

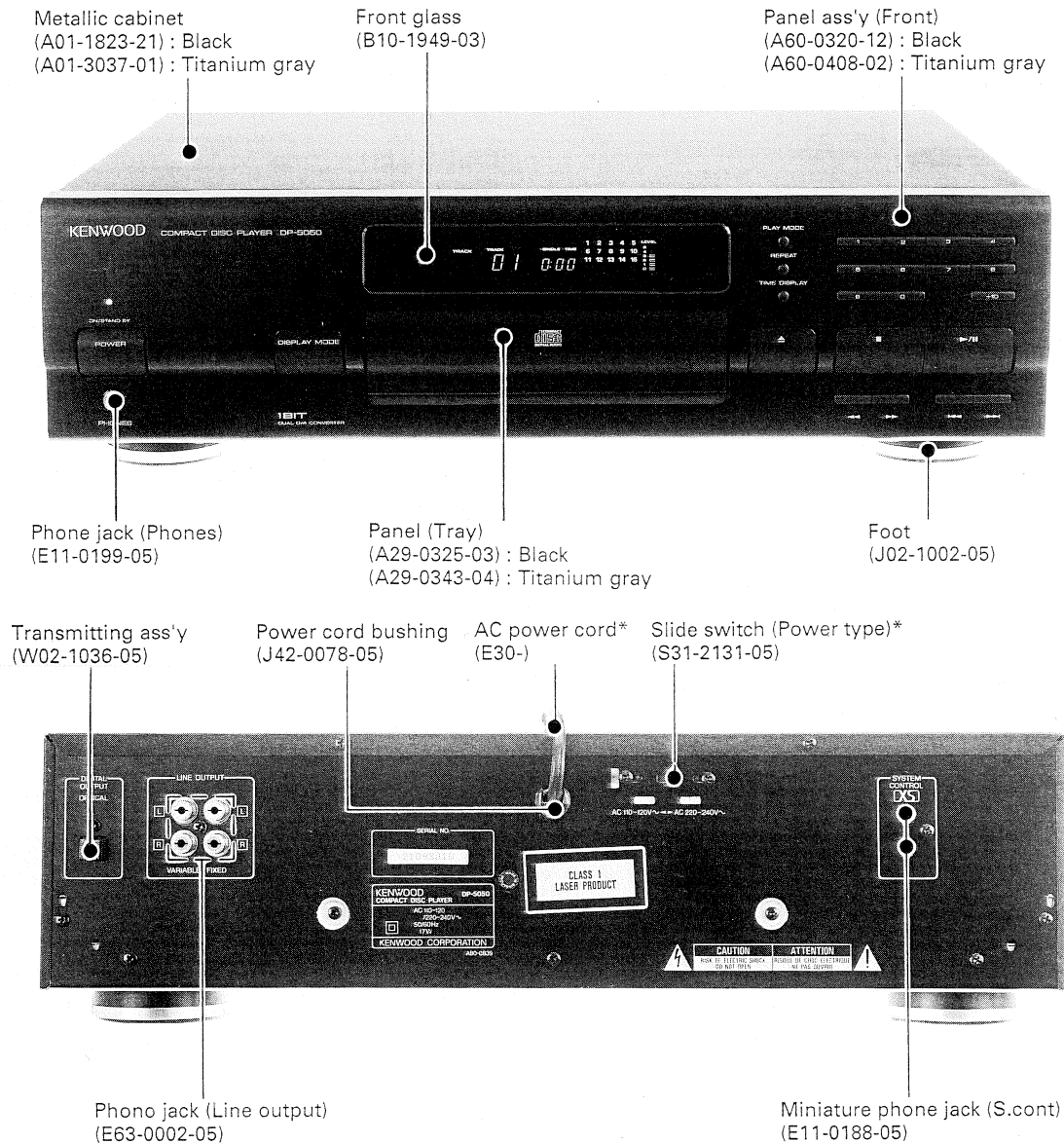
COMPACT DISC PLAYER

# DP-5050

## SERVICE MANUAL

# KENWOOD

© 1993-1 PRINTED IN JAPAN  
B51-4645-00(O)2494



\*Refer to parts list on page 30 .

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

" The color of this model is divided into 2 types :  
Black and Titanium gray. "

KENWOOD-Corp. certifies this equipment conforms to DHHS Regulations No. 21 CFR 1040. 10, Chapter 1, Subchapter J.

**Note : Refer to DP-7050 service manual (B51-4644-00), if you want to know more information of Semiconductor description, Mechanism description and more.**

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

## CONTENTS / ACCESSORIES

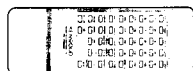
### CONTENTS

ACCESSORIES .....	2	2. Microprocessor: $\mu$ PD75216ACW-W43 .....	12
CONTROL .....	3	ADJUSTMENT .....	14, 17
REMOTE CONTROL OPERATION .....	4	REGLAGE .....	15, 17
DISASSEMBLY FOR REPAIR		ABGLEICH .....	16, 17
1. How to Disassemble Mechanism .....	5	PC BOARD (COMPONENT SIDE VIEW) .....	18
2. How to Remove Tray .....	7	SCHEMATIC DIAGRAM .....	21
3. How to Mount Tray .....	7	EXPLODED VIEW	
4. How to Replace the Pickup .....	8	: MECHANISM .....	27
BLOCK DIAGRAM .....	9	: UNIT .....	29
CIRCUIT DESCRIPTION		PARTS LIST .....	30
1. Test Mode .....	10	SPECIFICATIONS .....	BACK COVER

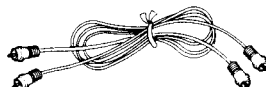
Note : Refer to DP-7050 service manual (B51-4644-00), if you want to know more information of Semiconductor description, Mechanism description and more.

### ACCESSORIES

- Remote control unit ..... 1  
(A70-0922-05)
- Battery cover  
(A09-0078-08)



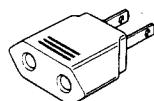
- Audio cord ..... 1  
(E30-0505-05)



- System control cord ..... 1  
(E30-0977-05)



- AC plug adaptor (M type only) ..... 1  
(E03-0115-05)

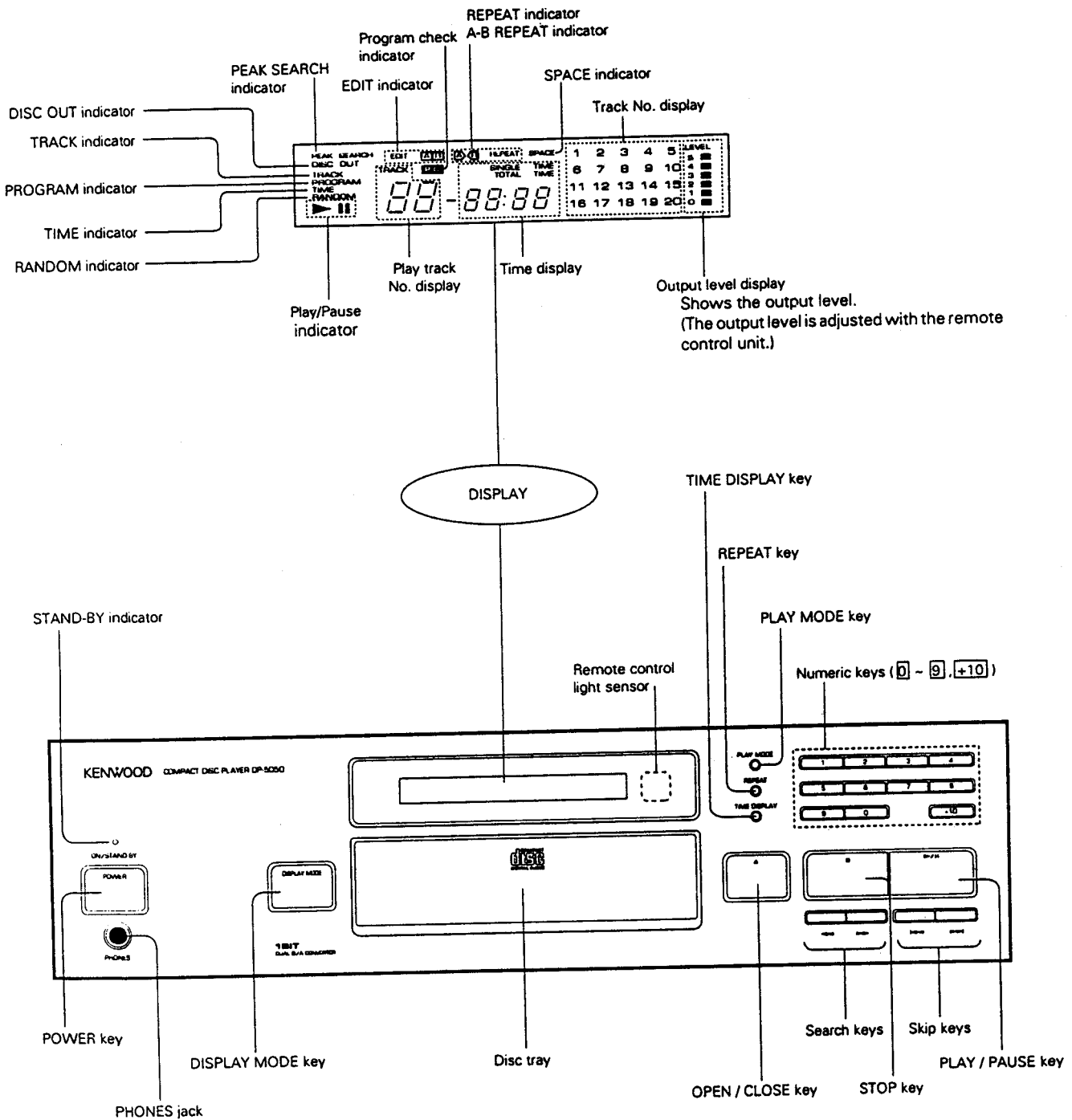


- Batteries ("R3/AAA") ..... 2  
(-)



(Except for some areas.)  
For the unit with European AC plug  
in areas other than Europe.

## CONTROL



### CAUTION

#### • Note related to transportation and movement

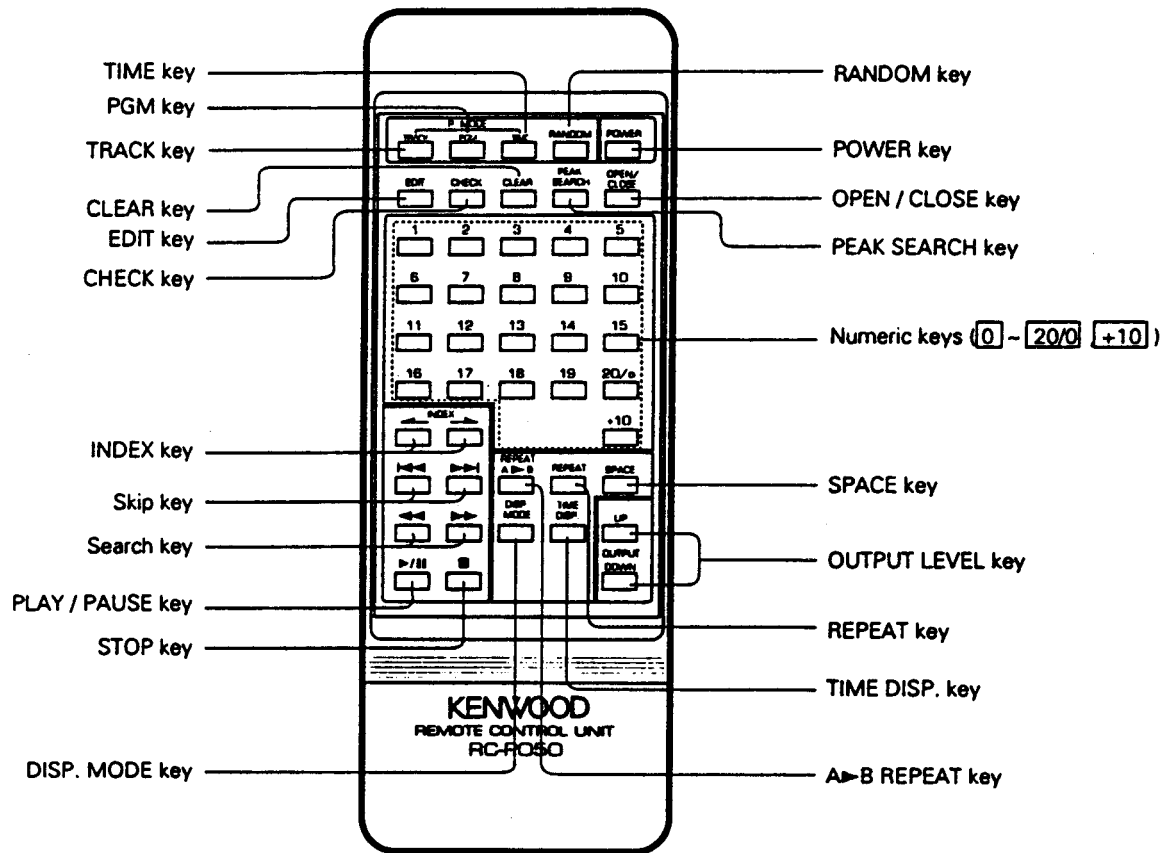
Carry out the operations listed below before transporting or moving this unit.

1. After making sure that is no disc loaded in the unit, turn the POWER switch ON.
2. Wait for several seconds to verify that display becomes as shown, and then turn the POWER switch back OFF.

DISC OUT	TRACK	SINGLE TIME	1	2	3	4	5
	TRACK		6	7	8	9	10
00		0:00	11	12	13	14	15
			16	17	18	19	20

# DP-5050

## REMOTE CONTROL OPERATION

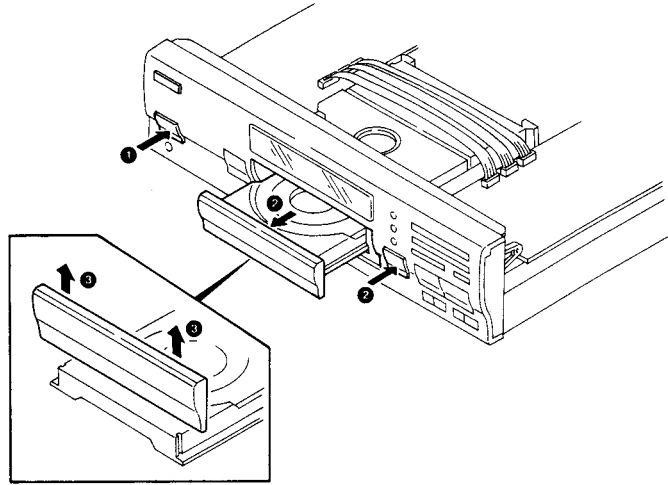




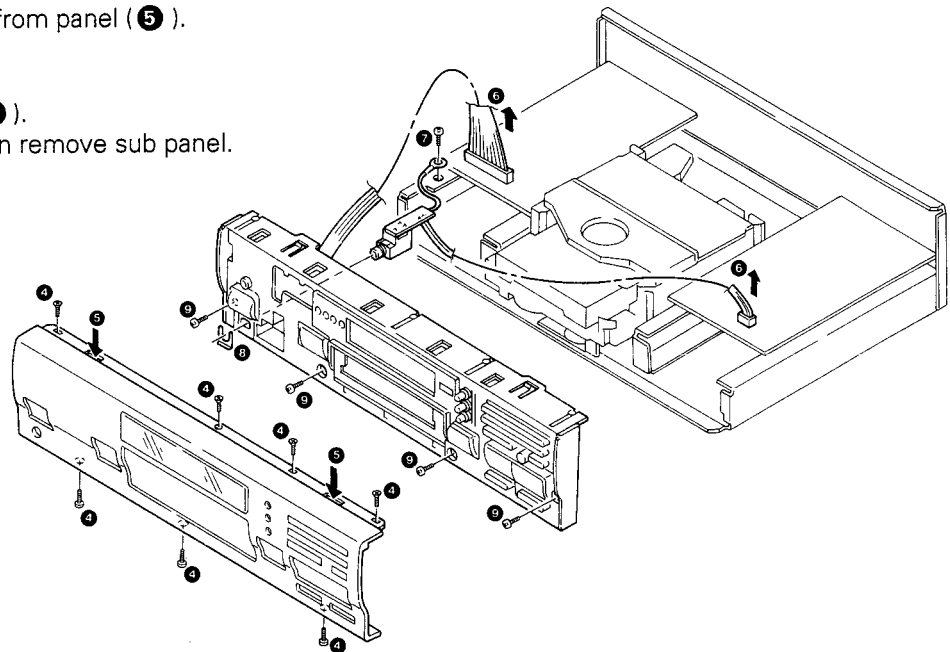
## DISASSEMBLY FOR REPAIR

### 1. How to Disassemble Mechanism

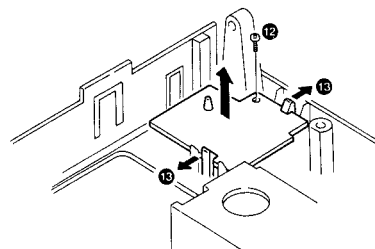
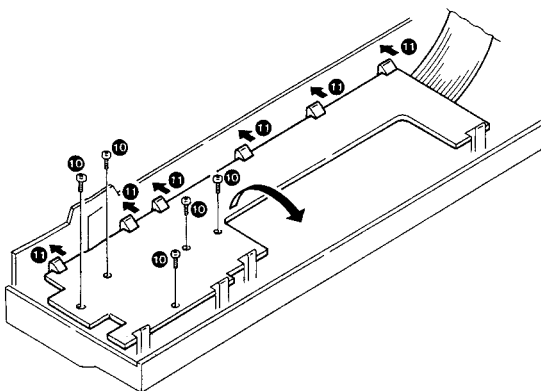
1. Push power switch to ON (1).
2. Push open switch and slide the tray outwards (2).
3. Remove the tray panel (3).



4. Remove 7 screws (4).
5. Remove sub panel catches from panel (5).
6. Remove 2 connectors (6).
7. Remove 1 screw (7).
8. Remove phones stopper (8).
9. Remove 4 screws (9), then remove sub panel.



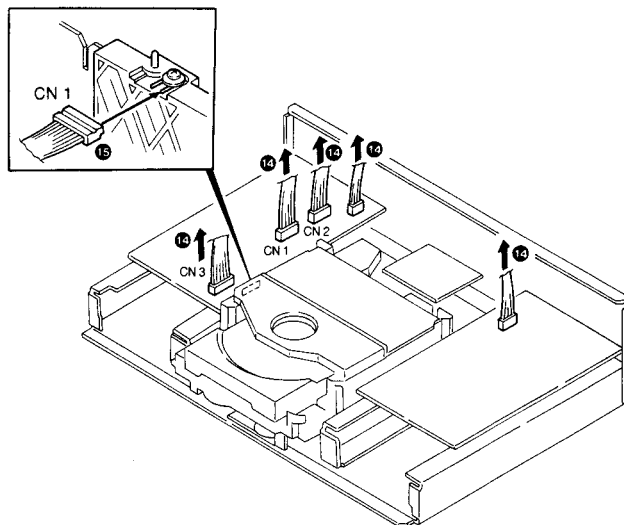
10. Remove 5 screws (10).
11. Remove PCB catchers and PCB (11).
12. Remove 1 screw (12).
13. Remove PCB catchers and PCB (13).



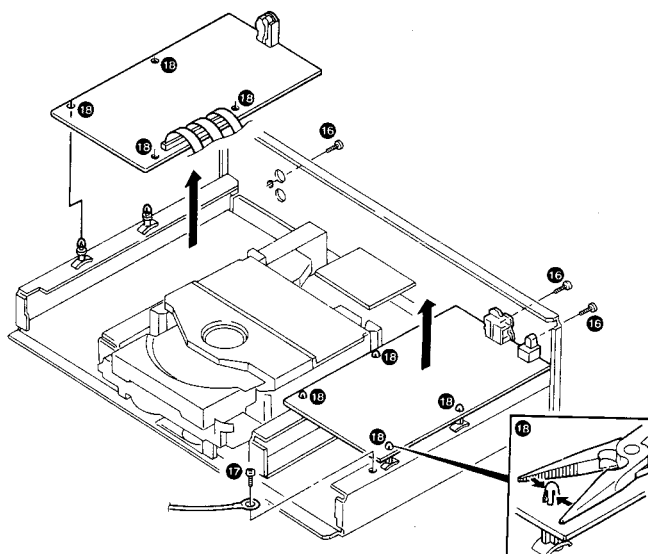
# DP-5050

## DISASSEMBLY FOR REPAIR

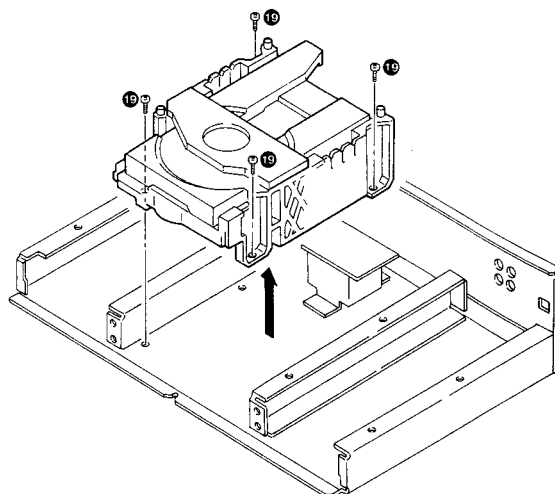
14. Disconnect 5 connectors (14).
15. Insert connector CN1 to LD short pin (15).



16. Remove 3 screws (16).
17. Remove 1 screw (17).
18. Remove PCB unit from holder (18).



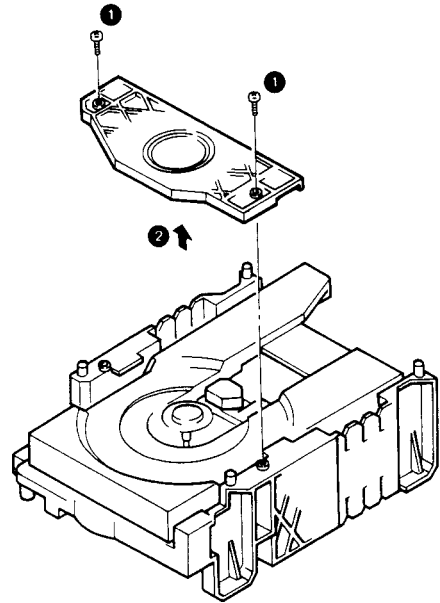
19. Remove 4 screws (19), then remove mechanism assy.



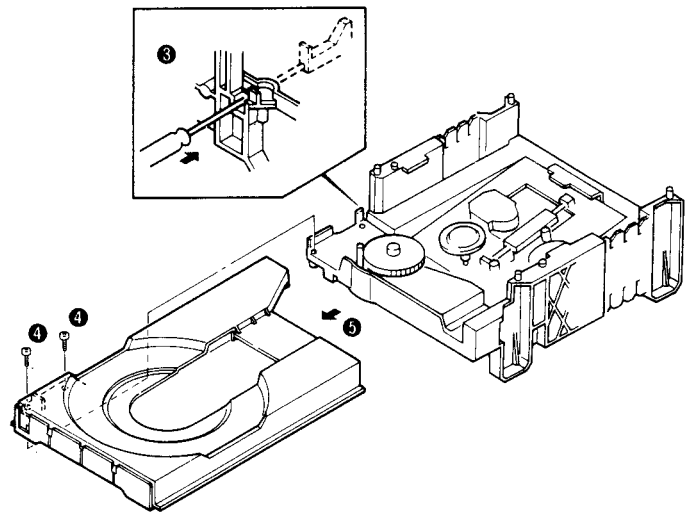
## DISASSEMBLY FOR REPAIR

### 2. How to Remove Tray

1. Remove 2 screws (1).
2. Remove clamber ass'y (2).

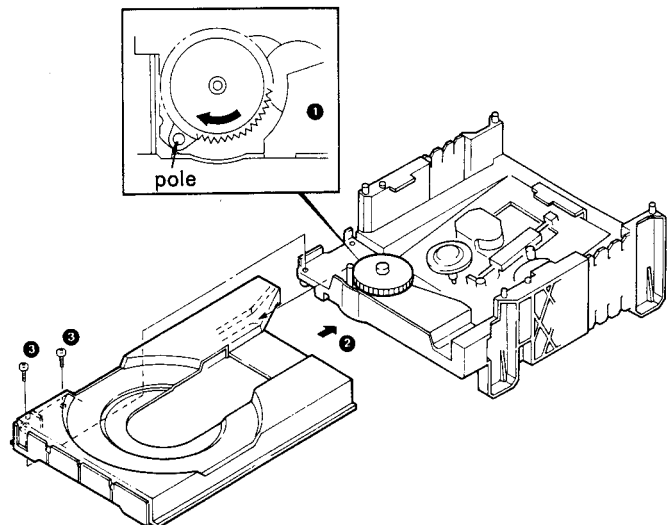


3. Insert the driver to left-side hole of mechanism ass'y and push the slider (3).
4. Remove 2 screws (4).
5. Tray can be pulled out (5).



### 3. How to Mount Tray

1. Set the pole to fully clockwise (1).
2. Insert the tray to both-side guide on chassis (2).
3. Fix 2 screws (3).

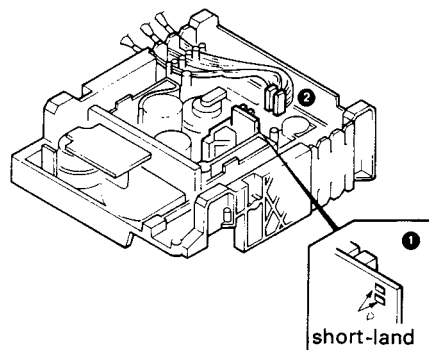


## DISASSEMBLY FOR REPAIR

### 4. How to Replace the Pickup

Short the short-land of the pickup before the following procedures (1).

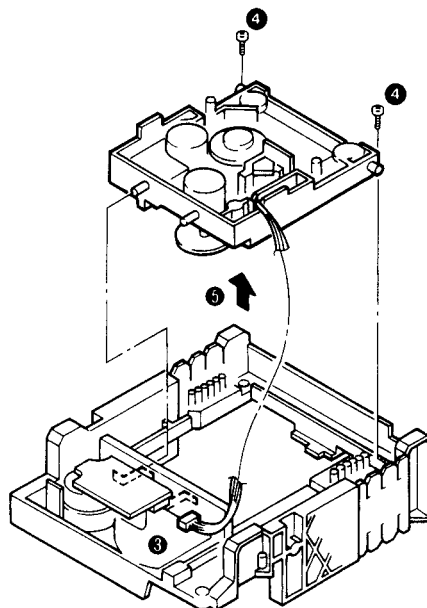
1. Remove 2 connectors (2).



2. Remove the connector (3).

3. Remove 2 screws (4).

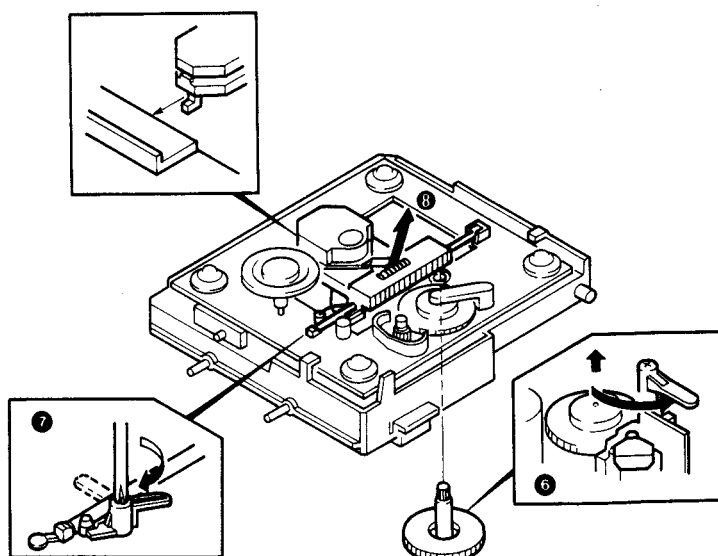
4. Remove the mechanism drive (MD) ass'y (5).



5. Remove stopper and gear (6).

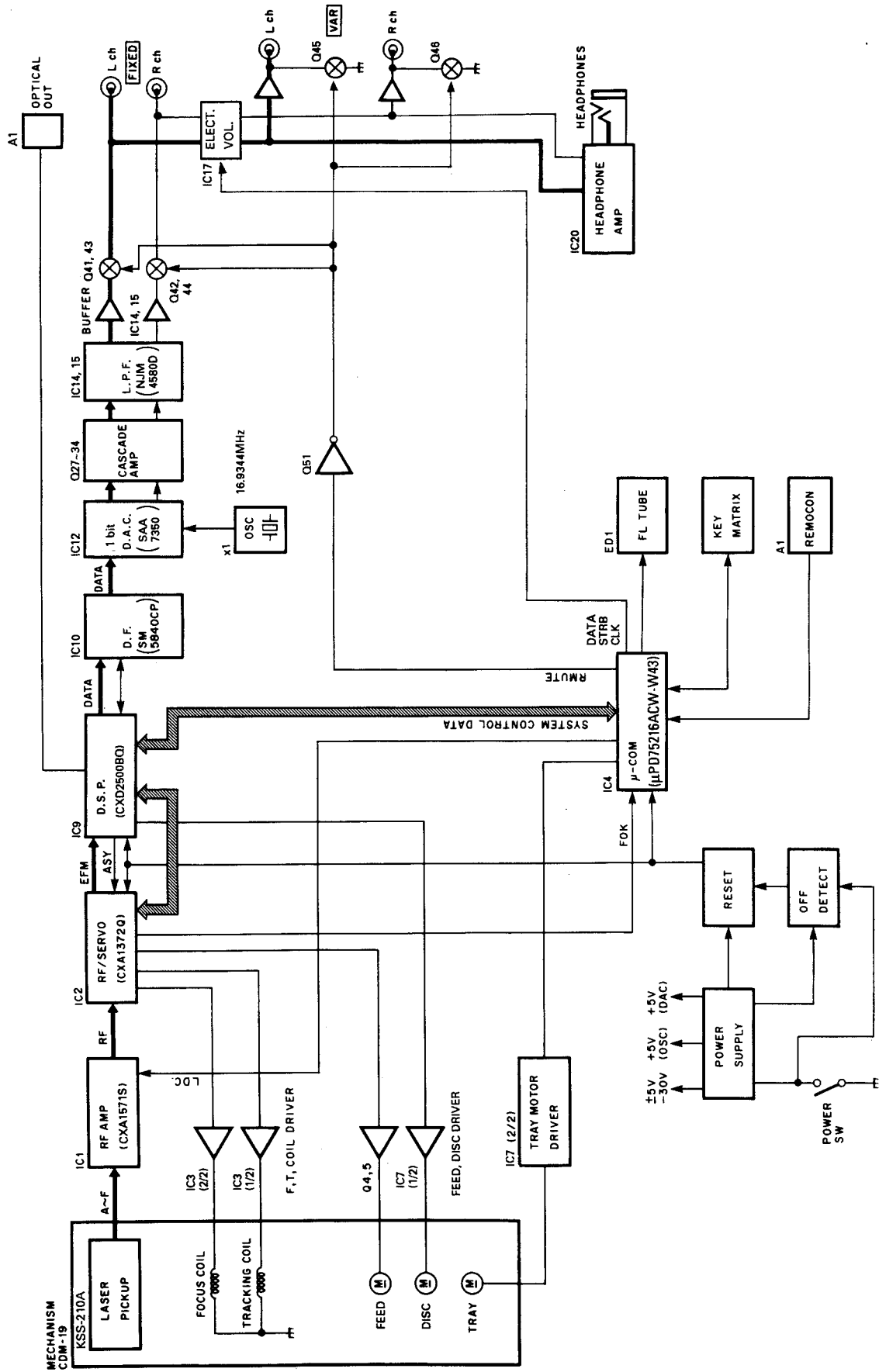
6. Remove rod stopper (7).

7. Remove the pickup ass'y (8).



**Note :** When mounting the pickup, in the reverse order of disassembly. Unsolder the short land after connecting the flexible wire.

# BLOCK DIAGRAM

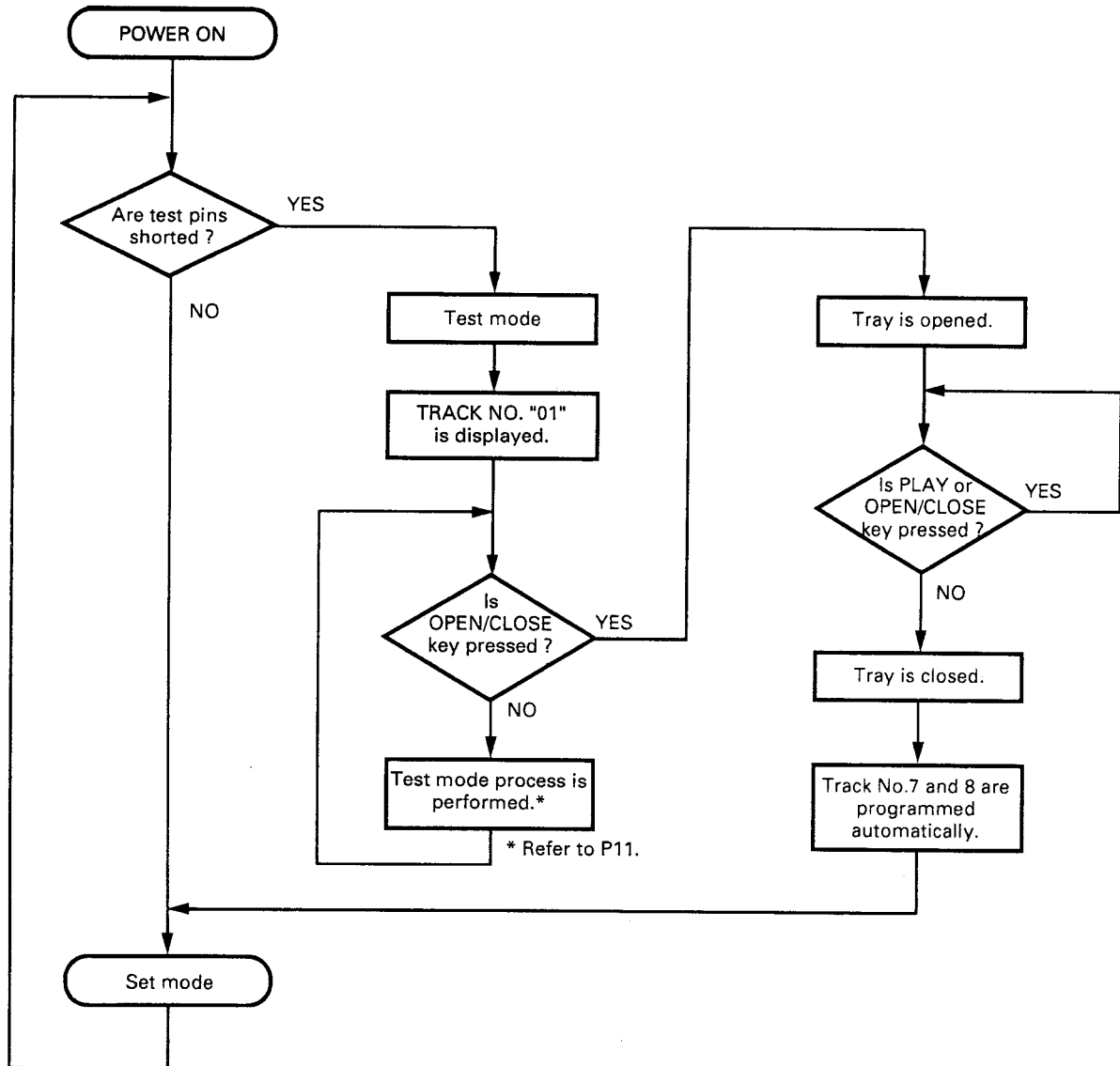


## CIRCUIT DESCRIPTION

### 1. Test Mode

#### 1-1. Setting the test mode

This microprocessor built this unit can be put to TEST MODE by just short-circuiting the test pins (#2 and #3) of main unit (X32-241).



## CIRCUIT DESCRIPTION

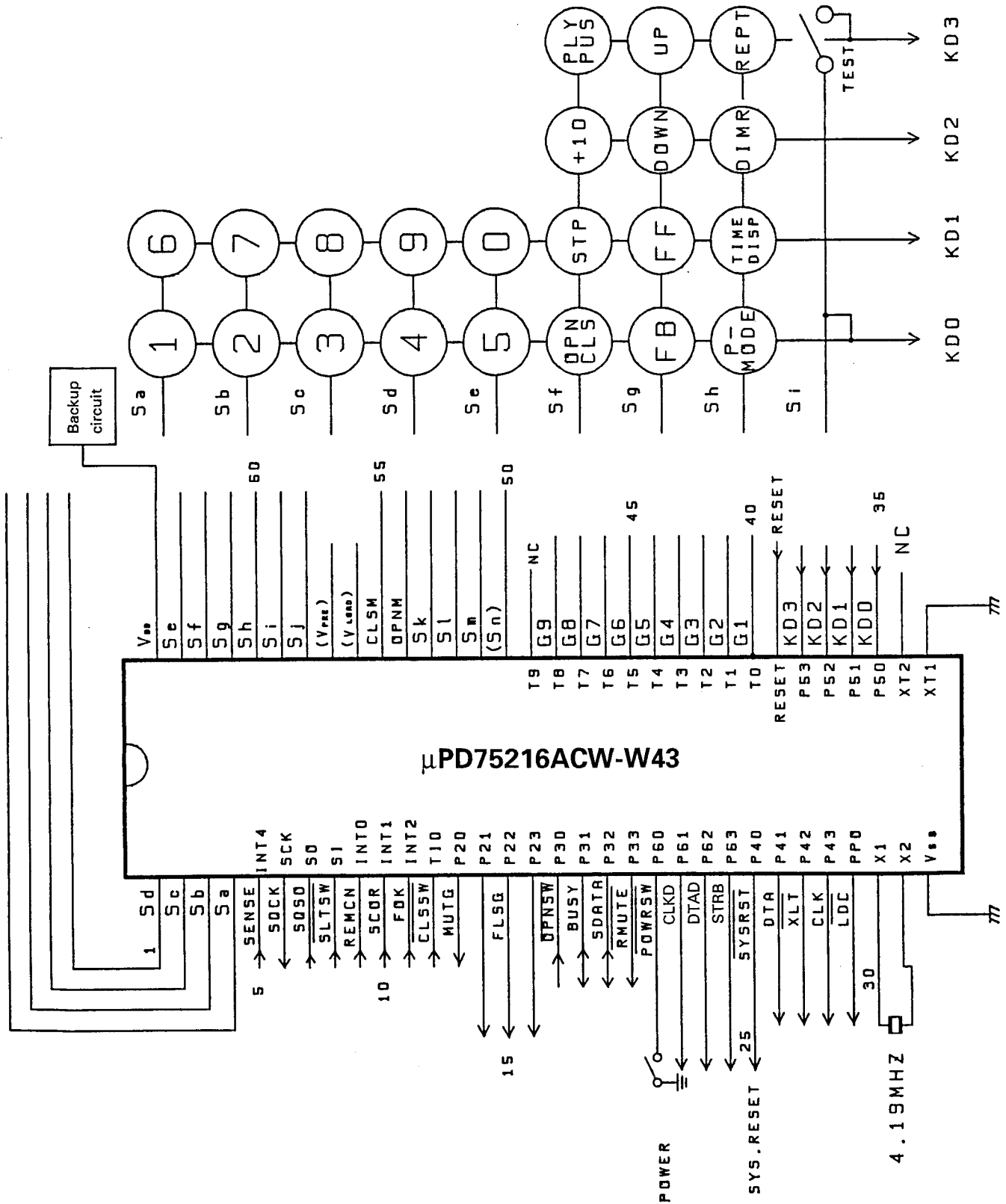
### 1-2. Key and functions valid in test mode

No.	Input key	Function	Track No. display
1	PLAY / PAUSE (▶ /   )	(1) Focusing servo ..... ON (2) Tracking servo ..... ON (3) Feed servo ..... ON	TRACK NO. 05 ↓ Displayed for a few seconds after completion (1), (2) and (3). ↓ Time, ▶ (Play mark), and Disc Track No. are displayed.
2	DISPLAY MODE	(1) Focusing servo ..... ON (2) Tracking servo ..... OFF (3) Feed servo ..... OFF	TRACK NO. 03 Pause (  ) is blinked.
3	STOP (■)	(1) Focusing servo ..... OFF (2) Tracking servo ..... OFF (3) Feed servo ..... OFF	TRACK NO. 01
4	UP (▶▶)	Turns all FL display lamps ON.	TRACK NO. 88
5	DOWN (◀◀)	Turns all FL display lamps OFF.	TRACK NO. 88 *TRACK NO.* is lighted.
6	P.MODE	Track No. 7 and 8 are programmed and played back. The test mode is canceled.	-
7	OPEN / CLOSE (▲)	When the tray is opened then closed in test mode. Track No. 7 and 8 are programmed and set is in STOP mode. The test mode is canceled.	-
8	FF (▶▶)	In the STOP mode, moves the pickup toward the outer position of disc. The test mode is available at this condition.	-
9	FB (◀◀)	In the STOP mode, moves the pickup toward the inner position of disc. If turn on start limit switch, the pickup stops to move.	-

## CIRCUIT DESCRIPTION

### 2. Microprocessor : $\mu$ PD75216ACW-W43

#### 2-1. Pin connection





## CIRCUIT DESCRIPTION

2-2. Pin function :  $\mu$ PD75216ACW-W43

Pin No.	Pin name	I/O	Function
1~4	Sd~Sa	O	FL segment control terminals. (also used for key scan signal).
5	SENSE	I	Signal detection terminal for SENSE signal from processor and servo ICs.
6	SOCK	O	Q data read clock output terminal.
7	SOSO	I	Q data input terminal.
8	SLTSW	I	Start limit switch (L : sw on).
9	REMCN	I	Remote control input terminal.
10	SCOR	I	Sub-code frame sync detection signal input terminal.
11	FOK	I	Input terminal for FOK signal from RF amp (focus OK : "H").
12	CLSSW	I	Tray close-switch (L : sw on).
13	MUTG	O	Digital mute signal to CXD2500 (H : mute on).
14~16	-	O	Not used.
17	OPNSW	O	Tray open switch (L : tray open).
18	BUSY	I/O	Busy signal input/output terminal.
19	SDATA	I/O	Serial data signal input/output terminal.
20	RMUTE	O	Really mute signal (L : mute on).
21	POWRSW	-	Power key switch input terminal (L : key is pressed).
22	CLKD	O	Volume data transmission clock.
23	DTAD	O	Volume data output.
24	STRB	O	Volume data strobe.
25	SYSRST	O	System reset signal (L : reset).
26	DTA	O	Data output terminal to CXD2500.
27	XLT	O	Data latch output terminal to CXD2500.
28	CLK	O	Clock output terminal to send data to CXD2500.
29	LDC	O	Laser diode control (L : on, H : off).
30	X1	I	Input terminal of system clock (4.19MHz).
31	X2	I	Input terminal of system clock (4.19MHz).
32	Vss	-	GND.
33	XT1	-	Vss.
34	XT2	-	Open.
35~38	KD0~KD3	I	Key data input terminal.
39	RESET	I	Reset input terminal (active "L").
40~48	G1~G9	O	FL digit control terminals.
49	T9	-	N.C.
50	Sn	O	Not used.
51~53	Sm~Sk	O	FL segments control terminals.
54	OPNM	O	Output terminal of tray-open signal.
55	CLSM	O	Output terminal of tray-close signal.
56	VLOAD	-	FL driver power supply.
57	VPRE	-	FL pre-driver power supply.
58~63	Sj~Se	O	FL segment control terminals. (also used for key scan signal)
64	VDD	-	Power supply.

## ADJUSTMENT

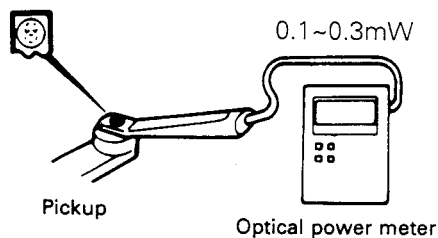
No.	ITEM	INPUT SETTING	OUTPUT SETTING	PLAYER SETTING	ALIGNMENT POINT	ALIGN FOR	FIG
1	LASER POWER	-	Set the sensor section of the optical power meter on the pickup lens.	Short-circuit pins TEST and turn the power on to enter the test mode. Press the "DISPLAY MODE" key to check that the display is "03".	-	On the power from 0.1 to 0.3mW, when the diffraction grating is correctly aligned with the RF level of 1.0Vp-p or more	(a)
2	TRACKING ERROR BALANCE	Test disc Type 4	Connect an oscilloscope as follows. CH1: RF (CN4-1) CH2: TE (CN4-6)	Load disc and set to test mode. Confirm the display is "03".	TE BALANCE VR1	Symmetry between upper and lower or DC=0±0.05V	(c)
3	FOCUS ERROR BALANCE	Test disc Type 4	Connect an oscilloscope as follows. CH1: RF (CN4-1) CH2: TE (CN4-6)	Press the PLAY key. Confirm that the display is "05".	FE BALANCE VR3	Optimum eye pattern	(d)
4	FOCUS GAIN	Test disc Type 4 Apply signal of 1.0kHz, 100mVrms to CN4 pin 2-3.	Connect a LPF to CN4 pin 2-3 to which connect an oscilloscope or AC voltmeters.	Press the PLAY key. Confirm that the display is "05".	FOCUS GAIN VR4	Two VTVMs should read the same value.	(e)
5	TRACKING GAIN	Test disc Type 4 Apply signal of 1.0kHz, 100mVrms to CN4 pin 5-6.	Connect a LPF to CN4 pin 5-6 to which connect an oscilloscope or AC voltmeters.	Press the PLAY key. Confirm that the display is "05".	TRACKING GAIN VR2	Two VTVMs should read the same value.	(e)

(Note) Type 4 disc: SONY YDS-18 Test Disc or equivalent.

LPF: Around 47kohms+390pF or so.

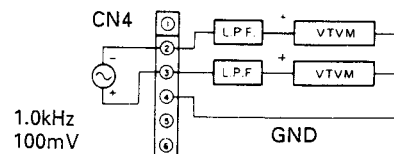
Step 1~5 are in Test Mode.

### (a) Laser Power

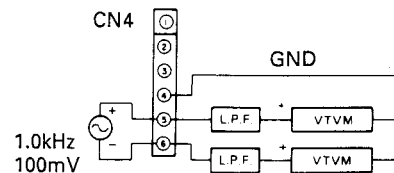


### (e) Focus Gain and Tracking Gain Adj.

#### Focus gain Adj.



#### Tracking gain Adj.



REGLAGE

ABGLEICH

No.	ELEMENT	REGLAGE D'ENTREE	REGLAGE DE SORTIE	REGLAGE DU LECTEUR	POINT D'ALIGNEMENT	ALIGNEMENT POUR	FIG.
1	PUISSANCE LASER	-	Placer la section détecteur de l'indicateur de puissance optique sur l'objectif du capteur.	Court-circuiter les broches TEST et mettre sous tension pour passer dans le mode d'essai. Appuyer sur la touche "DISPLAY MODE" pour vérifier que l'affichage indique "03".	-	Puissance de 0,1 à 0,3mW lorsque le sélecteur de mode de diffraction est correctement aligné avec un niveau RF de 1,0Vc-c ou plus.	(a)
2	BALANCE D'ERREUR D'ALIGNEMENT	Disque test type 4	Raccorder un oscilloscope comme suit. CH1 : RF (CN4-1) CH2 : TE (CN4-6)	Charger un disque et régler dans le mode d'essai. Confirmer que l'affichage indique "03".	TE BALANCE VR1	Symétrie entre les formes supérieure et inférieure ou DC=0±0,05V	(c)
3	BALANCE D'ERREUR DE FOCALISATION	Disque test type 4	Raccorder un oscilloscope comme suit. CH1 : RF (CN4-1) CH2 : TE (CN4-6)	Presser la touche PLAY. S'assurer que l'affichage est "05".	FE BALANCE VR3	Forme optimum	(d)
4	GAIN DE MISE AU POINT	Disque test type 4 Appliquer un signal de 1,0kHz, 100mVrms à CN4 broche 2-3.	Connecter un filtre pass-bas à CN4 broche 2-3 et raccorder un oscilloscop ou un voltmètre CA.	Presser la touche PLAY. S'assurer que l'affichage est "05".	GAIN DE MISE AU POINT VR4	Deux voltmètres doivent indiquer la même valeur.	(e)
5	GAIN D'ALIGNEMENT	Disque test type 4 Appliquer un signal de 1,0kHz, 100mVrms à CN4 broche 5-6.	Connecter un filtre pass-bas à CN4 broche 5-6 et raccorder un oscilloscop ou un voltmètre CA.	Presser la touche PLAY. S'assurer que l'affichage est "05".	GAIN DE MISE AU POINT VR2	Deux voltmètres doivent indiquer la même valeur.	(e)

(Note) Disque type 4 : Disque d'essai YDS-18 SONY ou équivalent.  
 LPF (filtre passe-bas) : Autour de 47kohms+390pF.  
 Les étapes 1-5 se font dans le mode d'essai.

Nr.	EINSTELLGRÖSSE	EINGANGSEIN STELLUNG	AUSGANGSEIN STELLUNG	SPIELER-BETRIEBSART	EINSTELLPUNKT	EINSTELLVORGANG	Abb.
1	LASERLEISTUNG	-	Den Sensorteil des optischen Leistungsmessers auf die Pickup-Linse einstellen.	Die Stifte TEST kurzschließen, das Gerät einschalten und auf Testbetrieb stellen. Die "DISPLAY MODE"-Taste drücken und sicherstellen, daß die Anzeige "03" erscheint.	-	Auf 0,1 bis 0,3mW justieren, wenn das Beugungsgitter korrekt auf den HF-Pegel von 1,0Vs-s oder mehr ausgerichtet ist.	(a)
2	TRACKING-FEHLER BALANCE	Testdisc Typ 4	Ein Oszilloskop wie folgt anschließen : Kanal 1 : RF (CN4-1) Kanal 2 : TE (CN4-6)	Die Disc einlegen, und auf Testbetrieb schalten. Sicherstellen, daß die Anzeige "03" erscheint.	TE BALANCE VR1	Symmetrie zwischen oberen und unteren Mustern oder Gleichstrom DC=0±0,05V	(c)
3	FOKUS-FEHLER BALANCE	Testdisc Typ 4	Ein Oszilloskop wie folgt anschließen : Kanal 1 : RF (CN4-1) Kanal 2 : TE (CN4-6)	Die PLAY-Taste drücken und sicherstellen, daß "05" angezeigt wird.	FE BALANCE VR3	Optimales Augenmuster	(d)
4	FOKUSVERSTÄRKUNG	Testdisc Typ 4 Ein Signal von 1,0kHz, 100mVrms an CN4 Stift 2-3 anlegen.	Ein Tiefpaßfilter an CN4 Stift 2-3 und an dieses ein Oszilloskop oder Wechselstrom voltmeter anschließen.	Die PLAY-Taste drücken und sicherstellen, daß "05" angezeigt wird.	FOCUS GAIN VR4	Zwei VTVM müssen den Gleichen Wert zeigen.	(e)
5	SPURHALTE-VERSTÄRKUNG	Testdisc Typ 4 Ein Signal von 1,0kHz, 100mVrms an CN4 Stift 5-6 anlegen.	Ein Tiefpaßfilter an CN4 Stift 5-6 und an dieses ein Oszilloskop oder Wechselstrom voltmeter anschließen.	Die PLAY-Taste drücken und sicherstellen, daß "05" angezeigt wird.	TRACKING GAIN VR2	Zwei VTVM müssen den Gleichen Wert zeigen.	(e)

Zur Beachtung  
 Disc Typ 4 : Test-Disc SONY YDS-18 oder gleichwertig.  
 Tiefpaßfilter : ca. 47kΩ+390pF  
 Schritte 1-5 erfolgen im Testbetrieb.

## ABGLEICH

Nr.	EINSTELLGRÖSSE	EINGANGSEIN- STELLUNG	AUSGANGSEIN- STELLUNG	SPIELER- BETRIEBSART	EINSTELLPUNKT	EINSTELLVORGANG	Abb.
1	LASERLEISTUNG	-	Den Sensorteil des optischen Leistungsmessers auf die Pickup-Linse einstellen.	Die Stifte TEST kurzschließen, das Gerät einschalten und auf Testbetrieb stellen. Die "DISPLAY MODE"-Taste drücken und sicherstellen, daß die Anzeige "03" erscheint.	-	Auf 0,1 bis 0,3mW justieren, wenn das Beugungsgitter korrekt auf den HF-Pegel von 1,0Vs-s oder mehr ausgerichtet ist.	(a)
2	TRACKING-FEHLER BALANCE	Testdisc Typ 4	Ein Oszilloskop wie folgt anschließen : Kanal 1 : RF (CN4-1) Kanal 2 : TE (CN4-6)	Die Disc einlegen, und auf Testbetrieb schalten. Sicherstellen, daß die Anzeige "03" erscheint.	TE BALANCE VR1	Symmetrie zwischen oberen und unteren Mustern oder Gleichstrom $DC=0\pm 0,05V$	(c)
3	FOKUS-FEHLER BALANCE	Testdisc Typ 4	Ein Oszilloskop wie folgt anschließen : Kanal 1 : RF (CN4-1) Kanal 2 : TE (CN4-6)	Die PLAY-Taste drücken und sicherstellen, daß "05" angezeigt wird.	FE BALANCE VR3	Optimales Augenmuster	(d)
4	FOKUSVERSTÄRKUNG	Testdisc Typ 4 Ein Signal von 1,0kHz, 100mVrms an CN4 Stift 2-3 anlegen.	Ein Tiefpaßfilter an CN4 Stift 2-3 und an dieses ein Oszilloskop oder Wechselstrom voltmeter anschließen.	Die PLAY-Taste drücken und sicherstellen, daß "05" angezeigt wird.	FOCUS GAIN VR4	Zwei VTVM müssen den Gleichen Wert zeigen.	(e)
5	SPURHALTE- VERSTÄRKUNG	Testdisc Typ 4 Ein Signal von 1,0kHz, 100mVrms an CN4 Stift 5-6 anlegen.	Ein Tiefpaßfilter an CN4 Stift 5-6 und an dieses ein Oszilloskop oder Wechselstrom voltmeter anschließen.	Die PLAY-Taste drücken und sicherstellen, daß "05" angezeigt wird.	TRACKING GAIN VR2	Zwei VTVM müssen den Gleichen Wert zeigen.	(e)

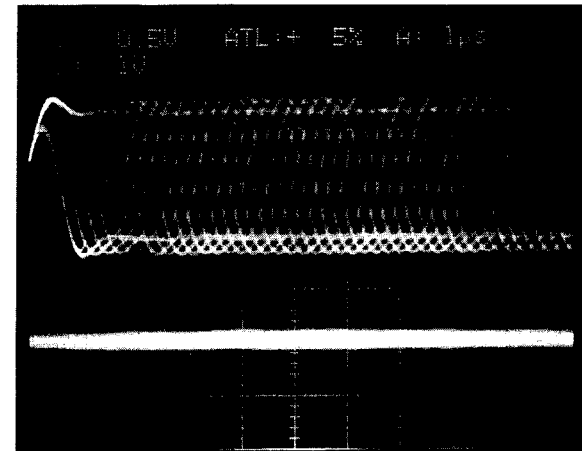
Zur Beachtung

Disc Typ 4 : Test-Disc SONY YDS-18 oder gleichwertig.

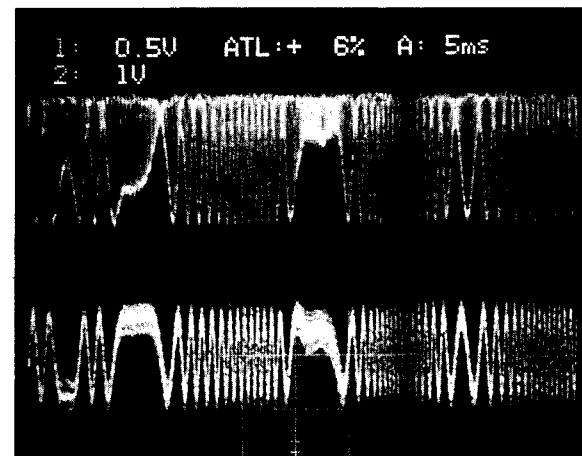
Tiefpaßfilter : ca.  $47k\Omega + 390pF$

Schritte 1-5 erfolgen im Testbetrieb.

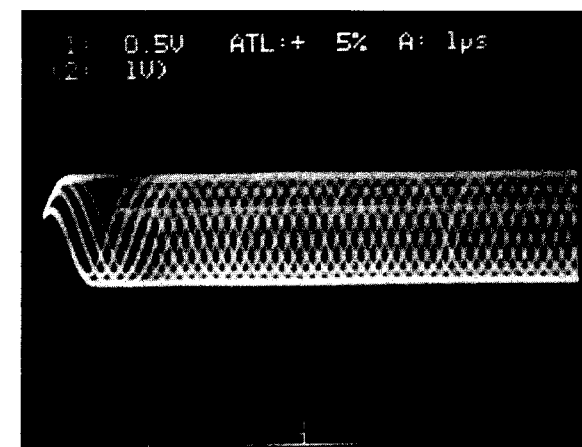
## ADJUSTMENT/REGLAGE/ABGLEICH



- RF signal and E.Spot signal in test mode (PLAY).
- Signal RF et signal E.Spot en mode de test (PLAY).
- RF-Signal und E.Spot-Signal im Testmodus (PLAY).



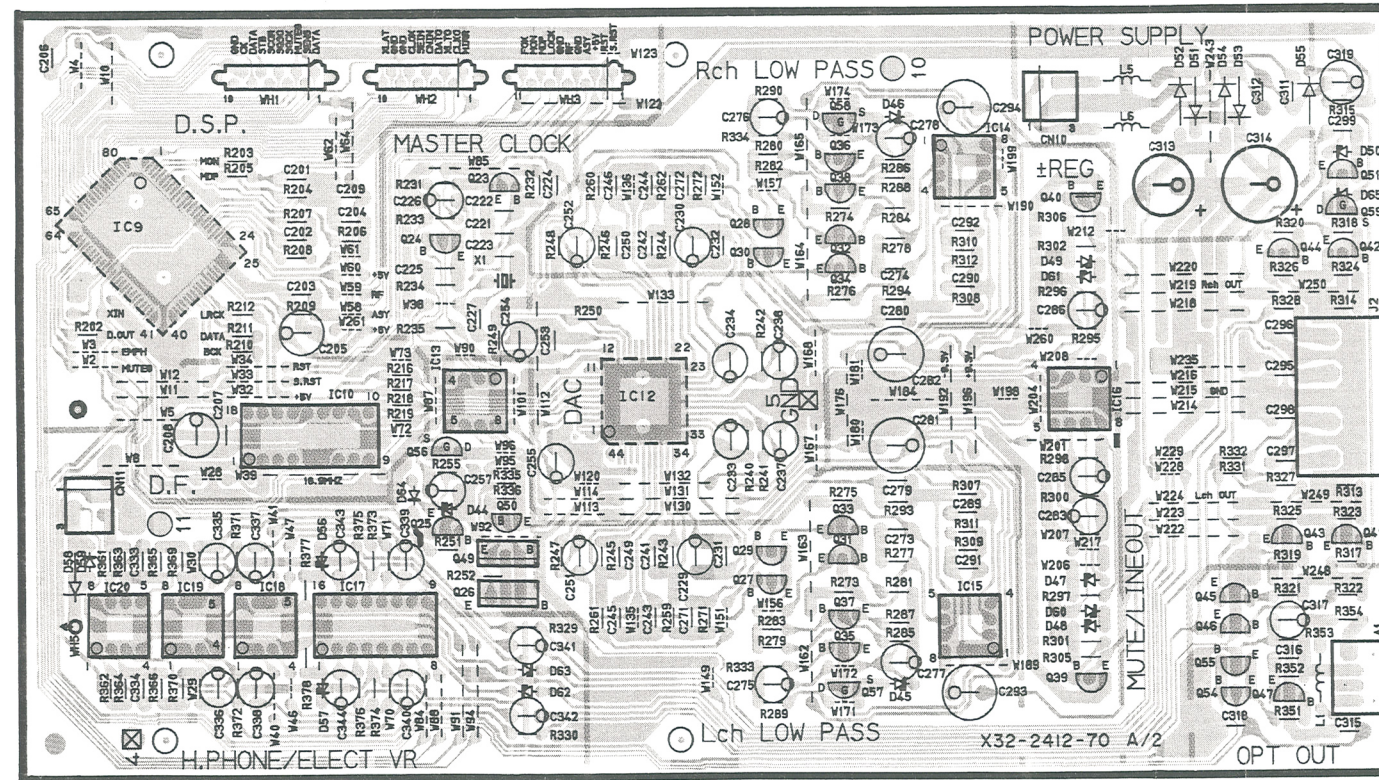
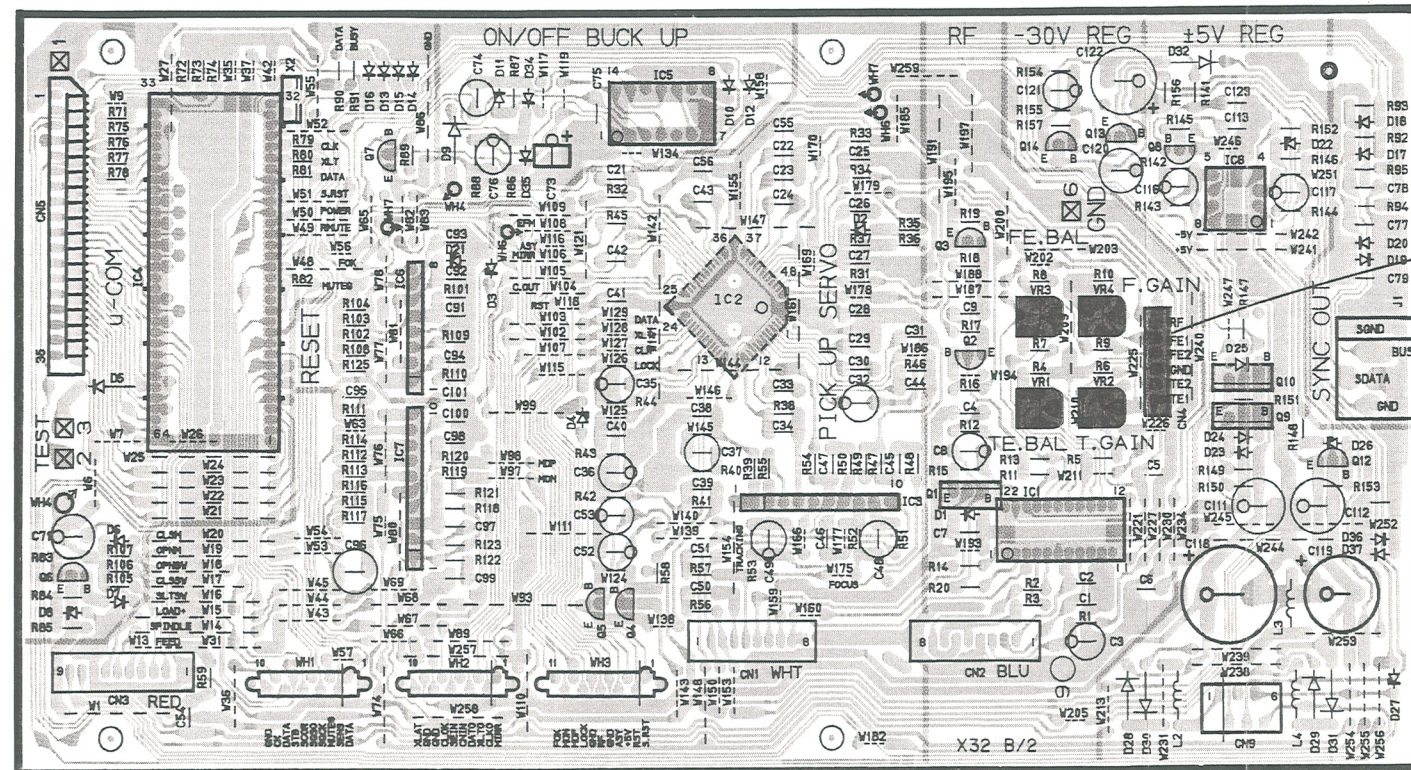
- RF signal and T.Error signal; in test mode (Focusing ON). (Disc type 4)
- Adjust T.Error so that the waveform is symmetrical above and below 0V. (VR1)
- Signal RF et signal T.Error; en mode test (mise au point ON). (Disque de type 4)
- Ajuster T.Error pour que la forme d'onde soit symétrique en-dessus et au-dessous de 0V. (VR1)
- RF-Signal und T.Error-Signal; im Testmodus (Fokussierung eingeschaltet). (Disc Typ 4)
- T.Error so einstellen, daß die Wellenform über und unter 0V symmetrisch ist. (VR1)



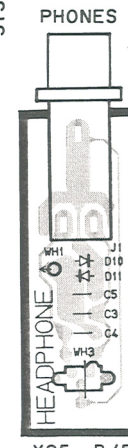
- RF signal in test mode (PLAY).
- Perform the tangential and focusing offset adjustments so that each of the center cross points are focused into one point on the display. The crossing points above and below the center shall also be displayed clearly.
- Signal RF en mode de test (PLAY).
- Effectuer les ajustments d'offset tangential et de mise au point pour que chacun des points de croisement central soit mis au point sur un point de l'affichage. Les points de croisement au-dessus et en-dessous du centre doivent aussi être affichés clairement.
- RF-Signal im Testmodus (PLAY).
- Die Tangential und Fokusversatz-Einstellungen so durchführen daß jeder der mittleren Kreuzungspunkte in einem Punkt auf dem Display fokussiert wird. Auch die Kreuzungspunkte über und unter der Mitte müssen klar angezeigt werden.



# PC BOARD (COMPONENT SIDE VIEW)

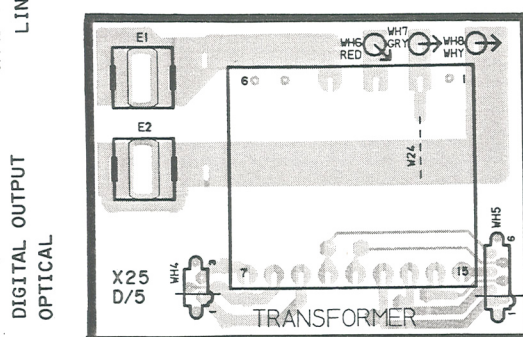


SYSTEM CONTROL

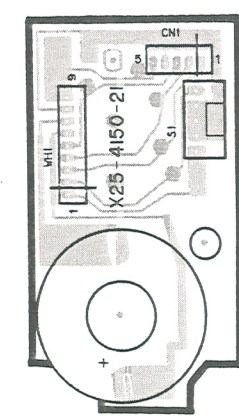


X25 B/5

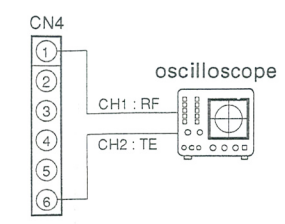
VARIABLE FIXED LINE OUTPUT



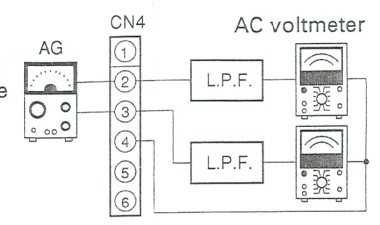
DIGITAL OUTPUT OPTICAL



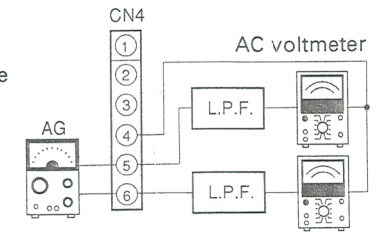
- (c) Tracking error balance : Symmetry between upper and lower or  $DC=0\pm 0.05V$
- (d) Focus error balance : Optimum eye pattern



- (e) Focus gain : Two VTVMs should read the same value

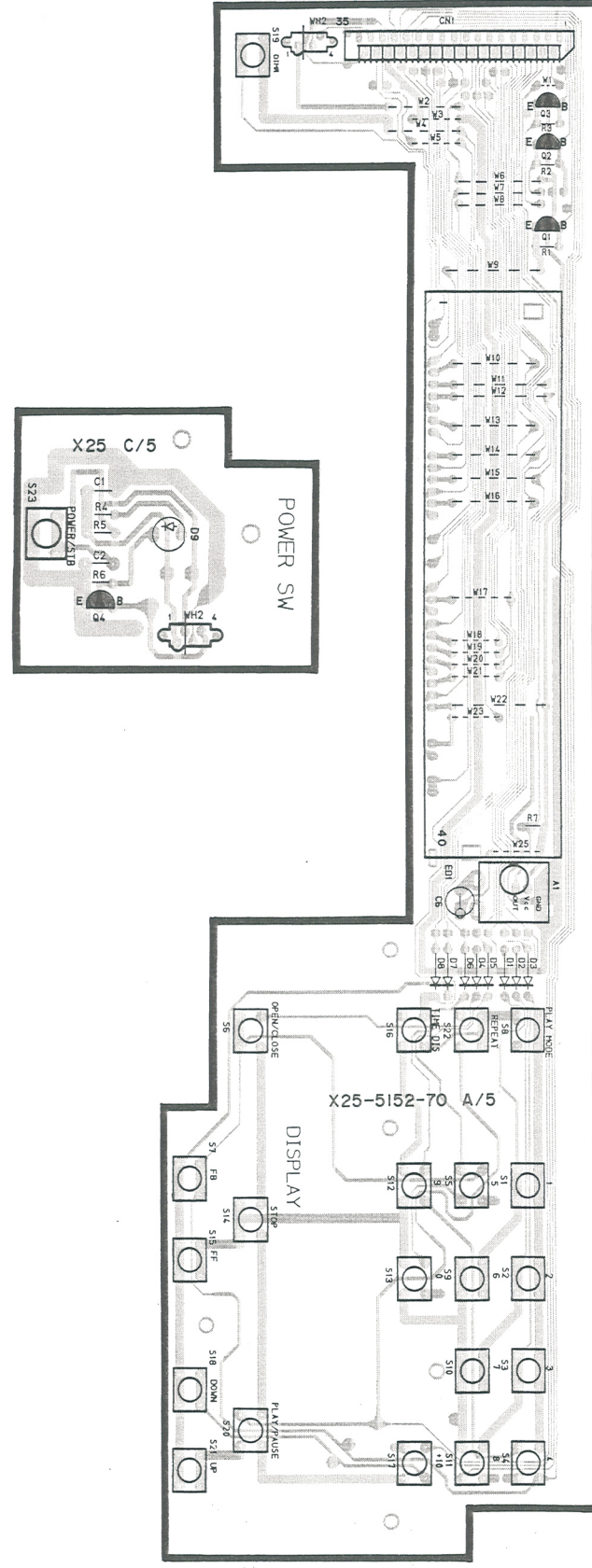
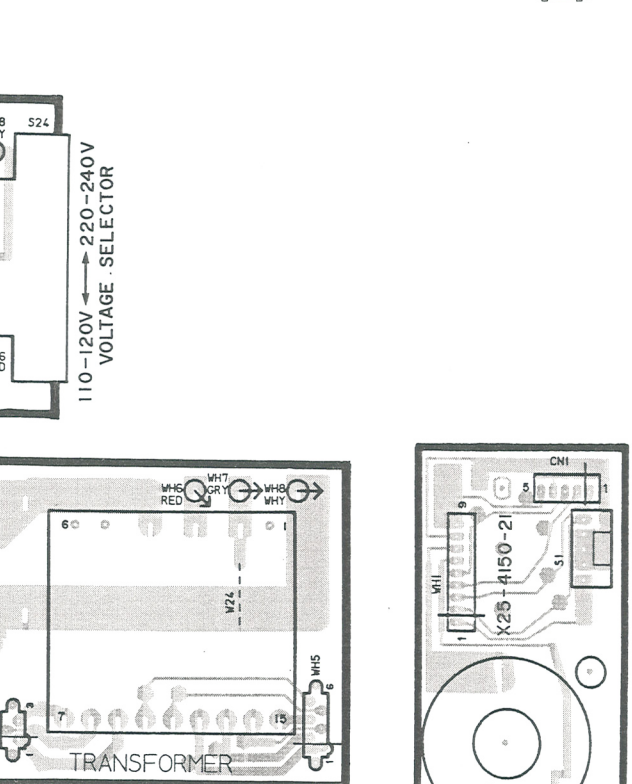
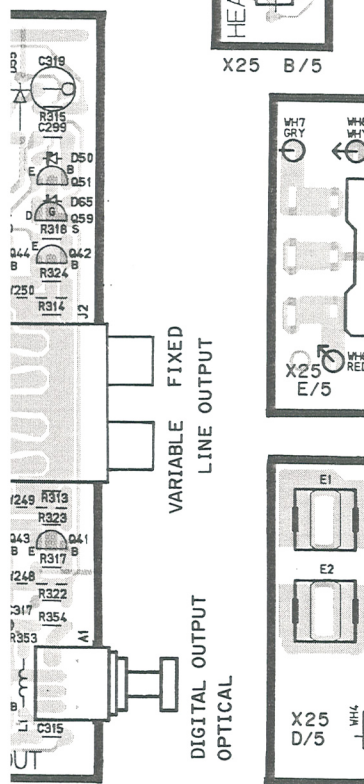
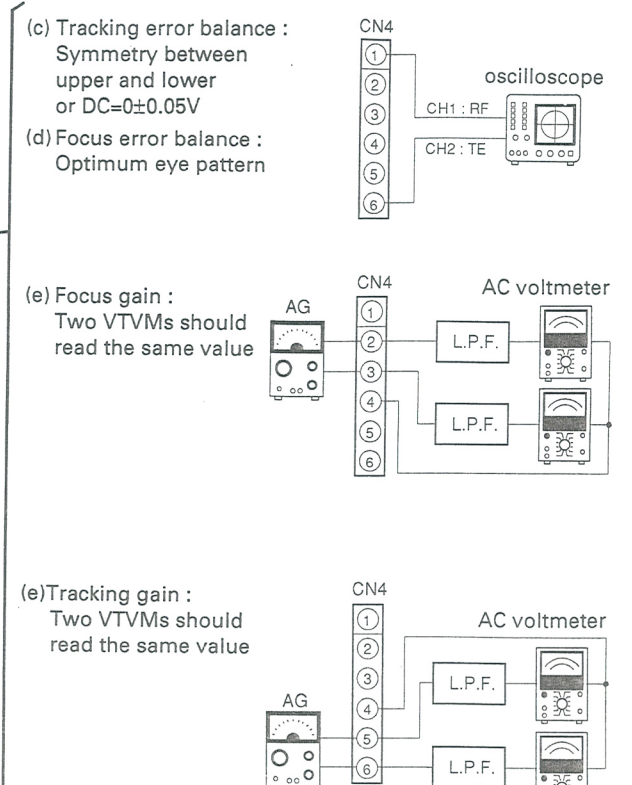
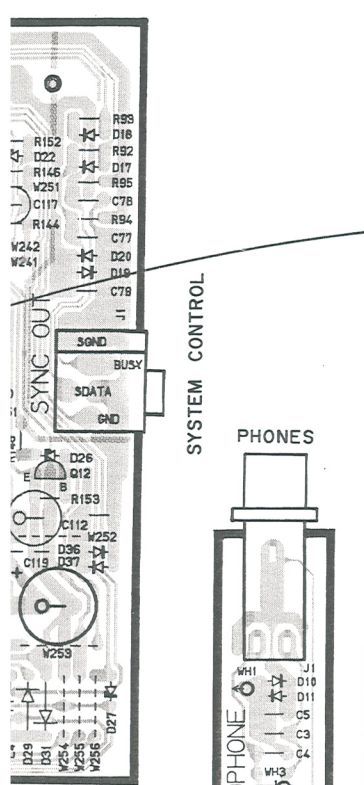


- (e) Tracking gain : Two VTVMs should read the same value

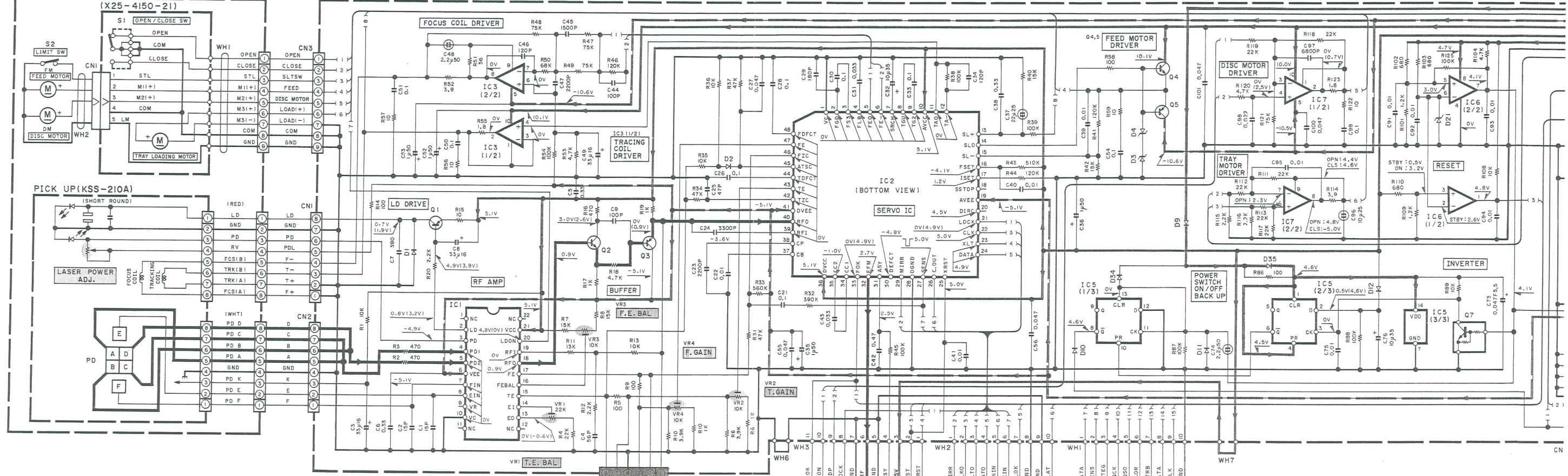


Refer to the schematic diagram for the values of resistors and capacitors.





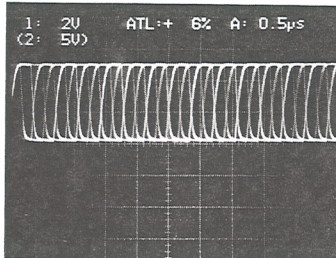
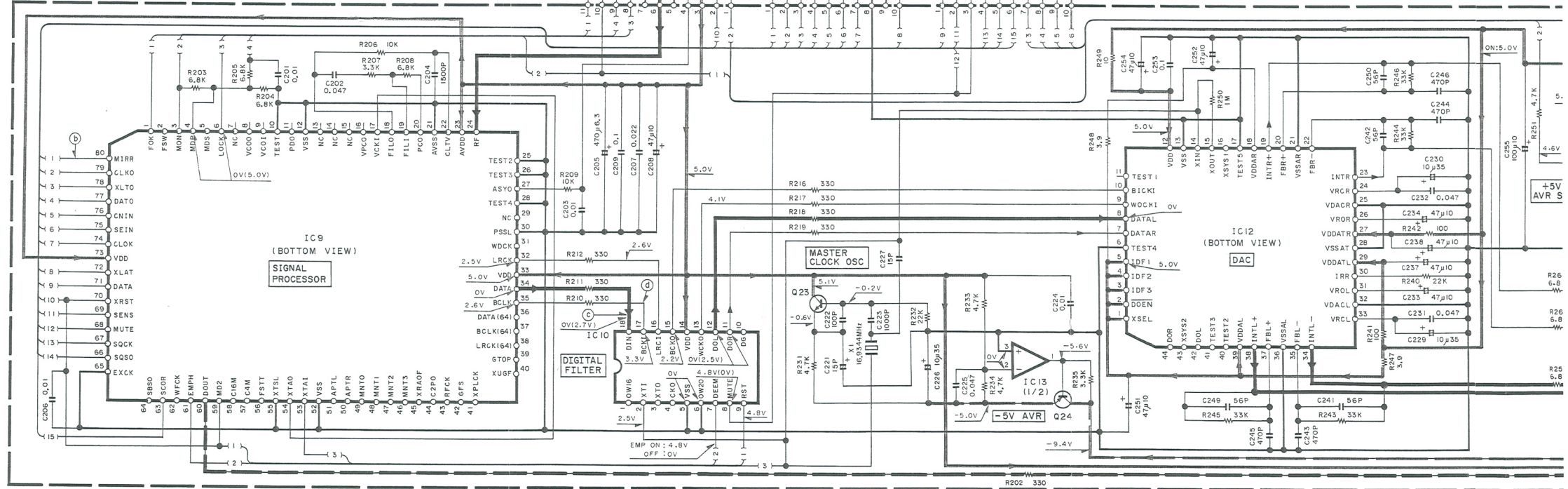




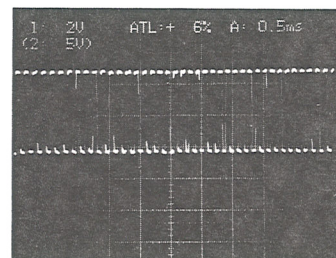
PRODUCT P.	UNIT NAME
SINGAPORE MADE	X32-2412-70
FRANCE MADE	X32-2512-70

- IC1 : CXA1571S
- IC2 : CXA1372Q
- IC3,7 : TA8410AK
- IC4 :  $\mu$ PD75126ACW-W43
- IC5 : TC74HC74AP
- IC6 : BA10393N
- IC8,13,16 : NJM4558D
- IC9 : CXD25008Q
- IC10 : SM5840CP
- IC12 : SAA7350
- IC14,15,20 : NJM4580D
- IC17 : TC9213P
- IC18,19 : NJM4566D
- Q1 : 2SA1110(R,S)
- Q2 : 2SC3311A(Q,R)
- Q3 : 2SA1309A(Q,R)
- Q4,6,12,14,39 : 2SC3940A
- Q5,40 : 2SA1534A
- Q7 : UN4212 or DTC124ES
- Q8,41-46 : 2SC2878(B)
- Q9,10 : 2SB1375
- Q13,24,25,35,36,47,55 : 2SA992(F,E)
- Q23 : 2SC1923(R,O)
- Q26,49 : 2SD2012
- Q27-34,37,38,50,54 : 2SC1845(F,E)
- Q51 : UN4216 or DTC143TS
- Q56 : 2SK246(Y,GR)
- Q57,58 : 2SK246(Y)
- Q59 : 2SK163(L)
- D1,2,6,7,10-20,23,24,34-37,59,64,65 : 1SS133 or HSS104
- D3,4,21,62,63 : HZS2.7N(B2) or RD2.7ES(B2)
- D5,28-32,51-55,58 : S5688B or 1SR139-100
- D8 : HZS5.6N(B2) or RD5.6ES(B2)
- D9 : SD103A
- D22,25,26,44-49,60,61 : HZS5.1S(B2) or RD5.1JS(B2)
- D27 : HZS8.2S(B2) or RD8.2JS(B2)
- D50 : HZS10N(B2) or RD10ES(B2)
- D56,57 : HZS7.5S(B2) or RD7.5JS(B2)

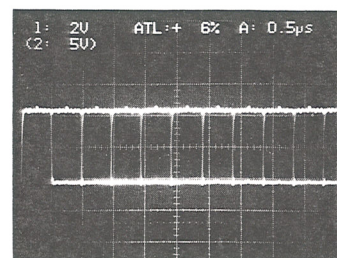
(X32-2412-70) (A/2)



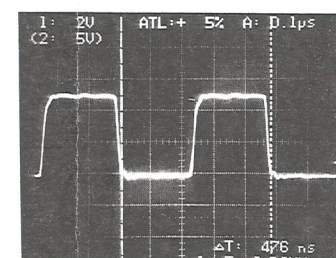
Ⓐ Q54, 55 Emitter : DC coupled  
 ←DATA : 1kHz, 0dB signal



Ⓑ IC9 (Pin80) : DC coupled  
 ←MIRR : During search

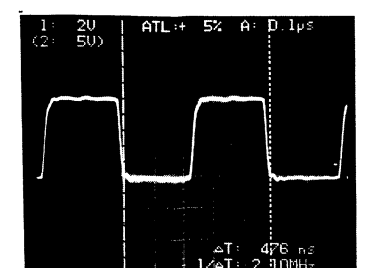
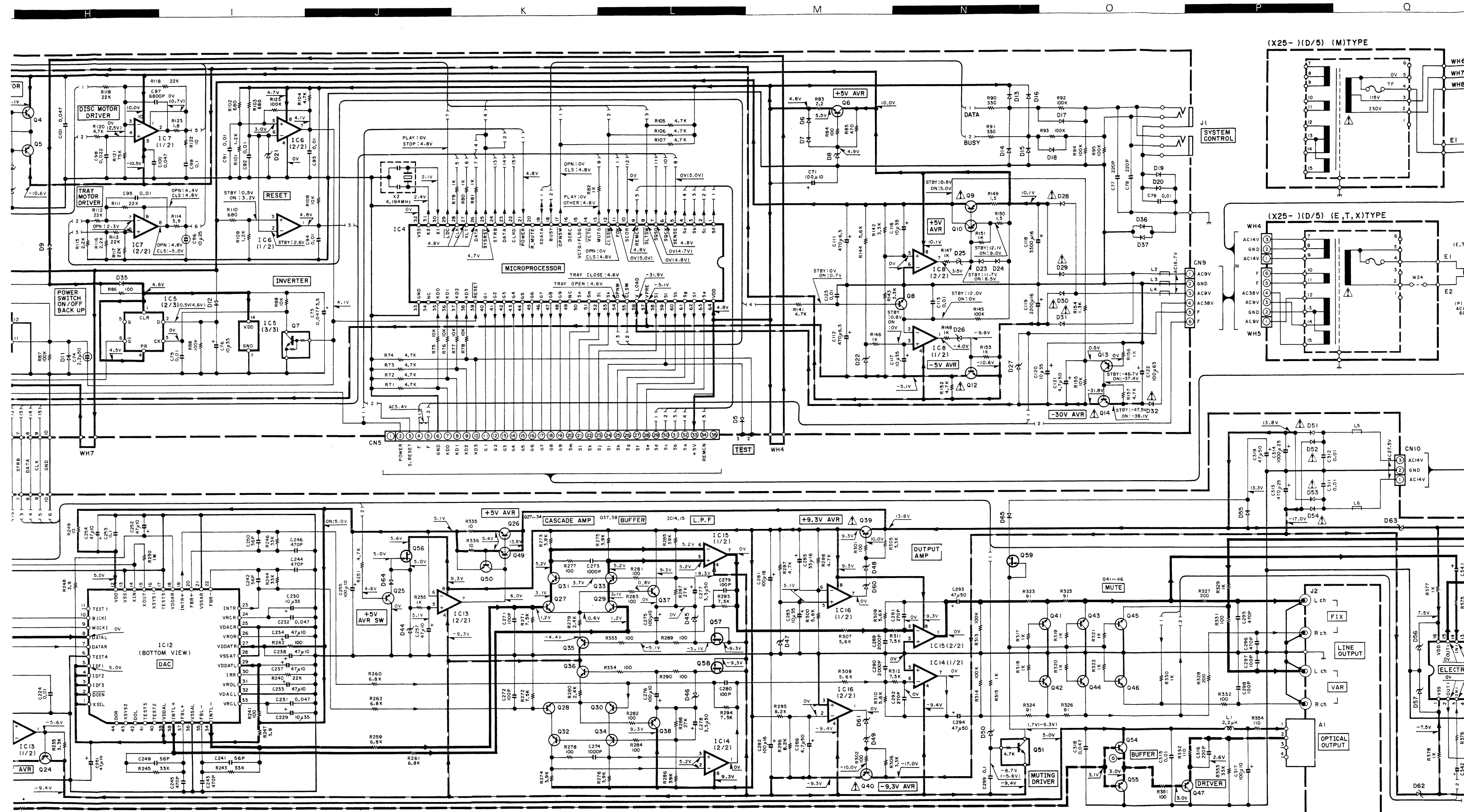


Ⓒ IC10 (Pin18) : AC coupled  
 ←DIN



Ⓓ IC10 (Pin17) : AC coupled  
 ←BCKI



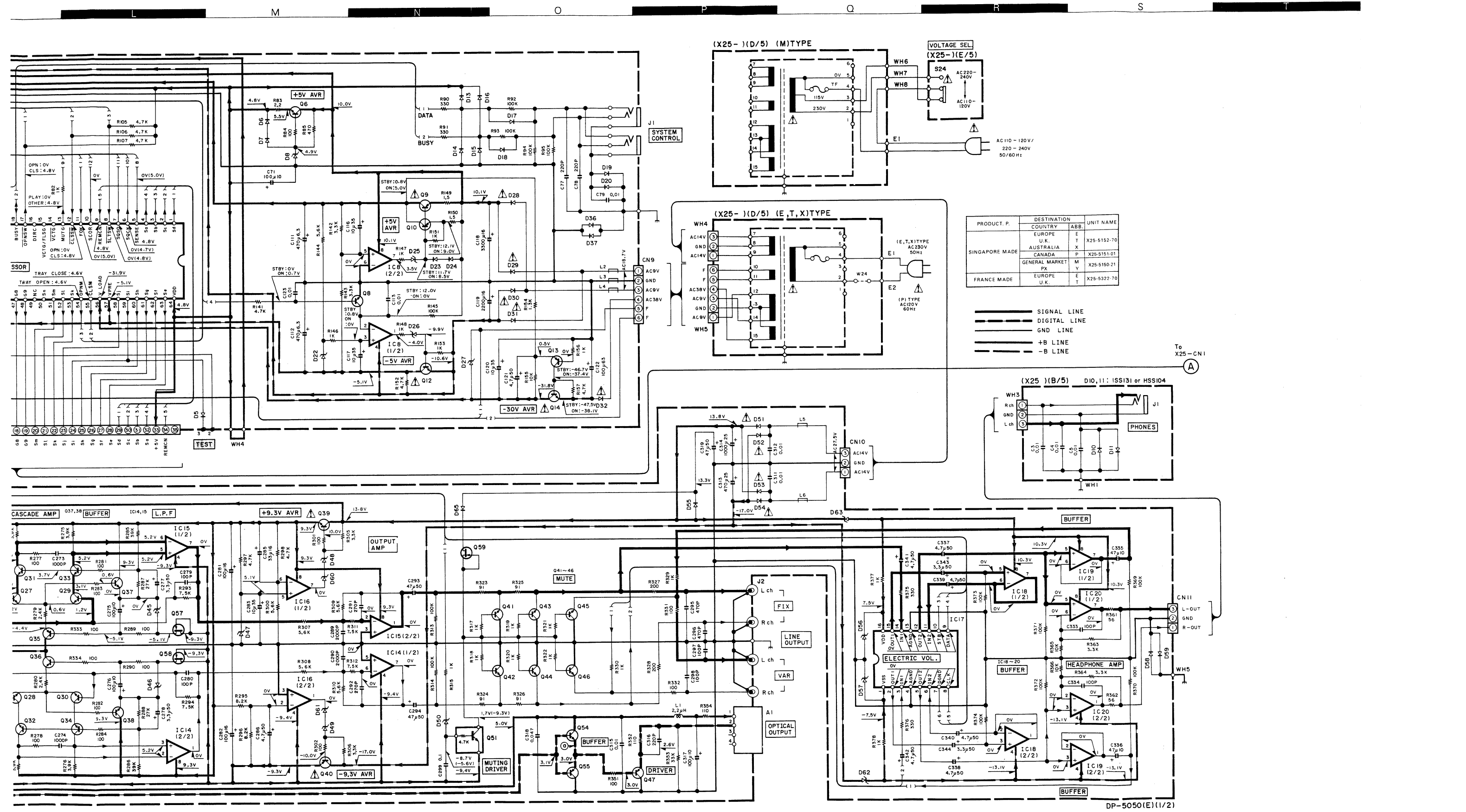


Ⓢ IC10 (Pin17) : AC coupled  
← BCK1

- DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between or/and units.
- Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance. Les valeurs peuvent différer légèrement en raison des variations inhérentes aux appareils et aux instruments de mesure individuels.
- Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen Voltmeter gemessen. Dabei schwanken die Werte geringfügig.

**CAUTION :** For continued safety, replace safety critical components only with manufacturer's recommended list. ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurement (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

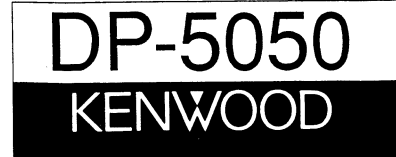




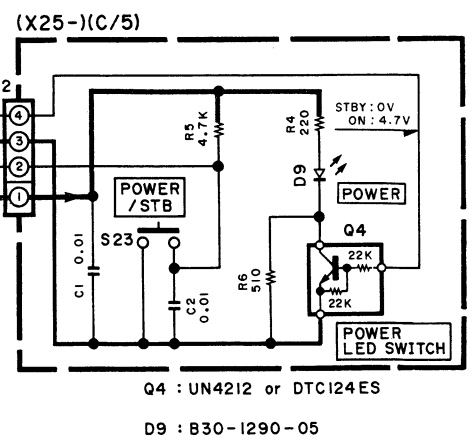
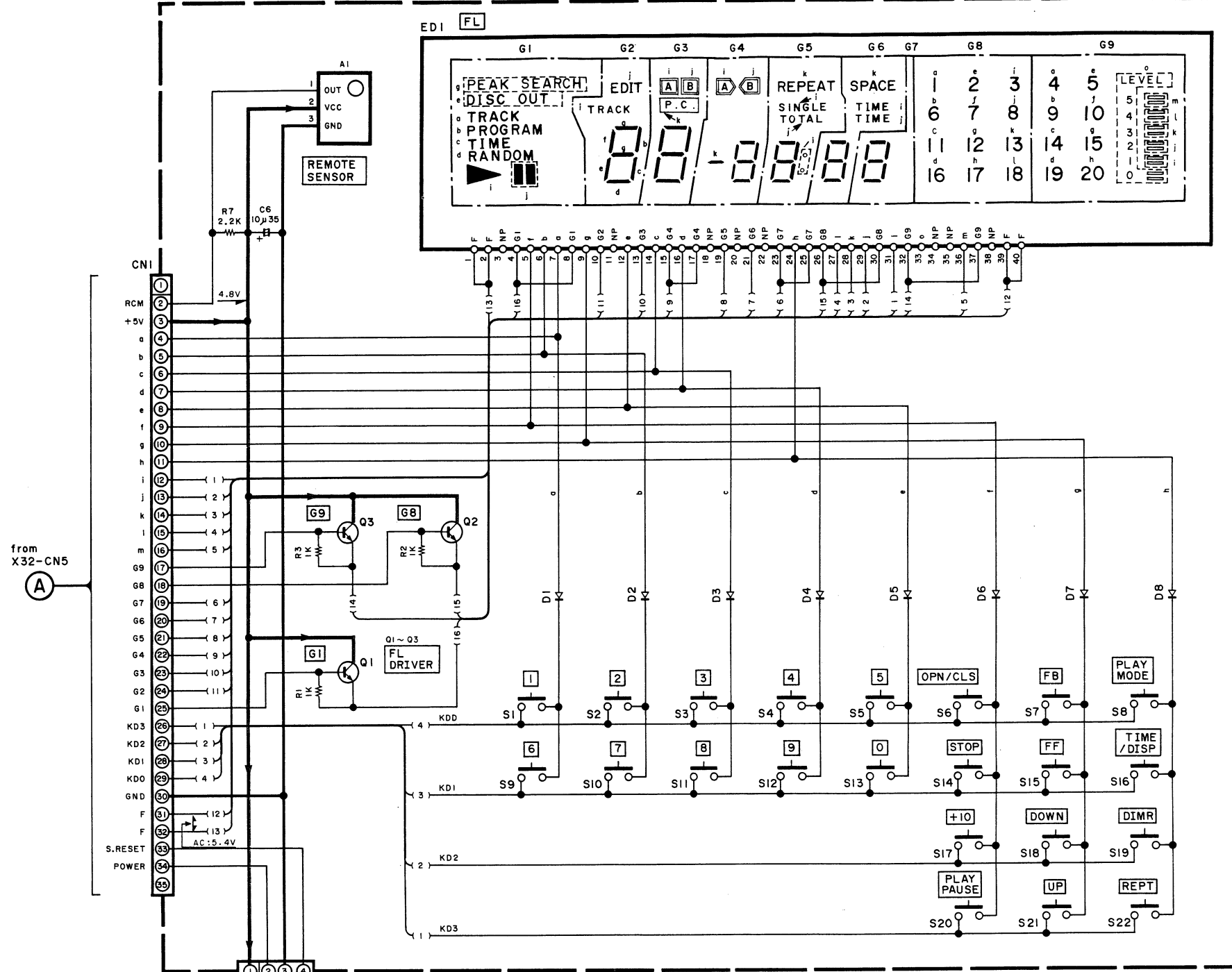
- DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.
- Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance. Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.
- Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen Voltmeter 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.

Y22-3192-70



(X25-5152-70) (A/5) DISPLAY UNIT



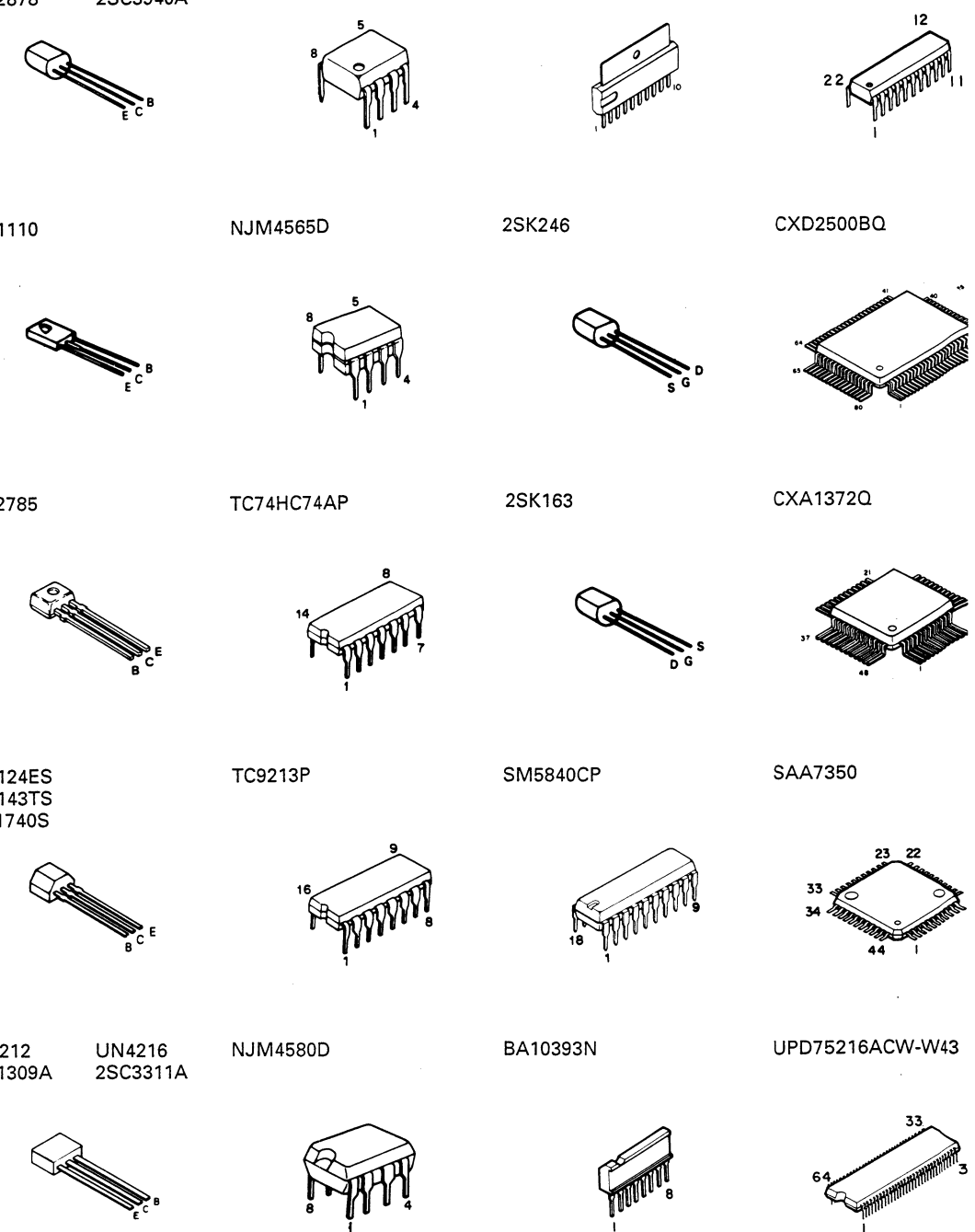
- Q1~3 : 2SC1740S (Q,R) or 2SC2785 (F,E)
- D1~8 : 1SS131 or HSS104A
- EDI : CF1090C
- A1 : W02-1129-05

PRODUCT. P.	DESTINATION		UNIT NAME
	COUNTRY	ABB.	
SINGAPORE MADE	EUROPE	E	X25-5152-70
	U.K.	T	
	AUSTRALIA	X	
	CANADA	P	X25-5151-01
GENERAL MARKET	PX	M	X25-5150-21
		Y	
FRANCE MADE	EUROPE	E	X25-5322-70
	U.K.	T	

Q4 : UN4212 or DTC124ES  
D9 : 830-1290-05

DP-5050 (E) (2/2)

2SA1534A 2SC1845 2SC2878	2SA992 2SC1923 2SC3940A	NJM4558D	TA8410AK	CXA1571S
2SA1110	NJM4565D	2SK246	CXD2500BQ	
2SC2785	TC74HC74AP	2SK163	CXA1372Q	
DTC124ES DTC143TS 2SC1740S	TC9213P	SM5840CP	SAA7350	
UN4212 2SA1309A	UN4216 2SC3311A	NJM4580D	BA10393N	UPD75216ACW-W43



• DC voltages are as measured with a high impedance voltmeter. 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. Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.

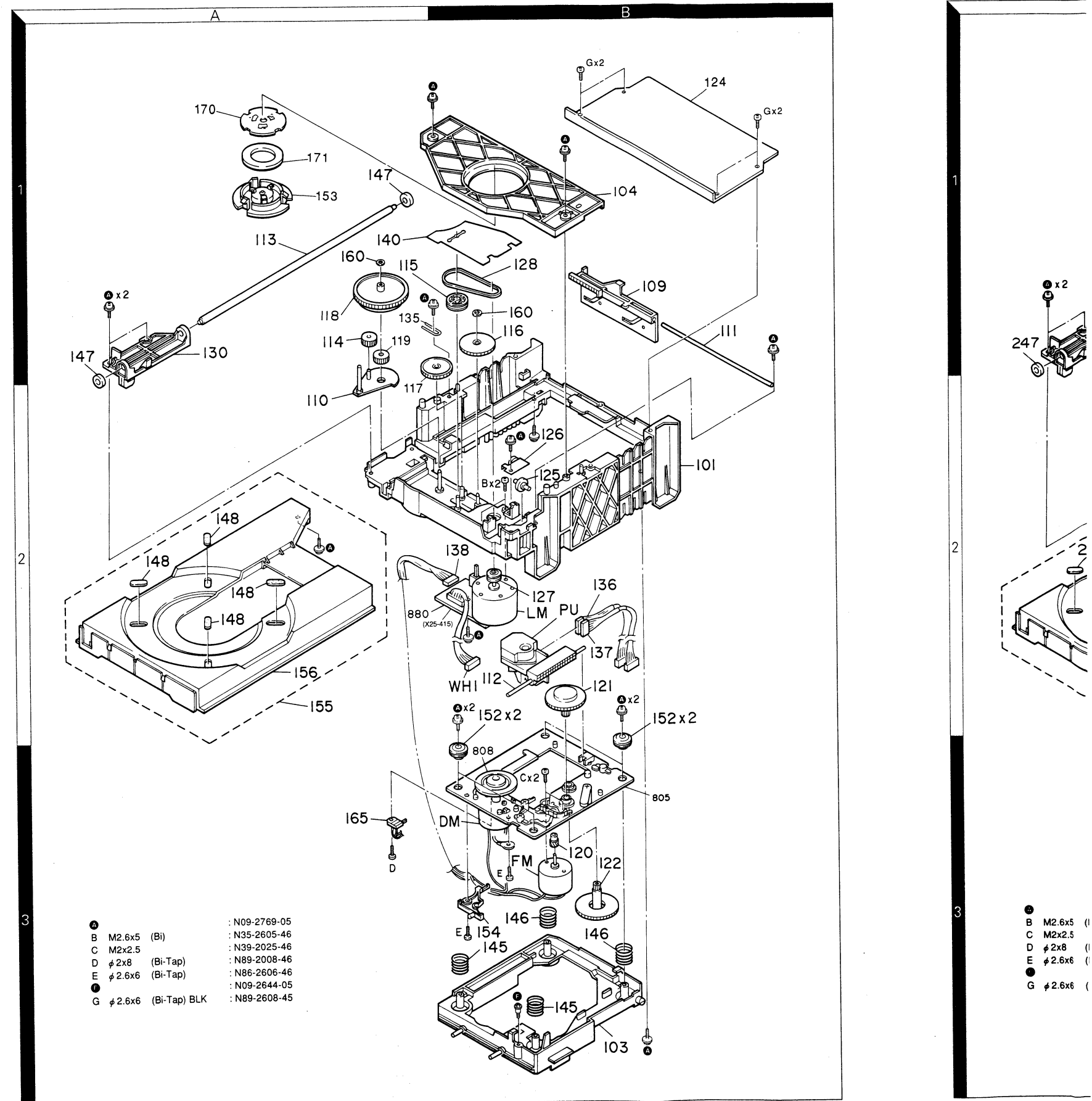
• Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen Voltmeter gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen instrumenten oder Geräten u.U. geringfügig.

**CAUTION:** For continued safety, replace safety critical components only with manufacturer's recommended parts (refer parts list). Δ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistant measurements shall be carried out (e posed parts are acceptably insulated from the supply circuit) before the appliance returned to the customer.

Y22-3192-70



EXPLODED VIEW (MECHANISM) : SINGAPORE MADE



- A : N09-2769-05
- B M2.6x5 (Bi) : N35-2605-46
- C M2x2.5 : N39-2025-46
- D φ2x8 (Bi-Tap) : N89-2008-46
- E φ2.6x6 (Bi-Tap) : N86-2606-46
- F : N09-2644-05
- G φ2.6x6 (Bi-Tap) BLK : N89-2608-45

- B M2.6x5 ( )
- C M2x2.5 ( )
- D φ2x8 ( )
- E φ2.6x6 ( )
- G φ2.6x6 ( )

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

534A 2SA992 NJM4558D TA8410AK CXA1571S  
845 2SC1923  
878 2SC3940A



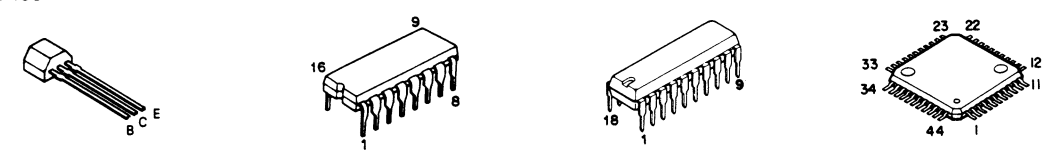
110 NJM4565D 2SK246 CXD2500BQ



785 TC74HC74AP 2SK163 CXA1372Q



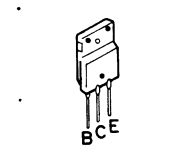
24ES 43TS 740S TC9213P SM5840CP SAA7350



212 UN4216 NJM4580D BA10393N UPD75216ACW-W43  
309A 2SC3311A



1375 2012



- DC voltages are as measured with a high impedance voltmeter. 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. 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 Voltmeter gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen instrumenten oder Geräten u.U. geringfügig.

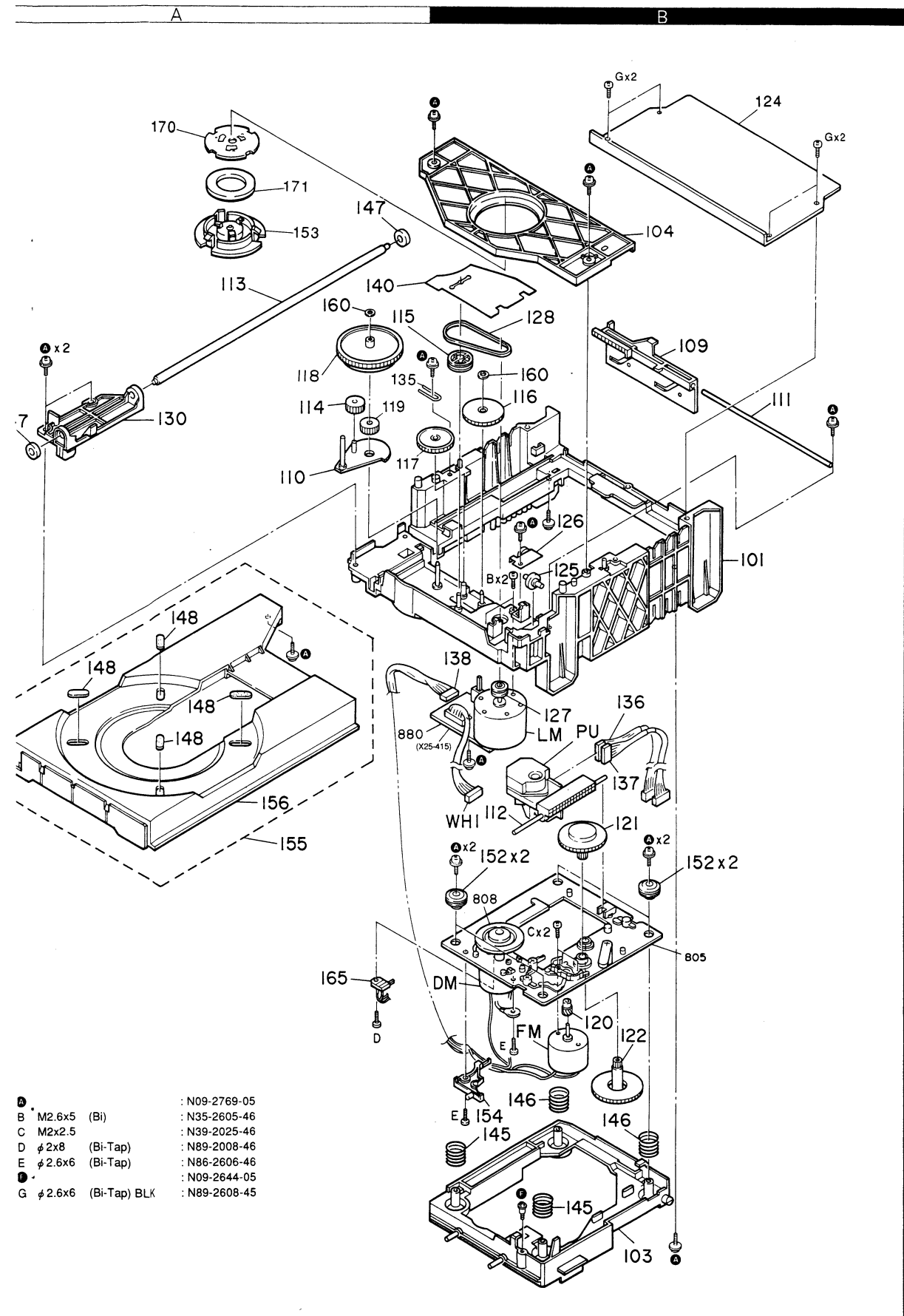
**CAUTION :** For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Δ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

**DP-5050**  
**KENWOOD**

Y22-3192-70

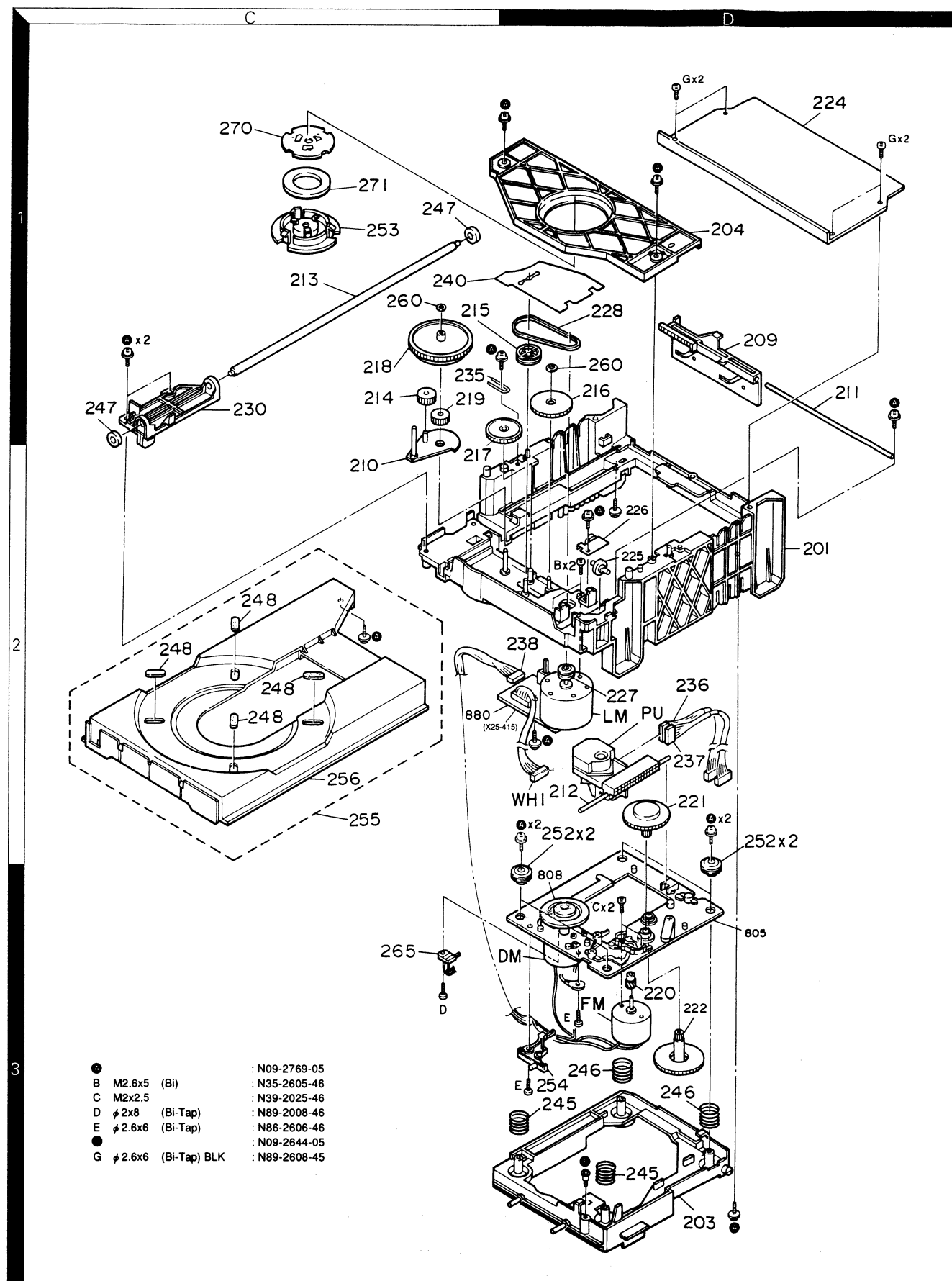
# DP-5050

## EXPLODED VIEW (MECHANISM) : SINGAPORE MADE

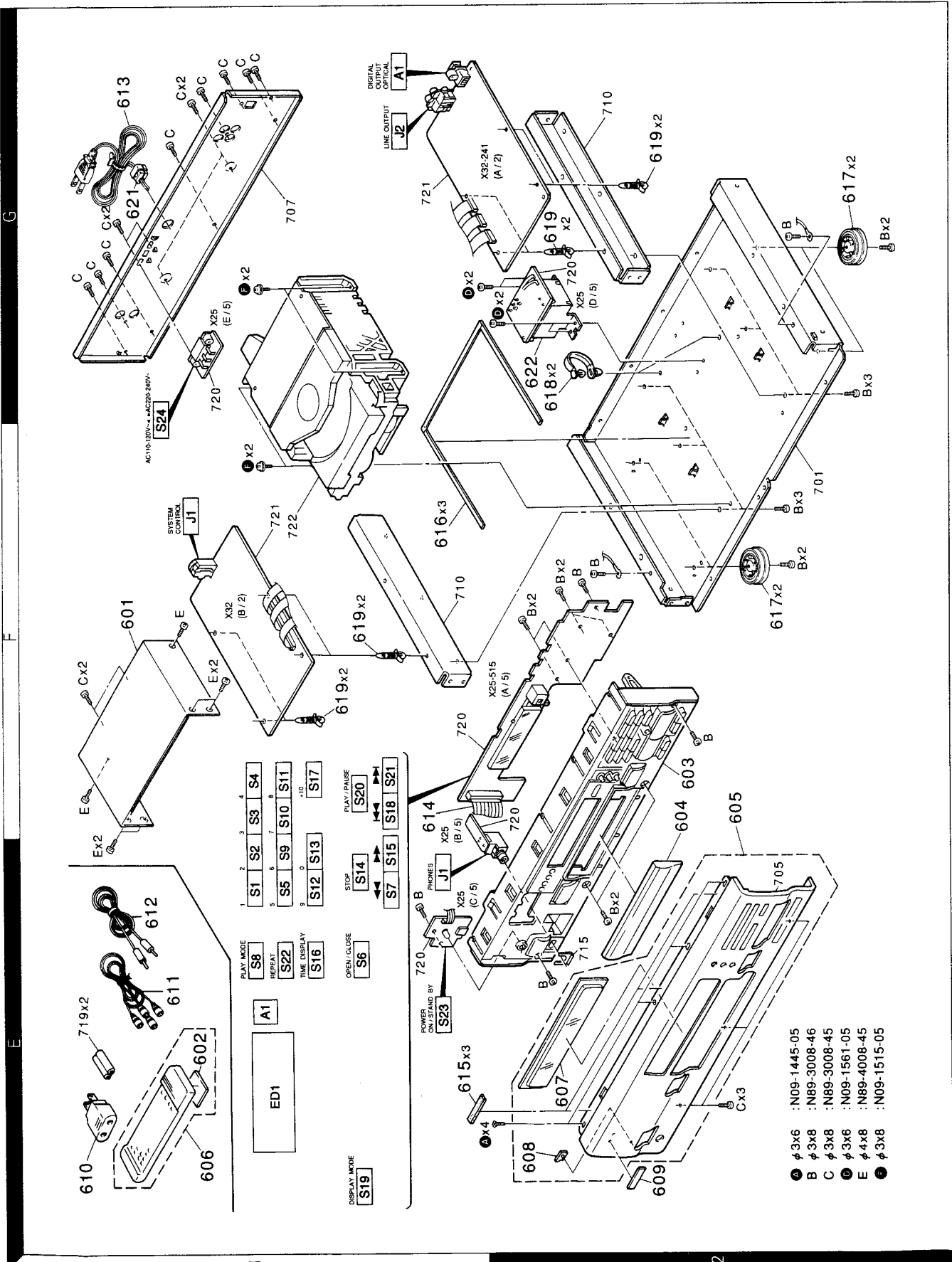


# DP-5050

## EXPLODED VIEW (MECHANISM) : FRANCE MADE



## EXPLODED VIEW (UNIT)



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

## PARTS LIST

\* New Parts

Parts without Parts No. are not supplied.

Les articles non mentionnés dans le Parts No. ne sont pas fournis.

Teile ohne Parts No. werden nicht geliefert.

Ref. No. 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
<b>DP-5050 COLOR : BLACK (SINGAPORE MADE)</b>						
601	1F		A01-1823-21	METALLIC CABINET		S
602	1E		A09-0078-08	BATTERY COVER		
603	2F	*	A22-1618-11	SUB PANEL		S
604	2F	*	A29-0325-03	PANEL (TRAY)		S
605	2F	*	A60-0320-12	PANEL ASSY(FRONT)		
606	1E	*	A70-0922-05	REMOTE CONTROLLER ASSY(RC-P050)		
607	2E	*	B10-1949-03	FRONT GLASS		
608	2E		B12-0219-04	INDICATOR		
609	2E		B43-0287-04	KENWOOD BADGE		
-			B46-0094-03	WARRANTY CARD	Y	
-			B46-0095-03	WARRANTY CARD	Y	
-			B46-0096-33	WARRANTY CARD	X	
-			B46-0121-23	WARRANTY CARD	P	
-			B46-0122-23	WARRANTY CARD	E	
-			B46-0143-13	WARRANTY CARD	T	
-			B58-0513-04	CAUTION CARD (PRESET220-240)	Y	
-			B58-0945-03	CAUTION CARD	T	
-		*	B60-1043-00	INSTRUCTION MANUAL(ENGLISH)		S
-		*	B60-1044-00	INSTRUCTION MANUAL(FRENCH)	EP	S
-		*	B60-1045-00	INSTRUCTION MANUAL(G,D,I)	E	S
-		*	B60-1046-00	INSTRUCTION MANUAL(SPANISH)	EM	S
-		*	B60-1047-00	INSTRUCTION MANUAL(CHINESE)	M	S
△ 610	1E		E03-0115-05	AC PLUG ADAPTER	M	
611	1E		E30-0505-05	AUDIO CORD		
612	1E		E30-0977-05	CORD WITH PLUG(SYSTEM CONTROL)		
△ 613	1G		E30-2273-05	AC POWER CORD	Y	
△ 613	1G		E30-2277-15	AC POWER CORD	EM	
△ 613	1G		E30-2405-05	AC POWER CORD	P	
△ 613	1G		E30-2715-05	AC POWER CORD	X	
△ 613	1G	*	E30-2719-05	AC POWER CORD	T	
614	1F		E35-0083-05	FLAT CABLE		
615	1E		G10-0185-04	NON-WOVEN FABRIC		
616	1F		G10-0183-04	NON-WOVEN FABRIC		
-			H10-5218-12	POLYSTYRENE FOAMED FIXTURE(L)	EPYM	S
-			H10-5219-12	POLYSTYRENE FOAMED FIXTURE(R)	EPYM	S
-			H10-5405-02	POLYSTYRENE FOAMED FIXTURE(L)	XT	S
-			H10-5406-02	POLYSTYRENE FOAMED FIXTURE(R)	XT	S
-			H20-0554-04	PROTECTION COVER	M	
-			H25-0232-04	PROTECTION BAG (235X350X0.03)	EPYMX	
-			H25-0361-04	PROTECTION BAG	EPYX	
-			H25-0651-04	PROTECTION BAG (0232 PRINTED)	T	
-			H25-0666-04	PROTECTION BAG (0361 PRINTED)	T	
-		*	H50-0501-04	ITEM CARTON CASE	EPY	S
-		*	H50-0502-04	ITEM CARTON CASE	M	S
-		*	H50-0590-04	ITEM CARTON CASE	XT	S
617	2F, 2G		J02-1002-05	FOOT		
618	2G		J11-0163-05	WIRE CLAMPER		
619	1F, 2G		J19-3325-05	UNIT HOLDER		
△ 621	1G		J42-0078-05	POWER CORD BUSHING		
-			J61-0307-05	WIRE BAND	MT	

L:Scandinavia

K:USA

P:Canada

S : SINGAPORE MADE

Y:PX(Far East, Hawaii)

T:England

E:Europe

Y:AAFES(Europe)

X:Australia

M:Other Areas

△ indicates safety critical components.

## PARTS LIST

x 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. 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
△ 622	2G	*	L07-0620-05	POWER TRANSFORMER	P	
△ 622	2G	*	L07-0621-05	POWER TRANSFORMER	EXT	
△ 622	2G	*	L07-0622-05	POWER TRANSFORMER	YM	
A	2E		N09-1445-05	SET SCREW (M3X8)		
B	2F		N89-3008-46	BINDING HEAD TAPTITE SCREW		
C	1G, 2E		N89-3008-45	BINDING HEAD TAPTITE SCREW		
D	2G		N09-1561-05	TAPTITE SCREW (3X6)		
E	1F		N89-4008-45	BINDING HEAD TAPTITE SCREW		
F	2F, 2G		N09-1515-05	TAPPING SCREW (3X8)		
<b>DP-5050 COLOR BLACK (FRANCE MADE)</b>						
601	1F		A01-1823-21	METALLIC CABINET		S
602	1E		A09-0078-08	BATTERY COVER		
603	2F	*	A22-1618-11	SUB PANEL		S
604	2F	*	A29-0325-03	PANEL (TRAY)		S
605	2F	*	A60-0320-12	PANEL ASSY (FRONT)		
606	1E	*	A70-0922-05	REMOTE CONTROLLER ASSY (RC-P050)		
607	2E	*	B10-1949-03	FRONT GLASS		
608	2E		B12-0219-04	INDICATOR		
609	2E		B43-0287-04	KENWOOD BADGE		
-			B46-0122-23	WARRANTY CARD	E	
-			B46-0143-13	WARRANTY CARD	T	
-			B58-0945-03	CAUTION CARD	T	
-		*	B60-1043-00	INSTRUCTION MANUAL (ENGLISH)	E	S
-		*	B60-1044-00	INSTRUCTION MANUAL (FRENCH)	E	S
-		*	B60-1045-00	INSTRUCTION MANUAL (G, D, I)	E	S
-		*	B60-1046-00	INSTRUCTION MANUAL (SPANISH)	E	S
611	1E		E30-0505-05	AUDIO CORD		
612	1E		E30-0977-05	CORD WITH PLUG (SYSTEM CONTROL)		
△ 613	1G		E30-2277-15	AC POWER CORD	E	
△ 613	1G	*	E30-2719-05	AC POWER CORD	T	
614	1F		E35-0083-05	FLAT CABLE		
615	1E		G10-0185-04	NON-WOVEN FABRIC		
616	1F		G10-0183-04	NON-WOVEN FABRIC		
-		*	H10-5480-02	POLYSTYRENE FOAMED FIXTURE (L)		F
-		*	H10-5481-02	POLYSTYRENE FOAMED FIXTURE (R)		F
-			H25-0272-04	PROTECTION BAG (235X350X0.03)	E	
-			H25-0361-04	PROTECTION BAG	E	
-			H25-0651-04	PROTECTION BAG (0232 PRINTED)	T	
-			H25-0666-04	PROTECTION BAG (0361 PRINTED)	T	
-		*	H50-0624-04	ITEM CARTON CASE	E	F
-		*	H50-0625-04	ITEM CARTON CASE	T	F
617	2F, 2G		J02-1002-05	FOOT		
618	2G		J11-0163-05	WIRE CLAMPER		
619	1F, 2G		J19-3325-05	UNIT HOLDER		
△ 621	1G		J42-0078-05	POWER CORD BUSHING		
-			J61-0307-05	WIRE BAND	T	
△ 622	2G	*	L07-0621-05	POWER TRANSFORMER		
A	2E		N09-1445-05	SET SCREW (M3X8)		
B	2F		N89-3008-46	BINDING HEAD TAPTITE SCREW		
C	1G, 2E		N89-3008-45	BINDING HEAD TAPTITE SCREW		

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D E F	2G 1F 2F, 2G		N09-1561-05 N89-4008-45 N09-1515-05	TAPTITE SCREW (3X6) BINDING HEAD TAPTITE SCREW TAPPING SCREW (3X8)		
<b>DP-5050 COLOR : TITANIUM GRAY (SINGAPORE MADE)</b>						
601	1F	*	A01-3037-01	METALLIC CABINET	E	
602	1E		A09-0078-08	BATTERY COVER	E	
603	2F	*	A22-1633-01	SUB PANEL	E	S
604	2F	*	A29-0343-04	PANEL ASSY(TRAY)	E	
605	2F	*	A60-0408-02	PANEL ASSY(FRONT)	E	
606	1E	*	A70-0922-05	REMOTE CONTROLLER ASSY(RC-P050)	E	
607	2E	*	B10-1949-03	FRONT GLASS	E	
608	2E		B12-0219-04	INDICATOR	E	
609	2E		B43-0287-04	KENWOOD BADGE	E	
-			B46-0122-23	WARRANTY CARD	E	
-		*	B60-1043-00	INSTRUCTION MANUAL(ENGLISH)	E	S
-		*	B60-1044-00	INSTRUCTION MANUAL(FRENCH)	E	S
-		*	B60-1045-00	INSTRUCTION MANUAL(G,D,I)	E	S
-		*	B60-1046-00	INSTRUCTION MANUAL(SPANISH)	E	S
611	1E		E30-0505-05	AUDIO CORD	E	
612	1E		E30-0977-05	CORD WITH PLUG(SYSTEM CONTROL)	E	
△ 613	1G		E30-2277-15	AC POWER CORD	E	
614	1F		E35-0083-05	FLAT CABLE	E	
615	1E		G10-0185-04	NON-WOVEN FABRIC	E	
-			H10-5218-12	POLYSTYRENE FOAMED FIXTURE(L)	E	S
-			H10-5219-12	POLYSTYRENE FOAMED FIXTURE(R)	E	S
-			H25-0232-04	PROTECTION BAG (235X350X0.03)	E	
-			H25-0361-04	PROTECTION BAG	E	
-		*	H50-0689-04	ITEM CARTON CASE	E	S
617	2F, 2G		J02-1002-05	FOOT	E	
618	2G		J11-0163-05	WIRE CLAMPER	E	
619	1F, 2G		J19-3325-05	UNIT HOLDER	E	
△ 621	1G		J42-0078-05	POWER CORD BUSHING	E	
△ 622	2G	*	L07-0621-05	POWER TRANSFORMER	E	
A	2E		N09-1445-05	SET SCREW (M3X8)	E	
B	2F		N89-3008-46	BINDING HEAD TAPTITE SCREW	E	
C	1G, 2E		N89-3008-45	BINDING HEAD TAPTITE SCREW	E	
D	2G		N09-1561-05	TAPTITE SCREW (3X6,+)	E	
E	1F		N89-4008-45	BINDING HEAD TAPTITE SCREW	E	
F	2F, 2G		N09-1515-05	TAPPING SCREW (3X8)	E	
<b>DP-5050 COLOR : TITANIUM GRAY (FRANCE MADE)</b>						
601	1F	*	A01-3037-01	METALLIC CABINET	E	
602	1E		A09-0078-08	BATTERY COVER	E	
603	2F	*	A22-1633-01	SUB PANEL	E	S
604	2F	*	A29-0343-04	PANEL ASSY(TRAY)	E	
605	2F	*	A60-0408-02	PANEL ASSY(FRONT)	E	
606	1E	*	A70-0922-05	REMOTE CONTROLLER ASSY	E	
607	2E	*	B10-1949-03	FRONT GLASS	E	
608	2E		B12-0219-04	INDICATOR	E	
609	2E		B43-0287-04	KENWOOD BADGE	E	
-			B46-0122-23	WARRANTY CARD	E	
-		*	B60-1043-00	INSTRUCTION MANUAL(ENGLISH)	E	S

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-		*	B60-1044-00	INSTRUCTION MANUAL(FRENCH)	E	S
-		*	B60-1045-00	INSTRUCTION MANUAL(G,D,I)	E	S
-		*	B60-1046-00	INSTRUCTION MANUAL(SPANISH)	E	S
611	1E		E30-0505-05	AUDIO CORD	E	
612	1E		E30-0977-05	CORD WITH PLUG(SYSTEM CONTROL)	E	
613	1G		E30-2277-15	AC POWER CORD	E	
614	1F		E35-0083-05	FLAT CABLE	E	
615	1E		G10-0185-04	NON-WOVEN FABRIC	E	
-		*	H10-5480-02	POLYSTYRENE FOAMED FIXTURE(L)	E	F
-		*	H10-5481-02	POLYSTYRENE FOAMED FIXTURE(R)	E	F
-			H25-0232-04	PROTECTION BAG (235X350X0.03)	E	
-			H25-0361-04	PROTECTION BAG	E	
-		*	H50-0699-04	ITEM CARTON CASE	E	F
617	2F, 2G		J02-1002-05	FOOT	E	
618	2G		J11-0163-05	WIRE CLAMPER	E	
619	1F, 2G		J19-3325-05	UNIT HOLDER	E	
621	1G		J42-0078-05	POWER CORD BUSHING	E	
622	2G	*	L07-0621-05	POWER TRANSFORMER	E	
A	2E		N09-1445-05	SET SCREW (M3X8)	E	
B	2F		N89-3008-46	BINDING HEAD TAPTITE SCREW	E	
C	1G, 2E		N89-3008-45	BINDING HEAD TAPTITE SCREW	E	
D	2G		N09-1561-05	TAPTITE SCREW (3X6,+)	E	
E	1F		N89-4008-45	BINDING HEAD TAPTITE SCREW	E	
F	2F, 2G		N09-1515-05	TAPPING SCREW (3X8)	E	
<b>MECHANISM ELECTRIC UNIT (X25-4150-21)</b>						
WH1	2B, 2D		E31-7866-05	WIRING HARNESS		
S1	2B, 2D		S33-2062-05	LEVER SWITCH(OPEN/CLOSE)		
<b>DISPLAY UNIT (X25-5152-70)</b>						
D9			B30-1290-05	LED(POWER/STAND BY)		
C1 -5			CK45FF1H103Z	CERAMIC 0.010UF Z		
C6			CE04LW1V100MCC	ELECTRO 10UF 35WV		
J1	1E		E11-0199-05	PHONE JACK(PHONES)		
S1 -23	1E, 1F		S40-1064-05	TACT SWITCH(1-0,+10 etc.)	YM	
S24	1G		S31-2131-05	SLIDE SWITCH (POWER TYPE)		
D1 -8			HSS104A	DIODE		
D1 -8			1SS131	DIODE		
D10 ,11			HSS104A	DIODE		
D10 ,11			1SS131	DIODE		
ED1	1E		CF1090C	INDICATOR TUBE		
Q1 -3			2SC1740S(Q,R)	TRANSISTOR		
Q1 -3			2SC2785(F,E)	TRANSISTOR		
Q4			DTC124ES	DIGITAL TRANSISTOR		
Q4			UN4212	DIGITAL TRANSISTOR		
A1	1E		W02-1129-05	ELECTRIC CIRCUIT MODULE		
<b>CD PLAYER UNIT (X32-2412-70)</b>						
C1 ,2			CC45FSL1H150J	CERAMIC 15PF J		
C3			CE04LW1C330MCC	ELECTRO 33UF 16WV		
C4			CC45FSL1H560J	CERAMIC 56PF J		

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C5 ,6			CF92FV1H334J	MF 0.33UF J		
C7			CF92FV1H391K	MF 390PF K		
C8			CE04LW1C330MCC	ELECTRO 33UF 16WV		
C9			CF92FV1H101K	MF 100PF K		
C21			CF92FV1H104J	MF 0.10UF J		
C22			CF92FV1H103J	MF 0.010UF J		
C23			CF92FV1H222J	MF 2200PF J		
C24			CF92FV1H332J	MF 3300PF J		
C25			CC45FSL1H470J	CERAMIC 47PF J		
C26			CF92FV1H104J	MF 0.10UF J		
C27			CF92FV1H473J	MF 0.047UF J		
C28			CF92FV1H104J	MF 0.10UF J		
C29			CF92FV1H181K	MF 180PF K		
C30			CF92FV1H104J	MF 0.10UF J		
C31			CF92FV1H333J	MF 0.033UF J		
C32			CE04LW1V100MCC	ELECTRO 10UF 35WV		
C33			CF92FV1H104J	MF 0.10UF J		
C34			CF92FV1H121K	MF 120PF K		
C35 ,36			CE04LW1H010MCC	ELECTRO 1.0UF 50WV		
C37			CE04HW1E220M	NP-ELEC 22UF 25WV		
C38			CF92FV1H334J	MF 0.33UF J		
C39 -41			CF92FV1H103J	MF 0.010UF J		
C42			CF92FV1H474J	MF 0.47UF J		
C43			CF92FV1H333J	MF 0.033UF J		
C44			CF92FV1H101K	MF 100PF K		
C45			CF92FV1H152J	MF 1500PF J		
C46			CF92FV1H121K	MF 120PF K		
C47			CF92FV1H222J	MF 2200PF J		
C48			CE04HW1H2R2M	NP-ELEC 2.2UF 50WV		
C49			CE04LW1C330MCC	ELECTRO 33UF 16WV		
C50 ,51			CF92FV1H104J	MF 0.10UF J		
C52 ,53			CE04LW1H010MCC	ELECTRO 1.0UF 50WV		
C54			CF92FV1H104J	MF 0.10UF J		
C55 ,56			CF92FV1H473J	MF 0.047UF J		
C71			CE04LW1A101MCC	ELECTRO 100UF 10WV		
C73			C90-1826-05	BACKUP 0.047F 5.5WV		
C74			CE04HW1H2R2M	NP-ELEC 2.2UF 50WV		
C75			CF92FV1H103J	MF 0.010UF J		
C76			CE04LW1V100MCC	ELECTRO 10UF 35WV		
C77 ,78			CF92FV1H221K	MF 220PF K		
C79			CF92FV1H103J	MF 0.010UF J		
C91 -95			CF92FV1H103J	MF 0.010UF J		
C96			CE04HW1E100M	NP-ELEC 10UF 25WV		
C97			CF92FV1H682J	MF 6800PF J		
C98			CF92FV1H223J	MF 0.022UF J		
C99			CF92FV1H104J	MF 0.10UF J		
C100,101			CF92FV1H473J	MF 0.047UF J		
C111,112			CE04LW0J471MCC	ELECTRO 470UF 6.3WV		
C113			CF92FV1H103J	MF 0.010UF J		
C116,117			CE04LW1V100MCC	ELECTRO 10UF 35WV		
C118			CE04LW1C332MCC	ELECTRO 3300UF 16WV		
C119			CE04LW1C222MCC	ELECTRO 2200UF 16WV		
C120			CE04LW1V100MCC	ELECTRO 10UF 35WV		
C121			CE04LW1H4R7MCC	ELECTRO 4.7UF 50WV		
C122		*	CE04LW1J101MCC	ELECTRO 100UF 63WV		

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C123			CF92FV1H103J	MF 0.010UF J		
C201			CF92FV1H103J	MF 0.010UF J		
C202			CF92FV1H473J	MF 0.047UF J		
C203			CF92FV1H103J	MF 0.010UF J		
C204			CF92FV1H152J	MF 1500PF J		
C205			CE04LWOJ471MCC	ELECTRO 47UF 6.3WV		
C206			CF92FV1H103J	MF 0.010UF J		
C207			CK45FF1H223Z	CERAMIC 0.022UF Z		
C208			CE04LW1A470MCC	ELECTRO 47UF 10WV		
C209			CF92FV1H104J	MF 0.10UF J		
C221			CC45FSL1H150J	CERAMIC 15PF J		
C222			CF92FV1H101K	MF 100PF K		
C223			CF92FV1H102J	MF 1000PF J		
C224			CF92FV1H103J	MF 0.010UF J		
C225			CF92FV1H473J	MF 0.047UF J		
C226			CE04LW1V100MCC	ELECTRO 10UF 35WV		
C227			CC45FSL1H150J	CERAMIC 15PF J		
C229, 230			CE04LW1V100MCC	ELECTRO 10UF 35WV		
C231, 232			CF92FV1H473J	MF 0.047UF J		
C233, 234			CE04LW1A470MCC	ELECTRO 47UF 10WV		
C237, 238			CE04LW1A470MCC	ELECTRO 47UF 10WV		
C241, 242			CC45FSL1H560J	CERAMIC 56PF J		
C243-246			CF92FV1H471J	MF 470PF J		
C249, 250			CC45FSL1H560J	CERAMIC 56PF J		
C251, 252			CE04LW1A470MCC	ELECTRO 47UF 10WV		
C253			CF92FV1H104J	MF 0.10UF J		
C254			CE04LW1A470MCC	ELECTRO 47UF 10WV		
C255			CE04LW1A101MCC	ELECTRO 100UF 10WV		
C257			CE04LW1A470MCC	ELECTRO 47UF 10WV		
C271, 272			CF92FV1H101K	MF 100PF K		
C273, 274			CF92FV1H102J	MF 1000PF J		
C275, 276			CE04LW1A101MCC	ELECTRO 100UF 10WV		
C277, 278			CE04LW1H3R3MCC	ELECTRO 3.3UF 50WV		
C279, 280			CF92FV1H101K	MF 100PF K		
C281, 282			CE04LW1C101MCC	ELECTRO 100UF 16WV		
C283			CE04LW1V100MCC	ELECTRO 10UF 35WV		
C285			CE04LW1C330MCC	ELECTRO 33UF 16WV		
C286			CE04LW1H4R7MCC	ELECTRO 4.7UF 50WV		
C289, 290			CF92FV1H202J	MF 2000PF J		
C291, 292			CF92FV1H271K	MF 270PF K		
C293, 294			CE04LW1H470MCC	ELECTRO 47UF 50WV		
C295, 296			CF92FV1H471J	MF 470PF J		
C297, 298			CF92FV1H101K	MF 100PF K		
C299			CF92FV1H104J	MF 0.10UF J		
C311, 312			CF92FV1H103J	MF 0.010UF J		
C313		*	CE04LW1E471MCC	ELECTRO 470UF 25WV		
C314		*	CE04LW1E102MCC	ELECTRO 1000UF 25WV		
C315			CF92FV1H103J	MF 0.010UF J		
C316			CF92FV1H221K	MF 220PF K		
C317			CE04LW1A101MCC	ELECTRO 100UF 10WV		
C318			CF92FV1H473J	MF 0.047UF J		
C319			CE04LW1H470MCC	ELECTRO 47UF 50WV		
C333, 334			CF92FV1H101K	MF 100PF K		
C335, 336			CE04LW1A470MCC	ELECTRO 47UF 10WV		
C337-342			CE04LW1H4R7MCC	ELECTRO 4.7UF 50WV		

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C343, 344			CE04LW1H3R3MCC	ELECTRO 3.3UF 50WV		
J1	1F		E11-0188-05	MINIATURE PHONE JACK(S.CONTROL		
J2	1G		E63-0002-05	PHONE JACK(LINE OUTPUT)		
L1			L40-2292-14	SMALL FIXED INDUCTOR(2.2UH,M)		
L2 -6			L92-0018-05	FERRITE CORE		
X1			L77-1164-05	CRYSTAL RESONATOR(16.9344MHZ)		
X2			L78-0267-05	RESONATOR (4.194MHZ)		
R45			RN14BK2C1003F	RN 100K F 1/6W		
R142, 143			RN14BK2C3301F	RN 3.30K F 1/6W		
R144			RN14BK2C5601F	RN 5.60K F 1/6W		
R146			RN14BK2C1001F	RN 1.00K F 1/6W		
R206			RN14BK2C1002F	RN 10.0K F 1/6W		
R207			RN14BK2C3301F	RN 3.30K F 1/6W		
R208			RN14BK2C6801F	RN 6.80K F 1/6W		
R233, 234			RN14BK2C4701F	RN 4.70K F 1/6W		
R240			RN14BK2C2202F	RN 22.0K F 1/6W		
R241, 242			RN14BK2C1000F	RN 100.0 F 1/6W		
R243-246			RN14BK2C3302F	RN 33.0K F 1/6W		
R249			RN14BK2C10R0F	RN 10.0 F 1/6W		
R255			RN14BK2C1001F	RN 1.00K F 1/6W		
R259-262			RN14BK2C6801F	RN 6.80K F 1/6W		
R271, 272			RN14BK2C7501F	RN 7.50K F 1/6W		
R287, 288			RN14BK2C2702F	RN 27.0K F 1/6W		
R289, 290			RN14BK2C1000F	RN 100.0 F 1/6W		
R293, 294			RN14BK2C7501F	RN 7.50K F 1/6W		
R297			RN14BK2C4701F	RN 4.70K F 1/6W		
R300			RN14BK2C5601F	RN 5.60K F 1/6W		
R307-310			RN14BK2C5601F	RN 5.60K F 1/6W		
R311, 312			RN14BK2C7501F	RN 7.50K F 1/6W		
R313, 314			RN14BK2C1003F	RN 100K F 1/6W		
R323-326			RN14BK2C91R0F	RN 91.0 F 1/6W		
R327, 328			RN14BK2C2000F	RN 200.0 F 1/6W		
VR1			R12-3686-05	TRIMMING POT 22K<TE BALNCE>		
VR2 -4			R12-3685-05	TRIMMING POT 10K<T.GAIN etc.>		
D1 ,2			HSS104	DIODE		
D1 ,2			1SS133	DIODE		
D3 ,4			HZS2.7N(B2)	ZENER DIODE		
D3 ,4			RD2.7ES(B2)	ZENER DIODE		
D5			S5688B	DIODE		
D5			1SR139-100	DIODE		
D6 ,7			HSS104	DIODE		
D6 ,7			1SS133	DIODE		
D8			HZS5.6N(B2)	ZENER DIODE		
D8			RD5.6ES(B2)	ZENER DIODE		
D9			SD103A	DIODE		
D10 -20			HSS104	DIODE		
D10 -20			1SS133	DIODE		
D21			HZS2.7N(B2)	ZENER DIODE		
D21			RD2.7ES(B2)	ZENER DIODE		
D22			HZS5.1S(B2)	ZENER DIODE		
D22			RD5.1JS(B2)	ZENER DIODE		
D23 ,24			HSS104	DIODE		
D23 ,24			1SS133	DIODE		

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D25 ,26			HZS5.1S(B2)	ZENER DIODE		
D25 ,26			RD5.1JS(B2)	ZENER DIODE		
D27			HZS8.2S(B2)	ZENER DIODE		
D27			RD8.2JS(B2)	ZENER DIODE		
△ D28 -32			S5688B	DIODE		
△ D28 -32			1SR139-100	DIODE		
D34 -37			HSS104	DIODE		
D34 -37			1SS133	DIODE		
D44 -49			HZS5.1S(B2)	ZENER DIODE		
D44 -49			RD5.1JS(B2)	ZENER DIODE		
D50			HZS10N(B2)	ZENER DIODE		
D50			RD10ES(B2)	ZENER DIODE		
△ D51 -55			S5688B	DIODE		
△ D51 -55			1SR139-100	DIODE		
D56 ,57			HZS7.5S(B2)	ZENER DIODE		
D56 ,57			RD7.5JS(B2)	ZENER DIODE		
D58			S5688B	DIODE		
D58			1SR139-100	DIODE		
D59			HSS104	DIODE		
D59			1SS133	DIODE		
D60 ,61			HZS5.1S(B2)	ZENER DIODE		
D60 ,61			RD5.1JS(B2)	ZENER DIODE		
D62 ,63			HZS2.7N(B2)	ZENER DIODE		
D62 ,63			RD2.7ES(B2)	ZENER DIODE		
D64 ,65			HSS104	DIODE		
D64 ,65			1SS133	DIODE		
IC1			CXA1571S	IC(CD RF AMP)		
IC2			CXA1372Q	IC(CD RF SERV)		
IC3			TA8410AK	IC(POWER OP AMP)		
IC4		*	UPD75216ACW-W43	IC(MICROPROCESSOR)		
IC5			TC74HC74AP	IC(DUAL D-TYPE FLIP FLOP)		
IC6			BA10393N	IC(DUAL COMPARTOR)		
IC7			TA8410AK	IC(POWER OP AMP)		
IC8			NJM4558D	IC(OP AMP X2)		
IC9			CXD2500BQ	IC(DIGITAL SIGNAL PROCESSOR)		
IC10			SM5840CP	IC(DIGITAL FILTER)		
IC12			SAA7350	IC(DAC)CONVERTOR		
IC13			NJM4558D	IC(OP AMP X2)		
IC14, 15			NJM4580D	IC(OP AMP X2)		
IC16			NJM4558D	IC(OP AMP X2)		
IC17			TC9213P	IC(2CH ELECTRONIC VOLUME)		
IC18, 19			NJM4565D	IC(OP AMP X2)		
IC20			NJM4580D	IC(OP AMP X2)		
Q1			2SA1110(R,S)	TRANSISTOR		
Q2			2SC3311A(Q,R)	TRANSISTOR		
Q3			2SA1309A(Q,R)	TRANSISTOR		
Q4			2SC3940A	TRANSISTOR		
Q5			2SA1534A	TRANSISTOR		
Q6			2SC3940A	TRANSISTOR		
Q7			DTC124ES	DIGITAL TRANSISTOR		
Q7			UN4212	DIGITAL TRANSISTOR		
Q8			2SC2878(B)	TRANSISTOR		
△ Q9 ,10			2SB1375	TRANSISTOR		
△ Q12			2SC3940A	TRANSISTOR		
Q13			2SA992(F,E)	TRANSISTOR		

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△ Q14			2SC3940A	TRANSISTOR		
Q23			2SC1923(R, Q)	TRANSISTOR		
Q24 ,25			2SA992(F, E)	TRANSISTOR		
Q26			2SD2012	TRANSISTOR		
Q27 -34			2SC1845(F, E)	TRANSISTOR		
Q35 ,36			2SA992(F, E)	TRANSISTOR		
Q37 ,38			2SC1845(F, E)	TRANSISTOR		
△ Q39			2SC3940A	TRANSISTOR		
△ Q40			2SA1534A	TRANSISTOR		
Q41 -46			2SC2878(B)	TRANSISTOR		
Q47			2SA992(F, E)	TRANSISTOR		
Q49			2SD2012	TRANSISTOR		
Q50			2SC1845(F, E)	TRANSISTOR		
Q51			DTC143TS	DIGITAL TRANSISTOR		
Q51			UN4216	DIGITAL TRANSISTOR		
Q54			2SC1845(F, E)	TRANSISTOR		
Q55			2SA992(F, E)	TRANSISTOR		
Q56 -58			2SK246(Y, GR)	FET		
Q59			2SK163(L)	FET		
A1	1G		W02-1036-05	TRANSMITTING ASSY		
<b>MECHANISM ASSY (SINGAPORE MADE : X92-1600-61)</b>						
101	2B		A10-2798-32	CHASSIS ASSY		S
103	3B		A11-0695-15	SUB CHASSIS(FRAME)		
104	1B		A11-0686-13	SUB CHASSIS(CLAMP)		S
109	1B		D10-2479-03	SLIDER		
110	2A		D10-2481-04	ARM ASSY		
111	1B		D10-2489-04	ROD(SLIDER)		S
112	2B		D10-2490-04	ROD(PICK UP)		S
113	1A		D10-2491-04	ROD(RETAINER)		S
114	1A		D13-0744-04	GEAR		
115	1A		D13-0779-04	GEAR(PULLEY)		
116	1B		D13-0780-04	GEAR(INTERMEDIATE)		
117	1A		D13-0890-04	GEAR(IDLER)		
118	1A		D13-0891-03	GEAR(MAIN)		
119	1A		D13-0892-04	GEAR		
120	3B		D13-0894-05	GEAR(FEED MOTOR)		
121	2B		D13-0895-05	GEAR(INTERMEDIATE)		
122	3B		D13-0896-05	GEAR(FEED)		
125	2B		D14-0324-04	ROLLER		
126	2B		D14-0325-04	ROLLER ASSY		
127	2B		D15-0295-04	MOTOR PULLEY(LOADING MOTOR)		
128	1B		D16-0309-03	BELT		
130	1A		D23-0267-03	RETAINER		S
135	1B		E23-0343-04	TERMINAL		
136	2B	*	E35-0322-25	WIRING HARNESS(8P, RED/BLACK)		
137	2B	*	E35-0288-15	WIRING HARNESS(8P, WHITE/BLACK)		
138	2A		E31-7868-15	WIRING HARNESS(5P)		S
140	1A		F19-1027-04	BLIND PLATE		
142	1A	*	F19-1037-04	SHIELDING PLATE		S
145	3B		G01-3326-14	COMPRESSION SPRING(FRONT)		S
146	3B		G01-3327-14	COMPRESSION SPRING(REAR)		S
147	1A		G11-2038-04	CUSHION		S
148	2A		G16-0766-04	SHEET		S

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152	2B		J02-1058-15	INSULATOR		
153	1B		J11-0168-03	CLAMPER		
154	3B		J19-3335-05	BRACKET		
155	2A		J99-0088-13	TRAY ASSY		S
156	2A		J99-0089-01	TRAY		S
160	1A, 1B		N19-0366-04	FLAT WASHER		
A			N09-2769-05	MACHINE SCREW		
B			N35-2605-46	BINDING HEAD MACHINE SCREW		
C			N39-2025-46	PAN HEAD MACHIN SCREW		
D			N89-2008-46	BINDING HEAD TAPTITE SCREW		
E			N86-2606-46	BINDING HEAD TAPTITE SCREW		
F			N09-2644-05	STEPPED SCREW		
G			N82-2608-45	BINDIG HEAD TAPTITE SCREW		
165	3A		S33-1022-05	LEVER SWITCH(LIMIT)		
170	1B		T50-1055-04	YÖKE		
171	1B		T99-0503-15	MAGNET		
DM	3B		A11-0733-05	DC MÖTOR(DISC MÖTOR)		
FM	3B		T42-0532-05	DC MÖTOR(FEED MÖTOR)		
LM	2B		T42-0530-05	DC MÖTOR(LOADING MÖTOR)		
PU	2B		T25-0011-05	OPTICAL PICKUP HEAD(KSS-210A)		
<b>MECHANISM ASSY (FRANCE MADE : X92-1590-61)</b>						
201	2D		A10-2797-22	CHASSIS ASSY		S
203	3D		A11-0695-15	SUB CHASSIS(FRAME)		
204	1D		A11-0686-13	SUB CHASSIS(CLAMP)		S
209	1D		D10-2479-03	SLIDER		
210	2C		D10-2481-04	ARM ASSY		
211	1D		D10-2489-04	RÖD(SLIDER)		S
212	2D		D10-2490-04	RÖD(PICK UP)		S
213	1C		D10-2491-04	RÖD(RETAINER)		S
214	1C		D13-0744-04	GEAR		
215	1C		D13-0779-04	GEAR(PULLEY)		
216	1D		D13-0780-04	GEAR(INTER MEDIATE)		
217	1C		D13-0890-04	GEAR(IDLER)		
218	1C		D13-0891-03	GEAR(MAIN)		
219	1C		D13-0892-04	GEAR		
220	3D		D13-0894-05	GEAR(FEED MÖTOR)		
221	2D		D13-0895-05	GEAR(INTERMEDIATE)		
222	3D		D13-0896-05	GEAR(FEED)		
225	2D		D14-0324-04	RÖLLER		
226	2D		D14-0325-04	RÖLLER ASSY		
227	2D		D15-0295-04	MÖTOR PULLEY(LOADING MÖTOR)		
228	1D		D16-0309-03	BELT		S
230	1C		D23-0267-03	RETAINER		
235	1D		E23-0343-04	TERMINAL		
236	2D	*	E35-0322-25	WIRING HARNESS(8P, RED/BLACK)		
237	2D	*	E35-0288-15	WIRING HARNESS(8P, WHITE/BLACK)		
238	2C		E31-7868-15	WIRING HARNESS(5P)		S
240	1C		F19-1027-04	BLIND PLATE		S
242	1C	*	F19-1037-04	SHIELDING PLATE		
245	3D		G01-3326-14	COMPRESSION SPRING(FRONT)		S
246	3D		G01-3327-14	COMPRESSION SPRING(REAR)		S
247	1C		G11-2038-04	CUSHION		S

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248	2C		G16-0766-04	SHEET		S
252	2D		J02-1058-15	INSULATOR		
253	1D		J11-0168-03	CLAMPER		
254	3D		J19-3335-05	BRACKET		
255	2C		J99-0088-13	TRAY ASSY		S
256	2C		J99-0089-01	TRAY		S
260	1C, 1D		N19-0366-04	FLAT WASHER		
A			N09-2769-05	MACHINE SCREW		
B			N35-2605-46	BINDING HEAD MACHINE SCREW		
C			N39-2025-46	PAN HEAD MACHIN SCREW		
D			N89-2008-46	BINDING HEAD TAPTITE SCREW		
E			N86-2606-46	BINDING HEAD TAPTITE SCREW		
F			N09-2644-05	STEPPED SCREW		
G			N82-2608-45	BINDIG HEAD TAPTITE SCREW		
265	3C		S33-1022-05	LEVER SWITCH(LIMIT)		
270	1D		T50-1055-04	YÖKE		
271	1D		T99-0503-15	MAGNET		
DM	3D		A11-0733-05	DC MÖTOR(DISC MÖTOR)		
FM	3D		T42-0532-05	DC MÖTOR(FEED MÖTOR)		
LM	2D		T42-0530-05	DC MÖTOR(LOADING MÖTOR)		
PU	2D		T25-0011-05	OPTICAL PICKUP HEAD(KSS-210A)		

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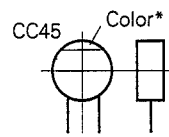
## PARTS LIST

### CAPACITORS

CC	45	TH	1H	220	J
1	2	3	4	5	6

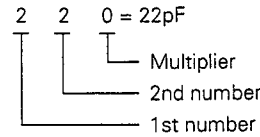
1 = Type ... ceramic, electrolytic, etc.  
 2 = Shape ... round, square, ect.  
 3 = Temp. coefficient

4 = Voltage rating  
 5 = Value  
 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	+80	+100	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	A	B	C	D	E	F	G	H	J	K	V	
1st word	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)

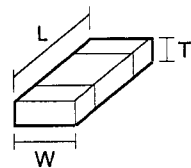
#### Carbon resistor (Normal type)

(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		

## SPECIFICATIONS

### Format

**System** ..... Compact disc digital audio system  
**Laser** ..... Semiconductor laser  
**Number of channels** ..... 2 channels  
**Playing rotation** ..... 200rpm ~ 500rpm (CLV)

### D/A Convertors

**D/A conversion** ..... Twin 1 Bit  
**Oversampling** ..... 8fs (352.8kHz)

### Audio

**Frequency response** ..... 4Hz ~ 20kHz, ±0.5dB (EIAJ)  
**Signal to noise ratio** ..... More than 103dB (EIAJ)  
**Dynamic range** ..... More than 99dB (EIAJ)  
**Total harmonic distortion** ..... Less than 0.0015%  
**Channel separation** ..... More than 99dB (EIAJ)

**Wow & flutter** ..... Unmeasurable Limit  
**Output level/impedance**  
**Fixed** ..... 2V/400Ω  
**Variable** ..... 0 ~ 2V/1.1kΩ  
**Digital output**  
**Optical** ..... -15dBm ~ -21dBm  
 (Wave length 660 nm)  
**Headphone output** ..... 20mW (16Ω)

### General

**Power consumption** ..... 17W  
**Dimensions** ..... W : 440mm (17-5/16")  
 H : 127mm (5")  
 D : 318mm (12-1/2")  
**Weight (Net)** ..... 6.2kg (13.7lb)

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, 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.

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 KENWOOD House, Dwight Road, Watford, Herts., WD1 8EB United Kingdom  
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 Rembrücker-Str. 15, 63150 Heusenstamm, Germany  
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**KENWOOD LINEAR S.p.A.**  
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 Bolivia, 239-08020 Barcelona, Spain  
**KENWOOD ELECTRONICS AUSTRALIA PTY. LTD.** (A.C.N. 001 499 074)  
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**KENWOOD & LEE ELECTRONICS, LTD.**  
 Unit 3712-3724, 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