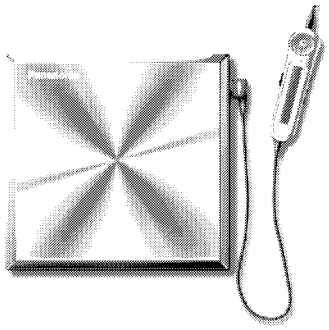
AD0303013C0

Service Manual

Portable CD Player

COMPACT disc DIGITAL AUDIO



SL-J900EB
SL-J900EG
SL-J900GD
SL-J900SG

Colours

(N).....Gold Type [SL-J900GD, SL-J900SG only]

(S).....Silver Type

Specifications

Audio (CD-DA)

No. of channels:	2 channels (left and right, stereo)
Frequency response:	20 to 20,000 Hz (+0.5 dB to –10 dB)
DA converter:	1 bit, MASH
Headphones output level:	RMS max. 6 mW+6 mW/16 Ω (adjustable)
Speaker output level:	RMS max. 1.2 W+1.2 W

Pickup

Light source:	Semiconductor laser
Wavelength:	780 nm

MP3

Supported bit-rates:	32 kbps to 320 kbps (128 kbps is recommended)
Supported sampling frequency:	48 kHz/44.1 kHz/32 kHz
Maximum number of items (sum of albums and tracks):	999
Maximum album levels:	100

General

Operational temperature range:	0 – 40 degree
Rechargeable temperature range:	5 – 40 degree
Power supply:	
DC input (via included AC adaptor);	DC 4.5 V
AC adaptor input;	AC 100 - 240 V, 50/60 Hz
Power consumption:	
Using AC adaptor (MP3/CD-DA);	
Using earphones;	2.2 W/2.1 W
Using speakers;	6.2 W/5.9 W
Recharging;	
Without speakers;	4.8 W
With speakers;	5.1 W

Play time:

[Approximate operating time in hours (playing MP3 at the recommended bit-rate of 128 kbps, with EQ canceled, at 25 degree on a flat, stable surface)]

Batteries used:	MP3 disc/CD-DA disc
2 Optional alkaline batteries (LR6);	Approx. 40/26 h
2 Supplied rechargeable batteries;	Approx. 12/8 h
2 Supplied rechargeable and 2 alkaline batteries;	Approx. 52/34 h

- The play time may be less depending on the operating conditions.
- Play time will be considerably reduced when playing CD-RW.

Recharging time:	Approx. 2 to 3 h
Dimensions (W × H × D):	
CD player;	126 × 14.4 × 126 mm
Speaker/Battery charger;	280 × 149.7 × 66 mm
Mass:	
CD player;	224 g (with batteries)
	178 g (without batteries)
Speaker/Battery charger;	443 g

Power consumptions in standby mode;	
Without speakers;	0.7 W
With speakers;	1.5 W

Notes: Specifications are subject to change without notice.
Mass and dimensions are approximate.

Note on CD-R and CD-RW

This unit can play CD-R and CD-RW recorded with CD-DA or MP3. Use an audio recording disc for CD-DA and finalize* it when you finish recording. The unit may not be able to play some discs due to the condition of the recording.

* A process performed after recording that enables CD-R/CD-RW players to play audio CD-R and CD-RW.

Panasonic

⚠ WARNING

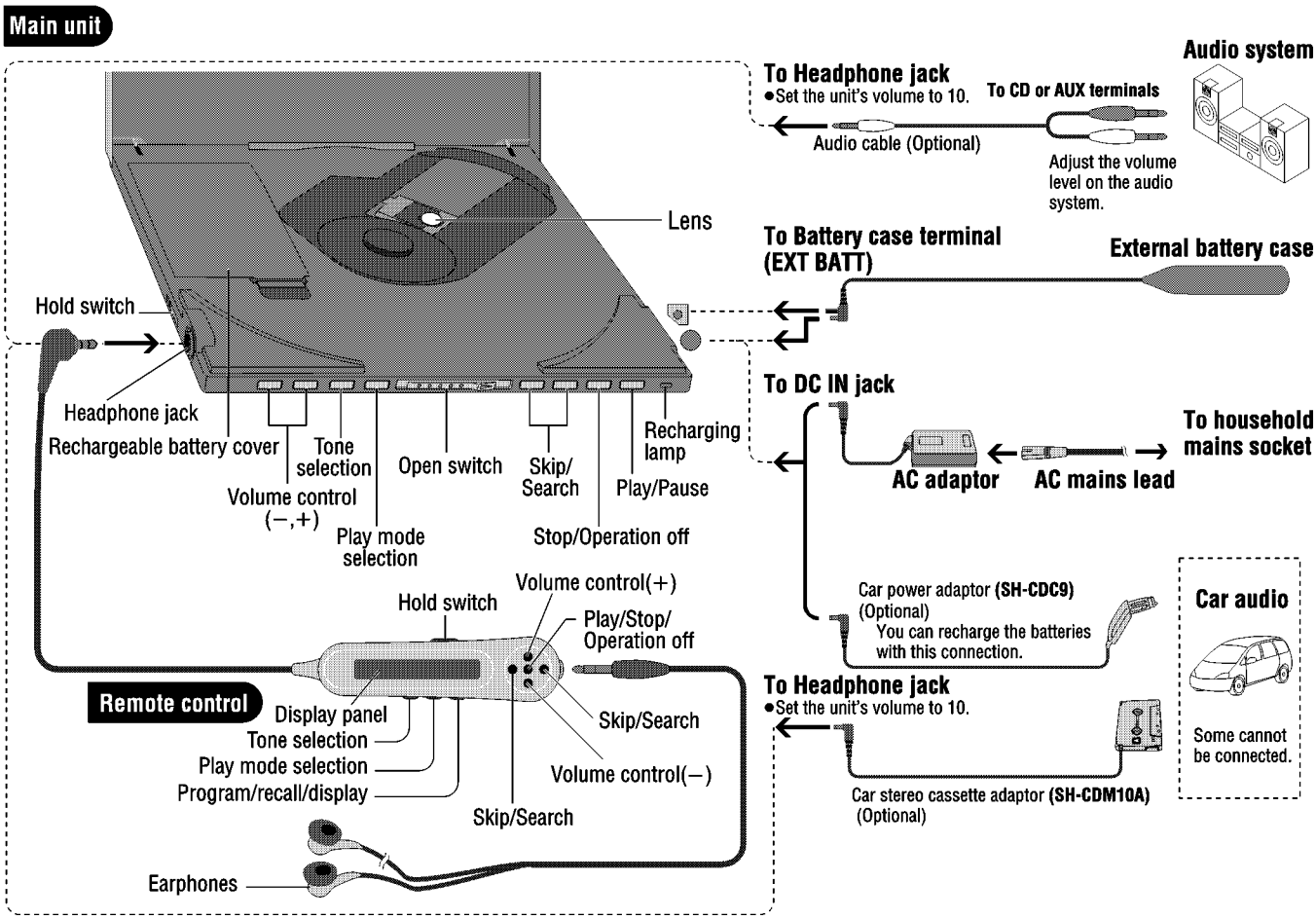
This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

CONTENTS

1 Accessories

- AC adaptor for SL-J900GD
  (DE-922C).....1 pc.
- AC adaptor except for SL-J900GD
  (DE-922A-1).....1 pc.
- AC mains lead for SL-J900EB
  (RJA0053-3X).....1 pc.
- AC mains lead for SL-J900EG, SL-J900SG
  (RJA0019-2X).....1 pc.
- AC mains lead for SL-J900GD
  (RJA0078-1X).....1 pc.
- Stereo earphones
  (L0BAB0000170).....1 pc.
- Wired remote control
  (N2QCBD000025).....1 pc.
- External battery case
  (RFA1821-H).....1 pc.
- Speaker/Battery charger for SL-J900GD
  (L0EAAB000013).....1 pc.
- Speaker/Battery charger except for SL-J900GD
  (L0EAAB000008).....1 pc.
- Rechargeable batteries (with case) for SL-J900EB, SL-J900EG
  (RFKFBP62EYD).....2 pcs.
- Rechargeable batteries (with case) for SL-J900GD, SL-J900SG
  (RFKFBP61GYD).....2 pcs.
- Power plug adaptor for SL-J900SG only
  (SJP5213-2).....1 pc.
- Soft case for SL-J900GD, SL-J900SG only
  (RFC0071A-H).....1 pc.

2 Location of Controls and Connection to Other Equipment



3 Precaution of Laser Diode

- **For SL-J900EB, SL-J900EG**

CAUTION:
THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

CAUTION: This product utilizes a laser diode with the unit turned "on", invisible laser radiation is emitted from the pick-up lens.
Wave length: 780 nm
Maximum output radiation power from pick-up: 100 µW/VDE

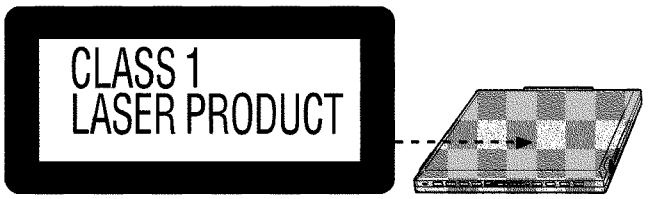
Laser radiation from the pick-up unit is safety level, but be sure the followings:

1. Do not disassemble the pick-up unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pick-up unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pick-up lens for a long time.

ACHTUNG: Dieses Produkt enthäl t eine Laserdiode. Im eingeschalteten Zustand wird unsichtbare Laserstrahlung von der Lasereinheit adgestrahit.
Wellenlänge: 780 nm
Maximale Strahlungsleistung der Lasereinheit: 100 µW/VDE

Die strahlungan der Lasereinheit ist ungefährlich, wenn folgende Punkte beachtet werden:

1. Die Lasereinheit nicht zerlegen, da die Strahlung an der freigelegten Laserdiode gefährlich ist.
2. Den werksseitig justierten Einstellregler der Lasereinheit nicht verstellen.
3. Nicht mit optischen Instrumenten in die Fokussierlinse blicken.
4. Nicht über längere Zeit in die Fokussierlinse blicken.



(Bottom of product)

(Inside of product)

- **For SL-J900GD, SL-J900SG**

Caution:

This product utilizes a laser diode with the unit turned on, invisible laser radiation is emitted from the pick-up lens.

Wavelength: 780 nm

Maximum output radiation power from pick-up: 100 µW/VDE

Laser radiation from the pick-up lens is safety level, but be sure the followings:

1. Do not disassemble the optical pick-up unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pick-up unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pick-up lens for a long time.

4 Handling Precautions for Traverse Deck

The laser diode in the traverse deck (optical pick-up) may break down due to potential difference caused by static electricity of clothes or human body.

So, be careful of electrostatic breakdown during repair of the traverse deck (optical pick-up).

4.1. Handling of traverse deck (optical pick-up)

1. Do not subject the optical pick-up to static electricity as it is extremely sensitive to electrical shock.
2. To protect the laser diode against electrostatic breakdown, be sure that the short land of the flexible board (FFC board) should be short-circuit by solder before inserting a short pin or similar object into the tip of the flexible board. (Referto Fig. 4-1.)
3. Take care not to apply excessive stress to the flexible board (FFC board).
4. Do not turn the variable resistor (laser power adjustment). It has already been adjusted. (Refer to Fig. 4-1.)

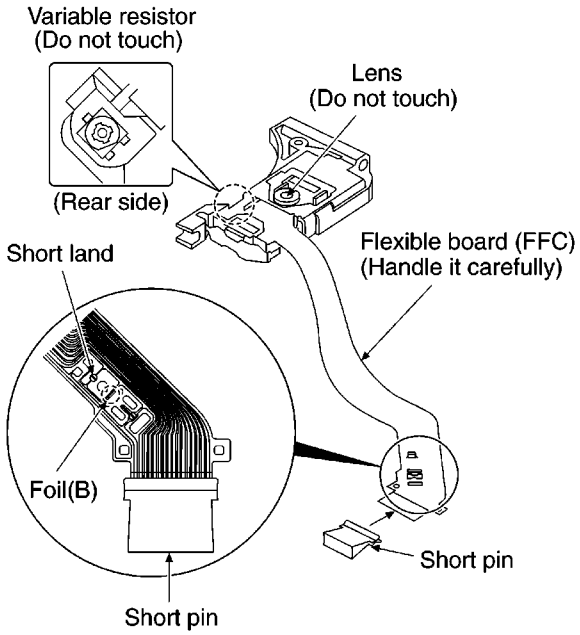


Fig. 4-1.

4.2. Caution when replacing traverse deck

The traverse deck short-circuits the foil (B) to protect the laser diode against electrostatic breakdown. Be sure to cut the foil (B) before making connection. Take care not to make contact with cutting point each other. (Refer to Fig. 4-1.)

4.3. Grounding for electrostatic breakdown prevention

4.3.1. Human body grounding

Use the anti-static wrist strap to discharge the static electricity from your body. (Refer to Fig. 4-2.)

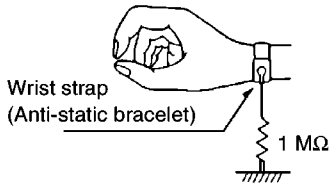


Fig. 4-2.

4.3.2. Work table grounding

Put a conductive material (sheet) or steel sheet on the area where the traverse deck (optical pick-up) is placed, and ground the sheet. (Refer to Fig. 4-3.)

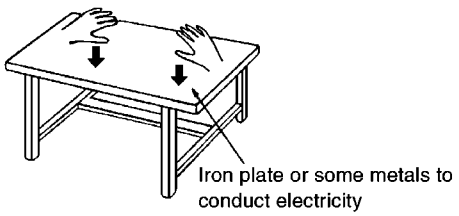


Fig. 4-3.

Caution:

The static electricity of your clothes will not be grounded through the wrist strap.

So take care not to let your clothes touch the traverse deck (optical pick-up).

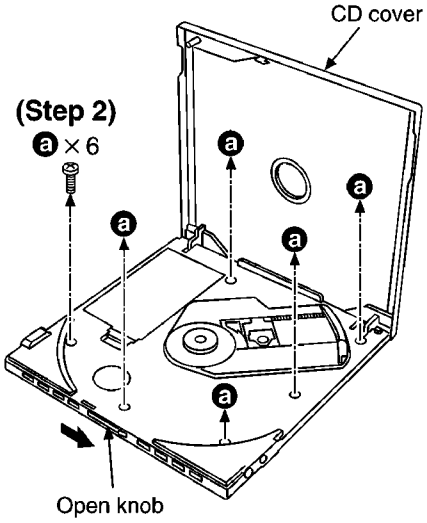
5 Operation Checks and Component Replacement Procedures

- **This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.**
- **For reassembly after operation checks or replacement, reverse the respective procedures. Special reassembly procedures are described only when required.**

5.1. Checking for the main P.C.B.

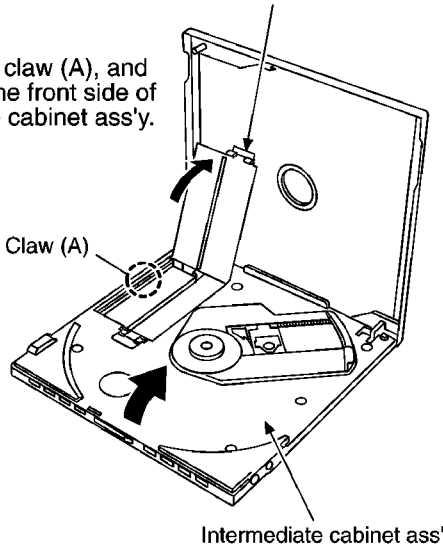
5.1.1. Checking for the main P.C.B. (A side)

(Step 1)
Push the open knob, and then open the CD cover.

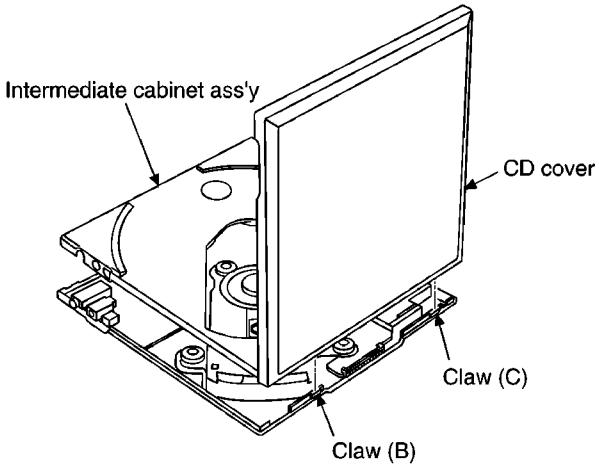


(Step 3)
Open the battery cover.

(Step 4)
Release the claw (A), and then lift up the front side of intermediate cabinet ass'y.

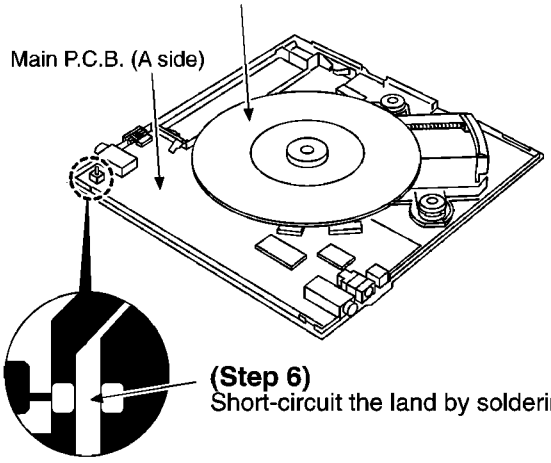


(Step 5)
Release the claw (B) and (C), and then remove the intermediate cabinet ass'y and CD cover.



- **Check the main P.C.B. (A side) as shown below.**

(Step 7)
Put the test disc (8cm).



(Step 6)
Short-circuit the land by soldering.

NOTE:
After checking, unsolder the short land to open circuit.

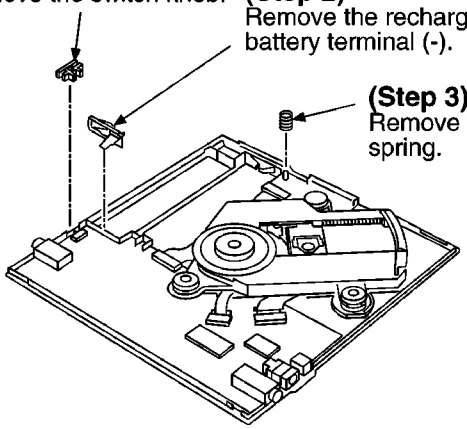
5.1.2. Checking for the main P.C.B. (B side)

• Follow the **(Step 1)** - **(Step 6)** of item 5.1.1.

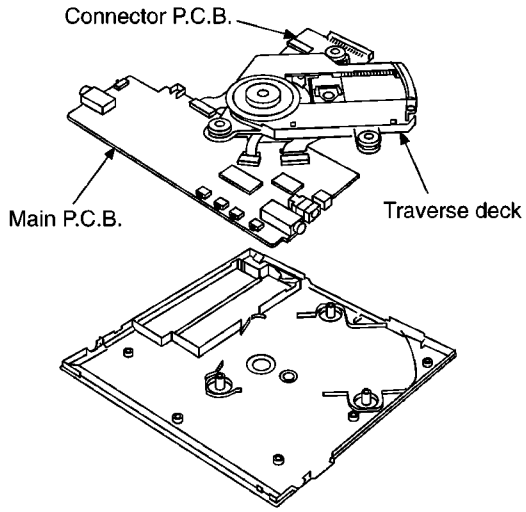
(Step 1)
Remove the switch knob.

(Step 2)
Remove the rechargeable battery terminal (-).

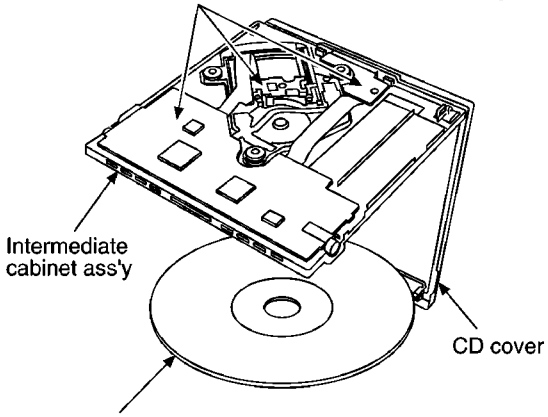
(Step 3)
Remove the earth spring.



(Step 4)
Remove the traverse deck, main P.C.B. and connector P.C.B..

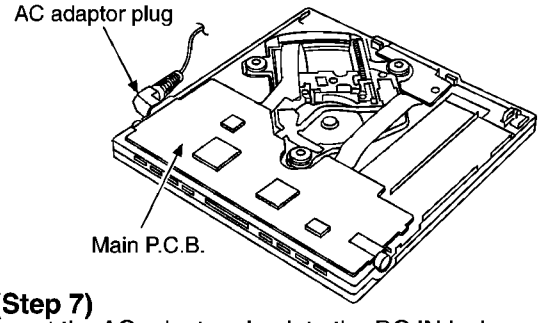


(Step 5)
Locate the traverse deck ass'y, main P.C.B. and connector P.C.B. on the intermediate cabinet ass'y.



(Step 6)
Put the test disc, and then close the CD cover.

• **Check the main P.C.B. (B side) as shown below.**

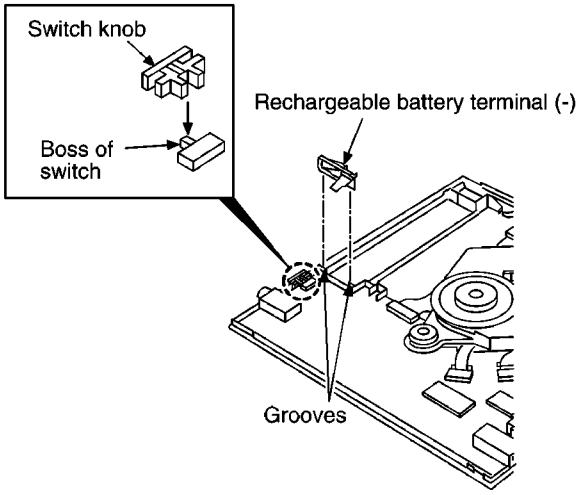


(Step 7)
Insert the AC adaptor plug into the DC IN jack, and then apply the power.

NOTE:
After checking, unsolder the short land to open circuit.

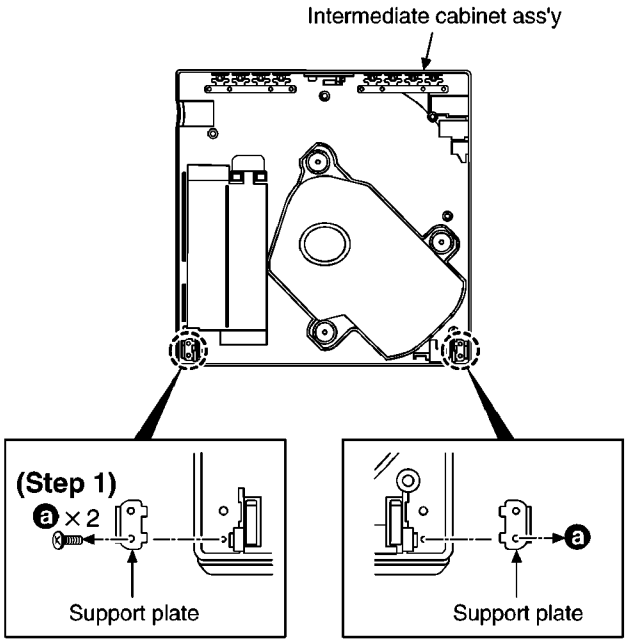
Notice for installation of switch knob and Rechargeable battery terminal (-)

1. Make sure the boss of switch is fitted in the switch knob.
2. Make sure the rechargeable battery terminal (-) is fitted in the gooves.



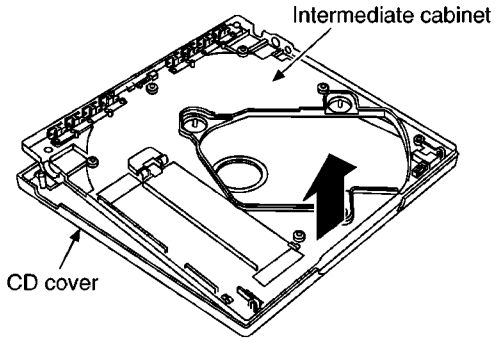
5.2. Replacement for the CD cover and LCD

- Follow the **(Step 1)** - **(Step 5)** of item 5.1.1.

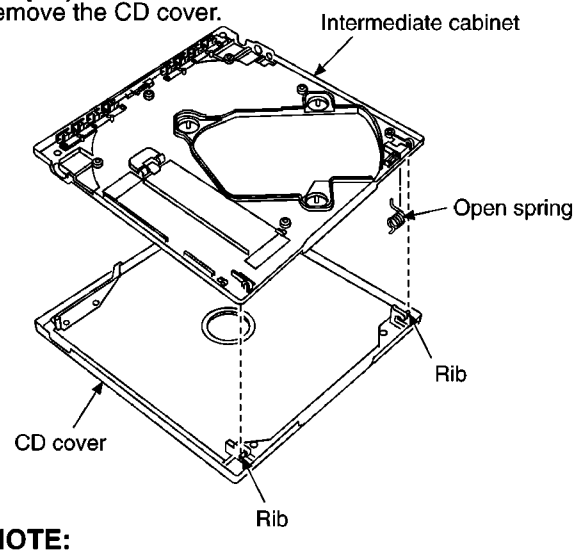


(Step 2)
Remove the support plate. (right and left)

(Step 3)
Open the CD cover, and then lift up the intermediate cabinet.



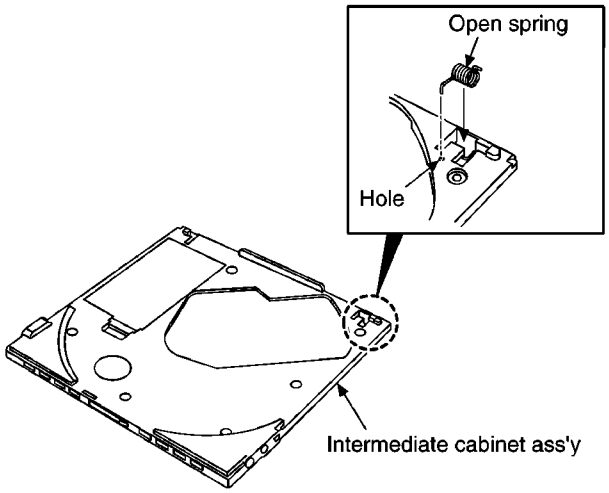
(Step 4)
Remove the CD cover.



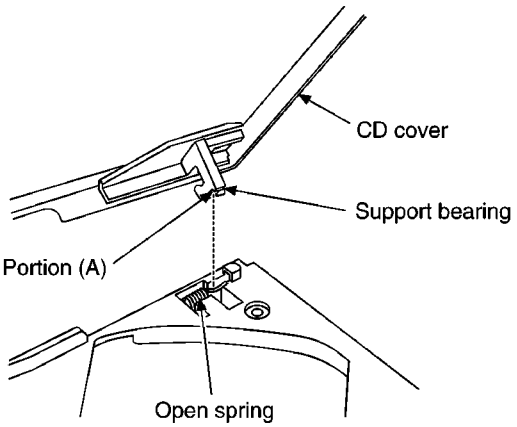
NOTE:
Be careful lost of open spring.

Notice for installation of open spring

1. Insert the tip of open spring to hole of intermediate cabinet ass'y.



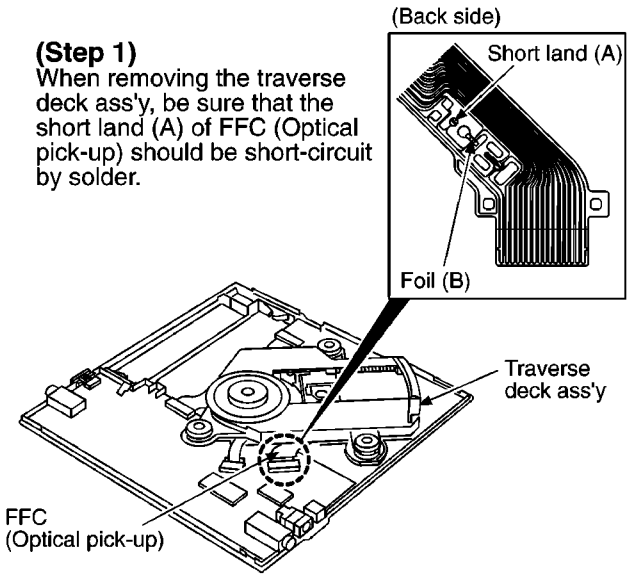
2. When replacing the CD cover, hook the point of open spring to the portion (A) of support bearing.



5.3. Replacement for the traverse deck ass'y

• Follow the **(Step 1)** - **(Step 5)** of item 5.1.1.

(Step 1)
When removing the traverse deck ass'y, be sure that the short land (A) of FFC (Optical pick-up) should be short-circuit by solder.



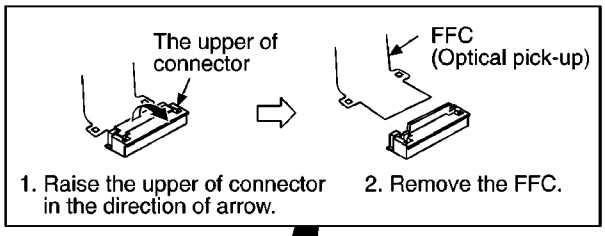
■ Notice for installation of traverse deck ass'y

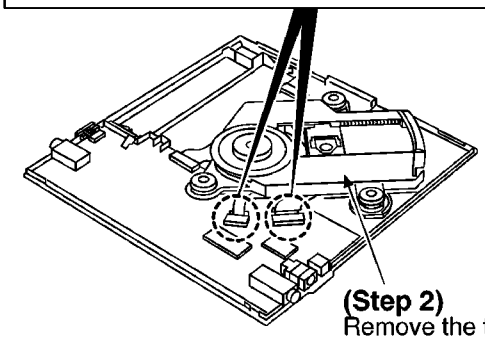
1. After replacement, unsolder the short land (A) to open circuit.
2. When replacing the traverse deck ass'y to new one, cut the foil (B) of FFC.

5.4. Replacement for the traverse motor and optical pick-up

• Follow the **(Step 1)** - **(Step 5)** of item 5.1.1.

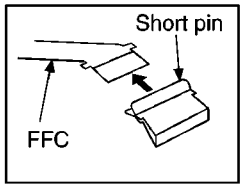
(Step 1)
Pull out the FFC from connector (2 points).



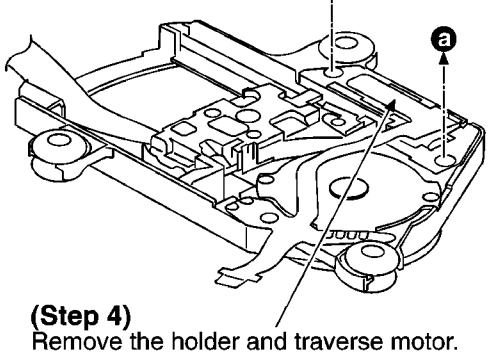


(Step 2)
Remove the traverse deck ass'y.

NOTE:
Insert a short pin into the traverse deck's FFC.
(Refer to "**Handling Precautions for Traverse Deck**".)

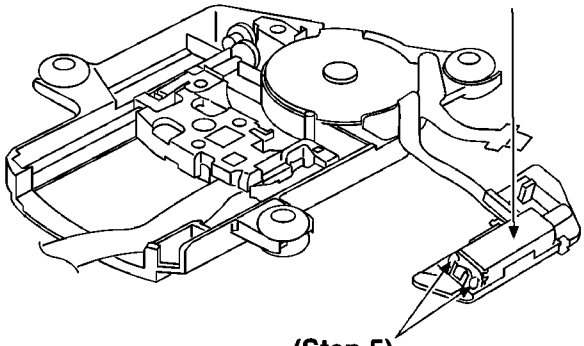


(Step 3)
ⓐ × 2



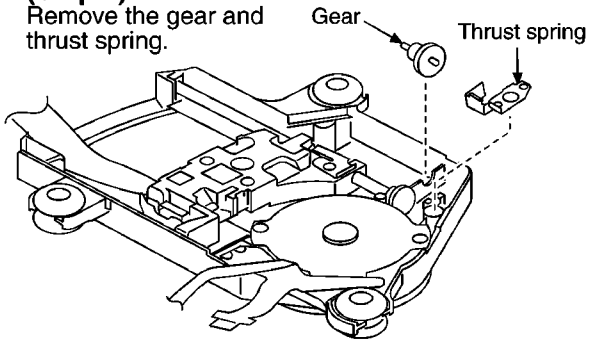
(Step 4)
Remove the holder and traverse motor.

(Step 6)
Remove the traverse motor.

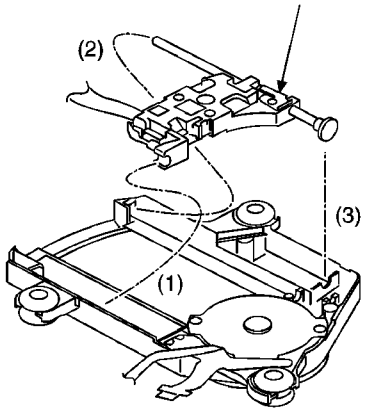


(Step 5)
Unsolder (2 points).

(Step 7)
Remove the gear and thrust spring.

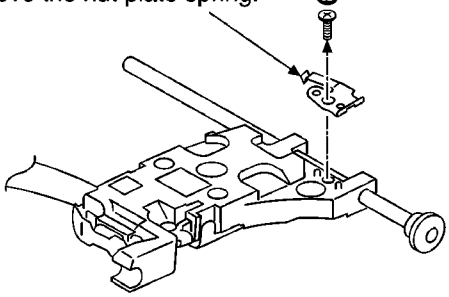


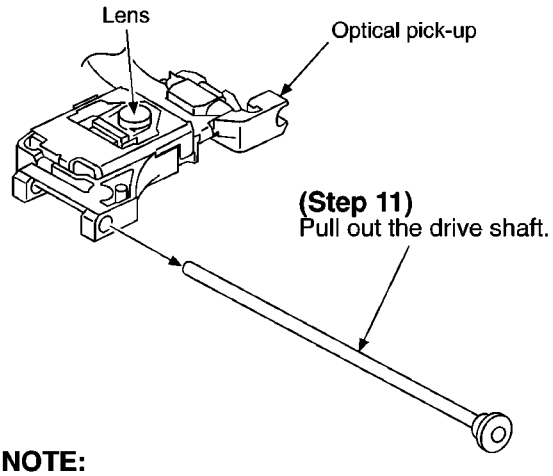
(Step 8)
Remove the optical pick-up ass'y.



(Step 10)
Remove the nut plate spring.

(Step 9)
ⓑ





(Step 11)
Pull out the drive shaft.

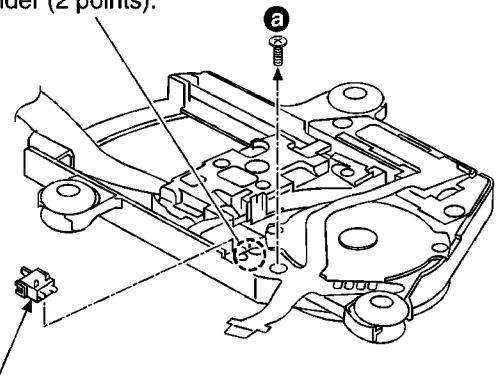
NOTE:
1. Use care to prevent damage the optical pick-up, due to the precision construction.
2. Do not apply the grease on the lens of optical pick-up.
3. Do not touch the lens of the optical pick-up.

5.5. Replacement for the rest switch

- Follow the **(Step 1)** - **(Step 5)** of item 5.1.1.
- Follow the **(Step 1)** , **(Step 2)** of item 5.4.

(Step 2)
Unsolder (2 points).

(Step 1)
ⓐ



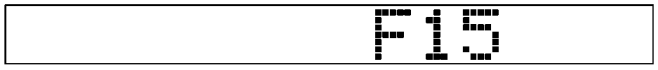
(Step 3)
Remove the rest switch.

6 Display of Self-Diagnostic Function

This unit (SL-J900) has self-diagnostic function. It may display below-mentioned on the remote control display.

- The substance of self-diagnostic display.

  Remote control display



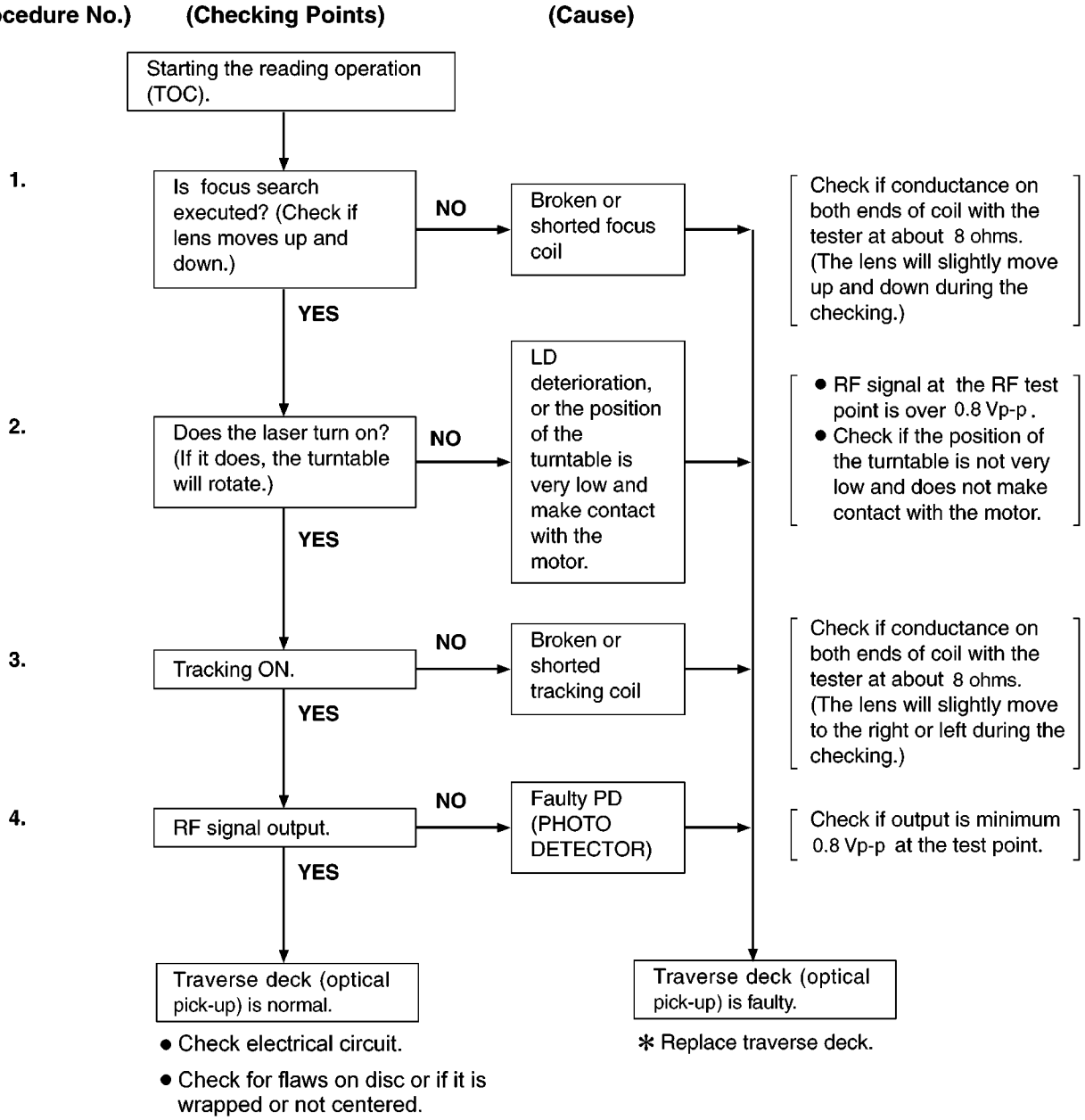
  (Press PLAY and STOP button. After 15 seconds, it is displayed for 2 seconds.)

In case of this display, it may be causing for abnormally movements of traverse deck, touching failure of REST detect switch and coming off or cutting off the flexible P.C.B.. It is necessary for confirmation or repair and replacement each parts.

7 Checking the Operation Problems on the Traverse Deck (Optical Pick-up)

Make sure to follow the procedures below to check the operation problems of the traverse deck (optical pick-up) before replacing it.

Replace the traverse deck only after the problem is identified.



7.1. Check the operations described below on the traverse deck after replacing

7.1.1. Checking skip search

1. Play an ordinary musical program disc.
2. Press the skip button to check for normal skip search operation (in both the forward and reverse directions).

7.1.2. Checking manual search

1. Play an ordinary musical program disc.
2. Press the manual search button to check for smooth manual search operation at either low or high speed (in both the forward and reverse directions).

7.1.3. Checking playability

1. Play the 0.7 mm black dot and the 0.7 mm wedge on the playability test disc (SZZP1054C) and verify that no sound skip or noise occurs.
2. Play the middle tracks of the uneven test disc (SZZP1056C) and verify that no sound skip or noise occurs.

8 Automatic Adjustment Results Display Function (Self-Check Function)

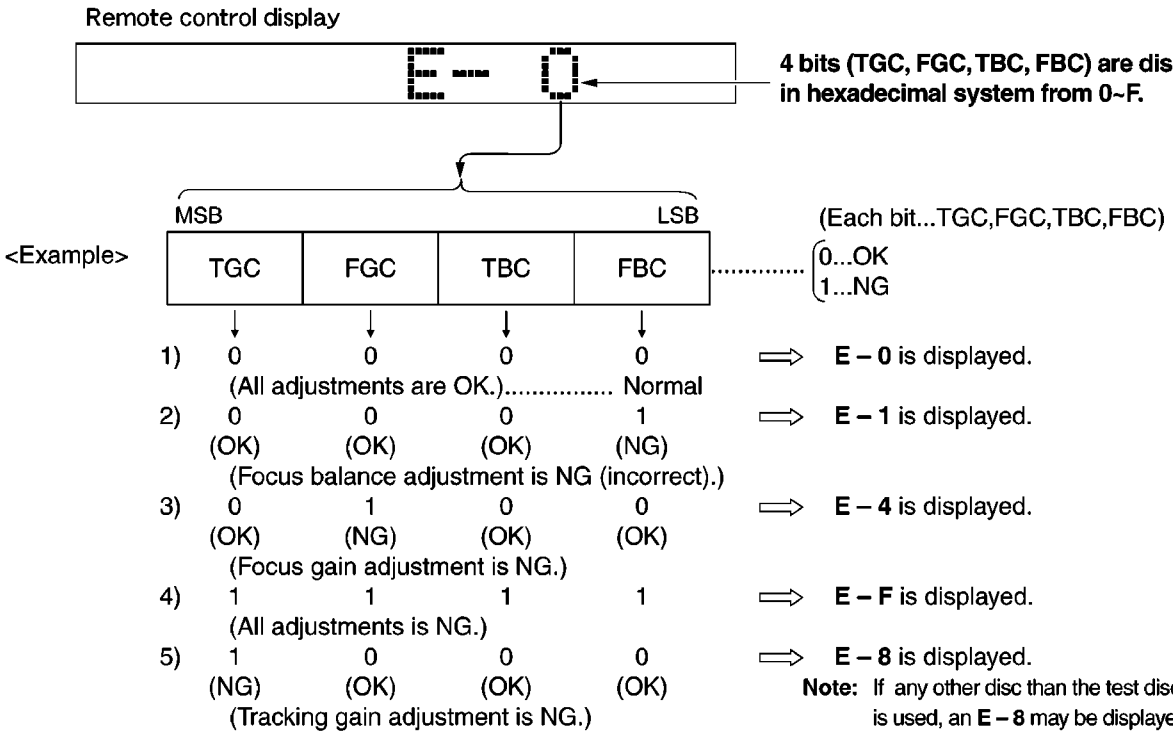
On the unit (SL-J900), each automatic adjustment result are displayed on the remote control display. This function is convenient to check or identify which automatic adjustment circuit is incorrect.

The followings are the contents of the automatic adjustment result displays (Self-Check Function).

8.1. How to display automatic adjustment results

1. Load the test disc (SZZP1054C).
2. Press the ⏮ (SKIP/SEARCH) and ⏭ (SKIP/SEARCH) buttons simultaneously and hold them, and additionallypress the ▶/⏸ (PLAY/PAUSE) button.
3. Press the ■ (STOP/OPR OFF) button once.
4. An automatic adjustment result is displayed on the remote control display.

8.2. Display of automatic adjustment results (Self-Check Function)



<Example>

Follow the below steps when E-1 is displayed.

(Cause: Focus balance (FBC) is set beyond the limit.)

- Check if
  1. the waveform or voltage of the focus servo circuit is correct, and
  2. the optical pick-up returns to the normal state by exchanging the traverse deck.

Follow the below steps when E-4 is displayed.

(Cause: Focus gain (FGC) is set beyond the limit.)

- Check if
  1. the waveform or voltage of the focus servo circuit is correct,
  2. the focus coil of the optical pick-up is correct (around 8 ohms), and
  3. the optical pick-up returns to the normal state by exchanging the traverse deck.

Follow the below steps when E-F is displayed.

(Cause: All adjustments (TGC, FGC, TBC, FBC) are set beyond the limit.)

- Check if
  1. the optical pick-up returns to the normal state by exchanging the traverse deck, and
  2. the waveform or voltage of the servo ICs are correct.

Note:

It is not always necessary to exchange the traverse deck when an error message is displayed.

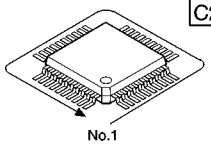
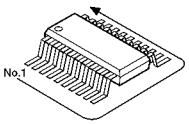
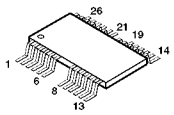
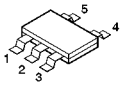
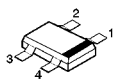
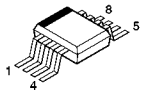
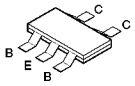
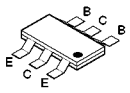
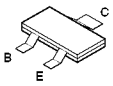
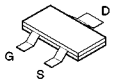
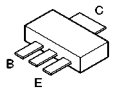
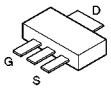
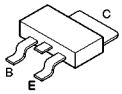
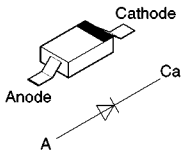
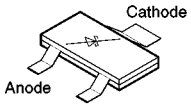
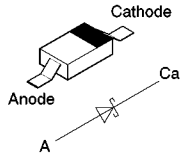
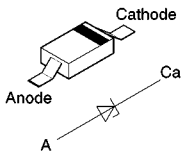
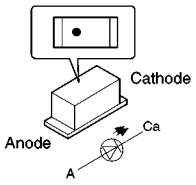
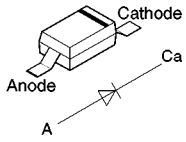
Be sure to check if the circuit is defective or not before exchanging the traverse deck.

Note:

If any other disc than the test disc (SZZP1054C) is used, an error message may be displayed.

This is not a malfunction.

9 Type Illustration of IC's, Transistors and Diodes

C0GBZ0000008 48PIN MN6627911AC1 80PIN C2BBGE000662 80PIN 		AN8885SBE1V 28PIN TA2131FNEL 24PIN 		C3ABMB000027 	C0CBZAZ00003 C0DBAFB00007 C0CBZAZ00001 C0CBZBZ00001 C0CBZBZ00002 
C0EBD0000020 	AK93C45BH-L 	XP1501TX 	XN0F261TX 	2SB1218TX 2SD1819ATX 	2SB709ATX DTA114YUA106 DTA143EUA106 DTA144EUA106 UN521MTX UN521DTX
2SK1958T1 XP152A12C0MR XP151A13A0MR B1CDGD000001 	B1ABMD000004 	XP161A1355PR 	2SB1182TLPQR 	MA111TX 	SB00703QTL 
	MA1070400L MA729TX B0JCMC000006 MA2YD2100L	MA8056MTX 	B3AAB0000075 	B0JCME000012 	

10 Schematic Diagram Notes

- **This schematic diagram may be modified at any time with the development of new technology.**

Notes:

S201:	Laser ON/OFF switch in ON position (It turns ON with disc holder closed.)
S202:	Rest detector switch in OFF position (It turns ON when optical pick-up comes to innermost periphery.)
S301:	Play/pause (▶/❚❚) switch
S302:	Stop/operation off (■) switch
S303:	R.skip/search (I◀◀) switch
S304:	Volume control switch (VOL+)
S305:	Volume control switch (VOL-)
S306:	Tone selection switch (EQ)
S307:	Play mode selection switch (MODE)
S308:	F.skip/search (▶▶I) switch
S310:	Hold (HOLD) switch in OFF position

- Important safety notice:

  Components identified by ⚠ mark have special characteristics important for safety.

  Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.

  When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

- The supply part number is described alone in the replacement parts list.
- Voltage and signal line

  ⟶ : Positive voltage line

  ⇨ : Playback signal line

- The voltage values and waveforms are the reference voltage of this measured by the DC electronic voltmeter (high impedance) and oscilloscope on the basis of GND terminal (DC IN jack). Accordingly, there may arise some errors in the voltage valuesand waveforms depending upon the internal impedance of the tester or measuring unit.

  Measurement conditions:

  – AC adaptor is used for power supply.
  – Set the hold switch to ON.
  – The parenthesized is the voltage for test disc (1 kHz, L+R, 0 dB) in play mode, and the other, for no disc in stop mode.

Caution!

IC and LSI are sensitive to static electricity.

Secondary trouble can be prevented by taking care during repair.

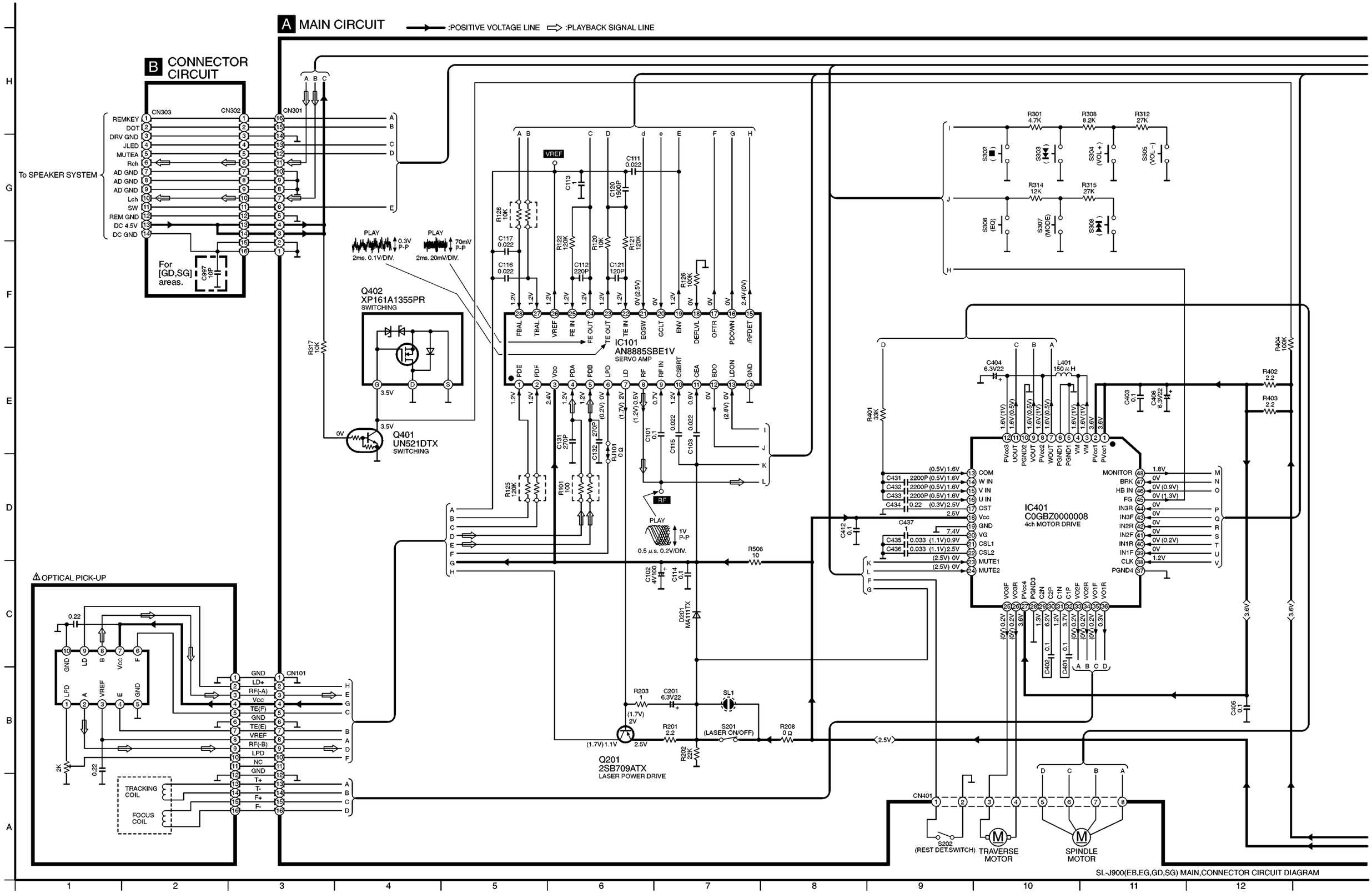
Cover the parts boxes made of plastics with aluminum foil.

Ground the soldering iron.

Put a conductive mat on the work table.

Do not touch the legs of IC or LSI with the fingers directly.

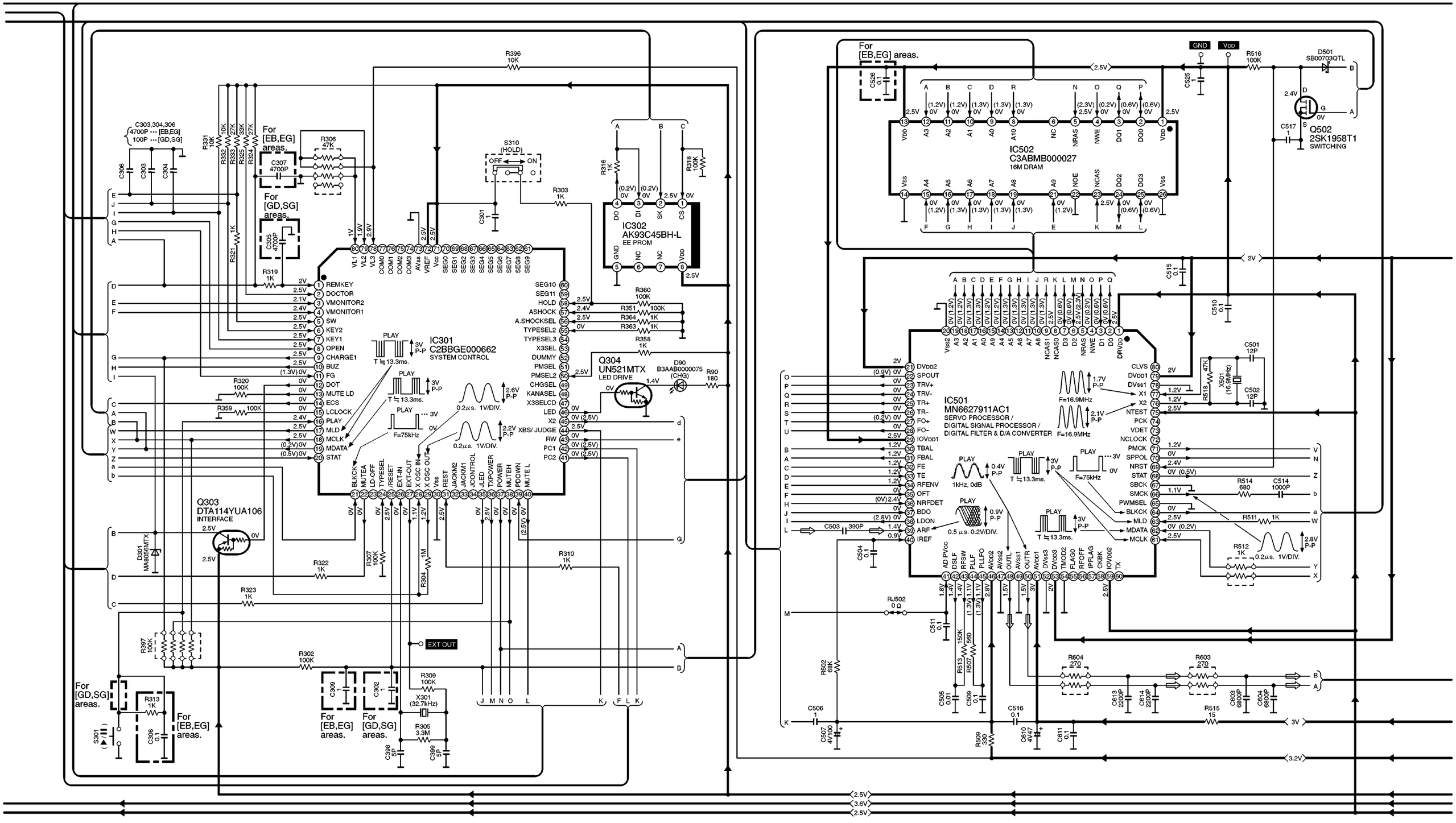
11 Schematic Diagram



SL-J900(EB,EG,GD,SG) MAIN,CONNECTOR CIRCUIT DIAGRAM

A MAIN CIRCUIT

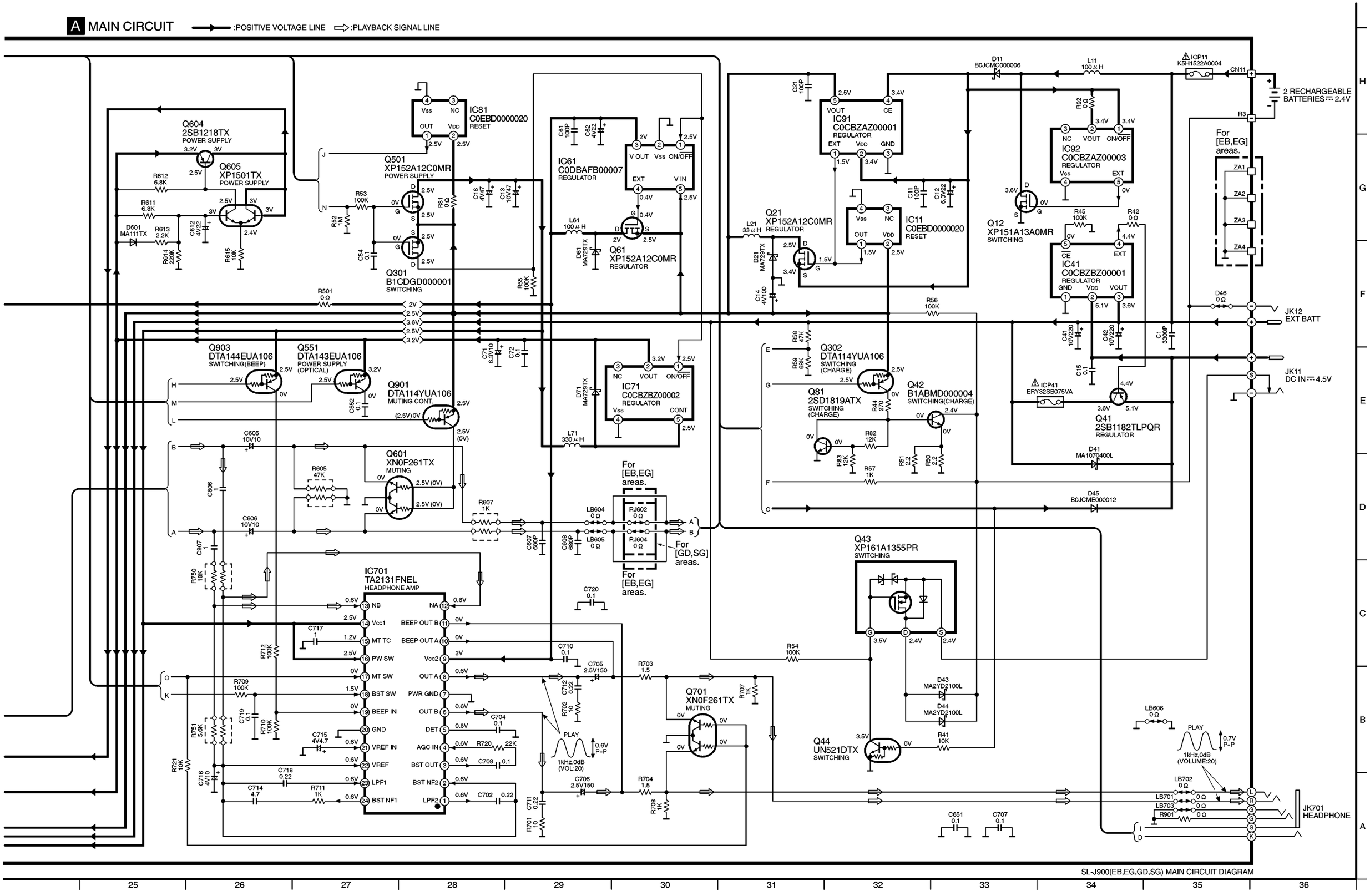
:POSITIVE VOLTAGE LINE :PLAYBACK SIGNAL LINE



SL-J900(EB,EG,GD,SG) MAIN CIRCUIT DIAGRAM

A MAIN CIRCUIT

:POSITIVE VOLTAGE LINE :PLAYBACK SIGNAL LINE

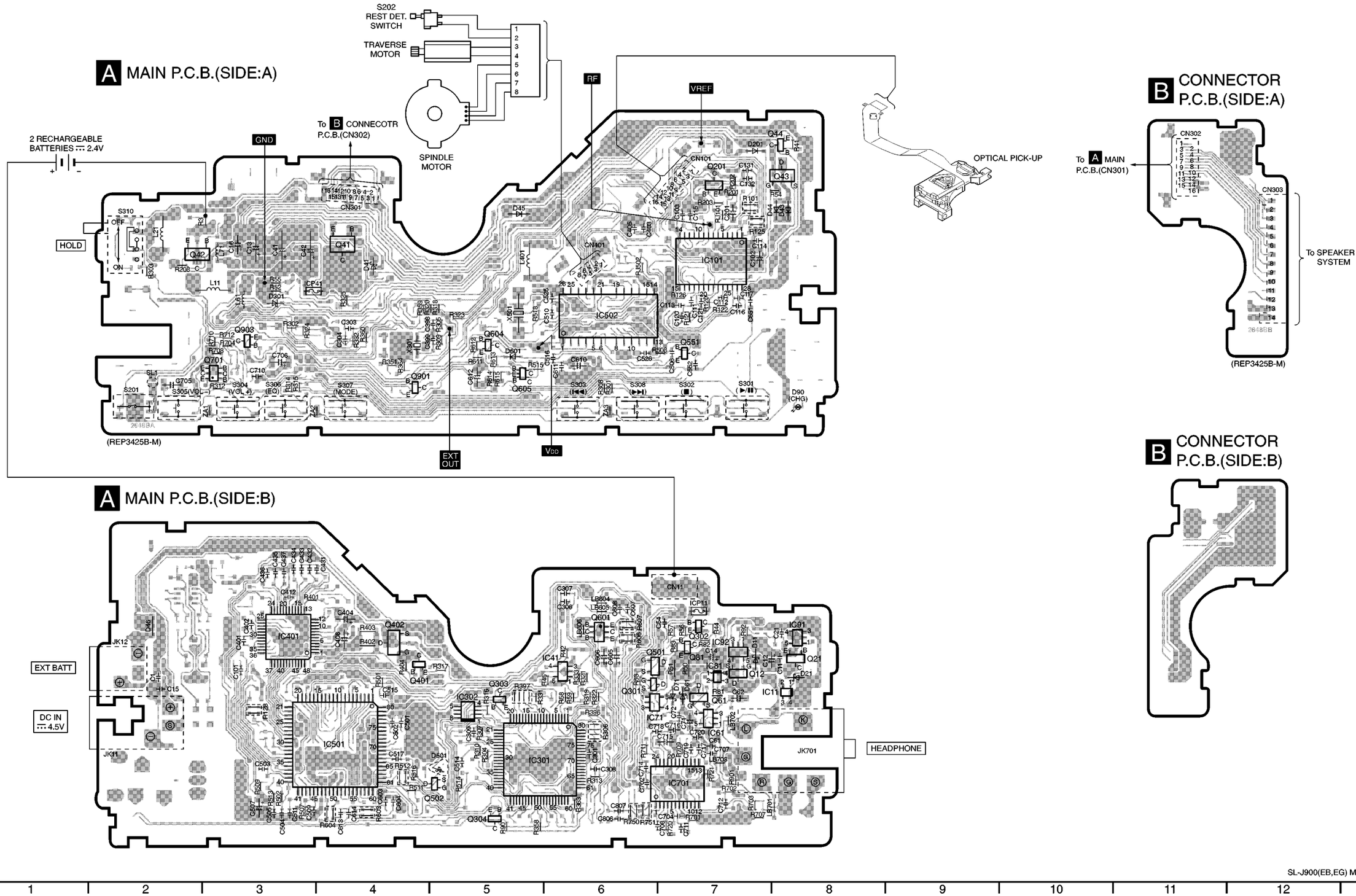


SL-J900(EB,EG,GD,SG) MAIN CIRCUIT DIAGRAM

12 Printed Circuit Board and Wiring Connection Diagram

12.1. For SL-J900EB, SL-J900EG

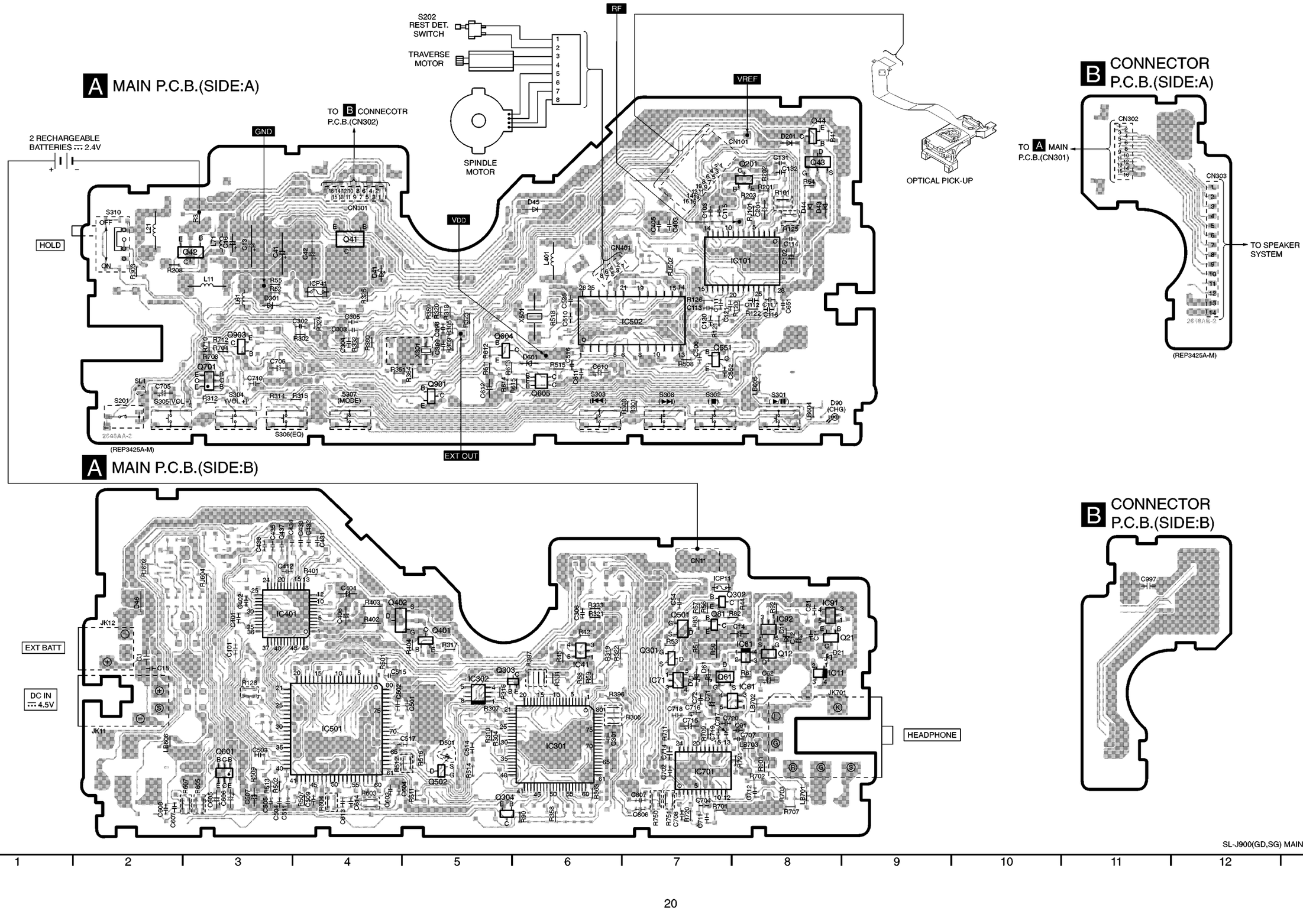
Note: This printed circuit board diagram may be modified at any time with the development of new technology.



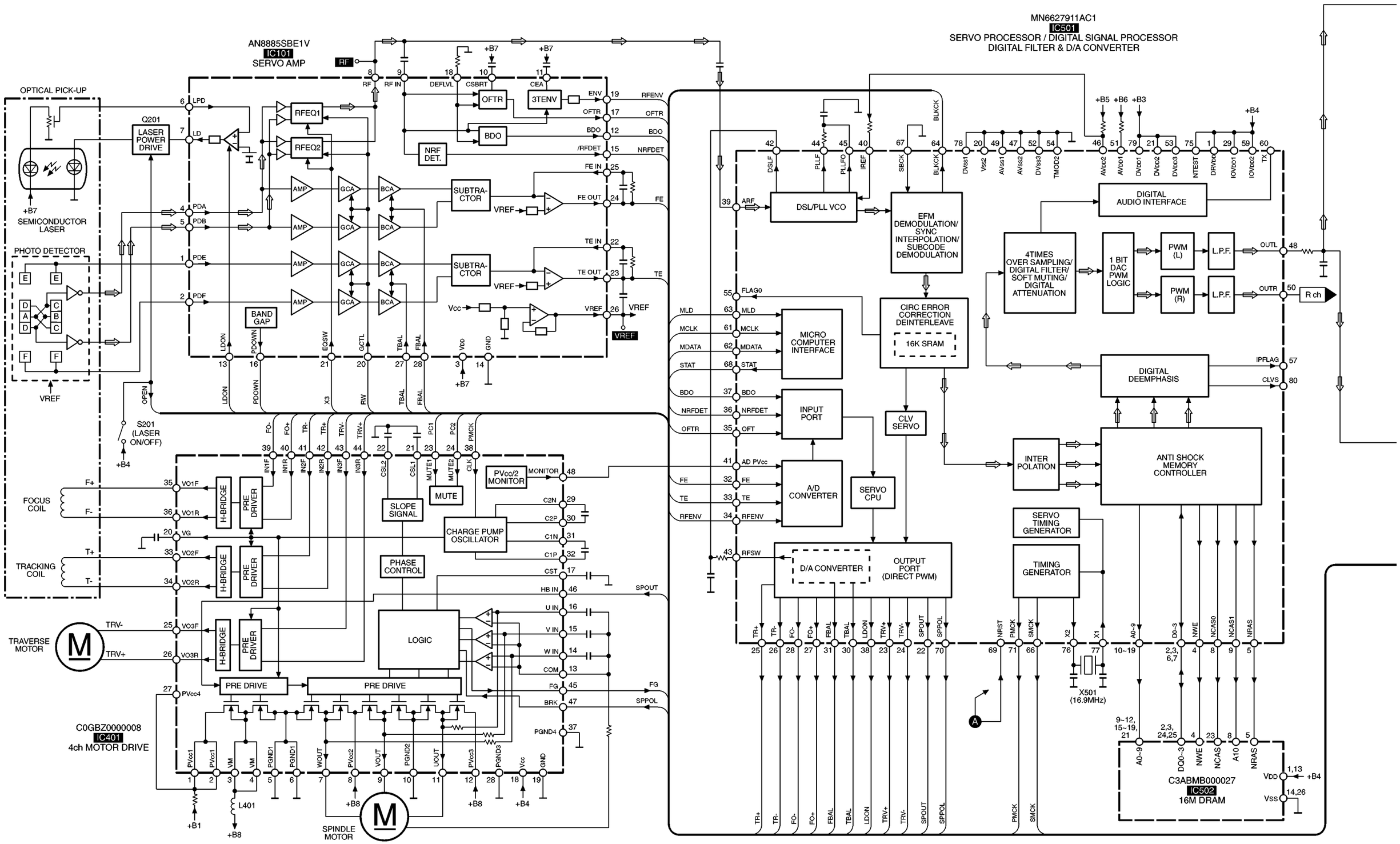
SL-J900(EB,EG) MAIN, CONNECTOR P.C.B.

12.2. For SL-J900GD, SL-J900SG

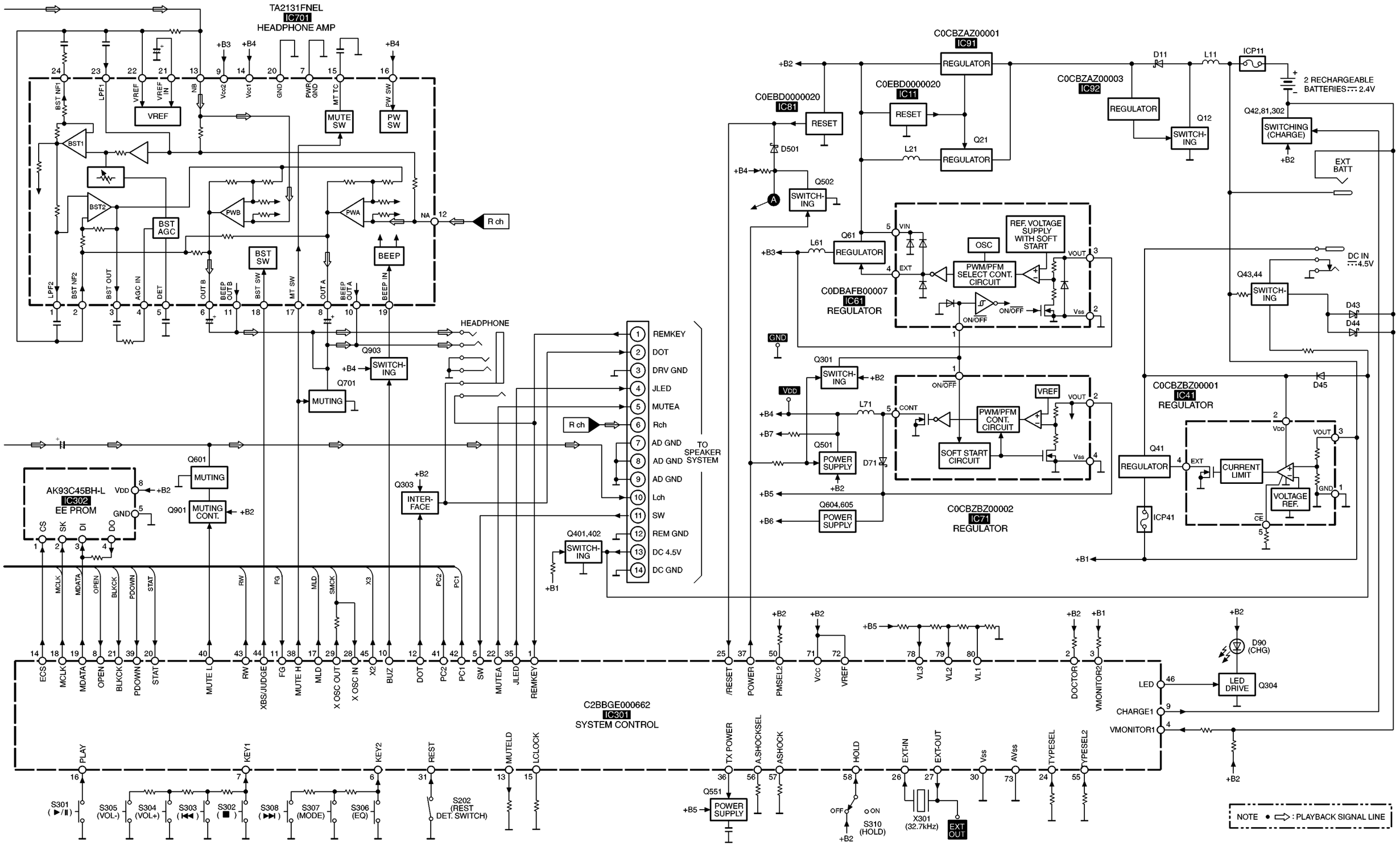
Note: This printed circuit board diagram may be modified at any time with the development of new technology.



13 Block Diagram



SL-J900(EB,EG,GD,SG) BLOCK DIAGRAM



SL-J900(EB,EG,GD,SG) BLOCK DIAGRAM

14 Terminal Function of ICs

14.1. IC101(AN8885SBE1V): Servo Amplifier

Pin No.	Terminal Name	I/O	Function
1	PDE	I	Tracking signal input (1) terminal
2	PDF	I	Tracking signal input (2) terminal
3	V_{DD}	I	Power supply terminal
4	PDA	I	Focus signal input (1) terminal
5	PDB	I	Focus signal input (2) terminal
6	LPD	I	APC amp input terminal
7	LD	O	APC amp output terminal
8	RF	O	RF addition output terminal
9	RF IN	I	RF detection signal input terminal
10	CSBRT	I	Connected to V_{DD} through capacitor
11	CEA	I	Connected to V_{DD} through capacitor
12	BDO	O	Dropout signal output terminal
13	LDON	I	Laser ON signal input terminal
14	GND	-	GND
15	/RFDET	O	RF detection signal output terminal
16	PDOWN	O	Reduced voltage detection signal output
17	OFTR	O	Off-track signal output terminal
18	DEFLVL	I	Not used, connected to GND via resistor
19	ENV	O	RF envelope signal output terminal
20	GCLT	I	Input for CD-RW
21	EQSW	I	EQ characteristic drive signal input
22	TEIN	I	Tracking error amplifier input terminal
23	TEOUT	O	Tracking error amplifier output terminal
24	FEOUT	O	Focus error amplifier output terminal
25	FEIN	I	Focus error amplifier input terminal
26	VREF	O	Reference voltage output terminal
27	TBAL	I	Tracking balance signal input terminal
28	FBAL	I	Focus balance signal input terminal

14.2. IC301(C2BBGE000662): System Control

Pin No.	Terminal Name	I/O	Function
1	REMKEY	I	Remote control key signal input
2	DOCTOR	I	Connected to power supply though resistor
3	VMONI TOR2	I	Battery remaining measurement/battery shorting detect signal
4	VMONI TOR1	I	Rechargeable battery/alkaline battery voltage signal input
5	SW	I	Operation key for speaker/battery charger signal input
6	KEY2	I	Operation key signal input
7	KEY1		
8	OPEN	I	CD cover open detect signal input
9	CHARGE1	O	Charging ON signal output
10	BUZ	O	Buzzer control output terminal
11	FG	I	Pulse input terminal for spindle motor rotating measurement
12	DOT	O	Communication signal output for LCD driver/Remote control power off output
13	MUTELD	O	Not used, connected to GND via resister
14	ECS	O	EEPROM communication signal output
15	LCLOCK	-	Not used, connected to GND via resistor
16	PLAY	I	PLAY key signal input
17	MLD	O	Serial command latch output
18	MCLK	O	Serial command clock output/EEPROM clock signal output
19	MDATA	O	Serial command data output/EEPROM data signal input/output
20	STAT	I	Status signal input
21	BLKCK	I	Sub code block clock signal input
22	MUTEA	O	Mute signal output for speaker/battery charger
23	LD-OFF	-	Not used, open
24	TYPESEL	I	Not used, connected to GND via resistor
25	/RESET	I	Reset detect signal input
26	EXT-IN	I	Oscillator connected terminal (F=32.7 kHz)
27	EXT-OUT	O	
28	XOSCIN	I	System clock signal
29	XOSCOUT	O	
30	V_{SS}	-	GND
31	REST	I	Rest detect switch signal input
32	JACKM2	-	Not used, open
33	JACKM1	-	Not used, open
34	JCON TROL	-	Not used, open
35	JLED	O	LED output for speaker/battery charger
36	TXPOWER	O	Optical output ON signal output
37	POWER	O	Power supply detect signal output
38	MUTEH	O	Headphone amp muting signal output
39	PDOWN	I	Headamp power OFF signal input
40	MUTEL	O	Muting signal output
41	PC2	O	Driver (3 ch) OFF signal output
42	PC1	O	Driver (4 ch) OFF signal output
43	RW	O	Output for CD-RW
44	JUDGE/ XBS	O	Unit inspection OK/XBS ON signal output
45	X2	O	RF equalizer twice speed signal output
46	LED	O	LED drive signal output
47	X3SELCD	-	Not used, open
48	KANASEL	-	Not used, open
49	CHGSEL	-	Not used, open
50	PMSEL2	I	Connected to GND via resistor
51	PMSEL	-	Not used, open
52	DUMMY	-	Not used, open
53	X3SEL	-	Not used, open
54	TYPESEL3	-	Not used, open
55	TYPESEL2	-	Not used, connected to GND via resistor
56	A.SHOCK SEL	-	Not used, connected to GND via resistor
57	ASHOCK	-	Not used, connected to GND via resistor
58	HOLD	I	HOLD switch signal input
59 | 70	SEG11 | SEG0	-	Not used, open
71	V_{CC}	I	Power supply terminal
72	VREF	I	Reference voltage input terminal
73	AV_{SS}	-	GND
74 | 77	COM3 | COM0	-	Not used, open
78	VL3	I	Power supply terminal
79	VL2	I	Power supply terminal (LCD drive bias)
80	VL1	I	Power supply terminal (LCD drive bias)

14.3. IC401(C0GBZ0000008): 4 ch Motor Drive

Pin No.	Terminal Name	I/O	Function
1,2	PV_{CC} 1	I	Power supply terminal
3,4	VM	O	Connected to power supply
5,6	PGND1	-	GND
7	W OUT	O	Spindle motor drive signal output
8	PV_{CC} 2	I	Power supply terminal

Pin No.	Terminal Name	I/O	Function
9	V OUT	O	Spindle motor drive signal output
10	PGND2	-	GND
11	U OUT	O	Spindle motor drive signal output
12	PV_{CC} 3	I	Power supply terminal
13	COM	I	Motor coil midpoint signal input
14	WIN	I	Motor position detect signal input
15	VIN		
16	UIN		
17	CST	-	Connected to GND through capacitor
18	V_{CC}	I	Power supply terminal
19	GND	-	GND
20	VG	-	Not used, connected to GND via capacitor
21	CSL1	-	Slope capacitor connection terminal (Connected to GND through capacitor)
22	CSL2		
23	MUTE1	I	Driver (4 ch) OFF signal input
24	MUTE2	I	Driver (3 ch) OFF signal input
25	VO3F	O	Traverse motor drive signal output
26	VO3R	O	Traverse motor drive signal output
27	PV_{CC} 4	I	Power supply terminal
28	PGND3	-	GND
29	C2N	-	Charge pump capacitor 2 connection terminal (Negative)
30	C2P	-	Charge pump capacitor 2 connection terminal (Positive)
31	C1N	-	Charge pump capacitor 1 connection terminal (Negative)
32	C1P	-	Charge pump capacitor 1 connection terminal (Positive)
33	VO2F	O	Tracking coil drive signal output
34	VO2R	O	Tracking coil drive signal output
35	VO1F	O	Focus coil drive signal output
36	VO1R	O	Focus coil drive signal output
37	PGND4	-	GND
38	CLK	I	Clock signal input terminal
39	IN1F	I	Focus coil drive signal input
40	IN1R	I	Focus coil drive signal input
41	IN2F	I	Tracking coil drive signal input
42	IN2R	I	Tracking coil drive signal input
43	IN3F	I	Traverse motor drive signal input
44	IN3R	I	Traverse motor drive signal input
45	FG	O	Pulse output terminal for spindle motor rotating measurement
46	HBIN	I	Spindle motor drive signal input
47	BRK	I	Spindle motor drive signal input
48	MONITOR	O	A/D reference voltage signal output

14.4. IC501(MN6627911AC1): Servo Processor, Digital Signal Processor, Digital Filter & D/A Converter

Pin No.	Terminal Name	I/O	Function
1	DRV_{DD}	I	Power supply terminal
2	D0	I/O	Data 0-1 input/output terminal
3	D1		
4	NWE	O	Write enable output terminal
5	NRAS	O	RAS control signal output terminal
6	D2	I/O	Data 2-3 input/output terminal
7	D3		
8	NCAS0	O	CAS control 0 signal output terminal
9	NCAS1	O	CAS control 1 signal output terminal
10 | 14	A8 | A4	O	Addresses 8-4 output terminal
15	A9	O	Address 9 output terminal
16 | 19	A0 | A3	O	Addresses 0-3 output terminal
20	V_{SS} 2	-	GND
21	DV_{DD} 2	I	Power supply terminal
22	SPOUT	O	Spindle motor drive output terminal
23	TRV+	O	Traverse motor drive (+) output terminal
24	TRV-	O	Traverse motor drive (-) output terminal
25	TR+	O	Tracking coil drive (+) output terminal
26	TR-	O	Tracking coil drive (-) output terminal
27	FO+	O	Focus coil drive (+) output terminal
28	FO-	O	Focus coil drive (-) output terminal
29	IOV_{DD} 1	I	Power supply terminal
30	TBAL	O	Tracking balance adjustment signal output
31	FBAL	O	Focus balance adjustment signal output
32	FE	I	Focus error signal input terminal
33	TE	I	Tracking error signal input terminal
34	RFENV	I	RF envelope signal input terminal
35	OFT	I	Off-track signal input terminal
36	NRFDET	I	RF detection signal input terminal
37	BDO	I	Dropout signal input terminal
38	LDON	O	Laser ON signal output terminal (H: ON)
39	ARF	I	RF signal input terminal
40	IREF	I	Reference current input terminal
41	AD PV_{CC}	I	A/D reference voltage input terminal
42	DSLF	O	Not used, connected to GND via capacitor
43	RFSW	O	Not used, connected to GND
44	PLLF	O	Not used, connected to GND
45	PLLFO	O	Not used, connected to GND via capacitor
46	AV_{DD} 2	I	Power supply terminal
47	AV_{SS} 2	-	GND
48	OUTL	O	L ch audio signal output terminal
49	AV_{SS} 1	-	GND
50	OUTR	O	R ch audio signal output terminal
51	AV_{DD} 1	I	Power supply terminal
52	DV_{SS} 3	-	Not used, connected to GND
53	DV_{DD} 3	I	Power supply terminal
54	TMOD2	-	Not used, connected to GND
55	FLAG0	-	Not used, open
56	RFOFF	-	Not used, open
57	IPFLAG	-	Not used, open
58	CKBK	-	Not used, open
59	IOV_{DD} 2	I	Power supply terminal
60	TX	-	Not used, open
61	MCLK	I	Serial command clock input
62	MDATA	I	Serial command data input
63	MLD	I	Serial command latch input
64	BLKCK	O	Sub-code block clock signal output
65	PWMSEL	I	Connected to GND
66	SMCK	O	System clock signal output
67	SBCK	-	Not used, connected to GND
68	STAT	O	Status signal output terminal
69	NRST	I	Reset signal input terminal
70	SPPOL	O	Spindle motor drive signal output terminal
71	PMCK	O	Clock signal output
72	NCLOCK	-	Not used, open
73	VDET	-	Not used, open
74	PCK	-	Not used, open
75	NTEST	I	Test terminal (Connected to power supply)
76	X2	O	Crystal oscillator connected (F=16.9 MHz)
77	X1	I	
78	DV_{SS} 1	-	GND
79	DV_{DD} 1	I	Power supply terminal
80	CLVS	-	Not used, open

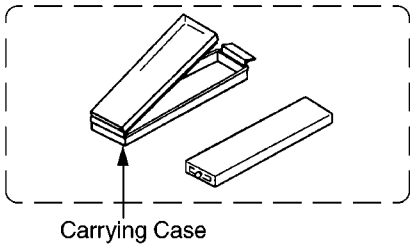
15 Supply of Rechargeable Battery as Replacement Parts

Please take note of the following points relating to Carrying Case to be used for protection of Rechargeable Battery from shorting.

Replacement Parts:

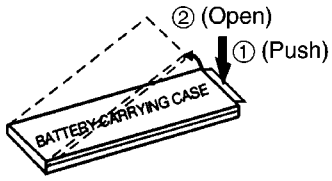
- Rechargeable Battery (RFKFBP62EYD/RFKFBP61GYD) to be supplied will be provided with Carrying Case.
- The rechargeable batteries for accessories are contained a pair of two batteries, however, for replacement parts, that is supplied one by one.
- No replacement parts will be supplied for Rechargeable Battery without Carrying Case.
- Replacement parts will be supplied for Carrying Case (RFC0062-X) without Rechargeable Battery.
- To your customers, delivery Rechargeable Battery together with Carrying Case to prevent shorting accidents that may occur when Rechargeable Battery is carried about without Carrying Case.

RFKFBP62EYD
RFKFBP61GYD
(Rechargeable Battery with Carrying Case)



16 Caution in use of Rechargeable Battery

- Take Rechargeable Battery out of Carrying Case and use it.
- Be sure to carry Rechargeable Battery in this Carrying Case.
  If not, may either heat or ignite by shorting with a metal.



17 Replacement Parts List

Notes:

- Important safety notice:

  Components identified by ⚠ mark have special characteristics important for safety.

  Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.

  When replacing any of components, be sure to use only manufactures specified parts shown in the parts list.

- The parenthesized indications in Remarks columns specify the areas and colours.

  (EBS): SL-J900EB, Silver Type

  (EGS): SL-J900EG, Silver Type

  (GDN): SL-J900GD, Gold Type

  (GDS): SL-J900GD, Silver Type

  (SGN): SL-J900SG, Gold Type

  (SGS): SL-J900SG, Silver Type

- The marking [RTL] indicates that retention time is limited for this item. After the discontinuation of this assembly in production, it will no longer be available.

- All parts are supplied by SPC.

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
1	RAE0223Z-M	TRAVERSE DECK UNIT	1	⚠
1-1	RMG0503-K1	FLOATING RUBBER	3	
1-2	RXQ0798	MOTOR ASS´Y	1	
1-3	RAF0223A	OPTICAL PICK-UP	1	⚠
1-4	RDG0554	GEAR 1	1	
1-5	RDG0555	GEAR 2	1	
1-6	RHD14092-K	SCREW	1	
1-7	RJB2447A-1	FFC	1	
1-8	RMC0451-1	SPRING PLATE	1	
1-9	RMC0452	SPRING	1	
1-10	RMS0782	SHAFT 1	1	
1-11	XQN17+BG45	SCREW	3	
2	RGN2476-H	NAME PLATE	1	(GDS/GDN)
2	RGN2346-H	NAME PLATE	1	(SGS/SGN)
2	RGN2345-H1	NAME PLATE	1	(EBS)
2	RGN2344-H1	NAME PLATE	1	(EGS)
3	RGV0308-H	KNOB,HOLD	1	
4	RJC99048	BATTERY TERMINAL(-)	1	
5	RMC0536	EARTH SPRING	1	
6	RMA1590	SHAFT PLATE	2	
7	RMB0722-1	SPRING	1	
8	RYF0649-S	CD LID UNIT	1	(GDS/SGS/EGS /EBS)
8	RYF0649-N	CD LID UNIT	1	(GDN/SGN)
9	RGU2147-S	BUTTON,VOLUME	2	
10	RGV0307-S1	KNOB,OPEN	1	
11	RKK0167A-S2	BATTERY COVER	1	
12	RKM0472-S4	MIDDLE CABINET	1	
13	RKW0700-Q	LENS	1	
14	RMB0723	SPRING	1	
15	RMV0248	SHEET	1	
16	XQN14+BG3FC	SCREW	2	
17	REZ1476	FFC	1	
18	RJC99049	BATTERY TERMINAL	1	
19	RKS0367A-S3	BOTTOM CABINET	1	
20	XTN17+6GFZ	SCREW	6	
21	XQN14+CG5FC	SCREW	2	
22	RQLS0244	LASER LABEL	1	(SGS/SGN/EBS /EGS)

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
A1	DE-922C	AC ADAPTOR	1	⚠ (GDS/GDN)
A1	DE-922A-1	AC ADAPTOR	1	⚠ (SGS/SGN/EBS /EGS)
A2	RJA0078-1X	AC MAINS LEAD	1	⚠ (GDS/GDN)
A2	RJA0019-2X	AC MAINS LEAD	1	⚠ (SGS/SGN/ EGS)
A2	RJA0053-3X	AC MAINS LEAD	1	⚠ (EBS)
A3	L0BAB0000170	STEREO EARPHONES	1	
A4	L0EAAB000013	SPEAKER/BATTERY CHARGER	1	(GDS/GDN)
A4	L0EAAB000008	SPEAKER/BATTERY CHARGER	1	(SGS/SGN/EBS /EGS)
A5	N2QCBD000025	WIRED REMOTE CONTROL	1	
A5-1	RFKY0017	TOP COVER	1	
A5-2	RFKY0004	BOTTOM COVER	1	
A6	RFA1821-H	EXTERNAL BATTERY CASE	1	
A7	RFC0062-X	BATTERY CARRYING CASE	1	
A8	RFKFBP61GYD	RECHARGEABLE BATT. ASS´Y	2	(GDS/GDN/SGS /SGN)
A8	RFKFBP62EYD	RECHARGEABLE BATT. ASS´Y	2	(EBS/EGS)
A9	RQT6941-Z	OPERATING INSTRUCTIONS	1	(GDS/GDN/SGS /SGN), KOREAN
A9	RQT6609-K	OPERATING INSTRUCTIONS	1	(SGS/SGN), CHINESE
A9	RQT6621-B	OPERATING INSTRUCTIONS	1	(SGS/SGN/EBS /EGS), ENGLISH
A9	RQT6608-E	OPERATING INSTRUCTIONS	1	(EGS), FRENCH, GERMANY, SPANISH, NETHERLANDS, SWEDISH, DANISH, ITALIAN, PORTUGUESE, RUSSIAN, POLISH, CZECH
A10	RQCS0430	NOTICE	1	(EGS)
A11	SJP5213-2	POWER PLUG ADAPTOR	1	⚠ K2DR42E00003 (SGS/SGN)
A12	J0KG00000072	FILTER	1	
A13	RFC0071A-H	SOFT CASE	1	(GDS/GDN/SGS /SGN)
C1	ECJ1VB1H332K	50V 3300P	1	
C11	ECUV1H101KCV	50V 100P	1	ECJ1VC1H101K
C12	ECST0JY226R	6.3V 22U	1	
C13	F3H1A476A001	10V 47U	1	
C14	F3G0G1070001	4V 100U	1	
C15	ECJ1VF1C104Z	16V 0.1U	1	
C16	RCST0GY476RG	4V 47U	1	F3F0G4760001
C21	ECUV1H101KCV	50V 100P	1	ECJ1VC1H101K
C41,42	F3H1A227A011	10V 220U	2	
C54	ECJ1VB1C104K	16V 0.1U	1	
C61	ECUV1H101KCV	50V 100P	1	ECJ1VC1H101K
C62	RCSX0GY226RE	4V 22U	1	F3F0G226A001
C71	F3F0J106A007	6.3V 10U	1	
C72	ECJ1VF1C104Z	16V 0.1U	1	
C101	ECJ1VB1C104K	16V 0.1U	1	
C102	F3G0G1070001	4V 100U	1	
C103	ECJ1VB1E223K	25V 0.022U	1	
C111	ECJ1VB1E223K	25V 0.022U	1	
C112	ECJ1VB1H221K	50V 220P	1	
C113	ECJ1XF1A105Z	10V 1U	1	F1H1A1050002

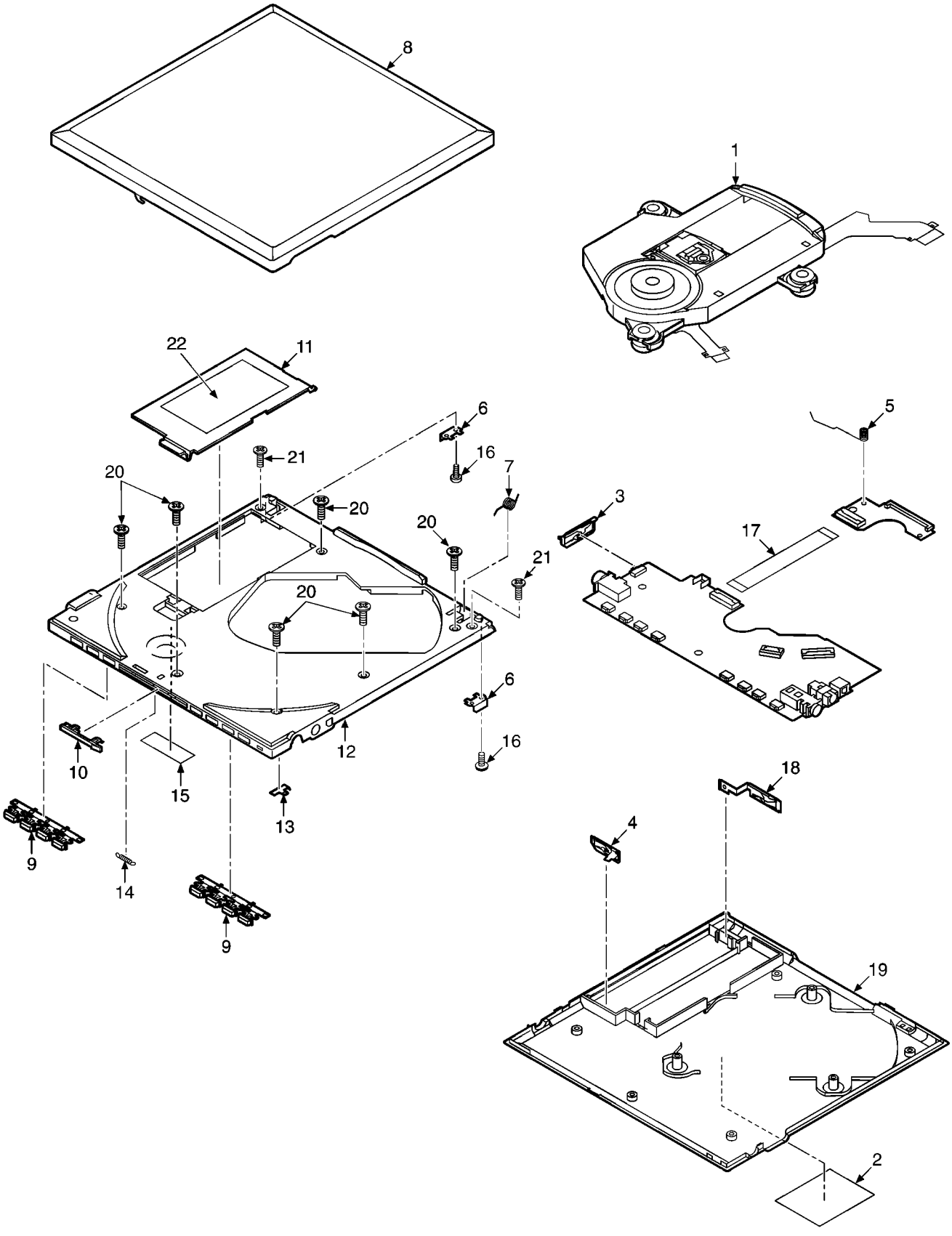
Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C114	ECJ1VF1C104Z	16V 0.1U	1	
C115-17	ECJ1VB1E223K	25V 0.022U	3	
C120	ECJ1VB1H152K	50V 1500P	1	
C121	ECJ1XC1H121J	50V 120P	1	
C131,32	ECJ1XC1H271J	50V 270P	2	
C201	ECST0JY226R	6.3V 22U	1	
C301	ECJ1VF1A105Z	10V 1U	1	
C302	ECJ1VF1A105Z	10V 1U	1	(GDS/GDN/SGS /SGN)
C303	ECJ1VB1H472K	50V 4700P	1	(EGS/EBS)
C303	ECUV1H101KCV	50V 100P	1	ECJ1VC1H101K (GDS/GDN/SGS /SGN)
C304	ECJ1VB1H472K	50V 4700P	1	(EGS/EBS)
C304	ECUV1H101KCV	50V 100P	1	ECJ1VC1H101K (GDS/GDN/SGS /SGN)
C305	ECJ1VB1H472K	50V 4700P	1	(GDS/GDN/SGS /SGN)
C306	ECJ1VB1H472K	50V 4700P	1	(EBS/EGS)
C306	ECUV1H101KCV	50V 100P	1	ECJ1VC1H101K (GDS/GDN/SGS /SGN)
C307	ECJ1VB1H472K	50V 4700P	1	(EGS/EBS)
C308	ECJ1VF1C104Z	16V 0.1U	1	(EGS/EBS)
C309	ECJ1VF1A105Z	10V 1U	1	(EGS/EBS)
C398,99	ECJ1VC1H050C	50V 5P	2	
C401,02	ECJ1VB1C104K	16V 0.1U	2	
C403	ECJ1VF1C104Z	16V 0.1U	1	
C404	ECST0JY226R	6.3V 22U	1	
C405	ECJ1VF1C104Z	16V 0.1U	1	
C406	ECST0JY226R	6.3V 22U	1	
C412	ECJ1VF1C104Z	16V 0.1U	1	
C431-33	ECJ1VB1H222K	50V 2200P	3	
C434	ECUVNA224KBV	10V 0.22U	1	F1H1A224A028
C435,36	ECUVNC333KBV	16V 0.033U	2	F1H1C333A071
C437	ECJ1VF1A105Z	10V 1U	1	
C501,02	ECUV1H120KCV	50V 12P	2	F1H1H120A725
C503	ECUV1H391KBV	50V 390P	1	ECJ1VB1H391K
C504	ECJ1VF1C104Z	16V 0.1U	1	
C505	ECUVNH103KBV	50V 0.01U	1	F1H1H103A748
C506	F1H1A105A028	10V 1U	1	
C507	F3G0G1070001	4V 100U	1	
C509	ECJ1VB1C104K	16V 0.1U	1	
C510,11	ECJ1VF1C104Z	16V 0.1U	2	
C514	ECJ1VB1H102K	50V 1000P	1	
C515,16	ECJ1VF1C104Z	16V 0.1U	2	
C517	ECJ1VF1A105Z	10V 1U	1	
C525	F1H1A105A028	10V 1U	1	
C526	ECJ1VF1C104Z	16V 0.1U	1	(EGS/EBS)
C552	ECJ1VF1C104Z	16V 0.1U	1	
C603,04	ECJ1VB1H682K	50V 6800P	2	
C605,06	F3F1A1060002	10V 10U	2	
C607,08	ECJ1VB1H681K	50V 680P	2	
C610	RCST0GY476RG	4V 47U	1	F3F0G4760001
C611	ECJ1VB1C104K	16V 0.1U	1	
C612	RCSX0GY226RE	4V 22U	1	F3F0G226A001
C613,14	ECJ1VB1H222K	50V 2200P	2	
C651	ECJ1VF1C104Z	16V 0.1U	1	
C702	ECUVNA224KBV	10V 0.22U	1	F1H1A224A028
C704	ECJ1VB1C104K	16V 0.1U	1	
C705,06	F3G0E1570001	2.5V 150U	2	
C707	ECJ1VF1C104Z	16V 0.1U	1	
C708	ECJ1VB1C104K	16V 0.1U	1	
C710	ECJ1VF1C104Z	16V 0.1U	1	
C711,12	ECUVNA224KBV	10V 0.22U	2	F1H1A224A028
C714	ECUVNJ475MBN	6.3V 4.7U	1	F1J0J4750002
C715	ECST0GY475RR	4V 4.7U	1	ECST0GY475R
C716	RCST0GZ106RG	4V 10U	1	F3E0G106A002
C717	ECJ1VF1A105Z	10V 1U	1	
C718	ECUVNA224KBV	10V 0.22U	1	F1H1A224A028
C719,20	ECJ1VF1C104Z	16V 0.1U	2	
C806,07	F1H1A105A028	10V 1U	2	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C997	ECUV1H100CCV	50V 10P	1	F1H1H100A722 (GDS/GDN/SGS /SGN/EBS)
CN11	RJC99042-1	BATT.TERMINAL	1	
CN101	RJS2A4616T	CONNECTOR(16P)	1	K1MN16B00063
CN301,02	RJS2A4616T	CONNECTOR(16P)	2	K1MN16B00063
CN303	K4BZ14E00001	CONNECTOR(14P)	1	
CN401	K1MN08B00063	CONNECTOR(8P)	1	
D11	B0JCMC000006	DIODE	1	
D21	MA2J72900L	DIODE	1	
D41	MA1070400L	DIODE	1	MA2J70400L
D43,44	MA2YD2100L	DIODE	2	
D45	B0JCME000012	DIODE	1	
D46	ERJ8GEY0R00V	1/8W 0	1	D0YFR0000002
D61	MA2J72900L	DIODE	1	
D71	MA2J72900L	DIODE	1	
D90	B3AAB0000075	LED	1	
D201	MA2J11100L	DIODE	1	
D301	MAZ80560ML	DIODE	1	
D501	SB00703QTL	DIODE	1	B0JCBD000002
D601	MA2J11100L	DIODE	1	
IC11	C0EBD0000020	IC	1	
IC41	C0CBZBZ00001	IC	1	
IC61	C0DBAFB00007	IC	1	
IC71	C0CBZBZ00002	IC	1	
IC81	C0EBD0000020	IC	1	
IC91	C0CBZAZ00001	IC	1	
IC92	C0CBZAZ00003	IC	1	
IC101	AN8885SBE1V	IC	1	AN8885SB-E1V
IC301	C2BBGE000662	IC	1	
IC302	AK93C45BH-L	IC	1	C3EBCG000028
IC401	C0GBZ0000008	IC	1	
IC501	MN6627911AC1	IC	1	
IC502	C3ABMB000027	IC	1	
IC701	C1BB00000605	IC	1	
ICP11	K5H1522A0004	IC PROTECTOR	1	⚠
ICP41	ERY32SB075VA	IC PROTECTOR	1	⚠
RJ101	ERJ3GEY0R00V	1/16W 0	1	
RJ502	ERJ3GEY0R00V	1/16W 0	1	
RJ602	ERJ3GEY0R00V	1/16W 0	1	(GDS/GDN/SGS /SGN/EBS)
RJ604	ERJ3GEY0R00V	1/16W 0	1	(GDS/GDN/SGS /SGN/EBS)
JK11	K2FB3B000003	JK,DC IN	1	
JK12	K2FB2B000003	JK,EXT BATT.	1	
JK701	K2HC106B0008	JK,HEADPHONE	1	
L11	G1C101MA0035	COIL	1	
L21	G1C330MA0035	COIL	1	
L61	RLQU101KT-W	COIL	1	G1C101K00008
L71	RLQU331KT-W	COIL	1	G1C331K00004
L401	G1C151MA0035	COIL	1	
LB604-06	ERJ3GEY0R00V	1/16W 0	3	
LB701-03	ERJ3GEY0R00V	1/16W 0	3	
P1	RPF0111-2	PROTECTION BAG	1	
P2	RPQ1545	PAD	2	
P3	RPQ1402	PAD	1	(GDS/GDN/SGS /SGN)
P3	RPQ1482	PAD	1	(EBS/EGS)
P5	RPQF0244	ACC.BOX	1	
P6	RPK1807	GIFT BOX	1	(GDS/SGS/EGS /EBS)
P6	RPK1950	GIFT BOX	1	(GDN/SGN)
PCB1	REP3425A-M	P.C.B. ASS´Y	1	[RTL] (GDS/GDN/SGS /SGN)

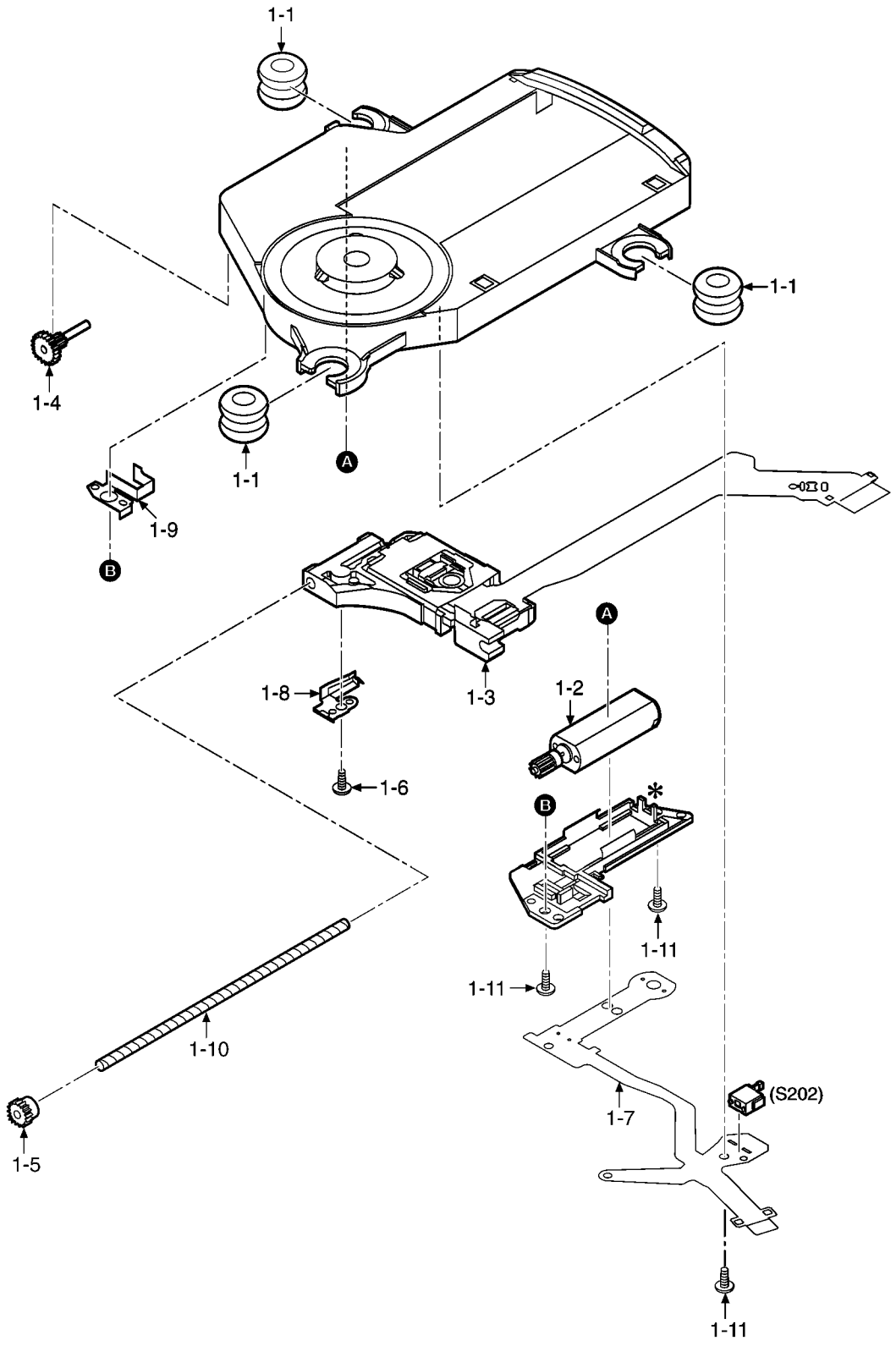
Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
PCB1	REP3425B-M	P.C.B. ASS´Y	1	[RTL] (EBS/EGS)
Q12	B1DFBC000003	TRANSISTOR	1	
Q21	B1DHAC000002	TRANSISTOR	1	
Q41	2SB1182TLPQR	TRANSISTOR	1	B1BDND000001
Q42	B1ABMD000004	TRANSISTOR	1	
Q43	B1DFDC000003	TRANSISTOR	1	
Q44	UN521DTX	TRANSISTOR	1	UNR521D00L
Q61	B1DHAC000002	TRANSISTOR	1	
Q81	2SD1819A0L	TRANSISTOR	1	
Q201	2SB709A	TRANSISTOR	1	2SB0709A
Q301	B1CDGD000001	TRANSISTOR	1	
Q302,03	B1GDCFJN0011	TRANSISTOR	2	
Q304	UN521MTX	TRANSISTOR	1	UNR521M00L
Q401	UN521DTX	TRANSISTOR	1	UNR521D00L
Q402	B1DFDC000003	TRANSISTOR	1	
Q501	B1DHAC000002	TRANSISTOR	1	
Q502	B1CFHA000001	TRANSISTOR	1	
Q551	DTA143EUA106	TRANSISTOR	1	B1GDCFGG0005
Q601	XN0F26100L	TRANSISTOR	1	
Q604	2SB1218A	TRANSISTOR	1	
Q605	XP1501TW	TRANSISTOR	1	XP0150100L
Q701	XN0F26100L	TRANSISTOR	1	
Q901	B1GDCFJN0011	TRANSISTOR	1	
Q903	B1GDCFNN0007	TRANSISTOR	1	
R3	D0YBR0000010	10K	1	
R41	ERJ3GEYJ103V	1/16W 10K	1	D0GB103JA002
R42	ERJ3GEY0R00V	1/16W 0	1	
R44	ERJ3GEYJ271V	1/16W 270	1	
R45	ERJ3GEYJ104	1/16W 100K	1	
R50,51	ERJ8GEYJ2R2V	1/8W 2.2	2	
R52	ERJ3GEYJ105V	1/16W 1M	1	
R53-56	ERJ3GEYJ104	1/16W 100K	4	
R57	ERJ3GEYJ102V	1/16W 1K	1	
R58	ERJ3RBD473	1/16W 47K	1	
R59	ERJ3RBD683V	1/16W 68K	1	
R81	ERJ3GEY0R00V	1/16W 0	1	
R82,83	ERJ3GEYJ123V	1/16W 12K	2	
R90	ERJ3GEYJ181V	1/16W 180	1	
R92	ERJ3GEY0R00V	1/16W 0	1	
R101	EXBV4V101JV	1/32W 100	1	
R120	ERJ3GEYJ103V	1/16W 10K	1	D0GB103JA002
R121,22	ERJ3GEYJ124V	1/16W 120K	2	D0GB124JA002
R125	EXBV4V124JV	1/32W 120K	1	
R126	ERJ3GEYJ104	1/16W 100K	1	
R128	EXBV4V103JV	1/32W 10K	1	
R201	ERJ3GEYJ2R2V	1/16W 2.2	1	D0GB2R2JA002
R202	ERJ3GEYJ223V	1/16W 22K	1	D0GB223JA002
R203	ERJ3GEYJ1R0V	1/16W 1	1	
R208	ERJ3GEY0R00V	1/16W 0	1	
R301	ERJ3GEYJ472V	1/16W 4.7K	1	
R302	ERJ3GEYJ104	1/16W 100K	1	
R303	ERJ3GEYJ102V	1/16W 1K	1	
R304	ERJ3GEYJ105V	1/16W 1M	1	
R305	ERJ3GEYJ335V	1/16W 3.3M	1	
R306	EXBV8V473JV	1/16W 47K	1	
R307	ERJ3GEYJ104	1/16W 100K	1	
R308	ERJ3GEYJ822V	1/16W 8.2K	1	D0GB822JA002
R309	ERJ3GEYJ104	1/16W 100K	1	
R310	ERJ3GEYJ102V	1/16W 1K	1	
R312	ERJ3GEYJ273V	1/16W 27K	1	D0GB273JA002
R313	ERJ3GEYJ102V	1/16W 1K	1	(EGS/EBS)
R314	ERJ3GEYJ123V	1/16W 12K	1	
R315	ERJ3GEYJ273V	1/16W 27K	1	D0GB273JA002
R316	ERJ3GEYJ102V	1/16W 1K	1	
R317	ERJ3GEYJ103V	1/16W 10K	1	D0GB103JA002
R318	ERJ3GEYJ104	1/16W 100K	1	
R319	ERJ3GEYJ102V	1/16W 1K	1	
R320	ERJ3GEYJ104	1/16W 100K	1	
R321-23	ERJ3GEYJ102V	1/16W 1K	3	
R324	ERJ3RBD273V	1/16W 27K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R325	ERJ3GEYJ333V	1/16W 33K	1	D0GB333JA002
R331,32	ERJ3GEYJ103V	1/16W 10K	2	D0GB103JA002
R333	ERJ3RBD273V	1/16W 27K	1	
R351	ERJ3GEYJ104	1/16W 100K	1	
R358	ERJ3GEYJ102V	1/16W 1K	1	
R359,60	ERJ3GEYJ104	1/16W 100K	2	
R363,64	ERJ3GEYJ102V	1/16W 1K	2	
R396	ERJ3GEYJ103V	1/16W 10K	1	D0GB103JA002
R397	EXBV8V104JV	1/16W 100K	1	
R401	ERJ3GEYJ333V	1/16W 33K	1	D0GB333JA002
R402,03	ERJ8GEYJ2R2V	1/8W 2.2	2	
R404	ERJ3GEYJ104	1/16W 100K	1	
R501	ERJ3GEY0R00V	1/16W 0	1	
R502	ERJ3GEYJ683V	1/16W 68K	1	D0GB683JA002
R507	MCR03PZHJ561	1/16W 560	1	
R508	ERJ3GEYJ100	1/16W 10	1	
R509	ERJ3GEYJ331V	1/16W 330	1	
R511	ERJ3GEYJ102V	1/16W 1K	1	
R512	EXBV4V102JV	1/32W 1K	1	
R513	ERJ3GEYJ154V	1/16W 150K	1	
R514	ERJ3GEYJ681V	1/16W 680	1	D0GB681JA002
R515	ERJ3GEYJ150V	1/16W 15	1	
R516	ERJ3GEYJ104	1/16W 100K	1	
R518	ERJ3GEYJ473V	1/16W 47K	1	D0GB473JA002
R603,04	EXBV4V271JV	1/16W 270	2	
R605	EXBV4V473JV	1/32W 47K	1	
R607	EXBV4V102JV	1/32W 1K	1	
R611,12	ERJ3GEYJ682V	1/16W 6.8K	2	D0GB682JA002
R613	ERJ3GEYJ222V	1/16W 2.2K	1	
R614	ERJ3GEYJ224V	1/16W 220K	1	D0GB224JA002
R615	ERJ3GEYJ103V	1/16W 10K	1	D0GB103JA002
R701,02	ERJ3GEYJ100	1/16W 10	2	
R703,04	ERJ3GEYJ1R5V	1/16W 1.5	2	
R707,08	ERJ3GEYJ102V	1/16W 1K	2	
R709,10	ERJ3GEYJ104	1/16W 100K	2	
R711	ERJ3GEYJ102V	1/16W 1K	1	
R712	ERJ3GEYJ104	1/16W 100K	1	
R720	ERJ3GEYJ223V	1/16W 22K	1	D0GB223JA002
R721	ERJ3GEYJ103V	1/16W 10K	1	D0GB103JA002
R750	EXBV4V183JV	1/32W 18K	1	
R751	EXBV4V562JV	1/32W 5.6K	1	
R901	ERJ3GEY0R00V	1/16W 0	1	
S201	RSH1A039-A	SW,LASER ON/OFF	1	K0L1BA000037
S202	RSP1A024-A	SW,REST DET.	1	K0L1BA000029
S301-08	EVQ1PG02K	SW,OPERATION	8	
S310	RSS2A010-1A	SW,HOLD	1	K0D112B00071
X301	H0J327200034	OSCILLATOR	1	
X501	H0J169300002	OSCILLATOR	1	
ZA1-A4	K4ZZ01000193	TEST TERMINAL	4	(EGS/EBS)

18 Cabinet Parts Location

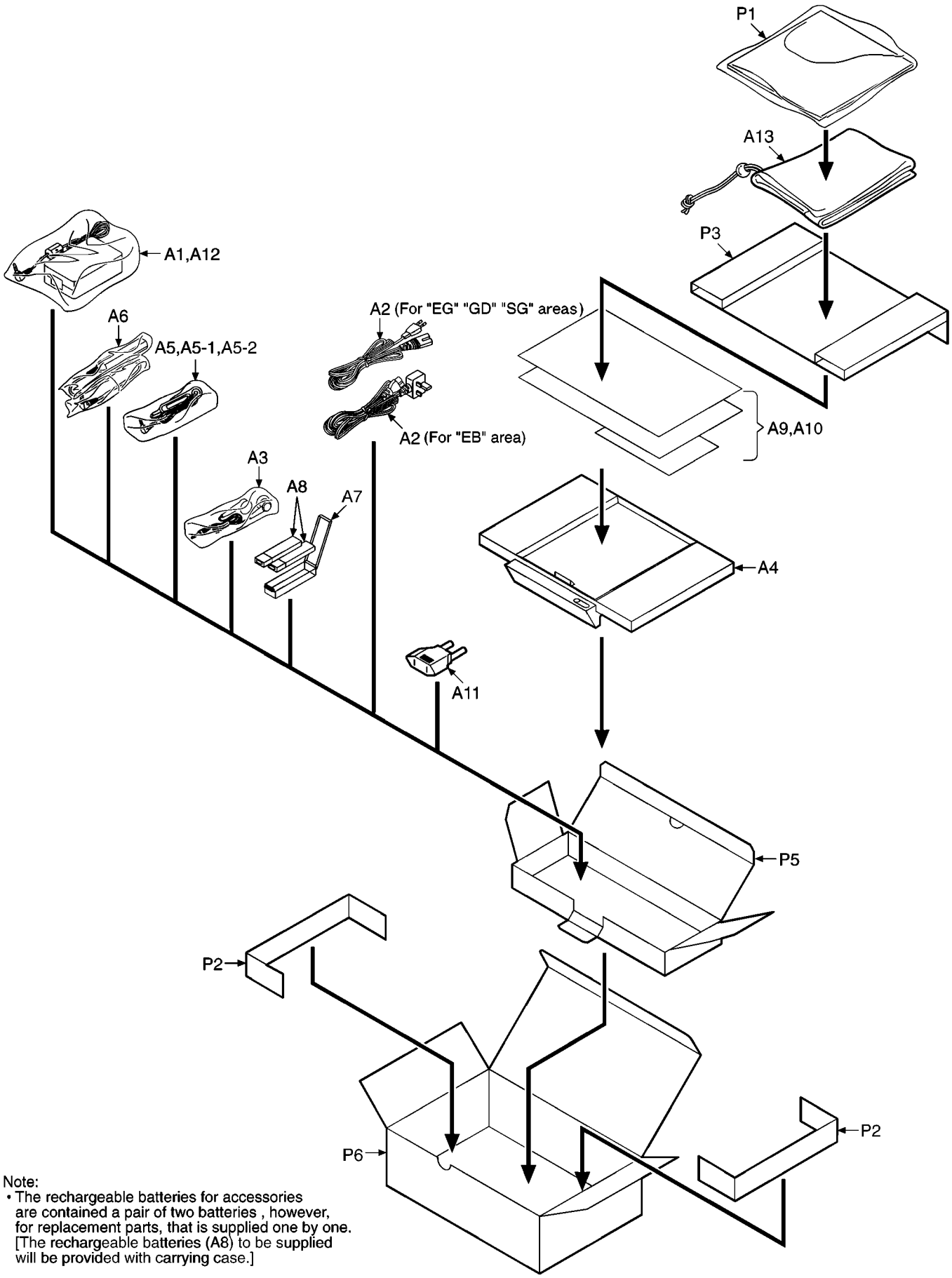


19 Traverse Unit Parts Location



Note : We do not supply those items of parts marked ✻.

20 Packaging



Note:
• The rechargeable batteries for accessories are contained a pair of two batteries , however, for replacement parts, that is supplied one by one. [The rechargeable batteries (A8) to be supplied will be provided with carrying case.]