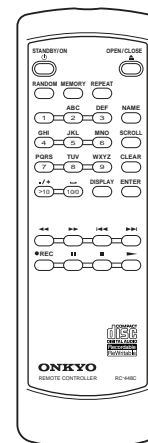
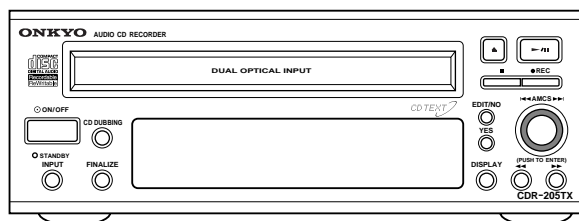


ONKYO SERVICE MANUAL

AUDIO CD RECORDER MODEL CDR-205TX



RC-448C

Silver model

UDT	120V AC, 60Hz
UPP	230-240V AC, 50Hz

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK \triangle ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

SPECIFICATIONS

System	Compact disc recorder
Recording/playing time	Max. 80 min (Approx., when using an 80-min disc)
D/A converter	Advanced Multi bit
Digital filter	8 times oversampling
Connections	1 analog output, 1 analog input 2 digital input (optical), 1 digital output (optical)
Frequency response	5 Hz to 20 kHz
Playback total harmonic distortion	0.004 % (1 kHz)
Playback dynamic range	98 dB
Playback signal-to-noise ratio	98 dB
Recording total harmonic distortion	0.006 % (1 kHz)
Recording dynamic range	92 dB
Recording signal-to-noise ratio	94 dB
Channel separation	90 dB (during playback)
Wow and flutter	Below threshold of measurability
Output level	2.0 V r.m.s. (analog)
Power supply	AC230-240 V, 50 Hz (European models) AC120 V, 60 Hz (Asian models)
External dimensions	205 (W) x 76 (H) x 303 (D) mm
Weight	2.7 kg

Specifications and features are subject to change without notice.

DISPLAY MESSAGES

Message	Explanation
Open	Disc tray is opening.
Welcome	Disc tray is closing.
Rec Setup	Setting initial settings for recording. Please wait.
TOC Reading	Reading the table of contents recorded on the disc. Please wait.
PMA Writing	Recording TOC data to the disc PMA (Program Memory Area). Never turn off the power while this message is displayed.
Erase Last?	Erasing the last track. To erase the last track, press the YES button or the AMCS dial.
Erase All? All Erase?	Erasing all tracks. (Erase All? : The selected rack is the first track.) To erase all track, press the YES button or the AMCS dial.
TOC Erase?	Erasing the TOC from a finalized disc to return it to the unfinalized condition. To erase the TOC, press the YES button.
Ers: (-)?	Erasing from track selected to last track. To erase, press the YES button or the AMCS dial.
Initialize?	Erase all data from disc. To erase all data, press the YES button or the AMCS dial.
Name In?	Asking if you are entering a disc name, artist name, and track names. To enter names, press the YES button (or the AMCS dial).

TROUBLESHOOTING GUIDE-1

If the CDR-205TX begins to operate improperly, use the troubleshooting guide below to help you ascertain the problem.

Because the unit contains a microcomputer to provide advanced functions, it may malfunction due to external noise or static electricity. If this happens, disconnect the power cord and then plug it in again after about 5 seconds.

About the self-diagnosis function

The CDR-205TX is equipped with a self-diagnosis function. If a malfunction is detected during operation, one of the messages given below will appear in the front display.

Display	Cause	Remedy
Disc Error	<ul style="list-style-type: none"> • Playback was likely stopped due to dirt, dust, scratches, or vibrations. • The disc has been placed in upside down. 	<ul style="list-style-type: none"> • Eject the disc and check for dirt, dust, and scratches. • Eject the disc and check that it is placed in correctly. <p>If you place the disc correctly and the same message appears, unplug the power cord and plug it back in again. If the same message appears again, contact an Onkyo service representative.</p>
System Error (flashing)	A malfunction has occurred in the system due to excessive noise or static electricity.	Unplug the power cord and plug it back in again. If the same message appears again, contact an Onkyo service representative.

Messages during recording

Display	Cause	Remedy
Cannot Copy	The input digital signal contains a copy guard signal (SCMS).	Record an analog signal or recordable music signal.
D. In Unlock	<ul style="list-style-type: none"> • The digital input is blocked. • Data has been input in the CD-ROM, etc. 	<ul style="list-style-type: none"> • Verify that the player component is properly playing and the digital cable is properly connected. • Verify that source signal is a normal music signal.
Check Level	The player component was already playing.	Stop the player component. Shortly thereafter, "Signal Wait" will appear.
Rec Setup	The CDR-205TX is entering the recording standby state.	Wait until the message disappears.
Repair	After recording, the disc was left in the CDR-205TX when the power was turned off and the track numbers and recording time data was lost.	<p>While "Repair" is displayed, the CDR-205TX is tracing back through the recorded area and repairing the track numbers and recording time data.</p> <p>When the message disappears, finalization of the disc is possible. Depending on the recording amount, this process may take up to 40 minutes.</p>
Disc Full	Either the disc is full of recordings or 99 tracks have been recorded and no more recordings can be made on the disc.	Use a new disc.

TROUBLESHOOTING GUIDE-2

Messages during recording (continued)

Display	Cause	Remedy
Pro Disc	A CD-R or a CD-RW not for music recording use (without the "FOR CONSUMER" marking) or a CD-RW has been inserted.	Eject the disc and check whether it meets the specifications for use with the CDR-205TX. Always insert a disc that has the markings "FOR CONSUMER" or "FOR MUSIC USE ONLY" on its surface
Check Input	Synchronous recording cannot be performed because the detected input signal is from a source other than the CD, MD, DAT, or DCC.	Record from a recordable source.
CD Dub Fail	CD dubbing cannot be performed because "Digital In 1" is not selected for the input source.	Select "Digital In 1" for the input source.
	CD dubbing cannot be performed because the connected component (Onkyo separate collection's cassette deck or MD recorder) is in the recording or recording standby state.	Cancel the recording or recording standby state on the connected component.
	CD dubbing cannot be performed because the components are not properly connected.	Make sure that proper connections is made for the RI cable, audio connection cables, and optical digital cable.
Cannot Rec	Recording cannot be performed because a finalized CD-R is used.	Replace it with a non-finalized CD-R.
	Recording cannot be performed because a finalized CD-RW is used.	Replace it with a non-finalized CD-RW. Or, retry recording after unfinalizing it.

Messages during playback, name input, and other situations

Display	Cause	Remedy
Blank Disc	You have tried to play a disc that has no recordings on it.	If the inserted disc is a CD-R or CD-RW with no recordings, you may record onto it, but it cannot be played.
No Disc	No disc has been inserted.	Open the disc tray and make sure that a disc is inserted.
Name Disc	Finalizing a disc without disc name was attempted.	Enter a disc name before attempting finalization
Name Full	Entering name information exceeding the limitation of 1000 characters per disc was attempted.	You can enter up to 1000 characters per disc
Full	Entering a name exceeding the limitation of 100 characters per name was attempted.	You can enter up to 100 characters per name
Erase Name	Name input cannot be performed because the unit retains name information for a previous disc.	Erase the name information retained in the unit. Or, write the retained name information to the previous disc and then enter name information to the new disc
A.Finalize	Name input cannot be performed during auto finalization.	Cancel auto finalization before performing name input
Memory Full	Programming more than 25 tracks was attempted.	You can program up to 25 tracks.

TROUBLESHOOTING GUIDE-3

Messages during playback, name input, and other situations (continued)

Display	Cause	Remedy
Cannot Edit	Editing a finalized CD-RW was attempted.	Unfinalize the CD-RW before attempting disc edit. This message also appears during CD dubbing, random playback, memory playback, or other situations where disc editing is not possible or when an ineditable disc is used.
Trouble	Cause	Remedy
The power does not turn on	The power cord is not properly plugged in.	Plug the power cord properly into a mains power supply.
	The component where the power cord is plugged into is not turned on.	Turn on the component into which the power cord is plugged.
	R-805TX is in the energy save mode (If connected).	Press the power (STANDBY/ON) button on the R-805TX to power on the CDR-205TX.
No sound is output from the speakers	The speakers are not properly connected.	Connect the speakers.
Cannot record	The components are not properly connected.	Connect the components.
	A finalized CD-R or CD-RW is being used.	Use an unfinalized disc.
	The input switch is not properly set.	Switch to a properly connected input source .
	The recording level adjustment is set too low.	Adjust the recording level to a proper level.
Recorded sound is distorted	The components are not properly connected.	Connect the components.
	Recording is being affected by the television.	Either turn off the television or move the CDR-205TX away from the television.
	The disc is damaged or cracked.	Use another disc.
	The recording level adjustment is set too high.	Adjust the recording level to a proper level.
	The disc is too dirty.	Clean the disc.
Remote controller does not work	The remote controller batteries are dead.	Replace all the remote controller batteries with new batteries.
	There is an object between the CDR-205TX and the remote controller obstructing the signals.	Remove the obstructing object.
	The remote controller is being used outside of its operational range.	Use the remote controller within its operational range.
A recorded CD-R cannot be played in normal CD players	The disc was not finalized after recording. (The CD-R indicator lights when the disc is played with the CDR-205TX)	Perform the finalization process.

SERVICE PROCEDURES

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs a laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!!

SERVICE WARNING : DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION, BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICKUP BLOCK.

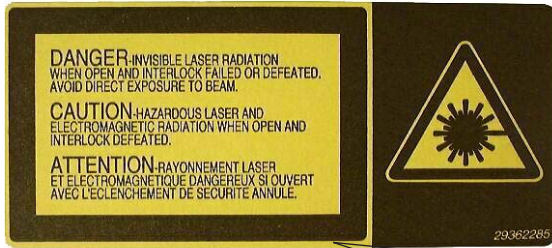
Laser Diode Properties

Material:	GaAS/GaAlAs
Wavelength:	778~787 nm
Emission Duration:	Continuous
Laser output:	MAX. 23 mW
	PLAY 0.9 mW +/-0.05 mW (Ave.)
	REC CD-R 4.4 mW +/-0.1 mW (Ave.)
	REC CD-RW 5.2 mW +/-0.1 mW (Ave.)

LASER WARNING LABEL

The labels shown below are affixed.

1. Warning label



DANGER:
INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCK FAILED OR DEFEATED. AVOID DIRECT EXPOSURE TO BEAM.

CAUTION:
HAZARDOUS LASER AND ELECTROMAGNETIC RADIATION WHEN OPEN AND INTERLOCK DEFEATED.

ATTENTION:
RAYONNEMENT LASER ET ELECTROMAGNETIQUE DANGEREUX SI OUVERT AVEC L'ECLANCHEMENT DE SECURITE ANNULE.

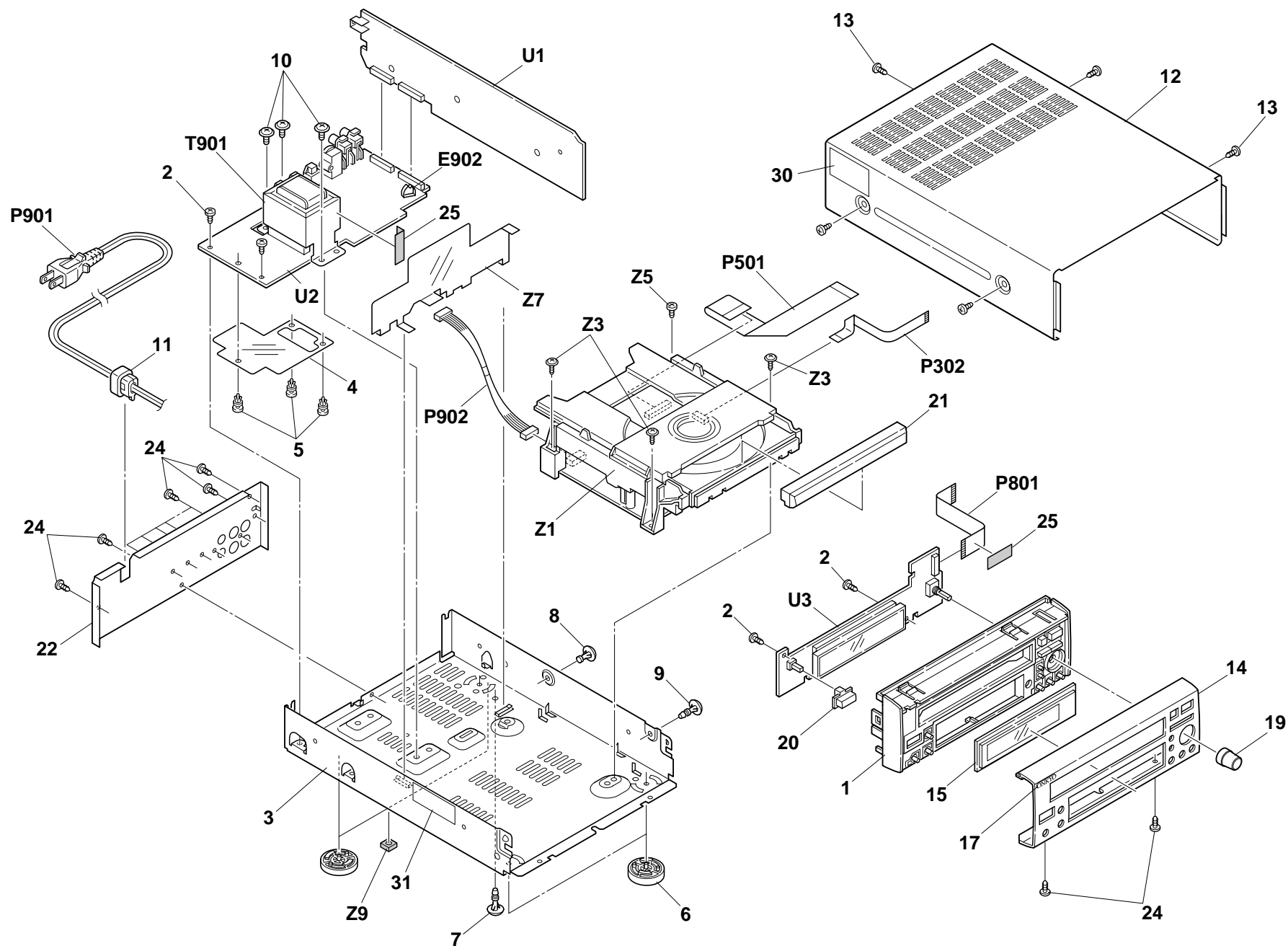
2. Class 1 label



LUOKAN 1
LASERLAITE

KLASS 1
LASER APPARAT

EXPLODED VIEW



EXPLODED VIEW PARTS LIST

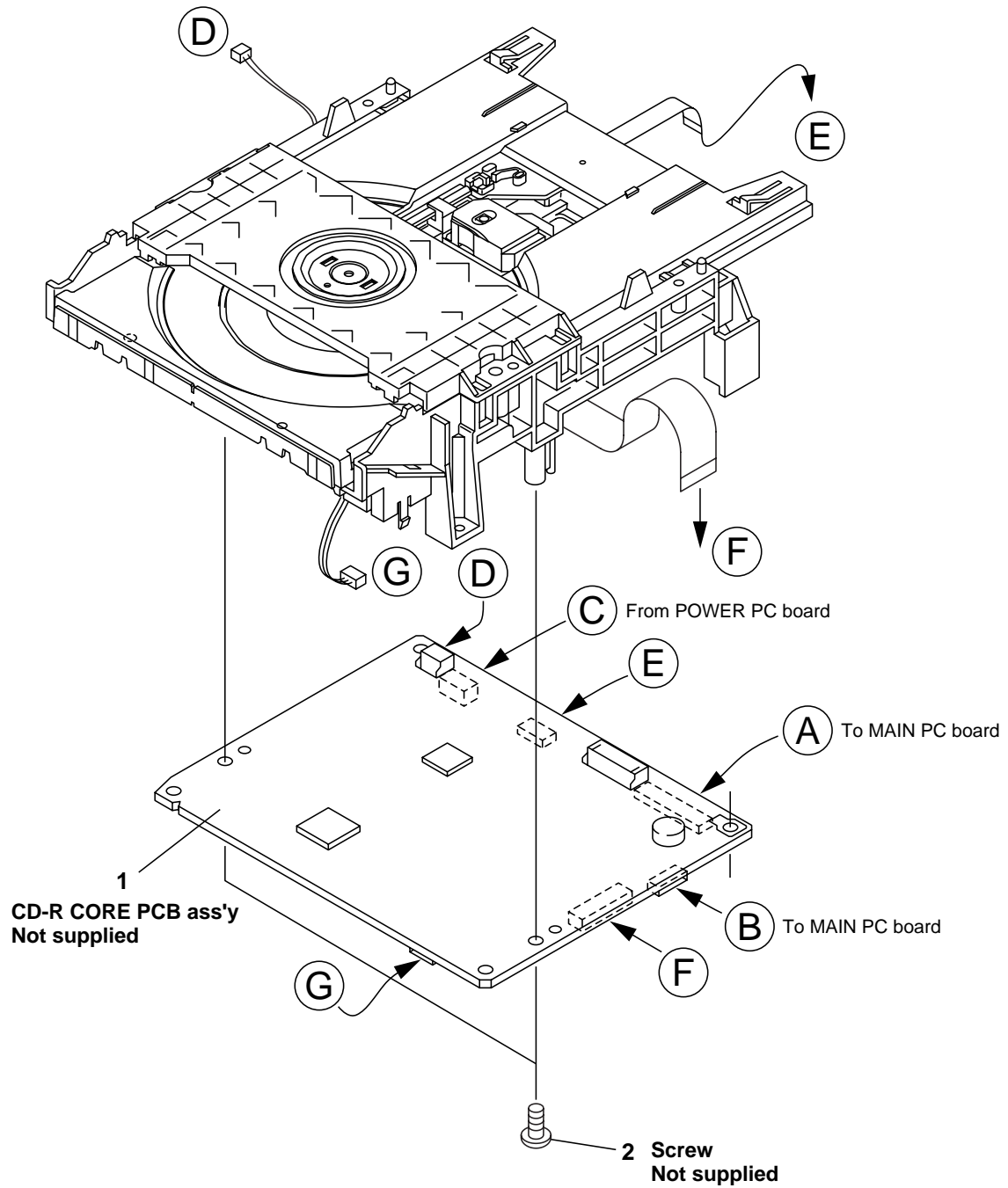
REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
1	27111207	Front bracket	E902	27190608-1	Clamp, UA-0 V0
2	838130088	3TTB+8B, Self tapping screw	P302	2045091012	NCFC5-091012, Flexible flat cable
3	27100398	Chassis	P501	2045251512	NCFC5-251512, Flexible flat cable
4	27150464A	Shield plate, TR	P801	2045201012	NCFC5-201012, Flexible flat cable
5	880048	Plastic rivet	P901	253277MIL or	⚠ AS-UC-2#18 or
6	27175323	Leg ass'y		253279HIT or	⚠ AS-UC-2#18 or
7	27190503	KGLS-8R, Holder		253280VOL	⚠ AS-UC-2#18, Power supply cord <DT>
8	27190693	KGLS-6R, Holder		253193HIT or	⚠ AS-CEE or
9	27191112	KGPS-6RF, Holder		253195MAR	⚠ AS CEE, Power supply cord <PP>
10	830440089	4TTC+8C(BC), Self tapping screw	P902	20022261220 or	NSAS-12P0829, Socket AS or
11	27300750	⚠ Bushing		20022261220-1	NSAS-12P0829, Socket AS
12	28184807	Top cover	T901	2301516	⚠ NPT-1414D, Power transformer <DT>
13	838930088	3TTB+8B(UN), Self tapping screw		2301517	⚠ NPT-1414P, Power transformer <PP>
14	27212297	Front panel	U1	1H463523-1B	NADG-7123-1B, Maincircuit PC board ass'y <PP>
15	28191876	Clear plate		1H463523-1C	NADG-7123-1C, Maincircuit PC board ass'y <DT>
16	28191920	Facet, S	U2	1H463524-1B	NAPS-7124-1B, Power supply PC board ass'y <PP>
17	28135247	Badge		1H463524-1C	NAPS-7124-1C, Power supply PC board ass'y <DT>
19	28325928	Knob, AMCS	U3	1H463525-1B	NADIS-7125-1B, Display circuit PC board ass'y <PP>
20	28325741	Knob, POWER		1H463525-1C	NADIS-7125-1C, Display circuit PC board ass'y <DT>
21	28148469	Tray panel	Z1	24800047	DB-ALD200, CD-R Mechanism ass'y
22	27122829	Rear panel <DT>	Z3	831430088	3TTW+8B(BC), Self tapping ascrew
	27122828	Rear panel <PP>	Z5	838130088	3TTB+8B, Self tapping screw
24	838430088	3TTB+8B(BC), Self tapping screw	Z7	27150465	Shield plate, MEC
25	29110083	Adhesive tape, CROSS-16U	Z9	28141420	Cuchion
30	29360687	⚠ Label <DT,PP>			
31	29362285	⚠ Label <DT,PP>			

NOTE:

<PP> : European model only
 <DT> : Asian model only for 120V

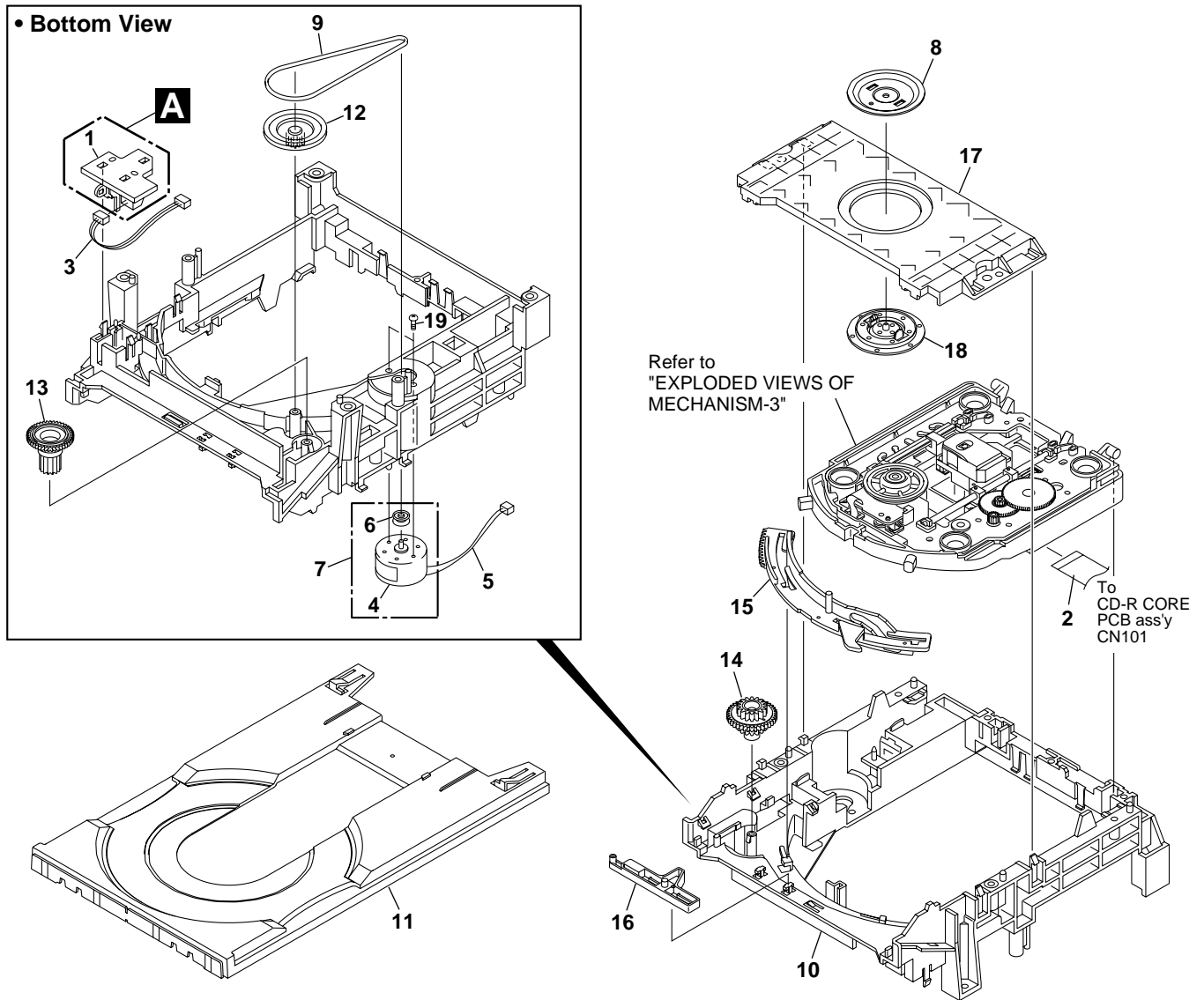
NOTE: THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE
 CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK.
 REPLACE ONLY WITH PART NUMBER SPECIFIED.

EXPLODED VIEWS OF MECHANISM-1
CD-R MECHANISM: DB-ALD200



EXPLODED VIEWS OF MECHANISM-2

CD-R MECHANISM: DB-ALD200



PARTS LIST

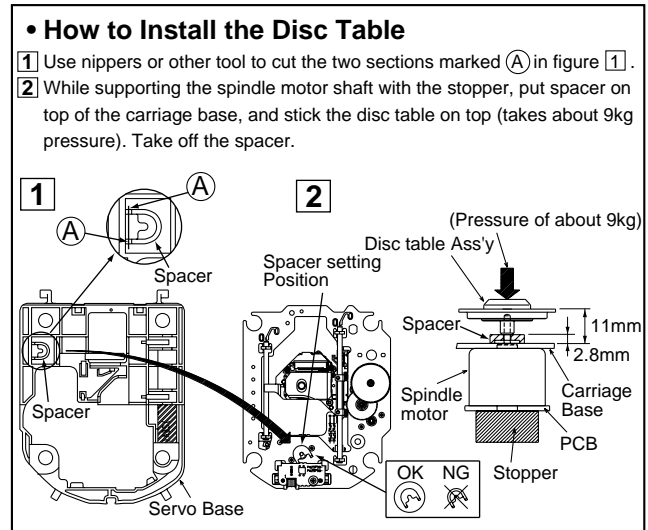
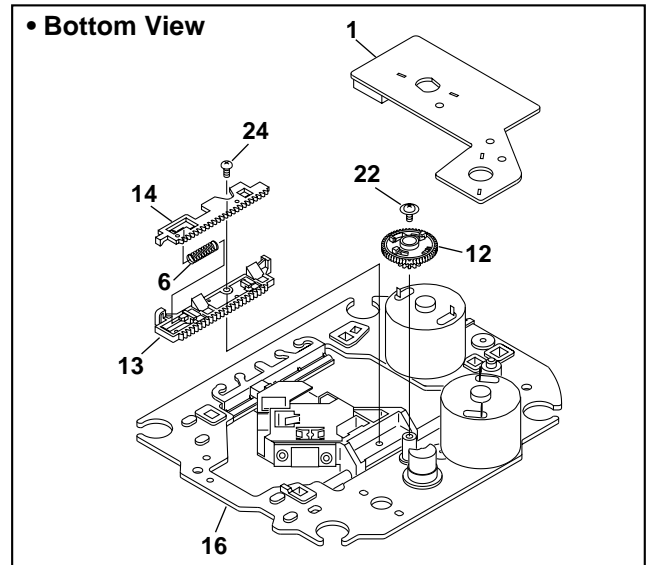
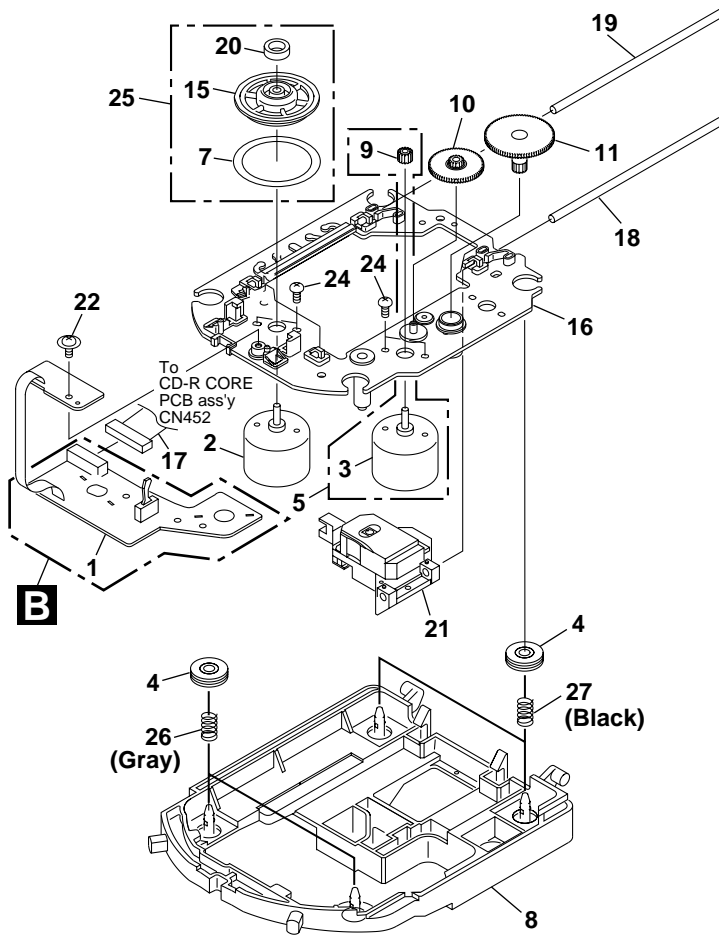
REF. NO.	PART NO.	DESCRIPTION
1	---	LOAB ass'y
2	PDD1222	32P flexible flat cable
3	PG03KK-E07	Connector
4	---	DC motor
5	VKP2253	2P Connector
6	---	Motor pulley
7	---	Loading motor ass'y
8	---	Clamper plate
9	VEB1315	Rubber belt
10	PNW2968	Loading base S
11	VNL1858	Tray
12	VNL1866	Pulley for gear
13	VNL1860	Loading gear
14	VNL1861	Drive gear
15	VNL1862	Drive cam
16	---	Lock plate
17	VNL1859	Bridge
18	---	Clamper plate
19	---	Screw

Note:
The mechanical parts with no part number in the exploded views are not supplied.

* : Refer to EXPLODED VIEWS OF MECHANISM-4 **A**

EXPLODED VIEWS OF MECHANISM-3

CD-R MECHANISM: DB-ALD200



PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
1	---	MECHA PCB ass'y
2	PXM1044	Spindle motor
3	---	DC motor (Carriage)
4	PEB1308	Floating rubber
5	PEA1353	Carriage motor
6	---	Rack spring
7	---	Reflection sheet
8	PNW2964	Floating base
9	PNW2994	Pinion gear
10	---	Gear A
11	---	Gear B
12	PNW2969	Gear C
13	PNW2965	Rack
14	PNW2966	Rack stopper

REF. NO.	PART NO.	DESCRIPTION
15	---	Disc table
16	PNW2967	Carriage base
17	VDA1822	8P flexible flat cable
18	---	Guide bar
19	---	Sub guide bar
20	---	Magnet
21	PEA1356	Optical pickup
22	---	Screw
24	---	Screw
25	---	Disc table ass'y
26	PBH1232	Floating spring
27	PBH1234	Floating spring B

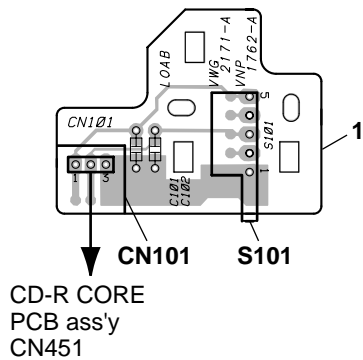
Note:

The mechanical parts with no part number in the exploded views are not supplied.

* : Refer to EXPLODED VIEWS OF MECHANISM-4 **B**

EXPLODED VIEWS OF MECHANISM-4
CD-R MECHANISM: DB-ALD200

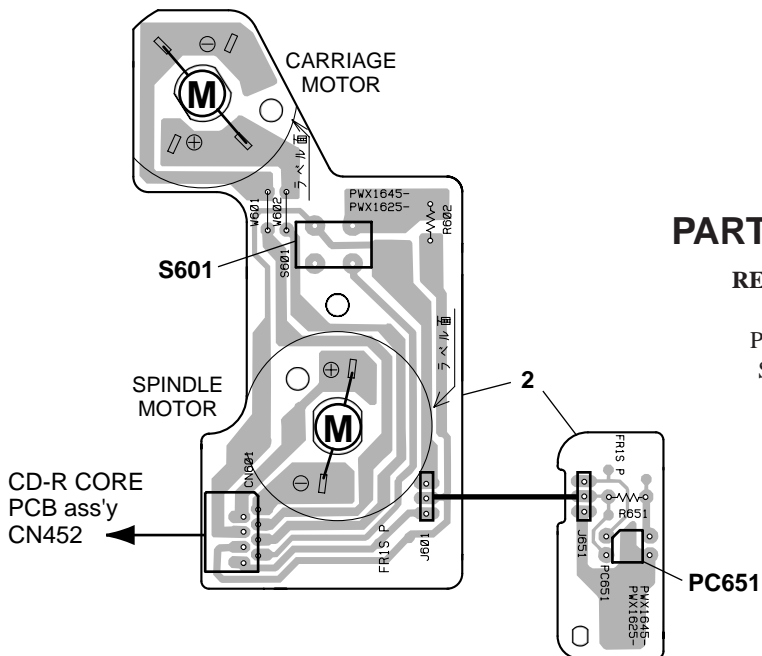
A LOAB (ASS'Y)



PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
1	VNP1762	PC board (LOAB)
CN101	S3B-PH-K	KR connector, Small type
S101	VSK1011	Switch

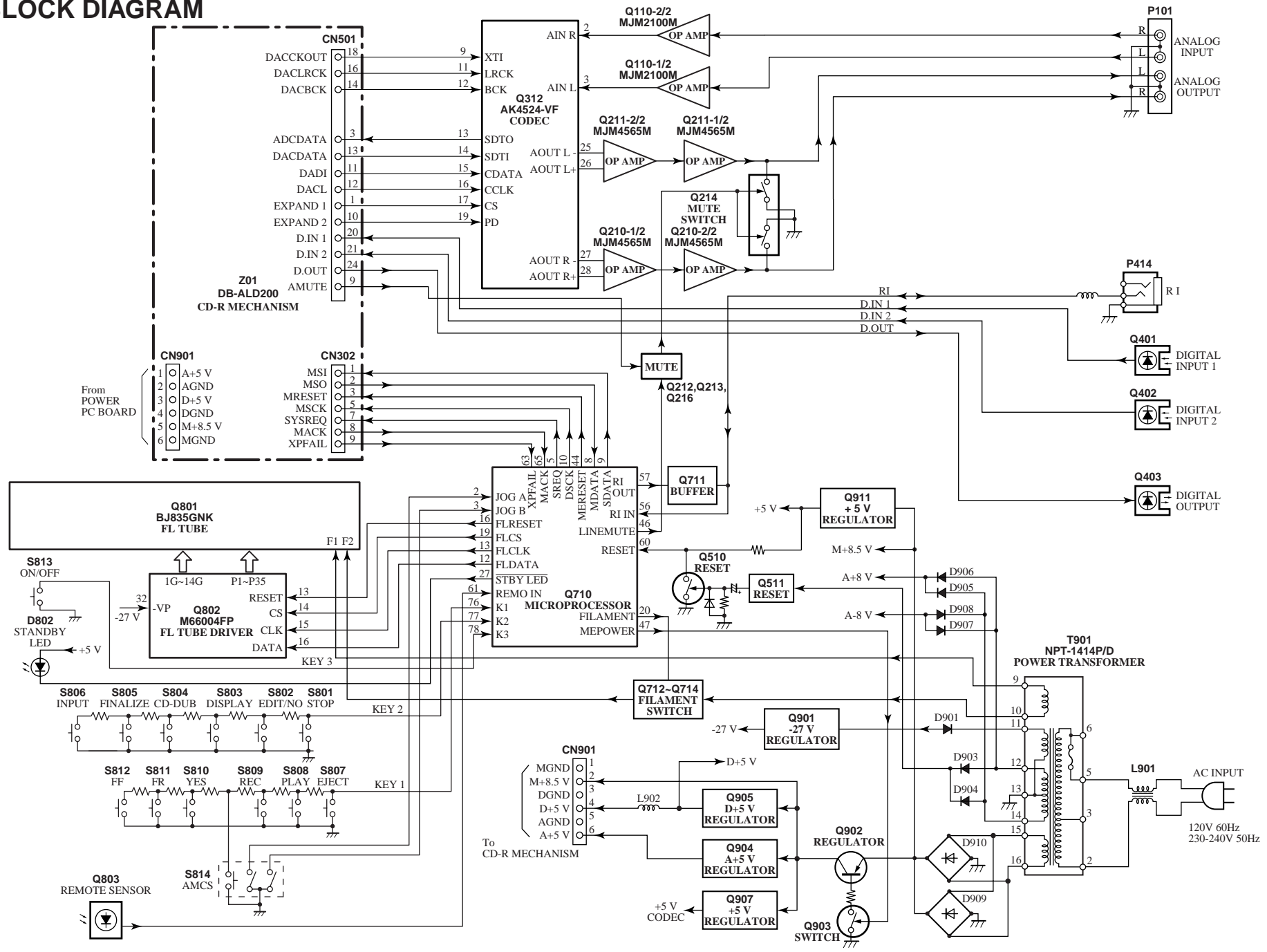
B MECHA PCB (ASS'Y)



PARTS LIST

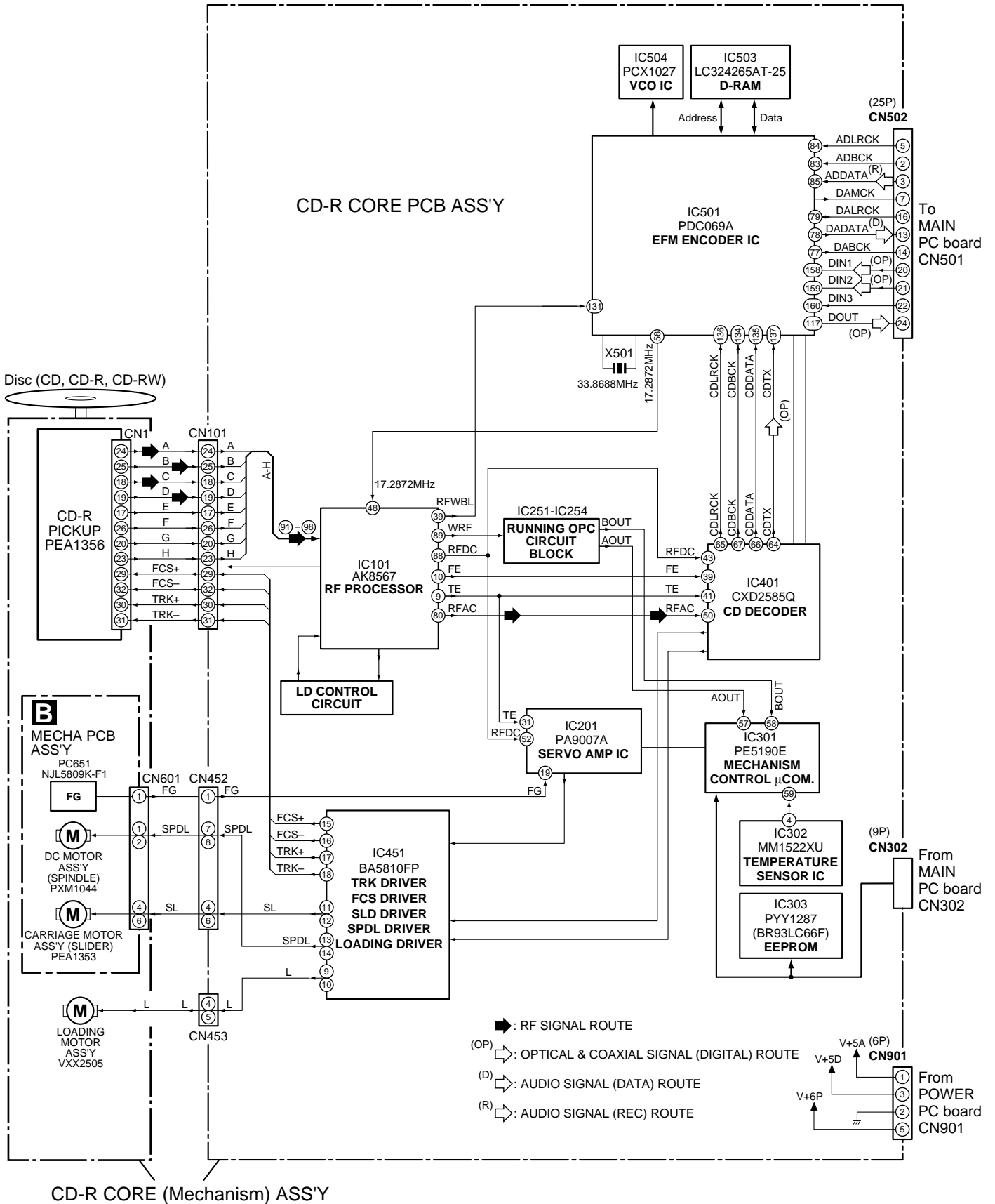
REF. NO.	PART NO.	DESCRIPTION
2	PNP1476	PC board (MECHA PCB)
PC651	NJL5809K-F1	NJL5809K-F1, PH refractor
S601	PSG1014	Push switch

BLOCK DIAGRAM



BLOCK DIAGRAM OF MECHANISM

CD-R MECHANISM: DB-ALD200



A

B

C

D

SCHEMATIC DIAGRAM

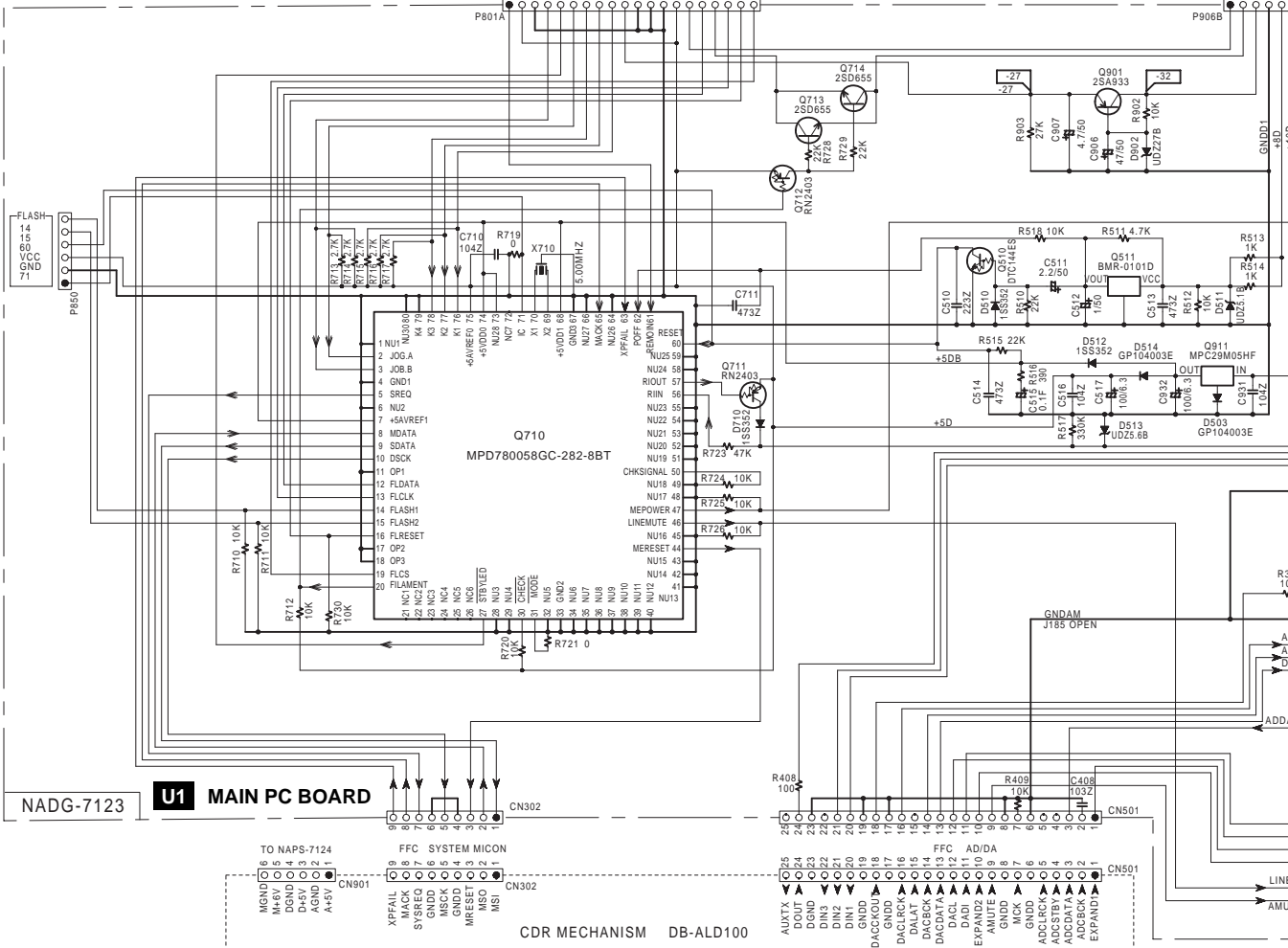
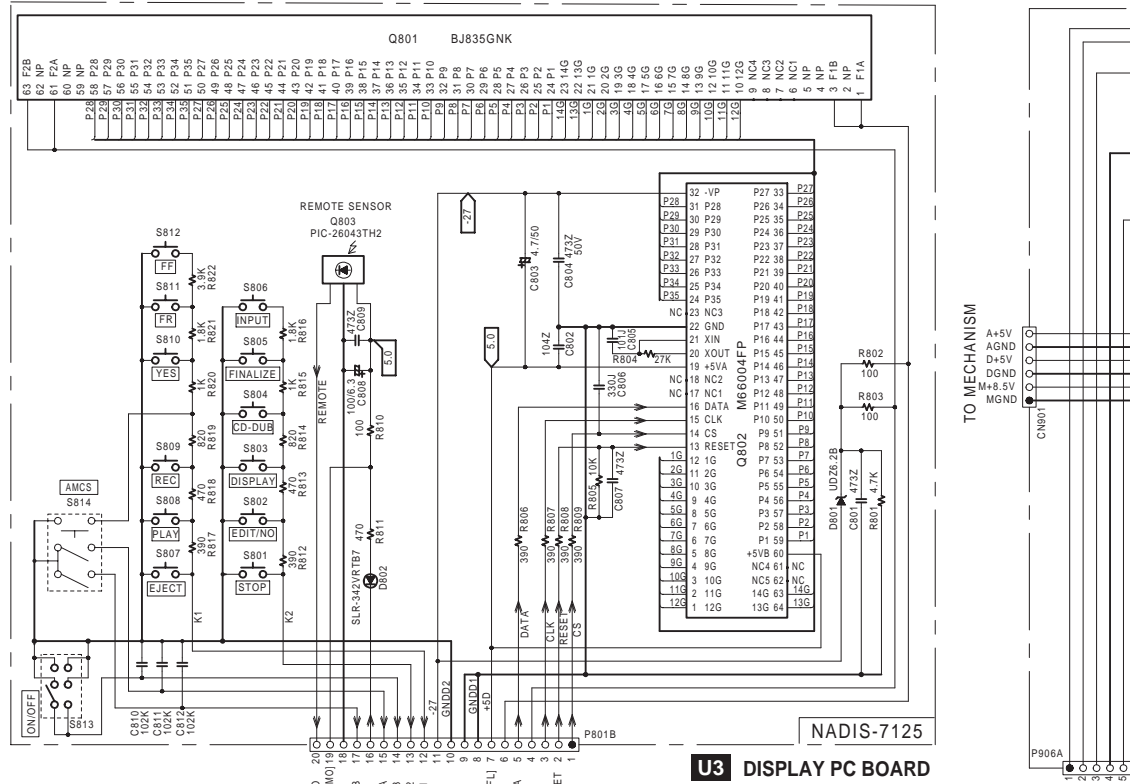
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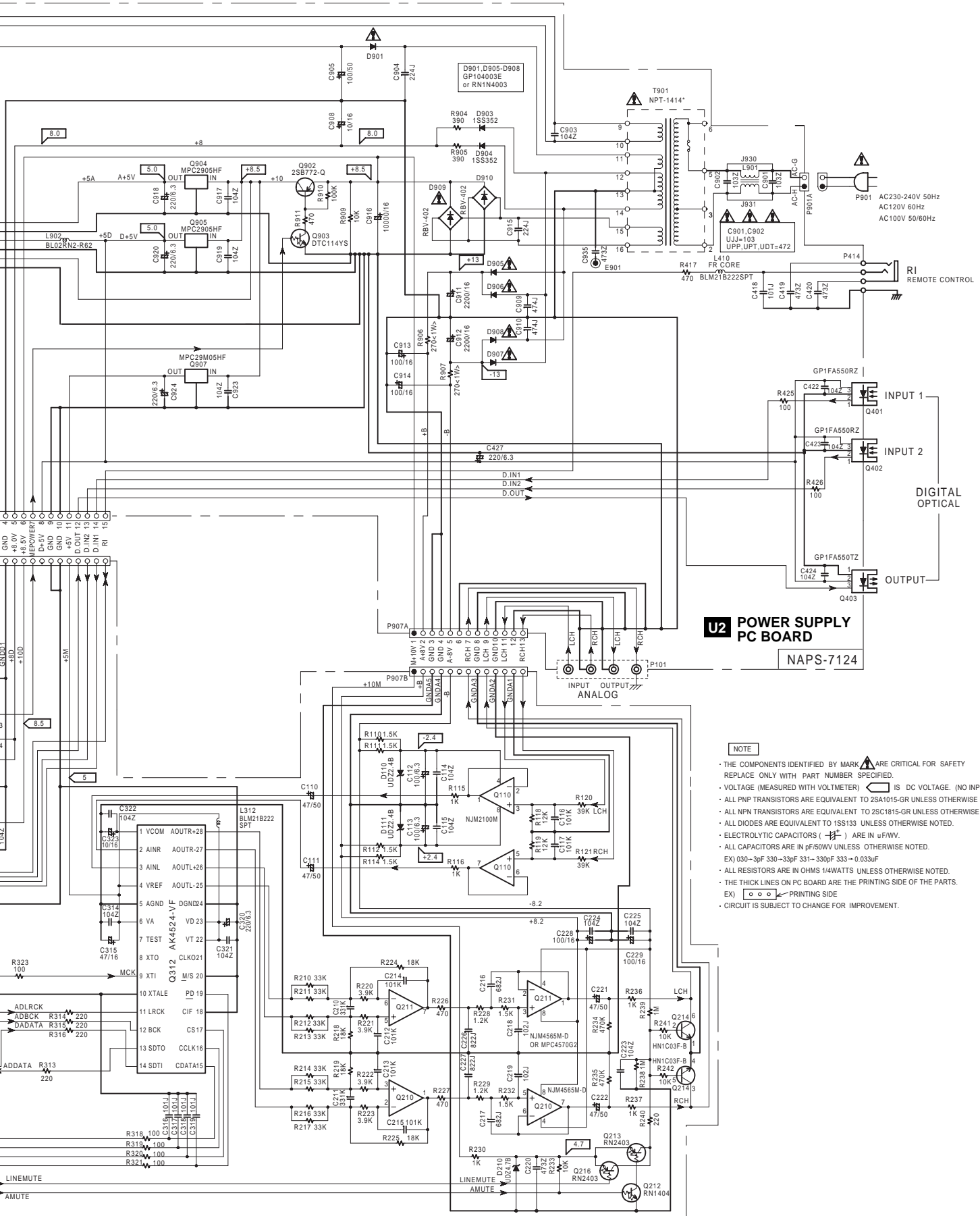
3

4

5



CDR MECHANISM DB-ALD100



U2 POWER SUPPLY PC BOARD
NAPS-7124

- NOTE**
- THE COMPONENTS IDENTIFIED BY MARK ARE CRITICAL FOR SAFETY. REPLACE ONLY WITH PART NUMBER SPECIFIED.
 - VOLTAGE (MEASURED WITH VOLTMETER) IS DC VOLTAGE. (NO INPUT SIGNAL)
 - ALL PNP TRANSISTORS ARE EQUIVALENT TO 2SA1815-GR UNLESS OTHERWISE NOTED.
 - ALL NPN TRANSISTORS ARE EQUIVALENT TO 2SC1815-GR UNLESS OTHERWISE NOTED.
 - ALL DIODES ARE EQUIVALENT TO 1S5133 UNLESS OTHERWISE NOTED.
 - ELECTROLYTIC CAPACITORS () ARE IN uF/VV.
 - ALL CAPACITORS ARE IN pF/50V UNLESS OTHERWISE NOTED.
EX) 030-3pF 330-33pF 331-330pF 333--0.033uF
 - ALL RESISTORS ARE IN OHMS 1/4WATTS UNLESS OTHERWISE NOTED.
 - THE THICK LINES ON PC BOARD ARE THE PRINTING SIDE OF THE PARTS.
EX) PRINTING SIDE
 - CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.

A B C D E F G H

SCHEMATIC DIAGRAM

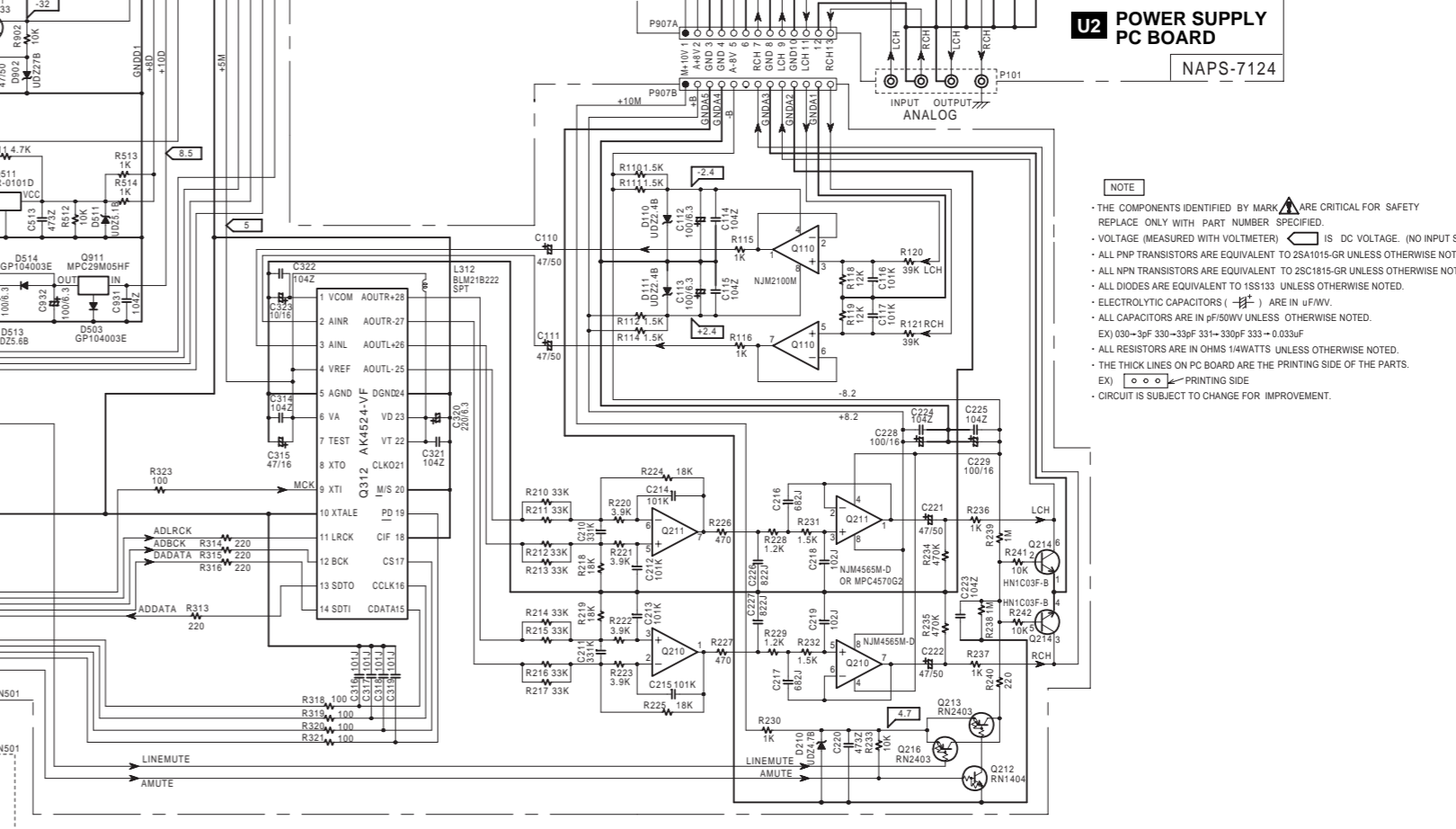
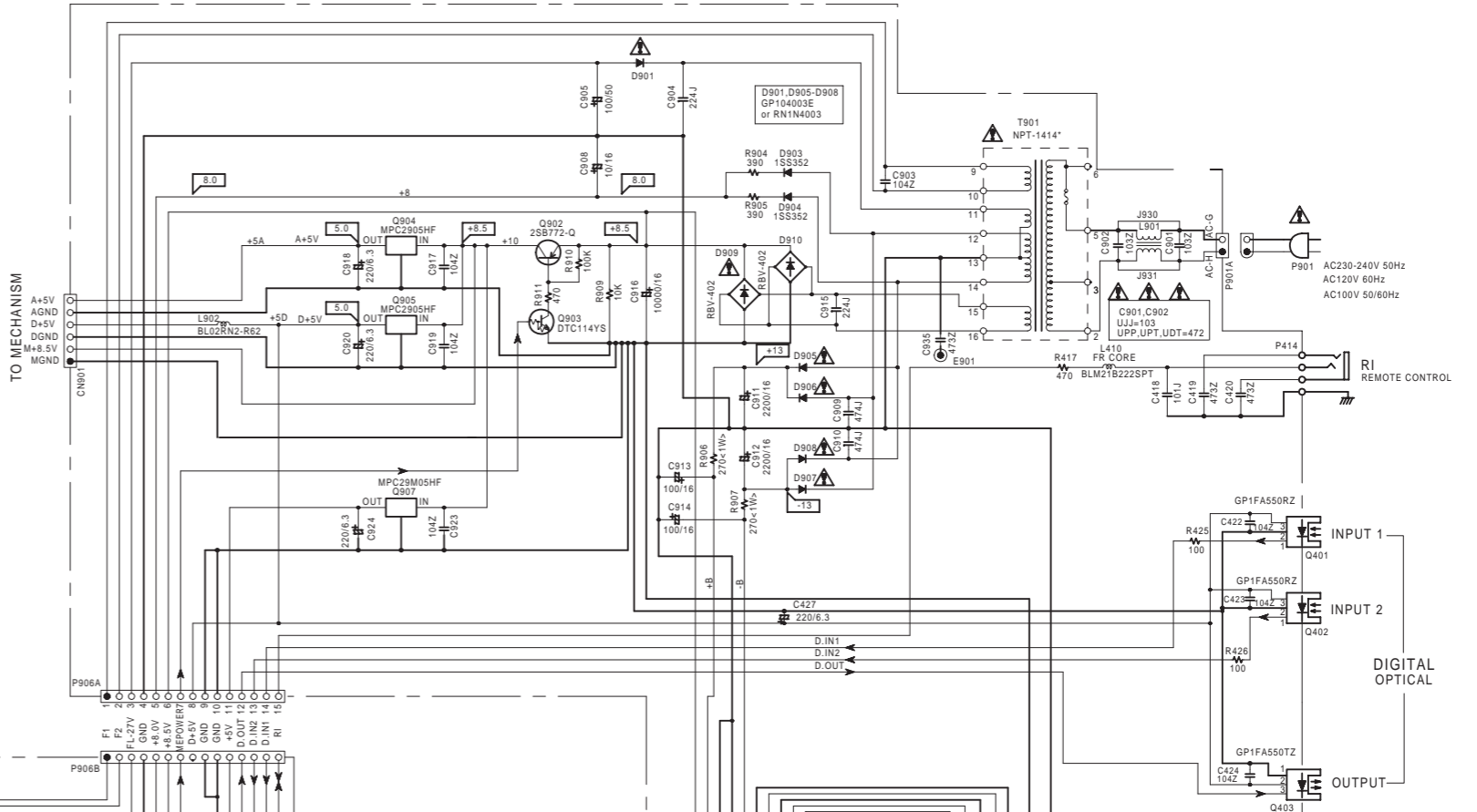
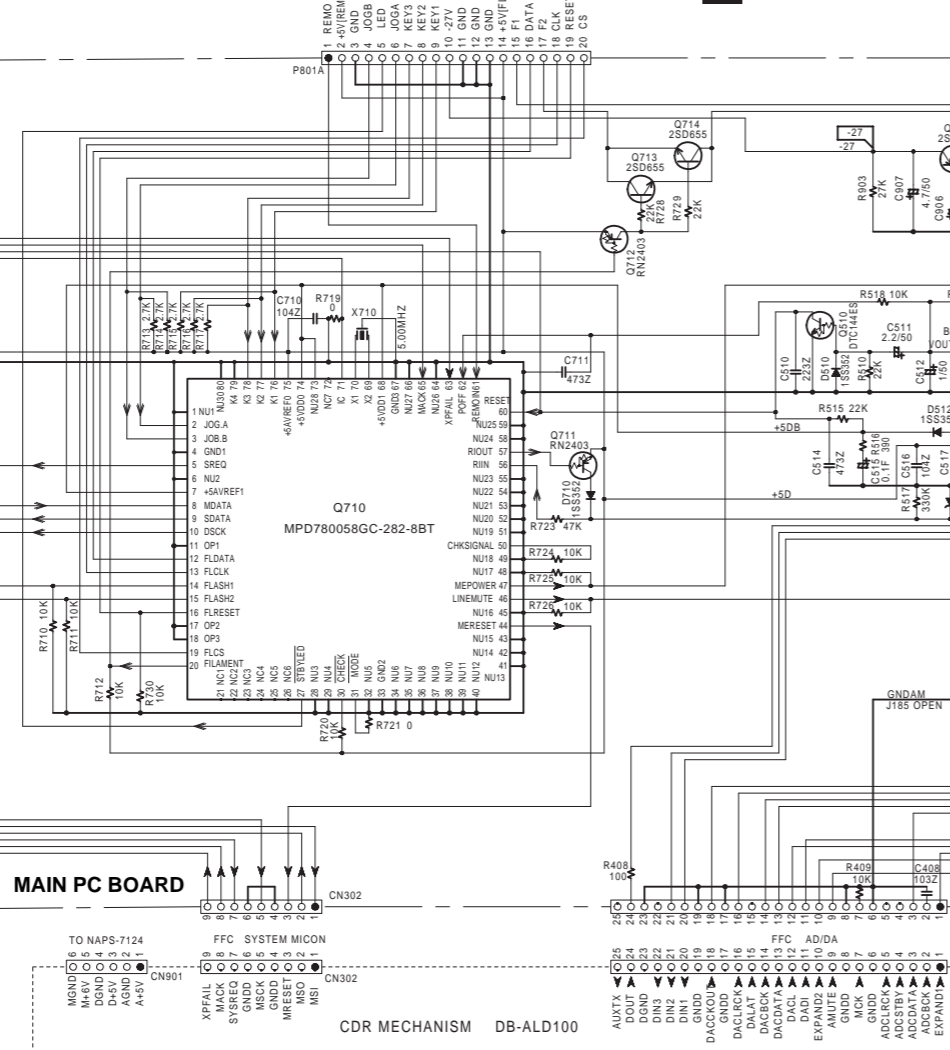
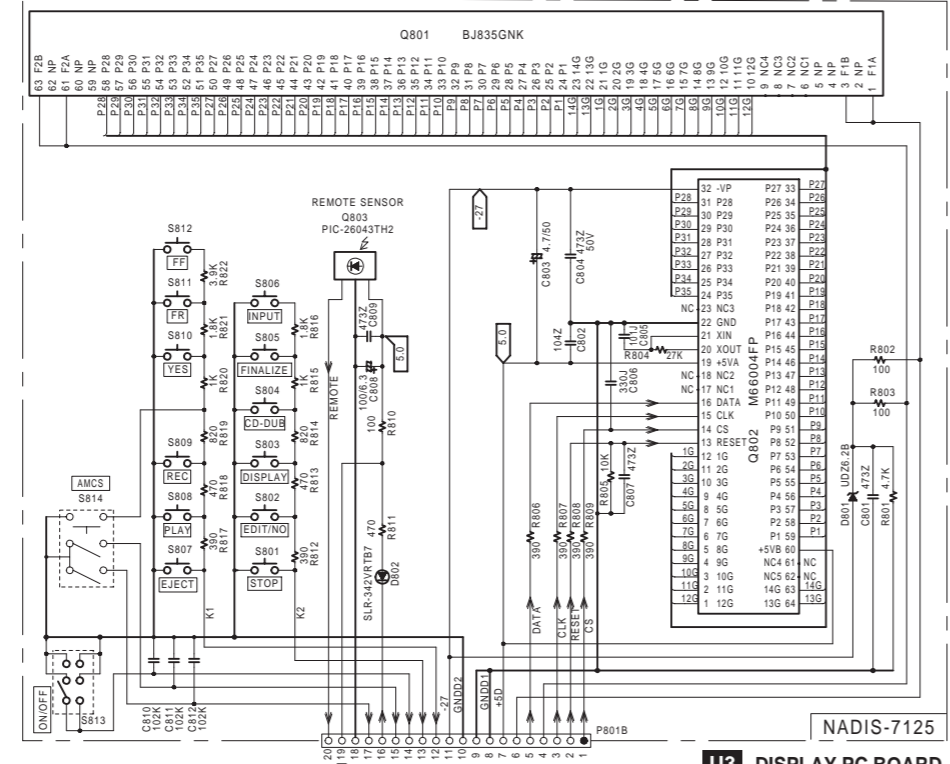
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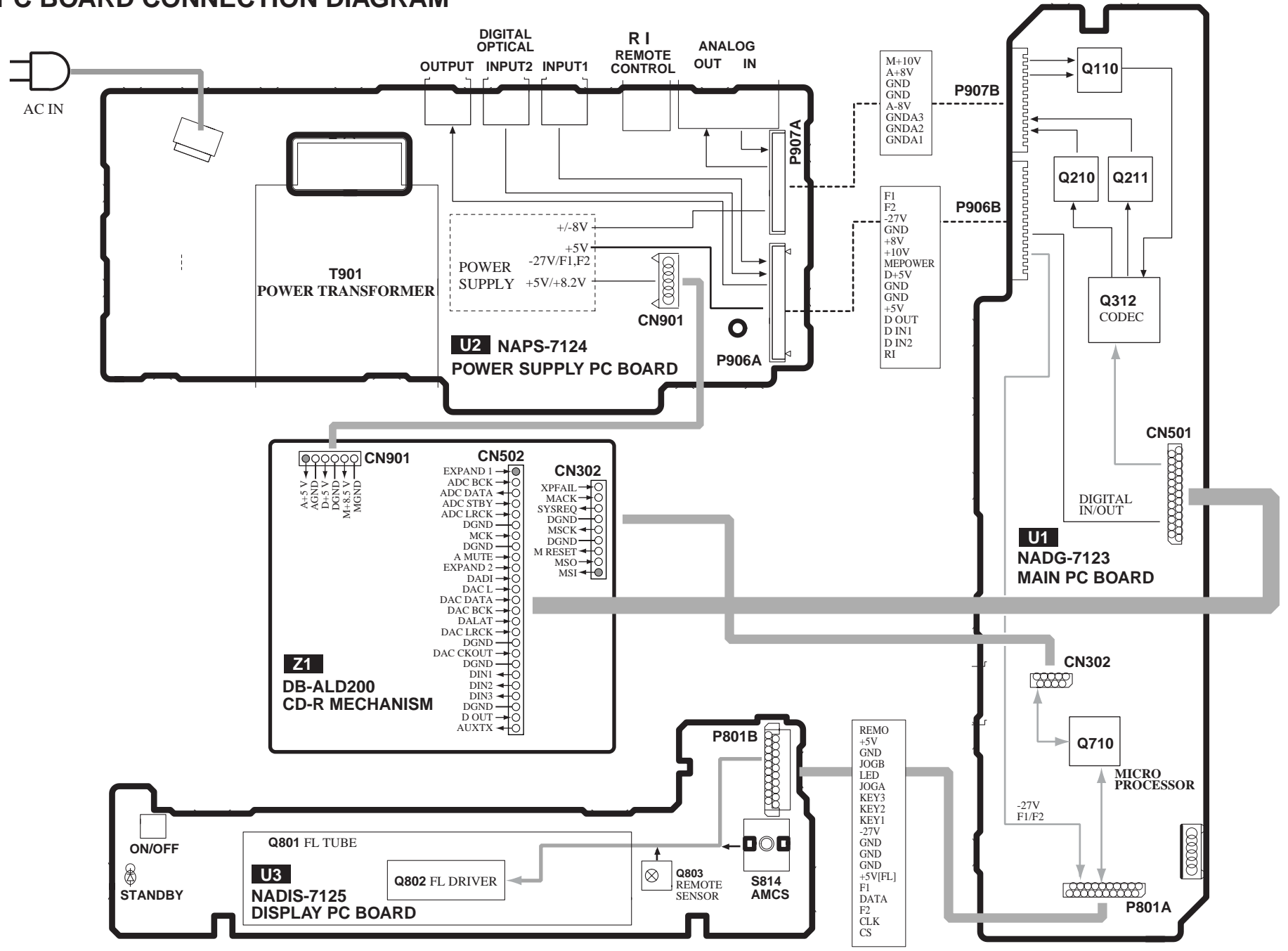
5



NOTE

- THE COMPONENTS IDENTIFIED BY MARK ARE CRITICAL FOR SAFETY. REPLACE ONLY WITH PART NUMBER SPECIFIED.
- VOLTAGE (MEASURED WITH VOLTMETER) IS DC VOLTAGE. (NO INPUT SIGNAL)
- ALL PNP TRANSISTORS ARE EQUIVALENT TO 2SA1815-GR UNLESS OTHERWISE NOTED.
- ALL NPN TRANSISTORS ARE EQUIVALENT TO 2SC1815-GR UNLESS OTHERWISE NOTED.
- ALL DIODES ARE EQUIVALENT TO 1SS133 UNLESS OTHERWISE NOTED.
- ELECTROLYTIC CAPACITORS () ARE IN uF/5V.
- ALL CAPACITORS ARE IN pF/50V UNLESS OTHERWISE NOTED.
- EX) 030-3pF 330-33pF 331-330pF 333-0.033uF
- ALL RESISTORS ARE IN OHMS 1/4WATTS UNLESS OTHERWISE NOTED.
- THE THICK LINES ON PC BOARD ARE THE PRINTING SIDE OF THE PARTS.
- EX) PRINTING SIDE
- CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.

PC BOARD CONNECTION DIAGRAM



A

B

C

D

PRINTED CIRCUIT BOARD VIEWS-1

U1 MAIN PC BOARD (NADG-7123)

Component side

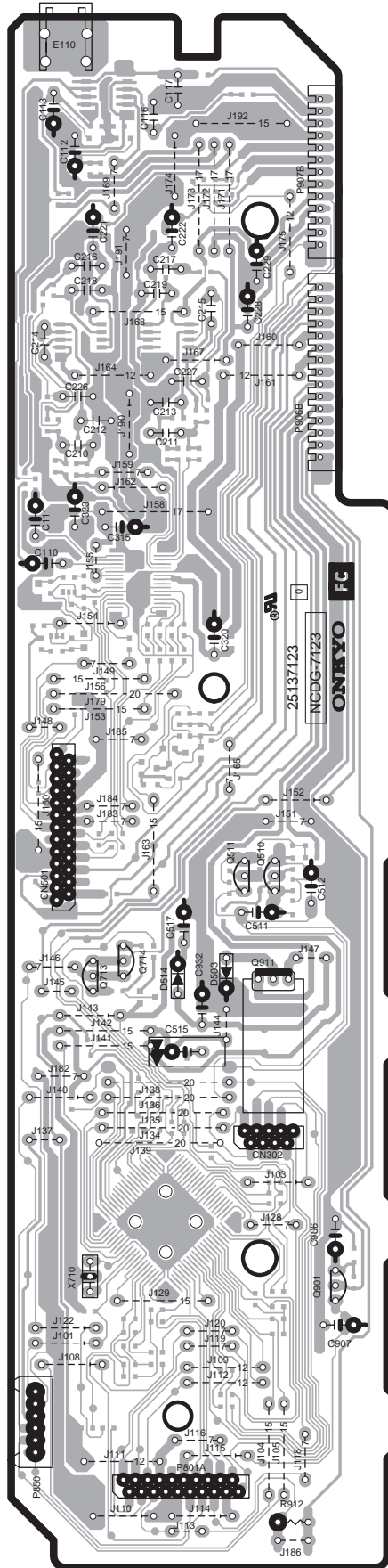
1

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4

5



A

B

C

D

PRINTED CIRCUIT BOARD VIEWS-2

U1 MAIN PC BOARD (NADG-7123)

Soldering side

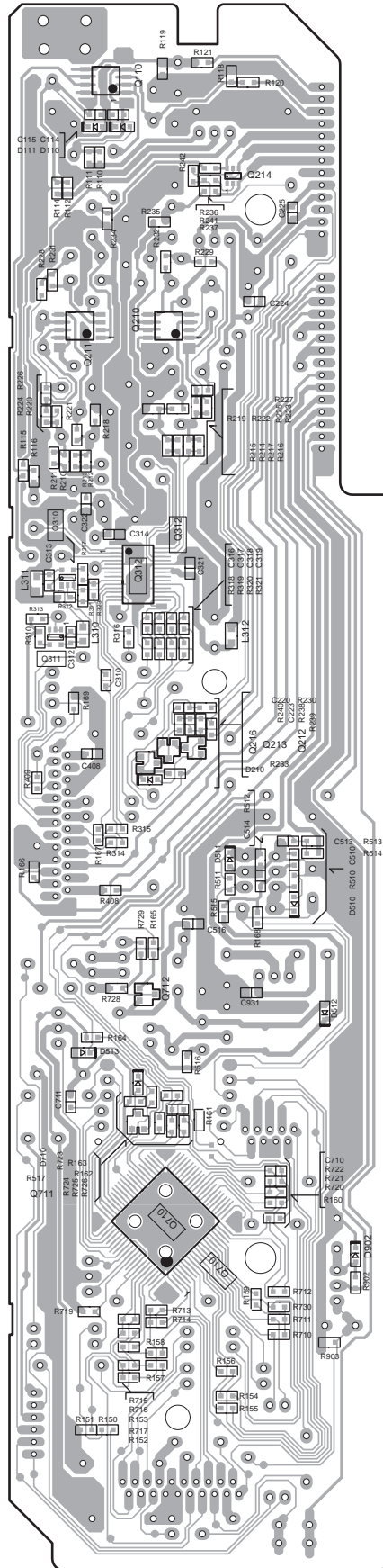
1

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3

4

5



A

B

C

D

PRINTED CIRCUIT BOARD VIEWS-3

U3 DISPLAY PC BOARD (NADIS-7125)

Component side

Soldering side

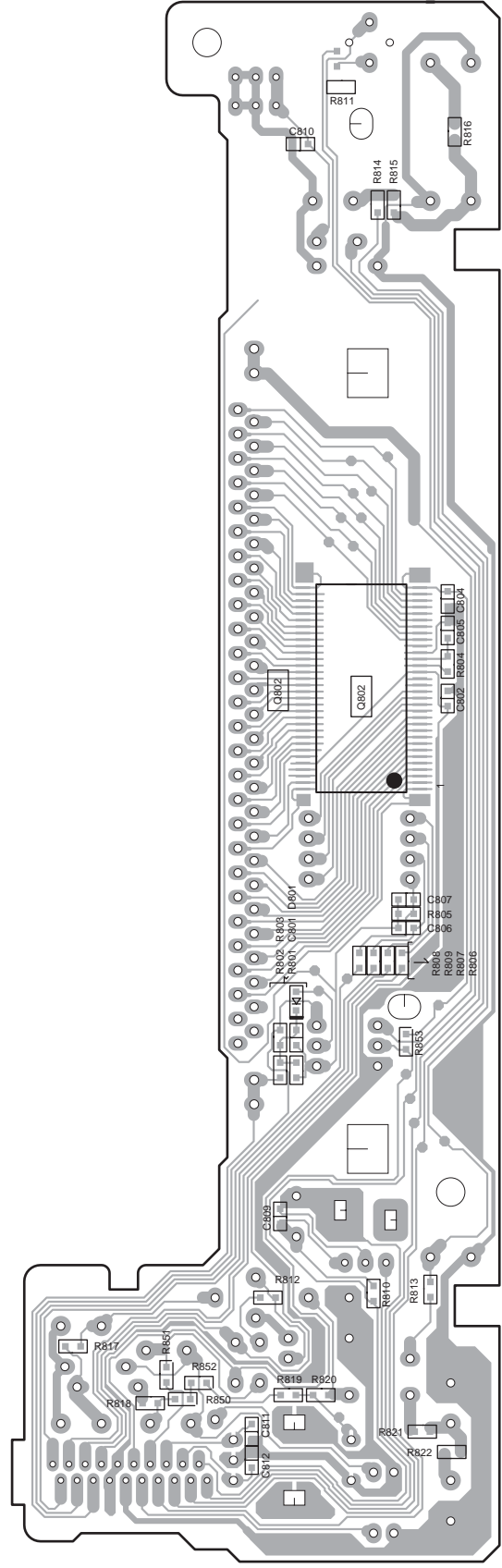
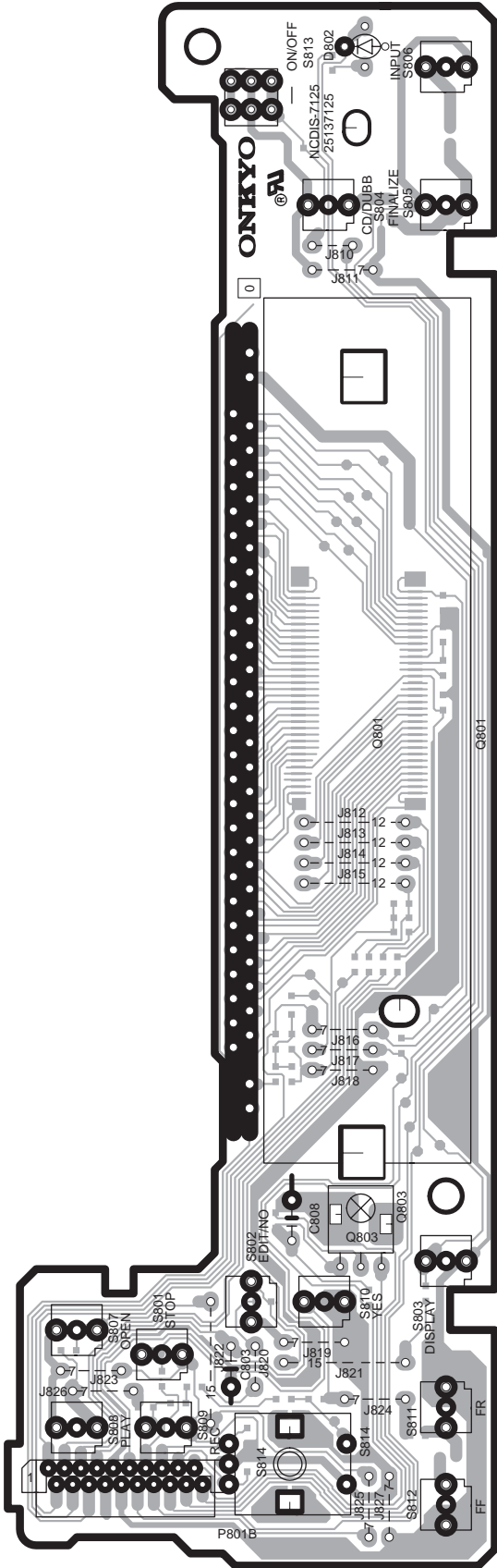
1

2

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4

5



A

B

C

D

PRINTED CIRCUIT BOARD VIEWS-4

U2 POWER SUPPLY PC BOARD (NAPS-7124)

1

Component side

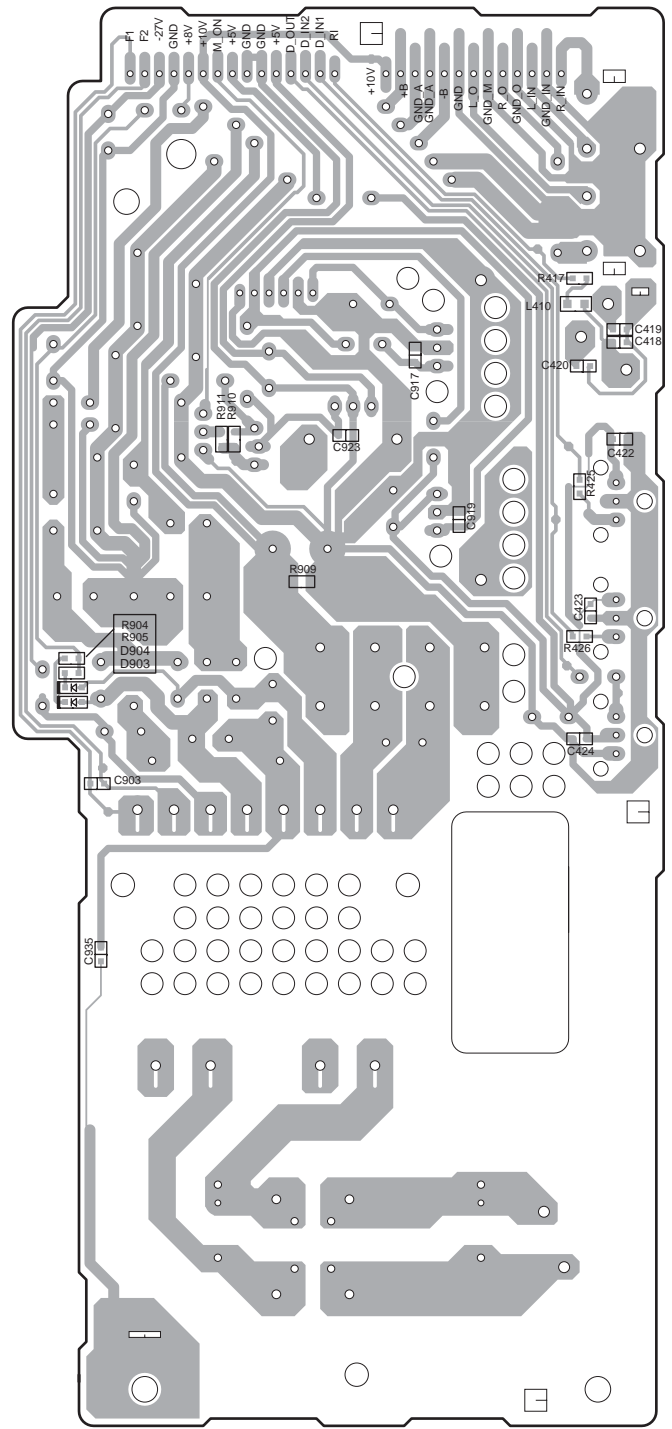
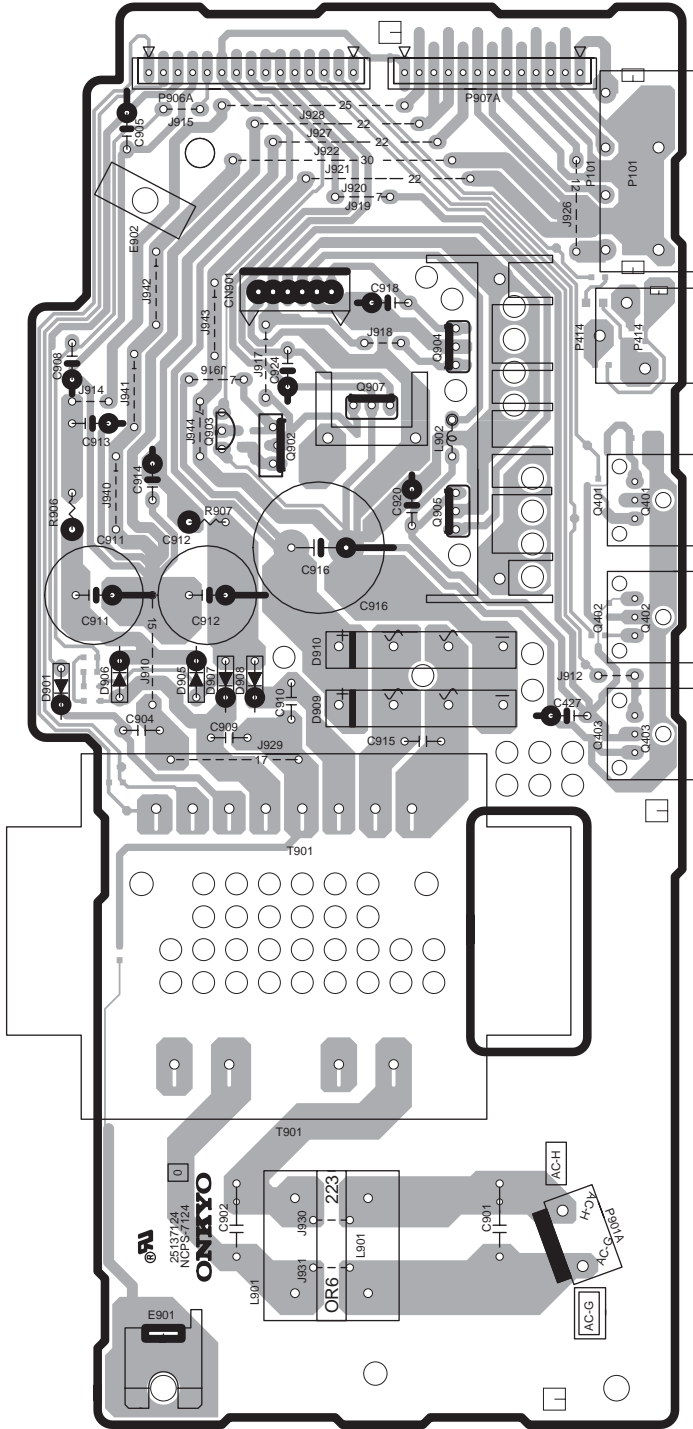
Soldering side

2

3

4

5



PRINTED CIRCUIT BOARD PARTS LIST-1

U1

MAIN CIRCUIT PC BOARD(NADG-7123-1B/-1C)

CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs			Ceramic Resonator	
Q110	22240608R1	NJM2100M	X710	3010242	CST5.00MGW
Q210,Q211	22241383R2 or 22240489R1NE	NJM4565M-D MPC4570G2-T1(MST)		Capacitors	
Q312	22241380R2	AK4524-VF	C110,C111	393384707	47uF, 50V, Elect.
Q511	22241210	BMR-0101D	C112,C113	393321017	100uF, 6.3V, Elect.
Q710	22241599R3	MPD780058GC-282-8BT	C116,C117	374721015	100pF+/-10%, 50V, Plastic
Q911	22278005ENE	MPC29M05HF	C210,C211	374723315	330pF+/-10%, 50V, Plastic
	Transistors		C212-C215	374721015	100pF+/-10%, 50V, Plastic
Q212	2214490R2 or 2216210R2	RN1404 or KRC104S	C216,C217	374726824	6800pF+/-5%, 50V, Plastic
Q213,Q216	2214540R2 or 2216230R2	RN2403 or KRA103S	C218,C219	374721024	1000pF+/-5%, 50V, Plastic
Q214	2216141R2	HN1C03F-B	C221,C222	393384707	47uF, 50V, Elect.
Q510	221282 or 2215820	DTC144ES or KRC104M	C226,C227	374728224	6800pF+/-5%, 50V, Plastic
Q711,Q712	2214540R2 or 2216230R2	RN2403 KRA103S	C228,C229	354741019	100uF, 16V, Elect.
Q713,Q714	2211705 or 2211706	2SD655-E or 2SD655-F	C315	393344707	47uF, 16V, Elect.
Q901	2213354 or 2213355 or 2215995	2SA933S-R or 2SA933S-S or KTA1267-GR	C320,C427	354722219	220uF, 6.3V, Elect.
	Diodes		C323	354741009	10uF, 16V, Elect.
D110,D111	224490240R2	UDZ2.4B	C511	354780229	2.2uF, 50V, Elect.
D210	224490470R2	UDZ4.7B	C512	393380107	1uF, 50V, Elect.
D503,D514	22380035 or 22380260	GP104003E or RL1N4003	C515	3000078 or 3000120	DX-5R5L104 or FMC0H104Z, Super capacitor
D510,D512,D710	223234R2 or 223269R2	1SS352 or 1SS355	C517,C932	354721019	100uF, 6.3V, Elect.
D511	224490510R2 or 224550510R2	UDZ5.1B or UDZS5.1B		Sockets	
D513	224490560R2 or 224550560R2	UDZ5.6B or UDZS5.6B	CN302	25052309	NSCT-9P2206
	Coils		CN501	25052325	NSCT-25P2222
L312	230952R2 or 230921R2	BK2125LM182-T or BLM21B222SPT	P801A	25052320	NSCT-20P2217

U2

POWER SUPPLY PC BOARD(NAPS-7124-1B/-1C)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Photo couplers	
Q401,Q402	24120083	GP1FA550RZ
Q403	24120082	GP1FA550TZ
	ICs	
Q904,Q905,Q907	22278005DNE	MPC2905HF

NOTE:

<PP> : European model only
<DT> : Taiwanese model only

NOTE: THE COMPONENTS IDENTIFIED BY MARK Δ ARE
CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK.
REPLACE ONLY WITH PART NUMBER SPECIFIED.

PRINTED CIRCUIT BOARD PARTS LIST-2

CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistors			Plug	
Q902	2201275 or 2201276	2SB772-Q or 2SB772-P	CN902	25055150	NPLG-6P134
Q903	221281 or 2213570 or 2216050	DTC114YS or RN1207 or KRC107M	P901A	25055675 or 25056028	△ NPLG-2P631 or △ NPLG-2P0978
	Diodes		P906A	25056020	NPLG-15P0970
D901,D905-D908	22380035 or 22380260	△ GP104003E or RL1N4003	P907A	25056018	NPLG-13P0968
D902	224492700R2	UDZ27B		Heat sinks	
D903,D904	223234R2 or 223269R2	1SS352 or 1SS355	Q904A	27160209	RAD-67
D909,D910	22380022F or 22380285F	△ RBV402 or △ RS403M	Q907A	27160145-1 or 27160145	RAD-51 or RAD-51
	Coils			Screws	
L410	230921R2 or 230952R2	BLM21B222SPT BK2125LM182-T	Q904B,Q905B Q907B	82143010	3P+10FN(BC), Screw
L901	231287	△ NCH-3567, Choke coil		U3	
L902	230906	BL02RN2-R62		DISPLAY CIRCUIT PC BOARD(NADIS-7125-1B/-1C)	
	Capacitors			CIRCUIT NO. PART NO. DESCRIPTION	
C904,C915	374722244	0.22uF+/-5%, 50V, Plastic		FL Tube	
C905	354781019	100uF, 50V, Elect.	Q801	212215	BJ835GNK
C906	354784709	47uF, 50V, Elect.		IC	
C907	354780479	4.7uF, 50V, Elect.	Q802	22240685R9	M66004FP
C908	354741009	10uF, 16V, Elect.	Q803	2413336	PIC-26043TH2
C909,C910	374724744	0.47uF+/-5%, 50V, Plastic		Diode	
C911,C912	393342227S	2200uF, 16V, Elect.	D801	224490620R2 or 224550620R2	UDZ6.2B or UDZS6.2B
C913,C914	354741019	100uF, 16V, Elect.	D802	225370	SLR-342VRTB7, LED
C916	393341037S	10000uF, 16V, Elect.		Capacities	
C918,C920,C924	354722219	220uF, 6.3V, Elect.	C803	355780479	4.7uF, 50V, Elect.
	Resistors		C808	355721019	100uF, 6.3V, Elect.
R906,R907	443622714	270ohm +/-5%, 1/2W, Metal oxide		Switches	
	Jacks		S801-S813	25035652	NPS-111-S604
P101	25045594	NPJ-4PDWR405		Rotary encoder	
P414	25045589	NPJ-2PDB400	S814	25065507	EC11B15244, AMCS
				Socket	
			P801B	25052357	NSCT-20P2254
				holder	
			Q801A	27191135A	FL Holder

NOTE:

<PP> : European model only
<DT> : Taiwanese model only

NOTE: THE COMPONENTS IDENTIFIED BY MARK △ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

MICROPROCESSOR TERMINAL DESCRIPTION

Q710: MPD780058GC-282-8BT

PIN NO.	FUNCTION	I/O	LOGIC	DESCRIPTION
1	NU	I	---	Not used. (Connect to Ground pin)
2	JOGA	I	H	Pulse input pin A from rotary encoder (AMCS).
3	JOGB	I	H	Pulse input pin B from rotary encoder (AMCS).
4	AVSS(GND)	---	---	Ground pin for A/D converter.
5	SREQ	O	L	Output pin for communication to mechanism microprocessor.
6	NU	I	---	Not used. (Connect to Ground pin)
7	AVREF1	---	---	Reference voltage input pin for D/A converter. (+5V)
8	MDATA	I	H	Serial data input pin from mechanism microprocessor.
9	SDATA	O	H	Serial data output pin to mechanism microprocessor.
10	DSCK	O	CLK	Clock data output pin to mechanism microprocessor.
11	NU	I	---	Not used. (Connect to Ground pin)
12	FLDATA	O	H	Serial data output pin for FL tube driver IC (M66004FP).
13	FLCLK	O	CLK	Clock data output pin for FL tube driver IC (M66004FP).
14	FLASH1	O	L	Output pin for flash writer.
15	FLASH2	I	L	Input pin for flash writer.
16	FLRESET	O	L	Reset signal output pin for FL tube driver IC (M66004FP).
17	NU	I	---	Not used. (Connect to Ground pin)
18	NU	I	---	Not used. (Connect to Ground pin)
19	FLCS	O	L	Chip enable signal output pin for FL tube driver IC (M66004FP).
20	FILAMENT	O	L	Output pin for filament control of FL tube.
21	NU	O	---	Not used. (OPEN)
22	NU	O	---	Not used. (OPEN)
23	NU	O	---	Not used. (OPEN)
24	NU	O	---	Not used. (OPEN)
25	NU	O	---	Not used. (OPEN)
26	NU	O	---	Not used. (OPEN)
27	STBYLED	O	L	Output pin for control of standby LED. STANDBY="L"
28	NU	I	---	Not used. (Connect to Ground pin)
29	NU	I	---	Not used. (Connect to Ground pin)
30	CHECK	I	H	Not used.
31	MODE	I	L	Input pin for model selection. DX-R700="H", CDR-205TX="L"
32	NU	I	---	Not used. (Connect to Ground pin)
33	VSS1(GND)	---	---	Ground pin.
34	NU	I	---	Not used. (Connect to Ground pin)
35	NU	I	---	Not used. (Connect to Ground pin)
36	NU	I	---	Not used. (Connect to Ground pin)
37	NU	I	---	Not used. (Connect to Ground pin)
38	NU	I	---	Not used. (Connect to Ground pin)
39	NU	I	---	Not used. (Connect to Ground pin)
40	NU	I	---	Not used. (Connect to Ground pin)

PIN NO.	FUNCTION	I/O	LOGIC	DESCRIPTION
41	NU	I	---	Not used. (Connect to Ground pin)
42	NU	I	---	Not used. (Connect to Ground pin)
43	NU	I	---	Not used. (Connect to Ground pin)
44	MERESSET	O	L	Reset signal output pin for mechanism microprocessor. Reset="L"
45	NU	I	---	Not used. (Connect to Ground pin)
46	LINEMUTE	O	L	Muting signal output pin to analog circuit. ON="L"
47	MEPOWER	O	H	Output pin for controlling the power supply of mechanism.
48	NU	I	---	Not used. (Connect to Ground pin)
49	NU	I	---	Not used. (Connect to Ground pin)
50	CHKSIGNAL	O	L	Not used.
51	NU	I	---	Not used. (Connect to Ground pin)
52	NU	I	---	Not used. (Connect to Ground pin)
53	NU	I	---	Not used. (Connect to Ground pin)
54	NU	I	---	Not used. (Connect to Ground pin)
55	NU	I	---	Not used. (Connect to Ground pin)
56	RIIN	I	H	System control (RI) signal input pin.
57	RIOUT	O	L	System control (RI) signal output pin.
58	NU	I	---	Not used. (Connect to Ground pin)
59	NU	I	---	Not used. (Connect to Ground pin)
60	RESET	I	L	System reset signal input pin.
61	REMOIN	I	L	Remote control signal input pin.
62	POFF	I	L	Input pin of power failure detected signal.
63	XPFAIL	I	L	Input pin of power failure detected signal from mechanism microprocessor.
64	NU	I	---	Not used. (Connect to Ground pin)
65	MACK	I	H	Input pin for communication from mechanism microprocessor.
66	NU	I	---	Not used. (Connect to Ground pin)
67	VSS0(GND)	---	---	Ground pin.
68	VDD1	---	---	Power supply pin. (+5V)
69	X2	O	CLK	System clock oscillation circuit output pin. (5MHz)
70	X1	I	CLK	System clock oscillation circuit input pin. (5MHz)
71	IC(GND)	---	---	Internal connection pin. Not used. (Connect to Ground pin)
72	XT2	---	---	Not used. (OPEN)
73	XT1(NU)	---	---	Not used. (Connect to VDD0 pin)
74	VDD0	---	---	Power supply pin. (+5V)
75	AVREF0	---	---	Reference voltage input pin for A/D converter. (+5V)
76	K1	I	H	Operation key connection input pin.
77	K2	I	H	Operation key connection input pin.
78	K3	I	H	Operation key connection input pin.
79	NU	I	---	Not used. (Connect to Ground pin)
80	NU	I	---	Not used. (Connect to Ground pin)

DISASSEMBLING PROCEDURES-1

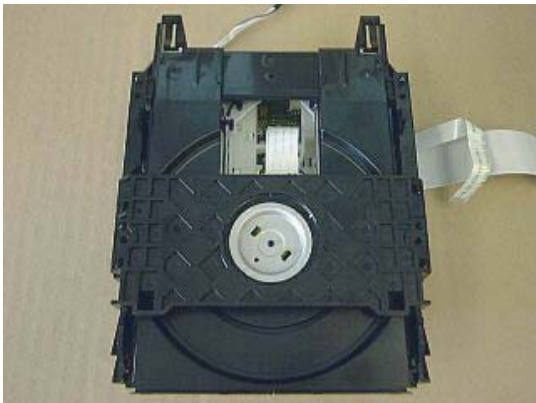
CD-R MECHANISM: REPLACEMENT OF OPTICAL PICKUP

The laser diode in the optical pickup block is so sensitive to static electricity, surge current and etc. That the components are liable to be broken down or its reliability remarkably deteriorated. During repair, carefully take the following precautions. Do not touch the optical pickup object lens with the hands.

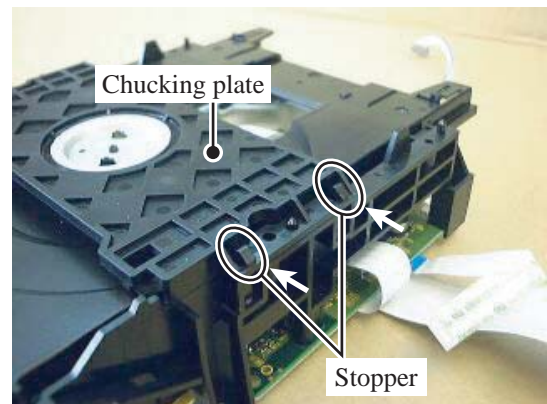
PRECAUTIONS

1. Ground for the work-desk.
Place a conductive sheet such as a sheet of copper (with impedance lower than 10Mohm) on the work-desk and place the set on the conductive sheet so that the chassis can be grounded.
2. Grounding for the test equipments and tools.
Test equipments and toolings should be grounded in order that their ground level is the same the ground of the power source.
3. Grounding for the human body.
Be sure to put on a wrist-strap for grounding whose other end is grounded.
Be particularly careful when the workers wear synthetic fiber clothes, or air is dry.
4. Select a soldering iron that permits no leakage and have the tip of the iron well-grounded.
5. Do not check the laser diode terminals with the probe of a circuit tester or oscilloscope.

- 1** Remove the mechanism from the chassis.



- 2** 1. Press the stopper of chucking plate to the arrow mark direction.



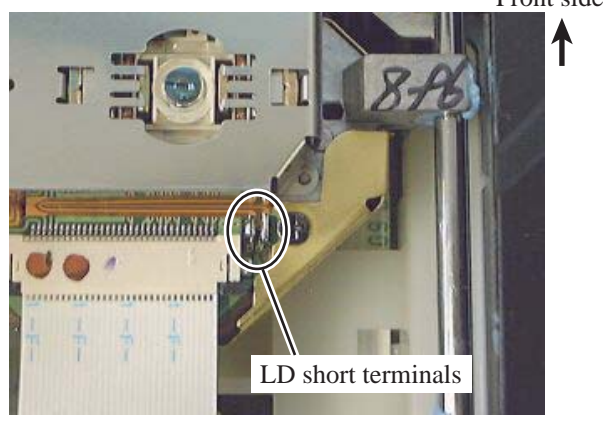
2. Remove the chucking plate.



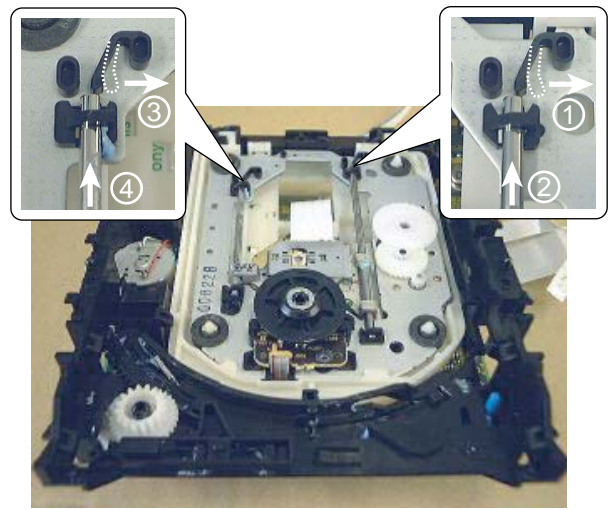
DISASSEMBLING PROCEDURES-2

CD-R MECHANISM: REPLACEMENT OF OPTICAL PICKUP

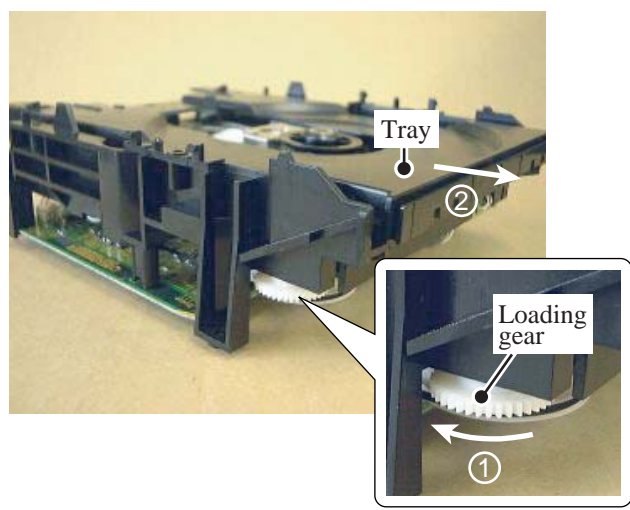
3 When replacing the optical pickup, short-circuit two terminals on the optical pickup unit.



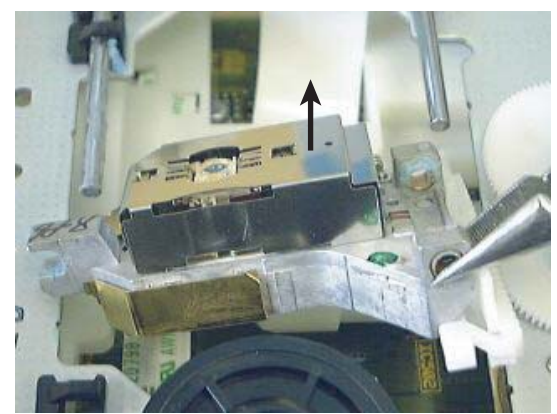
6 1, 3. Press the shaft stopper to the arrow mark direction. 2, 4. Pull out the shaft.



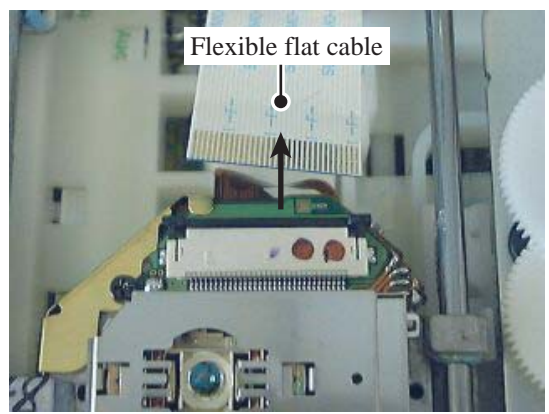
4 1. Rotate the loading gear to the arrow mark direction. 2. Remove the tray.



7 Replace the optical pickup.



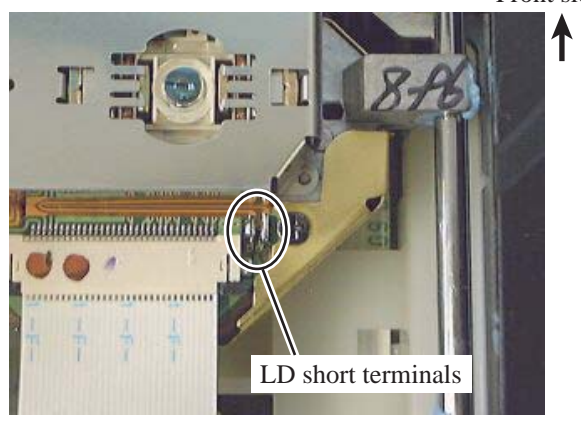
5 Disconnect the flexible flat cable of optical pickup.



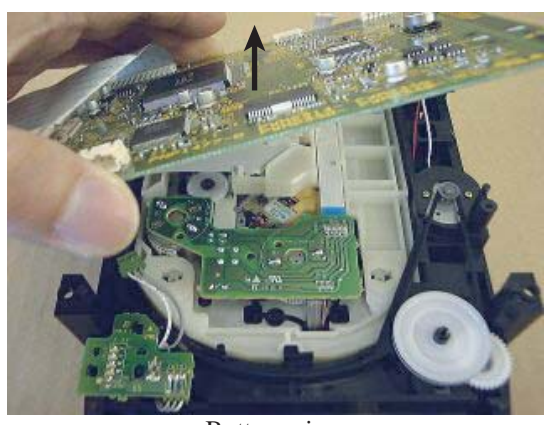
DISASSEMBLING PROCEDURES-3

CD-R MECHANISM: REPLACEMENT OF SPINDLE MOTOR

1 When replacing the optical pickup, short-circuit two terminals on the optical pickup unit. Front side

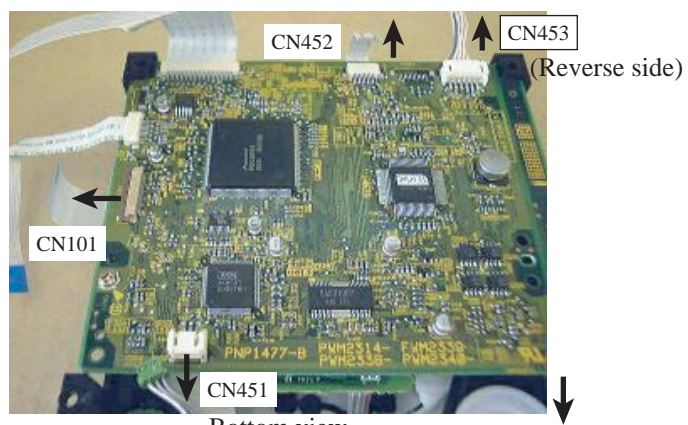


4 Remove the CD-R CORE PCB.



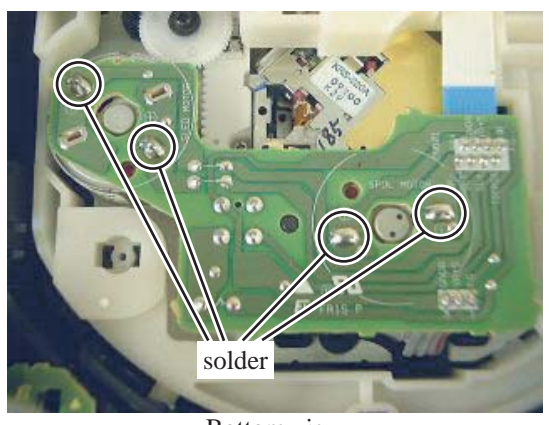
-- Bottom view --

2 Disconnect the flexible flat cable and socket ass'y from CD-R CORE PCB.



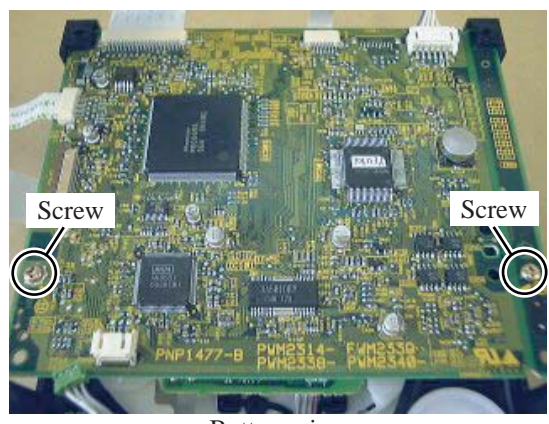
-- Bottom view --

5 Unsolder the spindle motor and carriage motor.



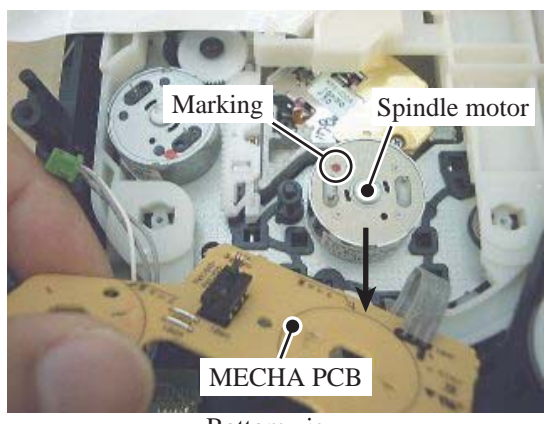
-- Bottom view --

3 Remove the machine screw of two points holding the CD-R CORE PCB.



-- Bottom view --

6 Remove the MECHA PCB.

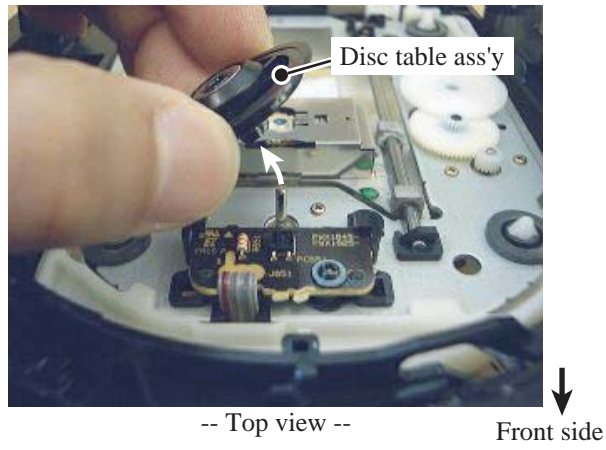


-- Bottom view --

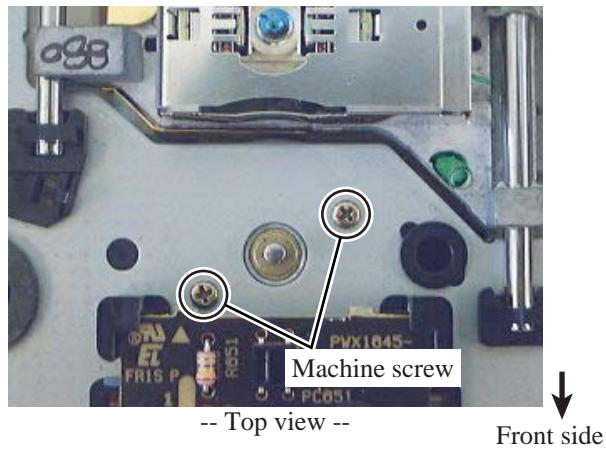
DISASSEMBLING PROCEDURES-4

CD-R MECHANISM: REPLACEMENT OF SPINDLE MOTOR

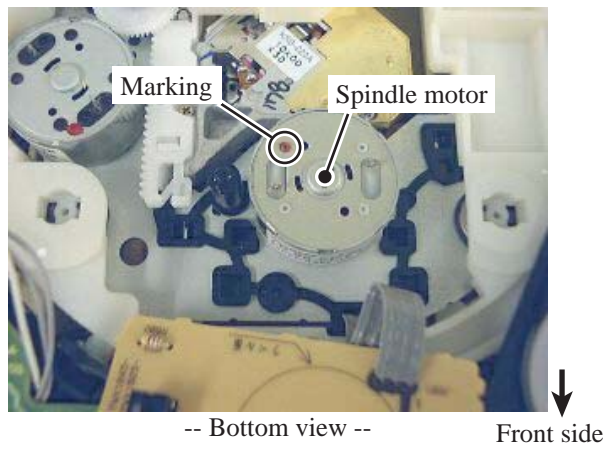
7 Remove the disc table ass'y.



8 Remove the machine screw of two points holding the spindle motor.



9 Replace the spindle motor.



ADJUSTMENT PROCEDURES-1

1. DISCS TO BE USED

SERVO SYSTEM ADJUSTMENT

CD: Test disc TYPE 4 YEDS-18 (by SONY) SN: 0R016
or STD-905 (by PIONEER) SN: 0R116

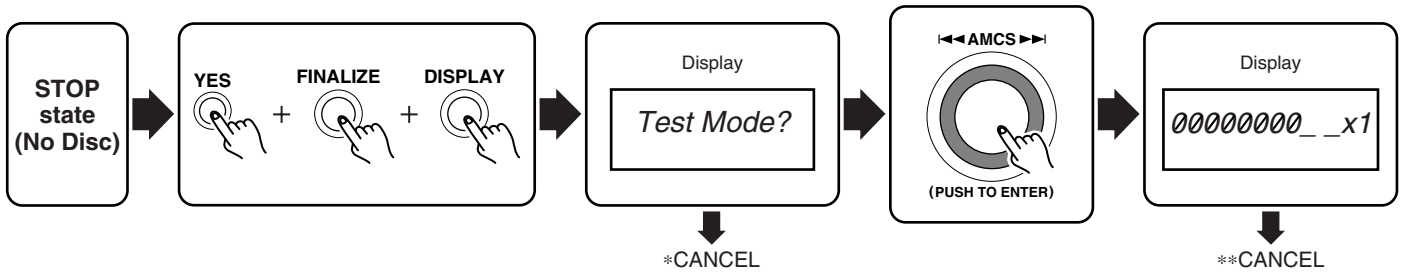
2. MEASUREMENT EQUIPMENT

- (1) Laser power meter: LE8010 (by LEADER)
- (2) Oscilloscope
- (3) CD jitter meter

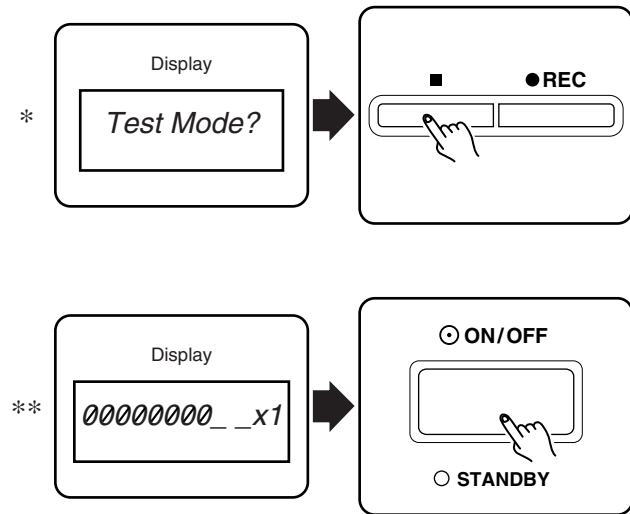
3. TEST MODE

3.1 How to Enter the Test Mode

TEST MODE : ON

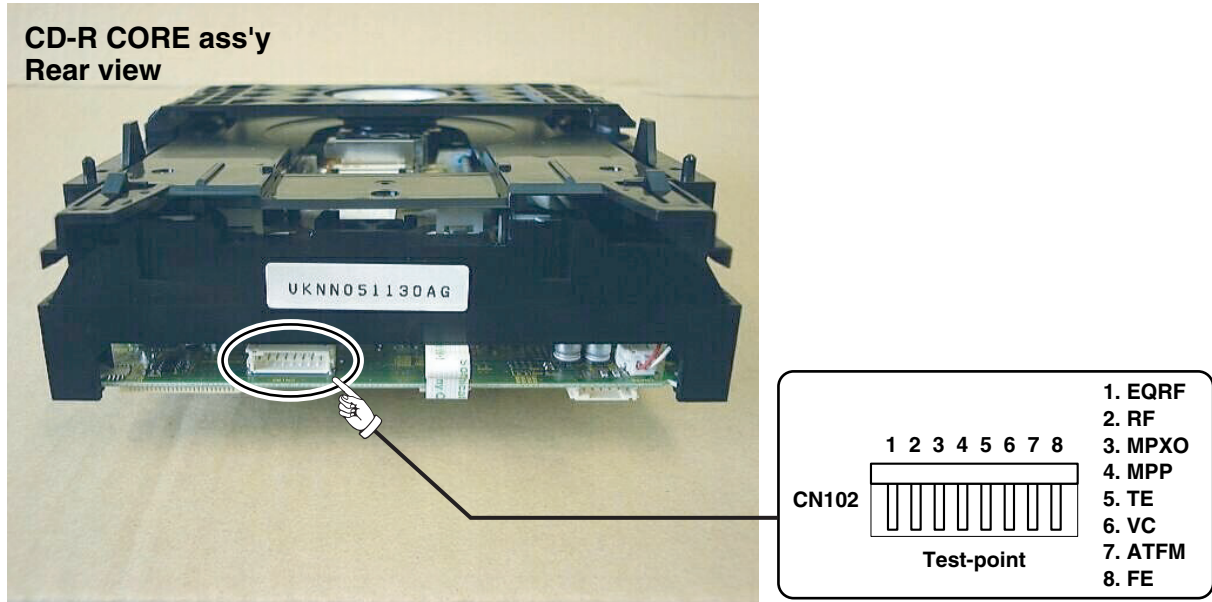


TEST MODE : CANCEL



ADJUSTMENT PROCEDURES-2

3.2 TEST-POINT



4. NECESSARY ADJUSTMENT POINTS

When	Adjustment points
■ Exchange of CD-R CORE (Mechanism) ass'y	
Optical pickup	Mechanical point
	Electric point
Spindle motor	Mechanical point
	Electric point
■ Exchange of CD-R CORE PCB ass'y (Reference)	
CD-R CORE PCB ass'y (Not supplied)	Mechanical point
	Electric point

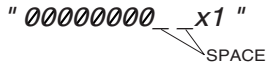
ADJUSTMENT PROCEDURES-3

5. LD POWER ADJUSTMENT

[Points]

- LD power adjustment consists of three sessions: Playback power adjustment, CD-R record power adjustment, and CD-RW record power adjustment.
- Once the test mode is activated in order to perform the LD power adjustment, be sure to finish the three sessions in one time, never to stop halfway; the three sessions should be always performed in one time.
- Pressing the PLAY/PAUSE key (not ENTER key) decides the adjustment value of laser power, and automatically changes over to the next session;
e.g. playback power adjustment --- <PLAY/PAUSE key> → CD-R record power adjustment --- <PLAY/PAUSE key>
→ CD-R overdrive power adjustment
- Press the STOP key when the last session (CD-RW record power adjustment) is finished. This is to stop the test mode.

5.1 Playback Power Adjustment

Test Point	Pickup objective lens
Adjustment Value	0.9 mW ± 0.05 mW
Purpose	Optimizing playback power of laser diode.
Symptom when Out of Adjustment	Incapable of disc discrimination, playback, or track searches. Or track jumping.
Adjustment method	
[Procedure] <ol style="list-style-type: none"> Enter the Test mode. Press the INPUT key so that "ANALOG IN" appears on the FL display. Press the YES key so that "CD" appears on the FL display. Move the pickup to the position where the power is easy to measure by pressing the REWIND or FAST FORWARD key (◀◀/▶▶). Press the REC and EDIT/NO key in order, and light the LD. Turn the JOG(AMCS) key to adjust the power. Switch the coarse adjustment and the fine adjustment by pressing the REC key, and adjust it. (initial state is the coarse adjustment.) Press the PLAY/PAUSE key to register the adjustment if the power became the adjustment value. 	FL Indication  " PLAY_ _ _ *00_ _ " " PLAY_ _ _ *XX_ _ " " R_REC_ _ *0000 "

5.2 CD-R Record Power Adjustment

Test Point	Pickup objective lens
Adjustment Value	R REC : 4.3 mW ± 0.1 mW (= A value) ; R Over Drive : A value + 0.1 mW ± 0.01 mW
Purpose	Optimizing CD-R recording power of laser diode.
Symptom when Out of Adjustment	Incapable of CD-R recording, self-pre recorded CD-R disc playback. Sound pauses, track jumping, or bad RF wave shape (though no failure in playing CD).
Adjustment method	
[Procedure] <p><Adjustment of CD-R Record Power></p> <ol style="list-style-type: none"> Turn the JOG(AMCS) key to adjust the power. Switch the coarse adjustment and the fine adjustment by pressing the REC key, and adjust it. (initial state is the coarse adjustment.) Press the PLAY/PAUSE key to register the adjustment if the power became the adjustment value. (assume the power when it was decided by A value) When it is registered, shift to the Overdrive Power adjustment automatically. <p><Adjustment of CD-R Overdrive Power></p> <ol style="list-style-type: none"> Turn the JOG(AMCS) key to adjust the power. Switch the coarse adjustment and the fine adjustment by pressing the REC key, and adjust it. (initial state is the coarse adjustment.) Press the PLAY/PAUSE key to register the adjustment if the power became the adjustment value. 	FL Indication " R_REC_ _ *0XXX " " R_OD_ _ _ *0000 " " R_OD_ _ _ *0XXX " " R_WBIAS_ *0000 "

ADJUSTMENT PROCEDURES-4

5.3 CD-RW Record Power Adjustment

Test Point	Pickup objective lens
Adjustment Value	RW Bias : 2.3 mW \pm 0.05 mW, RW REC : 3.2 mW \pm 0.05 mW, RW Erase : 5.2 mW \pm 0.1 mW
Purpose	Optimizing CD-RW recording power of laser diode.
Symptom when Out of Adjustment	Incapable of CD-RW recording, self-pre recorded CD-RW disc playback. Sound pauses, track jumping, or bad RF wave shape (though no failure in playing CD).
Adjustment method	
FL Indication	
<p>[Procedure]</p> <p><Adjustment of CD-RW BIAS Power></p> <p>12. Turn the JOG(AMCS) key to adjust the power. Switch the coarse adjustment and the fine adjustment by pressing the REC key, and adjust it. (initial state is the coarse adjustment.)</p> <p>13. Press the PLAY/PAUSE key to register the adjustment if the power became the adjustment value. When it is registered, shift to the CD-RW Record Power adjustment automatically.</p> <p>Note: In the CD-RW Bias Power Adjustment, in the case that the power is over 2.3 mW when the LD lighted, do not need to perform the Bias Power Adjustment. Set adjustment value of the CD-RW record power to + 0.9 mW \pm 0.05 mW against the power in LD lighting then.</p> <p><Adjustment of CD-RW Record Power></p> <p>14. Turn the JOG(AMCS) key to adjust the power. Switch the coarse adjustment and the fine adjustment by pressing the REC key, and adjust it. (initial state is the coarse adjustment.)</p> <p>15. Press the PLAY/PAUSE key to register the adjustment if the power became the adjustment value. When it is registered, shift to the CD-RW Erase Power adjustment automatically.</p> <p><Adjustment of CD-RW Erase Power></p> <p>16. Turn the JOG(AMCS) key to adjust the power. Switch the coarse adjustment and the fine adjustment by pressing the REC key, and adjust it. (initial state is the coarse adjustment.)</p> <p>17. Press the ENTER key to register the adjustment if the power became the adjustment value.</p> <p>18. Press the STOP key to goes out the LD, and adjustment is completed.</p>	<p>" RwBIAS_*00XX "</p> <p>" RwREC_*_*0000 "</p> <p>" RwREC_*_*0XXX "</p> <p>" RwERAS_*00XX "</p> <p>" RwERAS_*0XXX "</p> <p>" 00000000_*_*x1 "</p>

Cautions:

- (1) All the reading values of power meter of this adjustment are values with an average.
- (2) How to confirm the adjustment value:

When enter the power adjustment mode, enter it by pressing the REC and DISPLAY keys in order.

Furthermore, can confirm the adjustment value of each power stored in EEPROM by switching the DISPLAY key.

However, RW cannot see all adjustment results. Use DAC the same as erase power in the Bias Power Adjustment, and perform the adjustment of record power while outputting the setting value of erase power decided in the Bias Power Adjustment. And perform the Erase Power Adjustment while outputting the setting value of the record power.

Therefore, the value of Bias Power Adjustment does not remain after adjustment of the erase power. (as for the displayed adjustment value, erase power is the same as bias power.)

It is only erase power that can confirm the adjustment result with the power meter among power of RW.

As for the value of Record Power Adjustment, only setting numeric value is readable, but output power becomes the same as the erase power.

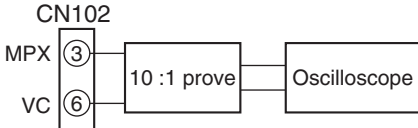
Bias power cannot confirm the setting value, too. Be not used during actual record operations either.

ADJUSTMENT PROCEDURES-5

6. SERVO ADJUSTMENT

■ AUTOMATIC ADJUSTMENT

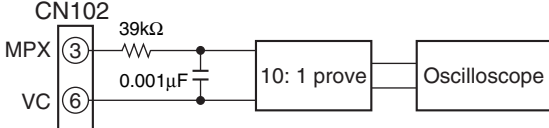
6.1 Preparation

Test Point	CN102-pin 3 (MPX)	
Discs to be Used	CD test disc (TYPE 4 or STD-905)	
	Method	FL Indication
	<p>[Procedure]</p> <ol style="list-style-type: none"> 1. Enter the Test mode. 2. Press the INPUT key so that "DIGITAL IN 1" appears on the FL display. → If it was not displayed the Focus Offset Adjustment, press the EDIT/NO + YES key and shift to the Focus Offset Adjustment. 3. Monitor the MPX signal with VC and set a CD disc. 	" FEOS_ _XX_ _ _ _ "

6.2 Automatic Adjustment Start

	Method	FL Indication
	<p>[Procedure]</p> <ol style="list-style-type: none"> 1. Press the REC key to start the automatic adjustment. → Stop by the state that selected an item of next "Tracking Gain Adjustment" once. 	" FEOS_ _00_ ?_ _ _ " " SPPG_ _70_ _ _ _ "

6.3 Tracking Gain Adjustment

Test Point	CN102-pin 3 (MPX)	
Adjustment Value	Minimize (MPP + SPP)	
Purpose	Matching gains of pickup main signal output and sub-signal output.	
Symptom when Out of Adjustment	Playback does not function, or incapable of searching.	
	Adjustment method	FL Indication
	<p>[Procedure]</p> <ol style="list-style-type: none"> 1. Move the Pickup to center of the disc by pressing the REWIND or FAST FORWARD key (◀◀/▶▶). 2. Monitor the MPX signal with VC and set a CD disc. 3. Press the FINALIZE key to FOCUS IN. 4. Press the PLAY/PAUSE key to turn the SPINDLE. (CAV) 5. Adjust the JOG(AMCS) key so that MPX waveform (MPP + SPP) becomes minimum. 6. Press the ENTER key to register the adjustment. → Stop the disc rotation and Execute "MPP Offset Readjustment" automatically. And select an item of next "Focus Bias Adjustment", and stop with the state completed to average processing. (Reference) 	" SPPG_ _XX_ ?_ _ _ " " FBIAS_ 00_ _ _ _ "

ADJUSTMENT PROCEDURES-6

6. SERVO ADJUSTMENT

6.4 Focus Bias Adjustment

Test Point	CN102-pin 2 (RF)	
Adjustment Value	Minimize jitter value	
Purpose	Optimizing DC offset voltage of focus servo loop circuit including pickup.	
Symptom when Out of Adjustment	Focus-in does not function, sound pauses, bad RF wave shape, or incapable to playback some discs.	
Adjustment method		FL Indication
<p>[Procedure]</p> <ol style="list-style-type: none"> 1. Move the Pickup to center of the disc by pressing the REWIND or FAST FORWARD key (◀◀/▶▶). 2. Monitor the jitter value and set a CD disc. (use the jitter meter) 3. Press the FINALIZE key to FOCUS IN. 4. Press the PLAY/PAUSE key to turn the SPINDLE. (CAV) 5. Press the PLAY/PAUSE key to TRACKING ON. (EFM CLV) 6. Adjust the JOG(AMCS) key so that jitter value becomes minimum. 7. Press the ENTER key to register the adjustment. <ul style="list-style-type: none"> ➔ Shift to the RFDC Level Adjustment automatically. 8. Adjustment is completed automatically. <ul style="list-style-type: none"> ➔ Each display the reason that became abnormal when adjustment was not completed normally. When did not converge in limit of adjustment possibility (when it became the lowest level) When failed in writing to the EEPROM 9. Press the STOP key to stop the operation. <p>Cautions:</p> <p>In this adjustment, shift to the RFDC Adjustment when pressing the ENTER key before step 7, and there is it when completed in normal on the indication.</p> <p>However, must not omit operation of steps 5 from 3 because RFDC is not adjusted to normal when pressing the ENTER key with the state that steps 5 from 3 are not executed.</p>		<p>" FBIAS_XX ? _ _ "</p> <p>" RFDC_ _ADJ_OK "</p> <p>" RFDC_ _ADJ_NG "</p> <p>" RFDC_ _EEP_NG "</p> <p>" FBIAS_XX_ _ _ _ "</p>
<pre> graph LR subgraph CN102 RF((2)) VC((6)) end RF --- P1(()) VC --- P2(()) P1 --- P2 P1 --- P10[10:1 probe] P2 --- P10 P10 --- JM[Jitter meter] </pre>		

How to execute the automatic adjustment once again after the automatic adjustment is completed:

1. Press the STOP key to stop the disc rotation. (servo OFF)
 2. Press the EDIT/NO + YES key and shift to the Focus Offset adjustment.
 3. Press the REC key to start the automatic adjustment.
- Adjust from "6.2 Automatic Adjustment Start" to "6.4 Focus Bias Adjustment".
- Press the STOP key when stops execution of the automatic adjustment on the way and stop processing.
- Then return to the state of "6.1 Preparations" and stop the operation.

ADJUSTMENT PROCEDURES-7

7. Pickup replacement repair, the final check inspection method after adjustment

Disc required:

CD-R disc

Standard disc for consumer (For music use).

or

RDD-74 (PIONEER VIDEO CORP.)

CD-RW disc

Standard disc for consumer (For music use).

or

RDW-74J (PIONEER VIDEO CORP.)

[Inspection items]

1. Recording-playback jitter

Method: 1. Press the PLAY/PAUSE key.

2. Measure RF signal (CN102-pin2) by Jitter Meter (Trailing edge).

Specification: 35 nS or below.

2. Recording-playback block error

Method: 1. Press the PLAY/PAUSE key.

2. While pushing the YES key and FINALIZE key, press the DISPLAY key.

3. Turn the JOG(AMCS) key so that "C1 Error?" appears on the FL display.

4. Press the ENTER key.

Display: appears in about 4 sec like

C1_XXXXX_ _

Specification: 65 pieces or less

(Press the STOP key to reset display)

3. Recording-playback ATIP error

Method: 1. Press the PLAY/PAUSE key.

2. While pushing the YES key and FINALIZE key, press the DISPLAY key.

3. Turn the JOG(AMCS) key so that "Atip Error?" appears on the FL display.

4. Press the ENTER key.

Display: appears in about 10 sec like

ATIP_XXX_XXX

Left 3 digit datum = Total number of errors

Right 3 digit datum = Maximum continuous error number (Specification item)

Specification: Max continuous error (Right side datum) must be 7 pieces or less.

(Press the STOP key to reset display)

[Warning]

Scratch, dust, fingerprint, etc. on recording disc may cause deterioration of performance. Be careful no to be occurred.

When CD-RW disc is used for measurement, do not use the same position at more than 100 times.

GENERAL INFORMATION-1

DIAGNOSIS

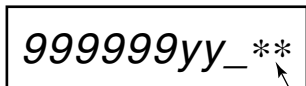
ERROR CODE

Error Code Display for Service.

The CDR-205TX/DX-R700 can display the error codes for service.

1. While pushing the YES key and FINALIZE key, press the DISPLAY key.
2. Turn the JOG(AMCS) key so that "S. Err Disp?" appears on the FL display.
3. Press the ENTER key.

• Display



Error code Number (2 digits)

Right 2 FL digits: Error code for service

The error code for service is displayed as a number (ERROR NUMBER), which follows a message "CHECK DISC" or "CHECK". For details, see the table below.

Error code table for service

Code	Trouble	Contents of Error	Possible Cause	Checkpoints
L*	The unit stops during the tray open/close operation. (CHECK display)	Improper loading	<ul style="list-style-type: none"> • Defective tray position sensor • Defective loading motor • Improper soldering • Pattern short • Improper power supply 	IC451 (BA5810FP)
E*	The unit stops when PLAY or REC/PAUSE starts. (CHECK display)	Defective slider <ul style="list-style-type: none"> • The pickup cannot be returned to the specified position. 	<ul style="list-style-type: none"> • Disconnected flexible cable • Defective drive circuit • Abnormal power supply • Abnormal TOC position switch • Improper soldering 	S601 (PSG1014) IC451 (BA5810FP) IC401 (CXD2585Q)
P*	The unit does not read the inserted disc, and stops. (CHECK DISC display)	Defect in spindle <ul style="list-style-type: none"> • Disc upside-down. • Dirty or cracked disc. • Abnormal disc rotation. • No signal obtained from the disc. 	<ul style="list-style-type: none"> • Defective spindle motor • Defective spindle drive circuit • Abnormal FG signals • Defective WBL circuit • Defective decoder circuit • Unable to read ATIP or subcode • High error rate 	PC651 (NJL5809K-F1) IC451 (BA5810FP) IC401 (CXD2585Q)
C*	The unit stops before it enters REC/PAUSE mode.	Defects related to the recording laser power <ul style="list-style-type: none"> • Dirty or cracked disc. • The optimum recording power cannot be obtained. • Trouble in RF detection. 	<ul style="list-style-type: none"> • Defective laser diode • Trouble in RF detection • Defective RFT RFB circuit • Recording power is not sufficient • Improper soldering, pattern short • Trouble with power supply • Unable to read ATIP or subcode 	IC201 (PA9007A) IC101 (AK8567) IC308 (TC7S14F)
F*	The unit stops during playback or recording.	Defective pickup <ul style="list-style-type: none"> • Unable to focus because of dirt or crack on the inserted disc. • Unable to output the proper laser power. 	<ul style="list-style-type: none"> • Defective laser diode • Defective focus drive circuits • Defective pickup • Improper soldering • Pattern short • Trouble of power supply 	IC451 (BA5810FP) IC401 (CXD2585Q)
A*	The unit stops in a recording-related operation, displaying "CHECK DISC".	<ul style="list-style-type: none"> • Unable to focus • Stop during recording. • The unit stops, being obstructed by a dirt or a crack on the disc. 	If any hardware trouble occurs before displaying A* or d*, the unit stops displaying a code other than these codes. Therefore, these service codes are generated only for troubles with the disc.	
d*	The unit stops in a recording related operation, displaying "CHECK DISC". The unit does not read the inserted disc, and stops.			

The indication for * shows the mechanism mode listed below.

No.	Mechanism Mode	No.	Mechanism Mode	No.	Mechanism Mode
0	PLAY	5	SETUP	A	REC
1	OPEN	6	TOC READ	B	TOC REC
2	STOP	7	–	C	OPC
3	–	8	SEARCH	D	TOC CHECK
4	–	9	REC/PAUSE	E	PMA, ACTUAL PAUSE REC

GENERAL INFORMATION-2

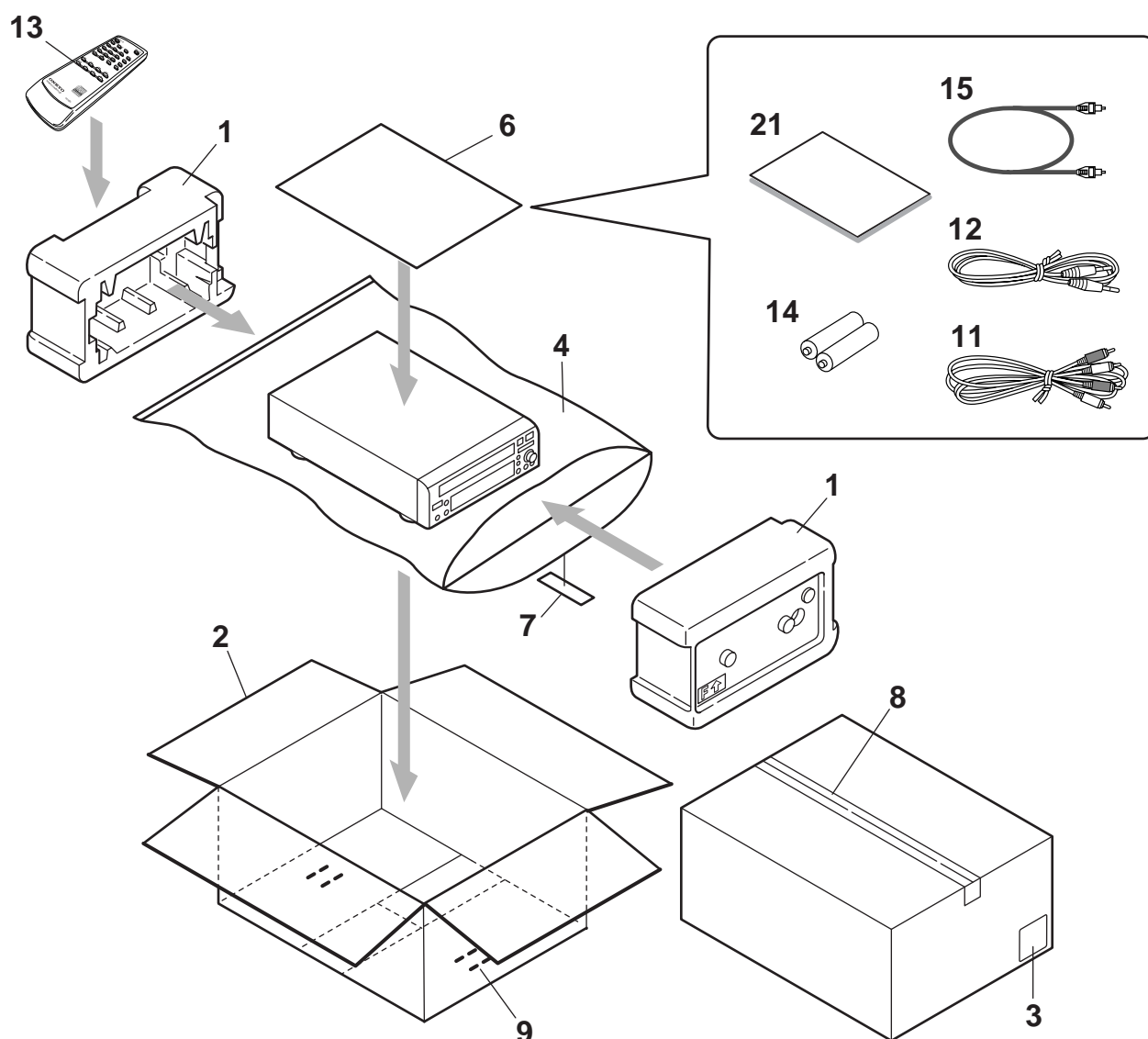
Error code table for service

Code	Generation Condition
L*	In the tray opening procedure, if opening action is not completed within 4.5 sec., the procedure moves to closing action. Afterwards if this closing action is not completed within 4.5 sec., the procedure recalls opening action again. This recalled opening action is not also completed within 4.5 sec., the operation halts. In the tray closing procedure, if closing action is not completed within 4.5 sec., the procedure moves to opening action. Afterwards if this opening action is not completed within 4.5 sec., the operation halts.
E*	(1) When the slider moves in REV direction, and if TOC position SW does not become "H" within 3.4 sec., the operation halts. (2) After (1) is completed normally and then the slider moves in the FWD direction, and if TOC position SW does not become "L" within 300 msec., the operation halts. (3) After (2) is completed normally and then the slider moves in the REV direction, and if TOC position SW does not become "H" within 300 msec., the operation halts.
P*	When Q data is not read in 1 sec. and ATIP data is not read in 1 sec., the system tries to read them for 3 times. And when even then both Q data and ATIP data are not read, the operation halts, etc.
C*	When reading PCA area, searching to playback starting position is failed, then even this is tried twice and the search is not completed, the operation halts. When writing PCA area, the rotation does not reach to the required speed at writing position, so that writing is not possible to start. Or searching to writing starting position is failed and retried for 19 times, as a result that both are incomplete, then the operation halts.
F*	Once disc discrimination is completed, and focus-in action is failed, then the operation halts.
A*	If the pickup jump occurs during recording, and not recovered, then the operation halts. If ATIP data is not to be read for 4 sec. during recording, then the operation halts.
d*	If PMA writing is not completed within 60 sec., then the operation halts. If reading of TOC and PMA is failed, or missing information is observed in read data, the error occurs. When to start recording and RF signal exists instead at the end edge boundary of disc, the error occurs.

The indication for * shows the mechanism mode listed below.

No.	Mechanism Mode	No.	Mechanism Mode	No.	Mechanism Mode
0	PLAY	5	SETUP	A	REC
1	OPEN	6	TOC READ	B	TOC REC
2	STOP	7	---	C	OPC
3	---	8	SEARCH	D	TOC CHECK
4	---	9	REC/PAUSE	E	PMA, ACTUAL PAUSE REC

PACKING VIEW



PARTS LIST

REF. NO	PART NO.	DESCRIPTION	REF. NO	PART NO.	DESCRIPTION
1	29091978	Pad AS	13	24140448	Remote controller, RC-448C
2	29053715	Carton	14	3010054	Battery, UM-3
3	29362818	Label EAN	15	2050064 or	NCS-1P106
4	29100037-1A	Polybag, 650x500		2050072	NOP-1P50, Optical cable
6	29100097-1A	Polybag, 350x250	21	29343057A	Instruction manual E
7	261504	Paper tape, W30		29343061A	Instruction manual T <DT>
8	29110098	PP tape, W50		29343058	Instruction manual U3FSI <PP>
9	282301	Staple		29343059	Instruction manual U3GDSw <PP>
11	2010376 or				
	2010396	Audio cable			
12	2010375 or				
	2010397	Cord ass'y, 3.5-MINI PLUG			

NOTE:

<PP> : European model only

<DT> : Asian model only for 120V

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