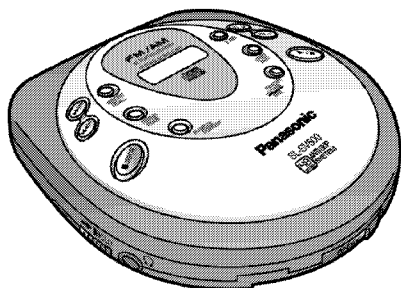


Service Manual

Portable CD Player



SL-SV500EB SL-SV500EG

Traverse Deck: RAE0145Z Mechanism Series

Colour

(S).....Silver Type

Specifications

● CD section

Audio

No. of channels: 2 channels (left and right, stereo)
Frequency response: 20 to 20,000 Hz(+0 dB, -8 dB)
DA converter: 1 bit, MASH
Headphones output level: RMS max. 6 mW+6 mW/16 Ω (adjustable)

Pickup

Light source: Semiconductor laser
Wavelength: 780 nm

● RADIO section

Frequency

Radio frequency:
FM; 87.5 - 108.0 MHz (0.05 MHz steps)
AM; 522 - 1629 kHz (9 kHz steps)
IF:
FM; 10.7 MHz
AM; 459 kHz

Audio

Selectivity:

FM; 42 dB
AM; 7.4 kHz (6 dB) 21 dB/9 kHz

Sensitivity:

FM; 7.9 μ V/0.5 mW output (S/N30 dB)
AM; 354.8 μ V/0.5 mW output (MAX)

● General

Operational temperature range: 0 - 40 degree

Power supply: DC 4.5 V

Power consumption: CD/ RADIO (FM BAND)

AC adaptor; 3.0 W/ 2.5 W

Playing time:

[Approximate operating time in hours (in hold mode with S-XBS canceled, at 25 degree on a flat, stable surface).]

Battery used: CD/ RADIO (FM BAND)

2 Alkaline batteries (LR6); Approx. 25 h/ 75 h

● The play time may be less depending on the operating conditions.

● Play time will be considerably reduced when playing CD-RW.

Dimensions (W×H×D): 128×29.8×131.5 mm

Mass: 264 g (with batteries)

218 g (without batteries)

Power consumption in standby mode (AC adaptor): 2.5 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-DA format audio CD-R and CD-RW that have been finalized* upon completion of recording. It may not be able to play some CD-R or CD-RW due to the condition of the recording.

* Finalizing is a process that enables CD-R/CD-RW players to play audio CD-R and CD-RW.

⚠ 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.

Panasonic

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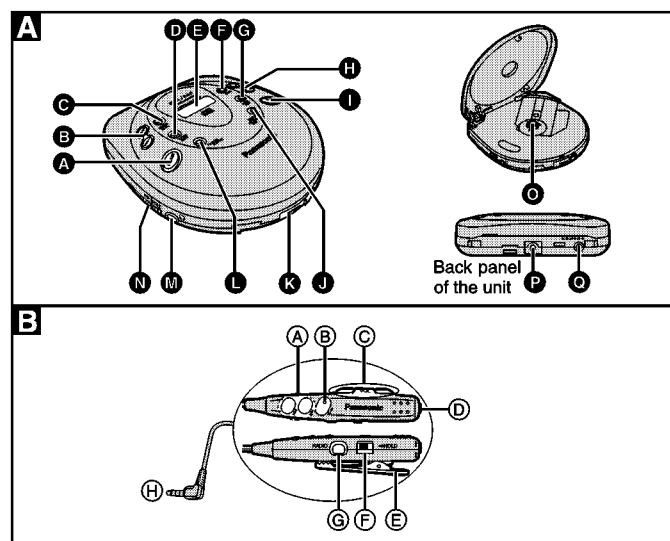
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1 Accessories

- AC adaptor for SL-SV500EB
(N0JCCE000004).....1 pc.
- AC adaptor for SL-SV500EG
(RFEA418E-S).....1 pc.

- Stereo earphones
(L0BAB0000124).....1 pc.
- Wired remote control
(N2QCBD000011).....1 pc.

2 Location of Controls



Main unit **A**

- A** Stop/operation off button
(■, OPR OFF)
- B** Tuning/skip/search buttons
(▶▶/+, ◀◀/-)
- C** Memory/recall button
(MEMORY/RECALL)
- D** Tuning mode select button
(TUNING MODE)
- E** Display
- F** S-XBS button (S-XBS)
- G** Tuner on/band select button
(RADIO/BAND)
- H** Headphone volume control
buttons (VOL+, VOL-)
- I** Play/pause button (▶/||)
- J** Sensitivity control, play mode
button
(FM RECEPT = CITY/NOR, MODE)
- K** Open switch (OPEN▶)
- L** Monaural/stereo button
(FM MODE MONO/ST)

- M** Headphone jack (○)
- N** Hold switch (HOLD)
- O** CD release button (PUSH)
- P** Hole for car mounting base
- Q** DC IN jack
(DC IN 4.5 V ◊-◊-◊)

Wired remote control **E**

- A** Skip/search buttons
(◀◀, ▶▶)
- B** Play/stop/operation off button
(■/▶)
- C** Volume control buttons
(-, VOL, +)
- D** Earphone jack
- E** Clip
- F** Hold switch (HOLD)
- G** Tuner on/off/band select but-
ton (RADIO)
- H** Plug

3 Precaution of Laser Diode

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 μ W/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 enthält eine Laserdiode. Im eingeschalteten Zustand wird unsichtbare Laserstrahlung von der Lasereinheit abgestrahlt.

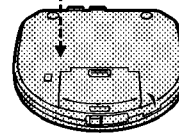
Wellenlänge: 780 nm

Maximale Strahlungsleistung der Lasereinheit: 100 μ W/VDE

Die strahlung 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.

CLASS 1 LASER PRODUCT		VARO! Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymätön lasersäteilylle. Älä katso säteeseen. VARNING! Osynlig laserstrålning när denna del är öppnad och spårren är urkopplad. Betrakta ej strålen. ADVERSE! Usynlig laserstrålning när deksel åpnes og sikkerhedslås brytes. Unngå eksponering for strålen. A pleine puissance, l'écoute prolongée du baladeur peut endommager l'oreille de l'utilisateur. RQLS0196
ADVARSEL: USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAF-BRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.		
VORSICHT: Unsichtbare Laserstrahlung, wenn Abdeckung geöffnet und Sicherheitsverriegelung überbrückt. Nicht dem Strahl aussetzen.	DANGER: Invisible laser radiation when open and interlock defeated. AVOID DIRECT EXPOSURE TO BEAM.	



4 Handling Precautions for Traverse Deck

The laser diode in the 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, short the flexible board (FFC board) with a clip or similar object. Refer to 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.

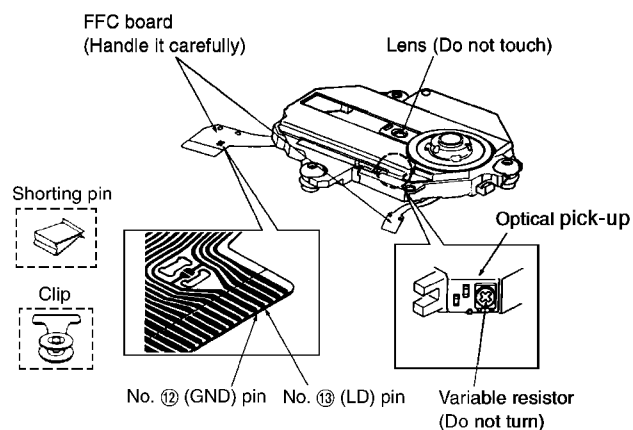


Fig. 4-1.

4.2. Grounding for electrostatic breakdown prevention

4.2.1. Human body grounding

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

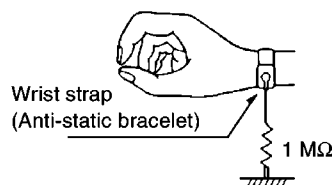


Fig. 4-2.

4.2.2. 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.

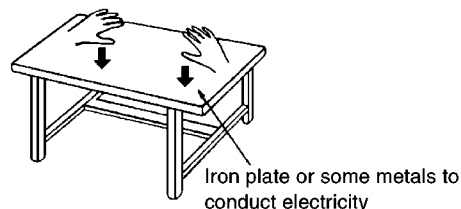


Fig. 4-3.

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

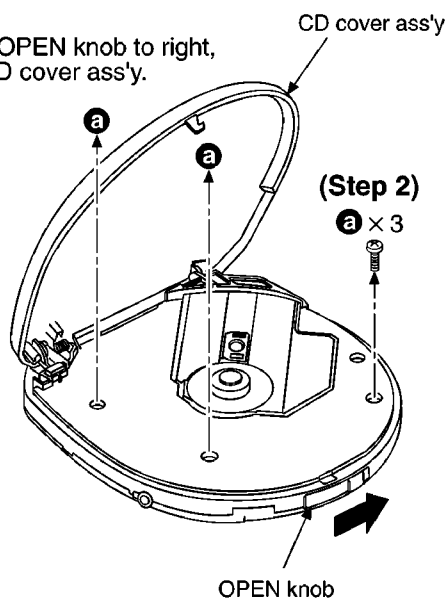
- This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.
- For reassembly after operation checks or replacement, reverse the respective procedures. Special reassembly procedures are described only when required.

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

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

(Step 1)

Sliding the OPEN knob to right, open the CD cover ass'y.

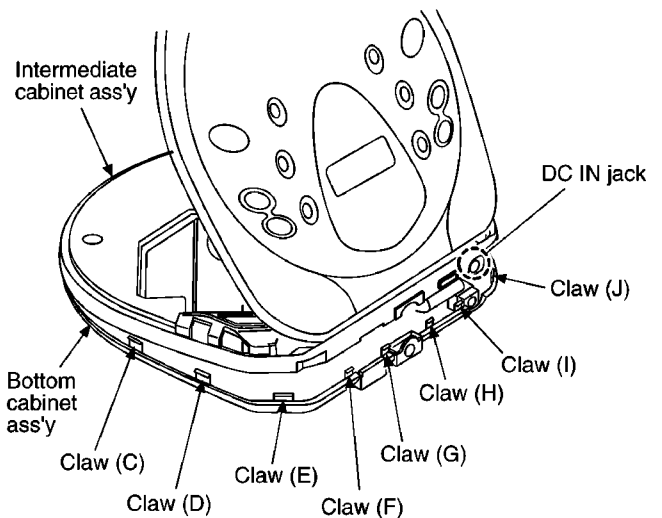
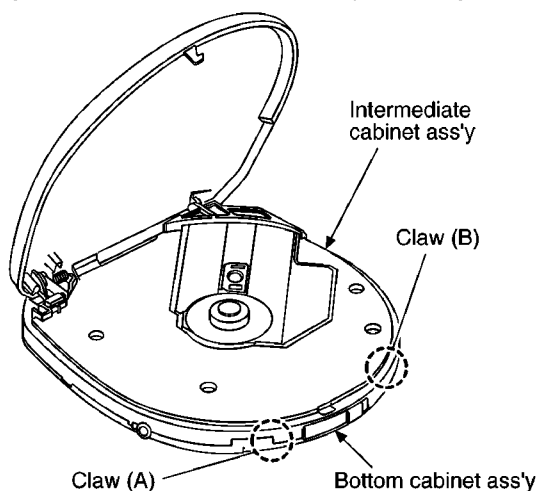


(Step 2)

$a \times 3$

(Step 3)

Spread the clearance between the bottom cabinet ass'y and intermediate cabinet ass'y manually.



(Step 4)

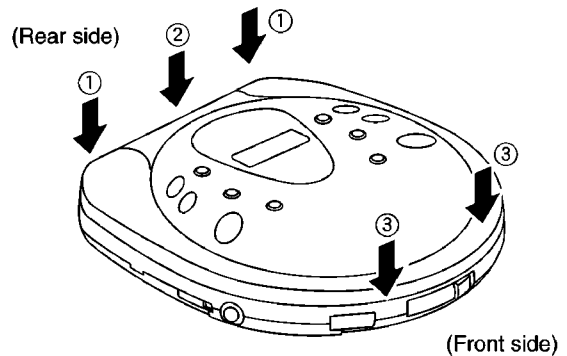
Open the clearance between the bottom cabinet ass'y and intermediate cabinet ass'y, and then release the claw (C) to claw (J) in turn.

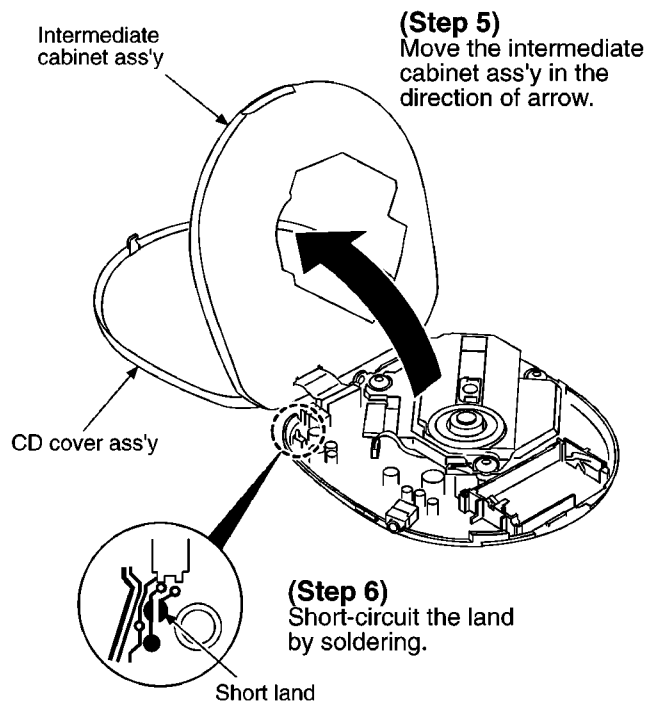
NOTE:

Take care not to break the DC IN Jack provided with intermediate cabinet.

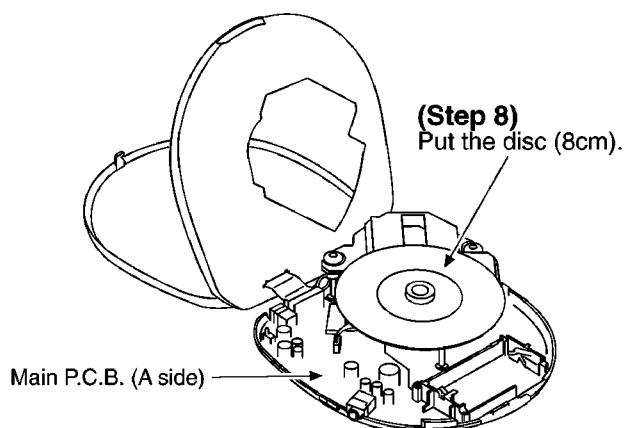
■ CD cover ass'y and intermediate reassembly procedure

- ① Fit together right side and left side of rear part. (Either right or left side)
- ② Fit together the center of rear part.
- ③ Fit together the right and left of front part. (Either right or left side)





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

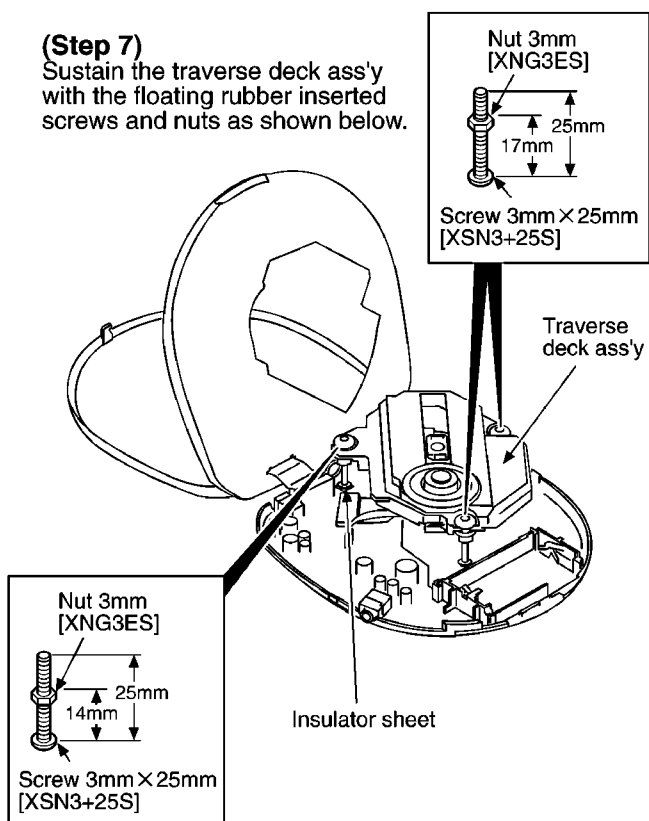
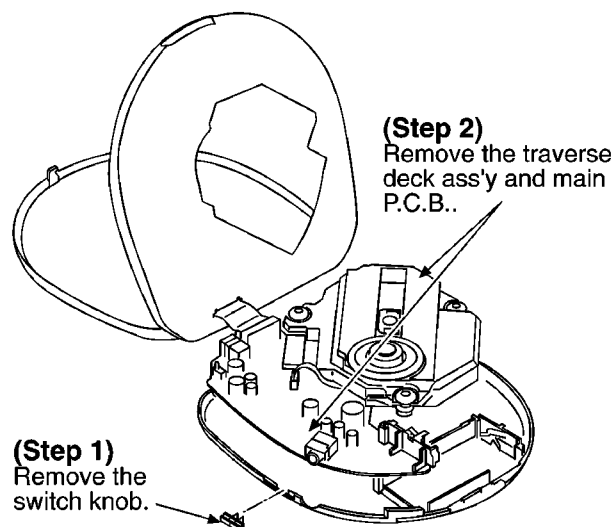


NOTE:

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.

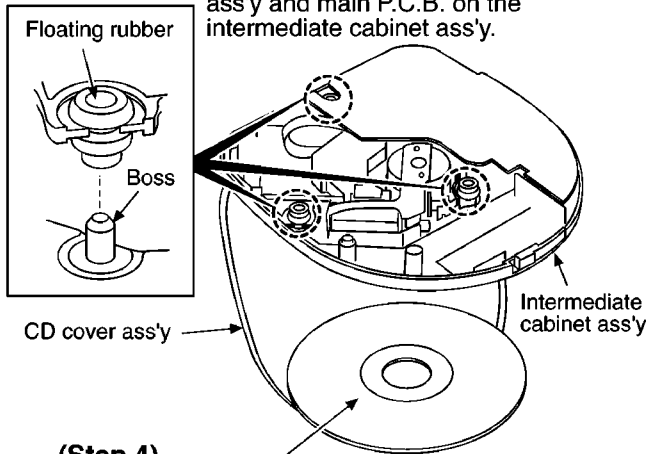


NOTE:

- The tip of screw must not protrude above the floating rubber.
- To keep insulation, place the insulator sheet (paper etc.) between the P.C.B. and the head of screws.

(Step 3)

Align the floating rubbers with bosses, and then locate the traverse deck ass'y and main P.C.B. on the intermediate cabinet ass'y.

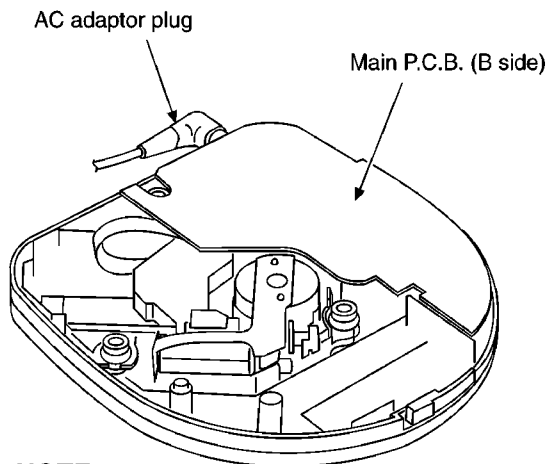
**(Step 4)**

Put the test disc, and then close the CD cover ass'y.

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

(Step 5)

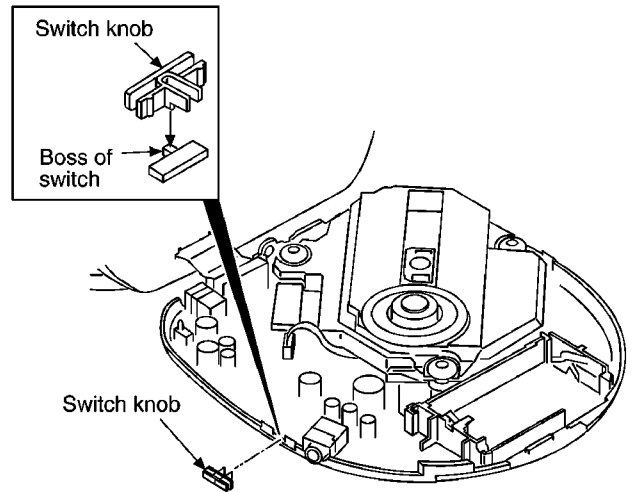
Insert the AC adaptor plug into the DC IN jack, and then apply the power.

**NOTE:**

After checking, unsolder the short land to open circuit.

Notice for installation of switch knobs

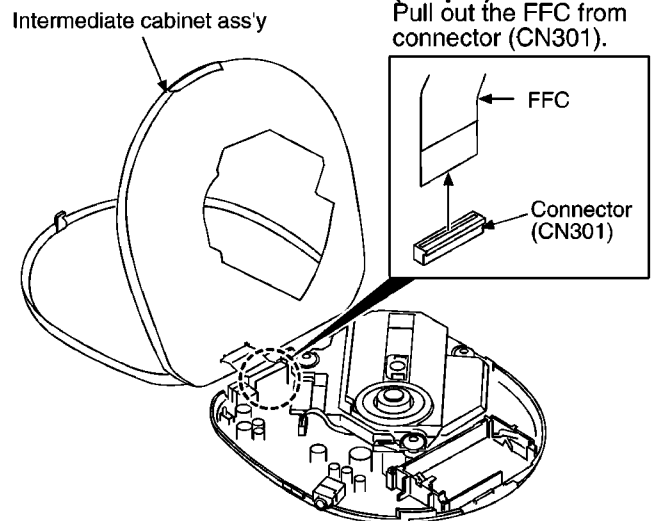
- Make sure the bosses of switch are fit in the switch knob.

**5.2. Checking for the tuner P.C.B.**

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

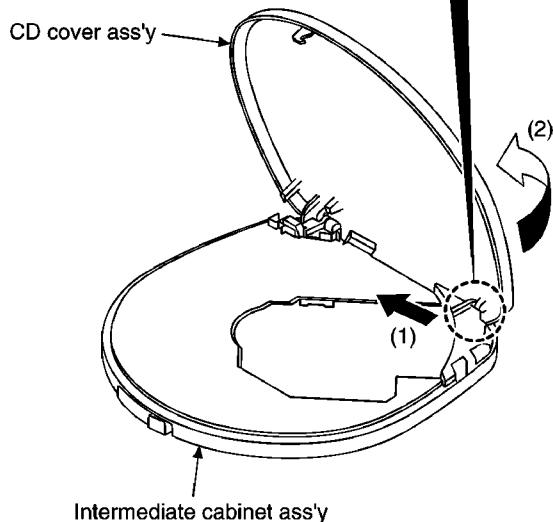
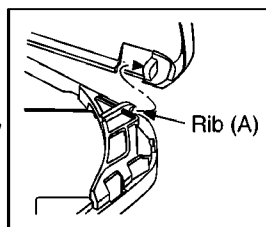
(Step 1)

Pull out the FFC from connector (CN301).



(Step 2)

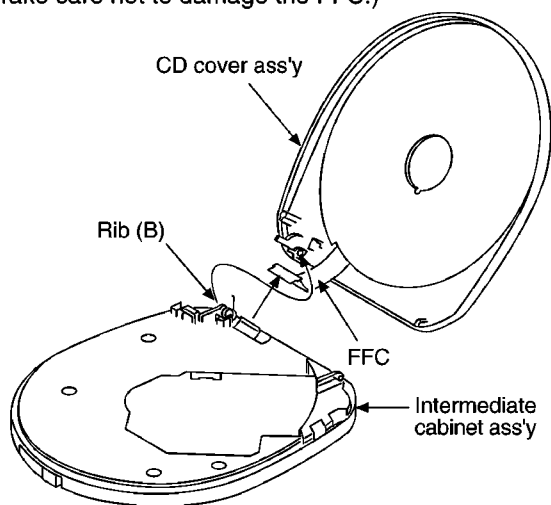
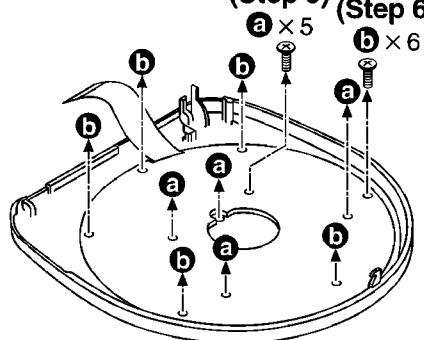
Bend the intermediate cabinet ass'y in the direction of arrow (1), and then release the CD cover ass'y from the rib (A).

**(Step 3)**

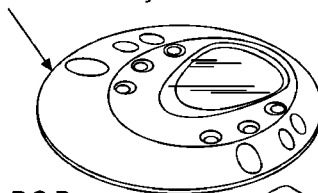
Remove the CD cover ass'y from the rib (B).

(Step 4)

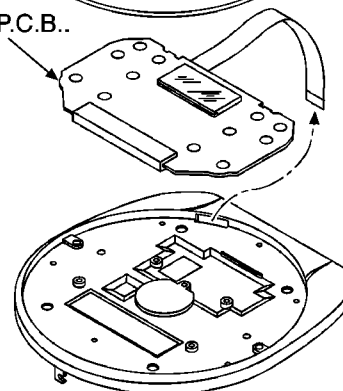
Draw the FFC from the intermediate cabinet ass'y. (Take care not to damage the FFC.)

**(Step 5) (Step 6)****(Step 7)**

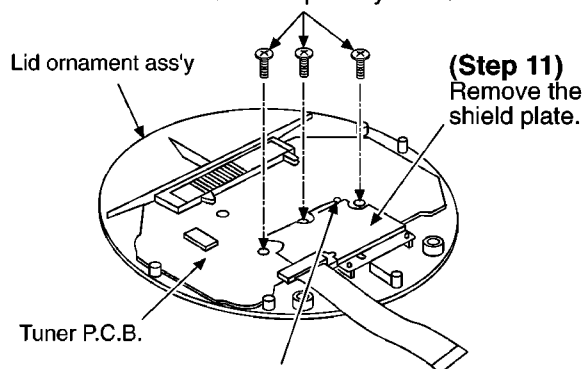
Remove the lid ornament ass'y.

**(Step 8)**

Remove the tuner P.C.B..

**(Step 9)**

Fix the tuner P.C.B. temporarily with 3 screw.

**(Step 11)**

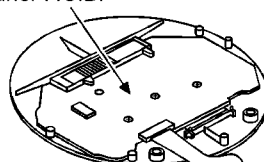
Remove the shield plate.

(Step 10)

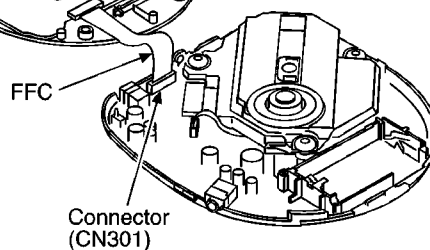
Unsolder the shield plate terminal.

• Check the tuner P.C.B. as shown below.

Tuner P.C.B.

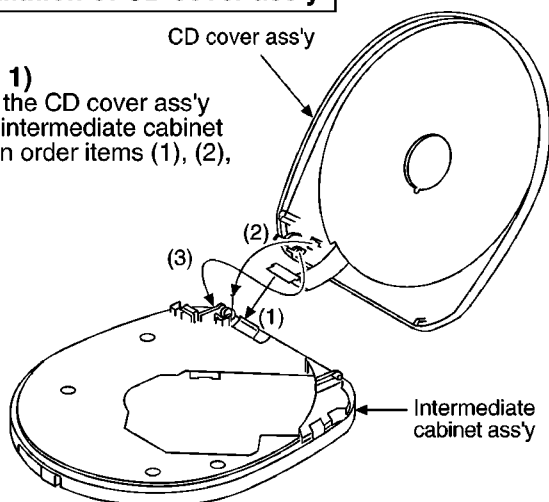
**(Step 12)**

Connect the FFC to connector (CN301).

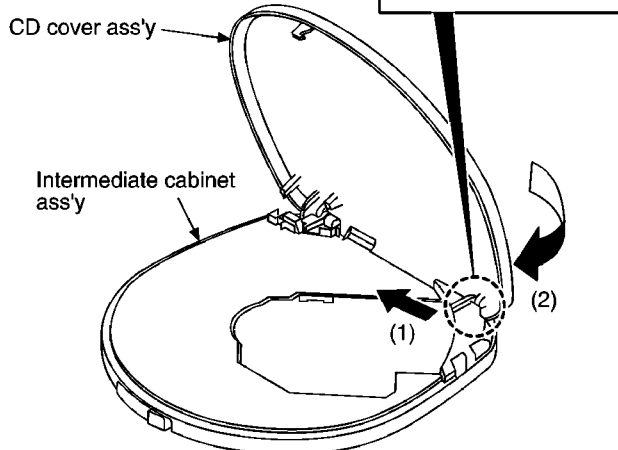


Installation of CD cover ass'y

(Step 1)
Install the CD cover ass'y to the intermediate cabinet ass'y in order items (1), (2), (3).

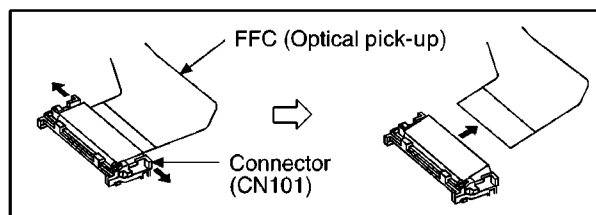


(Step 2)
Bend the intermediate cabinet ass'y in the direction of arrow (1), and then align the CD cover ass'y with the rib (A).

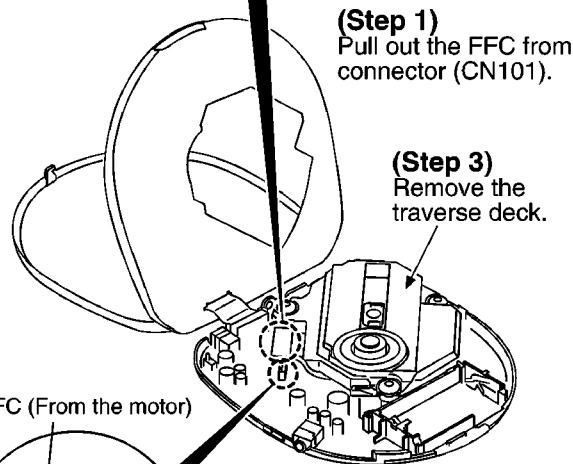


5.3. Replacement for the traverse motor

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

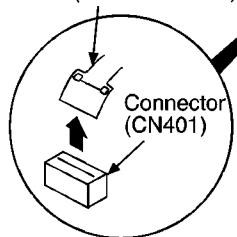


(Step 1)
Pull out the FFC from connector (CN101).



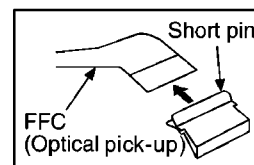
(Step 3)
Remove the traverse deck.

FFC (From the motor)

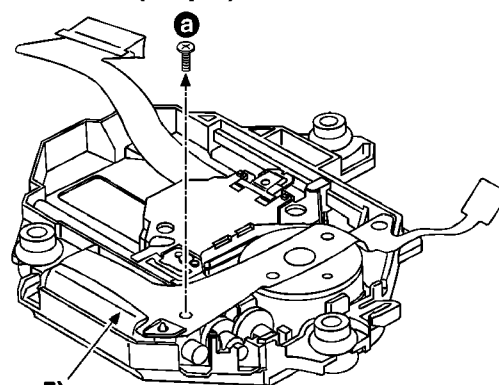


(Step 2)
Pull out the FFC from connector (CN401), and then remove the traverse deck ass'y.

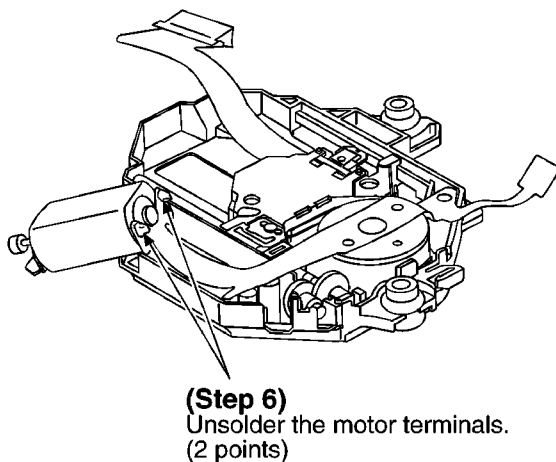
NOTE:
Insert a short pin into the traverse deck's FFC.
(Refer to "Handling Precautions for Traverse Deck".)



(Step 4)

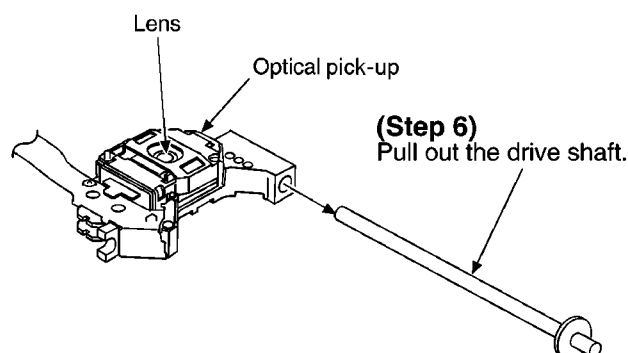
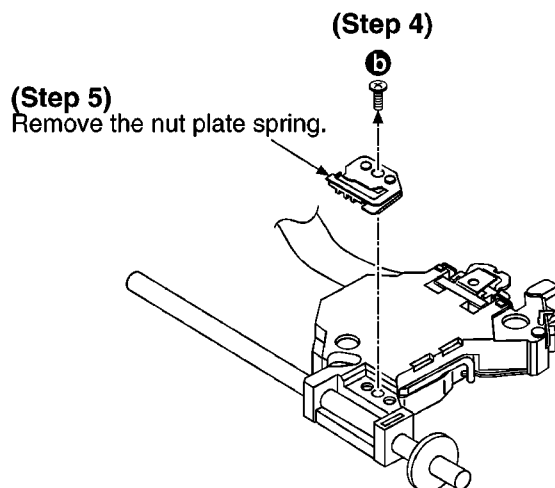
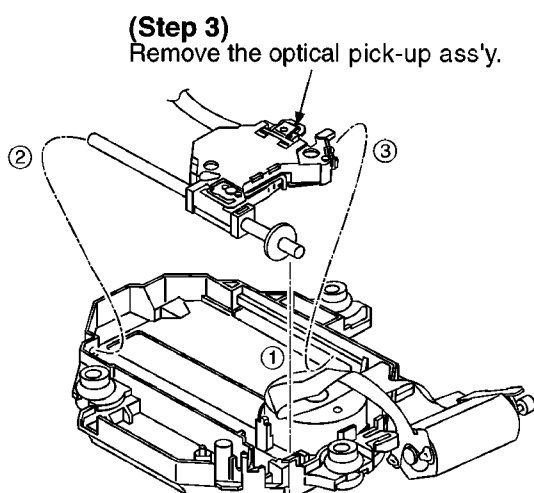
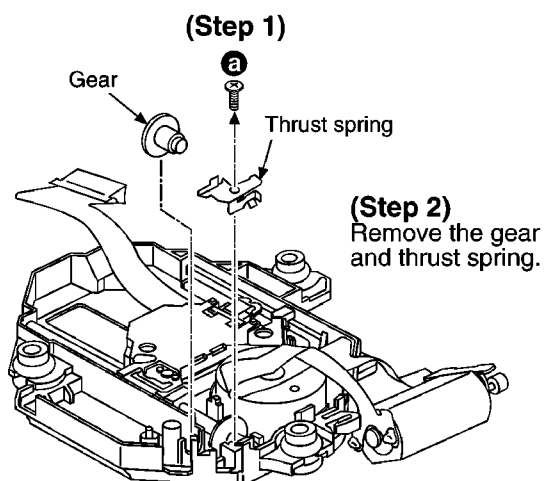


(Step 5)
Remove the traverse motor.



5.4. Replacement for the optical pick-up

- Follow the **(Step 1)** - **(Step 5)** of item 5.1.1.
- Follow the **(Step 1)** - **(Step 5)** of item 5.3.



NOTE:

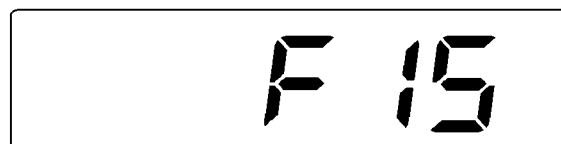
1. Use care to prevent damage the optical pick-up, due to the precision construction.
2. Do not apply the grease on the lens of optical pick-up.
3. Do not touch the lens of the optical pick-up.

6 Display of Self-Diagnostic Function

This unit (SL-SV500) has self-diagnostic function. It may display below-mentioned on the LCD of this unit.

- The substance of self-diagnostic display.

LCD display



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

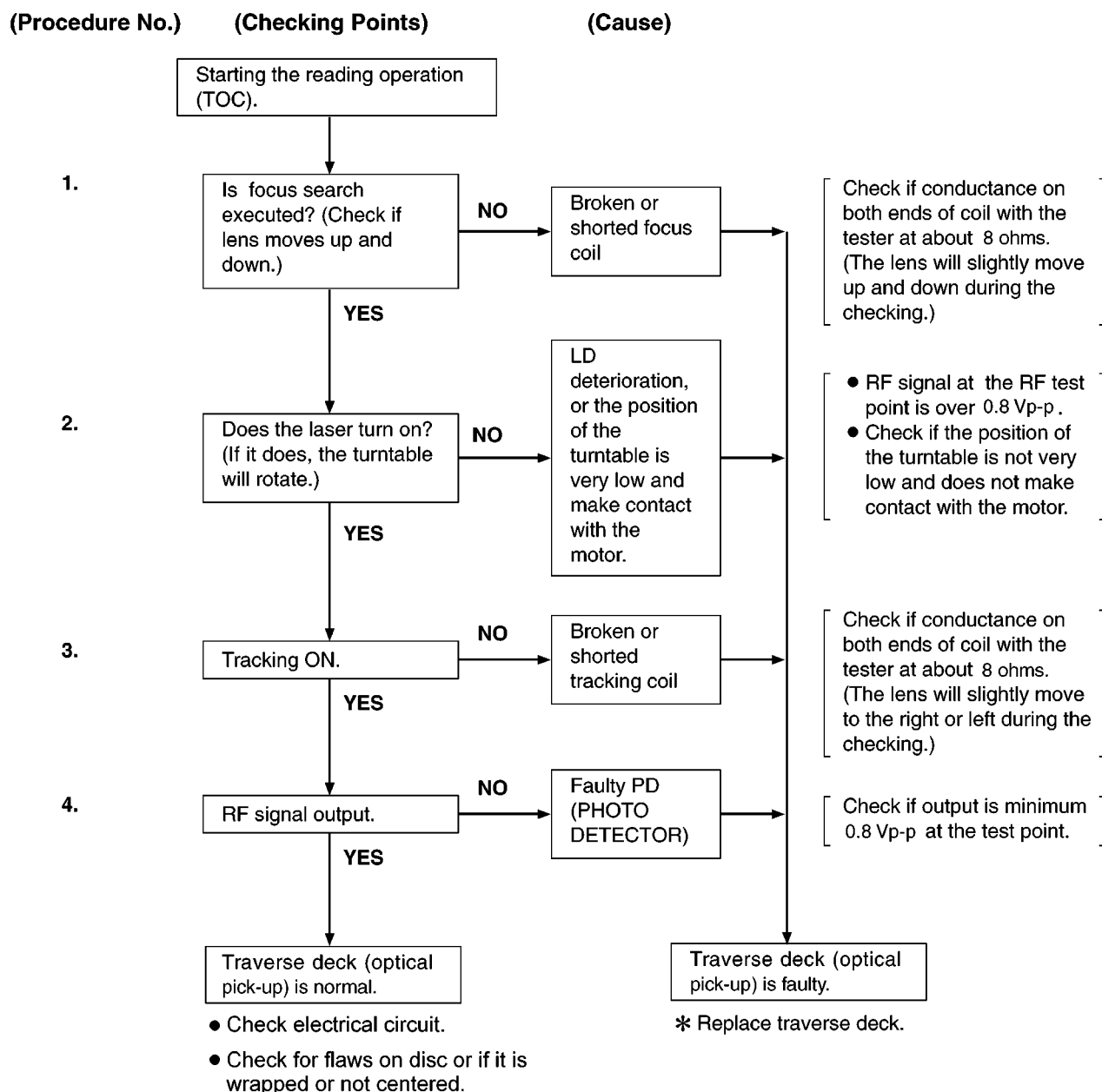
In case of this display, it may be causing for abnormally movements of traverse deck, touching failure of REST detect switch and coming off or cutting off the flexible P.C.B.. It is necessary for confirmation or repair and replacement each parts.

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)

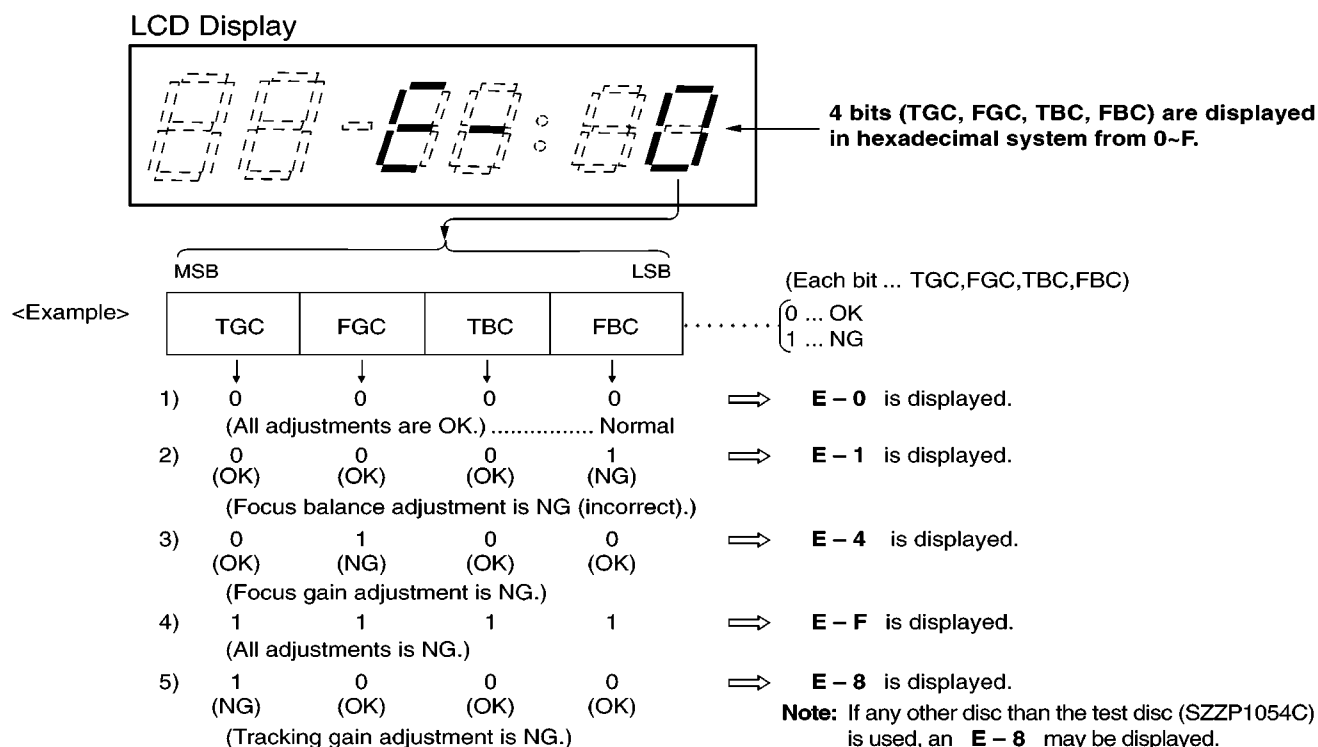
On the unit (SL-SV500), each automatic adjustment result are displayed on the LCD. This function is convenient to check or identify which automatic adjustment circuit is incorrect.

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

8.1. How to display automatic adjustment results

1. Set power source voltage to 4.5 V DC. (AC adaptor IN)
2. Load the test disc (SZZP1054C).
3. Press the **⏮** (SKIP/SEARCH) and **⏭** (SKIP/SEARCH) buttons simultaneously and hold them, and additionally press the **▶/||** (PLAY/PAUSE) button.
4. Press the **■** (STOP/OPR OFF) button once.
5. An automatic adjustment result is displayed on the LCD.

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 Schematic Diagram Notes

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

Notes:

S6:	Tuner on/band select (RADIO/BAND) switch
S7:	Play/pause (▶/■) switch
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:	Monaural/stereo (FM MODE MONO/ST) switch
S302:	Sensitivity control, play mode (FM RECEPT ■ CITY/NOR, MODE) switch
S303:	S-XBS (S-XBS) switch
S304:	Tuning, R.skip/search (◀◀ / -) switch
S305:	Headphone volume control switch (VOL+)
S308:	Memory/recall (MEMORY/RECALL) switch
S309:	Tuning mode select (TUNING MODE) switch
S310:	Hold (HOLD) switch in OFF position [For Main P.C.B.]
S310A:	Headphone volume control switch (VOL-) [For Tuner P.C.B.]
S311:	Tuning, F.skip/search (▶▶ / +) switch
S312:	Stop/operation off (■, OPR OFF) switch
VR1:	FM RF adjustment VR

- 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
	: Main signal line
	: FM signal line
	: FM OSC signal line
	: AM OSC signal line
	: FM/AM Vcap signal line
	: CD 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 values and 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.

No mark	: CD stop mode
()	: CD playback mode (Test disc 1kHz, L+R, 0dB)
< >	: FM mode
[]	: AM 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.

9.1. Cautions in Repair exchange of the Diode (D101, D102)

- When it is repaired, exchange the parts of D101, D102 together.
- The service parts of Number (KV1450TL3-4) are supplied only.

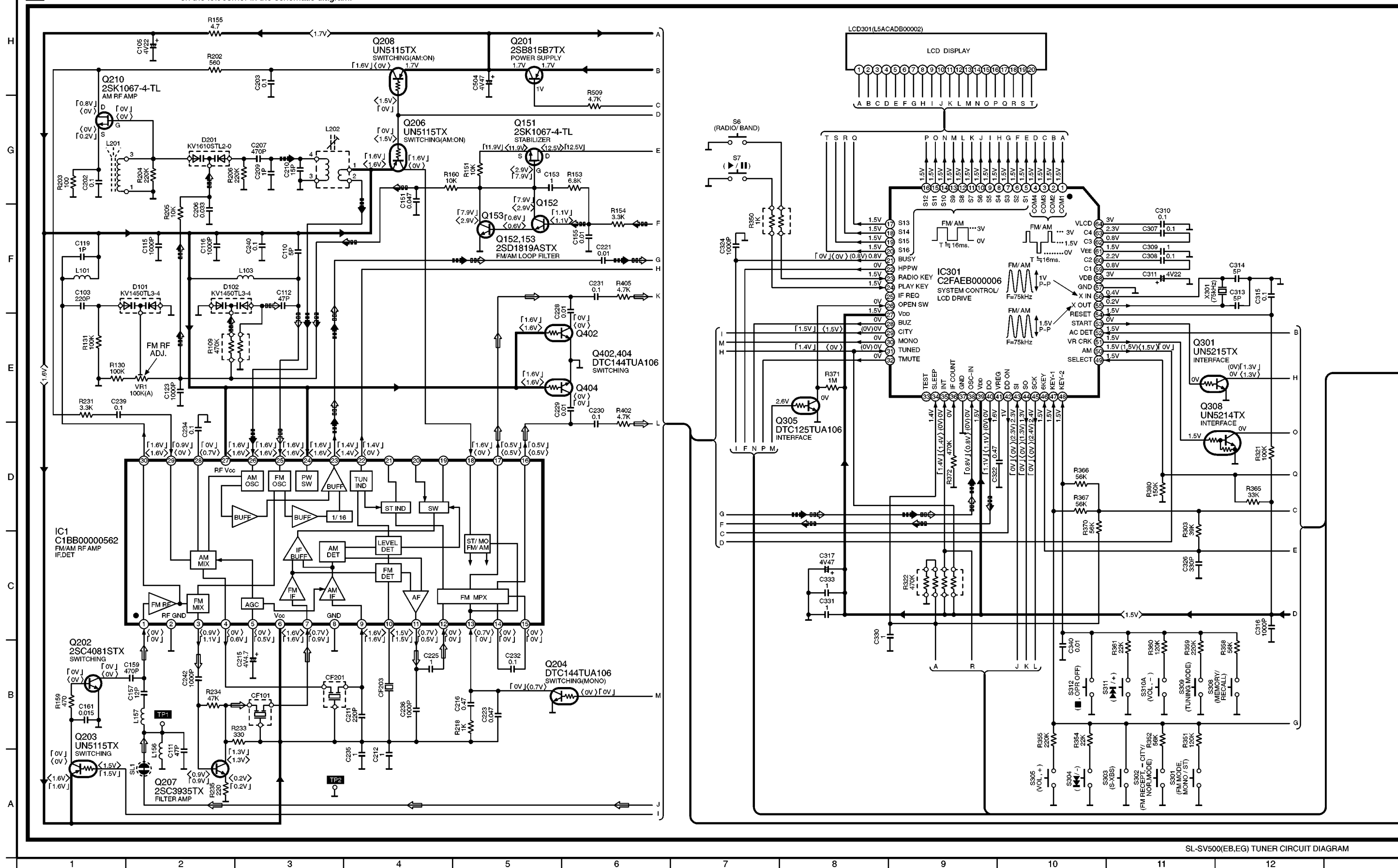
10 Schematic Diagram

SCHEMATIC DIAGRAM-1

NOTE:
The number which noted at the connectors on the schematic diagram as "SCHEMATIC DIAGRAM-1" or "SCHEMATIC DIAGRAM-2" indicates the schematic diagram serial number located on the left corner in the schematic diagram.

A TUNER CIRCUIT

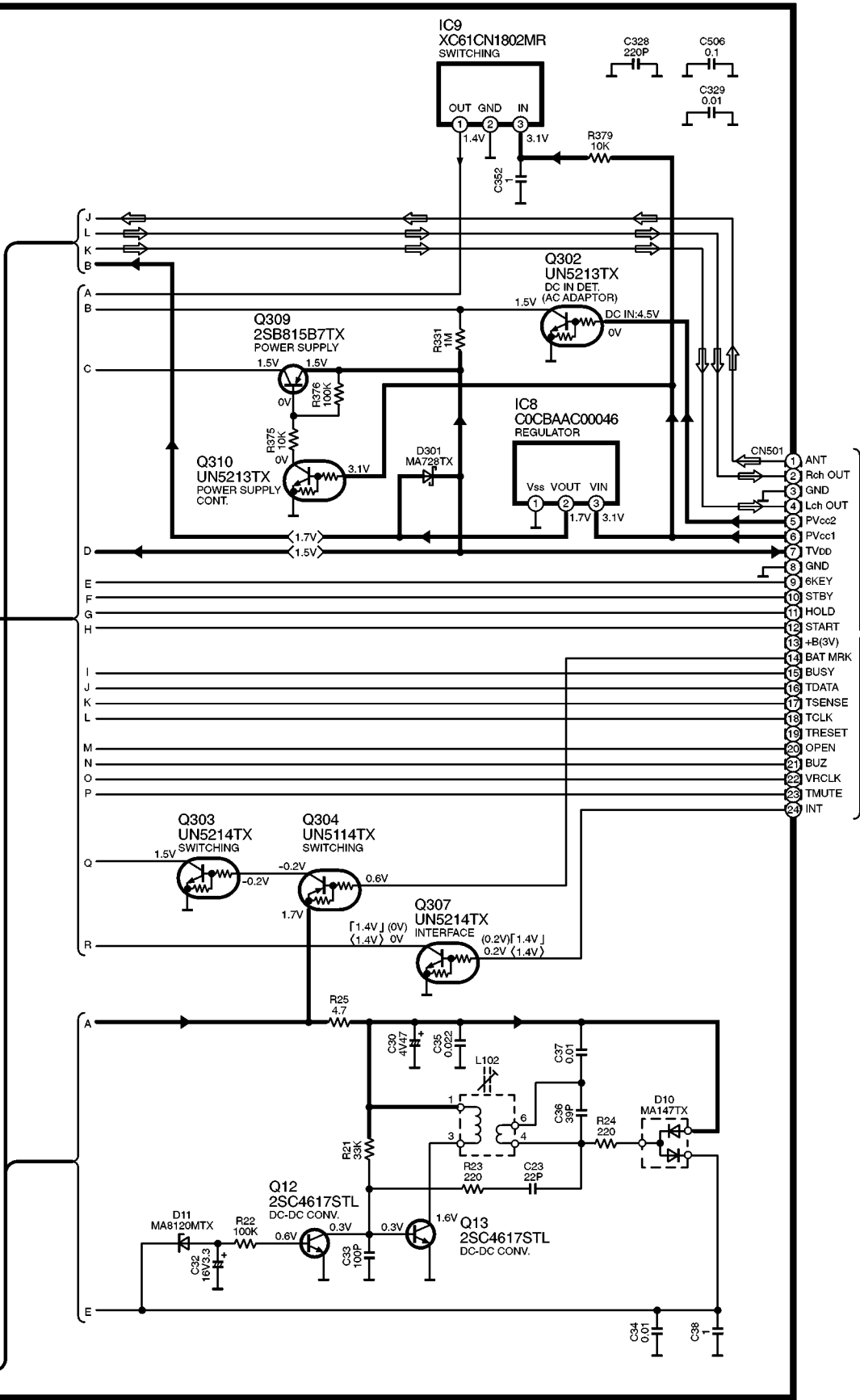
→: POSITIVE VOLTAGE LINE ⇨: FM SIGNAL LINE ⇨⇨: FM/AM Vcap SIGNAL LINE ⇨⇨⇨: FM OSC SIGNAL LINE ⇨⇨⇨⇨: AM OSC SIGNAL LINE



SCHEMATIC DIAGRAM-2

A TUNER CIRCUIT

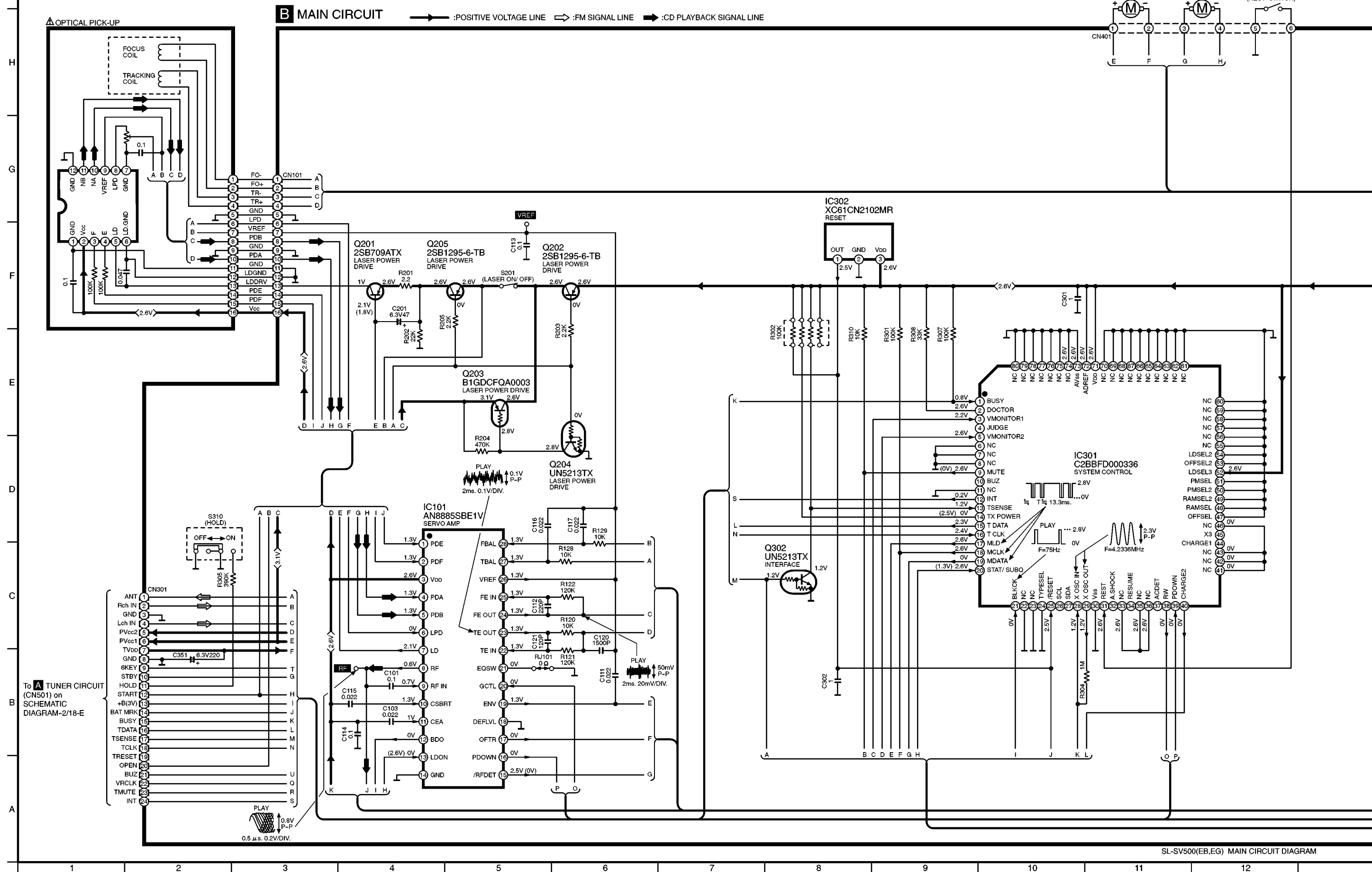
→ : POSITIVE VOLTAGE LINE ⇨ : FM SIGNAL LINE



SL-SV500(EB,EG) TUNER CIRCUIT DIAGRAM

To **B** MAIN CIRCUIT
(CN301) on
SCHEMATIC DIAGRAM-3/1-B

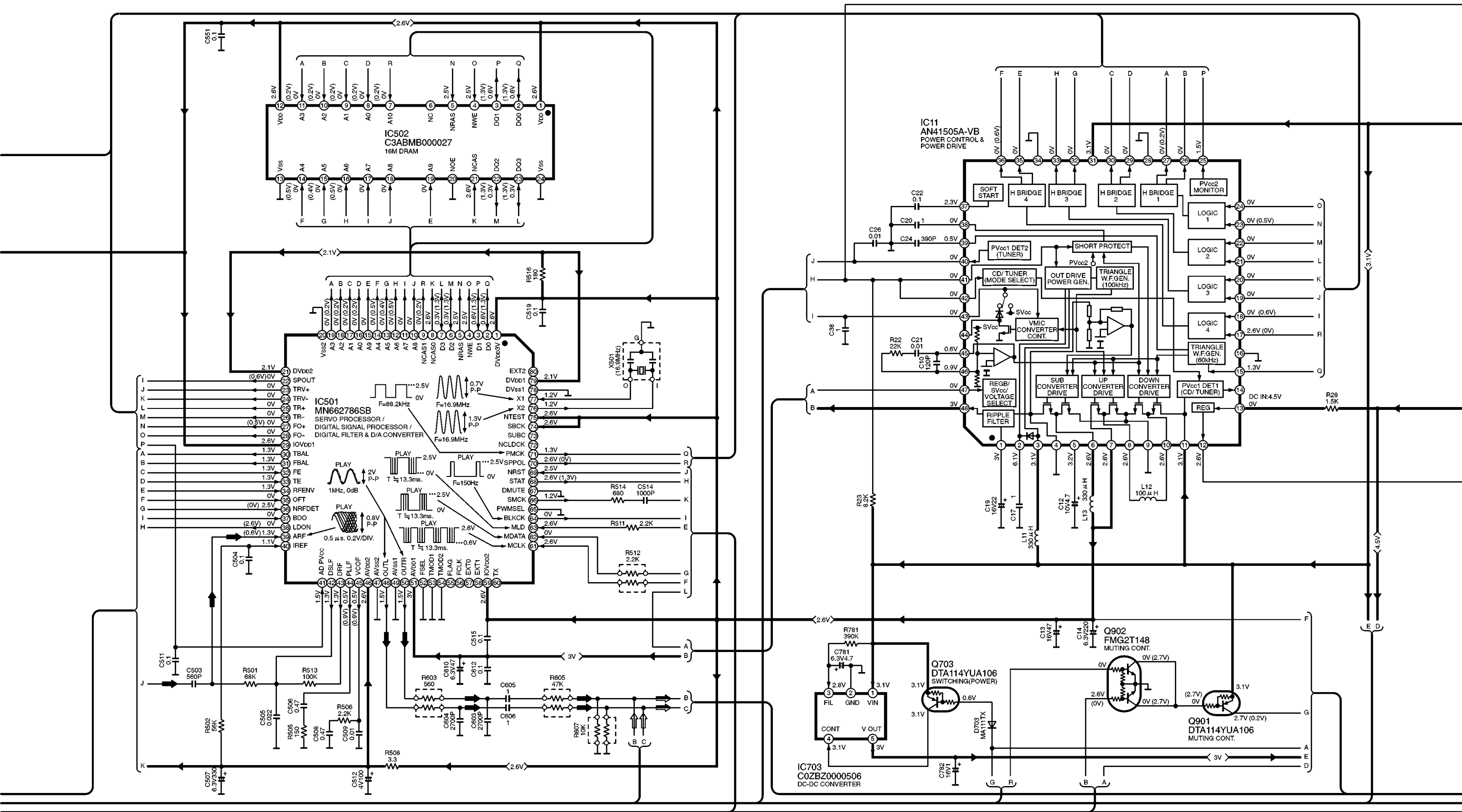
SCHEMATIC DIAGRAM-3



SCHEMATIC DIAGRAM-4

B MAIN CIRCUIT

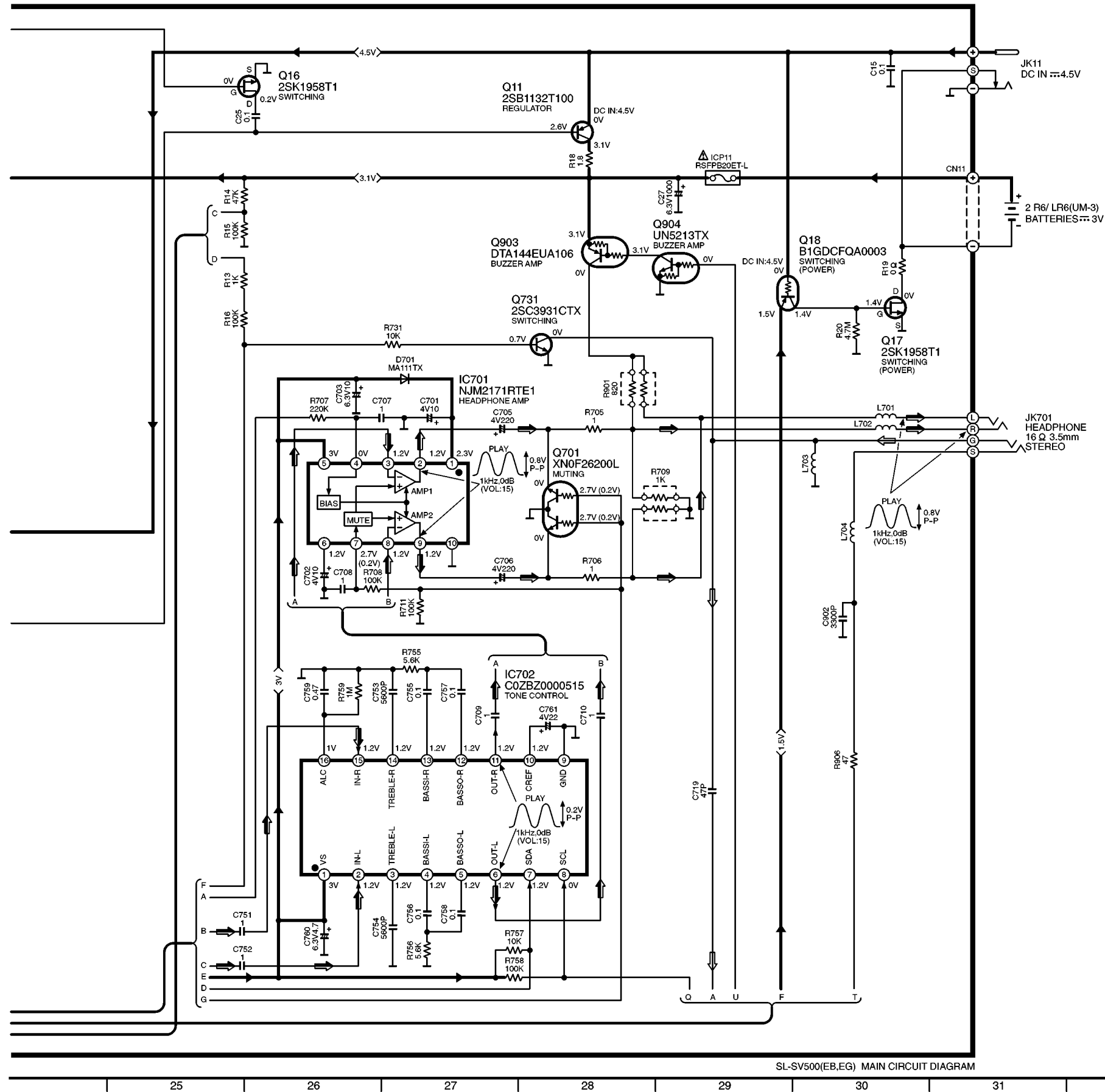
➡ :POSITIVE VOLTAGE LINE ➡ :CD PLAYBACK SIGNAL LINE ➡ :FM SIGNAL LINE ➡ :MAIN SIGNAL LINE



SCHEMATIC DIAGRAM-5

B MAIN CIRCUIT

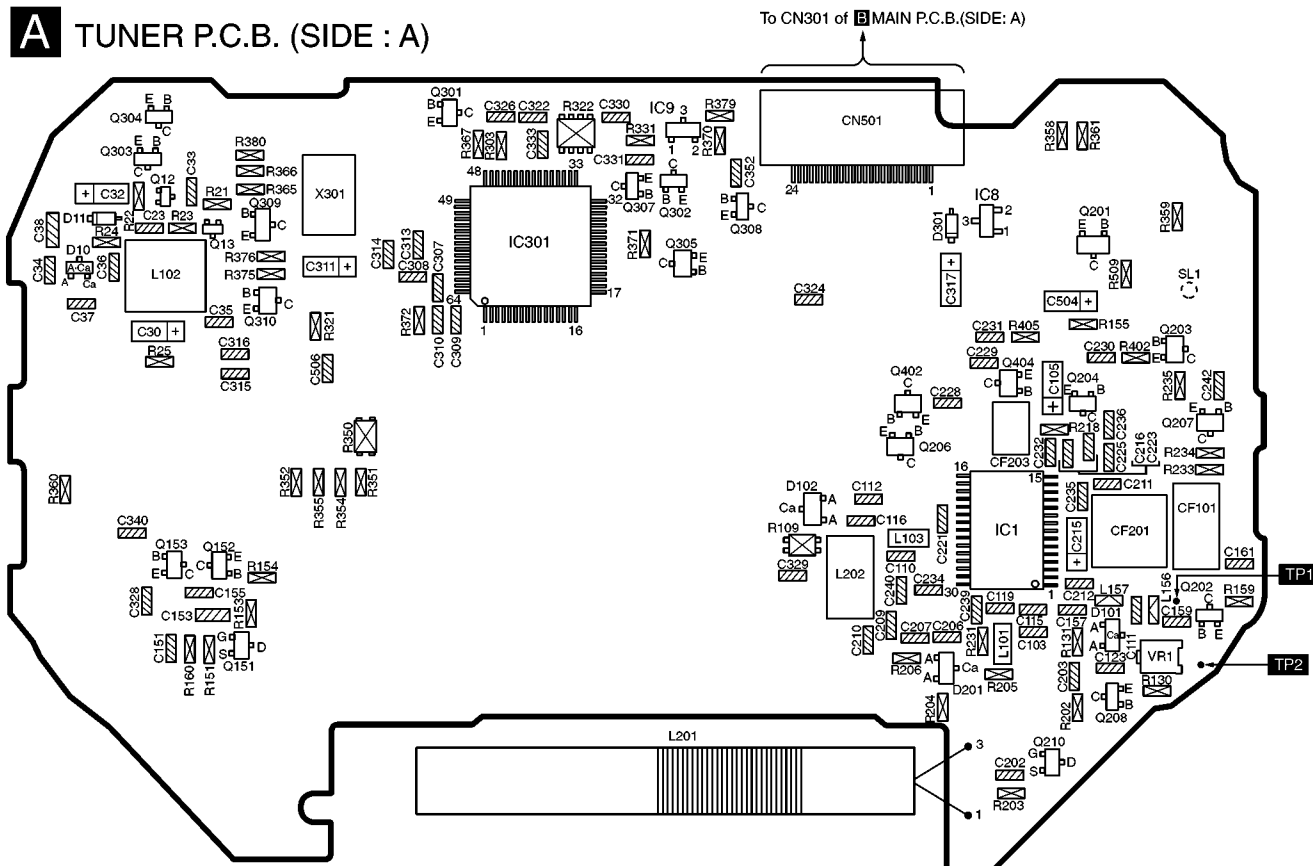
→ : POSITIVE VOLTAGE LINE ⇨ : FM SIGNAL LINE ⇨ : MAIN SIGNAL LINE



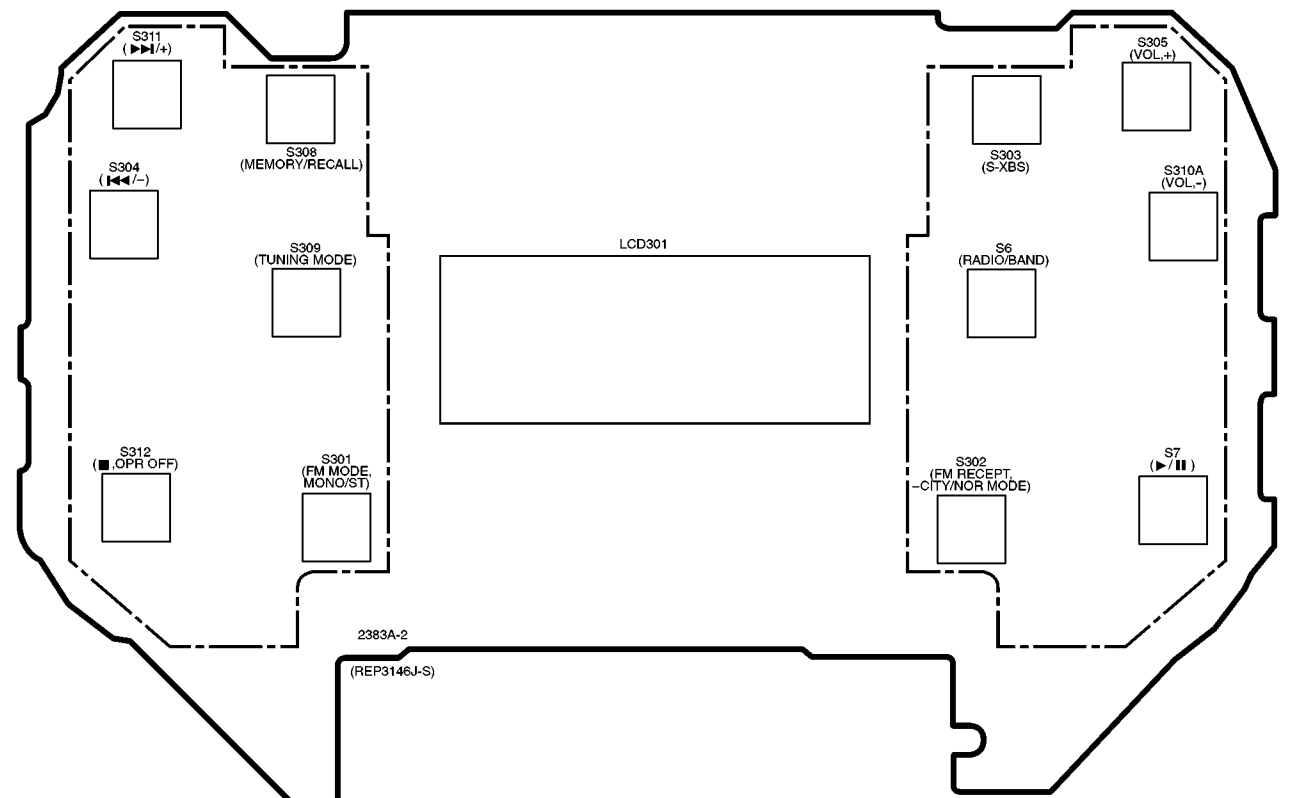
11 Printed Circuit Board and Wiring connection Diagram

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

A TUNER P.C.B. (SIDE : A)

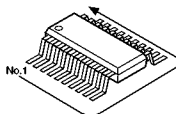
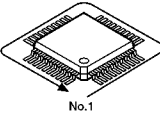
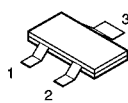
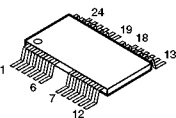
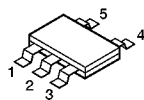
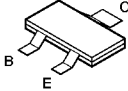
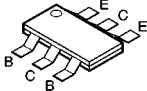
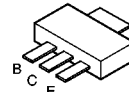
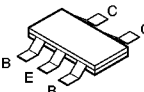
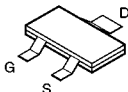
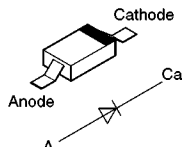
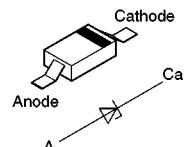
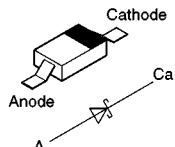
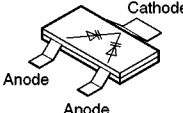
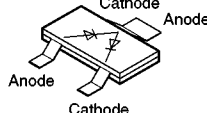


A TUNER P.C.B. (SIDE : B)

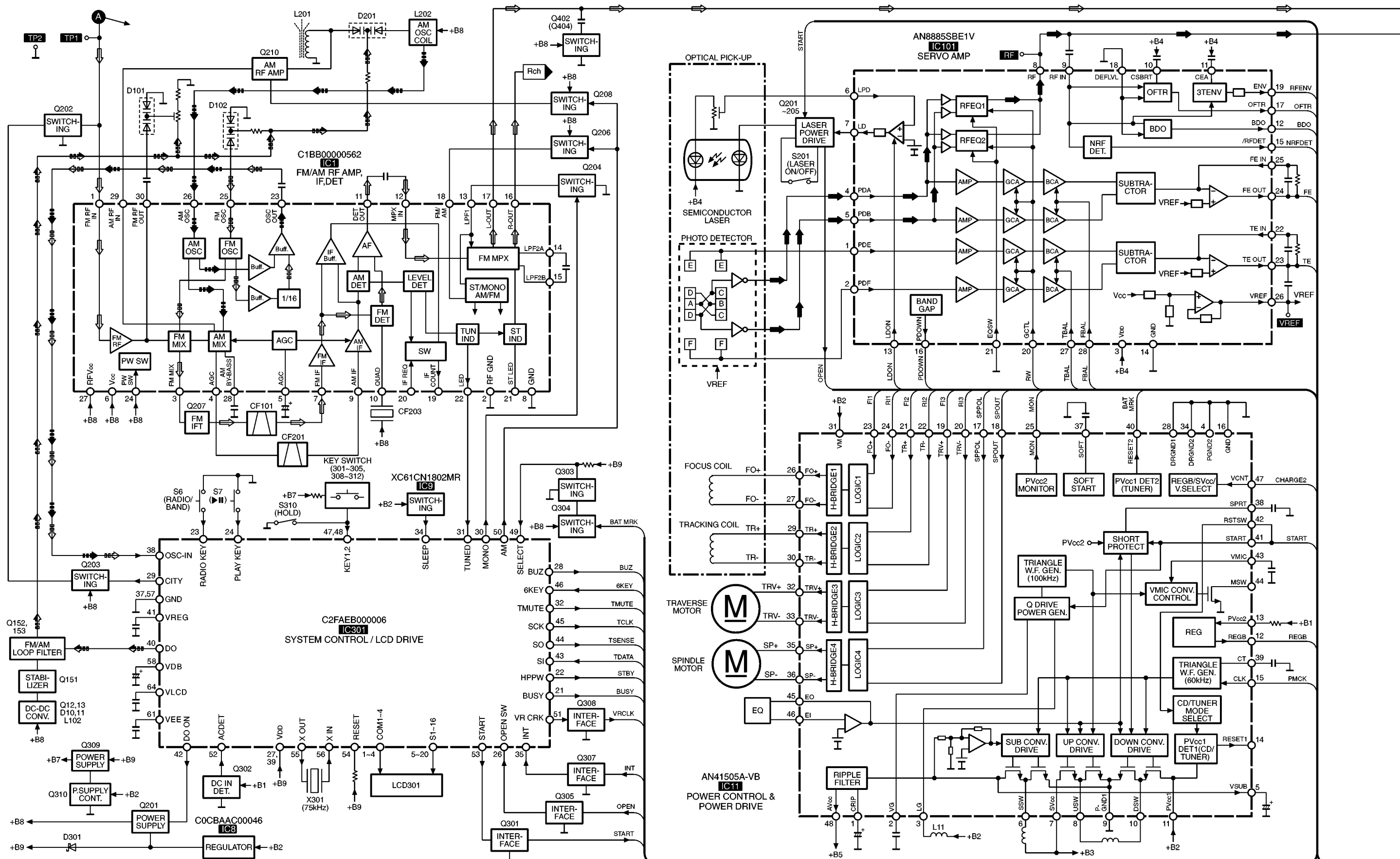




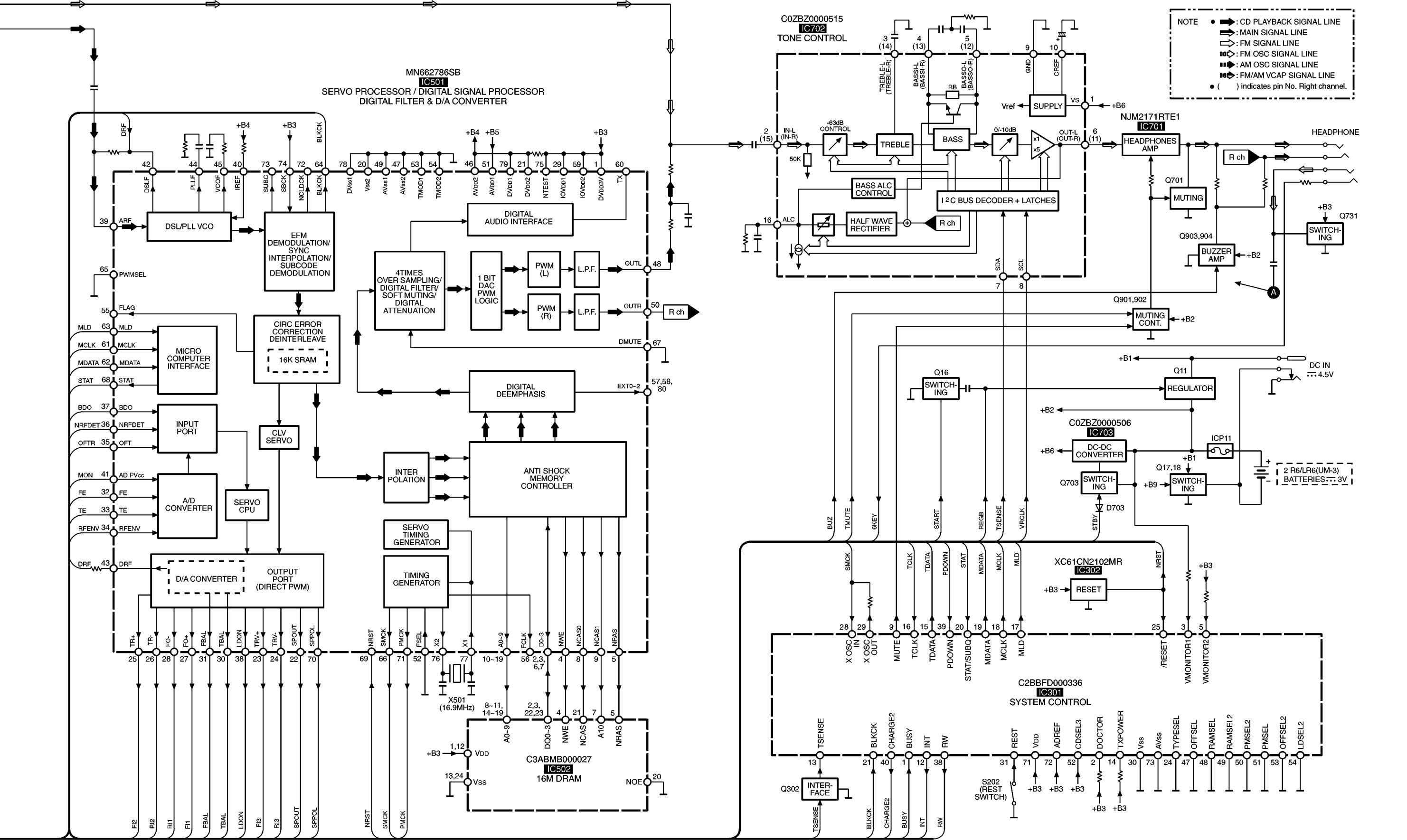
12 Type Illustration of ICs, Transistors and Diodes

 No.1	<table><tr><td>C1BB00000562</td><td>30PIN</td></tr><tr><td>NJM2171RTE1</td><td>10PIN</td></tr><tr><td>C0ZBZ0000515</td><td>16PIN</td></tr><tr><td>AN8885SBE1V</td><td>28PIN</td></tr></table>	C1BB00000562	30PIN	NJM2171RTE1	10PIN	C0ZBZ0000515	16PIN	AN8885SBE1V	28PIN	 No.1	<table><tr><td>C2FAEB000006</td><td>64PIN</td></tr><tr><td>MN662786SB</td><td>80PIN</td></tr><tr><td>AN41505A-VB</td><td>48PIN</td></tr><tr><td>C2BBFD000336</td><td>80PIN</td></tr></table>	C2FAEB000006	64PIN	MN662786SB	80PIN	AN41505A-VB	48PIN	C2BBFD000336	80PIN	 1 2 3	XC61CN1802MR C0CBAAC00046 SC61CN2102MR
C1BB00000562	30PIN																				
NJM2171RTE1	10PIN																				
C0ZBZ0000515	16PIN																				
AN8885SBE1V	28PIN																				
C2FAEB000006	64PIN																				
MN662786SB	80PIN																				
AN41505A-VB	48PIN																				
C2BBFD000336	80PIN																				
C3ABMB000027  1 6 7 12 13 18 19 24	C0ZBZ0000506  1 2 3 4 5	B1GDCFQA0003 2SC4617STL UN5115TX 2SB709ATX 2SD1819ASTX UN5213TX 2SB815B7TX DTA114YUA106 UN5214TX 2SB1295-6-TB DTA144EUA106 UN5215TX 2SC3931CTX DTC125TUA106 2SC3935TX DTC144TUA106 2SC4081STX UN5114TX  B C E			XN0F26200L  B C E																
2SB1132T100  B C E	FMG2T148  B C E	2SK1067-4-TL 2SK1958T1  G S D	MA111TX  Anode Cathode A Ca	MA8120MTX  Anode Cathode A Ca	MA728TX  Anode Cathode A Ca																
KV1450TL3-4 KV1610STL2-0  Anode Cathode Anode	MA147TX  Anode Cathode Anode Cathode																				

13 Block Diagram



SL-SV500(EB,EG) BLOCK DIAGRAM



SL-SV500(EB,EG) BLOCK DIAGRAM

14 Terminal Function of ICs

14.1. IC101(AN8885SBE1V): Servo Amp

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 amplifier input terminal
7	LD	O	APC amplifier output terminal
8	RF	O	RF addition output terminal
9	RF IN	I	RF detection signal input terminal
10	CSBRT	I	Capacitor connection terminal for OFTR (Connected to power supply through capacitor)
11	CEA	I	HPF amplifier capacitor connection input terminal (Connected to power supply through capacitor)
12	BDO	O	Dropout signal output terminal
13	LDON	I	APC control input terminal
14	GND	-	GND
15	/RFDET	O	RF detection signal output terminal
16	PDOWN	O	Headphone power OFF signal output
17	OFTR	O	Off-track signal output terminal
18	DEFLVL	-	Not used, connected to GND
19	ENV	O	RF envelope signal output terminal
20	GCTL	I	Input for CD-RW
21	EQSW	I	EQ characteristic drive signal input
22	TE IN	I	Tracking error amplifier input terminal
23	TE OUT	O	Tracking error amplifier output terminal
24	FE OUT	O	Focus error amplifier output terminal
25	FE IN	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 (C2FAEB000006) for Tuner P.C.B.: System Control / LCD Drive

Pin No.	Terminal Name	I/O	Function
1 4	COM1 COM4	O	LCD common signal output
5 20	S1 S16	O	LCD segment signal output
21	BUSY	O	Busy signal output
22	HPPW	O	Headphone amp ON signal output
23	RADIO KEY	I	RADIO key signal input
24	PLAY KEY	I	Play key signal input
25	IF REQ	-	Not used, open
26	OPEN SW	I	CD cover open detect signal input
27	V _{DD}	I	Power supply terminal
28	BUZ	O	Buzzer signal output
29	CITY	O	City monaural select signal output
30	MONO	O	Forced monaural signal output
31	TUNED	I	Tuned condition signal input
32	TMUTE	O	Muting control signal output
33	TEST	-	Not used, open
34	SLEEP	I	Sleep mode setting condition input
35	INT	I	Serial communication starting signal input

Pin No.	Terminal Name	I/O	Function
36	IF COUNT	I	IF counter signal input
37	GND	-	GND
38	OSC-IN	I	FM/AM OSC signal input
39	V _{DD}	I	Power supply terminal
40	DO	O	A phase comparator signal output
41	VREG	-	Not used, connected to GND via capacitor
42	DD ON	O	Power control signal output
43	SI	I	Communication data signal input
44	SO	O	Communication data signal output
45	SCK	O	Communication clock signal output
46	6KEY	I	6 key signal input
47	KEY-1	I	Operation key signal input
48	KEY-2	I	Operation key signal input
49	SELECT	I	Reduced voltage detect /Area select signal input
50	AM	O	AM selection output
51	VR CRK	O	Volume IC communication clock signal
52	AC DET	I	AC detection signal input
53	START	O	Power ON signal output
54	RESET	I	Reset signal input
55	X OUT	O	Crystal oscillator connected (F=75 kHz)
56	X IN	I	
57	GND	-	GND
58	VDB	-	Connected to GND via capacitor
59	C1	-	Connected to C2 via a capacitor
60	C2	-	Connected to C1 via a capacitor
61	VEE	-	Connected to GND via a capacitor
62	C3	-	Connected to C4 via a capacitor
63	C4	-	Connected to C3 via a capacitor
65	VLCD	-	Connected to GND via a capacitor

14.3. IC301 (C2BBFD000336) for Main P.C.B.: System Control

Pin No.	Terminal Name	I/O	Function
1	BUSY	I	Busy signal input
2	DOCTOR	I	Doctor mode input terminal (Connected to V _{DD} through resistor)
3	VMONITOR1	I	Battery voltage measurement signal input
4	JUDGE	-	Not used, open
5	VMONITOR2	I	Battery remaining measurement signal
6 7 8	NC	-	Not used, connected to GND
9	MUTE	O	Muting control signal output
10	BUZ	-	Not used, open
11	NC	-	Not used, connected to GND
12	INT	O	Serial communication starting signal output
13	TSENSE	I	Serial communication data signal input
14	TX POWER	-	Connected to V _{DD}
15	T DATA	O	Serial communication data signal output
16	T CLK	I	Serial communication clock signal input
17	MLD	O	Serial command latch output
18	MCLK	O	Serial command clock output
19	MDATA	O	Serial command data output
20	STAT/SUBQ	I	Status signal input
21	BLKCK	I	Sub code block clock signal input

Pin No.	Terminal Name	I/O	Function
22	NC	-	Not used, connected to GND
23			
24	TYPESEL	-	Not used, connected to GND
25	/RESET	I	Reset detect signal input
26	SCL	-	Not used, open
27	SDA	-	Not used, open
28	XOSCIN	I	System clock signal
29	XOSCOU	O	
30	V _{SS}	-	GND
31	REST	I	Rest detect switch signal input
32	A.SHOCK	-	Not used, open
33	NC	I	Test terminal (F.SKIP)
34	RESUME	-	Not used, open
35	NC	I	Test terminal (STOP)
36	NC	I	Test terminal (XBS)
37	AC DET	-	Not used, open
38	RW	O	Output for CD-RW
39	PDOWN	I	Headphone power OFF signal input
40	CHARGE2	O	Charge control 2 signal output
41	NC	-	Not used
42			
43			
44	CHARGE1	-	Not used, open
45	X3	-	Not used, open
46	NC	-	Not used
47	OFFSEL	-	Not used, connected to GND
48	RAMSEL	-	Not used, connected to GND
49	RAMSEL2	-	Not used, connected to GND
50	PMSEL2	-	Not used, connected to GND
51	PMSEL	-	Not used, connected to GND
52	LDSEL3	-	Not used, connected to V _{DD}
53	OFFSEL2	-	Not used, connected to GND
54	LDSEL2	-	Not used, connected to GND
55 70	NC	-	Not used, connected to GND
71	V _{DD}	I	Power supply terminal
72	ADREF	I	Reference voltage input terminal
73	AV _{SS}	-	GND
74 80	NC	-	Not used, connected to GND

14.4. IC501(MN662786SB): Servo Processor, Digital Signal Processor, Digital Filter & D/A Converter

Pin No.	Terminal Name	I/O	Function
1	DV _{DD} 3V	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

Pin No.	Terminal Name	I/O	Function
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	DSL	O	Loop filter output terminal for DSL
43	DRF	O	Bias output terminal for DSL
44	PLL	O	Loop filter output terminal for PLL
45	VCO	O	Loop filter output terminal for jitter-free VCO
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	FSEL	-	Noise filter ON/OFF switching input terminal (Connected to GND)
53	TMOD1	-	Not used, connected to GND
54	TMOD2	-	Not used, connected to GND
55	FLAG	-	Not used, open
56	FCLK	-	Not used, open
57	EXT0	-	Not used, open
58	EXT1	-	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	Not used, connected to GND
66	SMCK	O	System clock signal output
67	DMUTE	-	Not used, connected to GND
68	STAT	O	Status signal output terminal
69	NRST	I	Reset signal input terminal (H: Reset)
70	SPPOL	O	Spindle motor drive signal output terminal
71	PMCK	O	Clock signal output terminal
72	NCLDCK	-	Not used, open
73	SUBC	-	Not used, open
74	SBCK	I	Clock input for sub-code output terminal (Connected to power supply)
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	EXT2	-	Not used, open

15 Measurements and Adjustments

15.1. Tuner section

Connect lead wire for test points TP1 and TP2.
Refer to Fig. 15-1.

(Refer to "Printed Circuit Board Diagram and Wiring Connection Diagram" about TP1 and TP2.)

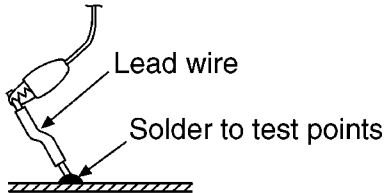


Fig. 15-1.

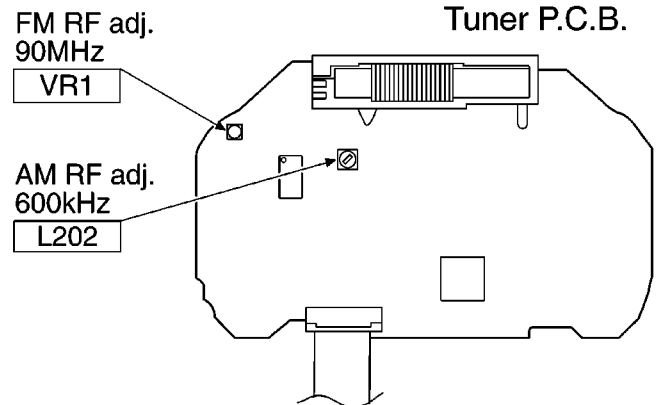


Fig. 15-3.

15.1.1. Measurement condition

1. Set volume control to maximum.
2. Release the hold state.
3. Set power source voltage to 4.5V DC. (AC adaptor IN)

15.1.2. Control positions and equipment used

1. Signal generator (FM/AM)
2. Oscilloscope
3. Headphones jig

15.1.3. FM RF adjustment

1. Connect the FM signal generator to TP1(+) and TP2(-) .
2. Connect the oscilloscope to headphones jack.
Refer to Fig. 15-2.
3. Set the unit to FM mode.
4. Set FM-SG to 90 MHz.
5. Receive 90 MHz in the unit.
6. Adjust VR1 for maximum output. Refer to Fig. 15-3.

15.1.4. AM RF adjustment

1. Fashion a loop of several turns of wire and radiate a signal into the loop antenna of receiver.
2. Connect the oscilloscope to headphones jack.
Refer to Fig. 15-2.
3. Set the unit to AM mode.
4. Set AM-SG to 600 kHz.
5. Receive 600 kHz in the unit.
6. Adjust L202 for maximum output. Refer to Fig. 15-3.

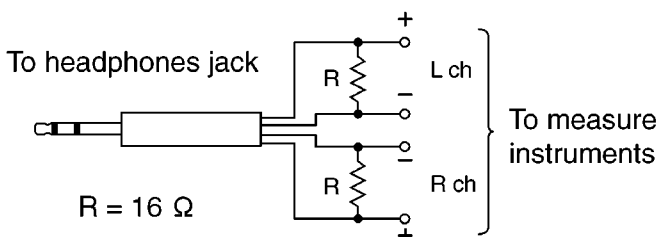


Fig. 15-2.

16 Replacement Parts List

Notes:

- Important safety notice:

Components identified by Δ 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 <IA> <IB> & <IC> marks in Remarks indicate language of instruction manual.

<IA>: English

<IB>: English, Spanish, Swedish, German, Italian, French

<IC>: Netherlands, Danish, Russian, Polish, Czech, Portuguese

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

(EB): SL-SV500EB

(EG): SL-SV500EG

- The marking in Ref No. indicate as follow.

*1: Main circuit

*2: Tuner circuit

- 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 MESA.

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
1	RGV0200-H1	KNOB, HOLD	1	
2	RJC93020-1	BATTERY TERMINAL	1	
4	RFKJLSV500ES	BOTTOM CABINET ASS`Y	1	
4-1	RKA0112-K	FOOT	2	
5	XTN17+6GFZ	SCREW	3	
6	RMB0679-4	SPRING	1	
7	RGD0085-H	CD LID	1	
8	RHE5079YA	SCREW	5	
9	XQN14+BG3FC	SCREW	6	
10	L5ACADB00002	LCD (LCD301)	1	
11	RGU2087-S	BUTTON, STOP/OPR. ETC.	1	
12	RMA1320-1	SHIELD PLATE	1	
13	RSQ0072	ZEBRA CONNECTOR	1	
14	REZ1466	FFC	1	
15	RMQ1106	SW, OPERATION	1	S301, 304, 308, 309, 311, 312
16	RMQ1107	SW, OPERATION	1	S6, 7, 302, 303, 305, 310A
17	RGK1510-S	LID ORNAMENT	1	
18	RKW0685-A	LCD PANEL	1	
19	RGU1838-H	BUTTON, OPEN	1	
20	RKM0411A-A	MIDDLE CABINET	1	
21	RML0580	STOPPER	1	
22	RGN2270-H	NAME PLATE	1	(EB)
22	RGN2269-H1	NAME PLATE	1	(EG)
23	RKK0135-A	BATTERY COVER	1	
24	RAE0145Z	TRAVERSE DECK	1	Δ
24-1	RAF0142A	OPTICAL PICK-UP	1	Δ
24-2	RDG0305	GEAR1	1	
24-3	RDG0306	GEAR2	1	
24-4	RJB2106A	FFC	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
24-5	RMG0449-H	FLOATING RUBBER	3	
24-6	RMC0264	SPRING	1	
24-7	RXQ0482	NUT PLATE	1	
24-8	RXQ0525	TRAVERSE MOTOR	1	
24-9	SNSD38	SCREW	1	
24-10	XQN17+BG45	SCREW	1	
24-11	XQN17+CG45	SCREW	1	
24-12	XQN2+BG55	SCREW	1	
A1	L0BAB0000124	STEREO EARPHONES	1	
A2	N2QCB000011	WIRED REMOTE CONTROL	1	
A3	N0JCCE000004	AC ADAPTOR	1	Δ (EB)
A3	RFEA418E-S	AC ADAPTOR	1	Δ (EG)
A4	RQT6417-B	OPERATING INSTRUCTIONS	1	<IA> (EB)
A4	RQT6415-E	OPERATING INSTRUCTIONS	1	<IB> (EG)
A4	RQT6416-H	OPERATING INSTRUCTIONS	1	<IC> (EG)
A5	RQCB0169	SERVICE CENTER LIST	1	
C10	ECJ1XC1H121J	50V 120P	1	
C12	RCST1AY475RG	10V 0.47U	1	F3F1A4750003
C13	F3H1A476A001	10V 47U	1	
C14	RCE0JKA2211G	6.3V 220U	1	F2A0J2210012
C15	ECUZNC104ZFV	16V 0.1U	1	F1H1C1040008
C17	ECUVNA105ZPV	10V 1U	1	F1H1A105A030
C19	ECA1CAK220XH	16V 22U	1	
C20	ECUVNA105ZPV	10V 1U	1	F1H1A105A030
C21	ECUVNH103KBV	50V 0.01U	1	F1H1H103A748
C22	ECUZNC104ZFV	16V 0.1U	1	F1H1C1040008
C23	ECUV1H220JCV	50V 22P	1	ECJ1VC1H220J
C24	ECUV1H391KBV	50V 390P	1	ECJ1VB1H391K
C25	ECJ1VB1C104K	16V 0.1U	1	
C26	ECUVNH103KBV	50V 0.01U	1	F1H1H103A748
C27	F2A0J102A130	6.3V 1000U	1	
C30	RCST0GY476RG	4V 47U	1	F3F0G4760001
C32	RCST1CY335RG	16V 0.33U	1	F3F1C3350005
C33	ECUV1H101JCV	50V 5P	1	F1H1H101A004
C34	ECUVNH103KBV	50V 0.01U	1	F1H1H103A748
C35	ECUVNE223KBV	25V 0.022U	1	F1H1E223A050
C36	ECUV1H390JCV	50V 39P	1	ECJ1VC1H390J
C37	ECUVNH103KBV	50V 0.01U	1	F1H1H103A748
C38*1	ECUVNA105ZPV	10V 1U	1	F1H1A105A030
C38*2	ECUVNC105KBN	16V 1U	1	F1J1C105A091
C101	ECJ1VB1C104K	16V 0.1U	1	
C103*1	ECUVNE223KBV	25V 0.022U	1	F1H1E223A050
C103*2	ECUV1H221GCV	50V 220P	1	F1H1H221A002
C105	RCST0GY226RG	4V 22U	1	F3F0G2260002
C110	ECJ1VC1H050C	50V 5P	1	
C111*1	ECUVNE223KBV	25V 0.022U	1	F1H1E223A050
C111*2	ECUV1H470JCV	50V 47P	1	F1H1H470A736
C112*1	ECUV1H221KBV	50V 220P	1	F1H1H2210001
C112*2	ECUV1H470GCV	50V 47P	1	F1H1H470A002
C113, 14	ECUZNC104ZFV	16V 0.1U	2	F1H1C1040008
C115*1	ECUVNE223KBV	25V 0.022U	1	F1H1E223A050
C115*2	ECJ1VB1H102K	50V 1000P	1	
C116*1	ECUVNE223KBV	25V 0.022U	1	F1H1E223A050
C116*2	ECJ1VB1H102K	50V 1000P	1	
C117	ECUVNE223KBV	25V 0.022U	1	F1H1E223A050
C119	ECUV1H010CCV	50V 1P	1	ECJ1VC1H010C
C120	ECUV1H152KBV	50V 1500P	1	F1H1H152A013
C121	ECJ1XC1H121J	50V 120P	1	
C123	ECJ1VB1H102K	50V 1000P	1	
C151	ECUVNC473KBV	16V 0.047U	1	F1H1C473A071
C153	ECUVNC105KBN	16V 1U	1	F1J1C105A091
C155	ECUVNH103KBV	50V 0.01U	1	F1H1H103A748
C157	ECJ1VC1H120J	50V 12P	1	
C159	ECUV1H471KBV	50V 470P	1	F1H1H471A013
C161	ECUVNE153KBV	25V 0.015	1	F1H1E153A050

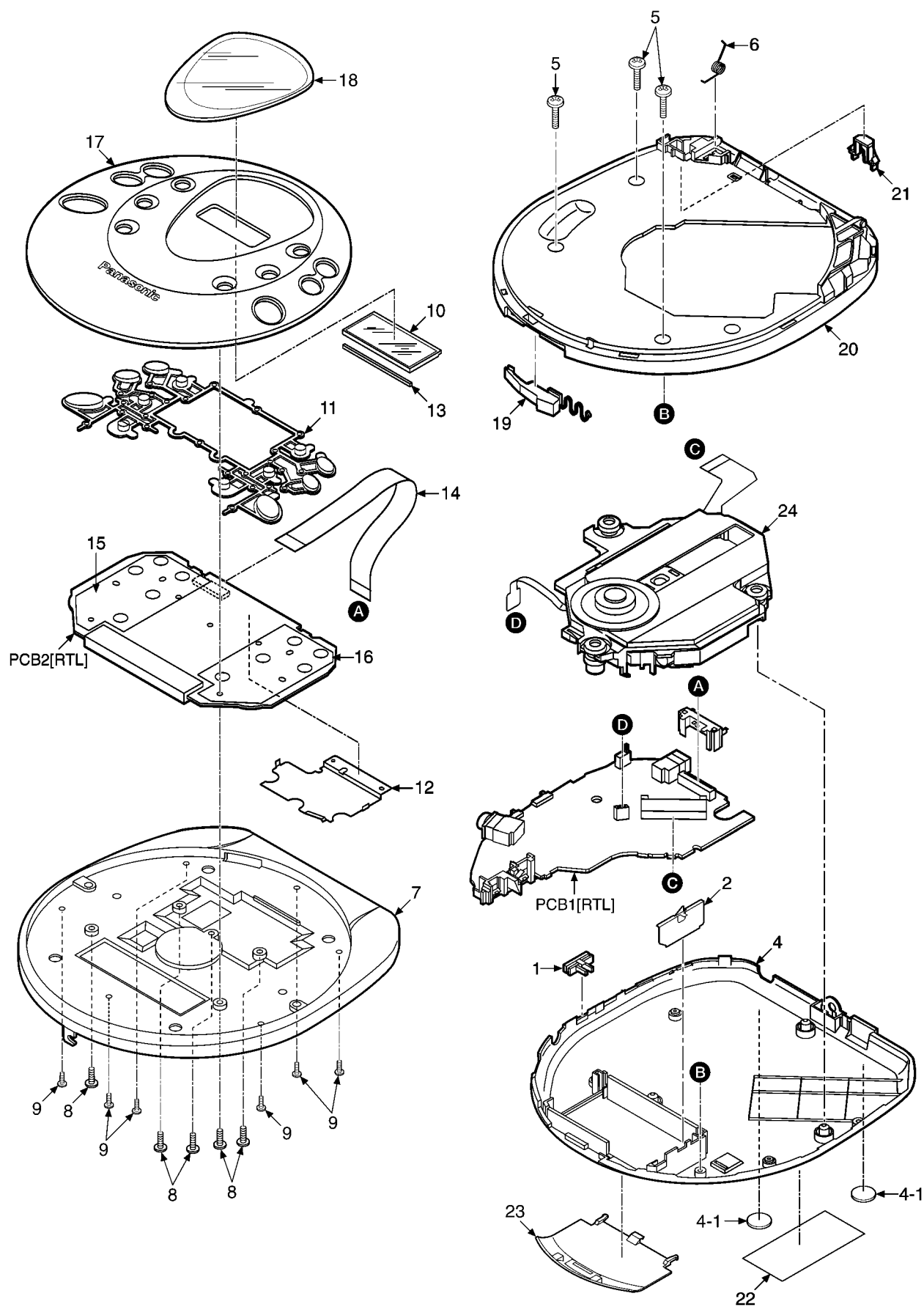
Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C201	ECA0JAK470XH	6.3V 47U	1	
C202,03	ECUZN104ZFY	16V 0.1U	2	F1H1C1040008
C206	ECUVN104ZFY	16V 0.033U	1	F1H1C333A071
C207	ECUV1H471GCV	50V 470P	1	
C209	ECUV1H010CCV	50V 1P	1	ECJ1VC1H010C
C210	ECUX1H150JCV	50V 15P	1	ECJ1VC1H150J
C211	ECUV1H221KVB	50V 220P	1	F1H1H2210001
C212	ECUVNA105ZFY	10V 1U	1	F1H1A105A030
C215	RCST0GY475RG	4V 0.47U	1	F3F0G475A005
C216	ECUVNJ474KBV	6.3V 0.47U	1	F1H0J474A002
C221	ECUVNH103KBV	50V 0.01U	1	F1H1H103A748
C223	ECUVNC473KBV	16V 0.047U	1	F1H1C473A071
C225	ECUVNA105ZFY	10V 1U	1	F1H1A105A030
C228,29	ECUVNH103KBV	50V 0.01U	2	F1H1H103A748
C230-32	ECJ1VB1C104K	16V 0.1U	3	
C234	ECJ1VB1C104K	16V 0.1U	1	
C235	ECUVNA105ZFY	10V 1U	1	F1H1A105A030
C236	ECJ1VB1H102K	50V 1000P	1	
C239	ECUZN104ZFY	16V 0.1U	1	F1H1C1040008
C240	ECJ1VB1C104K	16V 0.1U	1	
C242	ECJ1VB1H102K	50V 1000P	1	
C301	ECUVNA105ZFY	10V 1U	1	F1H1A105A030
C302	F1H1A105A028	CAPACITOR	1	
C307,08	ECJ1VB1C104K	16V 0.1U	2	
C309	ECUVNA105ZFY	10V 1U	1	F1H1A105A030
C310	ECJ1VB1C104K	16V 0.1U	1	
C311	RCST0GY226RG	4V 22U	1	F3F0G2260002
C313,14	ECUV1H050DCV	50V 5P	2	ECJ1VC1H050D
C315	ECUZN104ZFY	16V 0.1U	1	F1H1C1040008
C316	ECJ1VB1H102K	50V 1000P	1	
C317	RCST0GY476RG	4V 47U	1	F3F0G4760001
C322	ECUVNJ474KBV	6.3V 0.47U	1	F1H0J474A002
C324	ECJ1VB1H102K	50V 1000P	1	
C326	ECUV1H331KBV	50V 330P	1	ECJ1VB1H331K
C328	ECUV1H221KVB	50V 220P	1	F1H1H2210001
C329	ECUVNH103KBV	50V 0.01U	1	F1H1H103A748
C330,31	ECUVNA105ZFY	10V 1U	2	F1H1A105A030
C333	ECUVNA105ZFY	10V 1U	1	F1H1A105A030
C340	ECUVNH103KBV	50V 0.01U	1	F1H1H103A748
C351	RCB0JKA221IG	6.3V 220U	1	F2A0J2210012
C352	ECUVNA105ZFY	10V 1U	1	F1H1A105A030
C503	ECUV1H561KBV	50V 560P	1	F1H1H561A013
C504*1	ECUZN104ZFY	16V 0.1U	1	F1H1C1040008
C504*2	RCST0GY476RG	4V 47U	1	F3F0G4760001
C505	ECUVNE223KBV	25V 0.022U	1	F1H1E223A050
C506*1	ECUVNJ474KBV	6.3V 0.47U	1	F1H0J474A002
C506*2	ECUZN104ZFY	16V 0.1U	1	F1H1C1040008
C507	ECA0JKS331	6.3V 330U	1	
C508	ECUVNJ474KBV	6.3V 0.47U	1	F1H0J474A002
C509	ECUVNH103KBV	50V 0.01U	1	F1H1H103A748
C511	ECUZN104ZFY	16V 0.1U	1	F1H1C1040008
C512	ECA0GKS101	4V 100U	1	
C514	ECJ1VB1H102K	50V 1000P	1	
C515	ECUZN104ZFY	16V 0.1U	1	F1H1C1040008
C519	ECUZN104ZFY	16V 0.1U	1	F1H1C1040008
C551	ECUZN104ZFY	16V 0.1U	1	F1H1C1040008
C603,04	ECUV1H272KBV	50V 2700P	2	F1H1H272A009
C605,06	ECUVNA105ZFY	10V 1U	2	F1H1A105A030
C610	ECA0JAK470XH	6.3V 47U	1	
C612	ECUZN104ZFY	16V 0.1U	1	F1H1C1040008
C701,02	ECST0GY106R	4V 10U	2	
C703	ECST0JY106R	6.3V 10U	1	
C705,06	ECA0GAD221XI	4V 220U	2	
C707	F1H1A105A028	CAPACITOR	1	
C708-10	ECUVNA105ZFY	10V 1U	3	F1H1A105A030
C719	ECUV1H470KCV	50V 47P	1	F1H1H470A720
C751,52	ECUVNA105ZFY	10V 1U	2	F1H1A105A030
C753,54	ECJ1VB1H562K	50V 5600P	2	
C755-58	ECUZN104ZFY	16V 0.1U	4	F1H1C1040008
C759	ECJ1VF1C474Z	16V 0.47U	1	
C760	ECST0JY475R	6.3V 4.7U	1	
C761	RCST0GY226RG	4V 22U	1	F3F0G2260002
C781	ECST0JY475R	6.3V 4.7U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C782	ECST1CY105	16V 1U	1	
C902	ECUV1H332KBV	50V 3300P	1	F1H1H332A013
CF101	RLFFECNN01AL	CERAMIC FILTER	1	J0B1075B0030
CF201	J0B4593B0001	CERAMIC FILTER	1	
CF203	J0B1075B0038	CERAMIC FILTER	1	
CN11	K4ZZ02000071	BATTERY TERMINAL	1	
CN101	RJS2A6216T	CONNECTOR (16P)	1	K1MN16B00027
CN301	RJS2A6124T	CONNECTOR (24P)	1	K1MN24A00023
CN401	RJS2A5106T1	CONNECTOR (6P)	1	K1MN06A00021
CN501	RJS2A4524T1	CONNECTOR (24P)	1	K1MN24B00033
D10	MA147TX	DIODE	1	MA3J14700L
D11	MA8120M	DIODE	1	MAZ81200M
D101,02	KV1450TL3-4	DIODE	2	B0CDBB000006
D201	KV1610STL2-0	DIODE	1	B0CDBB000004
D301	MA2J72800L	DIODE	1	
D701	MA2J11100L	DIODE	1	
D703	MA2J11100L	DIODE	1	
IC1	C1BB00000562	IC	1	
IC8	C0CBAA000046	IC	1	
IC9	XC61CN1802MR	IC	1	C0EBC0000034
IC11	AN41505A-VB	IC	1	
IC101	AN8885SBE1V	IC	1	
IC301*1	C2BBFD0000336	IC	1	
IC301*2	C2FAEB0000006	IC	1	
IC302	C0EBD00000066	IC	1	
IC501	MN662786SB	IC	1	
IC502	C3ABMB0000027	IC	1	
IC701	NJM2171ARTE1	IC	1	C0ZZZ0000015
IC702	COZBZ00000515	IC	1	
IC703	COZBZ00000506	IC	1	
ICP11	RSFPB20ET-L	IC PROTECTOR	1	△ K5H102Z00002
JK11	RJJ43K09-C	JK,DC IN	1	K2EB2B000006
JK701	K2HC104B0013	JK, HEADPHONE	1	
L11	RLQU331KT-W	COIL	1	G1C331K00004
L12	G1A101D00007	COIL	1	
L13	RLQU331KT-W	COIL	1	G1C331K00004
L101	RLQM101NJT-W	COIL	1	G1CR10J00015
L102	G5ZZ00000047	COIL	1	
L103	RLQM101NJT-W	COIL	1	G1CR10J00015
L156	RLQP68NMT2-Y	COIL	1	G1C68NM00003
L157	RLQPR22KT2-Y	COIL	1	G1CR22KA0009
L201	RLV2N064-0	COIL	1	G2CBCB000015
L202	RL02U035T-T	COIL	1	G3A124C00001
L701-04	RLBV252AV-Y	COIL	4	J0JBC0000019
P1	RPF0111-2	PROTECTION BAG	1	
P2	RPK1749	GIFT BOX	1	
P3	RPQ0836-3	PAD 1	1	
P4	RPQ1297	PAD 2	1	(EB)
P4	RPQ1346	PAD 2	1	(EG)
PCB1	REP3147D-M	PCB ASS'Y	1	[RTL]
PCB2	REP3146J-S	PCB ASS'Y	1	[RTL]
Q11	BLADMD000001	TRANSISTOR	1	
Q12,13	2SC4617STL	TRANSISTOR	2	
Q16,17	B1CFHA000001	TRANSISTOR	2	
Q18	B1GDCFQA0003	TRANSISTOR	1	
Q151	2SK1067-4-TL	TRANSISTOR	1	B1CFCB000008
Q152,53	2SD1819ASTX	TRANSISTOR	2	2SD1819ASL
Q201*1	2SB709A	TRANSISTOR	1	2SB709A
Q201*2	2SB815B7TX	TRANSISTOR	1	B1ADJB000001
Q202*1	2SB1295-6-TB	TRANSISTOR	1	B1ADKB000001
Q202*2	2SC4081STX	TRANSISTOR	1	B1ABCF000021
Q203*1	B1GDCFQA0003	TRANSISTOR	1	

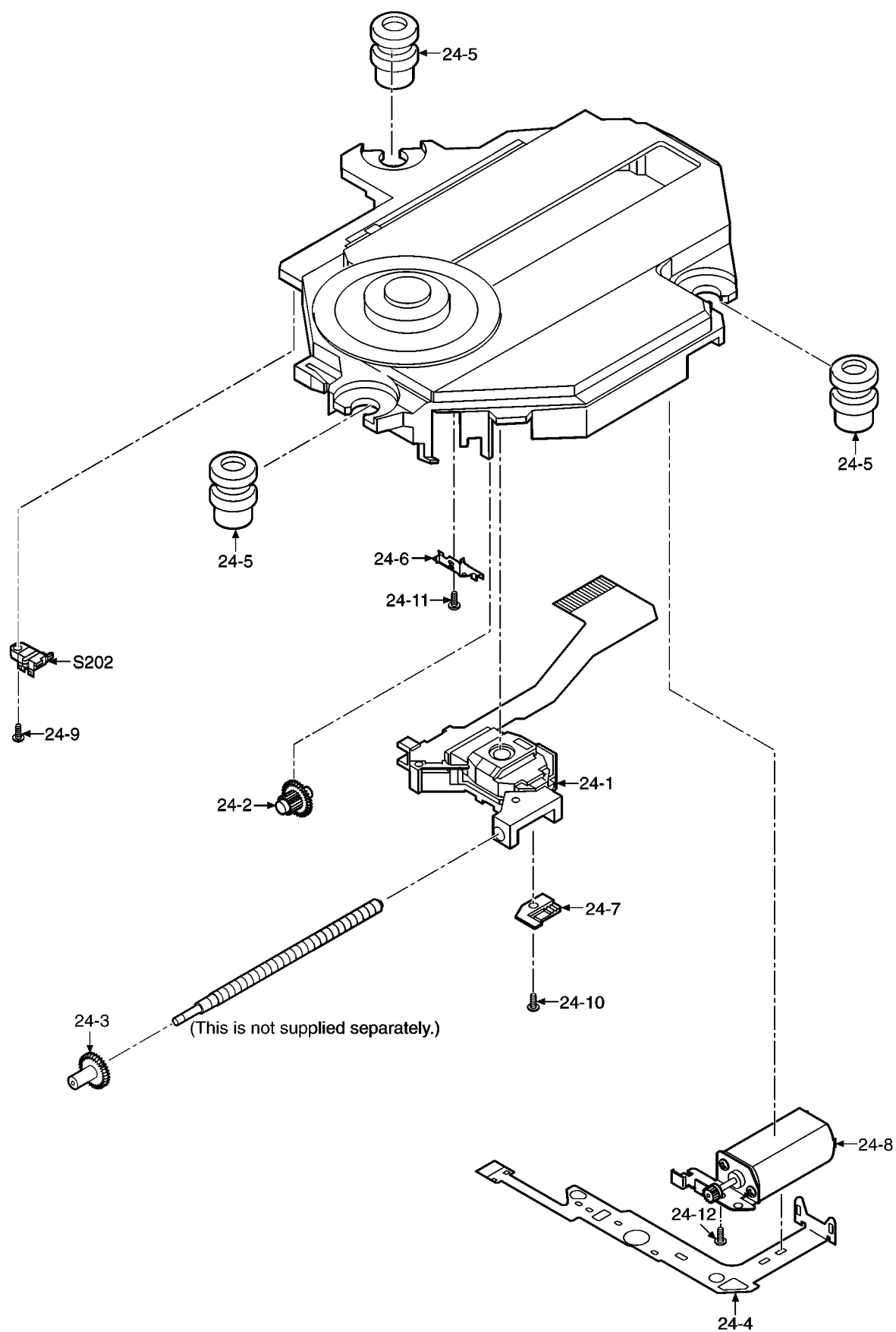
Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
Q203*2	UN5115TX	TRANSISTOR	1	UNR511500L
Q204*1	UNR521300L	TRANSISTOR	1	
Q204*2	DTC144TUA106	TRANSISTOR	1	B1GBCFNA0010
Q205	2SB1295-6-TB	TRANSISTOR	1	B1ADKB000001
Q206	UN5115TX	TRANSISTOR	1	UNR511500L
Q207	2SC3935TX	TRANSISTOR	1	2SC39350PL
Q208	UN5115TX	TRANSISTOR	1	UNR511500L
Q210	2SK1067-4-TL	TRANSISTOR	1	B1CFCB000008
Q301	UN5215TX	TRANSISTOR	1	UNR521500L
Q302*1	UNR521300L	TRANSISTOR	1	
Q302*2	UNR521300L	TRANSISTOR	1	
Q303	UN5214TX	TRANSISTOR	1	UNR521400L
Q304	UNR511400L	TRANSISTOR	1	
Q305	DTC125TUA106	TRANSISTOR	1	B1GBCFRA0001
Q307, 08	UN5214TX	TRANSISTOR	2	UNR521400L
Q309	2SB815B7TX	TRANSISTOR	1	B1ADJB000001
Q310	UNR521300L	TRANSISTOR	1	
Q402	DTC144TUA106	TRANSISTOR	1	B1GBCFNA0010
Q404	DTC144TUA106	TRANSISTOR	1	B1GBCFNA0010
Q701	XN0F26200L	TRANSISTOR	1	
Q703	B1GDCFNJ0011	TRANSISTOR	1	
Q731	2SC3931CTX	TRANSISTOR	1	2SC39310CL
Q901	B1GDCFNJ0011	TRANSISTOR	1	
Q902	FMG2T148	TRANSISTOR	1	B1GFCFNN0003
Q903	B1GDCFNN0007	TRANSISTOR	1	
Q904	UNR521300L	TRANSISTOR	1	
R13	ERJ3GEYJ102V	1/16W 1K	1	
R14	ERJ3GEYJ473V	1/16W 47K	1	D0GB473JA002
R15, 16	ERJ3GEYJ104Z	1/16W 100K	2	
R18	ERJ12YJ1R8U	1/2W 1.8	1	
R19	ERJ3GEY0R00V	CHIP JUMPER	1	
R20	ERJ3GEYJ475V	1/16W 4.7M	1	
R21	ERJ3GEYJ333Z	1/16W 33K	1	
R22*1	ERJ3GEYJ223V	1/16W 22K	1	D0GB223JA002
R22*2	ERJ3GEYJ104Z	1/16W 100K	1	
R23*1	ERJ3GEYJ822V	1/16W 8.2K	1	D0GB822JA002
R23*2	ERJ3GEYJ221V	1/16W 220	1	
R24	ERJ3GEYJ221V	1/16W 220	1	
R25	ERJ3GEYJ4R7V	1/16W 4.7	1	
R28	ERJ3GEYJ152V	1/16W 1.5K	1	
R109	EXBV4V474JV	1/32W 470K	1	
R120	ERJ3GEYJ103Z	1/16W 10K	1	
R121, 22	ERJ3GEYJ124V	1/16W 120K	2	D0GB124JA002
R128, 29	ERJ3GEYJ103Z	1/16W 10K	2	
R130, 31	ERJ3GEYJ104Z	1/16W 100K	2	
R151	ERJ3GEYJ103Z	1/16W 10K	1	
R153	ERJ3GEYJ682V	1/16W 6.8K	1	D0GB682JA002
R154	ERJ3GEYJ332V	1/16W 3.3K	1	D0GB332JA002
R155	ERJ3GEYJ4R7V	1/16W 4.7	1	
R159	ERJ3GEYJ471V	1/16W 470	1	
R160	ERJ3GEYJ103Z	1/16W 10K	1	
R201	ERJ3GEYJ2R2V	1/16W 2.2	1	D0GB2R2JA002
R202*1	ERJ3GEYJ223V	1/16W 22K	1	D0GB223JA002
R202*2	MCR03PZHJ561	1/16W 560	1	
R203*1	ERJ3GEYJ222V	1/16W 2.2K	1	
R203*2	ERJ3GEYJ101V	1/16W 100	1	
R204*1	ERJ3GEYJ474V	1/16W 470K	1	
R204*2	ERJ3GEYJ224V	1/16W 220K	1	D0GB224JA002
R205*1	ERJ3GEYJ222V	1/16W 2.2K	1	
R205*2	ERJ3GEYJ103Z	1/16W 10K	1	
R206	ERJ3GEYJ224V	1/16W 220K	1	D0GB224JA002
R218	ERJ3GEYJ102V	1/16W 1K	1	
R231	ERJ3GEYJ332V	1/16W 3.3K	1	D0GB332JA002
R233	ERJ3GEYJ331V	1/16W 330	1	D0GB331JA002
R234	ERJ3GEYJ473V	1/16W 47K	1	D0GB473JA002
R235	ERJ3GEYJ221V	1/16W 220	1	
R301	ERJ3GEYJ104Z	1/16W 100K	1	
R302	EXBV8V104JV	1/16W 100K	1	
R303	ERJ3GEYJ393V	1/16W 39K	1	D0GB393JA002
R304	ERJ3GEYJ105V	1/16W 1M	1	
R305	ERJ3GEYJ394V	1/16W 390K	1	
R307	ERJ3GEYJ104Z	1/16W 100K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R308	ERJ3GEYJ333V	1/16W 33K	1	D0GB333JA002
R310	ERJ3GEYJ103Z	1/16W 10K	1	
R321	ERJ3GEYJ104Z	1/16W 100K	1	
R322	EXBV8V474J	1/16W 470K	1	
R331	ERJ3GEYJ105V	1/16W 1M	1	
R350	EXBV4V102JV	1/32W 1K	1	
R351	ERJ3GEYJ124V	1/16W 120K	1	D0GB124JA002
R352	ERJ3GEYJ563V	1/16W 56K	1	
R354	ERJ3GEYJ223V	1/16W 22K	1	D0GB223JA002
R355	ERJ3GEYJ224V	1/16W 220K	1	D0GB224JA002
R358	ERJ3GEYJ563V	1/16W 56K	1	
R359	ERJ3GEYJ224V	1/16W 220K	1	D0GB224JA002
R360	ERJ3GEYJ124V	1/16W 120K	1	D0GB124JA002
R361	ERJ3GEYJ223V	1/16W 22K	1	D0GB223JA002
R365	ERJ3GEYJ333V	1/16W 33K	1	D0GB333JA002
R366, 67	ERJ3GEYJ563V	1/16W 56K	2	
R370	ERJ3GEYJ563V	1/16W 56K	1	
R371	ERJ3GEYJ105V	1/16W 1M	1	
R372	ERJ3GEYJ474V	1/16W 470K	1	
R375	ERJ3GEYJ103Z	1/16W 10K	1	
R376	ERJ3GEYJ104Z	1/16W 100K	1	
R379	ERJ3GEYJ103Z	1/16W 10K	1	
R380	ERJ3GEYJ154V	1/16W 150K	1	
R402	ERJ3GEYJ472V	1/16W 4.7K	1	
R405	ERJ3GEYJ472V	1/16W 4.7K	1	
R501	ERJ3GEYJ683V	1/16W 68K	1	D0GB683JA002
R502	ERJ3GEYJ563V	1/16W 56K	1	
R505	ERJ3GEYJ151V	1/16W 150	1	
R506	ERJ3GEYJ222V	1/16W 2.2K	1	
R508	ERJ3GEYJ3R3V	1/16W 3.3	1	
R509	ERJ3GEYJ472V	1/16W 4.7K	1	
R511	ERJ3GEYJ222V	1/16W 2.2K	1	
R512	EXBV4V222JV	1/32W 2.2K	1	
R513	ERJ3GEYJ104Z	1/16W 100K	1	
R514	ERJ3GEYJ681V	1/16W 680	1	D0GB681JA002
R516	ERJ3GEYJ181V	1/16W 180	1	
R603	EXBV4V561JV	1/16W 560	1	
R605	EXBV4V473JV	1/32W 47K	1	
R607	EXBV4V103JV	1/32W 10K	1	
R705, 06	ERJ3GEYJ1R0V	1/16W 1	2	
R707	ERJ3GEYJ224V	1/16W 220K	1	D0GB224JA002
R708	ERJ3GEYJ104Z	1/16W 100K	1	
R709	EXBV4V102JV	1/32W 1K	1	
R711	ERJ3GEYJ104Z	1/16W 100K	1	
R731	ERJ3GEYJ103Z	1/16W 10K	1	
R755, 56	ERJ3GEYJ562V	1/16W 5.6K	2	D0GB562JA002
R757	ERJ3GEYJ103Z	1/16W 10K	1	
R758	ERJ3GEYJ104Z	1/16W 100K	1	
R759	ERJ3GEYJ105V	1/16W 1M	1	
R781	ERJ3GEYJ394V	1/16W 390K	1	
R901	EXBV4V821JV	1/32W 820	1	
R906	ERJ3GEYJ470V	1/16W 47	1	
RJ101	ERJ3GEY0R00V	CHIP JUMPER	1	
S201	ESE11SV6	SW, LASER ON/OFF	1	
S202	ESE11HS4	SW, REST DET	1	
S310	RSS2A010-1A	SW, HOLD	1	K0D112B00071
VR1	D3DA3104A002	V.R., FM RF ADJ.	1	
X301	RSXC75K0L02T	OSCILLATOR	1	H0J750200006
X501	H2D169500022	OSCILLATOR	1	

17 Cabinet Parts Location



18 Traverse Unit Parts Location



19 Packaging

