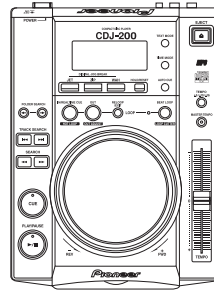


# Service Manual



CDJ-200

ORDER NO.  
**RRV3095**

COMPACT DISC PLAYER

# CDJ-200

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Remarks
CDJ-200	KUCXJ	AC120V	
CDJ-200	RLTXJ	AC110-120V/AC220-240V	
CDJ-200	WYXJ	AC220-240V	
CDJ-200	RFXJ	AC110-120V/AC220-240V	

NECESSARY INFORMATION FOR DHHS RULES  
MARKED ON THE TOP COVER BELOW:

CAUTION – LASER RADIATION WHEN OPEN.  
DO NOT STARE INTO BEAM



For details, refer to "Important Check Points for good servicing".

# SAFETY INFORMATION



This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.



## WARNING

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 - Proposition 65



## NOTICE

(FOR CANADIAN MODEL ONLY)

Fuse symbols  (fast operating fuse) and/or  (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

## REMARQUE

(POUR MODÈLE CANADIEN SEULEMENT)

Les symboles de fusible  (fusible de type rapide) et/ou  (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

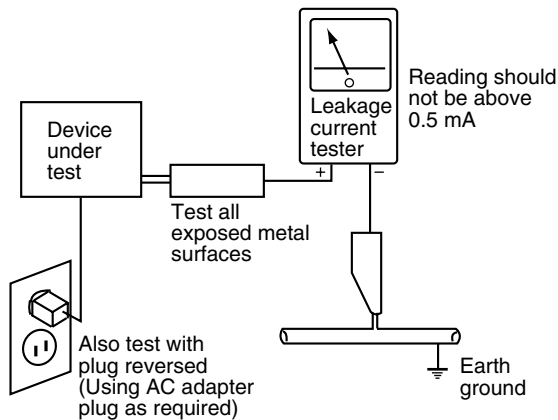
(FOR USA MODEL ONLY)

## 1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

### LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60 Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5 mA.




AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

## 2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a  on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

**IMPORTANT**

THIS PIONEER APPARATUS CONTAINS LASER OF CLASS 1.  
SERVICING OPERATION OF THE APPARATUS SHOULD BE DONE BY A SPECIALLY INSTRUCTED PERSON.

**LASER DIODE CHARACTERISTICS**

MAXIMUM OUTPUT POWER : 5 mW  
WAVELENGTH : 780 – 785 nm

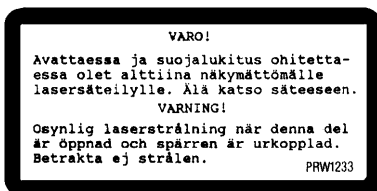
**WARNING !**

THE AEL (ACCESSIBLE EMISSION LEVEL) OF THE LASER POWER OUTPUT IS LESS THAN **CLASS 1** BUT THE LASER COMPONENT IS CAPABLE OF EMITTING RADIATION EXCEEDING THE LIMIT FOR **CLASS 1**.

A SPECIALLY INSTRUCTED PERSON SHOULD DO SERVICING OPERATION OF THE APPARATUS.

**LABEL CHECK (for RLTXJ, WYXJ and RFXJ types)**

for WYXJ



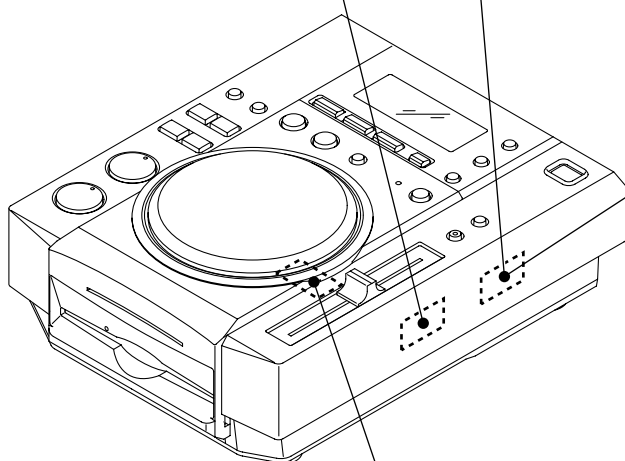
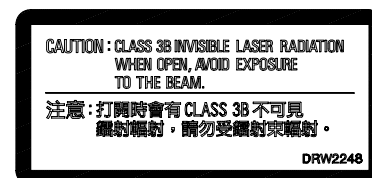
for WYXJ



for RLTXJ



for RFXJ



(Printed on the chassis)

**Additional Laser Caution****1. Laser Interlock Mechanism**

The position of the switch (S1901) for detecting loading completion is detected by the system microprocessor, and the design prevents laser diode oscillation when the switch is not in LPS1 terminal side (when the mechanism is not clamped and LPS1 signal is high level.)

Thus, the interlock will no longer function if the switch is deliberately set to LPS1 terminal side. ( if LPS1 signal is low level ).

In the test mode\* the interlock mechanism will not function. Laser diode oscillation will continue, if pin 41 of TC94A15FG (IC105) on the MAIN Assy is connected to GND, or else the terminals of Q105 are shorted to each other (fault condition).

**2. When the cover is opened, close viewing of the objective lens with the naked eye will cause exposure to a Class 1 laser beam.**

\* : See page 51.

## [Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol. Please be sure to confirm and follow these procedures.

### 1. Product safety



Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

- ① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

- ② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification (addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

- ③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris. Soldering should be finished with the proper quantity. (Refer to the example)

- ④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

- ⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

- ⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs. In addition, be sure that there are no pinched wires, etc.

- ⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

- ⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages. If you find a damaged power cord, please exchange it with a suitable one.

- ⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

- ⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries. Please pay attention to your surroundings and repair safely.

### 2. Adjustments



To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification. Adjustments should be performed in accordance with the procedures/instructions described in this manual.

### 3. Lubricants, Glues, and Replacement parts



Use grease and adhesives that are equal to the specified substance. Make sure the proper amount is applied.

### 4. Cleaning



For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

### 5. Shipping mode and Shipping screws



To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

5 6 7 8

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CDJ-200

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5

# 1. SPECIFICATIONS

## • KUCXJ type

### 1. General

System.....	Compact disc digital audio system
Power requirements.....	AC 120 V, 60 Hz
Power consumption.....	14 W
Operating temperature.....	+5°C – +35°C (+41°F – +95°F)
Operating humidity.....	5 % – 85 %
(There should be no condensation of moisture.)	
Weight.....	3.2 kg (7.1 lb)
Dimensions.....	216 (W) × 292 (D) × 99.5 (H) mm
	8 – 1/2 (W) × 11 – 1/2 (D) × 3 – 15/16 (H) in

### 2. Audio section

Frequency response.....	4 Hz – 20 kHz
Signal-to-noise ratio.....	110 dB or more (JEITA)
Distortion.....	.0006 % (JEITA)

### 3. Accessories

• Operating instructions.....	1
• Power cord.....	1
• Audio cable.....	1
• Control cable.....	1
• Forced eject pin (housed in a groove in the bottom panel)...	1
• Limited warranty.....	1

#### NOTE:

Specifications and design are subject to possible modification with-out notice.

## • WYXJ type

### 1. General

System.....	Compact disc digital audio system
Power requirements .....	AC 220-240 V, 50/60 Hz
Power consumption .....	16 W
Operating temperature .....	+5°C – +35°C
Operating humidity .....	5 % – 85 %
(There should be no condensation of moisture.)	
Weight .....	3.2 kg
Dimensions .....	216 (W) x 292 (D) x 99.5 (H) mm

### 2. Audio section

Frequency response.....	4 Hz – 20 kHz
Signal-to-noise ratio .....	110 dB or more (JEITA)
Distortion .....	0.0006 % (JEITA)

### 3. Accessories

• Operating instructions .....	1
• Power cord .....	1
• Audio cable .....	1
• Control cable .....	1
• Forced eject pin (housed in a groove in the bottom panel)...	1

#### NOTE:

Specifications and design are subject to possible modification with-out notice.

## • RLTXJ, RFXJ types

### 1. General

System.....	Compact disc digital audio system
Power requirements .....	AC 110-120 V/220-240 V, 50/60 Hz
Power consumption .....	16 W
	For Taiwan: 17 W
Operating temperature .....	+5°C – +35°C
Operating humidity .....	5 % – 85 %
(There should be no condensation of moisture.)	
Weight .....	3.2 kg
Dimensions .....	216 (W) x 292 (D) x 99.5 (H) mm

### 2. Audio section

Frequency response.....	4 Hz – 20 kHz
Signal-to-noise ratio .....	110 dB or more (JEITA)
Distortion .....	0.0006 % (JEITA)

### 3. Accessories

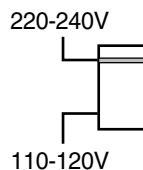
• Operating instructions .....	1
• Power cord .....	1
• Audio cable .....	1
• Control cable .....	1
• Forced eject pin (housed in a groove in the bottom panel)...	1

#### NOTE:

Specifications and design are subject to possible modification with-out notice.

#### Voltage selector (RLTXJ, RFXJ types only)

- You can find the voltage selector switch on the bottom plate of the unit.  
The factory setting for the voltage selector is 220 – 240 V.  
Please set it to the correct voltage for your country or region.
- For Taiwan, please set to 110 – 120 V before using.  
Before changing the voltage, disconnect the AC power cord.  
Use a medium size screwdriver to change the voltage selector switch.



● Accessories

Power cord  
 (KUCXJ : ADG7021)  
 (RLTXJ : ADG1154)  
 (WYXJ : ADG1154)  
 (RFXJ : ADG7097)



Audio cable  
 (VDE1064 or XDE3045)  
 L= 1.5m



Control cable  
 (ADE7108 or XDE3063)  
 L= 1 m





Forced eject pin  
 (housed in a groove  
 in the bottom panel)  
 (DEX1008)

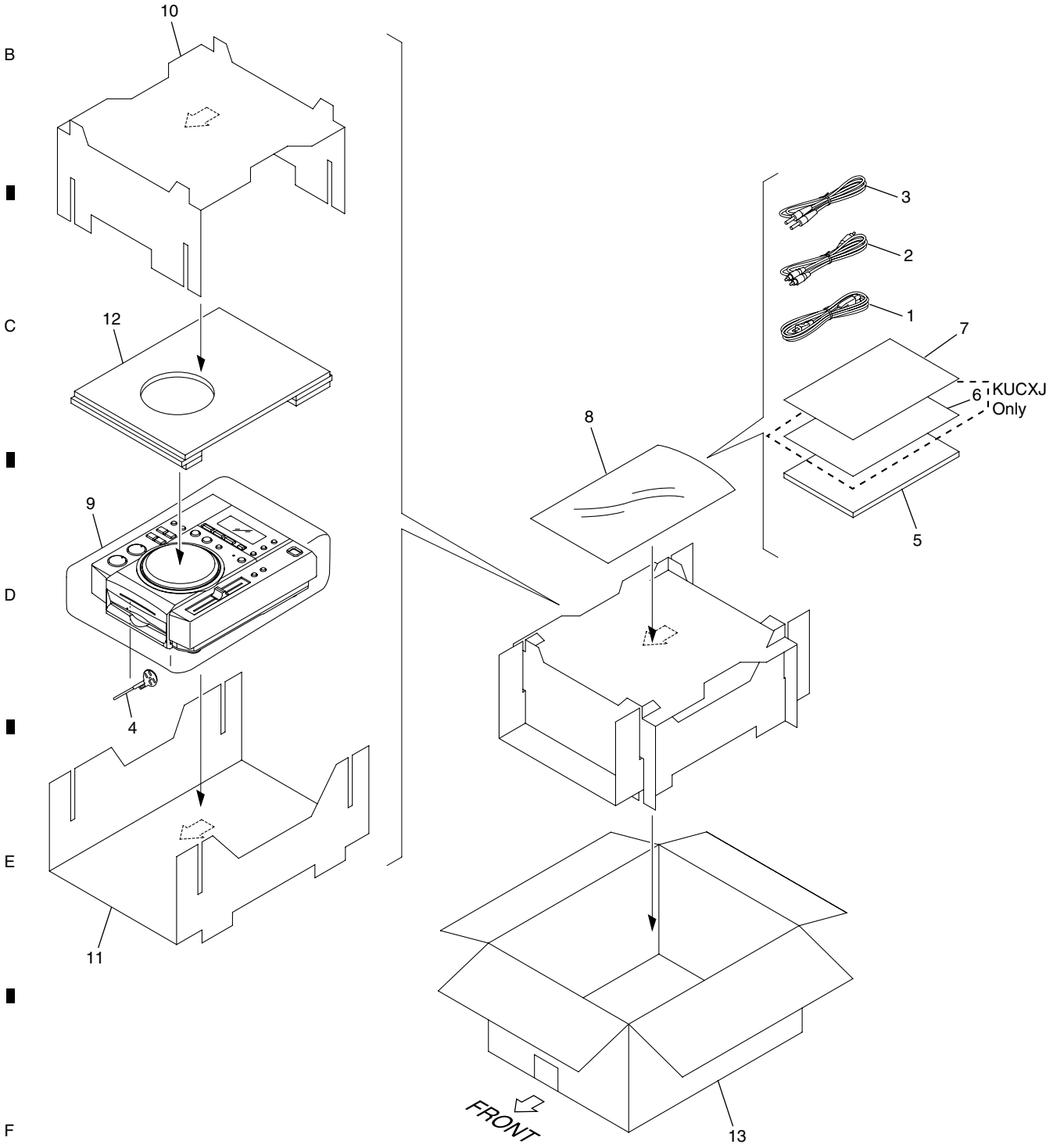


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# 2. EXPLODED VIEWS AND PARTS LIST

- NOTES:
- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
  - The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
  - Screws adjacent to  mark on product are used for disassembly.
  - For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)

## 2.1 PACKING SECTION





**(1) PACKING SECTION PARTS LIST**

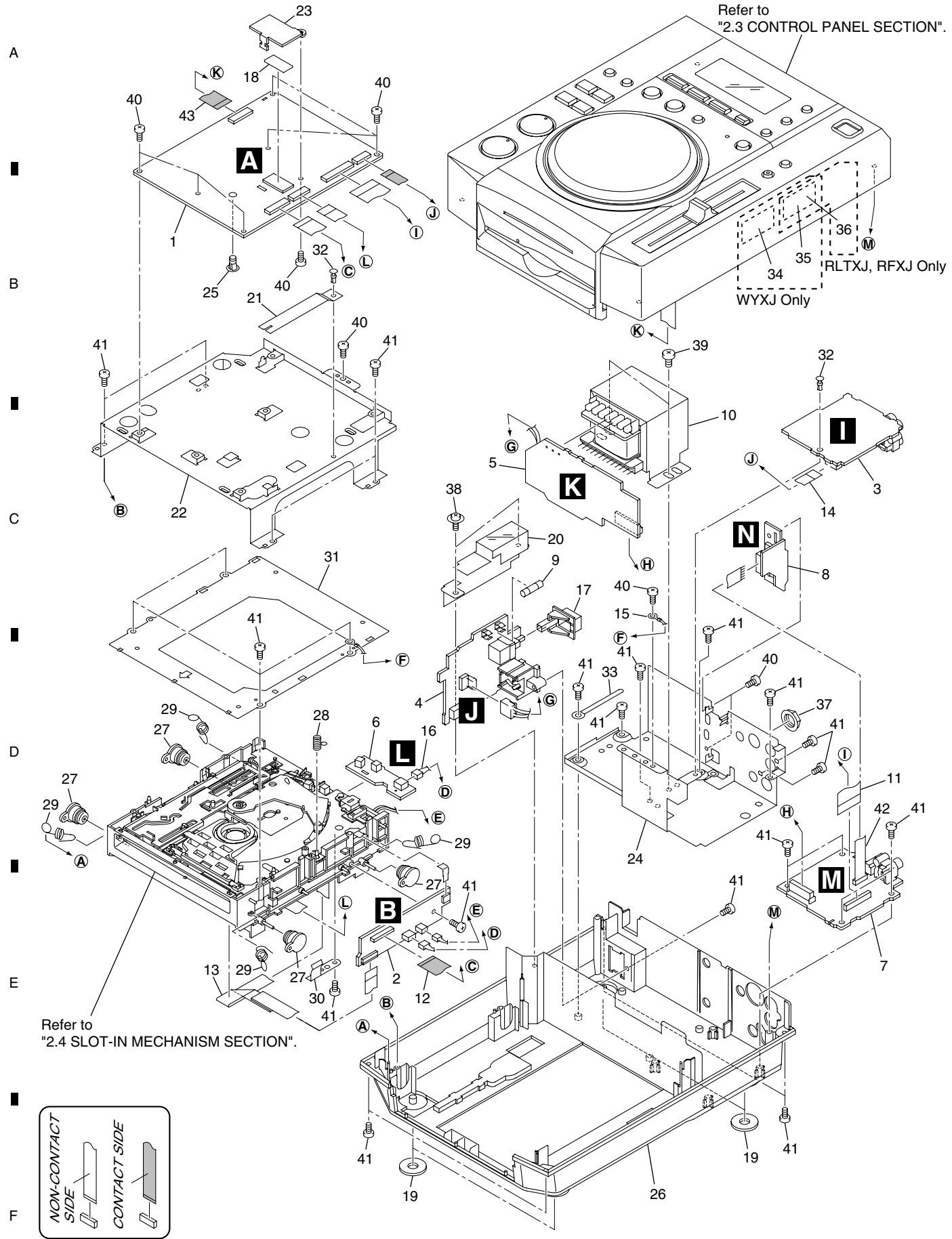
<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
⚠	1 Power Cord	See Contrast table (2)
	2 Audio Cable	VDE1064 or XDE3045
	3 Control Cable	ADE7108 or XDE3063
	4 Forced Eject Pin	DEX1008
	5 Operating Instructions	See Contrast table (2)
NSP 6	Limited Warranty	See Contrast table (2)
NSP 7	User Seat	DRM1262
NSP 8	Polyethylene Bag (0.06 x 230 x 340)	AHG7117
	9 Packing Sheet	AHG7015
10	Pad A	DHA1638
11	Pad B	DHA1639
12	Pad C	DHA1640
13	Packing Case	See Contrast table (2)

**(2) CONTRAST TABLE**

CDJ-200/KUCXJ, RLTXJ, WYXJ and RFXJ are constructed the same except for the following:

Mark	No.	Symbol and Description	CDJ-200/ KUCXJ	CDJ-200/ RLTXJ	CDJ-200/ WYXJ	CDJ-200/ RFXJ
⚠ NSP	1	Power Cord	ADG7021	ADG1154	ADG1154	ADG7097
	5	Operating Instructions	DRB1377	DRB1378	DRB1376	DRB1378
	6	Limited Warranty	ARY7043	Not used	Not used	Not used
	13	Packing Case	DHG2495	DHG2496	DHG2494	DHG2500

# 2.2 EXTERIOR SECTION



**(1) EXTERIOR SECTION PARTS LIST**

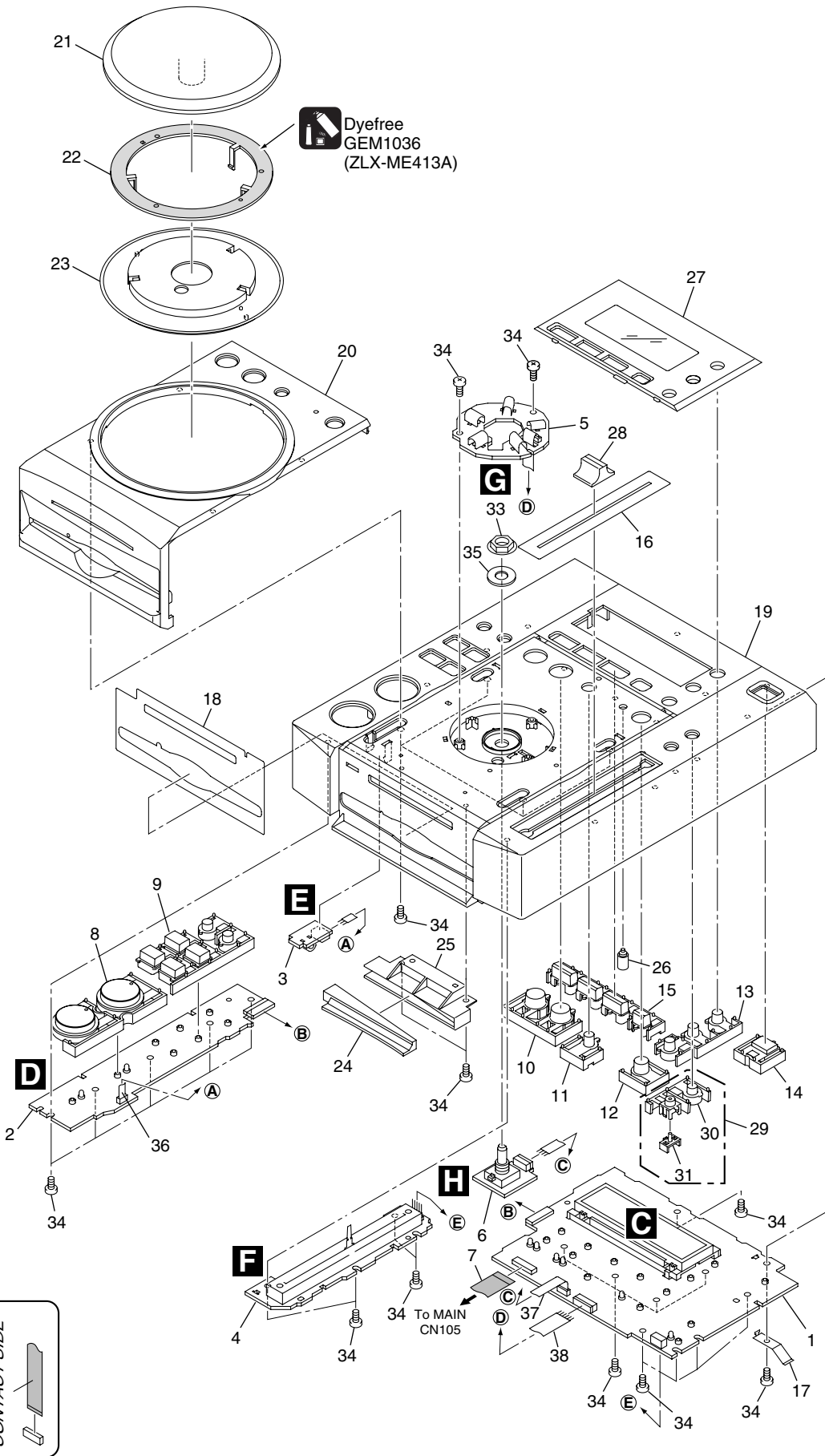
<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
1	MAIN Assy	DWG1587	23	Heatsink	DNH2641
2	RLYB Assy	DWX2429	24	Trans. Plate	DNH2670
3	JACK Assy	DWX2433	25	Card Spacer	DNK2769
4	ACIN Assy	See Contrast table (2)			
5	TRNS Assy	See Contrast table (2)	NSP 26	Chassis	See Contrast table (2)
			27	Damper	CNV6011
6	SLMB Assy	DWS1355	28	Earth Spring	DBH1398
7	SECB Assy	DWR1394	29	Float Spring G5	DBH1494
8	REGB Assy	DWR1393	30	FPC Guard	DBK1282
⚠ 9	Fuse (FU11)	See Contrast table (2)	31	Mecha Plate	DNH2642
⚠ 10	Power Transformer (T22)	See Contrast table (2)	32	Nyron Rivet (3 x 4.5)	RBM-003
11	24P Flexible Cable	DDD1275	33	Cord Clamper	RNH-184
12	32P Flexible Cable	DDD1276	34	Caution Label HE	See Contrast table (2)
13	24P Flexible Cable	DDD1278	35	Caution Label	See Contrast table (2)
14	9P Flexible Cable	DDD1279			
15	Earth Lead Unit/300V	DDF1032	36	Caution Label	See Contrast table (2)
			37	Nut M12	DBN1012
16	Connector Assy	PF03PP-B17	38	DM Screw	DBA1260
17	Power Button	DAC2254	39	Screw	BBZ40P060FTC
NSP 18	Silicone Sheet D5 L	DEB1456	40	Screw	BBZ30P060FTC
19	Insulator	DEC2250			
20	Protector	DEC2808	41	Screw	BPZ30P080FTC
			42	Jumper Wire 6P(J904)	D20PDY0610E
21	PU Caution	DEC2856	43	15P Flexible Cable	DDD1277
22	PCB Stay	DNH2640			

**(2) CONTRAST TABLE**

CDJ-200/KUCXJ, RLTXJ, WYXJ and RFXJ are constructed the same except for the following:

<u>Mark</u>	<u>No.</u>	<u>Symbol and Description</u>	<u>CDJ-200/ KUCXJ</u>	<u>CDJ-200/ RLTXJ</u>	<u>CDJ-200/ WYXJ</u>	<u>CDJ-200/ RFXJ</u>
	4	ACIN Assy	DWR1388	DWR1389	DWR1387	DWR1389
	5	TRNS Assy	DWR1391	DWR1392	DWR1391	DWR1392
⚠	9	Fuse (FU11 : 2.0A/125V)	REK1111	Not used	Not used	Not used
⚠	9	Fuse (FU11 : T1AL250V)	Not used	REK1022	REK1022	REK1022
⚠	10	Power Transformer (T22)	DTT1172	DTT1171	DTT1171	DTT1171
NSP	26	Chassis	DNK4423	DNK4424	DNK4386	DNK4427
	34	Caution Label HE	Not used	Not used	PRW1233	Not used
	35	Caution Label	Not used	Not used	VRW1094	Not used
	36	Caution Label	Not used	PRW1018	Not used	DRW2248

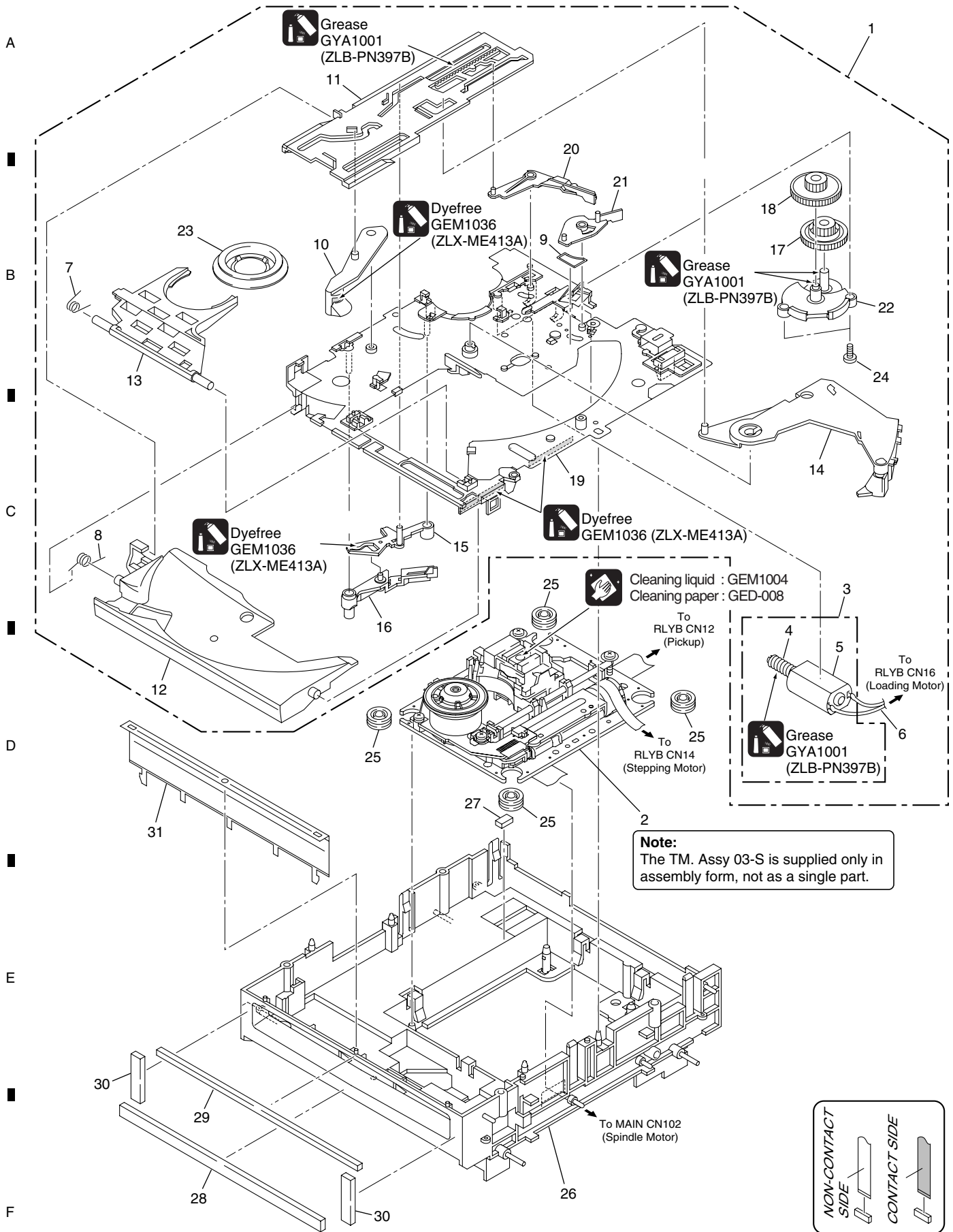
# 2.3 CONTROL PANEL SECTION



**CONTROL PANEL SECTION PARTS LIST**

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	
1	DISP Assy	DWG1588	
2	KSWB Assy	DWS1356	A
3	INDB Assy	DWX2438	
4	SLDB Assy	DWX2430	
5	JLED Assy	DWX2432	
6	JOGB Assy	DWX2431	
7	15P Flexible Cable	DDD1277	
8	PLAY Button	DAC2244	
9	SEARCH Button	DAC2245	
10	LOOP Button	DAC2246	
11	RELOOP Button	DAC2270	B
12	BEAT LOOP Button	DAC2271	
13	TIME Button	DAC2249	
14	EJECT Button	DAC2253	
15	JET Button	DAC2266	
16	Slide Sheet (GRAY)	DAH2374	
17	Earth Plate	DBK1224	
18	Vessel Sheet	DEC2751	
19	Control Panel A	DNK4384	
20	Control Panel B	DNK4385	C
21	Jog Dial	DNK4387	
22	POM Ring	DNK4388	
23	Jog Lens	DNK4389	
24	Front Lens	DNK4390	
25	Reflector	DNK4391	
26	BEAT Lens	DNK4392	
27	Display Panel	DNK4492	
28	Slide Knob (SILVER)	DNK4448	
29	TEMPO Button Assy	DXA2014	
30	TEMPO Button	DAC2258	D
31	TEMPO Lens	DNK4421	
32	•••••		
33	Nut M9	DBN1008	
34	Screw	BPZ30P080FTC	
35	JOG Washer	DBF1002	
36	Jumper Wire 3P	D20PDY0305E	
37	Jumper Wire 4P	D20PDY0405E	
38	Jumper Wire 6P	D20PDY0610E	E

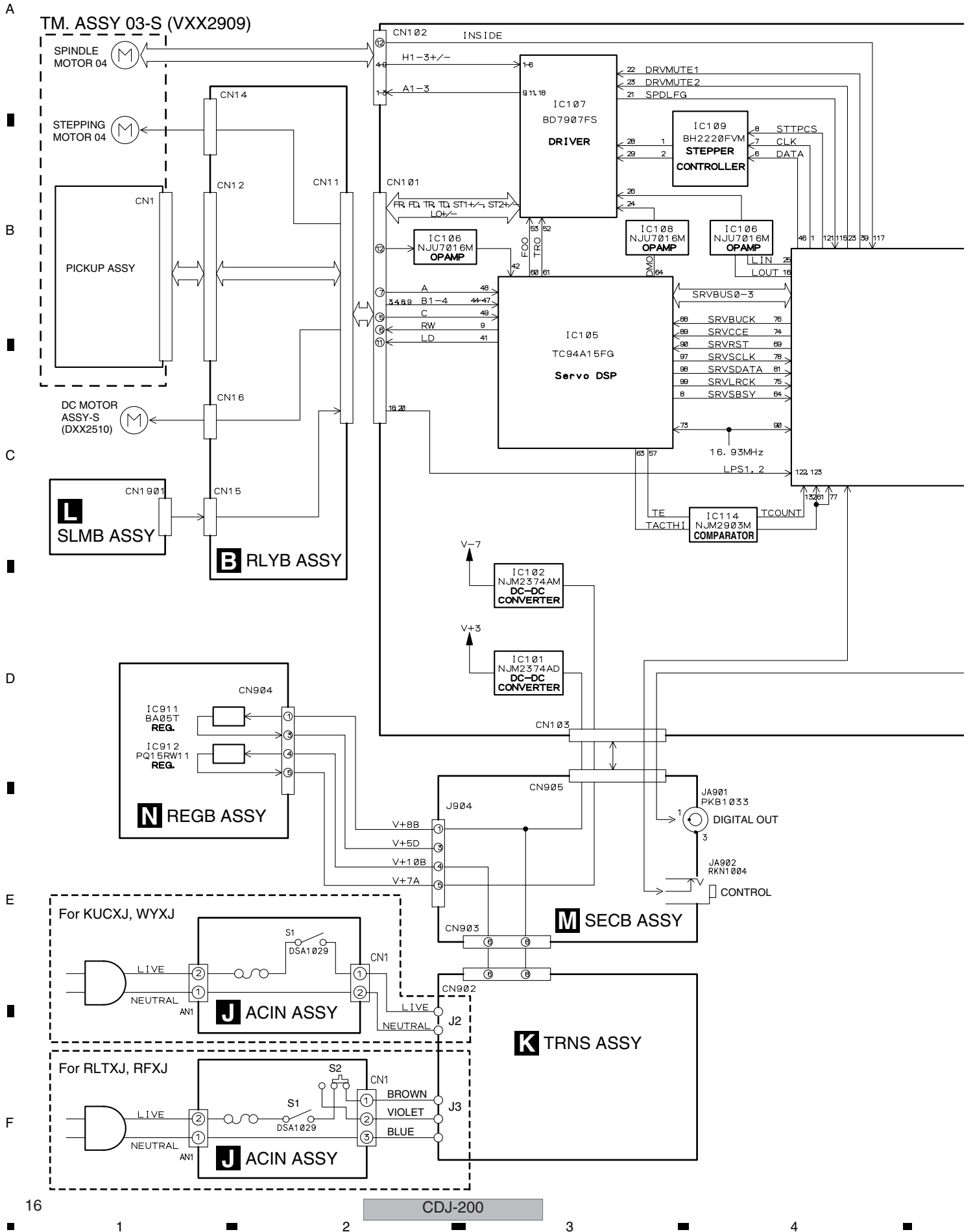
# 2.4 SLOT-IN MECHANISM SECTION





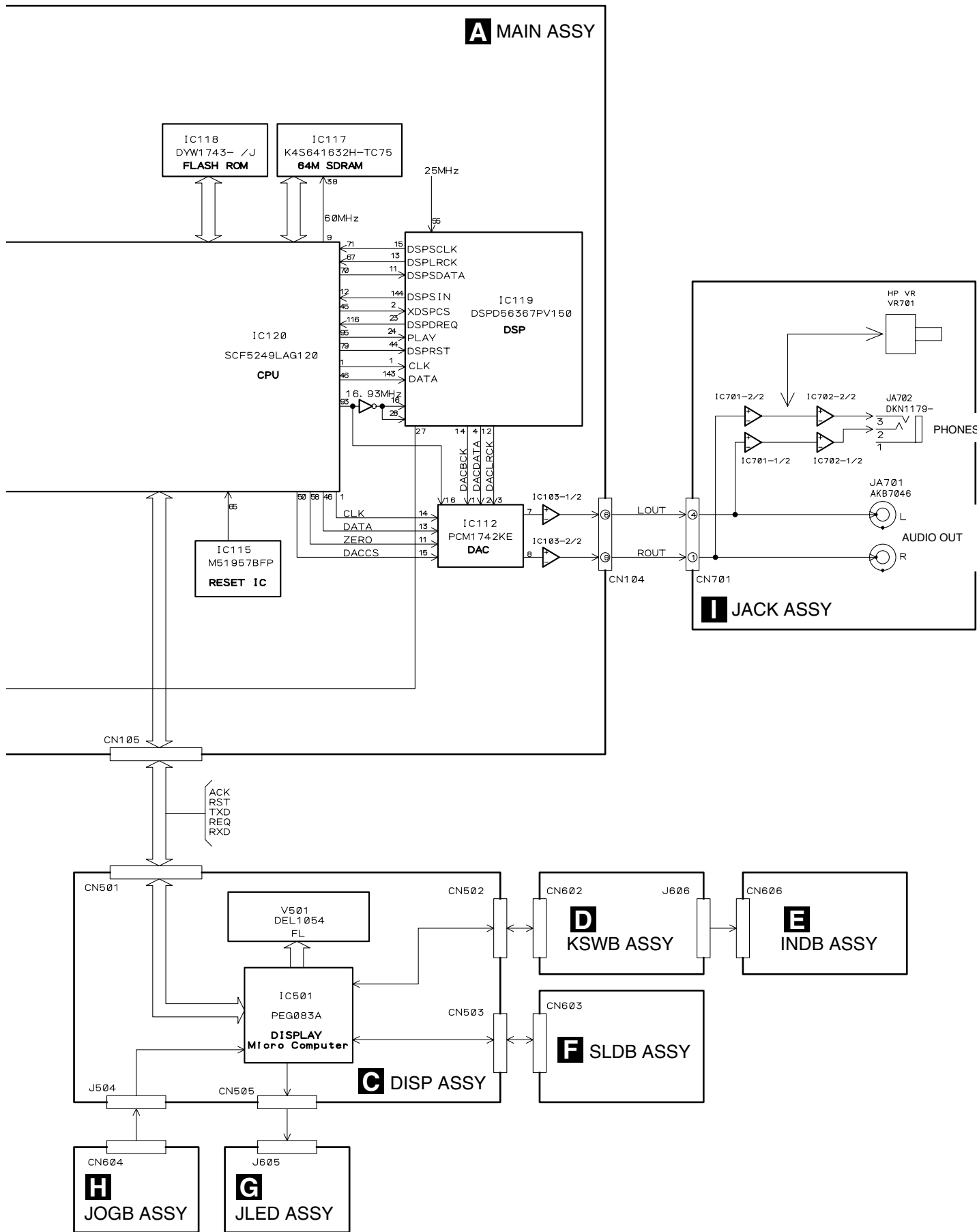
# 3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

## 3.1 BLOCK DIAGRAM

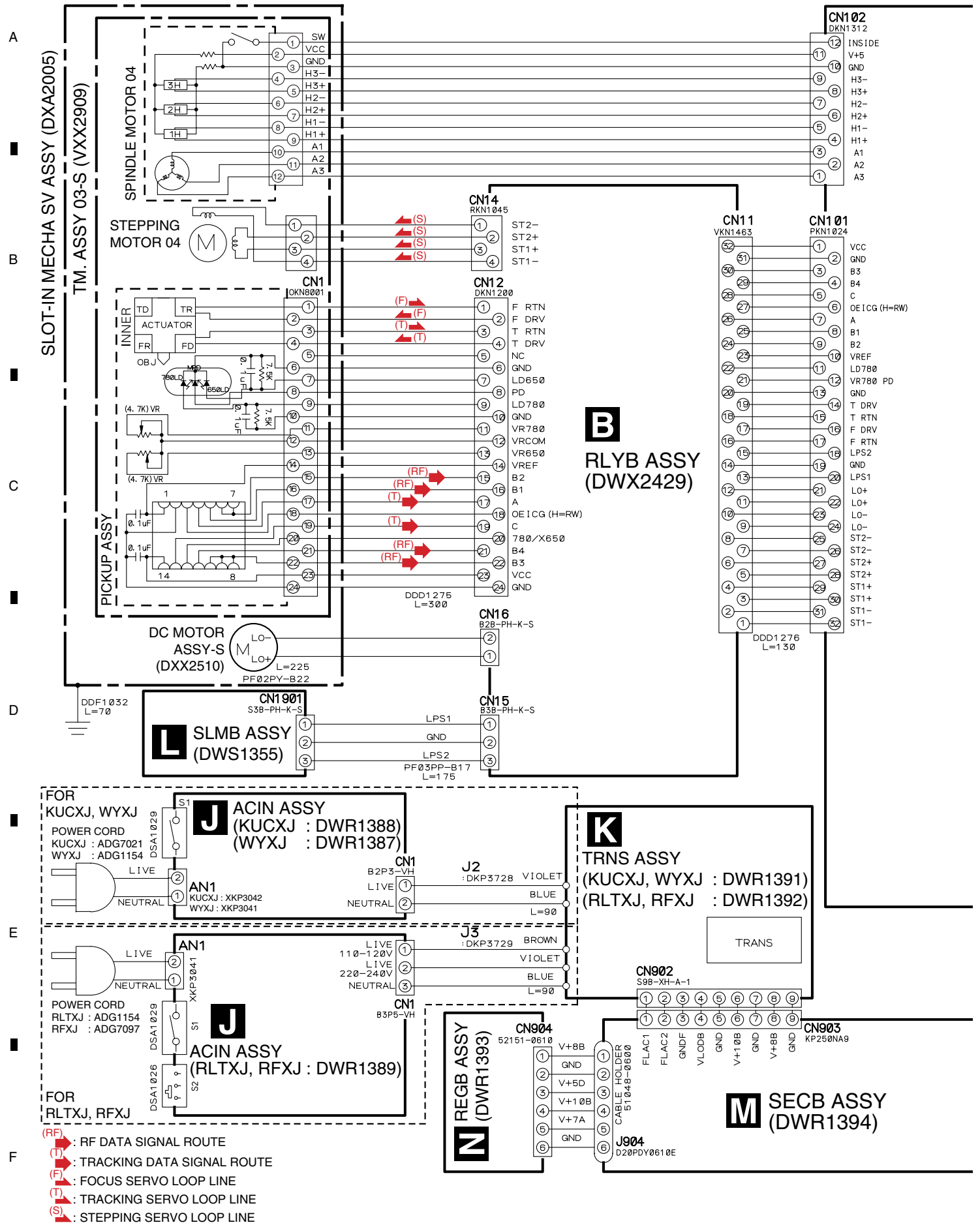


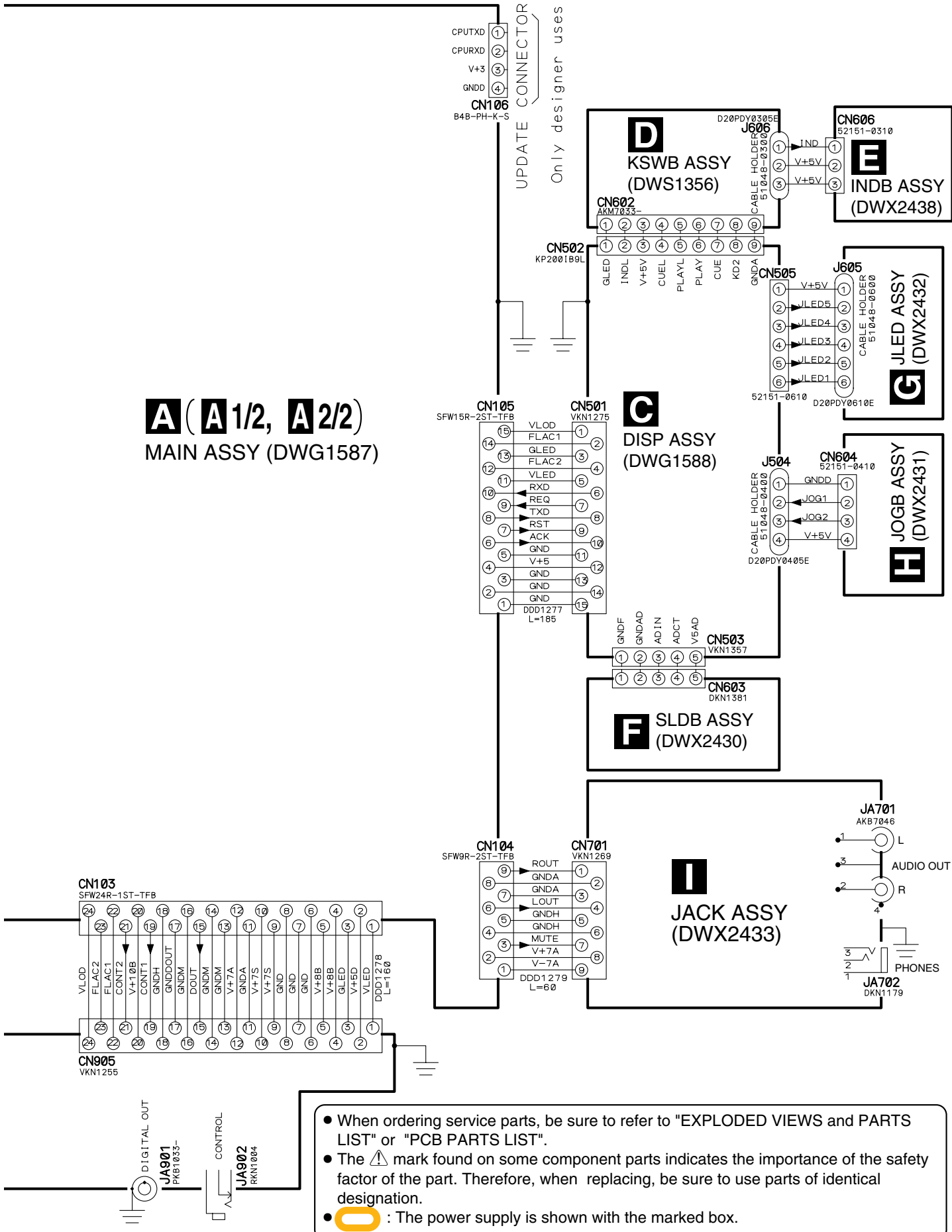



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# 3.2 OVERALL WIRING DIAGRAM

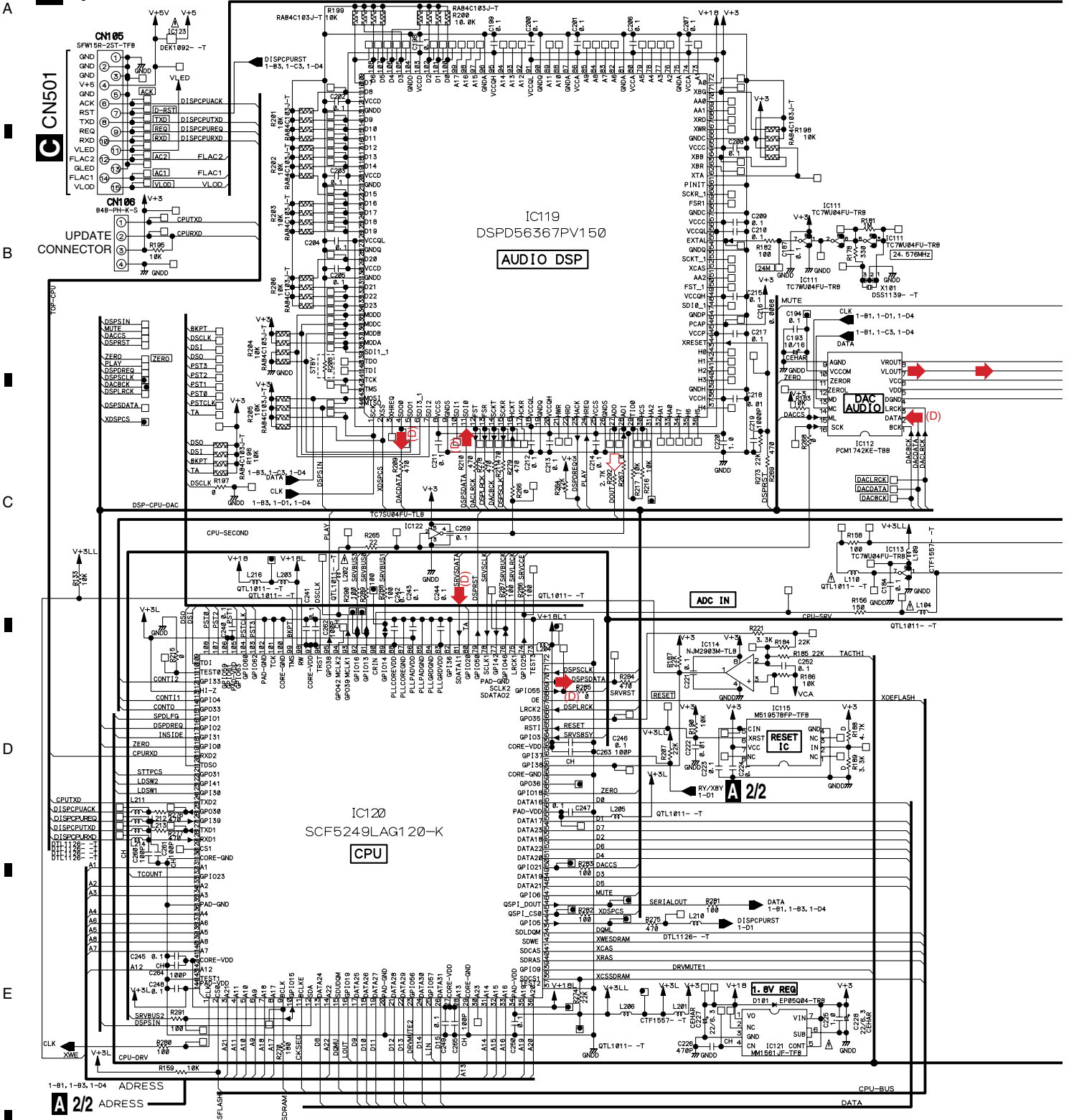




- When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
-  : The power supply is shown with the marked box.

# 3.3 MAIN ASSY (1/2)

## A 1/2 MAIN ASSY (DWG1587)



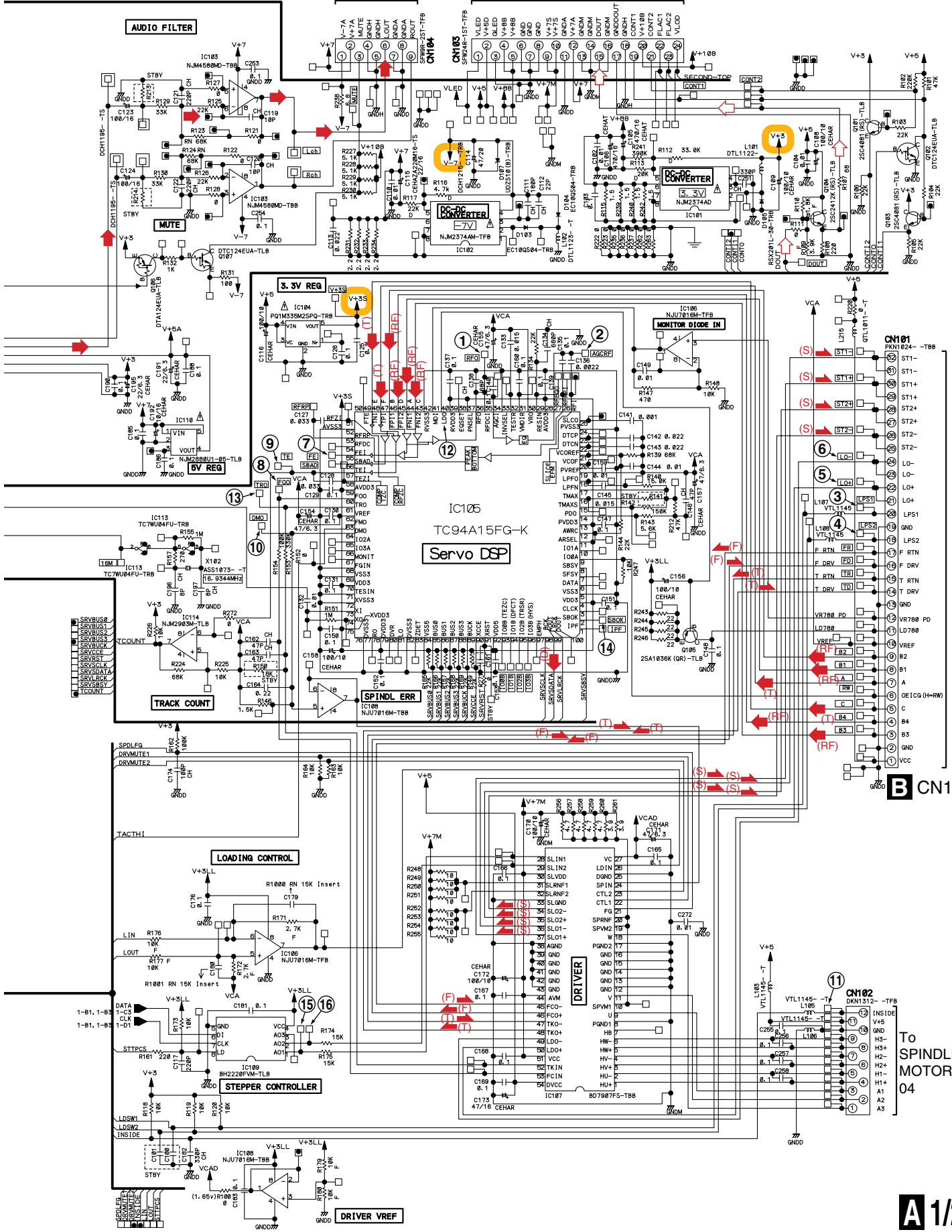
CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. DEK1092- 466.200 MFD, BY LITTELFUSE INK. FOR IC123.

CIRCUIT CHECK POINT  
\*\*\* □

Notes	
RESISTOR	NO MARK R51-1#55##J d
"	R51-1#55##P d
"	R51-1#55##R d
"	R51-1#55##S d
"	R51-1#55##T d
"	R51-1#55##U d
"	R51-1#55##V d
"	R51-1#55##W d
"	R51-1#55##X d
"	R51-1#55##Y d
"	R51-1#55##Z d
CAPACITOR	NO MARK C#K5#B #F
"	C#K5#C #F
"	C#K5#D #F
"	C#K5#E #F
"	C#K5#F #F
"	C#K5#G #F
"	C#K5#H #F
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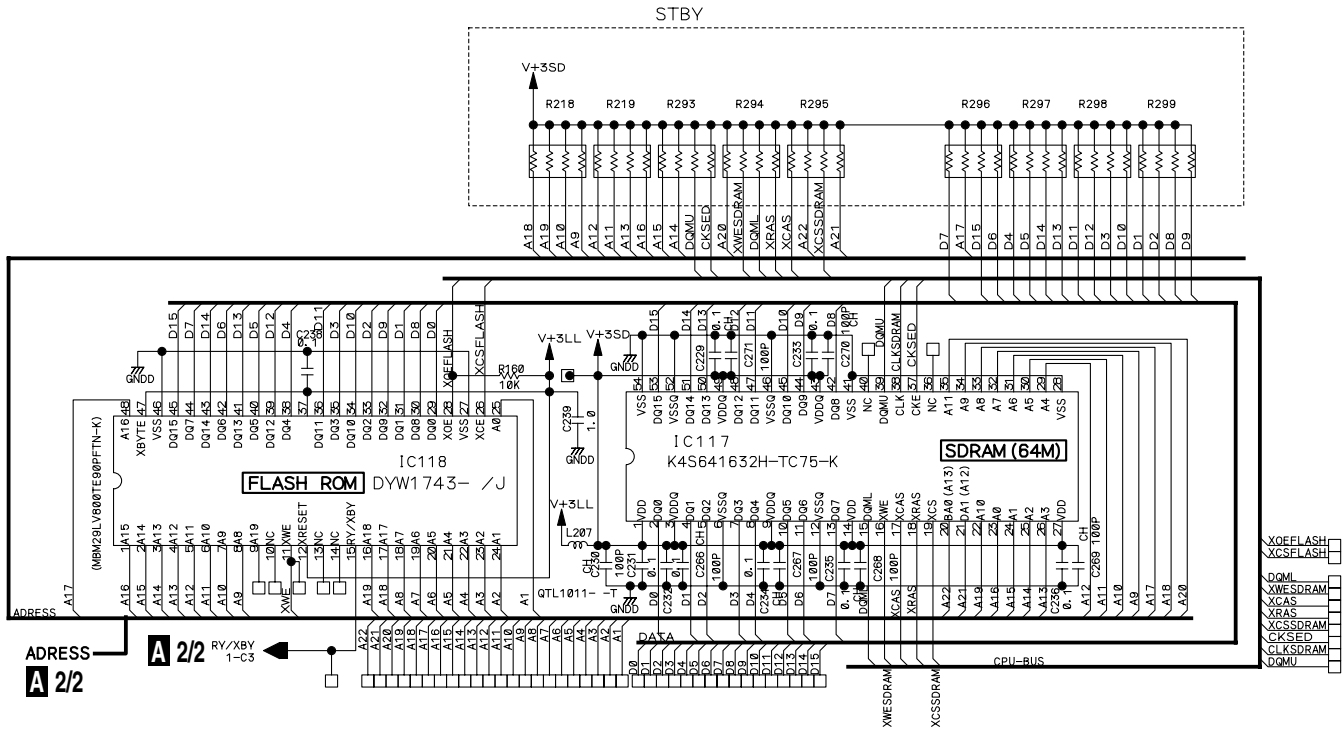
CN701

CN905



# 3.4 MAIN ASSY (2/2)

## A 2/2 MAIN ASSY (DWG1587)



Notes	
RESISTOR	
NO MARK	:RS1/16S***J Ω
CAPACITOR	
CERAMIC	
NO MARK	:CKSRYB μF
CH	:CCSRCH F
STBY 1s STANDBY	

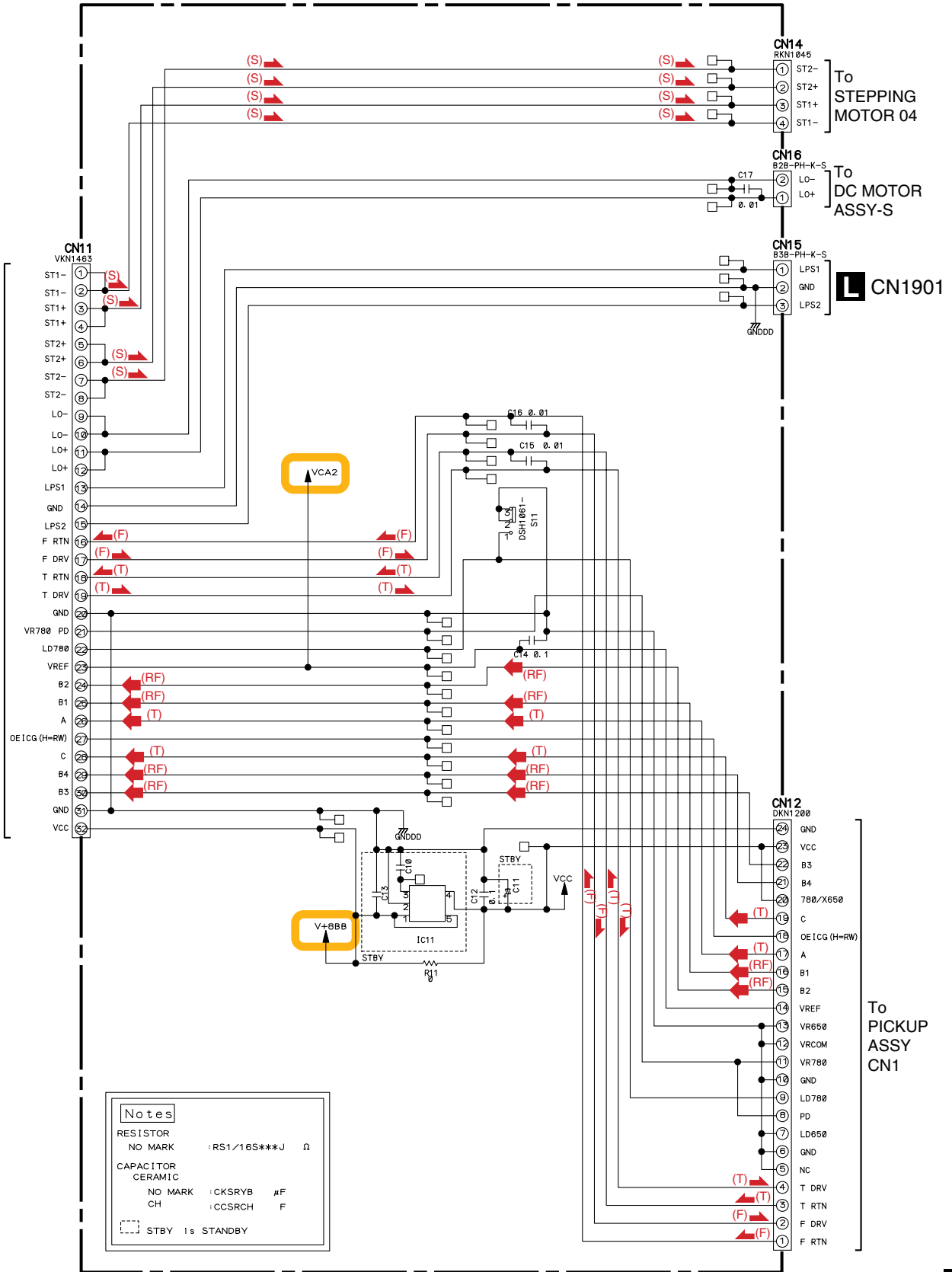
## A 2/2

# 3.5 RLYB ASSY

## B RLYB ASSY (DWX2429)

- (RF) : RF DATA SIGNAL ROUTE
- (T) : TRACKING DATA SIGNAL ROUTE
- (F) : FOCUS SERVO LOOP LINE
- (T) : TRACKING SERVO LOOP LINE
- (S) : STEPPING SERVO LOOP LINE

A 1/2 CN101



**Notes**

RESISTOR  
NO MARK : RS1/16S\*\*\*J Ω

CAPACITOR  
CERAMIC  
NO MARK : CKSRYB μF  
CH : CCSRCH F

STBY 1s STANDBY

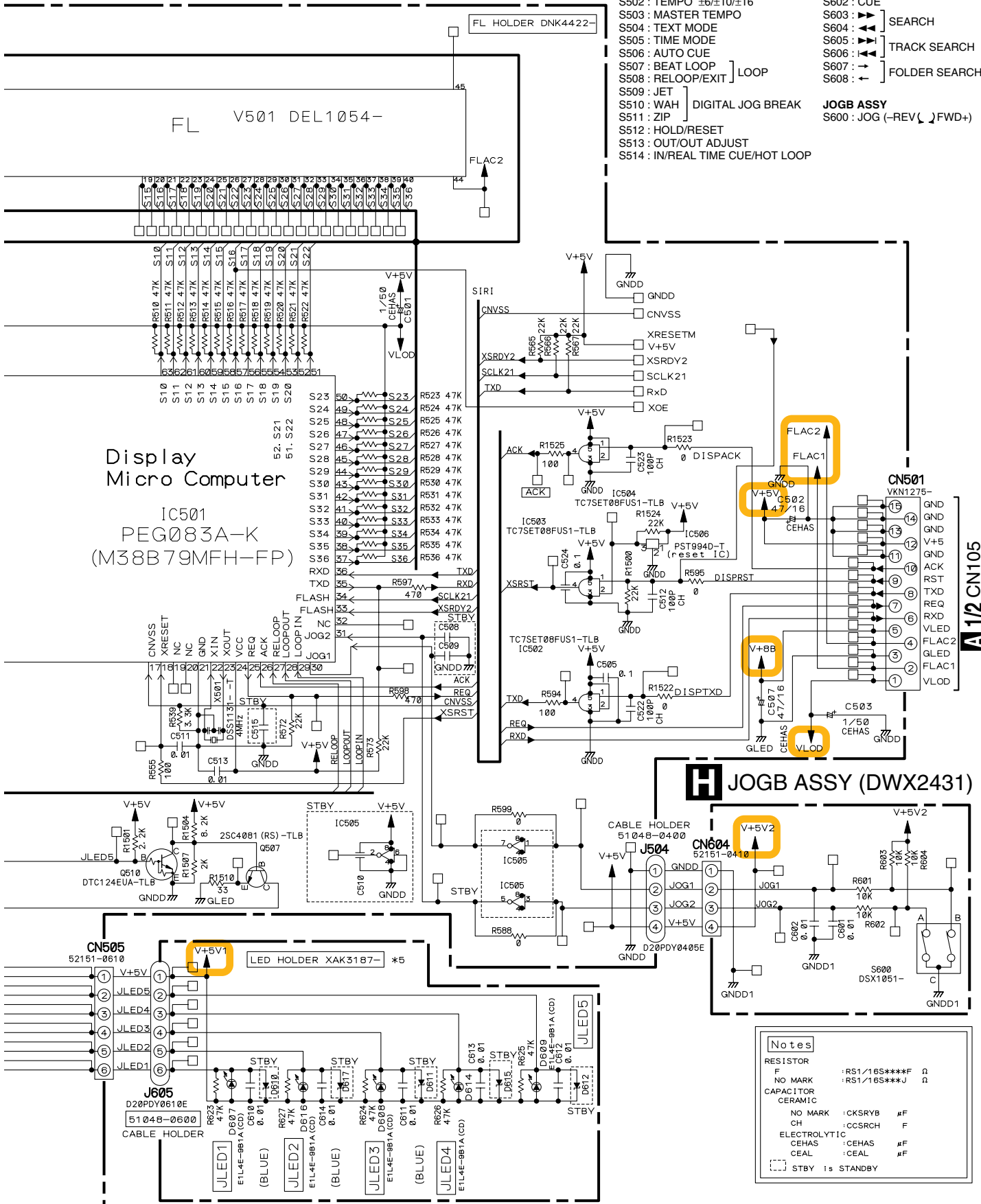
L CN1901

To PICKUP ASSY CN1





- DISP ASSY**  
 S501 : EJECT (▲)  
 S502 : TEMPO ±6/±10/±16  
 S503 : MASTER TEMPO  
 S504 : TEXT MODE  
 S505 : TIME MODE  
 S506 : AUTO CUE  
 S507 : BEAT LOOP  
 S508 : RELOOP/EXIT ] LOOP  
 S509 : JET  
 S510 : WAH ] DIGITAL JOG BREAK  
 S511 : ZIP  
 S512 : HOLD/RESET  
 S513 : OUT/OUT ADJUST  
 S514 : IN/REAL TIME CUE/HOT LOOP
- KSWB ASSY**  
 S601 : PLAY/PAUSE (▶/■)  
 S602 : CUE  
 S603 : ] SEARCH  
 S604 : ] ] TRACK SEARCH  
 S605 : ] ] ] FOLDER SEARCH  
 S606 : ] ] ] ]  
 S607 : ] ] ] ] ]  
 S608 : ] ] ] ] ] ]
- JOGB ASSY**  
 S600 : JOG (-REV (↶) FWD(↷))



Notes	
RESISTOR	
F	:R51/16S****F Ω
NO MARK	:R51/16S****J Ω
CAPACITOR	
CERAMIC	
NO MARK	:CKSRVB #F
CH	:CCSRCH #F
ELECTROLYTIC	
CEHAS	:CEHAS #F
CEAL	:CEAL #F
[ ] STBY is STANDBY	

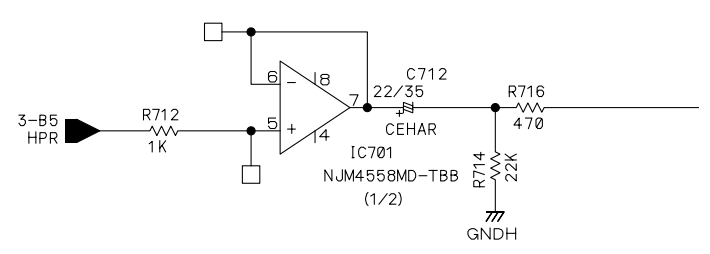
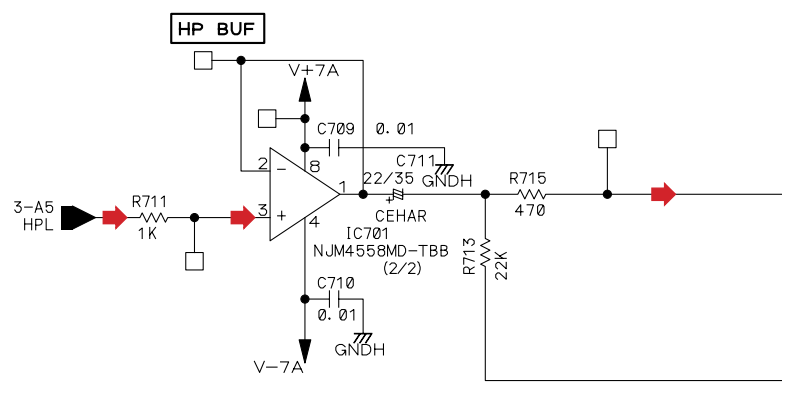
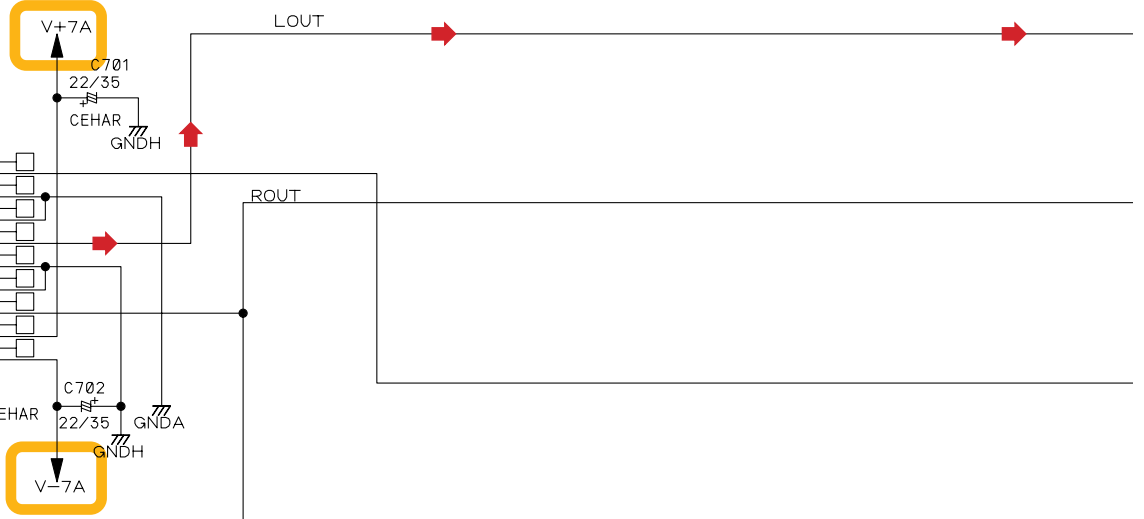
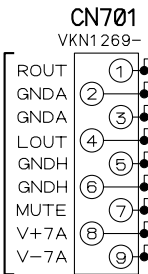
**G** JLED ASSY (DWX2432)



# 3.7 JACK ASSY

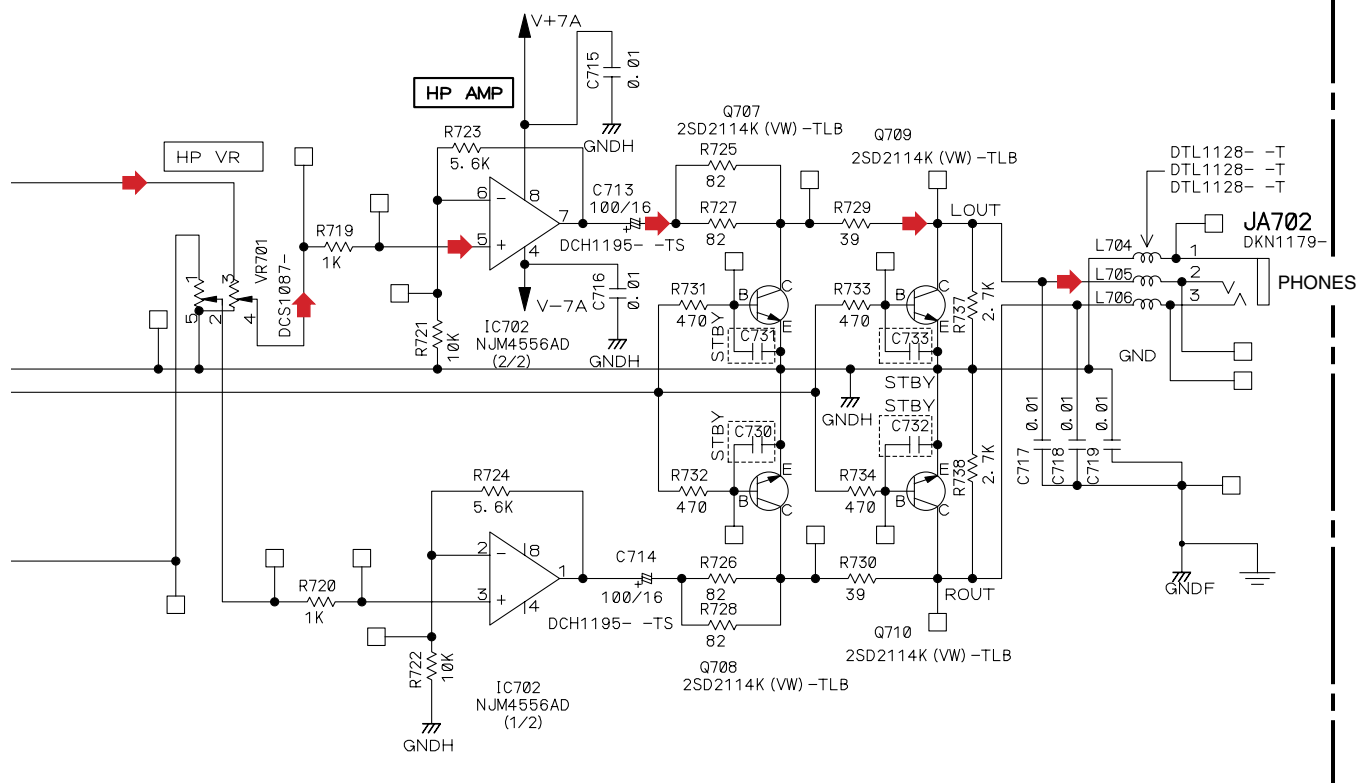
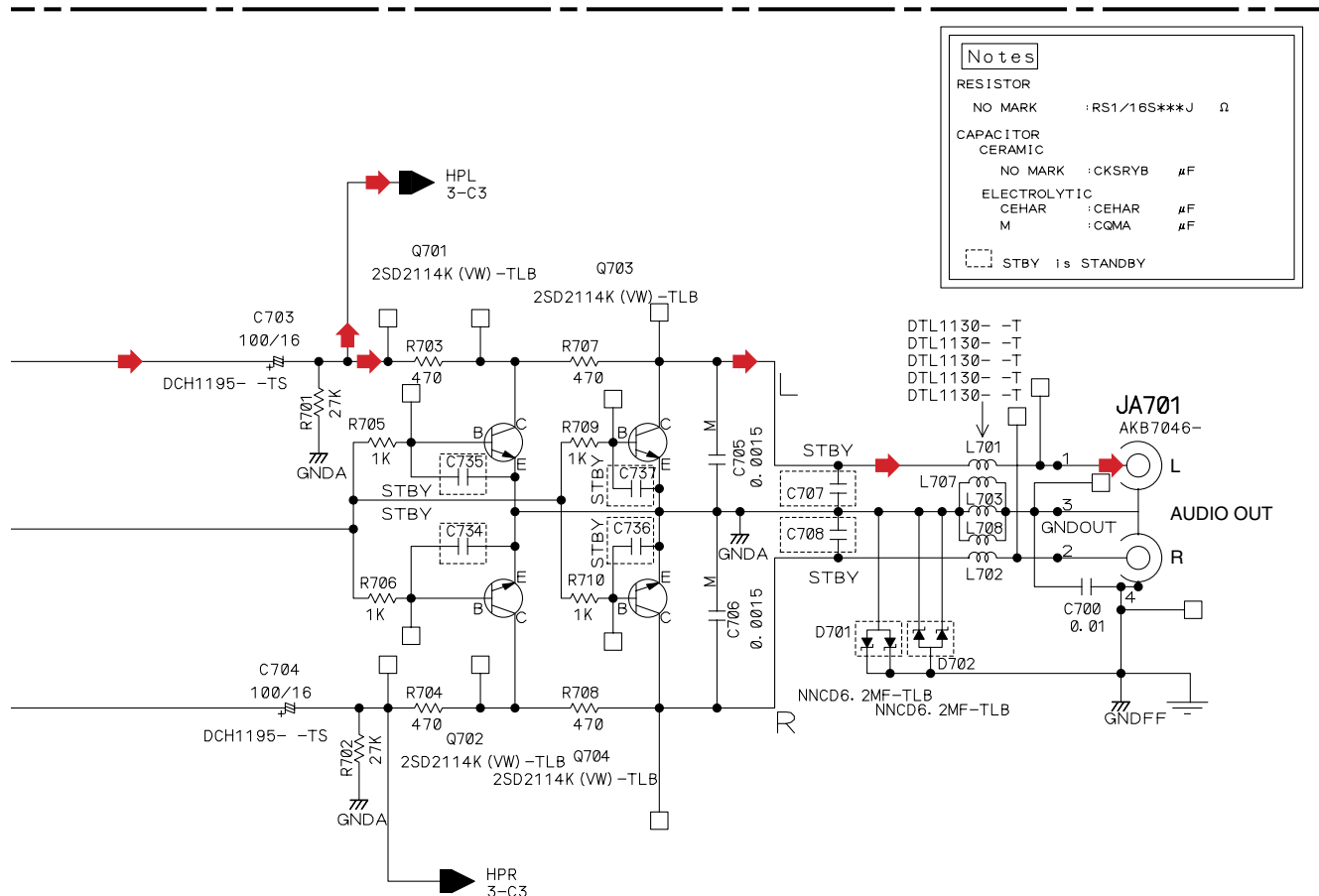
## JACK ASSY (DWX2433)

**A** 1/2  
CN104



➔: AUDIO SIGNAL ROUTE (L ch)

Notes		
RESISTOR		
NO MARK	:RS1/16S***J	Ω
CAPACITOR		
CERAMIC		
NO MARK	:CKSRYB	μF
ELECTROLYTIC		
CEHAR	:CEHAR	μF
M	:CGMA	μF
[STBY] is STANDBY		



### 3.8 ACIN, TRNS, SLMB, SECB and REGB ASSYS

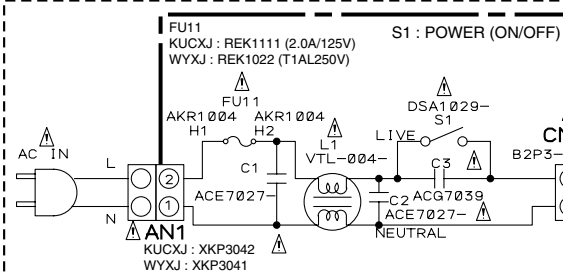
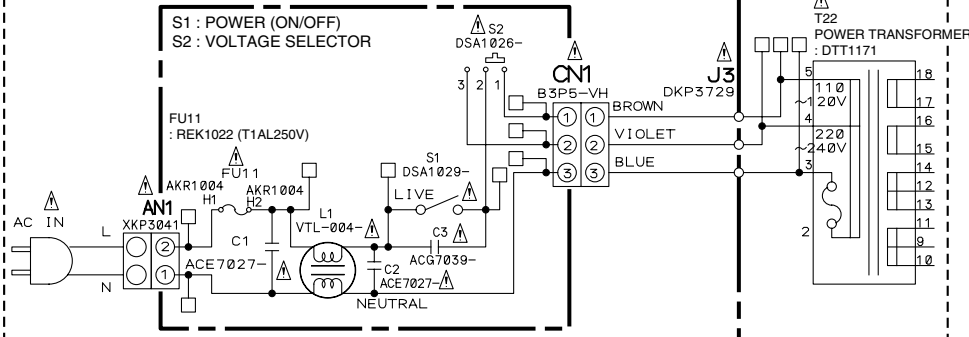
• NOTE FOR FUSE REPLACEMENT

**CAUTION** -FOR CONTINUED PROTECTION AGAINST RISK OF FIRE.  
REPLACE WITH SAME TYPE AND RATINGS ONLY.

**K** TRNS ASSY  
(KUCXJ, WYXJ : DWR1391)  
(RLTXJ, RFXJ : DWR1392)

FOR RLTXJ, RFXJ

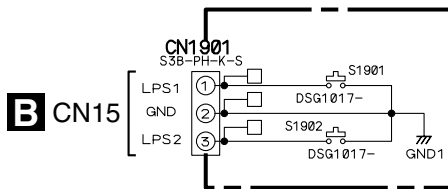
**J** ACIN ASSY  
(RLTXJ, RFXJ : DWR1389)



**J** ACIN ASSY  
(KUCXJ : DWR1388)  
(WYXJ : DWR1387)

FOR KUCXJ, WYXJ

**CAUTION**  
FOR CONTINUED PROTECTION  
AGAINST RISK OF FIRE,  
REPLACE ONLY WITH SAME TYPE NO.  
AEK7019- 491005  
MFD. BY LITTELFUSE INC. FOR IC903 AND IC904  
AEK7018- 491004  
MFD. BY LITTELFUSE INC. FOR IC901 AND IC902  
AEK7007- 491.750  
MFD. BY LITTELFUSE INC. FOR IC905



**L** SLMB ASSY  
(DWS1355)

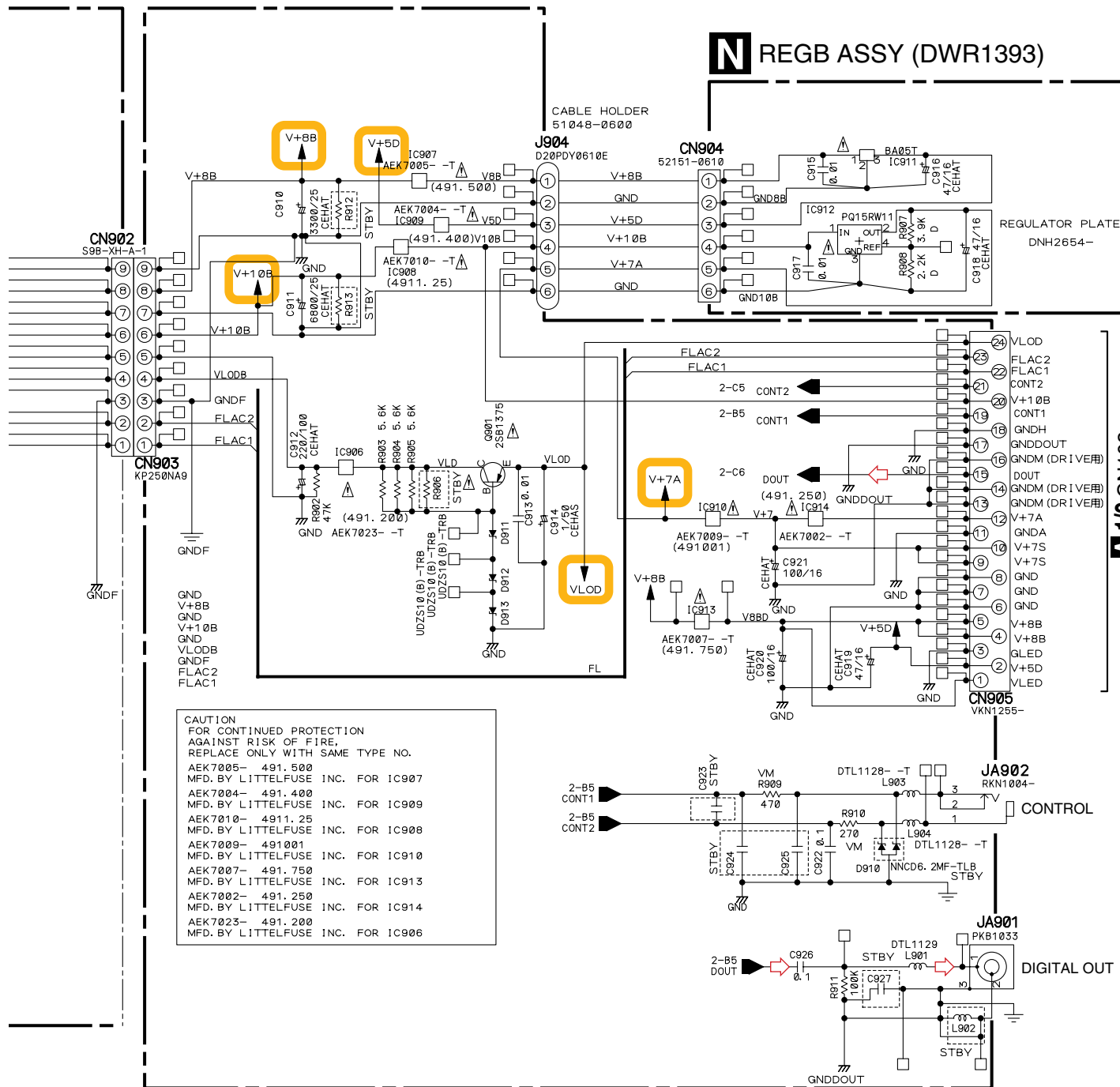
**J K L**

⇨ : AUDIO SIGNAL ROUTE (Digital)

Notes			
RESISTOR	VM	:RD1/2VM***J	Ω
	D	:RS1/16S***D	Ω
	NO MARK	:RS1/16S***J	Ω
CAPACITOR			
	NO MARK ELECTROLYTIC	:CEAT	μF
	NO MARK CERAMIC	:CKSRyb	μF
	STBY		1s STANDBY

# M SECB ASSY (DWR1394)

# N REGB ASSY (DWR1393)



**CAUTION**  
 FOR CONTINUED PROTECTION  
 AGAINST RISK OF FIRE,  
 REPLACE ONLY WITH SAME TYPE NO.

AEK7005- 491.500  
 MFD. BY LITTELFUSE INC. FOR IC907

AEK7004- 491.400  
 MFD. BY LITTELFUSE INC. FOR IC909

AEK7010- 4911.25  
 MFD. BY LITTELFUSE INC. FOR IC908

AEK7009- 491001  
 MFD. BY LITTELFUSE INC. FOR IC910

AEK7007- 491.750  
 MFD. BY LITTELFUSE INC. FOR IC913

AEK7002- 491.250  
 MFD. BY LITTELFUSE INC. FOR IC914

AEK7023- 491.200  
 MFD. BY LITTELFUSE INC. FOR IC906



# 3.9 VOLTAGES

## A MAIN ASSY

**IC101**  
(NJM2374AD)

Pin	Voltage (V)
1	7.92
2	3.56
3	0.873
4	-0.01
5	1.218
6	8.01
7	7.95
8	7.93

**IC102**  
(NJM2374AM-TFB)

Pin	Voltage (V)
1	7.11
2	0.389
3	-6.00
4	-6.76
5	-5.56
6	7.13
7	7.11
8	7.11

**IC104**  
(PQ1M335M2SPQ-TRB)

Pin	Voltage (V)
1	1.21
2	0
3	5
4	5
5	3.29

**IC106**  
(NJU7016M-TFB)

Pin	Voltage (V)
1	174.2m
2	166.4m
3	169.7m
4	0
5	1.667
6	1.979
7	1.642
8	3.23

**IC108**  
(NJU7016M-TFB)

Pin	Voltage (V)
1	1.617
2	1.617
3	1.617
4	0.01
5	1.617
6	1.678
7	1.678
8	3.34

**IC109**  
(BH2220FVM-TLB)

Pin	Voltage (V)
1	2.23
2	1.110
3	0.2m
4	3.24
5	0
6	71.2m
7	64.3m
8	102.2m

**IC110**  
(NJM2880U1-05-TLB)

Pin	Voltage (V)
1	7.13
2	0
3	1.262
4	5
5	7.13

**IC105**  
(TC94A15FG-K)

Pin	Voltage (V)	Pin	Voltage (V)
1	0.15	51	1.630
2	3.06	52	0
3	185.3m	53	2.42
4	3.29	54	1.617
5	0.01m	55	1.603
6	2.94	56	1.797
7	1.097	57	1.633
8	35.5m	58	1.636
9	20.5m	59	3.29
10	0	60	1.697
11	3.29	61	1.635
12	1.807	62	1.638
13	3.29	63	1.612
14	1.642	64	1.669
15	1.621	65	0
16	0.488	66	0
17	1.642	67	1.86
18	1.642	68	0
19	1.638	69	0
20	0.615	70	3.3
21	1.766	71	0
22	1.627	72	0
23	1.628	73	1.509
24	0	74	1.592
25	1.656	75	3.29
26	0	76	0
27	1.635	77	1.598
28	1.680	78	3.29
29	3.3	79	1.606
30	1.463	80	1.587
31	1.638	81	0
32	1.477	82	0.04
33	1.671	83	0
34	0	84	3.24
35	1.632	85	3.20
36	1.278	86	3.19
37	1.278	87	3.19
38	3.3	88	3.18
39	0.521	89	3.05
40	3.28	90	3.25
41	2.19	91	3.29
42	174.3m	92	1.819
43	0	93	3.29
44	1.728	94	0
45	1.720	95	3.28
46	1.710	96	3.28
47	1.726	97	1.681
48	1.730	98	1.715
49	1.737	99	1.648
50	0.190	100	0

**IC111**  
(TC7WU04FU-TRB)

Pin	Voltage (V)
1	1.708
2	1.715
3	1.769
4	0
5	1.727
6	1.727
7	1.759
8	3.33

**IC113**  
(TC7WU04FU-TRB)

Pin	Voltage (V)
1	1.628
2	1.628
3	1.609
4	0
5	1.678
6	1.678
7	1.722
8	3.23

**IC112**  
(PCM1742KE-TRB)

Pin	Voltage (V)
1	1.668
2	0.02m
3	1.666
4	0
5	3.33
6	5.01
7	2.52
8	2.48
9	0
10	2.49
11	2.4m
12	2.4m
13	70.8m
14	64.2m
15	3.23
16	1.489

**IC107**  
(BD7907FS-TBB)

Pin	Voltage (V)
1	2.41
2	2.41
3	2.40
4	2.40
5	2.39
6	2.39
7	0.532
8	0
9	0.682
10	7.23
11	0.678
12	0
13	0
14	0
15	0
16	0
17	0
18	0.682
19	7.23
20	7.23
21	1.624
22	2.2m
23	3.2
24	1.675
25	0
26	1.642
27	1.616
28	1.896
29	0.909
30	7.23
31	7.23
32	7.13
33	0
34	6.74
35	6.50
36	3.80
37	3.43
38	0
39	0
40	0
41	0
42	0
43	0
44	7.23
45	3.50
46	3.71
47	3.59
48	3.63
49	3.25
50	3.25
51	7.23
52	1.612
53	1.641
54	4.80

**IC114**  
(NJM2903M-TLB)

Pin	Voltage (V)
1	1.521
2	1.638
3	1.638
4	0
5	1.832
6	1.678
7	1.722
8	3.23

**IC115**  
(M51957BFP-TFB)

Pin	Voltage (V)
1	0
2	1.372
3	1.372
4	0
5	1.229
6	3.33
7	3.33
8	0

**IC117**  
(K4S641632H-TC75-K)

Pin	Voltage (V)
1	3.23
2	0.32
3	3.25
4	0.227
5	0.206
6	0
7	0.185
8	0.206
9	3.25
10	0.208
11	0.206
12	0.198
13	0.211
14	3.25
15	0.18m
16	3.25
17	3.24
18	3.24
19	3.24
20	1.0m
21	1.0m
22	2.0m
23	3.25
24	3.25
25	3.25
26	1.8m
27	3.25
28	0
29	3.26
30	1.0m
31	3.26
32	1.2m
33	3.26
34	1.2m
35	2.0m
36	0
37	3.26
38	1.634
39	1.0m
40	0
41	0
42	0.335
43	3.23
44	0.399
45	0.530
46	0
47	0.305
48	0.489
49	3.23
50	0.574
51	0.301
52	0
53	0.495
54	0

**IC121**  
(MM1561JF-TFB)

Pin	Voltage (V)
1	1.823
2	1.395
3	0
4	0.540
5	3.34
6	0
7	3.33

**IC122**  
(TC7SU04FU-TLB)

Pin	Voltage (V)
1	0
2	1.507
3	0
4	1.851
5	3.34

**IC118**  
(MBM29LV800TE90PFTN-K)

Pin	Voltage (V)
1	2.64
2	2.60
3	0.881
4	2.44
5	0.881
6	2.16
7	1.307
8	2.25
9	0
10	0
11	2.83
12	3.23
13	0
14	-102.3
15	3.23
16	155.4m
17	0
18	2.45
19	0.894
20	2.44
21	0.928
22	2.53
23	0.719
24	2.52
25	2.1
26	3.26
27	0
28	3.26
29	0.454
30	0
31	0.312
32	0.399
33	0.713
34	0.385
35	0.552
36	0.398
37	3.24
38	0.563
39	0.585
40	0.589
41	0.721
42	0.505
43	0.294
44	0.472
45	0.458
46	0
47	3.24
48	2.14

**IC119**  
(DSPD56367PV150)

Pin	Voltage (V)	Pin	Voltage (V)
1	64.1m	73	0.636
2	3.23	74	3.35
3	11.6m	75	0
4	0.556	76	0.512
5	0.3m	77	0.221
6	23.5m	78	0.305
7	0.2m	79	0.439
8	3.33	80	3.35
9	0	81	0
10	0.2m	82	0.502
11	1.545	83	0.384
12	1.666	84	0.325
13	1.683	85	0.348
14	1.678	86	3.35
15	1.663	87	0
16	1.886	88	0.413
17	0.3m	89	0.396
18	1.824	90	0
19	0	91	3.35
20	3.35	92	0.361
21	0.2m	93	0.389
22	0.2m	94	0.200
23	3.27	95	3.35
24	3.28	96	0
25	3.35	97	0.739
26	0	98	0.242
27	1.703	99	0.378
28	1.895	100	1.6m
29	3.34	101	1.6m
30	18.4m	102	1.7m
31	0.2m	103	3.35
32	0.2m	104	0
33	0.2m	105	1.7m
34	0.2m	106	1.7m
35	0.2m	107	1.7m
36	0.2m	108	1.7m
37	0.1m	109	1.7m
38	3.35	110	1.7m
39	0	111	3.35
40	0.1m	112	0
41	0.1m	113	1.6m
42	0	114	1.6m
43	0.1m	115	1.6m
44	3.18	116	1.6m
45	1.824	117	1.5m
46	0.441	118	0
47	0	119	3.35
48	0.195	120	0
49	3.35	121	1.4m
50	0	122	1.4m
51	0	123	1.3m
52	0.423	124	1.3m
53	0.193	125	1.2m
54	0	126	3.35
55	1.725	127	0
56	1.824	128	1.2m
57	3.35	129	3.35
58	0	130	0
59	0.346	131	1.3m
60	0.560	132	1.3m
61	0	133	1.5m
62	0	134	0.2m
63	3.35	135	23.7m
64	3.35	136	0.3m
65	3.35	137	3.34
66	0	138	

**A** MAIN ASSYIC120  
(SCF5249LAG120-K)

Pin	Voltage (V)	Pin	Voltage (V)
1	3.3	73	0
2	3.27	74	3.05
3	0.443	75	1.648
4	2.18	76	3.19
5	1.326	77	1.63
6	2.17	78	1.68
7	1.149	79	3.25
8	2.17	80	3.34
9	1.685	81	1.659
10	3.20	82	0
11	3.27	83	1.8
12	3.33	84	0
13	0.347	85	0
14	0.563	86	3.28
15	57.4m	87	0
16	3.25	88	1.775
17	0.545	89	3.19
18	0.390	90	1.603
19	0.394	91	3.21
20	0	92	3.17
21	0.545	93	1.547
22	0.662	94	0
23	0	95	3.27
24	0.433	96	0
25	3.25	97	1.775
26	0.489	98	2.92
27	1.8	99	3.34
28	2.61	100	0
29	0	101	0
30	0	102	0
31	0.710	103	0
32	2.71	104	0
33	2.64	105	0
34	3.26	106	3.28
35	139.5m	107	0
36	0.581	108	0
37	0	109	3.34
38	1.271	110	0
39	2.2m	111	0
40	2.84	112	3.27
41	2.76	113	3.3
42	2.76	114	0
43	2.76	115	1.543
44	3.25	116	3.26
45	3.25	117	3.34
46	41.6m	118	0
47	18.2m	119	3.33
48	0.469	120	3.33
49	0.636	121	36.0m
50	3.26	122	0
51	0.636	123	3.34
52	0.402	124	3.27
53	0.506	125	1.635
54	0.486	126	0.971
55	0.332	127	2.71
56	3.27	128	4.56
57	0.440	129	3.26
58	2.5m	130	0
59	1.3m	131	2.19
60	0	132	2.75
61	1.638	133	2.72
62	3.25	134	2.75
63	1.772	135	0
64	35.6m	136	2.74
65	3.35	137	2.73
66	1.615	138	0.774
67	1.662	139	2.83
68	3.27	140	0.766
69	3.27	141	1.776
70	1.534	142	2.80
71	1.660	143	0
72	0	144	3.27

**C** DISP ASSYIC501  
(PEG083A8-K)

Pin	Voltage (V)	Pin	Voltage (V)
1	2.39	51	-10.61
2	7.4m	52	-19.00
3	4.78	53	-17.91
4	4.78	54	-14.04
5	4.78	55	-22.6
6	0	56	-15.73
7	4.78	57	-14.93
8	79.1m	58	-16.31
9	80.1m	59	-22.4
10	80.4m	60	-24.3
11	0.7m	61	-17.86
12	80.1m	62	-24.3
13	0	63	-26.9
14	0	64	-28.7
15	0	65	-23.2
16	4.78	66	-15.13
17	0	67	-22.5
18	4.79	68	-6.94
19	0	69	-6.50
20	0	70	-15.05
21	0	71	-20.5
22	2.39	72	-14.58
23	2.03	73	-29.7
24	4.79	74	-29.7
25	0.970	75	-29.7
26	2.38	76	-27.3
27	4.78	77	-27.5
28	4.78	78	-27.5
29	4.78	79	-25.4
30	0	80	-27.4
31	0	81	-27.4
32	0	82	-27.5
33	4.77	83	-27.5
34	4.77	84	-27.5
35	4.56	85	-27.5
36	4.00	86	-27.5
37	-26.6	87	-27.5
38	-7.25	88	-27.5
39	-5.02	89	-30.0
40	-6.25	90	4.77
41	-24.0	91	2.26
42	-8.16	92	0
43	-26.7	93	4.77
44	-26.5	94	4.78
45	-24.1	95	4.78
46	-9.80	96	4.78
47	-8.23	97	0
48	-6.55	98	4.79
49	-9.61	99	4.77
50	-13.56	100	2.29

**N** REGB ASSYIC506  
(PST994D-T)

Pin	Voltage (V)
1	4.78
2	0
3	4.77

IC911  
(BA05T)

Pin	Voltage (V)
1	8
2	0
3	5

IC912  
(PQ15RW11)

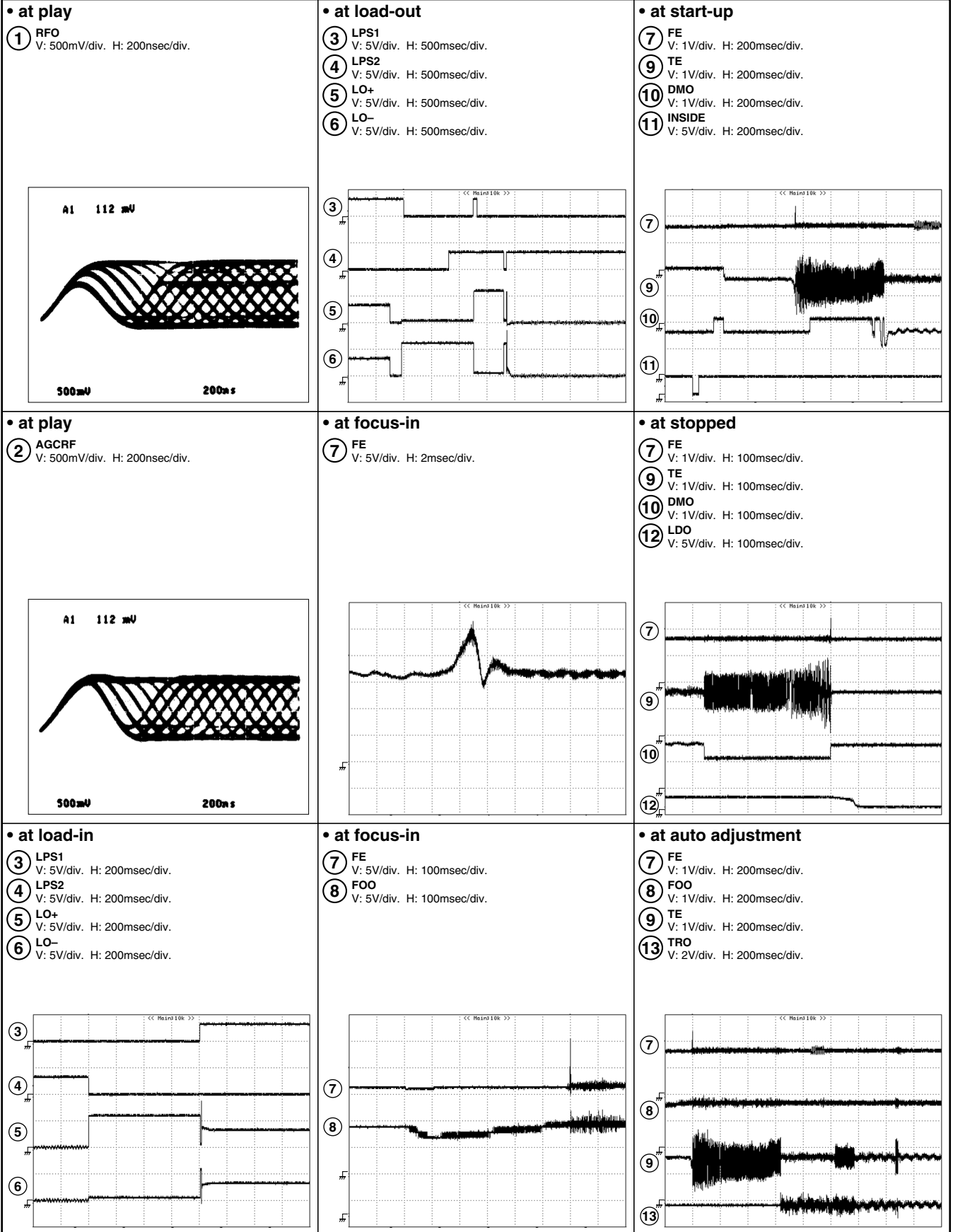
Pin	Voltage (V)
1	10.5
2	7.3
3	0
4	2.57

# 3.10 WAVEFORMS

Note : The encircled numbers denote measuring point in the schematic diagram.

A

## A 1/2 MAIN ASSY



B

C

D

E

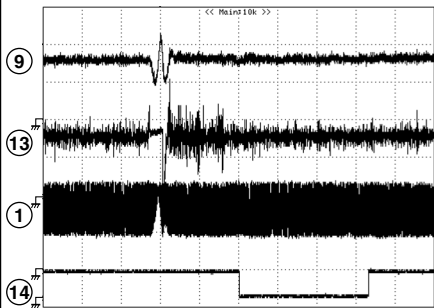
F



# A 1/2 MAIN ASSY

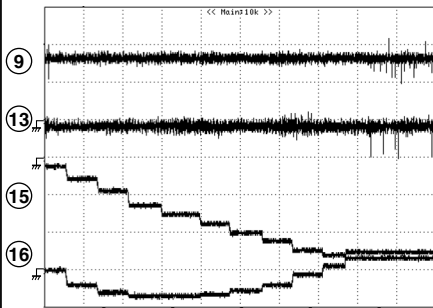
## • at pause

- ⑨ TE  
V: 1V/div. H: 2msec/div.
- ⑬ TRO  
V: 2V/div. H: 2msec/div.
- ① RFO  
V: 1V/div. H: 2msec/div.
- ⑭ SBOK  
V: 5V/div. H: 2msec/div.



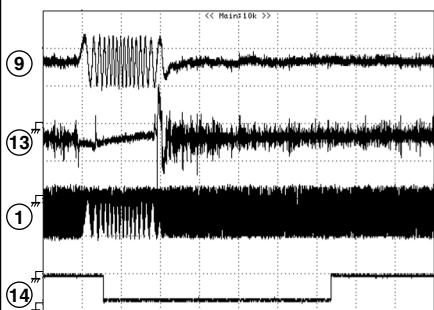
## • at play

- ⑨ TE  
V: 1V/div. H: 1sec/div.
- ⑬ TRO  
V: 2V/div. H: 1sec/div.
- ⑮ ST1 (IC109-pin 1)  
V: 1V/div. H: 1sec/div.
- ⑯ ST2 (IC109-pin 2)  
V: 1V/div. H: 1sec/div.



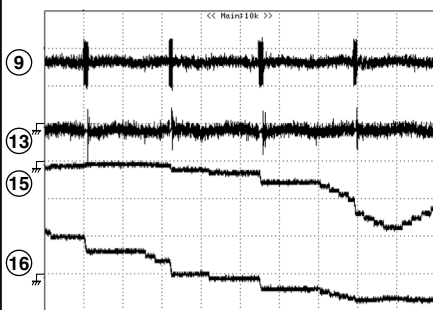
## • at scan

- ⑨ TE  
V: 1V/div. H: 2msec/div.
- ⑬ TRO  
V: 1V/div. H: 2msec/div.
- ① RFO  
V: 1V/div. H: 2msec/div.
- ⑭ SBOK  
V: 5V/div. H: 2msec/div.



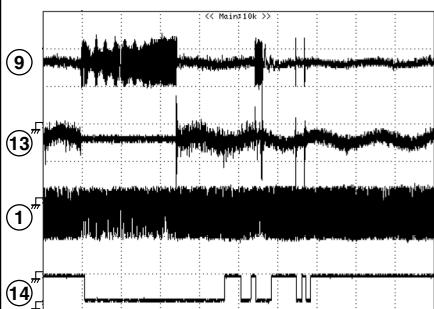
## • at scan

- ⑨ TE  
V: 1V/div. H: 50msec/div.
- ⑬ TRO  
V: 2V/div. H: 50msec/div.
- ⑮ ST1 (IC109-pin 1)  
V: 1V/div. H: 50msec/div.
- ⑯ ST2 (IC109-pin 2)  
V: 1V/div. H: 50msec/div.



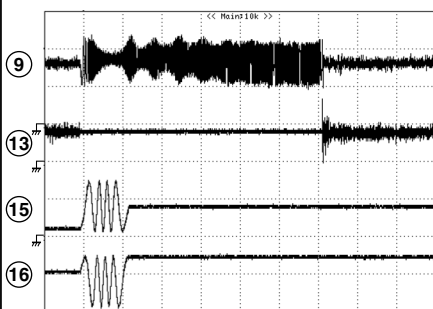
## • at track search

- ⑨ TE  
V: 1V/div. H: 50msec/div.
- ⑬ TRO  
V: 1V/div. H: 50msec/div.
- ① RFO  
V: 1V/div. H: 50msec/div.
- ⑭ SBOK  
V: 5V/div. H: 50msec/div.



## • at track search


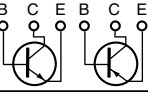

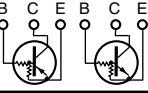

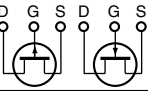

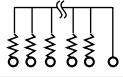


- ⑨ TE  
V: 1V/div. H: 20msec/div.
- ⑬ TRO  
V: 2V/div. H: 20msec/div.
- ⑮ ST1 (IC109-pin 1)  
V: 2V/div. H: 20msec/div.
- ⑯ ST2 (IC109-pin 2)  
V: 2V/div. H: 20msec/div.



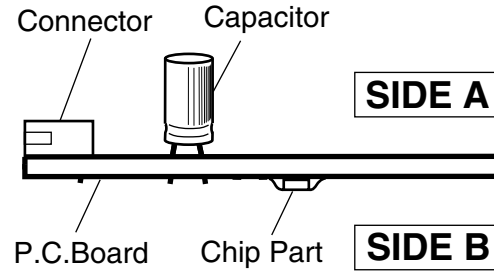
# 4. PCB CONNECTION DIAGRAM

## NOTE FOR PCB DIAGRAMS :

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
		Transistor
		Transistor with resistor
		Field effect transistor
		Resistor array
		3-terminal regulator

3. The parts mounted on this PCB include all necessary parts for several destinations.  
For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.

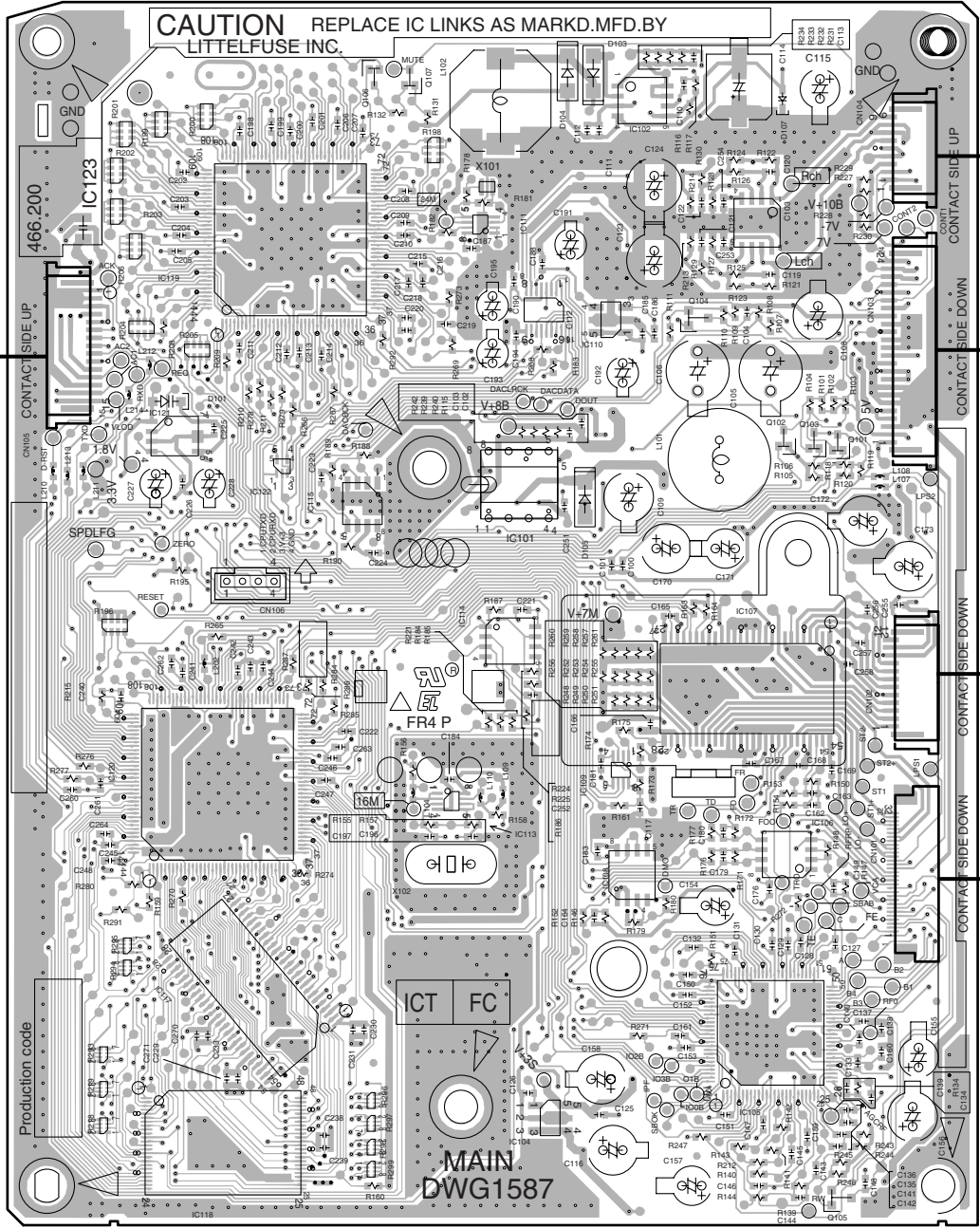




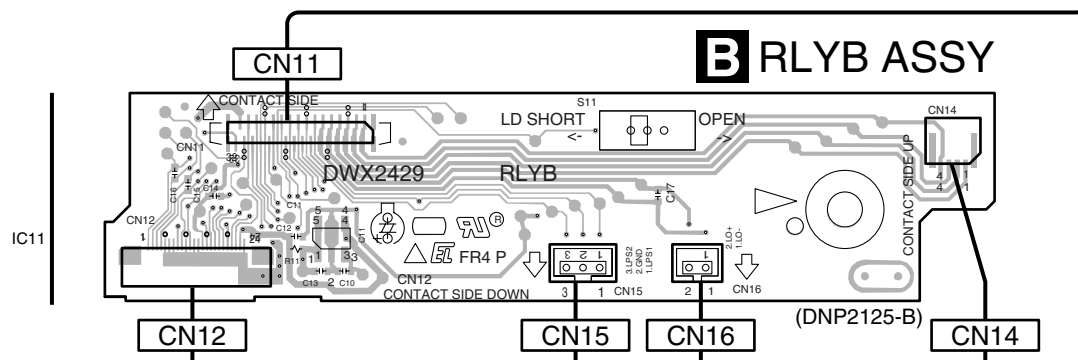
# 4.2 MAIN and RLYB ASSYS

**SIDE A**

## A MAIN ASSY



## B RLYB ASSY



PICKUP ASSY CN1  
 CN1901 DC MOTOR ASSY-S  
 STEPPING MOTOR 04

**A B**

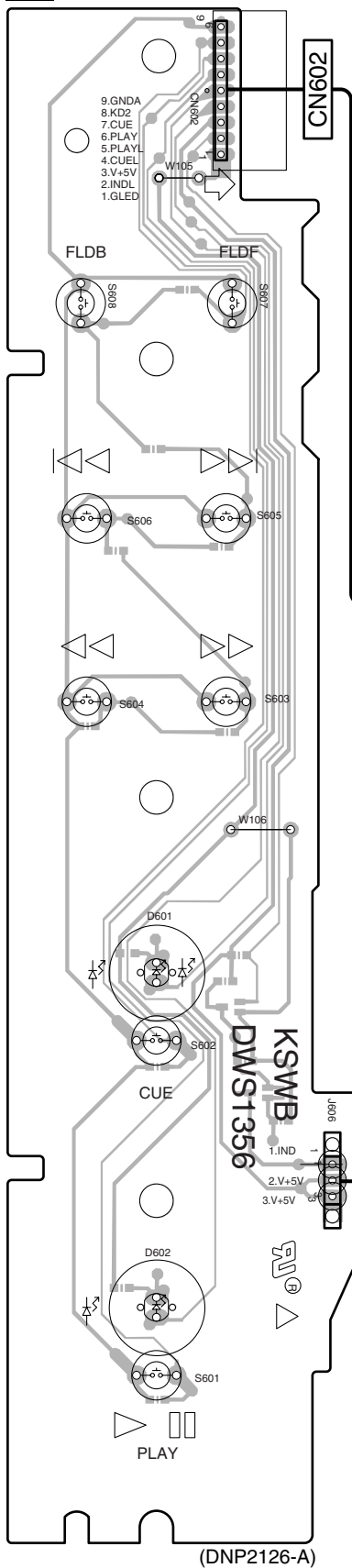
CDJ-200



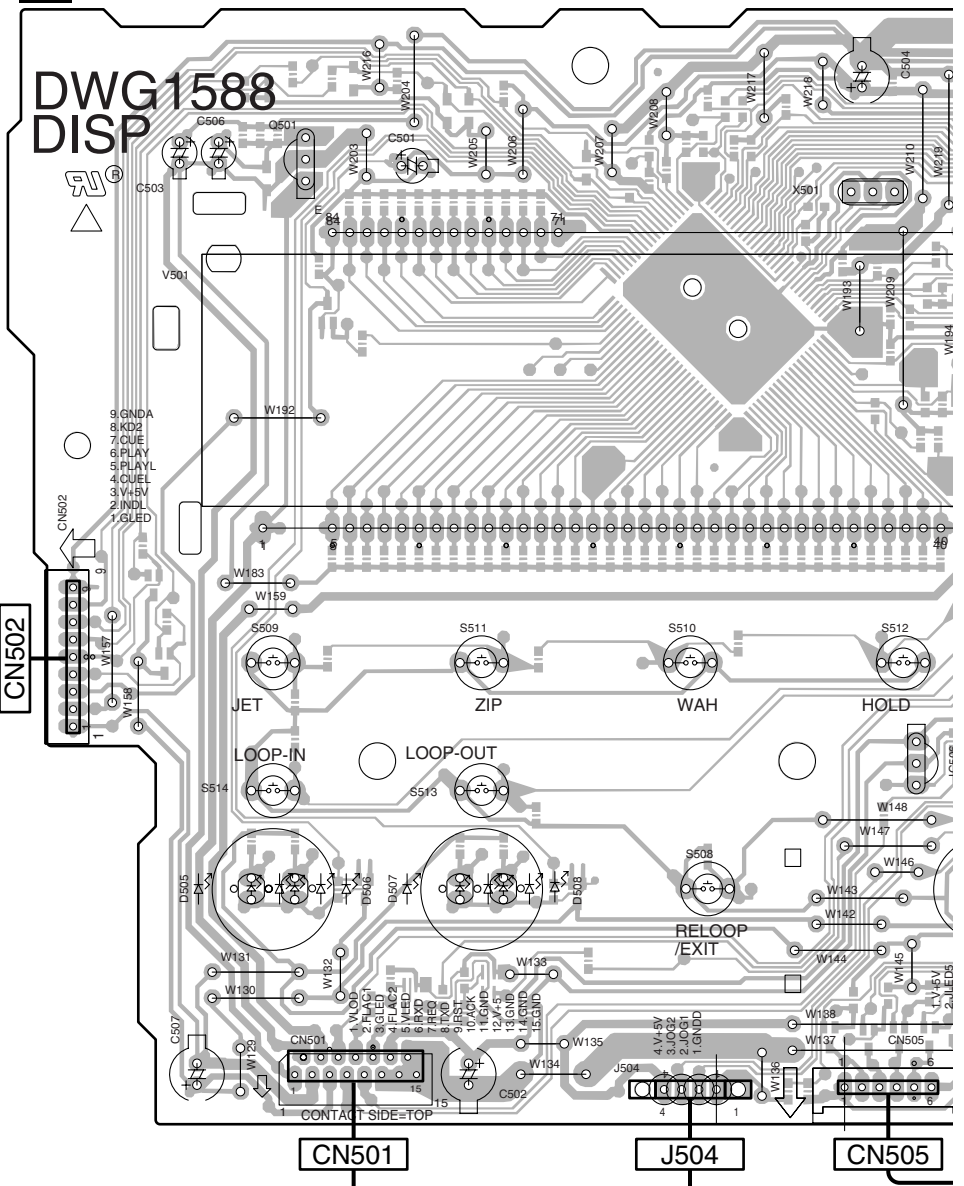
### 4.3 DISP, KSWB, INDB, SLDB, JLED and JOGB ASSYS

**SIDE A**

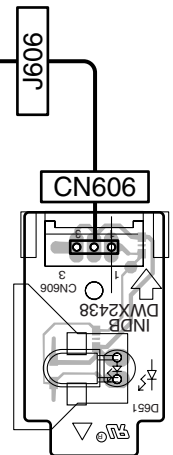
**D** KSWB ASSY



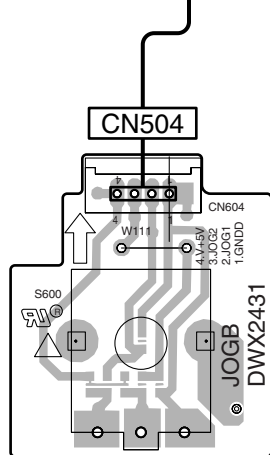
**C** DISP ASSY



**A** CN105



**E** INDB ASSY (DNP2126-A)



**H** JOGB ASSY (DNP2126-A)

**C D E H**



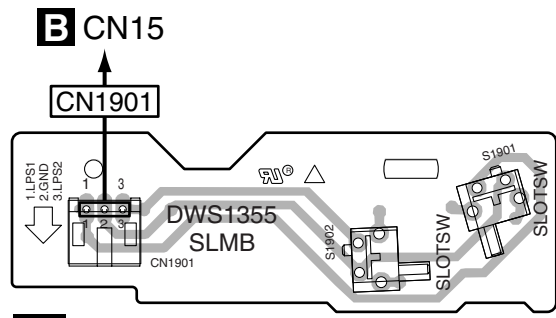




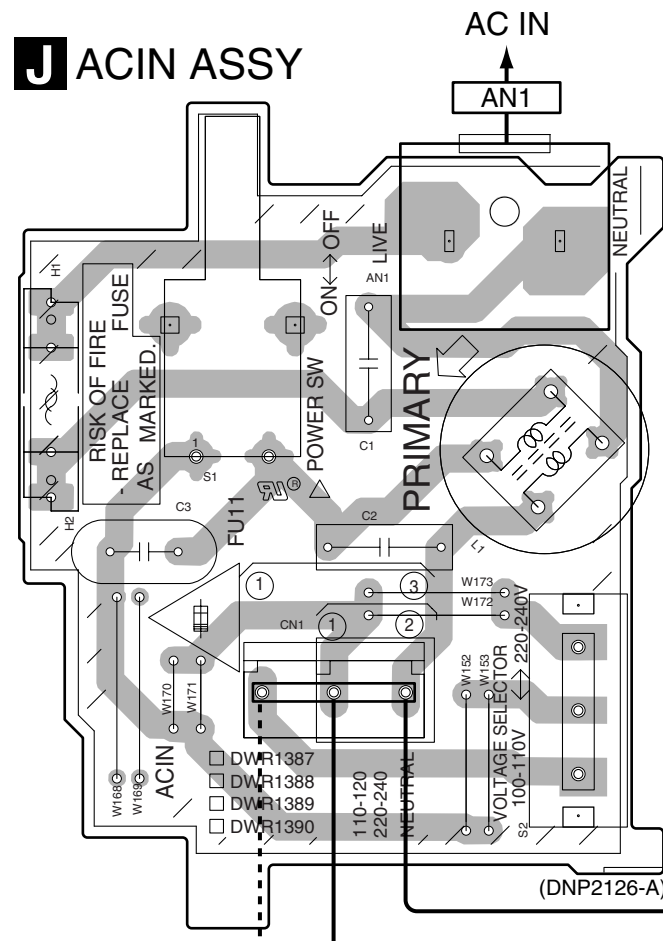


# 4.4 ACIN, TRNS, SLMB, SECB and REGB ASSYS

**SIDE A**



**L** SLMB ASSY (DNP2126-A)



**J** ACIN ASSY (DNP2126-A)

**CN1**

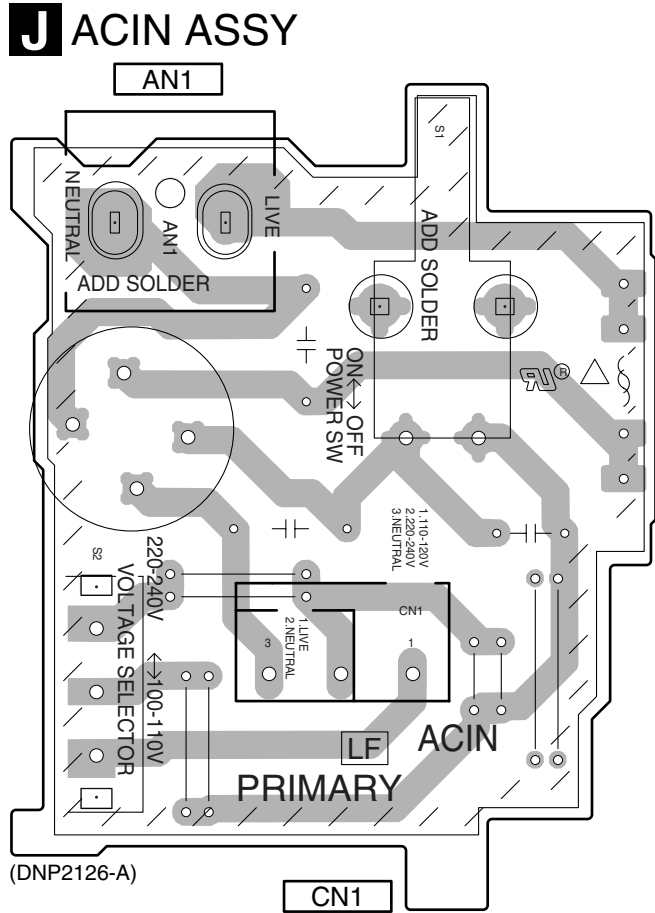
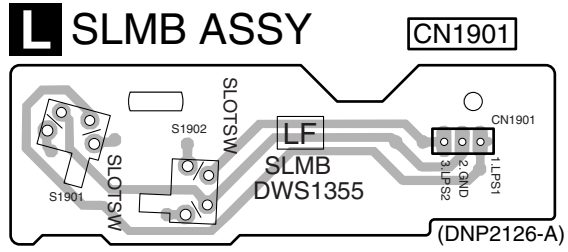
RLTXJ, RFXJ ONLY

**J L**





**SIDE B**



A  
B  
C  
D  
E  
F

**J L**

# 5. PCB PARTS LIST

NOTES: ● Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.

● The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

● When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560  $\Omega$  → 56 x 10<sup>1</sup> → 561 ..... RD1/4PU  $\overline{567}J$   
 47k  $\Omega$  → 47 x 10<sup>3</sup> → 473 ..... RD1/4PU  $\overline{473}J$   
 0.5  $\Omega$  → R50 ..... RN2H  $\overline{R50}K$   
 1  $\Omega$  → 1R0 ..... RS1P  $\overline{1R0}K$

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k  $\Omega$  → 562 x 10<sup>1</sup> → 5621 ..... RN1/4PC  $\overline{5621}F$

## B LIST OF HOLE PCB ASSEMBLIES

Mark	Symbol and Description	CDJ-200/ KUCXJ	CDJ-200/ RLTXJ	CDJ-200/ WYXJ	CDJ-200/ RFXJ
NSP	1..MOTHER ASSY	DWM2196	DWM2196	DWM2196	DWM2196
	2..MAIN ASSY	DWG1587	DWG1587	DWG1587	DWG1587
	2..RLYB ASSY	DWX2429	DWX2429	DWX2429	DWX2429
NSP	1..SUB ASSY	DWM2198	DWM2199	DWM2197	DWM2199
	2..DISP ASSY	DWG1588	DWG1588	DWG1588	DWG1588
	2..KSWB ASSY	DWS1356	DWS1356	DWS1356	DWS1356
	2..INDB ASSY	DWX2438	DWX2438	DWX2438	DWX2438
	2..SLDB ASSY	DWX2430	DWX2430	DWX2430	DWX2430
	2..JLED ASSY	DWX2432	DWX2432	DWX2432	DWX2432
	2..JOGB ASSY	DWX2431	DWX2431	DWX2431	DWX2431
	2..JACK ASSY	DWX2433	DWX2433	DWX2433	DWX2433
	2..ACIN ASSY	DWR1388	DWR1389	DWR1387	DWR1389
	2..TRNS ASSY	DWR1391	DWR1392	DWR1391	DWR1392
	2..SLMB ASSY	DWS1355	DWS1355	DWS1355	DWS1355
	2..SECB ASSY	DWR1394	DWR1394	DWR1394	DWR1394
	2..REGB ASSY	DWR1393	DWR1393	DWR1393	DWR1393

## D CONTRAST OF PCB ASSEMBLIES

### J ACIN ASSY

DWR1388, DWR1389 and DWR1387 are constructed the same except for the following :

Mark	Symbol and Description	DWR1388	DWR1389	DWR1387
$\Delta$	AN1 1P AC INLET	XKP3042	XKP3041	XKP3041
$\Delta$	CN1 2P VH CONNECTOR	B2P3-VH	Not used	B2P3-VH
$\Delta$	CN1 3P VH CONNECTOR	Not used	B3P5-VH	Not used
$\Delta$	S2 VOLTAGE SELECTOR	Not used	DSA1026	Not used

### K TRNS ASSY

DWR1391 and DWR1392 are constructed the same except for the following :

Mark	Symbol and Description	DWR1391	DWR1392
$\Delta$	J2 CONNECTOR ASSY	DKP3728	Not used
$\Delta$	J3 CONNECTOR ASSY	Not used	DKP3729



**Mark No. Description****Part No.****Mark No. Description****Part No.****B RLYB ASSY  
SWITCHES AND RELAYS**

S11

DSH1061

**D KSWB ASSY  
SEMICONDUCTORS**

Q604

2SC4081

Q603

DTC124EUA

D601

SLI-343YCW(RST)

D602

TLGE68TG(NP)

**CAPACITORS**

C15-C17

CKSRYB103K50

C12,C14

CKSRYB104K25

**RESISTORS**

All Resistors

RS1/16S###J

**SWITCHES AND RELAYS**

S601,S602

DSG1079

S603-S608

VSG1024

**OTHERS**

CN16 KR CONNECTOR

B2B-PH-K-S

CN15 KR CONNECTOR 3P

B3B-PH-K-S

CN14 4P FFC CONNECTOR

RKN1045

CN11 32P FFC CONNECTOR

VKN1463

**CAPACITORS**

C603

CKSRYB102K50

**RESISTORS**

All Resistors

RS1/16S###J

**C DISP ASSY  
SEMICONDUCTORS**

IC501

PEG083A

IC506

PST994D

IC502-IC504

TC7SET08FUS1

Q501

2SB1237X

Q502-Q509,Q514,Q516

2SC4081

**OTHERS**

0 3P CABLE HOLDER

51048-0300

CN602 9P PLUG

AKM7033

J606 JUMPER WIRE 3P

D20PDY0305E

Q601,Q602  
Q510-Q513,Q515

2SC4081

D512

DTC124EUA

D505-D508,D511

SLI-343URCW(RST)

D501

SLI-343YCW(RST)

UDZS6R2(B)

**E INDB ASSY  
SEMICONDUCTORS**

D651

E1L4E-9B1A(CD)

**SWITCHES AND RELAYS**

S507,S508,S513,S514

DSG1079

S501-S506,S509-S512

VSG1024

**CAPACITORS**

C651

CKSRYB103K50

**RESISTORS**

All Resistors

RS1/16S###J

**CAPACITORS**

C512,C522,C523

CCSRCH101J50

C520

CEAL100M16

C501,C503,C506

CEHAS1R0M50

C502,C504,C507

CEHAS470M16

C532,C534,C538,C539,C541

CKSRYB102K50

**OTHERS**

CN606 3P JUMPER CONNECTOR

52151-0310

0 LED HOLDER

XAK3187

C511,C513,C516,C521  
C505,C524  
C517-C519

CKSRYB103K50

CKSRYB104K16

CKSRYB105K6R3

**F SLDB ASSY  
SEMICONDUCTORS**

D603-D606

1SS355

**RESISTORS**

All Resistors

RS1/16S###J

**CAPACITORS**

C605,C606

CKSRYB102K50

**OTHERS**

X501 CERAMIC RESONATOR

DSS1131

(4MHz)

0 4P CABLE HOLDER

51048-0400

CN505 6P JUMPER CONNECTOR

52151-0610

J504 JUMPER WIRE 4P

D20PDY0405E

**RESISTORS**

R616,R617

RS1/16S2201F

VR601 SLIDE VOLUME

DCV1009

V501 FL TUBE

DEL1054

0 FL HOLDER

DNK4422

CN502 9P SOCKET

KP200IB9L

CN501 15P FFC CONNECTOR

VKN1275

**OTHERS**

CN603 PLUG

DKN1381



5	6
Mark No. Description	Part No.
<b>G</b> <b>JLED ASSY</b> <b>SEMICONDUCTORS</b> D607-D609,D614,D616	E1L4E-9B1A(CD)
<b>CAPACITORS</b> C610-C614	CKSRYB103K50
<b>RESISTORS</b> All Resistors	RS1/16S###J
<b>OTHERS</b> 0 6P CABLE HOLDER J605 JUMPER WIRE 6P 0 LED HOLDER	51048-0600 D20PDY0610E XAK3187
<b>H</b> <b>JOGB ASSY</b> <b>SWITCHES AND RELAYS</b> S600	DSX1051
<b>CAPACITORS</b> C601,C602	CKSRYB103K50
<b>RESISTORS</b> All Resistors	RS1/16S###J
<b>OTHERS</b> CN604 4P JUMPER CONNECTOR	52151-0410
<b>I</b> <b>JACK ASSY</b> <b>SEMICONDUCTORS</b> IC702 IC701 Q701-Q704,Q707-Q710 D701,D702	NJM4556AD NJM4558MD 2SD2114K NNCD6.2MF
<b>COILS AND FILTERS</b> L704-L706 CHIP FERRITE BEAD L701-L703,L707,L708 CHIP FERRITE BEAD	DTL1128 DTL1130
<b>CAPACITORS</b> C701,C702,C711,C712 C700,C709,C710,C715-C719 C705,C706 C703,C704,C713,C714 (100/16)	CEHAR220M35 CKSRYB103K50 CQMA152J50 DCH1195
<b>RESISTORS</b> VR701 POTENTIOMETER Other Resistors	DCS1087 RS1/16S###J
<b>OTHERS</b> JA701 AUDIO 2P PIN JACK JA702 PHONES JACK CN701 9P FFC CONNECTOR	AKB7046 DKN1179 VKN1269

7	8
Mark No. Description	Part No.
<b>J</b> <b>ACIN ASSY</b> <b>COILS AND FILTERS</b> △ L1 LINE FILTER	VTL-004
<b>SWITCHES AND RELAYS</b> △ S1	DSA1029
<b>CAPACITORS</b> △ C1,C2 △ C3	ACE7027 ACG7039
<b>OTHERS</b> H1,H2 FUSE CLIP △ CN1 2P VH CONNECTOR △ AN1 1P AC INLET	AKR1004 B2P3-VH XKP3042
<b>K</b> <b>TRNS ASSY</b> <b>SEMICONDUCTORS</b> △ IC905 (750mA) △ IC901,IC902 (4A) △ IC903,IC904 (5A) △ D905-D908 △ D901-D904	AEK7007 AEK7018 AEK7019 1SR154-400 RB060L-40
<b>CAPACITORS</b> C901-C909	CKSRYB473K50
<b>OTHERS</b> △ J2 CONNECTOR ASSY CN902 9P PCB CONNECTOR	DKP3728 S9B-XH-A-1
<b>L</b> <b>SLMB ASSY</b> <b>SWITCHES AND RELAYS</b> S1901,S1902	DSG1017
<b>OTHERS</b> CN1901 KR CONNECTOR	S3B-PH-K-S
<b>M</b> <b>SECB ASSY</b> <b>SEMICONDUCTORS</b> △ IC914 (250mA) △ IC909 (400mA) △ IC907 (500mA) △ IC913 (750mA) △ IC910 (1A)  △ IC908 (1.25A) △ IC906 (200mA) △ Q901 D910 D911-D913	AEK7002 AEK7004 AEK7005 AEK7007 AEK7009  AEK7010 AEK7023 2SB1375 NNCD6.2MF UDZS10(B)
<b>COILS AND FILTERS</b> L903,L904 CHIP FERRITE BEAD L901 CHIP FERRITE BEAD	DTL1128 DTL1129

**Mark No.**      **Description**

**Part No.**

## 6. ADJUSTMENT

- There is no information to be shown in this chapter.

### CAPACITORS

	C914	CEHAS1R0M50
	C920,C921	CEHAT101M16
A	C912	CEHAT221M2A
	C910	CEHAT332M25
	C919	CEHAT470M16
	C911	CEHAT682M25
	C913	CKSRYB103K50
	C922,C926	CKSRYB104K25

### RESISTORS

	R910	RD1/2VM271J
	R909	RD1/2VM471J
B	Other Resistors	RS1/16S###J

### OTHERS

	0 6P CABLE HOLDER	51048-0600
	J904 JUMPER WIRE 6P	D20PDY0610E
	CN903 9P SOCKET	KP250NA9
	JA901 1P JACK	PKB1033
	JA902 REMOTE CONTROL JACK	RKN1004
	CN905 24P FFC CONNECTOR	VKN1255

## **N** REGB ASSY

### SEMICONDUCTORS

	△IC911	BA05T
	△IC912	PQ15RW11

### CAPACITORS

	C916,C918	CEHAT470M16
	C915,C917	CKSRYB103K50

### RESISTORS

	R908	RS1/16S2201D
	R907	RS1/16S3901D

### OTHERS

	CN904 6P JUMPER CONNECTOR	52151-0610
	0 REGULATOR PLATE	DNH2654

# 7. GENERAL INFORMATION

## 7.1 DIAGNOSIS

### 7.1.1 SERVICE MODE

#### 1. Overview of Service mode

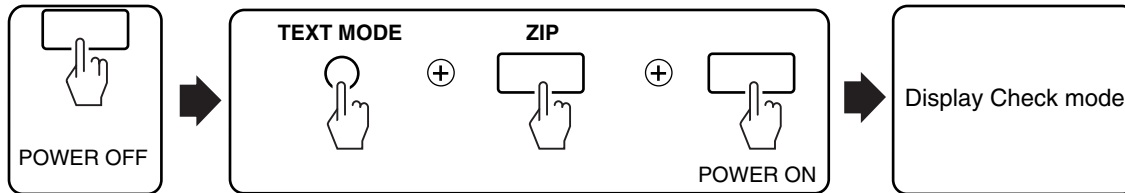
Two microcomputers are provided for this unit: One is for the Display section, and it controls key input, displays on the FL display, and lighting of LEDs. The other is for the Player section, and it controls the drive of the player. Test modes are provided for each microcomputer:

- ① Display Check mode for the Display section  
Mode for confirmation of key input and display functions
- ② Operation Check mode for the Player section  
This mode for operation check of the mechanism and servomechanism of the Player section consists of Player Operation mode and Test Operation mode.
- ③ Version Check mode  
Mode for checking the software version of each microcomputer
- ④ List of Error codes/Detail Display mode  
Up to 16 error logs can be checked.

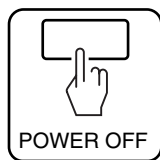
#### 2. Display Check mode for the Display section

In this mode, you can light up some LEDs and part of the Display section to check if the input of each key/variable control is correctly reflected on the display. An LED or part of the display is lit while the corresponding key is held pressed.

##### How to enter Display Check mode



##### How to exit Display Check mode



# LED CHECK

A

Key	Display
① BEAT LOOP	① The BEAT LOOP LED lights up.
② AUTO CUE	All the LEDs light up.
③ CUE	③ The CUE LED lights up.
④ PLAY/PAUSE	④ The PLAY/PAUSE LED lights up.
⑤ IN/REALTIME CUE (LOOP IN)	⑤ The LOOP IN LED lights up.
⑥ OUT (LOOP OUT)	⑥ The LOOP OUT LED lights up.
⑦ MASTER TEMPO	⑦ The MASTER TEMPO LED lights up.
⑧ TEMPO ±6/±10/±16	All the segments on the FL display and all the LEDs light up.
⑨ JOG (Rotate the dial.)	⑨ The JOG LEDs corresponding to the direction and extent of rotation light up.

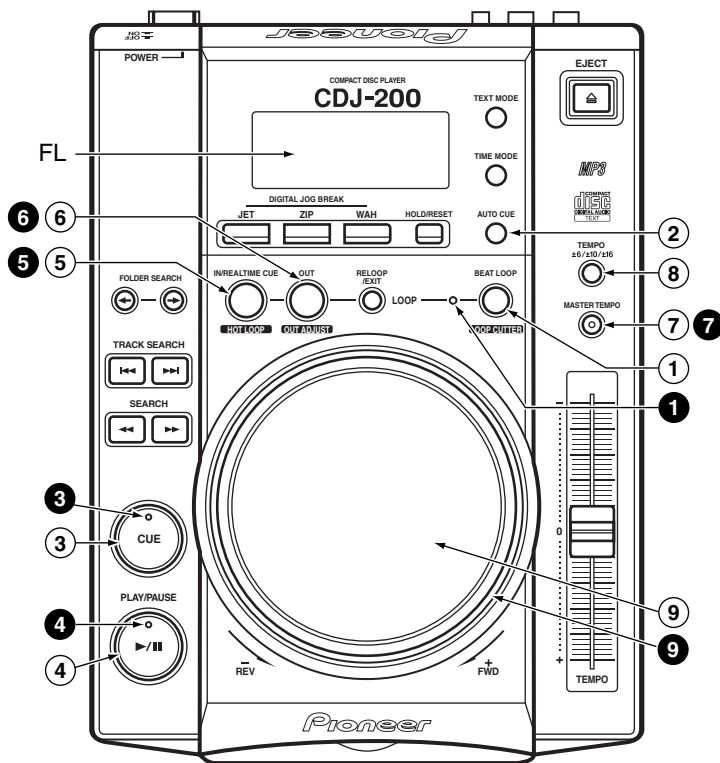
B

C

D

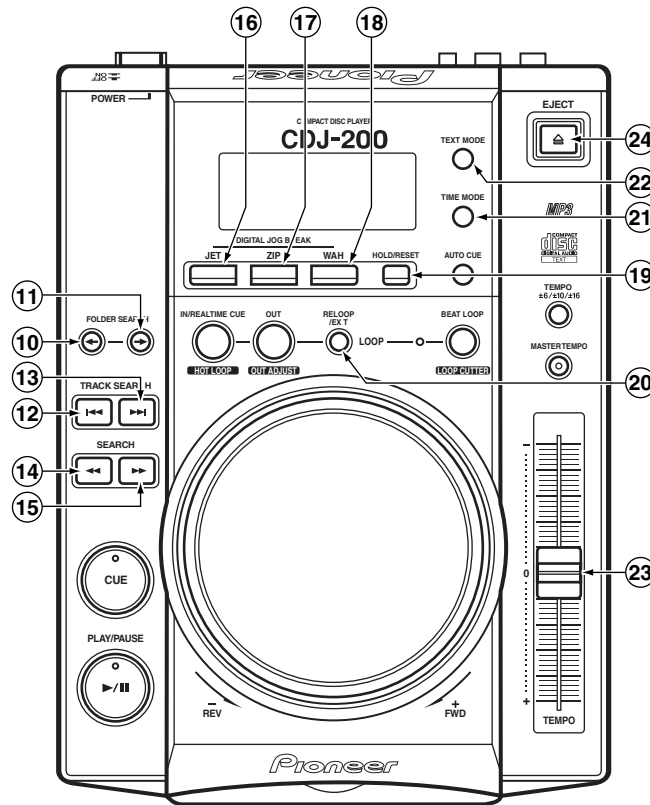
E

F

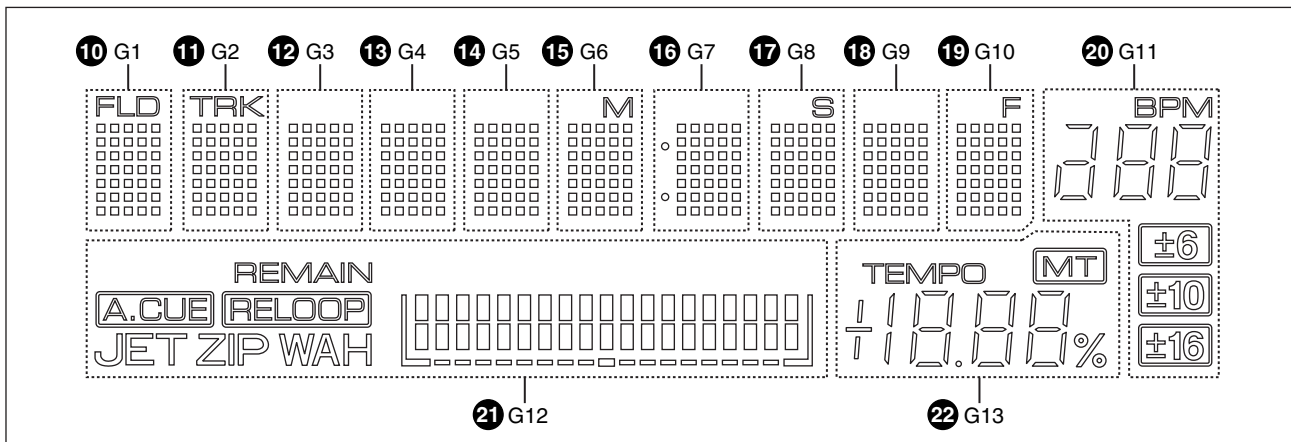


# FL CHECK

Key	FL Display
10 FOLDER SEARCH ←	10 All the G1 section light up.
11 FOLDER SEARCH →	11 All the G2 section light up.
12 TRACK SEARCH ◀◀	12 All the G3 section light up.
13 TRACK SEARCH ▶▶	13 All the G4 section light up.
14 SEARCH ◀◀	14 All the G5 section light up.
15 SEARCH ▶▶	15 All the G6 section light up.
16 JET	16 All the G7 section light up.
17 ZIP	17 All the G8 section light up.
18 WAH	18 All the G9 section light up.
19 HOLD/RESET	19 All the G10 section light up.
20 RELOOP/EXIT	20 All the G11 section light up.
21 TIME MODE	21 All the G12 section light up.
22 TEXT MODE	22 All the G13 section light up.
23 TEMPO (SLIDER VOLUME)	23 Bars for the G12 section light up according to variable control values. With the slider moved fully to the + side, all the segments are dark. With the slider moved fully to the - side, all the segments are lit.
24 EJECT	All the FL display light up.

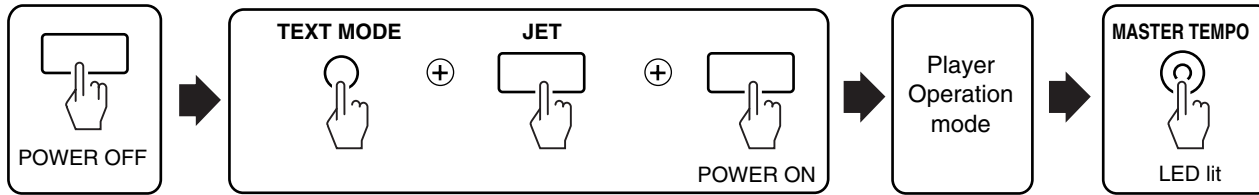


## • FL Display

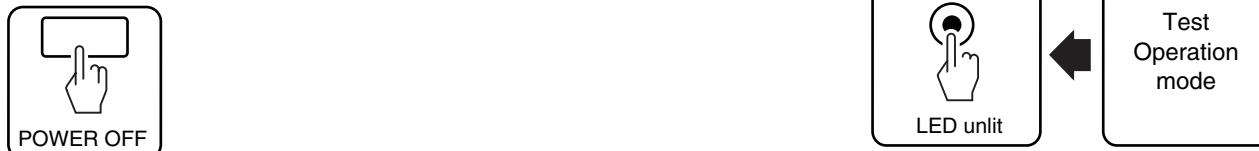


### 3. Operation Check mode for the Player section

#### Player Operation mode: ON



#### Player Operation mode: CANCEL



This mode consists of Player Operation mode and Test Operation mode.

#### Player Operation mode

In this mode, basic operations of the servomechanism, such as setup, playback, pause, and track search, are checked. Error rates can also be measured.

#### Test Operation mode

Servo operations can be controlled step by step in detail.

#### Notes:

- Switching from Player Operation mode to Test Operation mode can be accomplished by pressing the MASTER TEMPO key.
- Commands in Test Operation mode are mainly for testing the mechanism and servomechanism, not for testing the DJ functions, such as scan and tempo.

#### • Player Operation mode

Function	Key on the main unit
Play(trace) / Pause	PLAY/PAUSE
Track Search F/R	TRACK SEARCH ►►/◄◄
Error Rate Count	CUE
Eject	EJECT
Mode Change	MASTER TEMPO

#### • Test Operation mode

Function	Key on the main unit
Servo All Off	TIME
LD On/Off	TEMPO
Focus On/Off	RELOOP
Spindle Kick, Tracking On/Off	(LOOP) IN/REALTIME CUE
Tracking Off	(LOOP) OUT
Slide FWD (2mm)	SEARCH ►►
Slide REV (2mm)	SEARCH ◄◄
Pickup Up/Down	AUTO CUE
Mode Change	MASTER TEMPO

#### • Description of commands in Player Operation mode

##### Play (trace)/Pause

If this command is issued in Stop mode, the unit is set up and starts playing. If the command is issued in Playback mode, pause and playback are alternately performed each time the PLAY/PAUSE key is pressed. The address currently being played back is displayed on the FL display.

**Note:** In this mode, auto setup is not performed when a disc is inserted. Playback in this mode does not mean audio playback but trace of the signal area on a disc. In playback, tracing is performed at double the speed of normal playback. No audio signal is output.

### Track Search F/R

The unit starts searching for the displayed track in the forward or reverse direction and will pause when it finds it.

### Error Rate Count

An error rate is measured from the current Play/Pause position for about 10 seconds. The result will be displayed on the FL display. Normally, search for the track to be measured then press the CUE key in Pause mode. The error rate is displayed, for example, as "3.56E-4 OK." "OK" is displayed if the error rate is 3.00E-3 or less, and "NG" is displayed if it is more than 3.00E-3. The result is determined on the assumption that the measurement is performed using a control disc upon shipment of the product. This measurement cannot be used for judging whether or not the product is defective during servicing.

### Eject

The loaded disc is ejected.

### Mode Change

Press the MASTER TEMPO key during Player Operation mode to change to Test Operation mode. The MASTER TEMPO LED lights up, and Test Operation mode (described below) is entered.

### • Test Operation mode

Servo operations can be controlled step by step in detail.

Please note that incorrect use of commands in Test Operation mode may damage the player.

### Servo All Off

When the TIME key is pressed during Servo ON, all the servos will be shut off.

### LD On/Off

Pressing the TEMPO key turns the LD ON or OFF.

### Focus On/Off

Pressing the RELOOP key during Stop mode turns the LD ON, and auto focusing is performed.

### Spindle Kick, Tracking On/Off

When the IN/REAL TIME CUE (LOOP IN) key is pressed while the tracking servo is OFF, spindle kicking is performed, and the automatic adjustment process and tracking servo are turned ON. When the key is pressed while the tracking servo is ON, the tracking servo is turned OFF.

### Tracking Off

Pressing the (LOOP) OUT key while the tracking servo is ON turns the tracking servo OFF.

### Slide FWD

Pressing the SEARCH ►► (FWD) key while the tracking servo is ON turns the tracking servo OFF and moves the slider about 2 mm in the forward direction.

### Slide REV

Pressing the SEARCH ◀◀ (REV) key while the tracking servo is ON turns the tracking servo OFF and moves the slider about 2 mm in the reverse direction.

### Pickup Up/Down

Pressing the AUTO CUE key during Stop mode turns the LD ON and moves the pickup up and down. Focus will not be closed.

### Mode Change

Pressing the MASTER TEMPO key during Test Operation mode turns the MASTER TEMPO LED off, and Player Operation mode (described above) is entered.

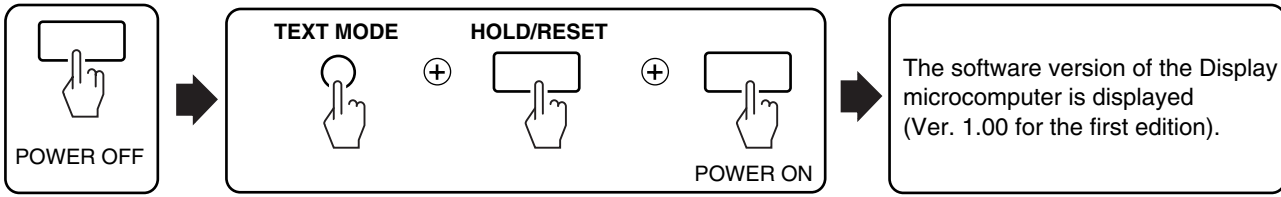
**Note:** To start up the servos step by step in Test Operation mode, input the commands in the following order:

Servo All Off, Focus On, Spindle Kick, then Tracking On.

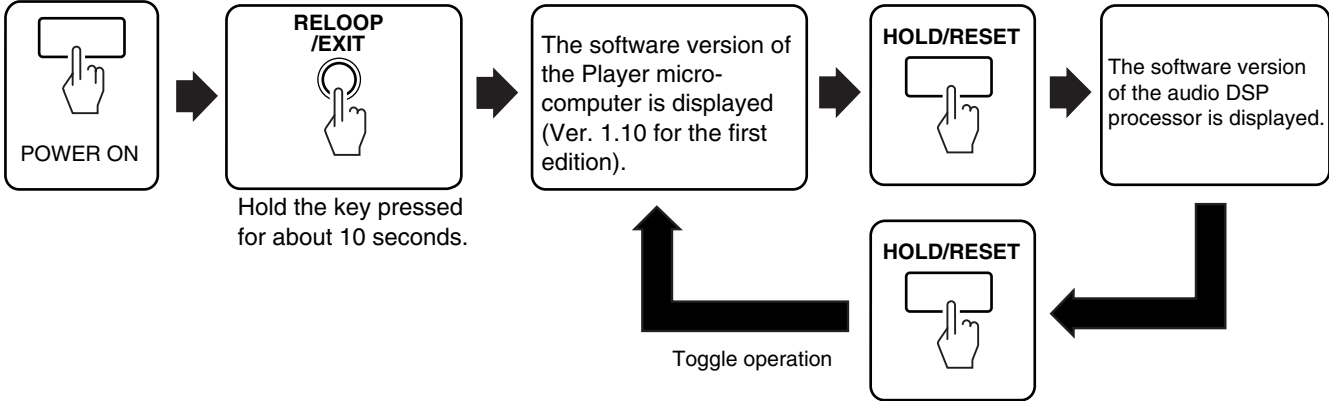
### 4. Version Check mode

Mode for checking the software version of each microcomputer

#### A • How to check the software version of the Display microcomputer

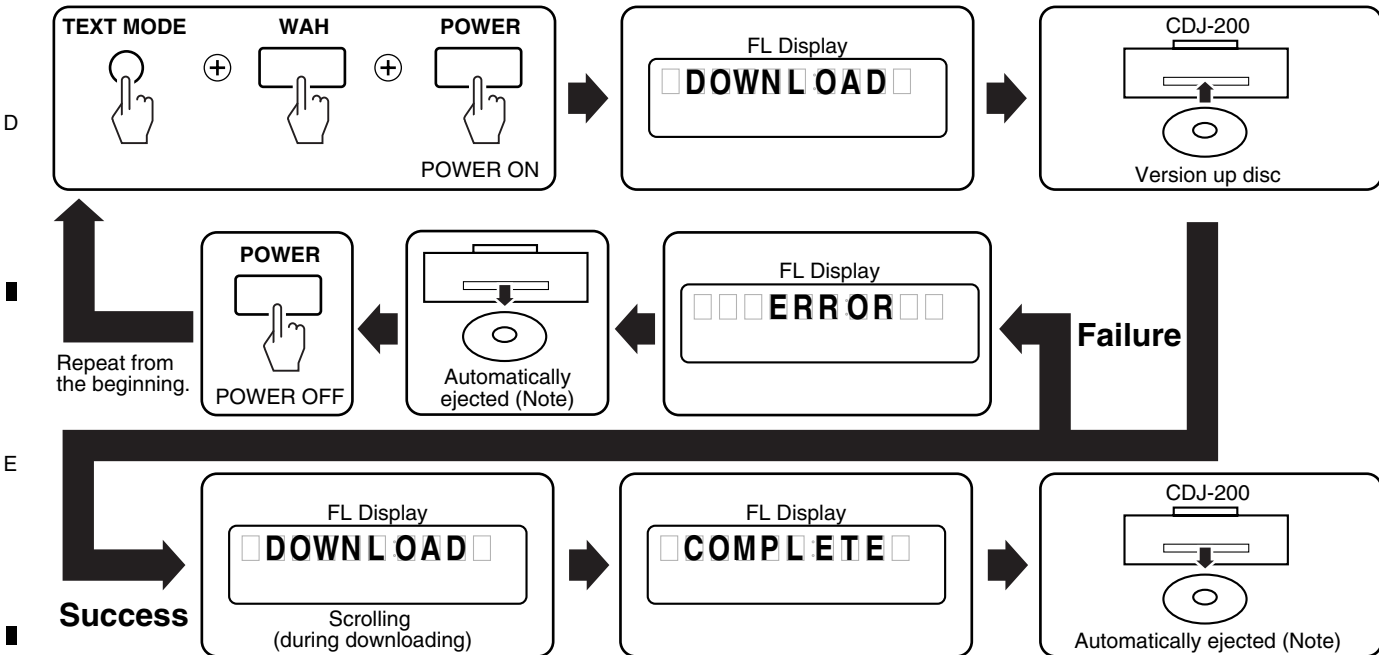


#### B • How to check the software version of the Player microcomputer



**Note:** The audio DSP processor is one for audio signal processing, and it operates independently from the Player microcomputer. However, its program is stored in the flash ROM of the Player microcomputer and is copied from there to the DSP processor when the power is turned on.

### 5. How to upgrade the software of the microcomputer



**Note:**

- Do NOT turn off the power after the upgrade disc is loaded till it is automatically ejected. If you do, the unit may not operate properly afterward.
- Eject a disc automatically even if updating fails.



## 6. List of Error Codes/Detail Display mode

If an error is generated during Normal mode, one of the following error codes is displayed on the FL display. (See "4. Version Check mode".

Detailed error content (error described in the Error content column of the table below: E-XX) can be confirmed if the SEARCH ►► or ◀◀ key is pressed during Software Version Check mode for the Player microcomputer.

The first error displayed when the SEARCH ►► or ◀◀ key is pressed is the latest, and each time the ◀◀ key is pressed the previous error is displayed (pressing the ►► key displays the oldest error). Data for up to 16 errors are stored in memory.

For errors E-12 and E-15, the address (TNO:MIN:SEC:FRM) where an error was generated is also stored in memory, and it can be displayed by pressing the TIME MODE key (toggle operation).

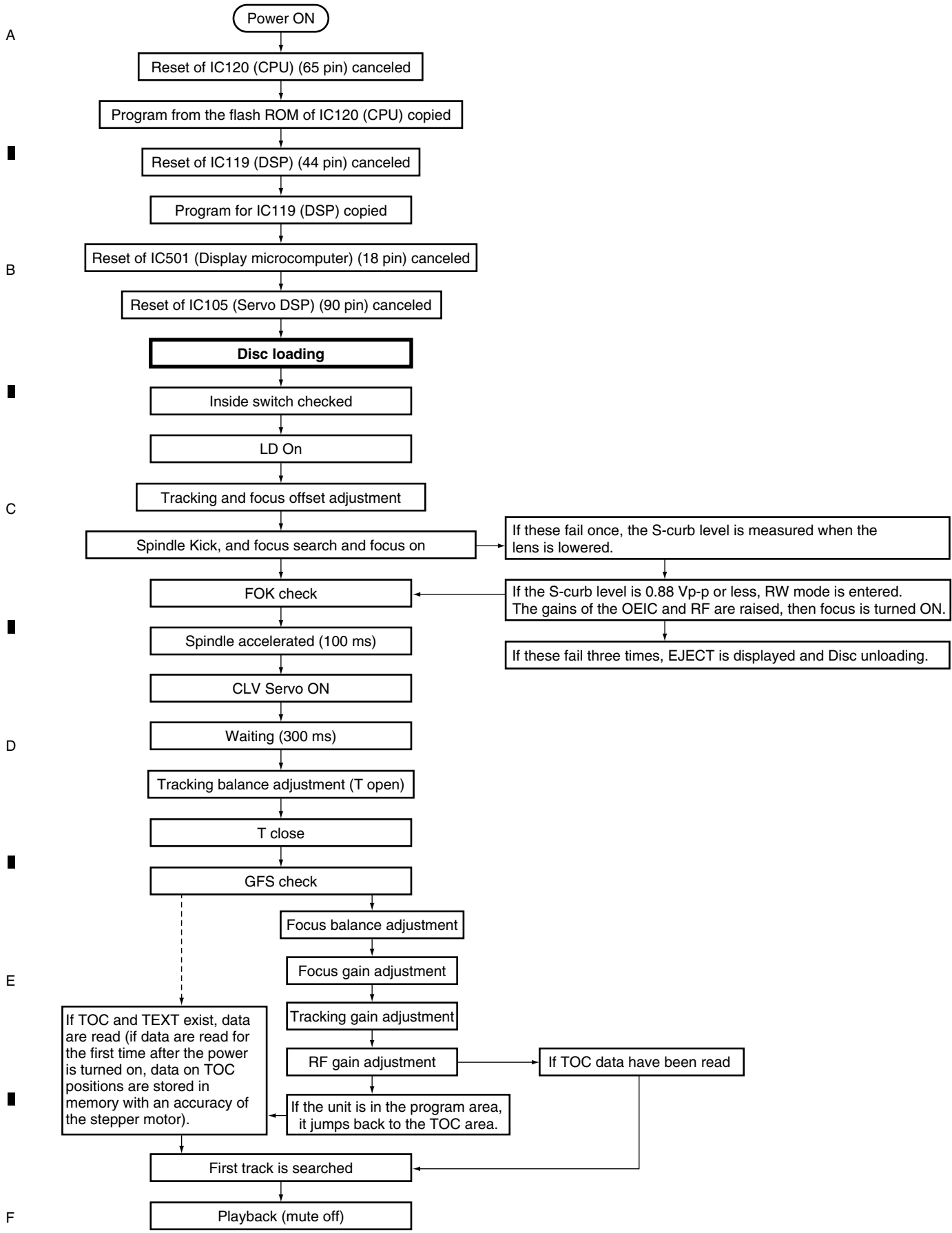
Error No.	Error Name	Error Content
E-6002	DSP PROGRAM DOWNLOAD ERROR	62: The program cannot be written in the DSP.
E-7201	TOC READ ERROR	26: TOC data could not be read.
E-8301	PLAYER ERROR (Startup error)	12: The desired address could not be searched. 15: Address data could not be read. } * 22: The Focus Servo could not be closed. 91: The pickup could not be returned to the inner track.
E-8302	PLAYER ERROR (Abnormality in playback)	12: The desired address could not be searched. 15: Address data could not be read. 22: The Focus Servo could not be closed.
E-8303	PLAYER ERROR (Abnormality in writing to the buffer)	99: Abnormality in writing in the buffer
E-8304	MP3 DECODE ERROR (Abnormality in decoding)	Abnormality in decoding **
E-8305	DATA FORMAT ERROR (Inappropriate data format)	A data format other than MP3 was used. **
E-9101	MECHANICAL TIME OUT	90: Abnormality in the disc-loading mechanism (TIMEOUT)

\* If these errors are generated before the loaded disc is identified as a CD, the disc is automatically ejected. In this case, the error code is not displayed, but you can check it, as the error content is stored in memory.

\*\* Data for errors E-8304 and E-8305 are not stored in the memory.

To clear the error logs, while holding the TEXT MODE and BEAT LOOP keys pressed, press the POWER button. At this time, the settings for the AUTO CUE and TIME MODE keys are reset to those preset at the factory (AUTO CUE = OFF, TIME MODE = REMAIN).

# 7.1.2 POWER ON SEQUENCE



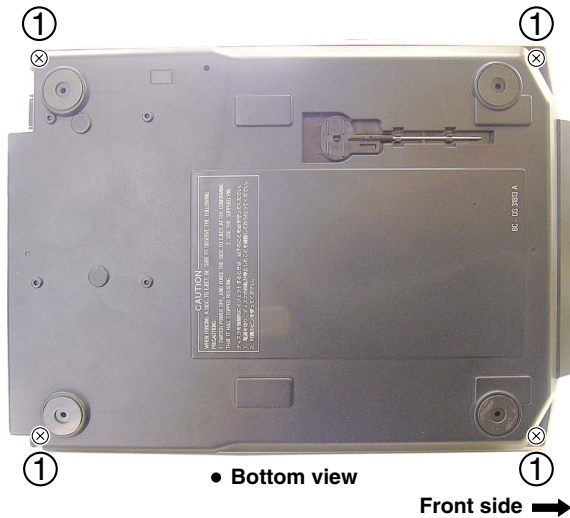
### 7.1.3 DISASSEMBLY

**Note 1 :** Do NOT look directly into the pickup lens. The laser beam may cause eye injury.

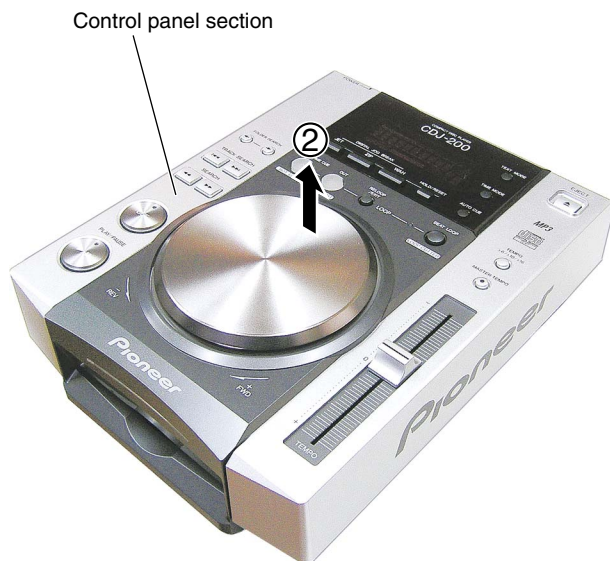
**Note 2 :** Even if the unit shown in the photos and illustrations in this manual may differ from your product, the procedures described here are common.

#### 1 Diagnosis of MAIN Assy

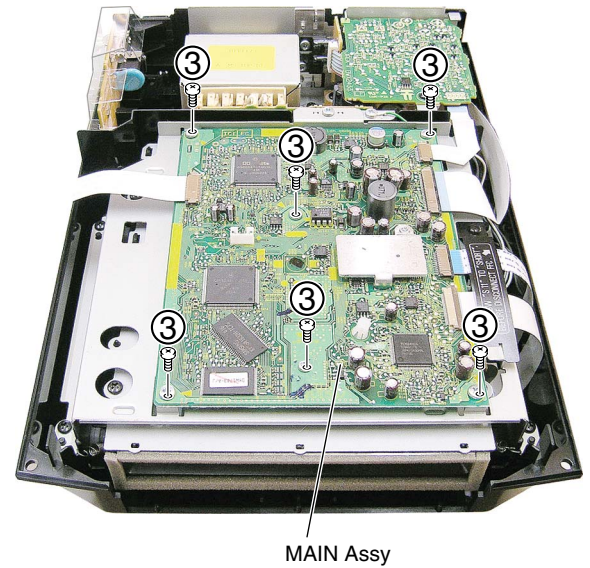
① Remove the four screws.



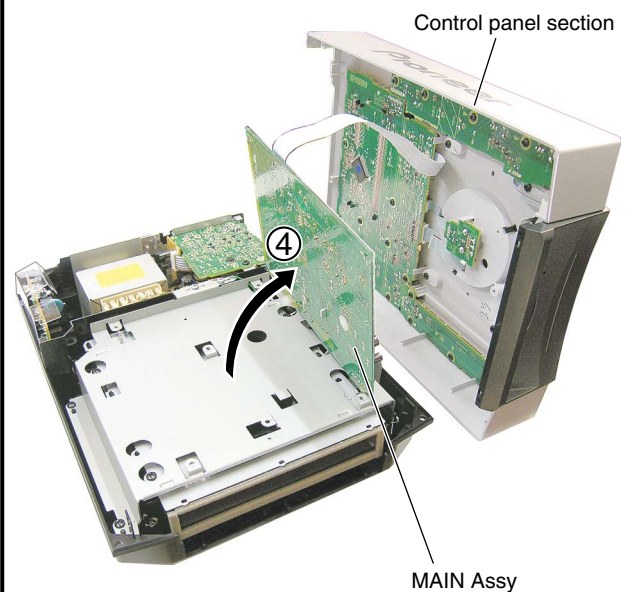
② Remove the control panel section.



③ Remove the six screws.



④ Stand the MAIN Assy.

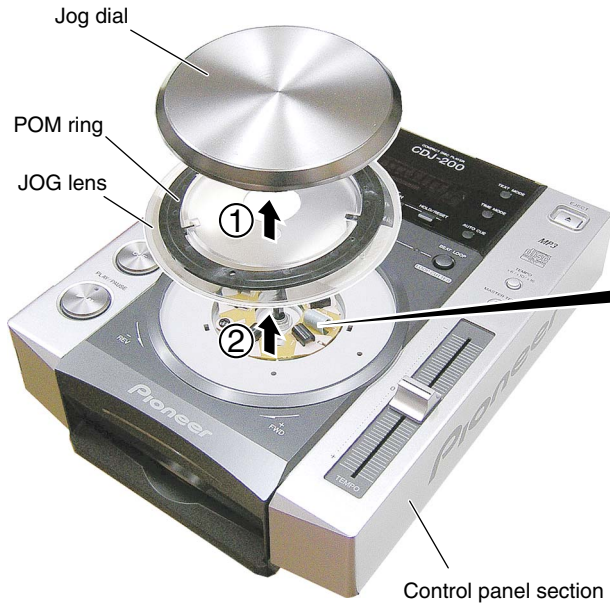


Diagnosis

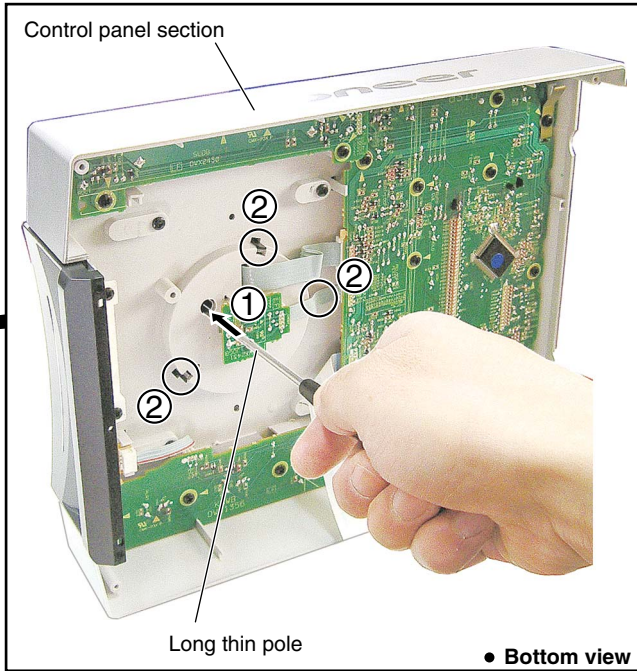
## 2 Control panel section

- ① Push the jog dial with a long thin pole, and remove the jog dial.
- ② Remove the POM ring and JOG lens by unhooking the three hooks.

A



B



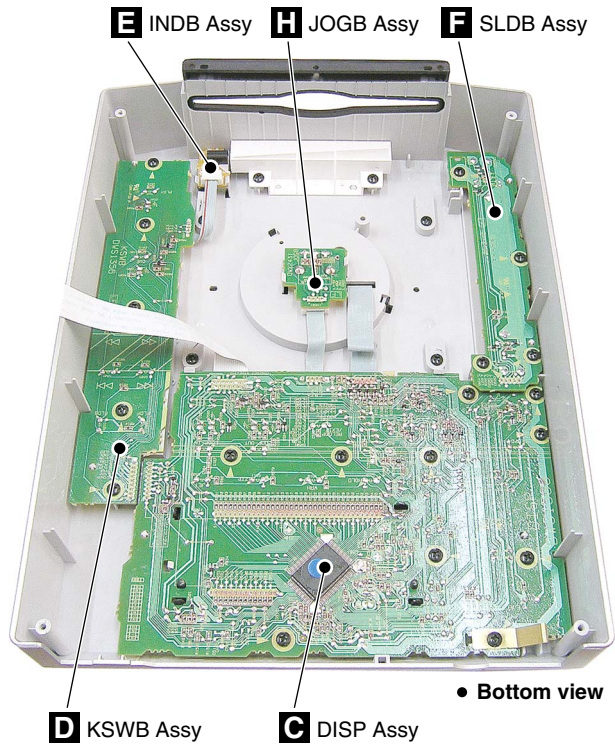
C



D



E

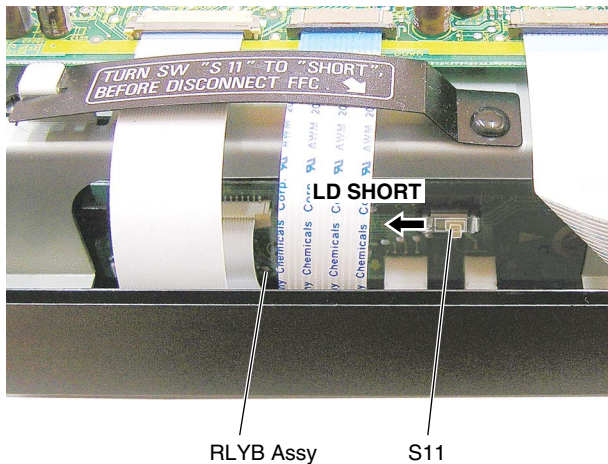


F

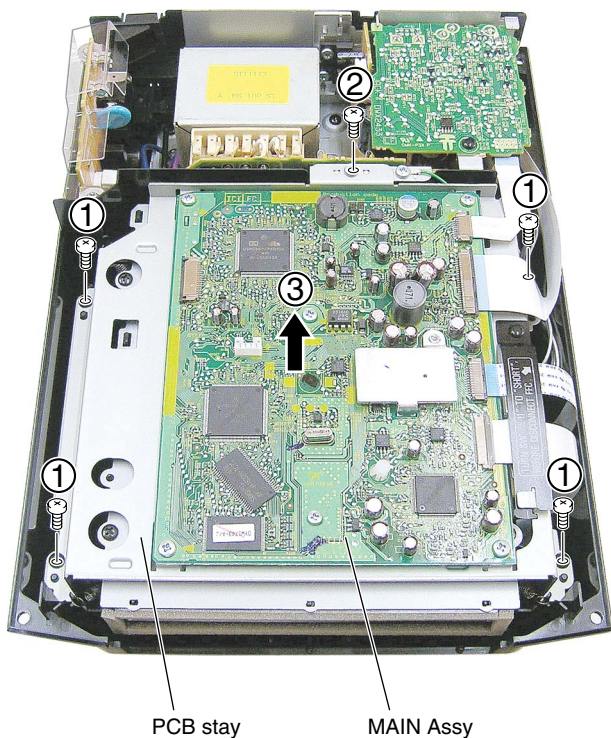
### 3 Slot-in mechanism section

#### ● Short-circuit switch for the pickup

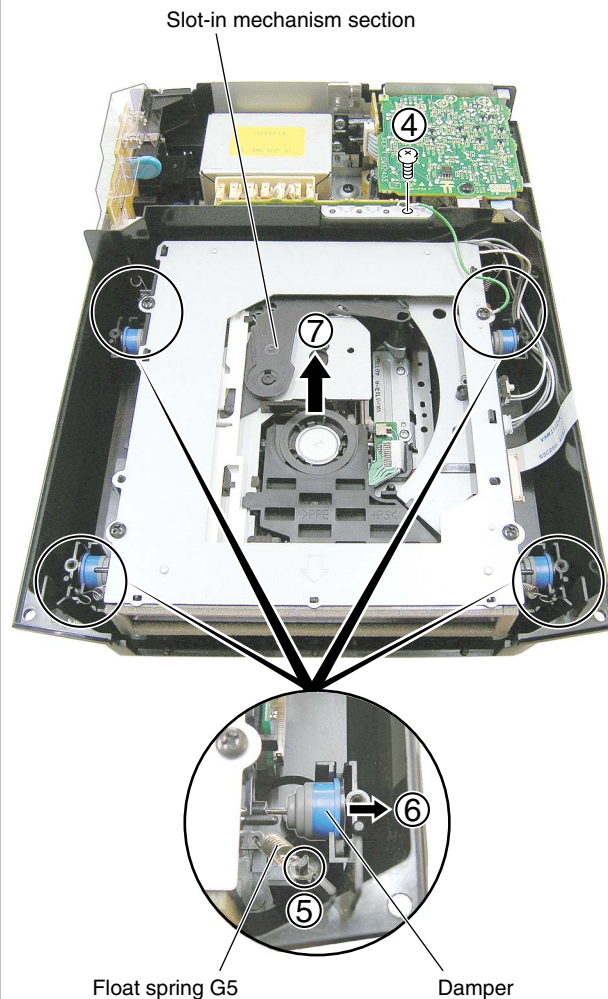
Before disconnecting the flexible cable for the pickup, change the position of the S11 switch on the RLYB Assy to LD SHORT.



- ① Remove the four screws.
- ② Remove the one screw.
- ③ Remove the PCB stay with the MAIN Assy.

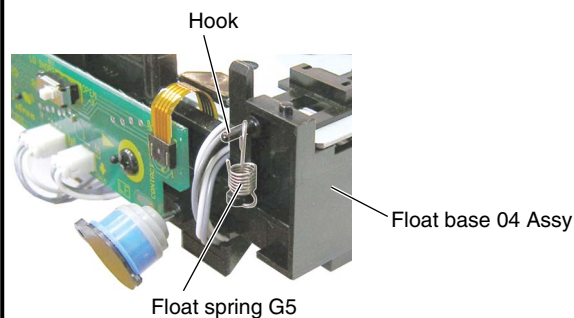


- ④ Remove the one screw.
- ⑤ Unhook the four float spring G5s.
- ⑥ Remove the four dampers.
- ⑦ Remove the slot-in mechanism section.



#### ● How to handle the float spring G5

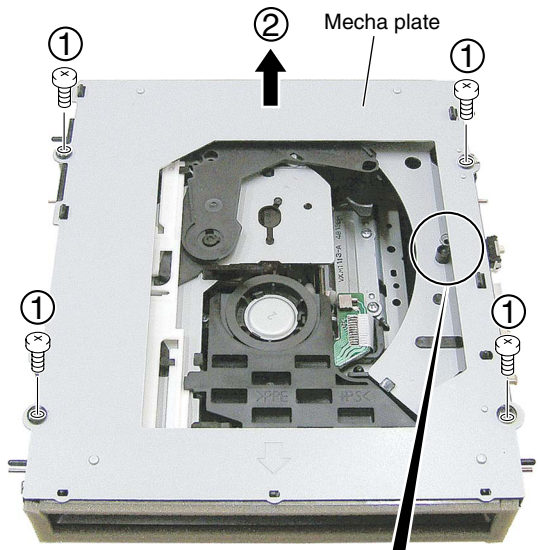
To avoid losing the float spring G5, after removing it, put it on the hook of the float base 04 Assy.



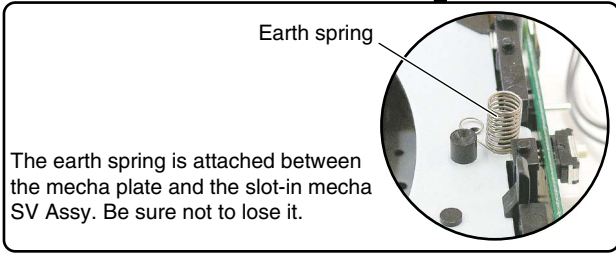
### 4 Slot-in mecha SV Assy

- ① Remove the four screws.
- ② Remove the mecha plate.

A



B

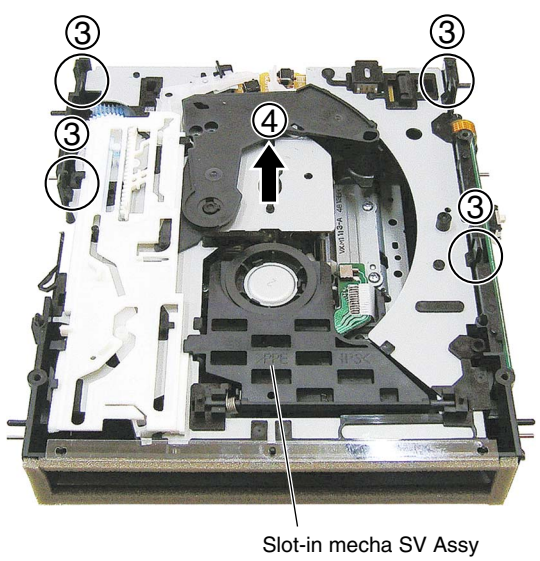


C



- ③ Unhook the four hooks.
- ④ Remove the slot-in mecha SV Assy.

D



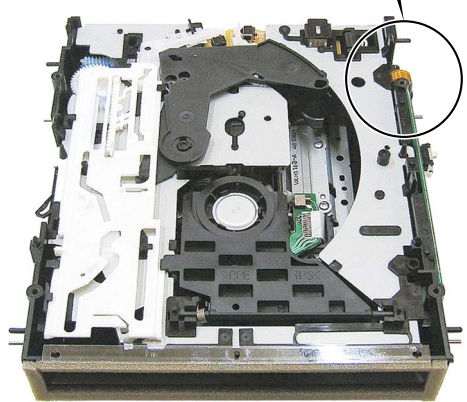
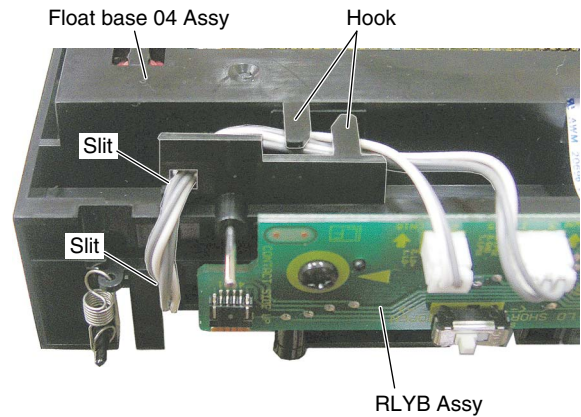
E



F

### ● Arrangement of the jumper wires

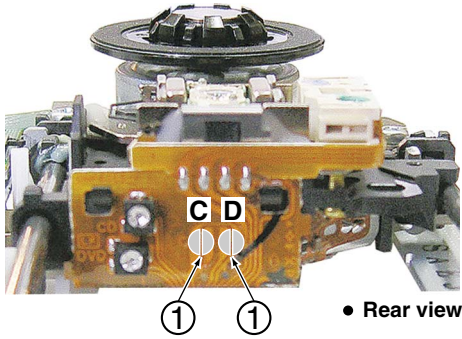
#### ● Bottom view



### 5 Traverse Assy 03-S

① Short-circuit two points of C and D soldering.

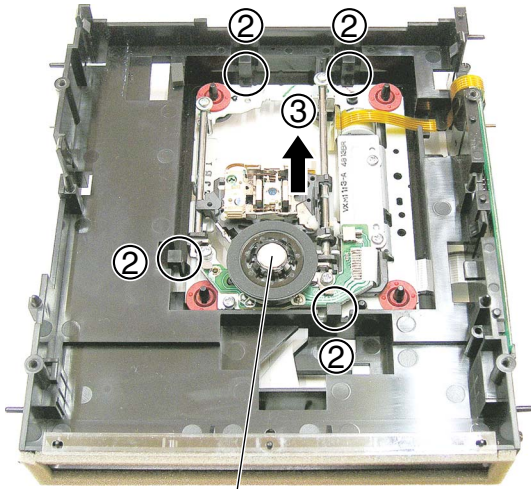
**Note:** After replacement, connect the flexible cable, then remove the soldered joint (open).



② Unhook the four hooks.

③ Disconnect the some flexible cables at need.

④ Remove the traverse Assy 03-S.

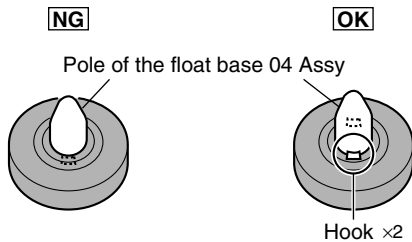


Traverse Assy 03-S



**Replace**

#### ● Note on the float rubber installation

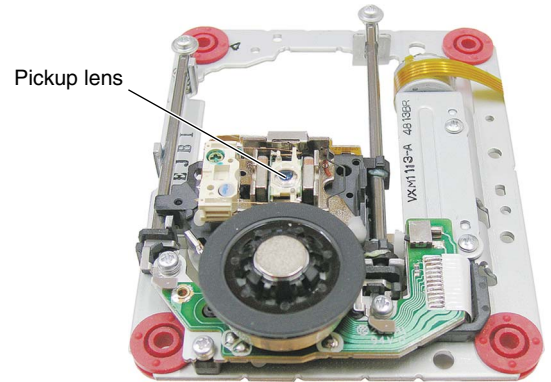


#### ● Cleaning the pickup lens

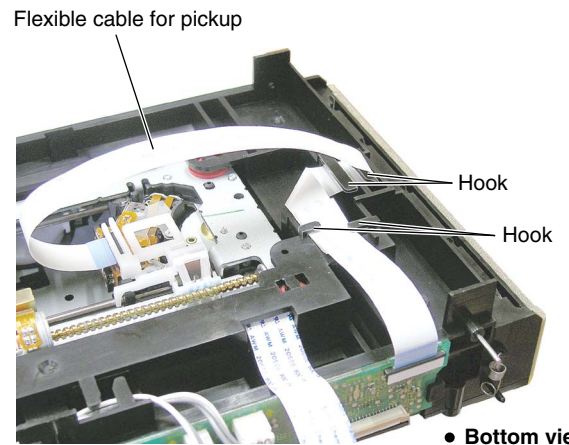
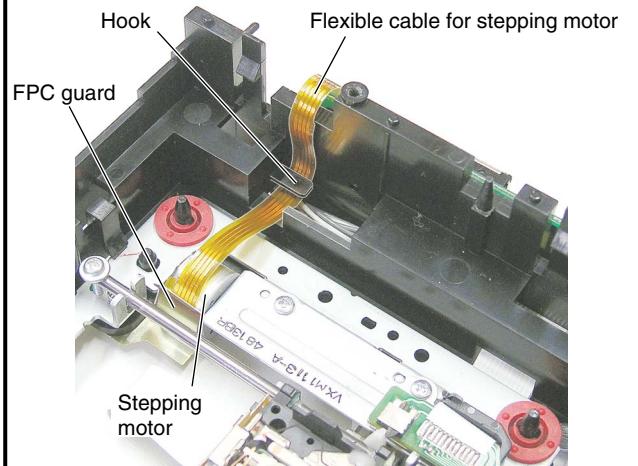


Before shipment, be sure to clean the pickup lens, using the following cleaning materials:

- Cleaning liquid : GEM1004
- Cleaning paper : GED-008



#### ● Arrangement of the flexible cables



## 7.2 PARTS

### 7.2.1 IC

The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

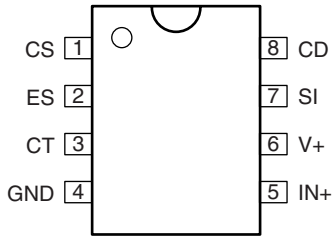
#### List of IC

NJM2374AD, PQ1M335M2SPQ, TC94A15FG, BD7907FS, BH2220FVM, DYW1743, SCF5249LAG120

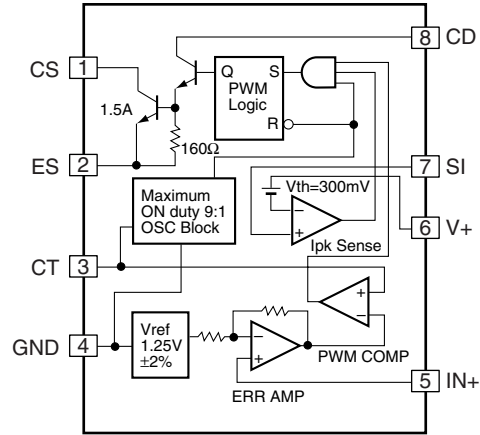
#### NJM2374AD (MAIN ASSY : IC101)

DC/DC Converter IC

##### Pin Arrangement (Top view)



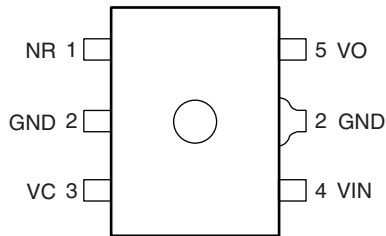
##### Block Diagram



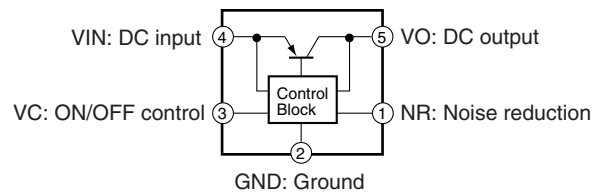
#### PQ1M335M2SPQ (MAIN ASSY : IC104)

Regulator IC

##### Pin Arrangement (Top view)



##### Block Diagram

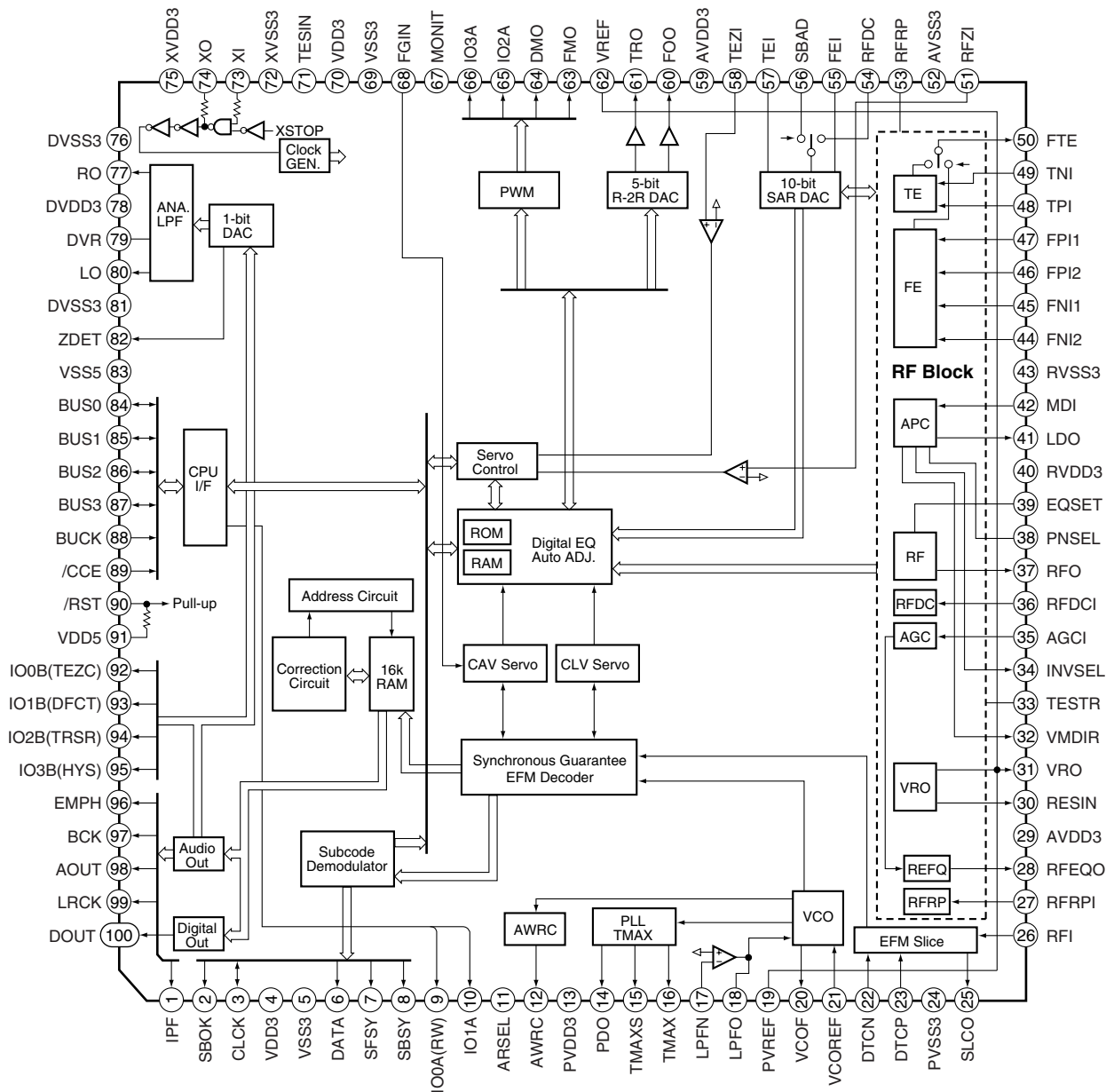




# TC94A15FG (MAIN ASSY : IC105)

• Digital Servo IC

## • Block Diagram



## ● Pin Function

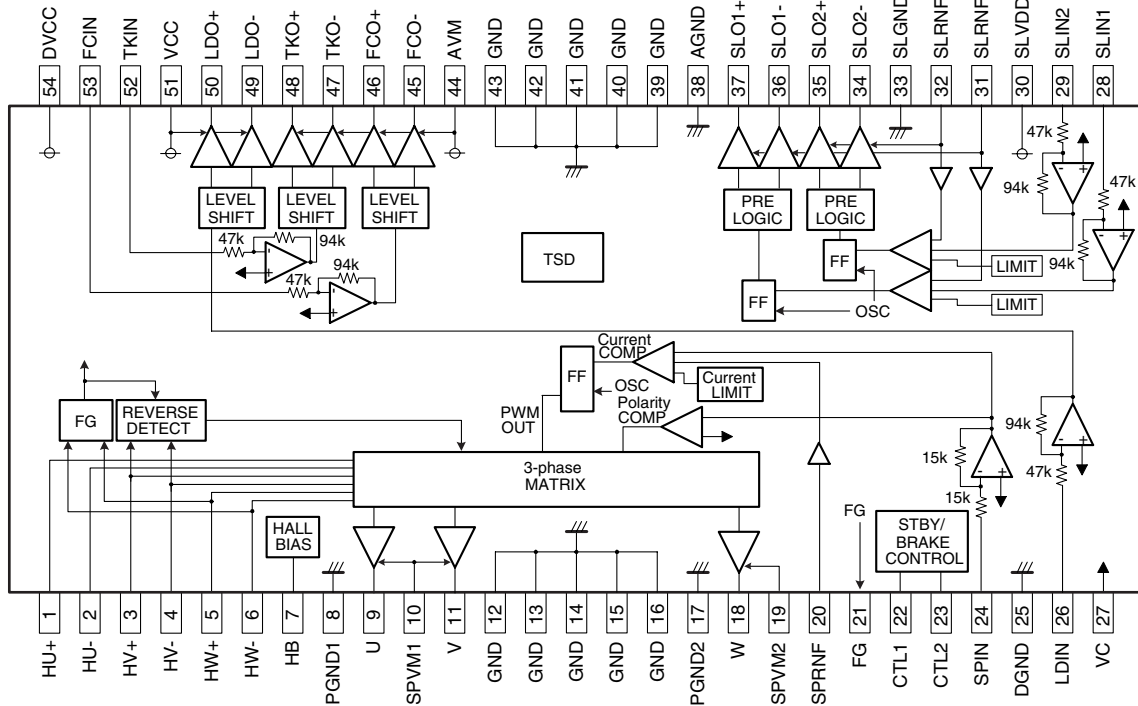
No.	Pin Name	I/O	Pin Function
1	IPF	O	Correction flag output. "H" if the AOOUT output is an uncorrectable symbol in C2 correction.
2	SBOK	O	CRCC check result output for subcode Q data. "H" if the check result is OK.
3	CLCK	I/O	Clock input/output for reading subcode P to W data. The polarity of the input/output can be selected with a command.
4	VDD3	–	Power supply for 3.3V digital circuits.
5	VSS3	–	Grounding for digital circuits.
6	DATA	O	Subcode P to W data output.
7	SFSY	O	Playback section frame sync signal output.
8	SBSY	I/O	Subcode block sync output. "H" in the S1 position when a subcode sync is detected.
9	IO0A (RW)	O	"H" when the CD-RW is detected (usually "L"), and switch the OEIC gain.
10	IO1A	O	Unsetting. Always "L"
11	ARSEL	I	Usually fixed at "H" level.
12	AWRC	O	VCO control for active wide-range PLL.
13	PVDD3	–	3.3V power supply dedicated to the PLL section.
14	PDO	O	Signal output for phase difference between EFM and PLCK signals.
15	TMAXS	O	TMAX detection result output. The same signal is output from the TMAX and TMAXS pins.
16	TMAX	O	TMAX detection result output. The same signal is output from the TMAX and TMAXS pins.
17	LPFN	I	Inversion input for PLL section low-pass filter amplifier.
18	LPFO	O	Output for PLL section low-pass filter amplifier.
19	PVREF	–	1.65V reference voltage dedicated to the PLL section.
20	VCOF	O	VCO filter pin.
21	VCOREF	I	Input for VCO center frequency reference level.
22	DTCN	O	Analog slicer filter.
23	DTCP	O	Analog slicer filter.
24	PVSS3	–	Grounding dedicated to the PLL section.
25	SLCO	I	EFM slice level output.
26	RFI	I	RF signal input. An input resistance can be selected using a command.
27	RFRPI	I	RF ripple signal input.
28	RFEQO	O	RF equalizer circuit output.
29	AVDD3	–	Power supply for 3.3V analog circuits.
30	RESIN	I	Pin for connecting a resistor for reference current generation.
31	VRO	O	1.65V reference voltage output.
32	VMDIR	–	1.533V reference voltage output.
33	TESTR	O	Pin for connecting filter for RFEQO offset correction.
34	INVSEL	I	Test pin, usually fixed at "L" level.
35	AGCI	I	Input for RF signal amplitude adjustment amp.
36	RFDCI	I	Input for RF signal peak detection.
37	RFO	O	Output for RF signal generation amp.
38	PNSEL	I	Test pin, usually fixed at "H" level.
39	EQSET	O	External-connection for RF signal equalizer.
40	RVDD3	–	Power supply for 3.3V RF amp. core section.
41	LDO	O	Laser diode amp. output.
42	MDI	I	Monitor photodiode amp. input.
43	RVSS3	–	Grounding for 3.3V RF amp. core section.
44	FNI2	I	Main beam input. To be connected to PIN diode C.
45	FNI1	I	Main beam input. To be connected to PIN diode A.
46	FPI2	I	Main beam input. To be connected to PIN diode D.
47	FPI1	I	Main beam input. To be connected to PIN diode B.
48	TPI	I	Subbeam input. To be connected to PIN diode F.
49	FNI	I	Subbeam input. To be connected to PIN diode E.

No.	Pin Name	I/O	Pin Function
50	FTE	O	Focus/tracking signal output. (Test pin for servo characteristic measurement.)
51	RFZI	I	Input for RF ripple zero-cross signal.
52	AVSS3	–	Grounding for analog circuits.
53	RFRP	O	RF ripple signal output.
54	RFDC	O	Pin for the RF peak detection signal supporting hologram.
55	FEI	O	Focus error signal pin.
56	SBAD	O	Subbeam addition signal pin.
57	TEI	O	Tracking error signal pin.
58	TEZI	I	Input for tracking error signal zero-cross.
59	AVDD3	–	Power supply for 3.3V analog circuits.
60	FOO	O	Focus equalizer output.
61	TRO	O	Tracking equalizer output.
62	VREF	O	Reference voltage for analog circuits.
63	FMO	O	Speed error/feed equalizer output.
64	DMO	O	Disc equalizer output.
65	IO2A	O	Unsetting. Always "L"
66	IO3A	O	Unsetting. Always "L"
67	MONIT	O	Pin for monitoring signals in the DSP.
68	FGIN	I	FG signal input for CAV. CLV: "L", CAV: FG input
69	VSS3	–	Grounding for digital circuits.
70	VDD3	–	Power supply for 3.3V digital circuits.
71	TESIN	I	Test input pin, usually fixed at "L" level.
72	XVSS3	–	Grounding for system clock oscillator circuit.
73	XI	I	Input for system clock oscillator circuit.
74	XO	O	Output for system clock oscillator circuit.
75	XVDD3	–	Power supply for 3.3V system clock oscillator circuit.
76	DVSS3	–	Grounding for 1-bit DAC.
77	RO	O	R channel data normal output for 1-bit DAC.
78	DVDD3	–	3.3V power supply for 1-bit DAC.
79	DVR	O	Reference voltage for 1-bit DAC.
80	LO	O	L channel data normal output for 1-bit DAC.
81	DVSS3	–	Grounding for 1-bit DAC.
82	ZDET	O	Zero detection flag output for 1-bit DAC.
83	VSS5	–	Grounding for interface.
84	BUS0	I/O	Data input/output for the microcomputer interface
85	BUS1	I/O	Data input/output for the microcomputer interface
86	BUS2	I/O	Data input/output for the microcomputer interface
87	BUS3	I/O	Data input/output for the microcomputer interface
88	BUCK	I	Clock input for the microcomputer interface
89	/CCE	I	Chip enable signal input for the microcontroller interface. BUS3 to BUS0 are active if this pin is "L".
90	/RST	I	Reset signal input. The internal registers and servo section registers are reset, respectively, when the reset signal is "L" and on the rising edge of the reset signal.
91	VDD5	–	Power supply for the interface,
92	IO0B (TEZC)	O	The signal that inverts H/L with TE zero-cross.
93	IO1B (DFCT)	O	Defect signal. Normally "H", but it becomes "L" when detecting dirt on the disc.
94	IO2B (TRSR)	O	It becomes "L" during tracking close or search.
95	IO3B (HYS)	O	It becomes "L" in the hysteresis operation.
96	EMPH	O	Emphasis flag output. EMPH ON: "H", EMPH OFF: "L" The output polarity is switched, using a command.
97	BCK	O	Bit clock output. 32fs, 48fs and 64fs are selected, using a command.
98	AOUT	O	Audio data output. Which bit is first (MSB first or LSB first) can be selected, using a command.
99	LRCK	O	LR channel clock output. L ch: "L", R ch: "H" The output polarity can be inverted, using a command.
100	DOUT	O	Digital-out output

# BD7907FS (MAIN ASSY : IC107)

• 6-ch Combo Driver IC

## ● Block Diagram



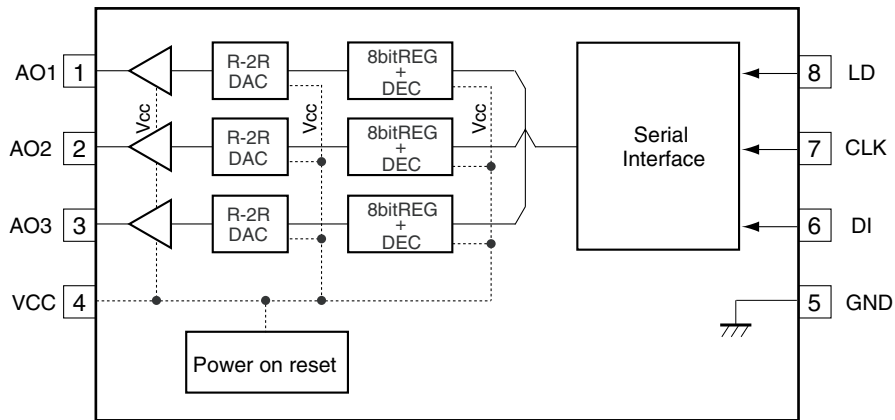
## ● Pin Function

No.	Pin Name	I/O	Pin Function	No.	Pin Name	I/O	Pin Function
1	HU+	I	Hall amp. U positive input	28	SLIN1	I	Sled motor driver 1 input
2	HU-	I	Hall amp. U negative input	29	SLIN2	I	Sled motor driver 2 input
3	HV+	I	Hall amp. V positive input	30	SLVDD	-	Sled motor MOS pre-power supply
4	HV-	I	Hall amp. V negative input	31	SLRNF1	I	Current sense input of sled motor driver 1
5	HW+	I	Hall amp. W positive input	32	SLRNF2	I	Current sense input of sled motor driver 2
6	HW-	I	Hall amp. W negative input	33	SLGND	-	Sled motor driver power ground
7	HB	-	Hall bias	34	SLO2-	O	Negative output of sled motor driver 2
8	PGND1	-	Spindle driver power ground 1	35	SLO2+	O	Positive output of sled motor driver 2
9	U	O	Spindle driver output U	36	SLO1-	O	Negative output of sled motor driver 1
10	SPVM1	I	Spindle driver power supply 1	37	SLO1+	O	Positive output of sled motor driver 1
11	V	O	Spindle driver output V	38	AGND	-	BTL block ground
12	GND	-	GND	39	GND	-	GND
13	GND	-	GND	40	GND	-	GND
14	GND	-	GND	41	GND	-	GND
15	GND	-	GND	42	GND	-	GND
16	GND	-	GND	43	GND	-	GND
17	PGND2	-	Spindle driver power ground 2	44	AVM	-	Actuator driver block power supply
18	W	O	Spindle driver output W	45	FCO-	O	Negative output of focus driver
19	SPVM2	-	Spindle driver power supply 2	46	FCO+	O	Positive output of focus driver
20	SPRNF	I	Spindle driver current sense	47	TKO-	O	Negative output of tracking driver
21	FG	O	FG signal output	48	TKO+	O	Positive output of tracking driver
22	CTL1	I	Driver logic control input 1	49	LDO-	O	Negative output of loading driver
23	CTL2	I	Driver logic control input 2	50	LDO+	O	Positive output of loading driver
24	SPIN	I	Spindle driver input	51	VCC	-	BTL pre and loading power supply
25	DGND	-	PWM block pre-ground	52	TKIN	I	Tracking driver input
26	LDIN	I	Loading driver input	53	FCIN	I	Focus driver input
27	VC	I	Reference voltage input	54	DVCC	-	PWM block control power supply

## ■ BH2220FVM (MAIN ASSY : IC109)

• 8-bit 3ch D/A Converter IC

### ● Block Diagram



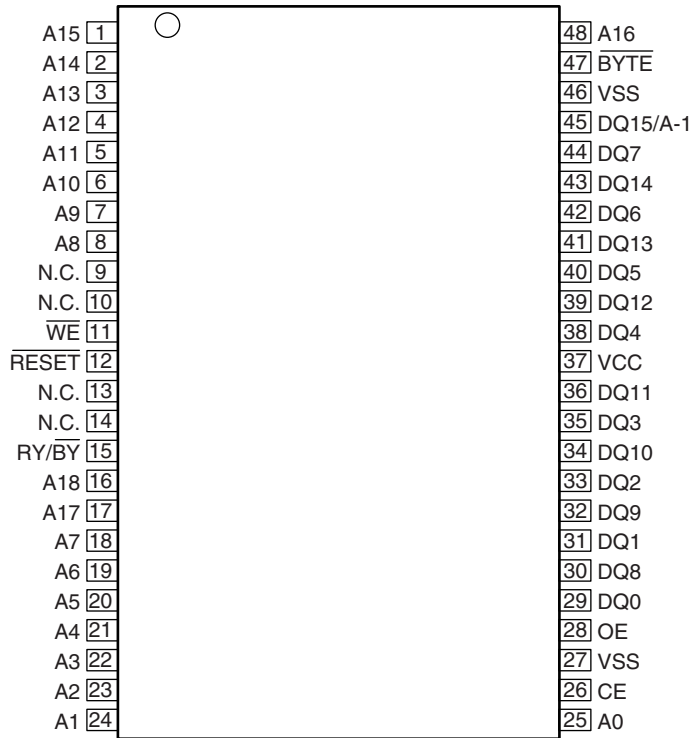
### ● Pin Function

No.	Pin Name	I/O	Pin Function
1	AO1	O	Analog output
2	AO2	O	Analog output
3	AO3	O	Analog output
4	VCC	-	Power supply
5	GND	-	Ground
6	DI	I	Serial data input
7	CLK	I	Serial clock input
8	LD	I	Serial data load input

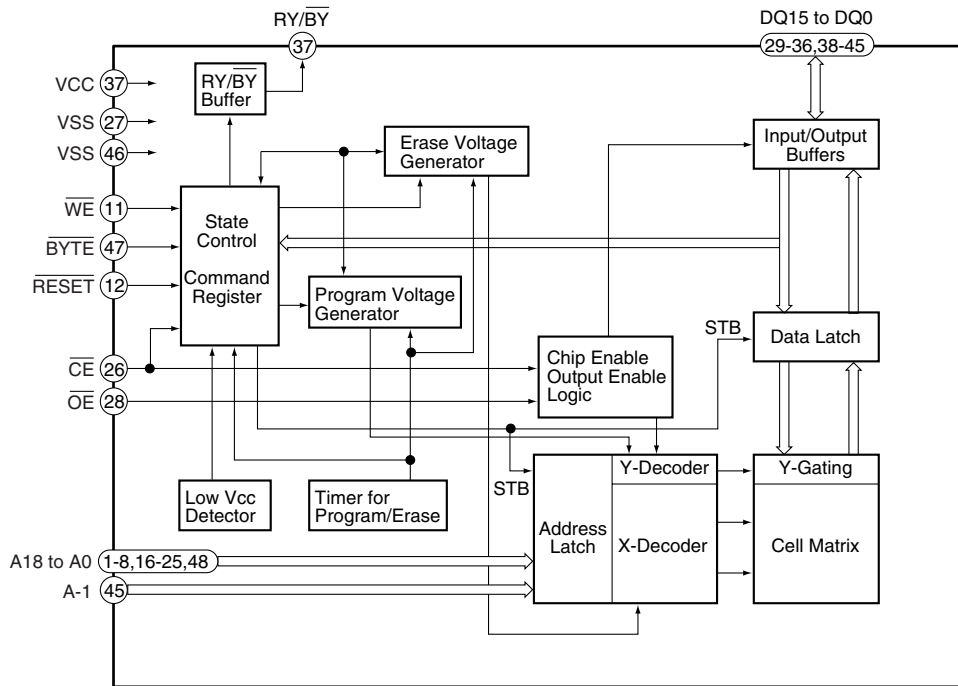
# DYW1743 (MAIN ASSY : IC118)

• Flash ROM

## A • Pin Arrangement (Top view)



## D • Block Diagram



● Pin Function

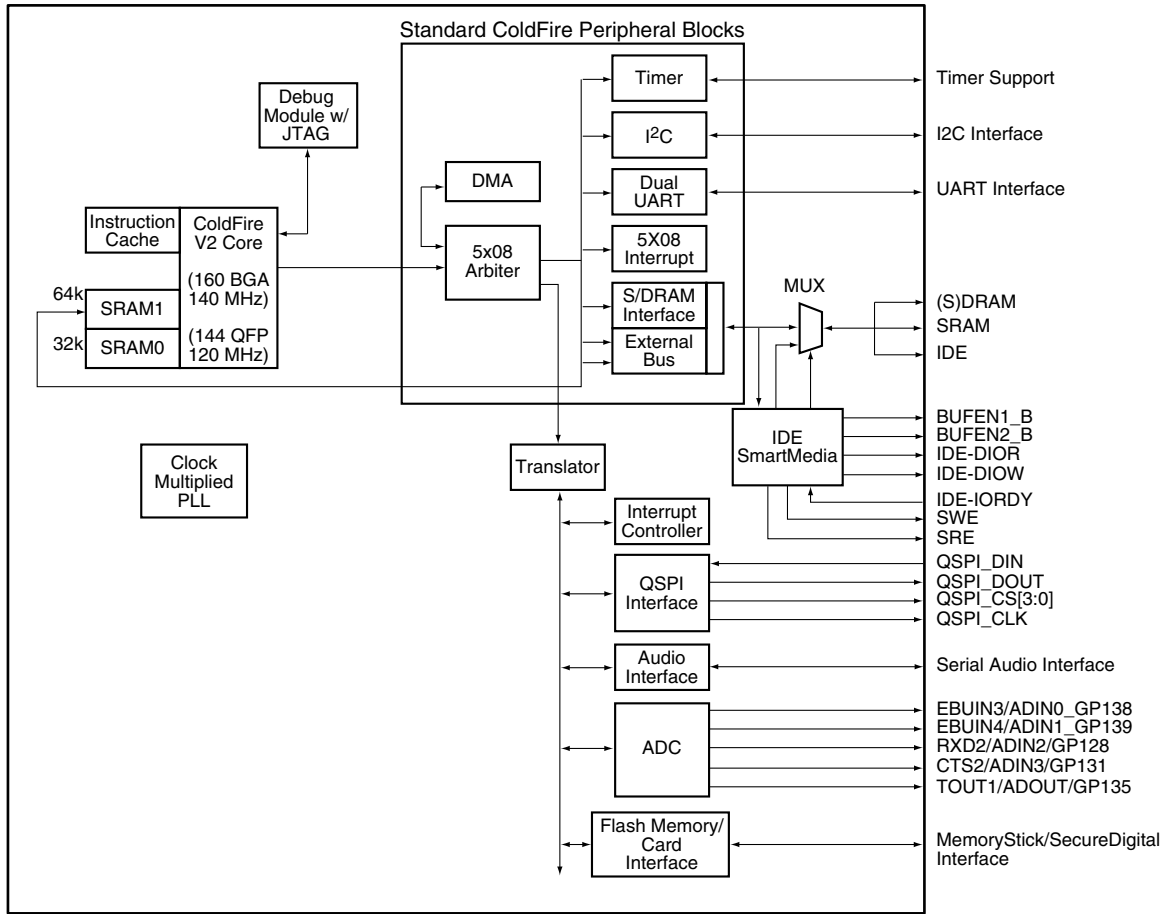
No.	Pin Name	I/O	Pin Function	No.	Pin Name	I/O	Pin Function
1	A15	I	Address input	25	A0	I	Address input
2	A14	I	Address input	26	$\overline{CE}$	I	Chip enable
3	A13	I	Address input	27	VSS	-	Ground
4	A12	I	Address input	28	$\overline{OE}$	I	Output enable
5	A11	I	Address input	29	DQ0	I/O	Data input/output
6	A10	I	Address input	30	DQ8	I/O	Data input/output
7	A9	I	Address input	31	DQ1	I/O	Data input/output
8	A8	I	Address input	32	DQ9	I/O	Data input/output
9	N.C.	-	No connection	33	DQ2	I/O	Data input/output
10	N.C.	-	No connection	34	DQ10	I/O	Data input/output
11	$\overline{WE}$	I	Write enable	35	DQ3	I/O	Data input/output
12	$\overline{RESET}$	I	Hardware reset	36	DQ11	I/O	Data input/output
13	N.C.	-	No connection	37	VCC	-	Power supply
14	N.C.	-	No connection	38	DQ4	I/O	Data input/output
15	RY/ $\overline{BY}$	O	Ready/Busy output	39	DQ12	I/O	Data input/output
16	A18	I	Address input	40	DQ5	I/O	Data input/output
17	A17	I	Address input	41	DQ13	I/O	Data input/output
18	A7	I	Address input	42	DQ6	I/O	Data input/output
19	A6	I	Address input	43	DQ14	I/O	Data input/output
20	A5	I	Address input	44	DQ7	I/O	Data input/output
21	A4	I	Address input	45	DQ15/A-1	I/O	Data input/output / Address input
22	A3	I	Address input	46	VSS	-	Ground
23	A2	I	Address input	47	$\overline{BYTE}$	I	Selects 8-bit or 16-bit mode
24	A1	I	Address input	48	A16	I	Address input

# SCF5249LAG120 (MAIN ASSY : IC120)

• 32-bit RISC MPU

A

## ● Block Diagram



B

C

D

E

F



## ● Pin Function

No.	Pin Name	I/O	Pin Function
1	SCL/QSPI_CLK	O	Serial clock of DSP/DAC/Stepper DA
2	CS0	O	Chip select output to FLASH ROM
3	A21	O	SDRAM bank address output BA1
4	A11	O	Address output to SDRAM(A5)/FLASH ROM(A10)
5	A10	O	Address output to SDRAM(A6)/FLASH ROM(A9)
6	A9	O	Address output to SDRAM(A7)/FLASH ROM(A8)
7	A18	O	Address output to SDRAM(A9)/FLASH ROM(A17)
8	A17	O	Address output to SDRAM(A8)/FLASH ROM(A16)
9	BCLK/GPIO10	O	SDRAM clock
10	SCLK_OUT/GPIO15	I/O	TC94A15F bus #2
11	BCLKE	O	SDRAM clock enable
12	SDA/QSPI_DIN	I	DSP serial data input
13	DATA24	I/O	SDRAM/FLASH data input/output D8
14	A22	O	SDRAM bank address output BA0
15	SDUDQM	O	SDRAM UDQM
16	EF/GPIO19	O	Loading motor control signal
17	DATA25	I/O	SDRAM/FLASH data input/output D9
18	DATA26	I/O	SDRAM/FLASH data input/output D10
19	DATA27	I/O	SDRAM/FLASH data input/output D11
20	PAD-GND	-	GND
21	DATA28	I/O	SDRAM/FLASH data input/output D12
22	DATA29	I/O	SDRAM/FLASH data input/output D13
23	SDATA3/GPIO56	O	Driver IC muting control 2
24	DATA30	I/O	SDRAM/FLASH data input/output D14
25	BUFENB1/GPIO57	O	Loading motor control signal
26	DATA31	I/O	SDRAM/FLASH data input/output D15
27	CORE-VDD	-	Core power supply (1.8V)
28	A13	O	Address output to SDRAM(A12)/FLASH ROM(A3)
29	CORE-GND	-	GND
30	A23	-	NC
31	A14	O	Address output to SDRAM(A2)/FLASH ROM(A13)
32	A15	O	Address output to SDRAM(A1)/FLASH ROM(A14)
33	A16	O	Address output to SDRAM(A0)/FLASH ROM(A15)
34	PAD-VDD	-	I/O power supply (3.3V)
35	A19	O	Address output to SDRAM(A10)/FLASH ROM(A18)
36	A20	O	Address output to SDRAM(A11)
37	TEST2	I	Connect to GND. Mode select pin
38	SDRAM_CS1	O	SDRAM chip select
39	SDATA1_BS1/GPIO9	I/O	Driver IC muting control 1
40	SDRAS	O	SDRAM RAS
41	SDCAS	O	SDRAM CAS
42	SDWE	O	SDRAM WE
43	SDLDQM	O	SDRAM LDQM
44	GPIO5	O	Display microcomputer reset
45	QSPI_CS0/GPIO29	O	DSP chip select
46	QSPI_DOUT/GPIO26	O	DSP/DAC/StepperDA serial data output
47	GPIO6	O	Audio muting control output
48	DATA21	I/O	SDRAM/FLASH data input/output D5

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No.	Pin Name	I/O	Pin Function
49	DATA19	I/O	SDRAM/FLASH data input/output D3
50	QSPI_CS2/GPIO21	O	DAC chip select output
51	DATA20	I/O	SDRAM/FLASH data input/output D4
52	DATA22	I/O	SDRAM/FLASH data input/output D6
53	DATA18	I/O	SDRAM/FLASH data input/output D2
54	DATA23	I/O	SDRAM/FLASH data input/output D7
55	DATA17	I/O	SDRAM/FLASH data input/output D1
56	PAD-VDD	-	I/O power supply (3.3V)
57	DATA16	I/O	SDRAM/FLASH data input/output D0
58	CFLG/GPIO18	I	DAC zero detecting input
59	EBUOUT1/GPO36	O	NC
60	CORE-GND	-	GND
61	EBUIN3/ADIN0/GPI38	I	Actuator bias data comparator input
62	EBUIN2/GPI37	I	FLASH-ROM busy input
63	CORE-VDD	-	Core power supply (1.8V)
64	SCL2/GPIO3	I	Subcode sync input
65	RSTI	I	System reset
66	TOUT1/ADOUT/GPO35	O	Comparison voltage output of actuator bias comparator
67	LRCK2/GPIO44	I	Synchronous LRCK input of the audio data output to the DSP
68	OE	O	FLASH output enable
69	SDA2/GPIO55	O	TC94A15F reset output
70	SDATAO2/GPO41	O	Audio data output to the DSP
71	SCLK2/GPIO48	I	Synchronous serial CLK input of the audio data output to the DSP
72	PAD-GND	-	GND
73	TEST3	I	Connect to GND. Mode select pin
74	SDATAO1/GPIO25	O	TC94A15F chip enable
75	LRCK1	I	Audio synchronous LRCK input from the TC94A15F
76	LRCK4/GPIO46	I	TC94A15F bus clock
77	SDATAI4/GPI42	I	Actuator bias data comparator input
78	SCLK1	I	Audio synchronous serial CLK input from the TC94A15F
79	SCLK4/GPIO50	O	DSP reset output
80	TA/GPIO20	I	Pull-up port 3.3V for debugging
81	SDATAI1	I	Audio data input from the TC94A15F
82	EBUIN1/GPI36	I	Connect to GND
83	PLLGRDVDD	-	PLL power supply (1.8V)
84	PLLGRDGND	-	GND
85	PLLPADGND	-	GND
86	PLLPADVDD	-	PLL power supply (3.3V)
87	PLLCOREGND	-	GND
88	PLLCOREVDD	-	PLL power supply (1.8V)
89	IDE-DIOW/GPIO14	I/O	TC94A15F bus #1
90	CRIN	I	16.9344MHz system clock input
91	CS2/IDE-DIOR/GPIO13	I/O	TC94A15F bus #0
92	IDE-IORDY/GPIO16	I/O	TC94A15F bus #3
93	MCLK1/GPO39	O	DSP/DAC clock output 16.9344MHz
94	MCLK2/GPO42	O	NC
95	XTRIM/GPO38	O	PLAY control signal to the DSP
96	TRST/DSCLK	I	Connect to GND

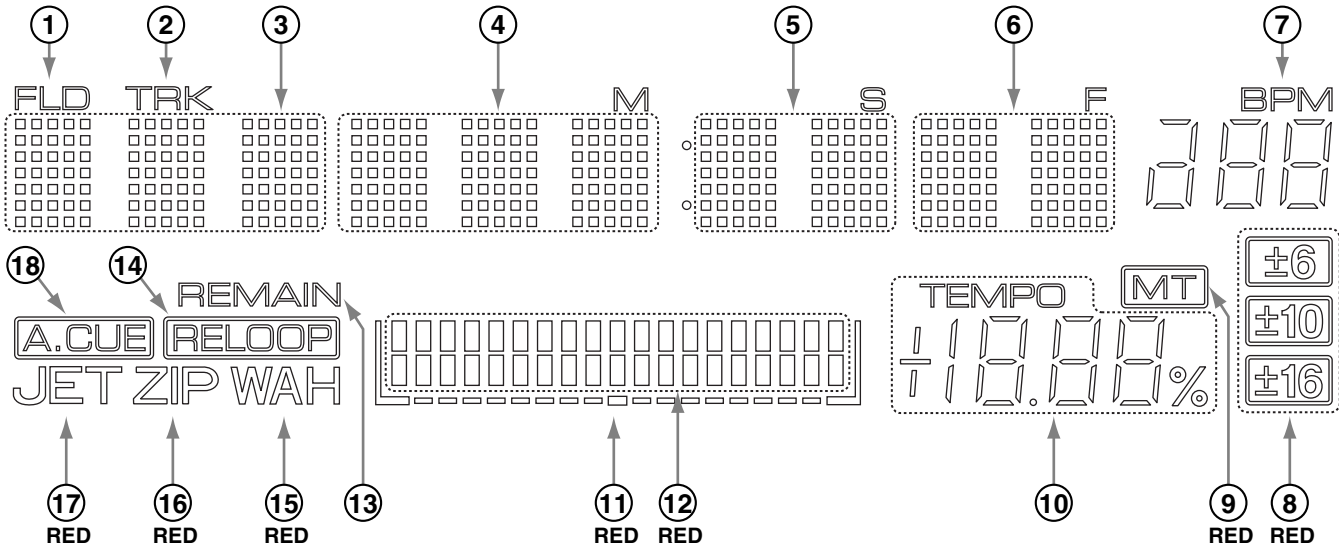
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No.	Pin Name	I/O	Pin Function
97	CORE-VDD	-	Core power supply (1.8V)
98	RW_B	O	Write enable output to the FLASH ROM
99	TMS/BKPT	I	Pull-up 3.3V
100	CORE-GND	-	GND
101	TCK	I	Connect to GND
102	PAD-GND	-	GND
103	PST3/GPIO62	O	NC
104	CNPSTCLK/GPO63	O	NC
105	PST1/GPIO60	O	NC
106	PAD-VDD	-	I/O power supply (3.3V)
107	PST2/GPIO61	O	NC
108	PST0/GPIO59	O	NC
109	TDI/DSI	I	Pull-up 3.3V
110	TEST0	I	Connect to 3.3V. Mode select pin
111	TIN0/GPI33	I	Control pin input #2
112	HI-Z	I	Connect to 3.3V.
113	DDATA3/GPIO4	I	Control pin input #1
114	TOUT0/GPO33	O	Control pin output
115	DDATA1/GPIO1	I	Spindle FG input
116	DDATA2/GPIO2	I	DSP data request
117	CTS2_B/ADIN3/GPI31	I	Slider inside SW detecting input (L: ON)
118	DDATA0/GPIO0	I	DAC zero detecting input
119	RXD2/GPI28/ADIN2	I	232C RXD for debugging
120	TDSO	O	Pull-up 3.3V
121	RTS2_B/GPO31	O	Latch strobe output of stepper D/A
122	SDATAI3/GPI41	I	Loading mecha. SW input 2
123	CTS1_B/GPI30	I	Loading mecha. SW input 1
124	TXD2/GPO28	O	232C TXD for debugging
125	RTS1_B/GPO30	O	Acknowledge of the display microcomputer
126	EBUIN4/ADIN1/GPI39	I	Request of the display microcomputer
127	TXD1/GPO27	O	Serial transmission of the display microcomputer
128	RXD1/GPI27	I	Serial receiving of the display microcomputer
129	CS1/GPIO58	O	NC
130	CORE-GND	-	GND
131	A1	O	Address output to FLASH ROM(A0)
132	TIN1/GPIO23	I	Tracking cross pulse input
133	A2	O	Address output to FLASH ROM(A1)
134	A3	O	Address output to FLASH ROM(A2)
135	PAD-GND	-	GND
136	A4	O	Address output to FLASH ROM(A3)
137	A6	O	Address output to FLASH ROM(A5)
138	A5	O	Address output to FLASH ROM(A4)
139	A8	O	Address output to FLASH ROM(A7)
140	A7	O	Address output to FLASH ROM(A6)
141	CORE-VDD	-	Core power supply (1.8V)
142	A12	O	Address output to SDRAM(A4)/FLASH ROM(A11)
143	TEST1	I	Connect to GND. Mode select pin
144	PAD-VDD	-	I/O power supply (3.3V)

## 7.2.2 FL

### DEL1054 (DISP ASSY : V501)

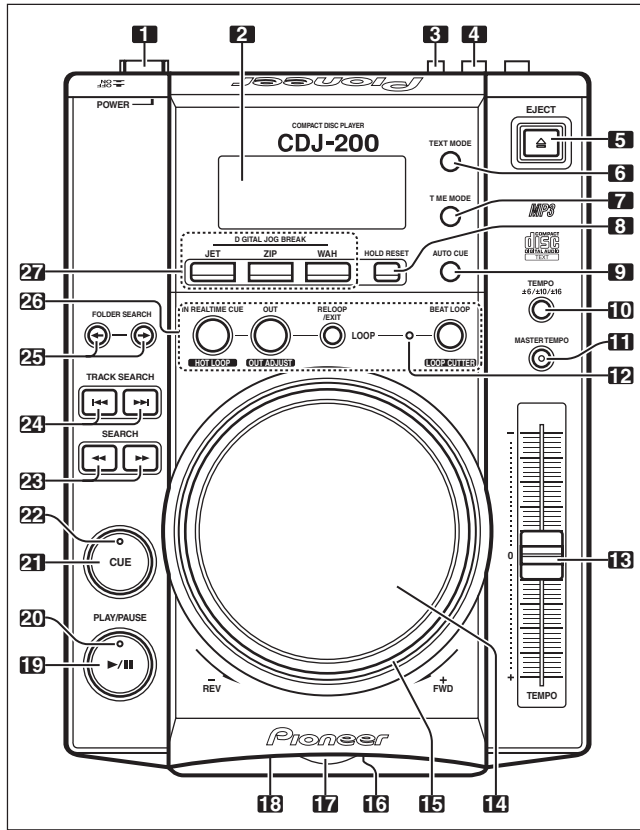
• FL Tube



#### • Summary of Display

No.	Contents
1	Lights when FOLDER NUMBER is displayed
2	Lights when TRACK NUMBER is displayed
3	Displays FOLDER NUMBER or TRACK NUMBER or TEXT
4	Displays the time (minutes) or TEXT
5	Displays the time (seconds) or TEXT
6	Displays the time (frames) or TEXT
7	Displays the BPM
8	Lights of TEMPO range is selected
9	Lights when MASTER TEMPO function is ON
10	Displays the TEMPO from $\pm 16\%$
11	Scale of the bar graph of playback time (Lights always)
12	Indications playback time with the scaled bar graph
13	Lights when remaining playback time of the track
14	Lights when the unit is in reloop standby or performing a loop
15	Blink when WAH function is ON (Lights when HOLD function is ON)
16	Blink when ZIP function is ON (Lights when HOLD function is ON)
17	Blink when JET function is ON (Lights when HOLD function is ON)
18	Lights when AUTO CUE function is ON

# 8. PANEL FACILITIES



**1. POWER switch (■ OFF/▲ ON)**

This switch is located on the rear panel of the unit. Switches the unit's power ON/OFF.

**2. Display**

**3. PHONES VOL dial**

Located on the rear panel of the unit. Adjusts the volume of the headphones.

**4. PHONES connector**

Located on the rear panel of the unit. φ6.3 mm phone plug headphones can be connected.

**5. EJECT button (▲)**

Ejects the disc.

**6. TEXT MODE button**

Changes the TEXT display.

**7. TIME MODE button**

Toggles the time display between the remaining track time and elapsed time.

**8. HOLD/RESET button**

Preserves the effect of the Digital Jog Break.

**9. AUTO CUE button**

Toggles the Auto Cue ON/OFF.

**10. TEMPO control range button (±6/±10/±16)**

Changes the variable range of the tempo control.

**11. MASTER TEMPO button/indicator**

Turns the Master Tempo function ON/OFF (lights when turned ON).

**12. BEAT LOOP indicator**

Lights at the loop-in point during loop play.

**13. TEMPO control slider**

Controls the track's tempo (playback speed).

**14. Jog dial (-REV/+FWD)**

**15. Jog indicator**

- When no disc is inserted, the indicator is turned off.
- When disc is inserted and in normal mode, indicator is turned on.
- When the Digital Jog Break is ON, indicator flashes rapidly.
- When Digital Jog Break is in HOLD ON mode, indicator flashes slowly.

**16. Disc indicator**

Located on the front panel of the unit.

- When no disc is inserted, the indicator is turned on.
- When disc is loading and unloading, indicator flashes.
- When disc loading is completed, indicator turns off.

**17. Disc loading slot**

Located in front panel.

**18. Forced ejection hole**

Located in front panel of the unit.

**19. PLAY/PAUSE button (▶/⏸)**

**20. PLAY/PAUSE indicator (▶/⏸)**

Lights when playing, and turns off when in pause mode.

**21. CUE button**

Use to set and confirm cue point.

**22. CUE indicator**

Lights when cue point is set, and turns off when in pause mode.

**23. SEARCH buttons (◀◀, ▶▶)**

Use to perform fast-forward and fast-reverse (with sound) during playback mode.

**24. TRACK SEARCH buttons (◀◀, ▶▶)**

Changes tracks in the forward/reverse direction.

**25. FOLDER SEARCH buttons (←, →)**

When using a CD-ROM with folder layers, use to change folders in the forward/reverse direction.

**26. LOOP buttons**

■ **IN/REALTIME CUE/HOT LOOP button/indicator**

Use to input loop-in point. (IN)

Use to set the current playback point as cue point.

(REALTIME CUE)

When pressed during loop play, returns playback to loop-in point and begins replay.

(HOT LOOP)

■ **OUT/OUT ADJUST button/indicator**

Use to input loop-out point. (OUT)

When pressed during loop play, adjusts loop-out point.

(OUT ADJUST)

■ **RELOOP/EXIT button**

After finishing loop play, the stored loop-in/out information can be used to begin loop play again. (RELOOP)

When pressed during loop play, loop play stops and playback returns to normal playback mode. (EXIT)

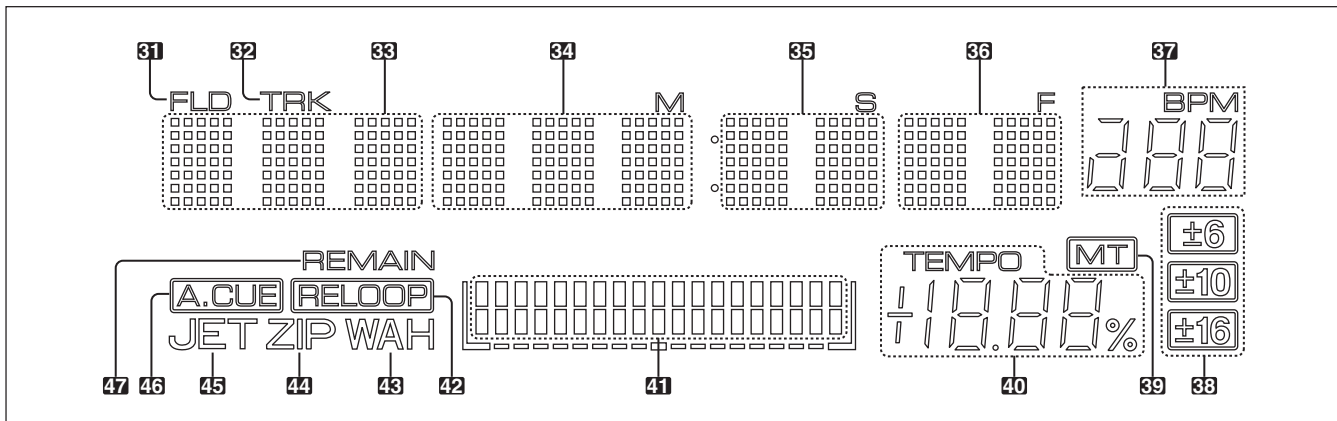
■ **BEAT LOOP/LOOP CUTTER button**

When pressed during play or pause modes, the loop end is automatically set based on the track's BPM (Beat Per Minutes), and loop play starts. (BEAT LOOP)

When pressed during loop play, the length of the loop is cut to half its length. (LOOP CUTTER)

**27. DIGITAL JOG BREAK buttons**

Turns each sound effect ON/OFF: JET, ZIP, WAH.



B

## Display

### 31. FLD indicator

Lights when folder number is displayed.

### 32. TRK

Lights when track number is displayed.

### 33. Dot matrix display (7x5)x3

Displays folder number, track number, or alphanumeric data.

### 34. Dot matrix display (7x5)x3

Displays time (minutes) or alphanumeric data.

### 35. Dot matrix display (7x5)x2

Displays time (seconds) or alphanumeric data.

### 36. Dot matrix display (7x5)x2

Displays time (frame) or alphanumeric data.

### 37. BPM

Displays the BPM of the track displayed.

### 38. $\pm 6$ , $\pm 10$ , $\pm 16$

Lights to display tempo range.

### 39. MT

Lights when Master Tempo function is ON.

### 40. TEMPO

Displays the change rate of tempo.

### 41. Playing address display

Displays the current playback position in a one-track full-scale graph.

When displaying elapsed time, the graph lights from the left, and when displaying the remaining time the graph light turns off from the left.

When remaining time is less than 30 seconds, the graph flashes slowly, and when remaining time is less than 15 seconds the graph flashes rapidly.

### 42. RELOOP

Lights during reloop standby and loop play.

### 43. WAH

Flashes when Digital Jog Break WAH is turned on.

### 44. ZIP

Flashes when Digital Jog Break ZIP is turned on.

### 45. JET

Flashes when Digital Jog Break JET is turned on.

### 46. A.CUE

Lights when Auto Cue function is turned on.

### 47. REMAIN

Lights when the track remaining time is displayed.

### Time display

- When the **TIME MODE** button is pressed, the display switches into Time Mode, and by pressing the **TIME MODE** button again, the display alternates between elapsed time (TIME) and remaining track time (REMAIN).
- The display mode is saved when the power is turned off.

### Text display

- By pressing the **TEXT MODE** button when playing CD-TEXT or MP3s, the dot matrix display changes alternately as follows:  
Track title (when playing MP3s, the file name)→Album title→Artist name.
- When no TEXT data is recorded, the display shows [NO TEXT].
- No more than 48 characters can be displayed.
- If all text data cannot be displayed at once, the text will scroll.
- To return to Time Mode display, press **TIME MODE** button.

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CDJ-200

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## ■ Lubricants and Glues list



A

Name	Lubricants and Glues No.	Remark
Dyefree	GEM1036 (ZLX-ME413A)	Refer to "2.3 CONTROL PANEL SECTION" , "2.4 SLOT-IN MECHANISM SECTION".
Grease	GYA1001 (ZLB-PN397B)	Refer to "2.3 CONTROL PANEL SECTION" , "2.4 SLOT-IN MECHANISM SECTION".

## ■ Cleaning



- Before shipping out the product, be sure to clean the following positions by using the prescribed cleaning tools:

B

Position to be cleaned	Cleaning tools	Remark
Pickup lenses	Cleaning liquid : GEM1004	Refer to "2.4 SLOT-IN MECHANISM SECTION" , "7.1.3 DISASSEMBLY".
	Cleaning paper : GED-008	

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