	
667	1E	*	E30-0505-05	AUDIO CORD		S1 -11			L78-0267-05	RESONATOR (4.194MHZ)	
668	1E	*	E30-2592-15	AC POWER CORD		S21			S70-0031-05	TACT SWITCH	
669	1C	*	E30-2721-05	AC POWER CORD		S22			S40-1153-05	PUSH SWITCH	
670	1C	*	E30-2733-05	CORD WITH PLUG		D1 -4			S31-2094-05	SLIDE SWITCH	
671	1D	*	F19-1085-03	BLIND PLATE		D1 -4			HSS104	DIODE	
672	1D	*	F20-1483-04	INSULATING BOARD		D6 -9			1SS133	DIODE	
673	1D	*	G10-0146-04	NON-WOVEN FABRIC		D6 -9			1SS133	DIODE	
674	1D	*	G11-0155-14	SOFT TAPE (40X9X2)		ED1			FIP7BEM6	INDICATOR TUBE	
675	1D	*	G11-2269-04	CUSHION		IC1			UPD78044AGF20	2 MI-COM IC	
676	1D	*	G11-2272-04	SOFT TAPE		Q1 -4			2SC1740S(Q,R)	TRANSISTOR	
677	1D	*	H10-7197-02	POLYSTYRENE FOAMED FIXTURE		Q1 -4			2SC2785(F,E)	TRANSISTOR	
678	1D	*	H10-7198-02	POLYSTYRENE FOAMED FIXTURE		Q5			DTC124ESA	DIGITAL TRANSISTOR	
679	1D	*	H12-2288-04	PACKING FIXTURE		Q6			UN4212	DIGITAL TRANSISTOR	
680	1D	*	H25-0232-04	PROTECTION BAG (235X350X0.03)		Q6			2SC1740S(Q,R)	TRANSISTOR	
681	1D	*	H25-0319-04	PROTECTION BAG		Q6			2SC2785(F,E)	TRANSISTOR	
682	1D	*	H25-0651-04	PROTECTION BAG		Q7			2SA1175(F,E)	TRANSISTOR	
683	1D	*	H25-0657-04	PROTECTION BAG		Q7			2SA933AS(Q,R)	TRANSISTOR	
684	1D	*	H50-2003-04	ITEM CARTON CASE		A1			W02-2537-05	ELECTRIC CIRCUIT MODULE	
685	1D	*	H50-2005-04	ITEM CARTON CASE		A2			W02-1114-05	OSCILLATING MODULE	
686	1D	*	J02-1169-03	FOOT		CD PLAYER UNIT (X32-3182-70)					
687	1E	*	J42-0083-05	POWER CORD BUSHING		C1			CO93FMG1H103J	MYLAR	0.010UF
688	1E	*	J61-0307-05	WIRE BAND		C2			CF92FV1H124J	MF-C	0.12UF
689	1C	*	K27-2178-04	KNOB (BUTTON)		C3			CO93FMG1H103J	MYLAR	0.010UF
690	1D	*	L07-2171-05	POWER TRANSFORMER		C4			CF92FV1H124J	MF-C	0.12UF
691	1D	*	L07-2171-05	POWER TRANSFORMER		C5			CO93FMG1H103J	MYLAR	0.010UF
692	1D	*	L07-2171-05	POWER TRANSFORMER		C6			CO93FMG1H102J	MYLAR	1000PF
693	1D	*	L07-2171-05	POWER TRANSFORMER		C7			CO93FMG1H103J	MYLAR	0.010UF
694	1D	*	L07-2171-05	POWER TRANSFORMER		C8			CE04KW1A101M	ELECTRO	10WV
DISPLAY UNIT (X25-5752-70)						DISPLAY UNIT (X25-5752-70)					
D12			B30-1290-05	LED							
L : Scandinavia Y : PX(Far East, Hawaii) Y : AAFES(Europe)						L : Scandinavia Y : PX(Far East, Hawaii) Y : AAFES(Europe)					
K : USA T : Europe X : Australia						K : USA T : Europe X : Australia					
P : Canada E : Europe M : Other Areas						P : Canada E : Europe M : Other Areas					
R : Mexico G : Germany M : Other Areas						R : Mexico G : Germany M : Other Areas					

Δ indicates safety critical components.

PARTS LIST

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④

Ref. No	Add- ress	New Parts	Parts No.	Description	Desti- nation	Re- marks
C72			C093FMG1H102J	MYLAR	J	
C73-75			C093FMG1H103J	MYLAR	1000PF	
C76-77			CE04KW1C470M	ELECTRO	47UF	16WV
C78-79			CC45FSL1H101J	CERAMIC	100PF	J
C80			CK45FF1H103Z	CERAMIC	0.010UF	Z
C81			CK45FB1H102K	CERAMIC	1000PF	K
C82-85			CE04KW1C470M	ELECTRO	47UF	16WV
C87-88			C90-1814-05	ELECTRO	22UF	23WV
C90			C093FMG1H103J	MYLAR	0.010UF	J
C91			CE04KW1V100M	ELECTRO	10UF	35WV
C92			C093FMG1H103J	MYLAR	0.010UF	J
C93-94			CF92FV1H101K	MF-C	100PF	K
C95-96			CK45FB1H102K	CERAMIC	1000PF	K
C97-98			CE04KW1C220M	ELECTRO	22UF	16WV
C99-100			CE04KW1C101M	ELECTRO	100UF	16WV
C101-102			CE04KW1C470M	ELECTRO	47UF	16WV
C103-104			CK45FB1H102K	CERAMIC	1000PF	K
C109-110			CF92FV1H101K	MF-C	100PF	K
C111-112			CK45FB1H102K	CERAMIC	1000PF	K
C113-114			CE04KW1C220M	ELECTRO	22UF	16WV
C115-116			CE04KW1C101M	ELECTRO	100UF	16WV
C117-118			CE04KW1C470M	ELECTRO	47UF	16WV
C119-120			CK45FB1H102K	CERAMIC	1000PF	K
C121-124			CF92FV1H124J	MF-C	0.12UF	J
C125-126			CF92FV1H101K	MF-C	100PF	K
C127-128			CK45FB1H102K	CERAMIC	1000PF	K
C129-130			CE04KW1C220M	ELECTRO	22UF	16WV
C131-132			CE04KW1C101M	ELECTRO	100UF	16WV
C133-134			CE04KW1C470M	ELECTRO	47UF	16WV
C135-136			CK45FB1H102K	CERAMIC	1000PF	K
C141-142			CF92FV1H101K	MF-C	100PF	K
C143-144			CF92FV1H124J	MF-C	0.12UF	J
C145-146			CE04KW1C220M	ELECTRO	22UF	16WV
C147-148			CE04KW1C101M	ELECTRO	100UF	16WV
C149-150			CE04KW1C470M	ELECTRO	47UF	16WV
C151-156			CF92FV1H124J	MF-C	0.12UF	J
C158-159			C093FMG1H102J	MYLAR	1000PF	J
C161-164			CC45FSL1H101J	CERAMIC	100PF	J
C165-166			CF92FV1H124J	MF-C	0.12UF	J
C167			CC45FSL1H101J	CERAMIC	100PF	J
C168			CK45FF1H103Z	CERAMIC	0.010UF	Z
C169-170			CC45FSL1H101J	CERAMIC	100PF	J
C171-173			CF92FV1H124J	MF-C	0.12UF	J
C174			C91-1478-05	FILM	150PF	J
C175			CF92FV1H124J	MF-C	0.12UF	J
C176			CE04KW1A101M	ELECTRO	100UF	10WV
C177-178			C093FMG1H103J	MYLAR	0.010UF	J
C181-182			C093FMG1H103J	MYLAR	0.010UF	J
C183-186			C91-1474-05	FILM	100PF	J
C189-190			C093FMG1H681J	MYLAR	880PF	J
C191-192			C91-1474-05	FILM	100PF	J
C195-202			CC45FSL1H101J	CERAMIC	0.010UF	Z
C203-211			CK45FF1H103Z	CERAMIC	0.010UF	Z
C212-213			CK45FB1H102K	CERAMIC	1000PF	K
C214			CC45FSL1H050C	CERAMIC	5.0PF	C

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Ref. No	Add- ress	New Parts	Parts No.	Description	Desti- nation	Re- marks
C9			C093FMG1H103J	MYLAR	J	
C10-11			CE04KW1H470M	MYLAR	0.010UF	J
C12			C093FMG1H103J	ELECTRO	47UF	50WV
C13			CC45FSL1H101J	MYLAR	1500PF	J
C14			CC45FSL1H221J	CERAMIC	220PF	J
C15			C093FMG1H472J	MYLAR	4700PF	J
C16			C093FMG1H473J	MYLAR	0.047UF	J
C17			C093FMG1H471J	MYLAR	470PF	J
C18			C093FMG1H104J	MYLAR	0.10UF	J
C19			C093FMG1H471J	MYLAR	470PF	J
C20			C093FMG1H562J	MYLAR	5600PF	J
C21			C093FMG1H103J	MYLAR	0.010UF	J
C22			C093FMG1H104J	MYLAR	0.10UF	J
C23			CE04KW1V470M	ELECTRO	47UF	35WV
C24			C093FMG1H272J	MYLAR	2700PF	J
C25			C093FMG1H472J	MYLAR	4700PF	J
C26			C093FMG1H272J	MYLAR	2700PF	J
C27			C093FMG1H104J	MYLAR	0.10UF	J
C28			C093FMG1H103J	MYLAR	0.010UF	J
C29			C093FMG1H391K	MYLAR	390PF	K
C30			CC45FSL1H221J	CERAMIC	220PF	J
C31			C093FMG1H391K	MYLAR	390PF	K
C32			C093FMG1H104J	MYLAR	0.10UF	J
C33			CE04KW1V470M	ELECTRO	47UF	35WV
C34			C093FMG1H471J	MYLAR	470PF	J
C35			C093FMG1H391K	MYLAR	390PF	K
C36			C093FMG1H104J	MYLAR	0.10UF	J
C37			CE04KW1H282M	NP-ELEC	2.2UF	50WV
C38			CC45FSL1H330J	CERAMIC	33PF	J
C39-40			CE04KW1A101M	ELECTRO	100UF	10WV
C41			C093FMG1H103J	MYLAR	0.010UF	J
C42			C093FMG1H391K	MYLAR	390PF	K
C43			CF92FV1H124J	MF-C	0.12UF	J
C44			CC45FSL1H101J	CERAMIC	100PF	J
C45			C093FMG1H103J	MYLAR	0.010UF	J
C46			CC45FSL1H101J	CERAMIC	100PF	J
C47			C093FMG1H103J	MYLAR	0.010UF	J
C48			CE04KW1H100M	ELECTRO	10UF	50WV
C49-50			CK45FB1H471K	CERAMIC	470PF	K
C51-53			CE04KW1C470M	ELECTRO	47UF	18WV
C54			CF92FV1H124J	MF-C	0.12UF	J
C55			CC45FSL1H473Z	CERAMIC	0.047UF	Z
C56			CE04KW1A101M	ELECTRO	100UF	10WV
C57			C91-1468-05	FILM	33PF	K
C58			C91-1471-05	FILM	56PF	K
C59			C093FMG1H102J	MYLAR	1000PF	J
C60-61			C093FMG1H103J	MYLAR	0.010UF	J
C62			CE04KW1V470M	ELECTRO	47UF	35WV
C63			C093FMG1H103J	MYLAR	0.010UF	J
C64			CE04KW1V470M	ELECTRO	47UF	35WV
C65-66			CE04KW1C332M	ELECTRO	3300UF	16WV
C67			CE04KW1J470M	ELECTRO	47UF	63WV
C68-69			CE04KW1C332M	ELECTRO	3300UF	16WV
C70			C093FMG1H103J	MYLAR	0.010UF	J
C71			C91-1469-05	FILM	39PF	K

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5

Ref. No	Add- ress	New Parts	Parts No.	Description	Designation	Re- marks
IC7			CXA1571S	ANALOGUE IC		
IC8			KAN03	CUSTOM IC		
IC9			KAN04	CUSTOM IC		
IC10			SM5843AS1	MOS-IC		
IC11-18			PCM1702P	MOS-IC		
IC19-24			NJM4580L	IC(OP AMP X2)		
IC25			X24C00P	MEMORY IC		
IC28-29			NJM4558D	ANALOGUE IC		
IC30			TC74HCU04AF	IC(HEX INVERTER SMD)		
IC31		*	ICP-N20	ANALOGUE IC		
IC32-33		*	ICP-N10	ANALOGUE IC		
O1			2SA1284	TRANSISTOR		
O2_3			2SC3840A	TRANSISTOR		
O5			2SA954(L,K)	TRANSISTOR		
O6			2SK246(Y,GR)	FET		
O7_8			2SD2396(J,K)	TRANSISTOR		
O10			2SK246(Y,GR)	FET		
O11_12			2SD2396(L,K)	TRANSISTOR		
O14			DTA124ESA	DIGITAL TRANSISTOR		
O15			UN4112	DIGITAL TRANSISTOR		
O16_17			2SK246(Y,GR)	FET		
O18			2SA992(F,E)	TRANSISTOR		
O19			2SC1845(F,E)	TRANSISTOR		
O20_21			2SD2012	TRANSISTOR		
O24			Q24	TRANSISTOR		
O25			2SD2012	TRANSISTOR		
O26_27			2SK246(Y,GR)	FET		
O28_29			2SB1375	TRANSISTOR		
Q30			DTA124ESA	DIGITAL TRANSISTOR		
Q31			UN4212	DIGITAL TRANSISTOR		
Q33_36			2SC1923(R,O)	TRANSISTOR		
Q37_38			2SD1450(S,T)	TRANSISTOR		

CD MECHANISM ASSY (D40-1485-11)

1	2B	A10-2798-32	CHASSIS ASSY			
2	3B	A11-0695-25	SUB CHASSIS (FRAME)			
3	1B	A11-0723-03	SUB CHASSIS (CLAMP)			
6	1B	D10-2479-03	SLIDER			
7	2A	D10-2481-04	ARM ASSY			
10	1A	D10-2491-04	PCD			
11	2A	D13-0744-04	GEAR (RETAINER)			
12	1A	D13-0779-04	GEAR (PULLEY)			
13	2B	D13-0780-04	GEAR (INTERMEDIATE)			
14	2A	D13-0890-04	GEAR (IDLER)			
15	1A	D13-0891-03	GEAR (MAIN)			
16	2B	D13-0892-04	GEAR			
17	3B	D13-0894-04	GEAR (FEED MOTOR)			
18	2B	D13-0895-05	GEAR (INTERMEDIATE)			
19	3B	D13-0896-05	GEAR (FEED)			
20	2B	D14-0324-04	ROLLER			
21	2B	D14-0325-04	ROLLER ASSY			
22	2B	D15-0295-04	MOTOR PULLEY (LOADING MOTOR)			

L : Scandinavia
Y : PX(Far East, Hawaii)
Y : AAFES(Europe)

K : USA
T : Europe
X : Australia

P : Canada
E : Europe
M : Other Areas

R : Mexico
G : Germany

Δ indicates safety critical components.

* 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.

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Ref. No	Add- ress	New Parts	Parts No.	Description	Designation	Re- marks
CN1			E40-4296-05	FLAT CABLE CONNECTOR		
CN4			E40-4294-05	FLAT CABLE CONNECTOR		
CN5			E40-3253-05	PIN ASSY		
CN7			E40-4876-05	PIN ASSY		
CN8			E40-4807-05	PIN ASSY		
CN10-12			E40-4609-05	PIN ASSY		
CN20			E40-4858-05	PIN ASSY		
CN21			E40-3248-05	PIN ASSY		
E1_3			J11-0098-05	WIRE CLAMPER		
L1			L92-0017-05	FERRITE CORE		
L3			L92-0017-05	FERRITE CORE		
L5_8			L40-2291-17	SMALL FIXED INDUCTOR		
X1			L77-2133-05	CRYSTAL RESONATOR(16.9344MHZ-1		
R89			RD14NB2E4R7J	RD 4.7 J 1/4W		
R91_94			RD14NB2E1R0J	RD 1.0 J 1/4W		
R137-152			RN14BKCC3801F	RD 3.90K F 1/6W		
R155			RD14NB2E1R0J	RD 1.0 J 1/4W		
R157-159			RD14NB2E1R0J	RD 1.0 J 1/4W		
R209-212			RD14NB2E101J	RD 100 J 1/4W		
R311			RD14NB2E100J	RD 10 J 1/4W		
VR1			R12-3686-05	TRIMMING POT.(22K)		
D4_9			HSS104	DIODE		
D4_9			1SS133	DIODE		
D11			D3SBA20F03	DIODE		
D11			RBV-402LFA	DIODE		
D12			1B4B41	DIODE		
D13_14			HSS104	DIODE		
D13_14			1SS133	DIODE		
D15			S5688B	DIODE		
D15			1SR139-400	DIODE		
D18			MTZJ5.6(B)	ZENER DIODE		
D18			UZ-5.6BSB	ZENER DIODE		
D19			MTZJ5.1(B)	ZENER DIODE		
D19			UZ-5.1BSB	ZENER DIODE		
D20_21			MTZJ8.2(B)	ZENER DIODE		
D20_21			UZ-8.2BSB	ZENER DIODE		
D22_25			MTZJ5.1(B)	ZENER DIODE		
D22_25			UZ-5.1BSB	ZENER DIODE		
D26			HSS104	DIODE		
D26			1SS133	DIODE		
D27			MTZJ3.9(B)	ZENER DIODE		
D27			UZ-3.9BSB	ZENER DIODE		
D30_35			HSS104	DIODE		
D30_35			1SS133	DIODE		
D60			MTZJ30(B)	ZENER DIODE		
D60			UZ-30BS	ZENER DIODE		
D61			MTZJ5.1(B)	ZENER DIODE		
D61			UZ-5.1BSB	ZENER DIODE		
IC1			TAB409S	MOS-IC		
IC2			TC74HCU04AF	IC(HEX INVERTER SMD)		
IC3			CXD2545Q	MOS-IC		
IC4_5			TAB410AK	ANALOGUE IC		
IC6			PST993D-T	ANALOGUE IC		

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PARTS LIST

Ref. No	Add. rans	New Parts	Parts No.	Description	Desti- nation	Ra- marks
23	1B		D16-0309-03	BELT		
24	2A		D23-0267-03	RETAINER		
30	2A		E31-7868-25	WIRING HARNESS		
31	2B	*	E35-1542-05	WIRING HARNESS		
32	2B	*	E35-1543-05	FLAT CABLE		
33	1B	*	E35-1583-15	WIRING HARNESS		
34		*	E40-3263-05	PIN ASSY		
40	1A		F19-1027-04	BLIND PLATE		
45	3B		G01-3326-14	COMPRESSION SPRING (FRONT)		
46	3B		G01-3327-14	COMPRESSION SPRING (REAR)		
48	1A		G02-1020-04	FLAT SPRING		
49	3B		G10-0146-04	NON-WOVEN FABRIC		
50	1A,2A		G11-2038-04	CUSHION		
55	3B		J02-1058-15	INSULATOR		
56	1B		J11-0173-33	CLAMPER		
57	3B		J19-3335-05	BRACKET		
58	3B		J19-5708-14	BRACKET		
59	2A	*	J99-0088-23	TRAY ASSY		
65	1B		N19-0366-04	FLAT WASHER		
66	1B		N19-1292-04	FLAT WASHER		
70	3A		S33-1022-05	LEVER SWITCH		
DM	3B		A11-0733-05	SUB CHASSIS ASSY (DISC MOTOR)		
FM	3B		T42-0532-05	DC MOTOR (FEED MOTOR)		
LM	2B		T42-0530-05	DC MOTOR (LOADING MOTOR)		
PU	2B		T25-0041-05	OPTICAL PICKUP HEAD (KSS-213B)		

SPECIFICATIONS

[Format]

System.....Compact disc digital audio system
LaserSemiconductor laser

[D/A Convertors]

D/A Conversion	20 Bit
Oversampling	32 fs (1411.2 kHz)

[Audio]

Frequency response 4Hz ~ 20 kHz, ± 0.3 dB
Signal to noise ratio More than 120 dB
Dynamic range More than 99 dB
Total harmonic distortion + noise
..... Less than 0.002 % (at 1 kHz)
Channel separation More than 100 dB (at 1 kHz)

Wow & flutter	Unmeasurable Limit
Output level / impedance	
Variable	0 ~ 2 V / 0.3 k Ω
Digital output	
Coaxial	0.5 V p-p / 75 Ω
Optical	-15 dBm ~ -21 dBm
(Wave length 660 nm)	
Headphone output (Max.)	20 mW (32 Ω)

[General]

Power consumption20 W
DimensionsW: 440 mm (17-5/16")
 H: 147 mm (5-13/16")
 D: 366 mm (14-7/16")
Weight (Net)7.6 kg (16.7 lb)

Note :

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

Note:

Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on 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.

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⚠ indicates safety critical components.