ORDER NO. AD9907166C2

Service Manual

DVD Changer

DVD Changer

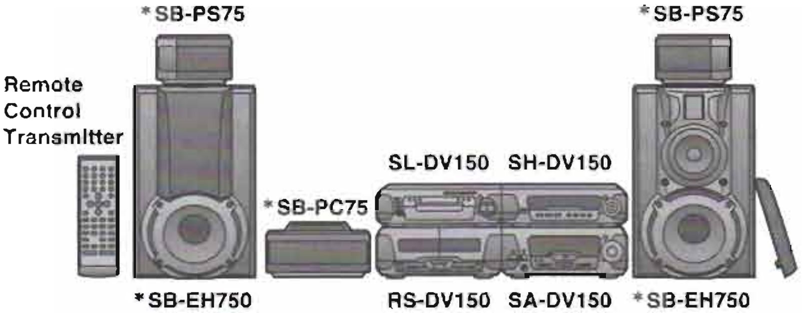
SL-DV150

COMPACT DISC DIGITAL VIDEO

COMPACT DISC DIGITAL AUDIO

DVD VIDEO

MASH multi-stage noise shaping



Colour
(S) .... Silver Type

Area
(EG) ...... Europe.

Because of unique interconnecting cables, when a component requires service, send or bring in the entire system.

System	SC-DV150
Sound Processor	SH-DV150
Tuner/Amplifier	SA-DV150
DVD Changer	**SL-DV150**
Cassette Deck	RS-DV150
Front Speakers*	SB-EH750
Center Speaker*	SB-PC75
Surround Speakers*	SB-PS75

*: Made in Singapore.

Specifications

Discs played Section

DVD-Video disc: 8/12 cm single-sided, single-layer
8/12 cm single-sided, double-layer
8/12 cm double-sided, double-layer
(One layer per side)

Compact disc (CD-DA, VIDEO CD): 8/12 cm disc

Audio Section

DA converter: Delta-sigma DAC

Frequency response:

- **CD audio;** 4 – 20 kHz ± 1 dB
- **DVD (linear audio);** 4 – 22 kHz ± 1 dB (48 kHz sampling)
4 – 44 kHz+1, –3 dB (96 kHz sampling)

Video Section

Signal system: PAL (PAL60/NTSC)

Output level:

- **Composite Video;** 1 Vp-p (75 Ω)
- **S-video Y;** 1 Vp-p (75 Ω)
- **S-video C;** 0.300 Vp-p (75 Ω) PAL
0.286 Vp-p (75 Ω) NTSC

Pickup Section

Beam source: Semiconductor laser

Wavelength: 668 nm

General

Dimensions (W×H×D): 293×89×290 mm

Weight: 2.6 kg

Notes: Specifications are subject to change without notice.
Weight and dimensions are approximate.
Total harmonic distortion is measured by the digital spectrum analyzer.

⚠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.

Technics®

■ Contents

NOTE :

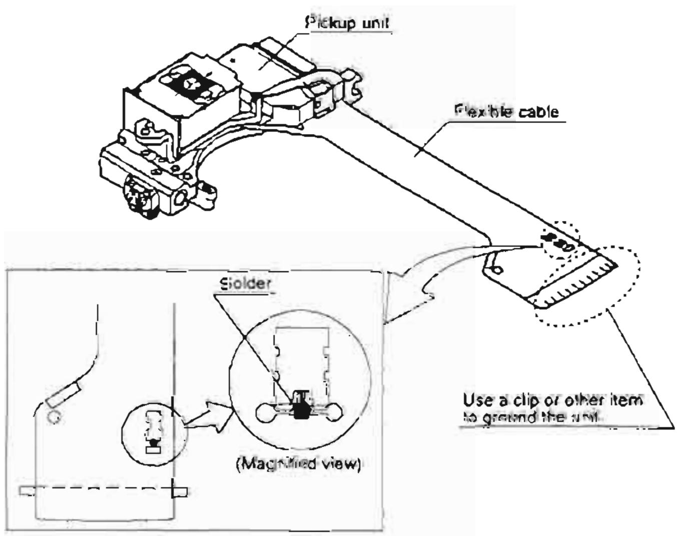
Refer to the service manual for Model No. SA-DV150 (ORDER No. AD9907165C2) for information on "Accessories", "Connections", "Installation", "Operations" and "Packaging".

■ Handling Precautions for Traverse Deck

The laser diode in the optical pickup may break down due to potential difference caused by static electricity of clothes or human body. So be careful of electrostatic break down during repair of the optical pickup.

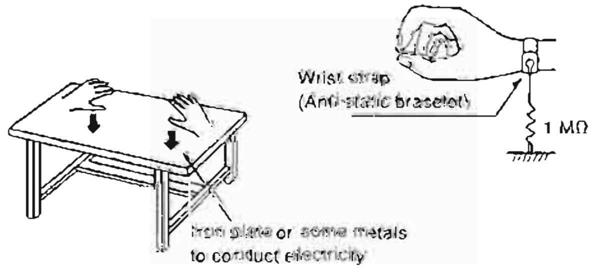
• Handling of optical pickup

1. Do not subject the optical pickup to static electricity as it is extremely sensitive to electrical shock.
2. To prevent the breakdown of the laser diode, an antistatic shorting pin is inserted into the flexible board (FPC Board). When removing or connecting the short pin, finish the job in as short time as possible.
3. Be careful not to apply excessive stress to the flexible board (FPC Board).
4. Do not turn the variable resistor (Laser power adjustment).



• Grounding for electrostatic breakdown prevention

1. Human body grounding
   Use the antistatic wrist strap to discharge the static electricity from your body.
2. Work table grounding
   Put a conductive material (sheet) or steel sheet on the area where the optical pickup is placed and ground the sheet.



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 optical pickup.

■ Precaution of Laser Diode

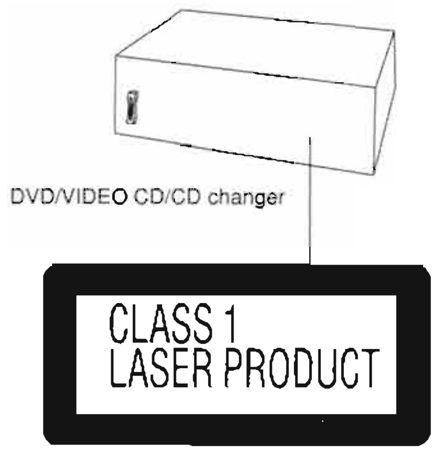
CAUTION:

This unit utilizes a class I laser. Invisible laser radiation is emitted from the optical pickup lens when the unit is turned on.

1. Do not look directly into the pickup lens.
2. Do not use optical instruments to look at the pickup lens.
3. Do not adjust the preset variable resistor on the optical pickup.
4. Do not disassemble the optical pickup unit
5. If the optical pickup is replaced, use the manufacture's specified replacement pickup only
6. Use of control or adjustment or performance of procedures other than those specified herein may result in hazardous radiation exposure.

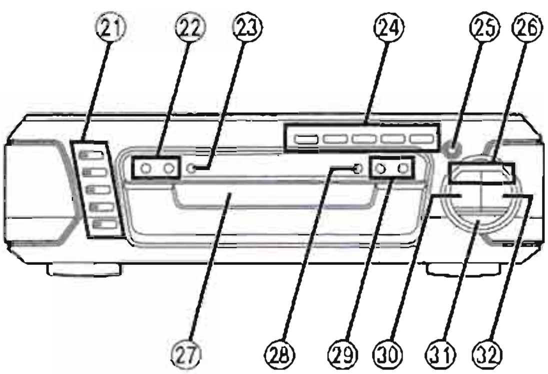
DANGER	INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM.
ADVARSEL	USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.
VARO!	AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTÖNTÄ LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
VARNING	OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.
ADVARSEL	USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES. UNNGÅ EKSPONERING FOR STRÅLEN.
VORSICHT	UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.

(Inside of product)



(Back of product)

■ Location of Controls



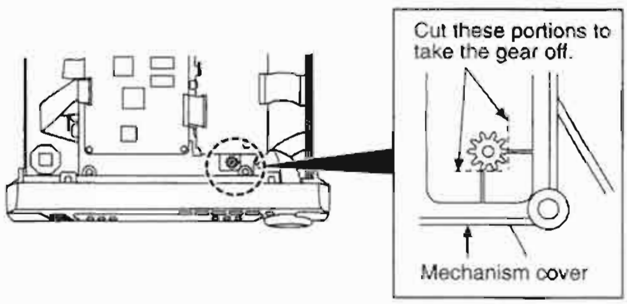
21. **Disc select buttons and indicators (DISC, 1–5)**
    Green: Indicates that the tray is ready to play its disc or to be opened.
22. **Repeat function buttons (A-B REPEAT, REPEAT)**
23. **CD edit button (CD EDIT)**
24. **Disc direct open buttons (DIRECT OPEN, DISC1 - DISC5)**
25. **Disc tray open/close button (⏏ OPEN/CLOSE)**
26. **Skip buttons (⏮, ⏭ SKIP)**
27. **Disc tray**
28. **Disc management select button (1 DISC/ALL)**
29. **Slow-motion/search buttons (◀◀, ▶▶ SLOW/SEARCH)**
30. **Stop button (■)**
31. **Pause button (II)**
32. **Play button and indicator (▷)**
    The color of the indicator depends on the operation.
    If stopped: orange
    If playing: green
    If paused: flashes green

Operation Checks and Component Replacement Procedures

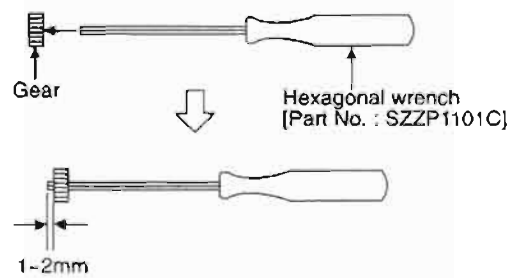
Gear for servicing (as jig) information

1. This unit has a gear which used for checking items (Open/close of disc tray, up/down operation of traverse unit by manually) when servicing. (For gear information, that is described on the items for disassembly procedures.)
2. For preparation of gear (for servicing), perform the procedures as follows.
3. In case of re-servicing the same set, the "gear for servicing" may be took off because it had been used. So, the "gear for servicing" must be stored.

1. Remove the gear provided with mechanism cover as shown below.



2. Insert the hexagonal wrench (2mm) into the gear, and then project the tip of wrench for 1~2mm length.

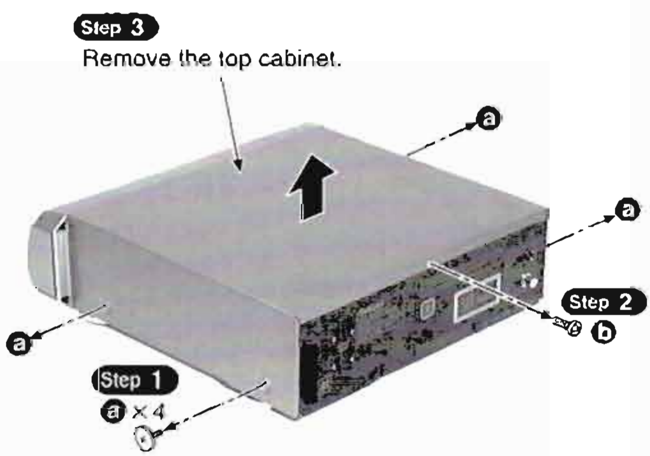


(Preparation of gear as jig is completed.)

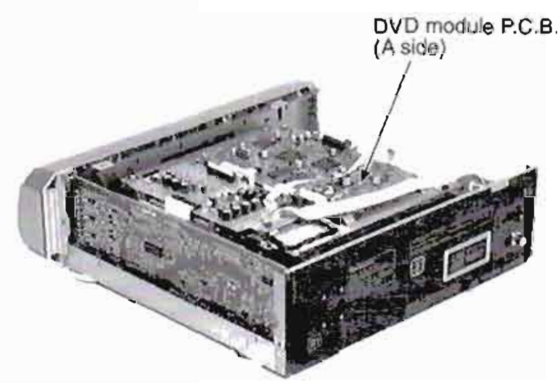
Contents

Checking Procedures for each P.C.B.

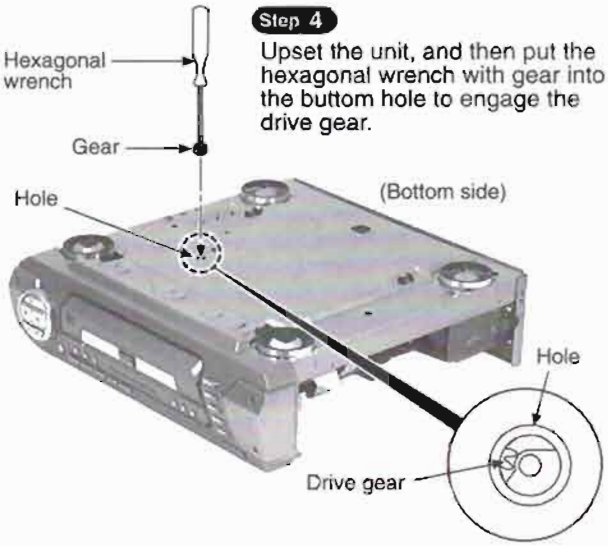
1. Checking for the DVD module P.C.B., DAC P.C.B., main P.C.B. and operation P.C.B.



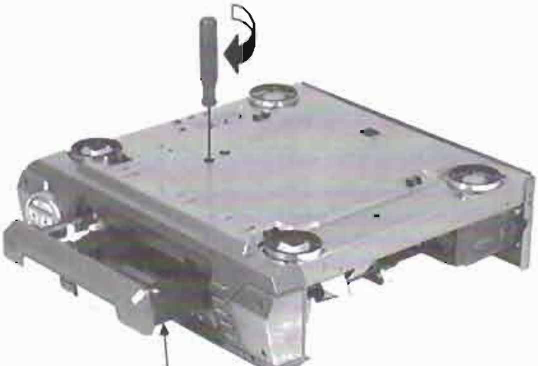
· **Check the DVD module P.C.B. (A side) as shown below.**

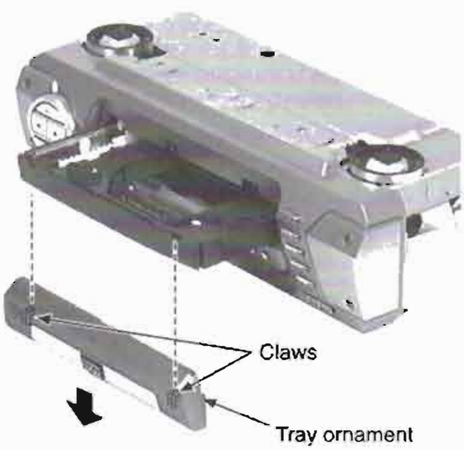


Step 4
Upset the unit, and then put the hexagonal wrench with gear into the buttom hole to engage the drive gear.



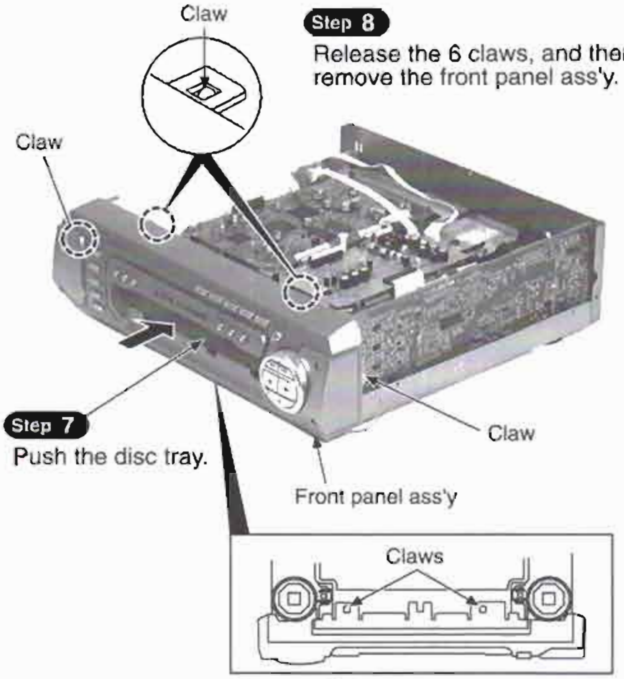
Step 5
Rotate the hexagonal wrench with gear in direction of arrow, and then open the disc tray.

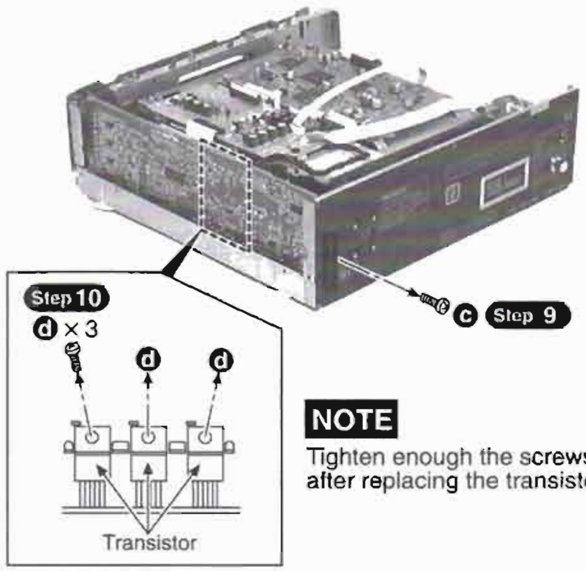




Step 6
Release the 2 claws, and then remove the tray ornament.

Step 8
Release the 6 claws, and then remove the front panel ass'y.

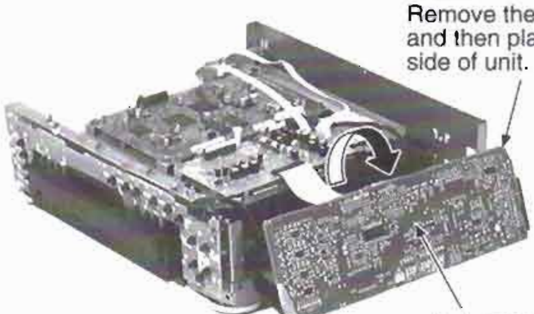


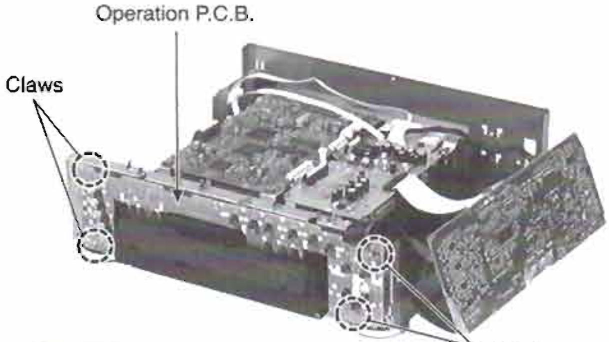


NOTE
Tighten enough the screws (d) after replacing the transistor.

· **Checking the main P.C.B. as shown below.**

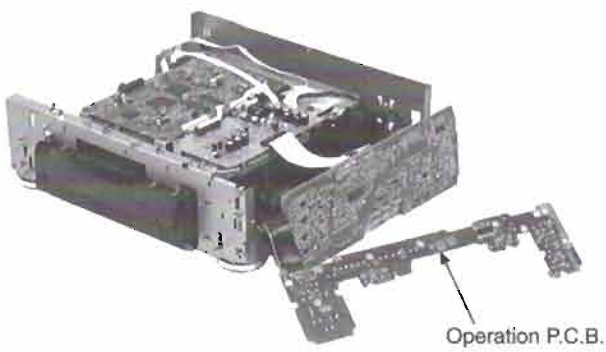
Step 11
Remove the main P.C.B., and then place it on the side of unit.





Step 12
Release the 4 claws, and then remove the operation P.C.B..

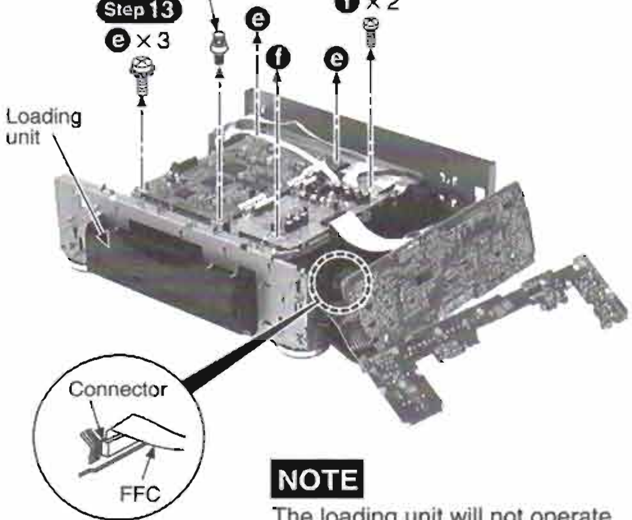
· Check the operation P.C.B. as shown below.



Step 14
Remove the plastic rivet.

Step 15
f × 2

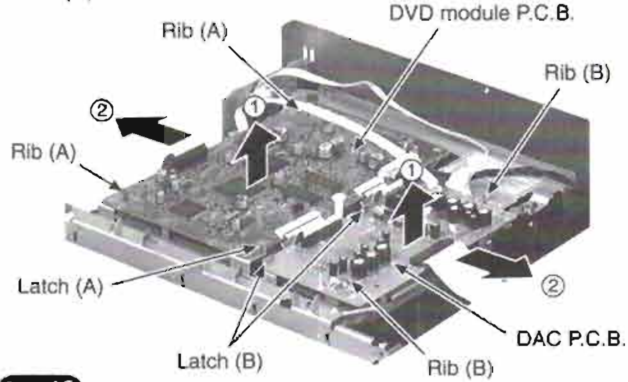
Step 13
e × 3



Step 16
Remove the FFC from connector (CN1).

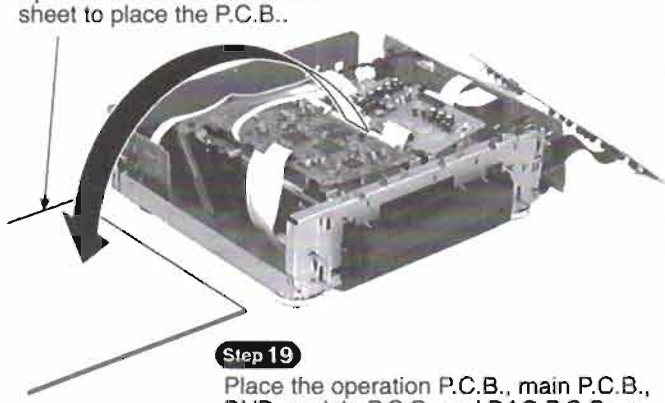
NOTE
The loading unit will not operate because the cable of loading P.C.B. is removed.
Therefore, the test disc must be stored in the loading unit.

Step 17
Lift up the DVD module P.C.B. in the direction of arrow ① and release it from the rib (A). Then, slide the DVD module P.C.B. in the direction of arrow ② and release it from the latch (A).



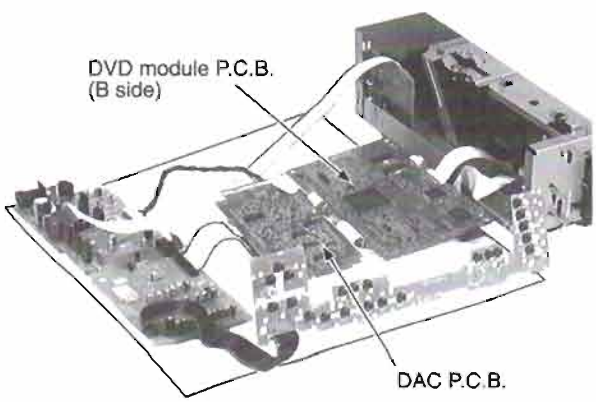
Step 18
Lift up the DAC P.C.B. in the direction of arrow ① and release it from the rib (B). Then, slide the DAC P.C.B. in the direction of arrow ② and release it from the latch (B).

NOTE
Spread the cloth or insulation sheet to place the P.C.B..



Step 19
Place the operation P.C.B., main P.C.B., DVD module P.C.B. and DAC P.C.B. on the left side of unit.

· Check the DVD module (B side) and DAC P.C.B. as shown below.



Main Component Replacement Procedures / Each parts disassembly and reassembly

1. Replacement for the traverse ass'y

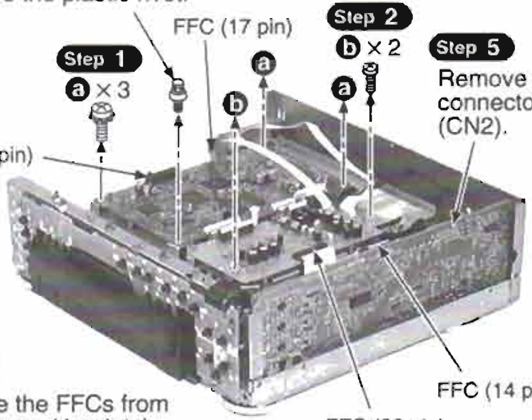
- Follow the Step 1 ~ Step 8 of the item 1 in checking procedures for each P.C.B. on pages 4 and 5.

Step 3
Remove the plastic rivet.

Step 1
ⓐ × 3

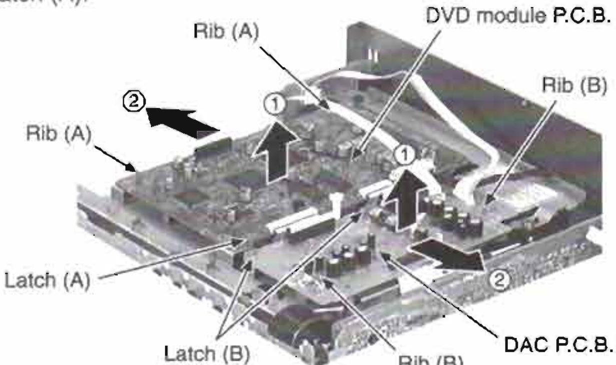
Step 2
ⓑ × 2

Step 5
Remove the connector (CN2).



Step 4
Remove the FFCs from connectors. (4 points)

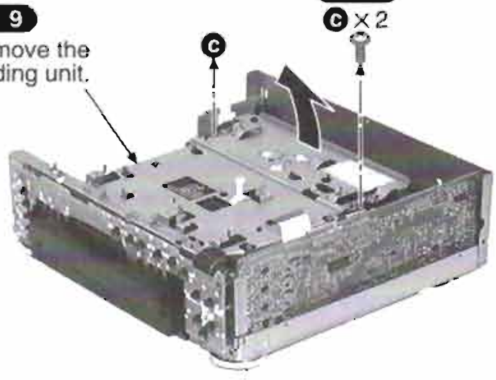
Step 6
Lift up the DVD module P.C.B. in the direction of arrow ① and release it from the rib (A). Then, slide the DVD module P.C.B. in the direction of arrow ② and release it from the latch (A).

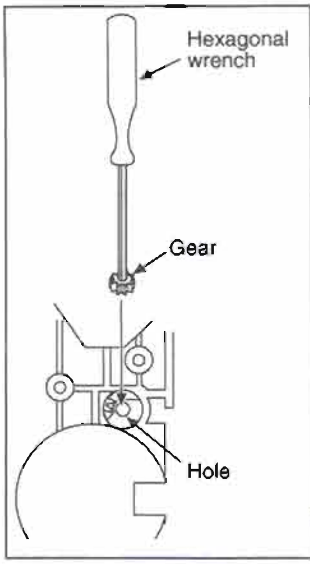


Step 7
Lift up the DAC P.C.B. in the direction of arrow ① and release it from the rib (B). Then, slide the DAC P.C.B. in the direction of arrow ② and release it from the latch (B).

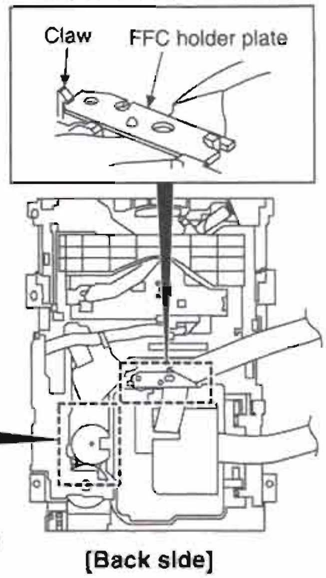
Step 8
ⓒ × 2

Step 9
Remove the loading unit.

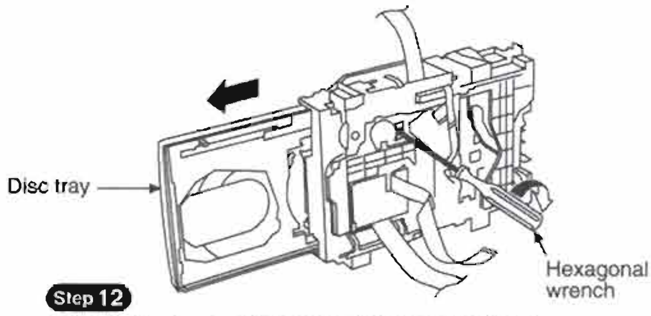




Step 10
Release the claw, and then remove the FFC holder plate.

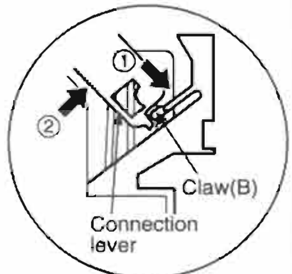


Step 11
Insert the gear with hexagonal wrench into the hole.

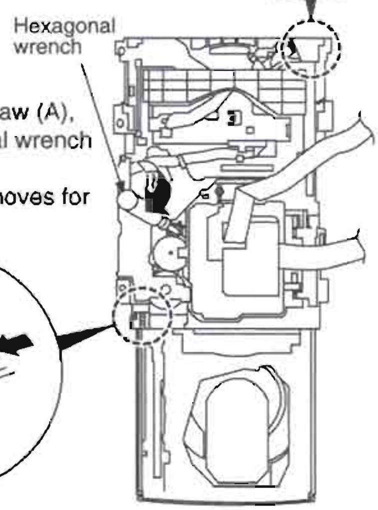


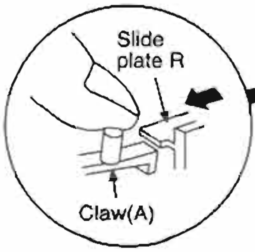
Step 12
Rotate the hexagonal wrench in the direction of arrow, and then open the disc tray fully.

Step14
Pressing the claw (B) in the direction of arrow①, the connection lever moves in the direction of arrow②.

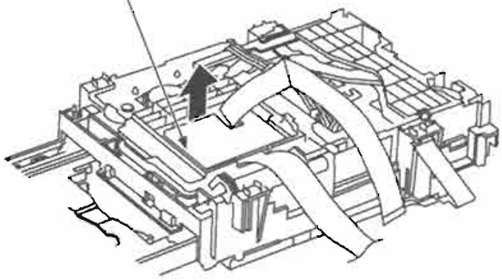


Step 13
With pressing the claw (A), rotate the hexagonal wrench clockwise.
(The slide plate R moves for a little amount.)

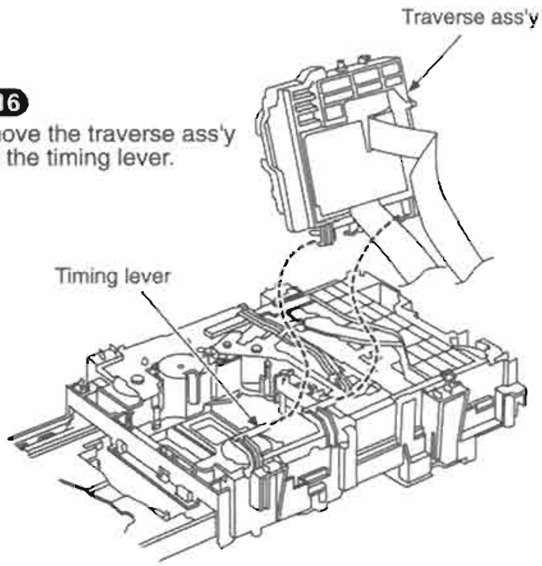




Step 15
Lift up the traverse ass'y.



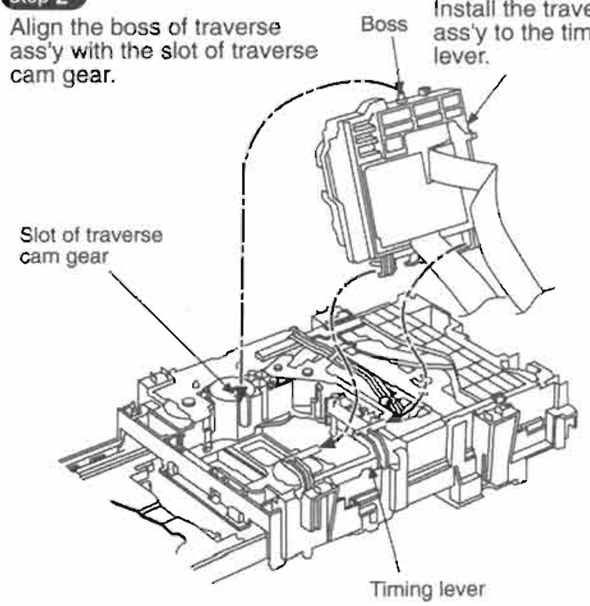
Step 16
Remove the traverse ass'y from the timing lever.

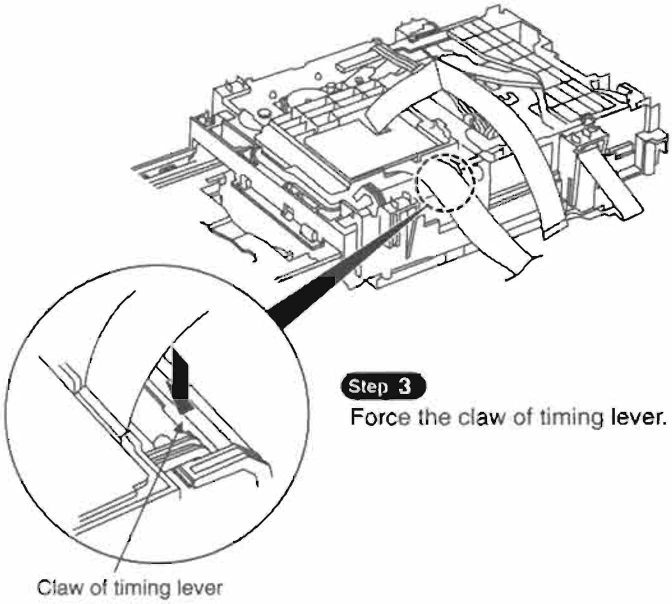


Installation for traverse deck ass'y

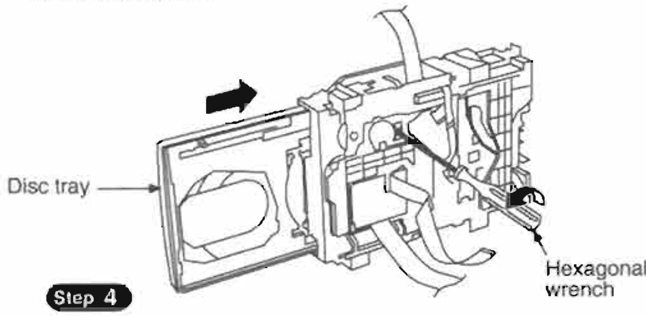
Step 1
Install the traverse ass'y to the timing lever.

Step 2
Align the boss of traverse ass'y with the slot of traverse cam gear.

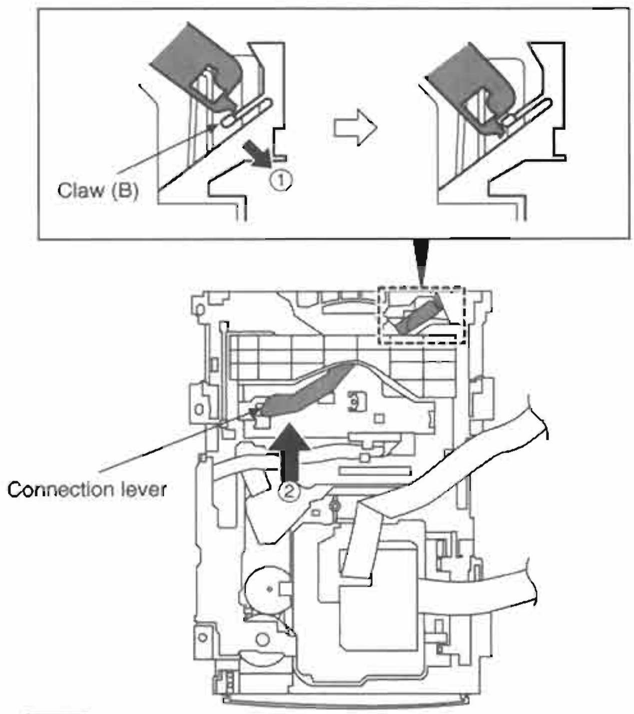




Step 3
Force the claw of timing lever.



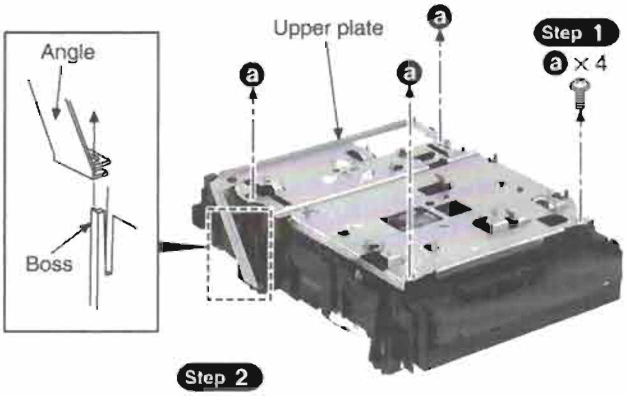
Step 4
Rotate the hexagonal wrench in the direction of arrow and then close the disc tray fully.



Step 5
With pressing the claw (B) in the direction of arrow ①, force the connection lever in the direction of arrow ②.

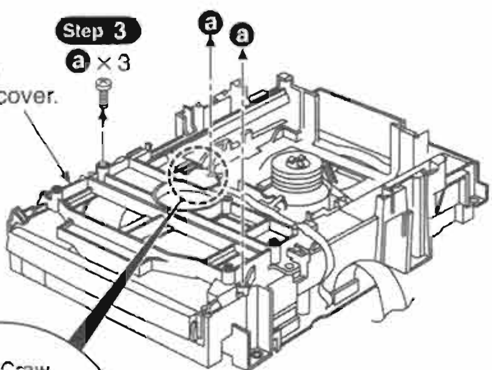
2. Replacement for the disc tray

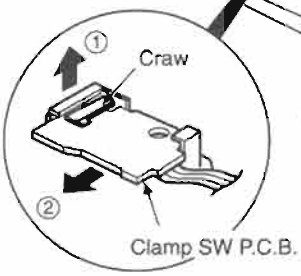
- Follow the Step 1 ~ Step 8 of the item 1 in checking procedures for each P.C.B. on pages 4 and 5.
- Follow the Step 1 ~ Step 9 of the item 1 in main component replacement procedures on page 7.



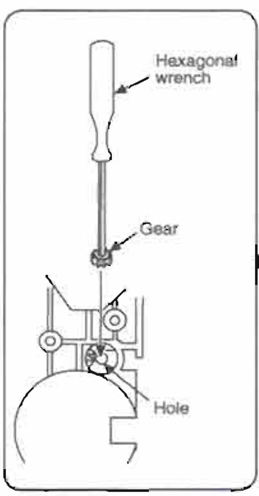
Step 2
Take care not to damage the boss of loading unit, then lift up the upper plate and angle upward to remove them.

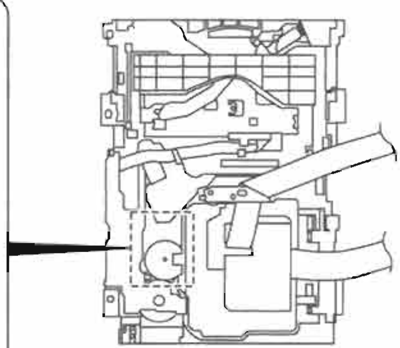
Step 5
Remove the mechanism cover.





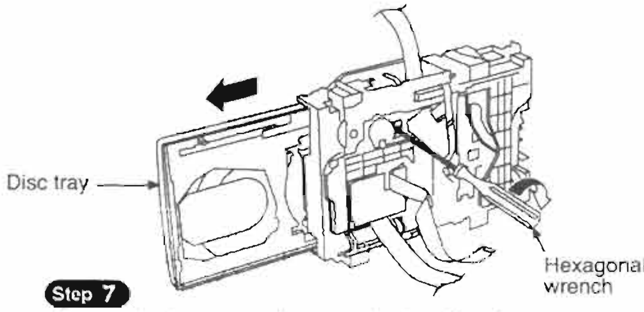
Step 4
With lifting the claw in the direction of arrow ①, draw the clamp SW P.C.B. in the direction of arrow ②.





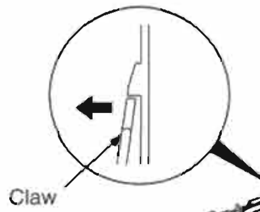
(Back side)

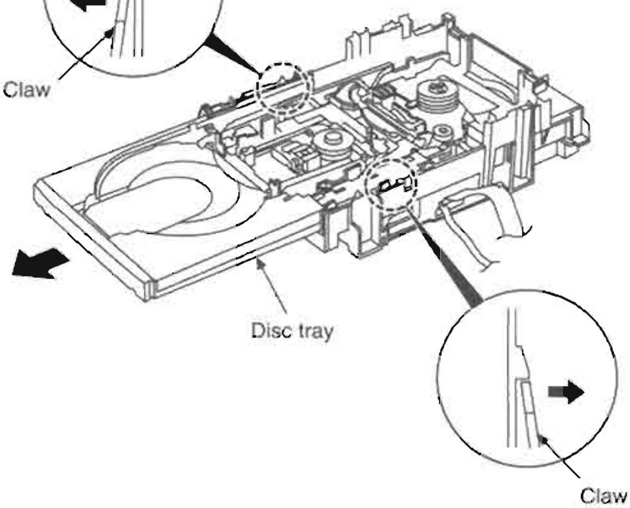
Step 6
Insert the gear with hexagonal wrench into the hole.

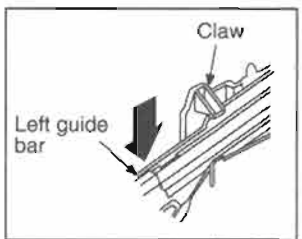


Step 7
Rotate the hexagonal wrench in the direction of arrow and then open the disc tray fully.

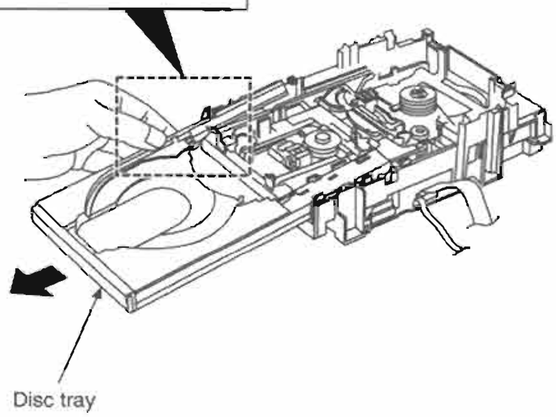
Step 8
Release the both claws, and then draw the disc tray.





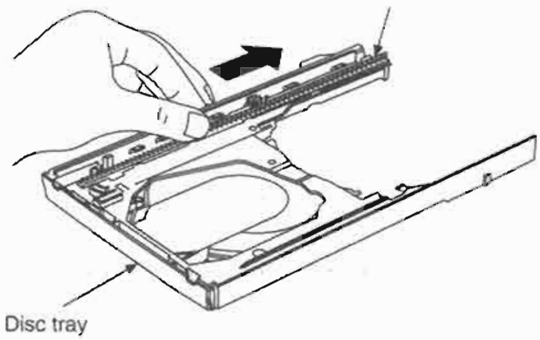


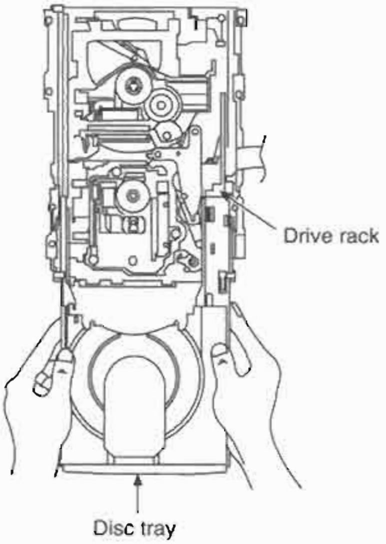
Step 9
With forcing the left guide bar manually because the left guide bar interfers with claw, draw the disc tray.



Installation of the disc tray after replacement

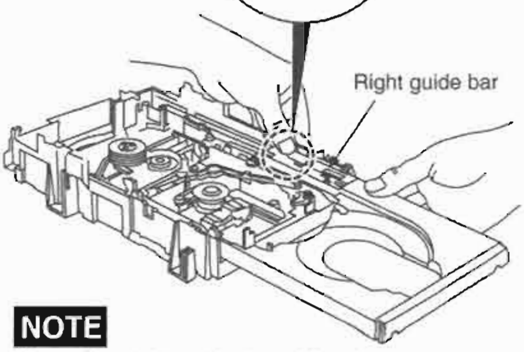
Step 1
Slide the drive rack fully in the direction of arrow.





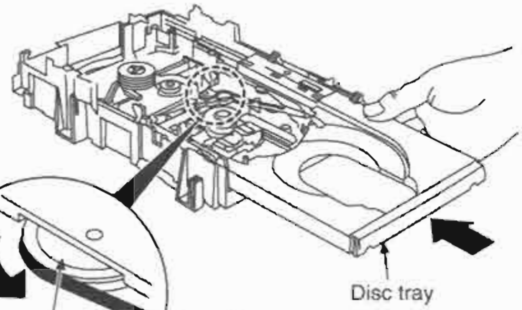
Step 2
Holding the drive rack not to move, install the disc tray

Step 3
Align the drive rack with the drive gear.



NOTE
Force the right guide bar of tray base manually not to move upwards.

Step 4
Holding the disc tray manually,rotate the pulley gear in the direction of arrow.



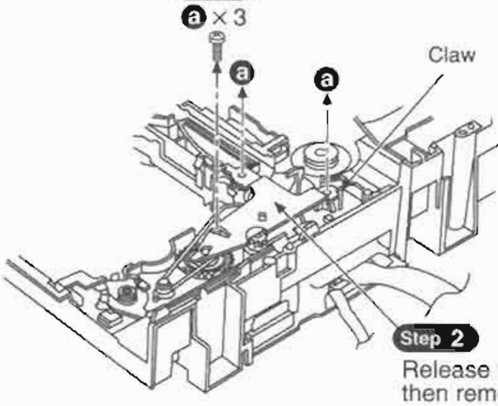
Step 5
Rotate the gear 5 or 6 times manually, and then push the disc tray.

3. Disassembly and reassembly for mechanism base drive unit

Disassembly for mechanism base drive unit

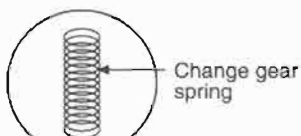
- Follow the **Step 1** ~ **Step 8** of the item 1 in checking procedures for each P.C.B. on pages 4 and 5.
- Follow the **Step 1** ~ **Step 9** of the item 1 in main component replacement procedures on page 7.
- Follow the **Step 1** ~ **Step 9** of the item 2 in main component replacement procedures on page 9.

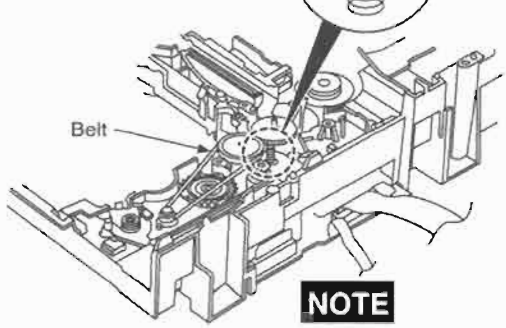
Step 1
ⓐ × 3



Step 2
Release the claw, and then remove the gear holder.

Step 3
Remove the belt and change gear spring.

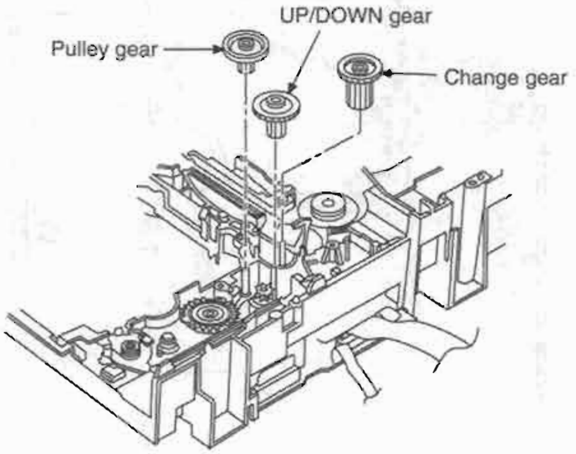


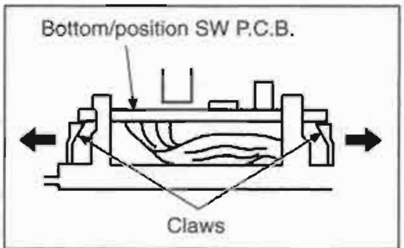


NOTE
Take care not to lose the change gear spring.

Step 4

Remove the pulley gear, change gear and UP/DOWN gear.



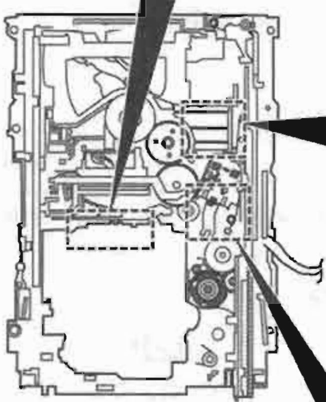


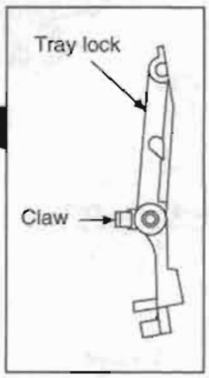
Step 5

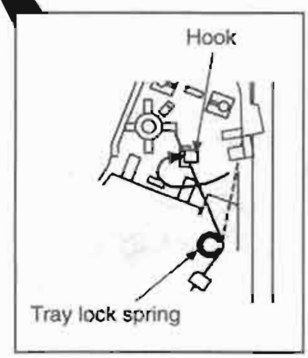
Release the 2 claws, and then remove the bottom/position SW P.C.B..

Step 7

Release the claw, and then remove the tray lock.







Step 6

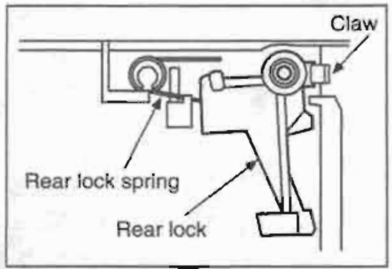
Install the tray lock spring to the hook temporally.

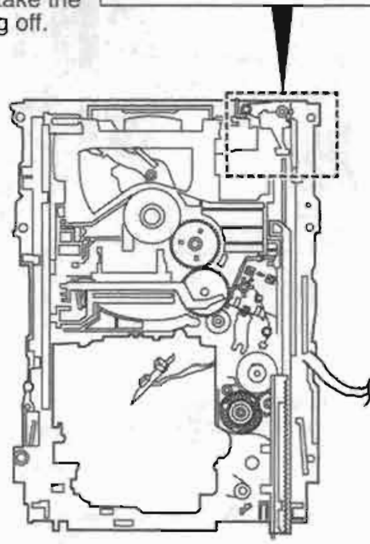
Step 8

Release the claw, and then remove the rear lock.

NOTE

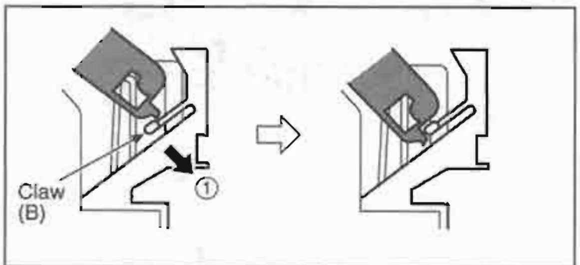
Take care not take the rear lock spring off.

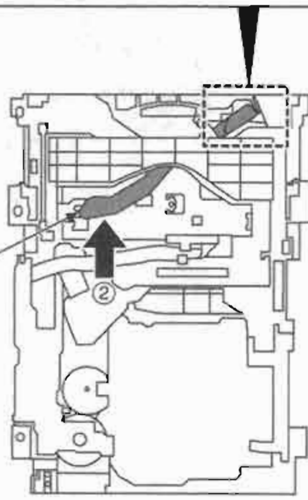




Step 9

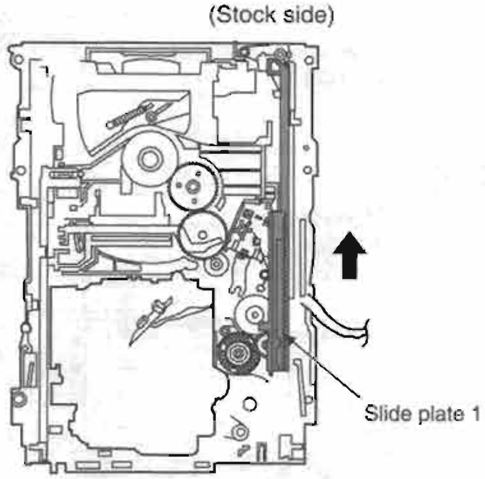
Pressing the claw (B) in the direction of arrow ①, force the connection lever in the direction of arrow ②.





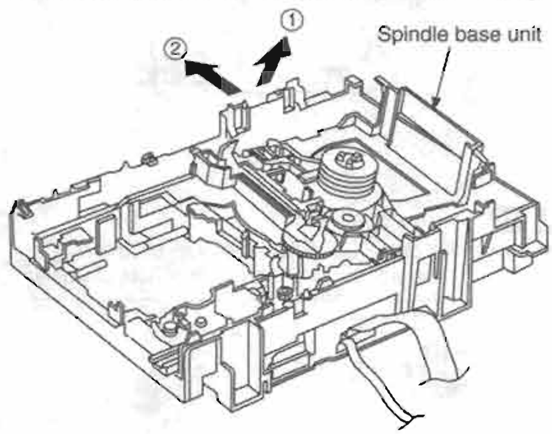
Step 10

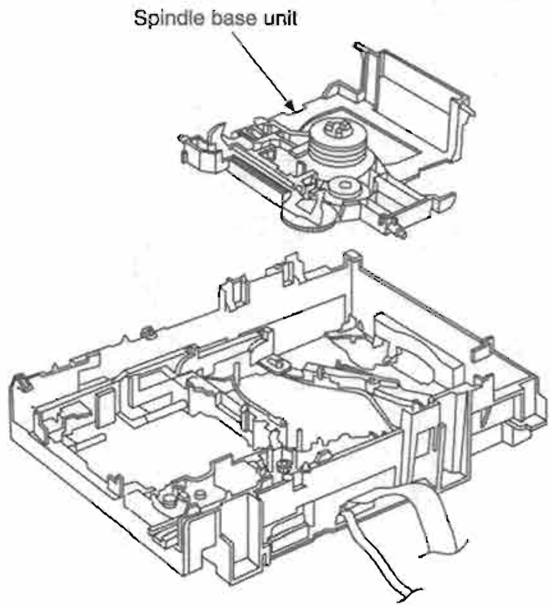
Move the slide plate 1 to the end of stock side.



Step 11

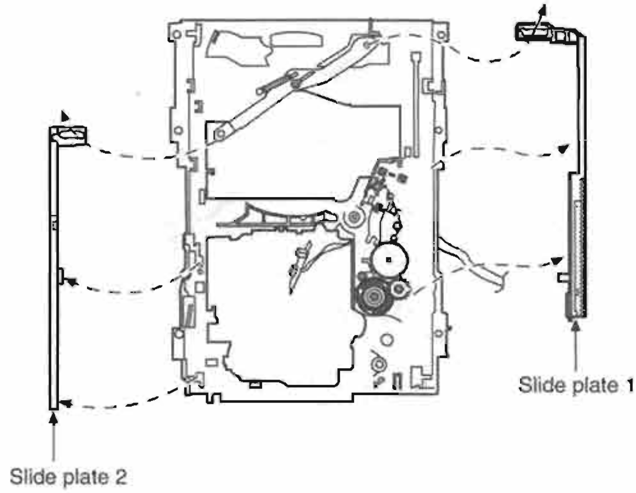
Lift up the left end of spindle base unit in the direction of arrow ①, and then remove the unit in the direction of arrow ②.





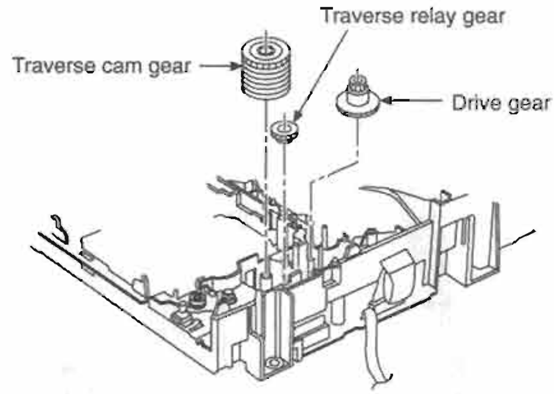
Step 12

Remove the slide plate 1 and slide plate 2.



Step 13

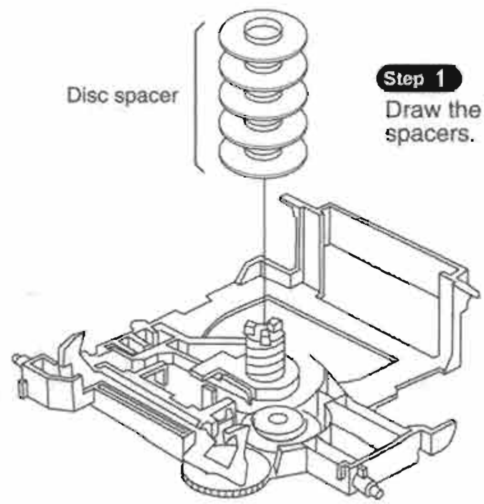
Remove the traverse relay gear, traverse cam gear and drive gear.



Disassembly/reassembly for the spindle base unit

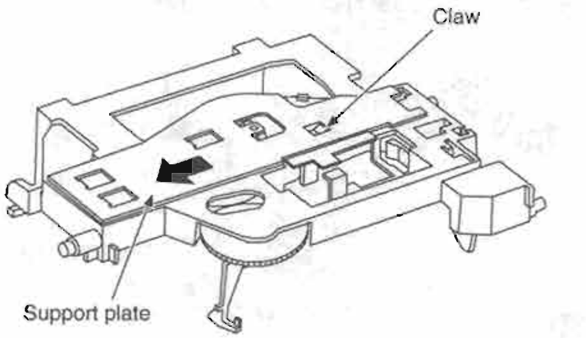
Step 1

Draw the 5 disc spacers.

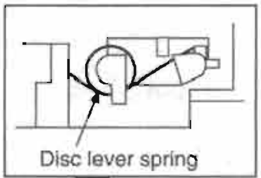


Step 2

Pushing the claw, slide the support plate in the direction of arrow, and then remove it.

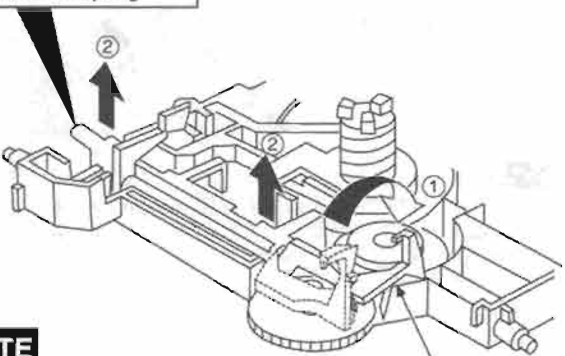


(Installation for disc lever spring)



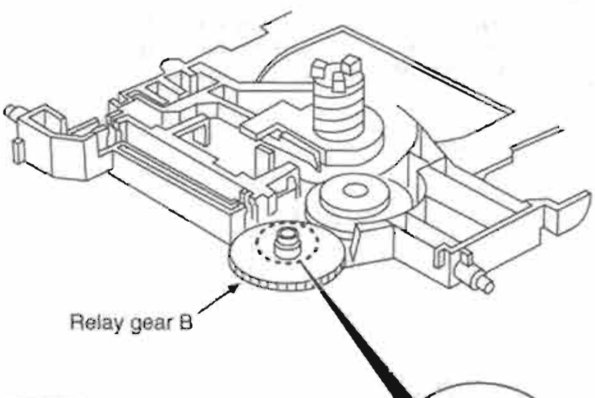
Step 3

Rotate the disc lever in the direction of arrow ①, draw the disc lever.



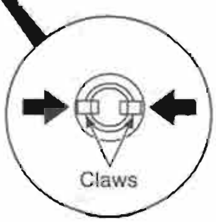
NOTE

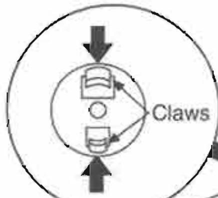
Take care not to lose the disc lever spring.



Step 4

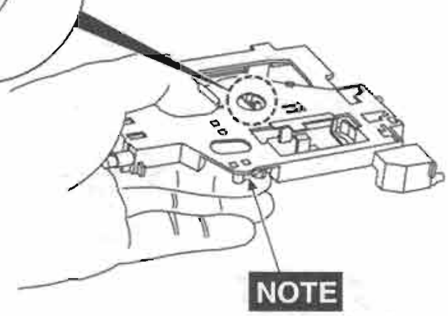
Release the 2 claws, and then draw the relay gear B.





Step 5

Release the 2 claws.

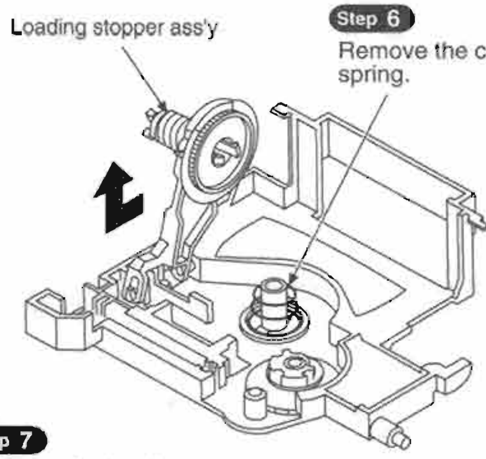


NOTE

Hold the loading stopper ass'y manually because it is flipped by spring.

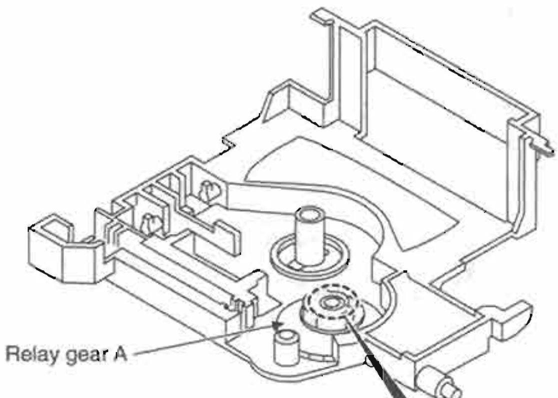
Step 6

Remove the cushion spring.



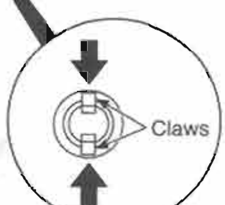
Step 7

Remove the loading stopper ass'y in the direction of arrow.



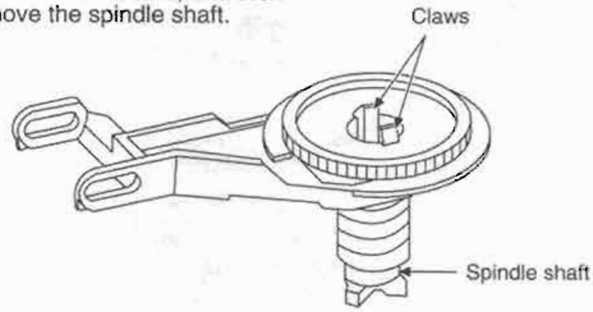
Step 8

Release the 2 claws, and then remove the relay gear A.



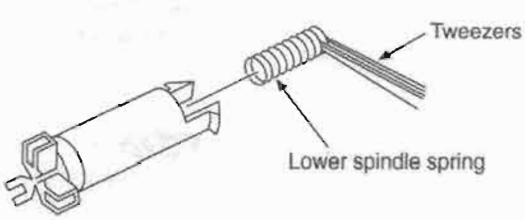
Step 9

Release the 2 claws, and then remove the spindle shaft.



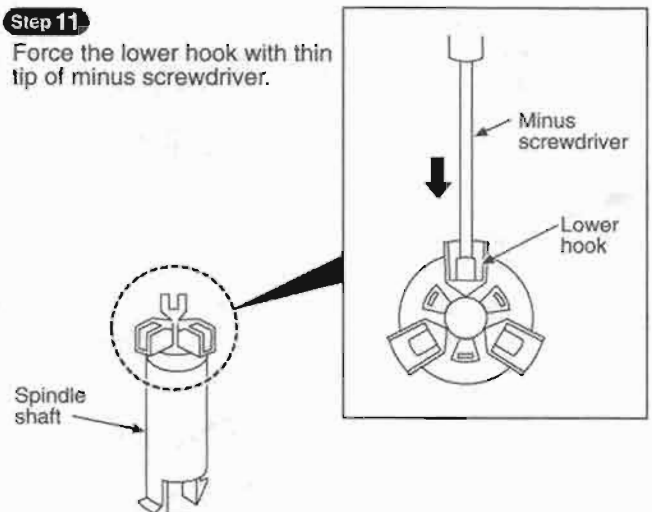
Step 10

Remove the lower spindle spring with tweezers.



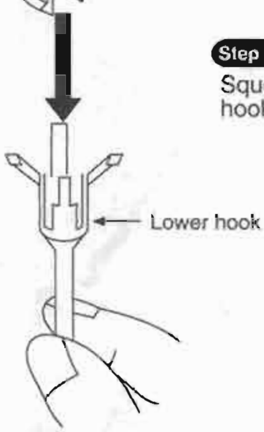
Step 11

Force the lower hook with thin tip of minus screwdriver.



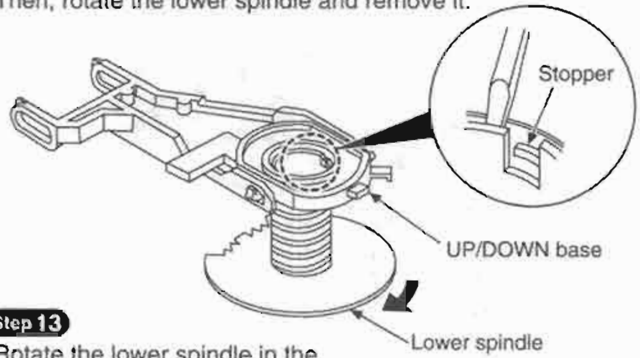
Step 12

Squeeze the shaft of lower hook, and then draw it.



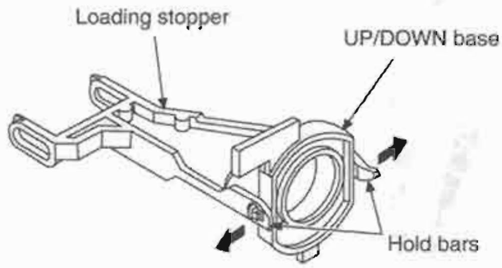
Step 14

Insert the thin tip of minus screwdriver between the lower spindle and UP/DOWN base, and then slacken the lower spindle to release the stopper.
Then, rotate the lower spindle and remove it.



Step 13

Rotate the lower spindle in the direction of arrow until the lower spindle interferes with stopper.



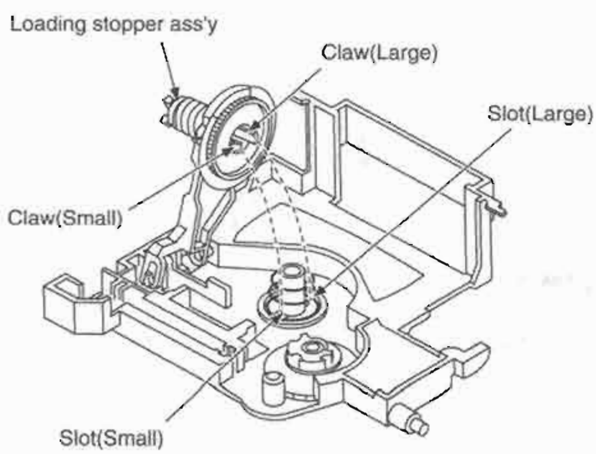
Step 15

Rotate the UP/DOWN base at a 90 degree angle. Then, spread the hold bars of loading stopper and remove the UP/DOWN base.

Installation for loading stopper ass'y

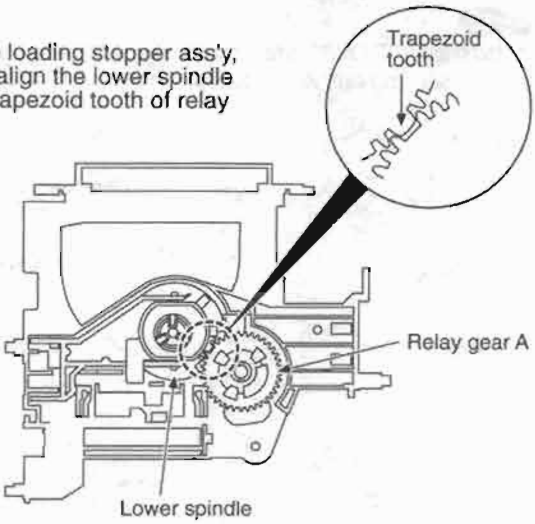
Step 1

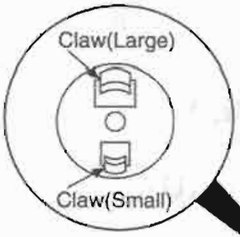
Align the claw of loading stopper ass'y with the slot of spindle base. (Caution should be exercised when alignment of claw due to the size of claws.)



Step 2

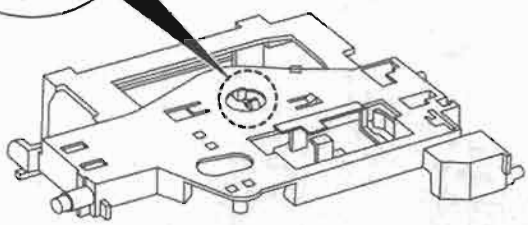
Lower the loading stopper ass'y, and then align the lower spindle with the trapezoid tooth of relay gear A.





Step 3

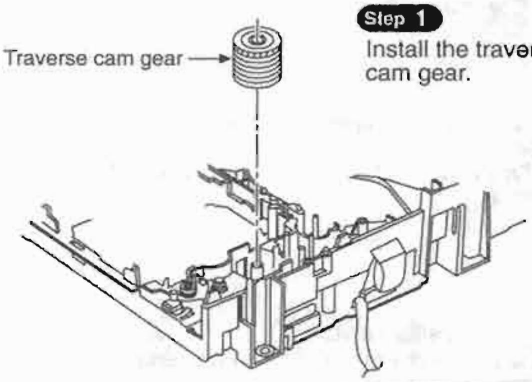
Force the loading stopper ass'y, latch the claw firmly.



Reassembling for mechanism base drive unit

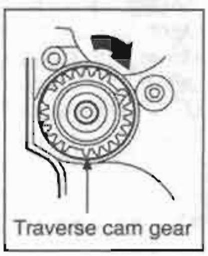
Step 1

Install the traverse cam gear.



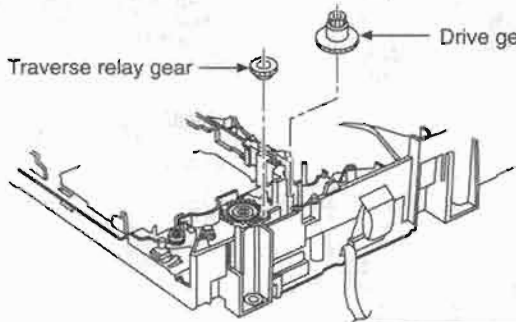
Step 2

Rotate the traverse cam gear to the direction of arrow.

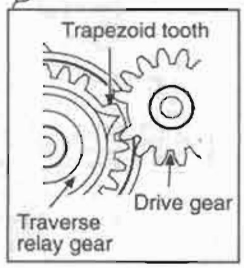


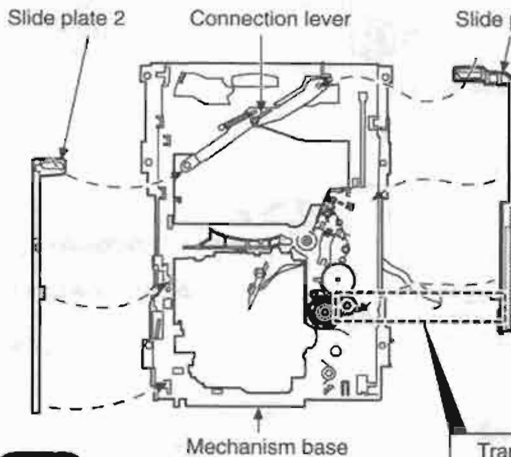
Step 3

Install the drive gear and traverse relay gear.



※ When installing the traverse relay gear, align the trapezoid tooth of gear with tooth of drive gear.



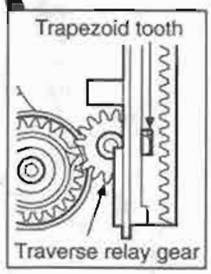


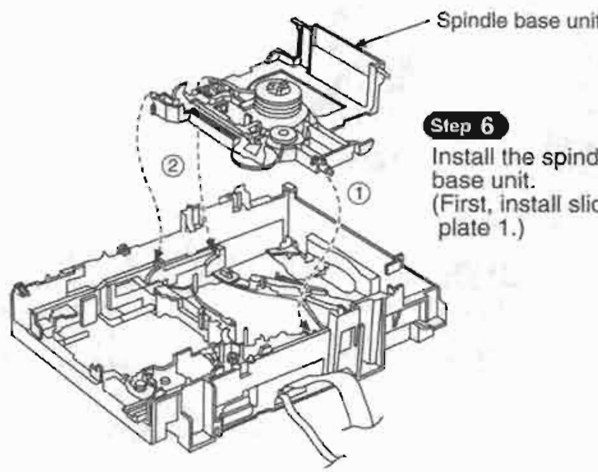
Step 4

Install the slide plate 2 to the mechanism base, and then match to the connection lever.

Step 5

Install the slide plate 1 to the mechanism base, and then match to the connection lever and align the trapezoid tooth of traverse relay gear with the slide plate 1.

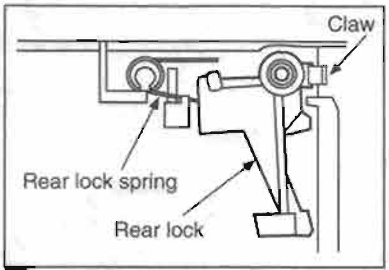


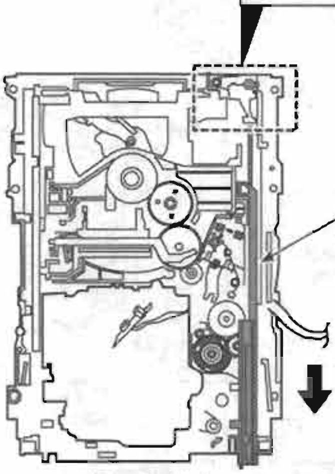


Step 6

Install the spindle base unit.
(First, install slide plate 1.)

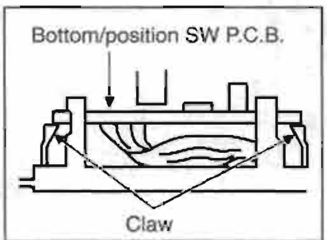
Step 8
Install the rear lock.
(The claw should be latched.)





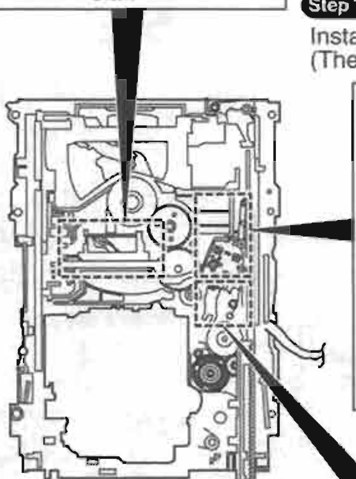
(Front side)

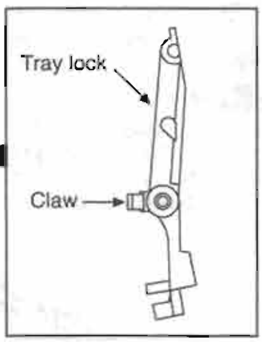
Step 7
Move the slide plate 1 to forward fully.

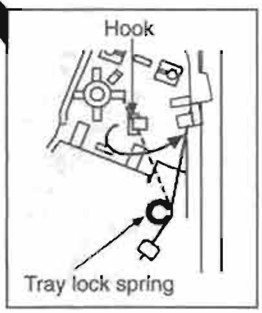


Step 9
Install the bottom/position SW P.C.B..
(The claw should be latched.)

Step 10
Install the tray lock.
(The claw should be latched.)

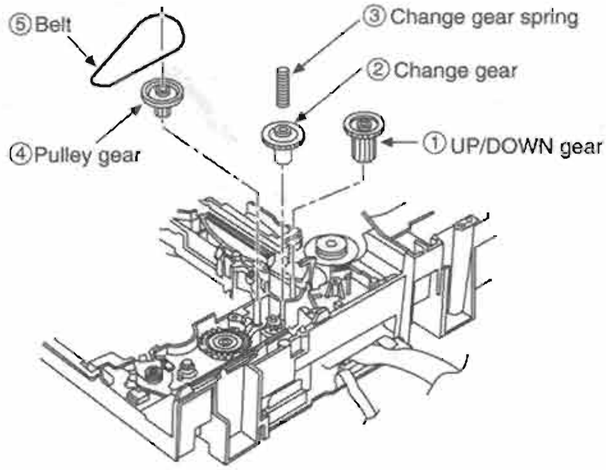




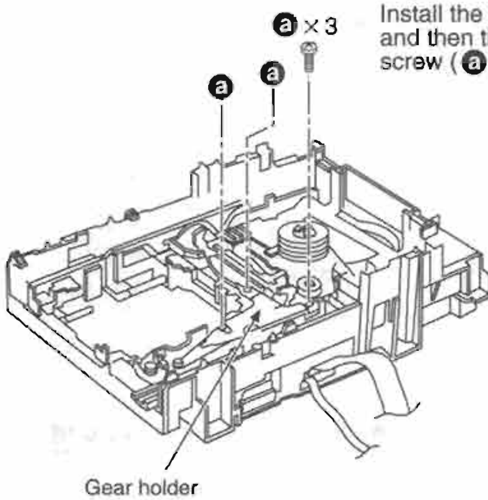


Step 11
Remove the tray lock spring from hook, and then latch to the tray lock.

Step 12
Install the UP/DOWN gear, change gear, change gear spring, pulley gear and belt in the order of ①-⑤.



Step 13
Install the gear holder, and then tighten the screw (ⓐ).

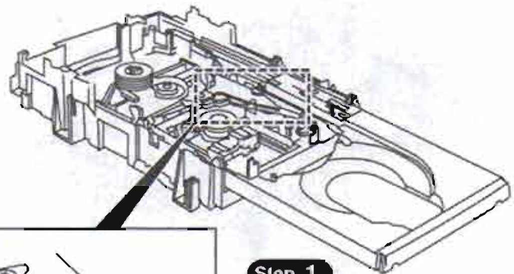


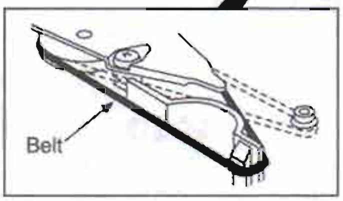
Step 14
Install the tray base, traverse ass'y, mechanism cover and upper plate.
(Refer to the items 1 and 2 of Main Component Replacement Procedures.)

[Operation check after servicing]
Check the proper operation of following items with gear and hexagonal screwdriver.
1) Open/close of tray base.
2) Moving the tray base to the stock side.
3) UP/DOWN operation of spindle base unit.
4) UP/DOWN operation of traverse ass'y.

4. Replacement for the motor ass'y

- Follow the **Step 1** ~ **Step 8** of the item 1 in checking procedures for each P.C.B. on pages 4 and 5.
- Follow the **Step 1** ~ **Step 9** of the item 1 in main component replacement procedures on page 7.
- Follow the **Step 1** ~ **Step 9** of the item 2 in main component replacement procedures on page 9.



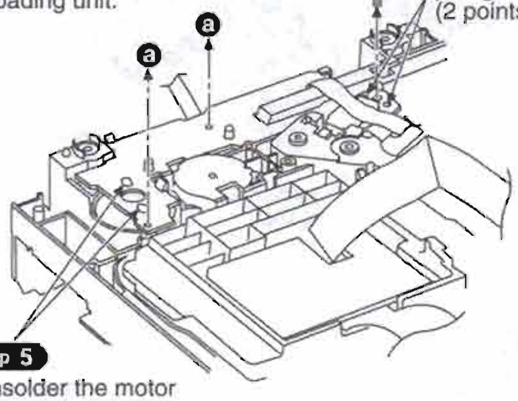


Step 1
Install the belt temporarily.

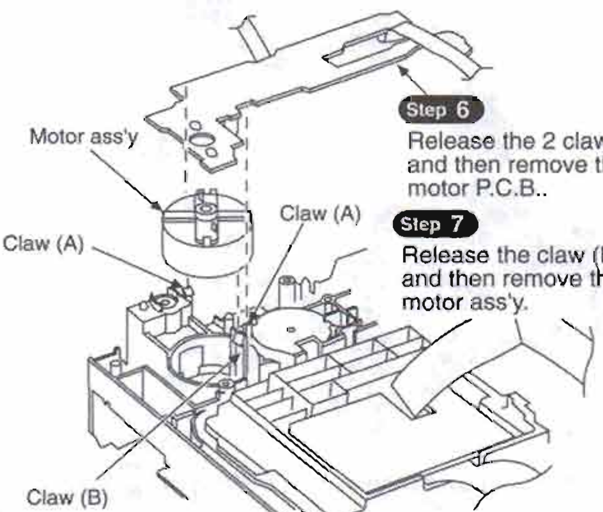
NOTE
Take care not apply the grease to the belt.

Step 2
Upset the CD loading unit.

Step 3 **Step 4**
ⓐ × 3
Unsolder the plunger terminals (2 points).



Step 5
Unsolder the motor terminals (2 points).

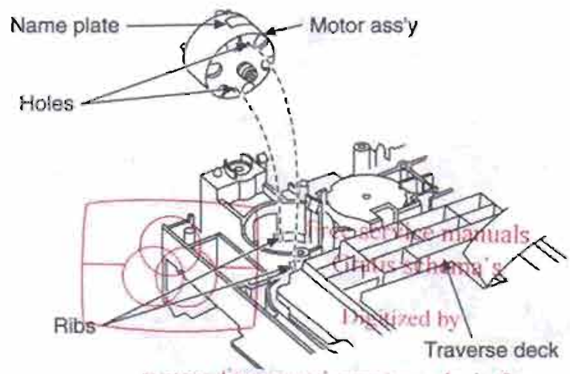


Step 6
Release the 2 claws (A), and then remove the motor P.C.B..

Step 7
Release the claw (B), and then remove the motor ass'y.

Notice for motor ass'y installation

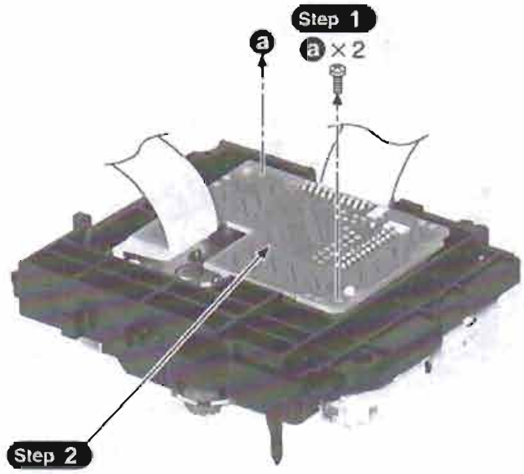
1. Locate the name plate of motor to the traverse ass'y.
2. Align the hole of motor with the ribs.



5. Replacement for the traverse motor ass'y, optical pickup and spindle motor ass'y

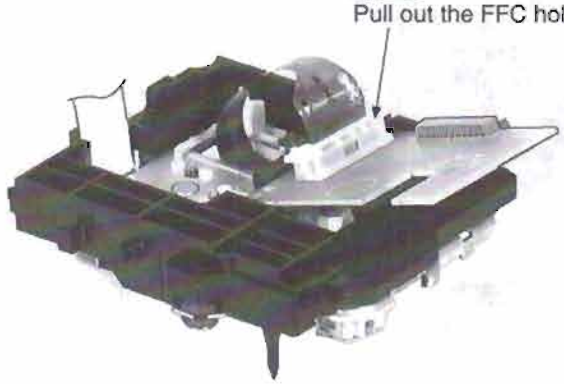
- Follow the **Step 1** ~ **Step 8** of the item 1 in checking procedures for each P.C.B. on pages 4 and 5.
- Follow the **Step 1** ~ **Step 16** of the item 1 in main component replacement procedures on pages 7 and 8.

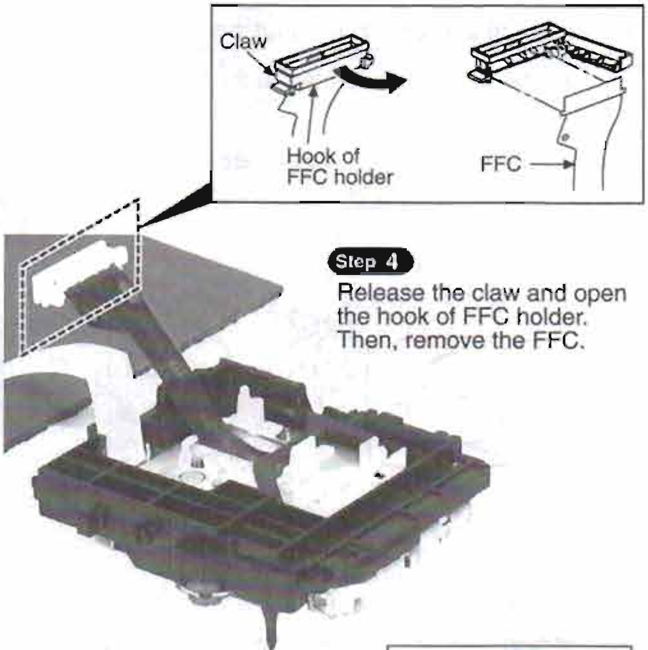
Step 1
ⓐ × 2



Step 2
Remove the connector P.C.B..

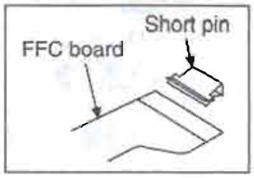
Step 3
Pull out the FFC holder.

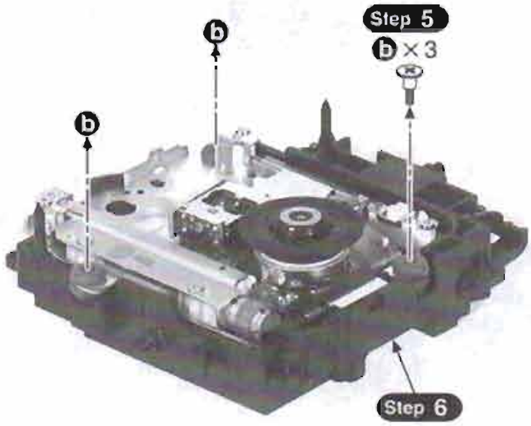




Step 4
Release the claw and open the hook of FFC holder. Then, remove the FFC.

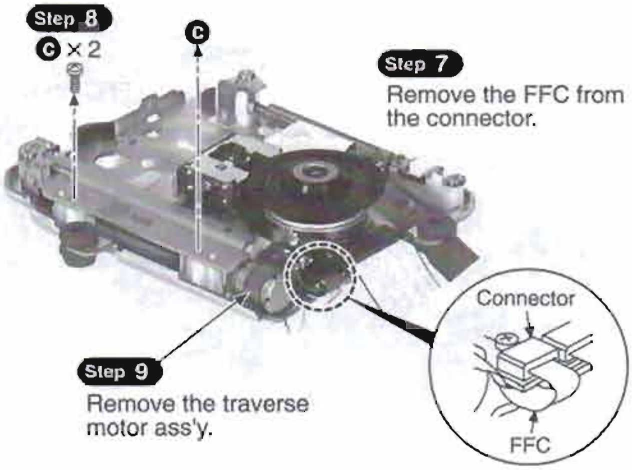
Caution:
Insert short pin into the traverse unit FFC board.
(Refer to "**Handling Precautions for Traverse Deck**".)





Step 5
b × 3

Step 6
Remove the traverse chassis.

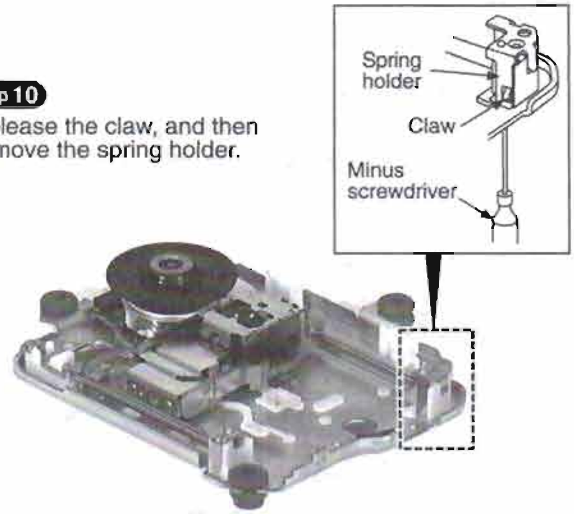


Step 7
Remove the FFC from the connector.

Step 8
c × 2

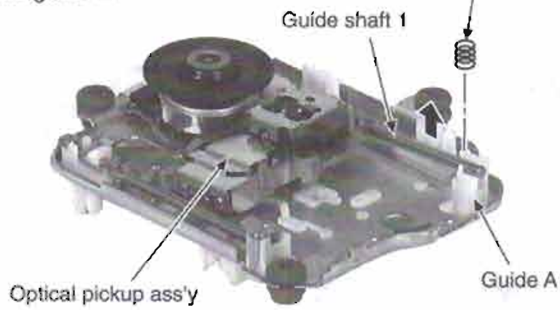
Step 9
Remove the traverse motor ass'y.

Step 10
Release the claw, and then remove the spring holder.



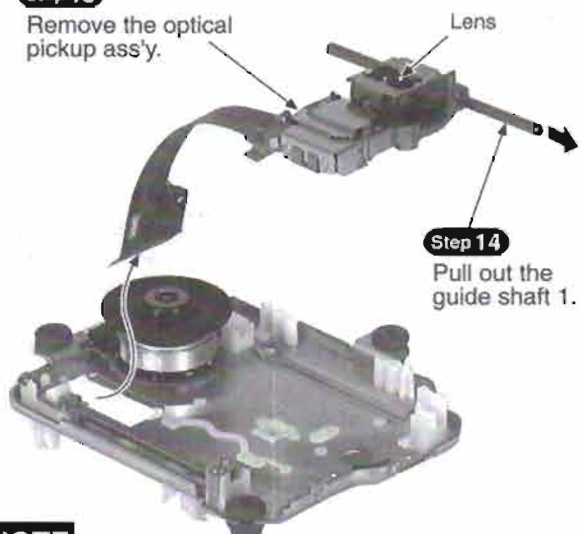
Step 12
Lift up the optical pickup ass'y, and then remove the guide shaft 1 from the guide A.

Step 11
Remove the spring.



NOTE
Take care not to lose the spring.

Step 13
Remove the optical pickup ass'y.



Step 14
Pull out the guide shaft 1.

NOTE
1. Use care to prevent damage the optical pickup, due to the precision construction.
2. Do not touch the lens of the optical pickup.

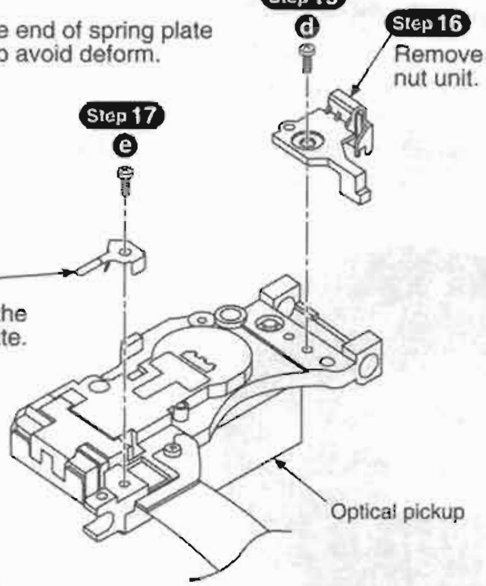
NOTE
Handle the end of spring plate carefully to avoid deform.

Step 15
d

Step 16
Remove the nut unit.

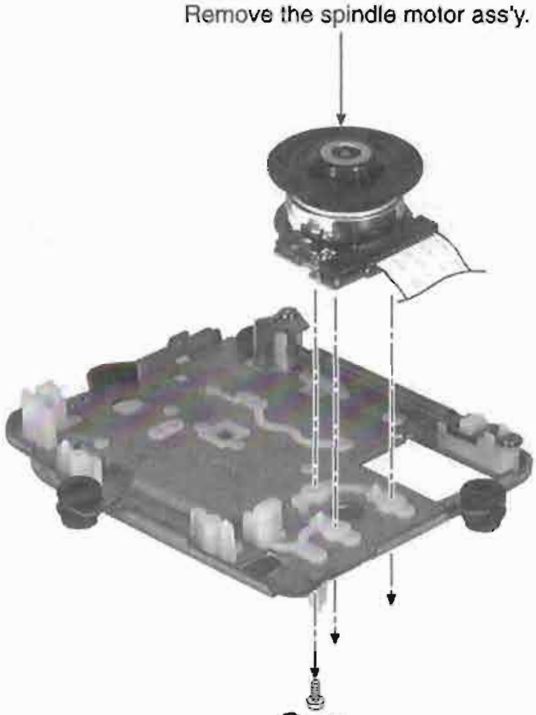
Step 17
e

Step 18
Remove the spring plate.



NOTE
Tighten the screw, and then apply the locktite sealant.

Step 20
Remove the spindle motor ass'y.



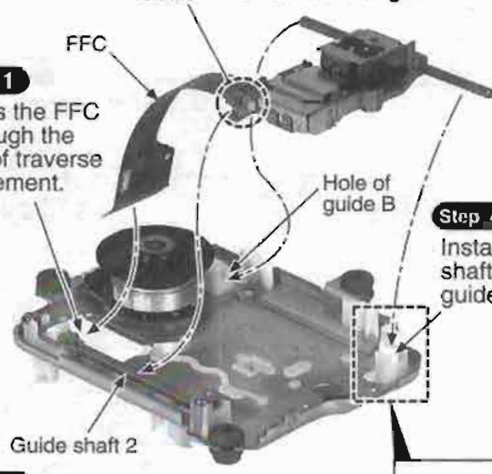
f × 3
Step 19

NOTE
Tighten the screw, and then apply the locktite sealant.

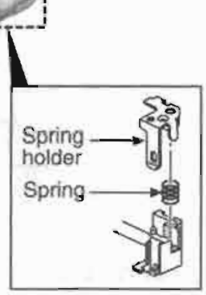
Installing the optical pickup

Step 3
Install the tip end of guide shaft 1 to the hole of guide B.

Step 1
Pass the FFC through the slit of traverse basement.



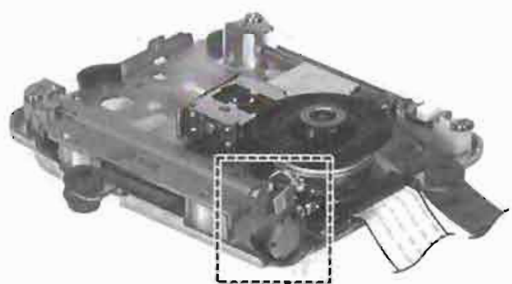
Step 4
Install the guide shaft 1 to the guide A.



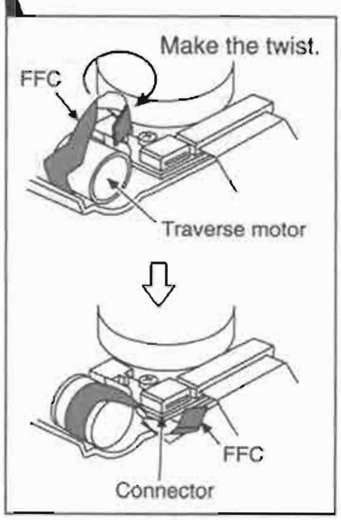
Step 2
Align the guide with the guide shaft 2.

Step 5
Install the spring and spring holder.

Installing the traverse motor ass'y



- Wind the FFC around the traverse motor. Then, connect the FFC to the connector doing one twist.

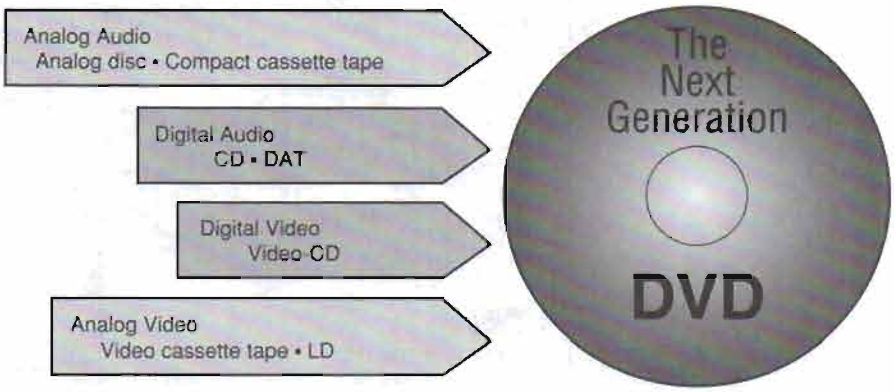


■ What is DVD

• Introduction

Through a variety of media such as TVs, videos, radios, stereos, newspapers and magazines, we enjoy movies and music and obtain information every day.
Personal computers have become essential to our daily lives. We are surrounded by an abundance of sound, information and images. As a result, there is a need for a medium that can accommodate such a vast amount of information easily and in a compact form. To meet this demand, the DVD has been created.

DVD, which stands for Digital Versatile Disc, is expected to have a wide array of applications including a DVD-Video, which records visual images such as movies; a DVD-Audio for music; a DVD-ROM for computer use; and a DVD-RAM for rewritable media.



• Types of DVD

The DVD has two major formats: a Read-only format and a Recordable format.
The recordable format can be divided into a write-once type and a rewritable type.
These discs have different recording method. Therefore, not all equipment is compatible with these formats.

- Read only
  - Recording method
    - Pit recording (same as CDs)
  - Disc types
    - DVD-Video, DVD-Audio, DVD-ROM
- Write-once
  - Recording method
    - Organic dye recording
  - Disc types
    - DVD-R
- Rewritable
  - Recording method
    - Phase change recording
  - Disc types
    - DVD-RAM

Compatible list for Panasonic products

	SC-DV150	SA-DK1	near future
DVD-Video	○	○	○
DVD-Audio	×	×	○
DVD-ROM	×	×	×
DVD-R	×	×	×
DVD-RAM	×	×	×
CD-DA	○	○	○
CD-ROM	×	×	×
CD-R	×	×	×
Video-CD	○	○	○
Dolby digital	○	○	○
dts	×	×	○
MPEG Audio	○	○	○

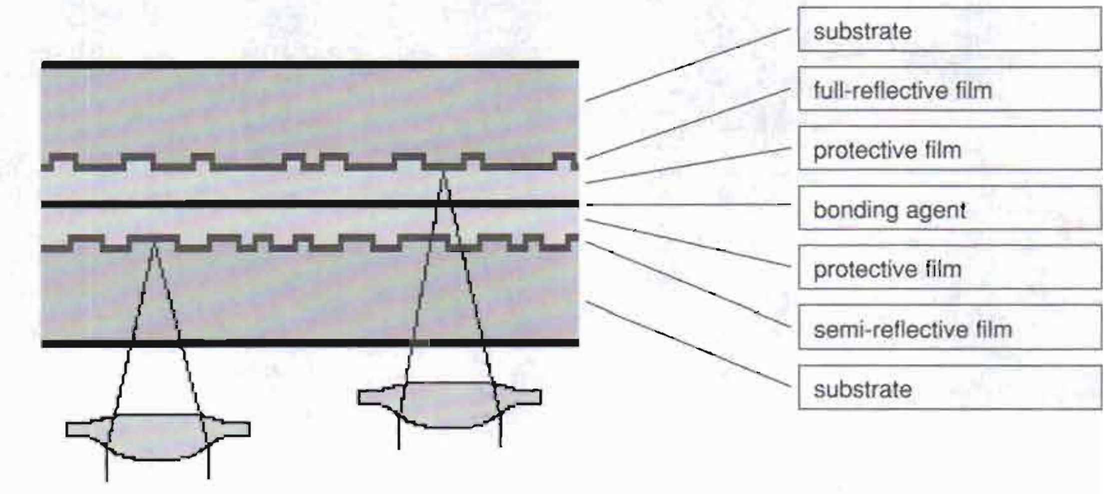
• Disc Configuration (Read only)

The DVD-ROM disc is designed so that two thin discs are pasted together. The result is that both sides can be recorded on. Also, by employing a transparent adhesive and a semi-transparent reflective film, a dual-layer configuration recording method has been achieved which allows both sides of a disc to be played using a single pick-up on one side.
The appearance of the DVD is identical to the CD, and many DVD players are compatible with CDs.

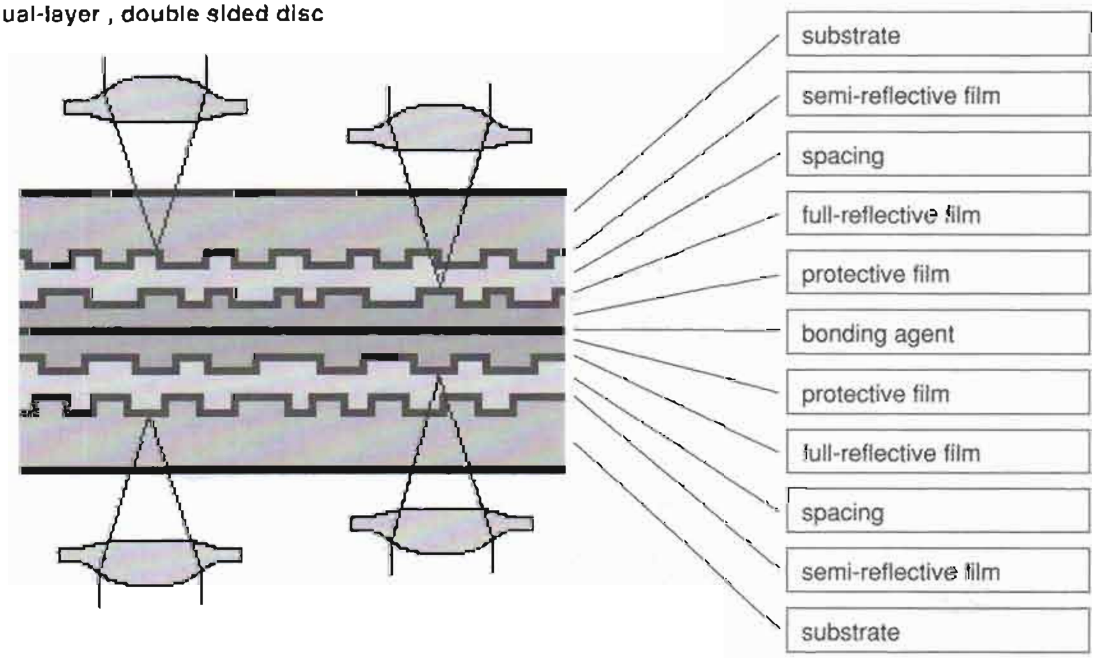
Disc configuration and recording capacity

configuration	single-layer	single-layer	dual-layer	dual-layer
	single sided	double sided	single sided	double sided
capacity	4.7 GB	9.4 GB	8.5 GB	17 GB

Dual-layer , single sided disc



Dual-layer , double sided disc



Outer appearance

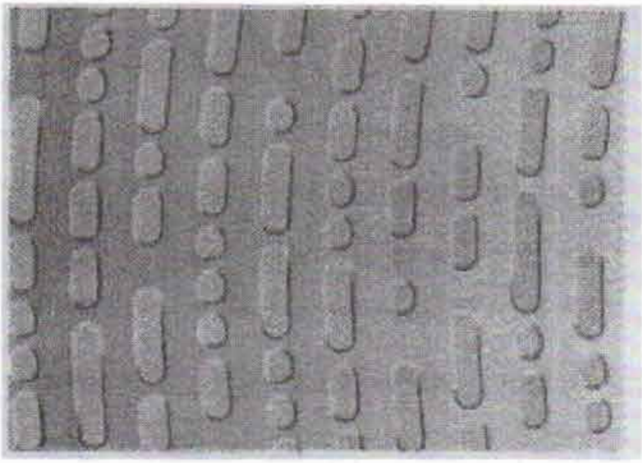
Thick:	1.2 mm (0.6 mm x 2)	
Diameter:	120 mm	
Center hole diameter:	15 mm	

Signal recording section

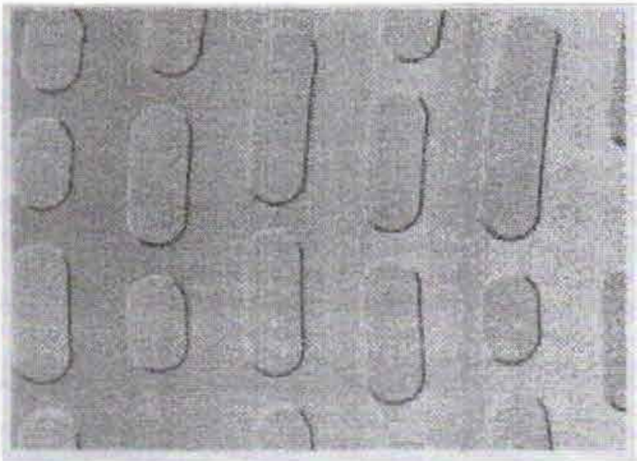
Pit recording (same method as used for CDs)

		(case of CD)
Minimum pit size	0.4 μ m	(0.9 μ m)
Track pitch	0.74 μ m	(1.6 μ m)
Controller	CLV	(CLV)

Signal recording side of DVD



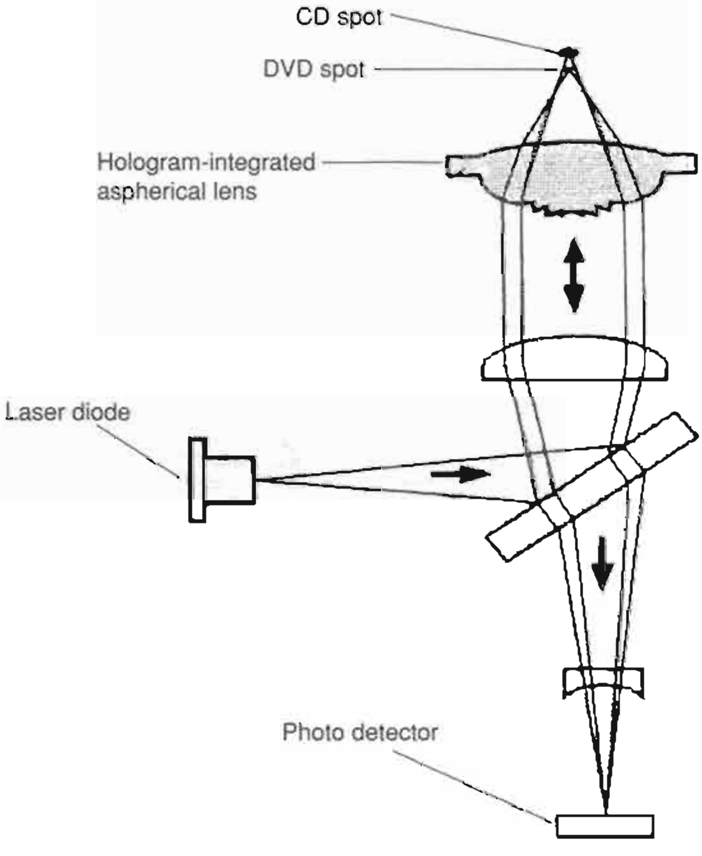
Signal recording side of CD

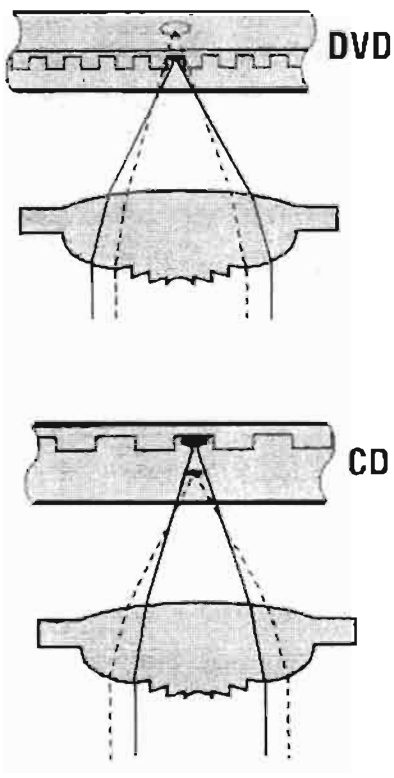


• Opticals and Servo Control

In order to increase recording time, the signals are recorded highly compressed on the disc. The signals are all converted to digital signals and recorded by producing concave and convex areas on the disc as a replacement for 0 and 1. These concave and convex areas are called pits. The pits are lined up in so-called tracks that spiral from the center to the outside edge of the disc. In order to read these recorded signals, the DVD player uses a laser diode which outputs short-wavelength light beams, and the opening ratio of the lens to gather the laser beam is set wider. Also, the rotation of the disc is servo-controlled (CLV) to maintain a stable speed as the laser beam passes over the tracks so that the timing of the read signals does not fluctuate. The player also uses light beams that have two focal points in order to play both DVDs and CDs because their signal recording area positions are different.

Panasonic has recently developed and uses a Hologram-integrated aspherical lens for these Laser beams.





• Recording Time

To meet the demands of a Hollywood film production company, one film must fit onto a single disc while keeping the movie's image quality and audio quality high.
To achieve this, we compress video images using MPEG2 technology, sub-video
images (superimposed) using run length coding compression; produce high-quality audio using linear PCM, Dolby Digital AC-3, DTS and MPEG audio; and make the surround system recordable. The resulting recording time is about 133 minutes.
Approximately 93% of Hollywood movies can each be recorded on one disc.

Video image	3.5 Mbit / sec
Audio	1152 kbit / sec
Sub-video image	40 kbit / sec
Total	4.692 Mbit / sec

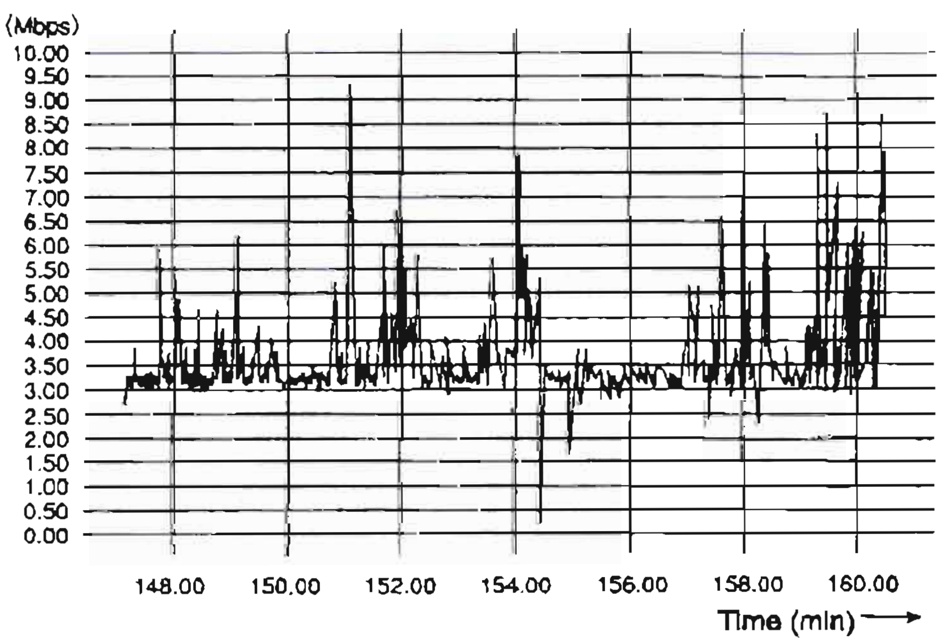
The recording capacity of a disc is 4.7 GB, so:
4700 Mbyte × 8 ÷ (4.692 Mbit/sec × 60 second) = 133.5 minutes
Therefore, one side of a disc can record about 133 minutes.

• Key of High Image Quality

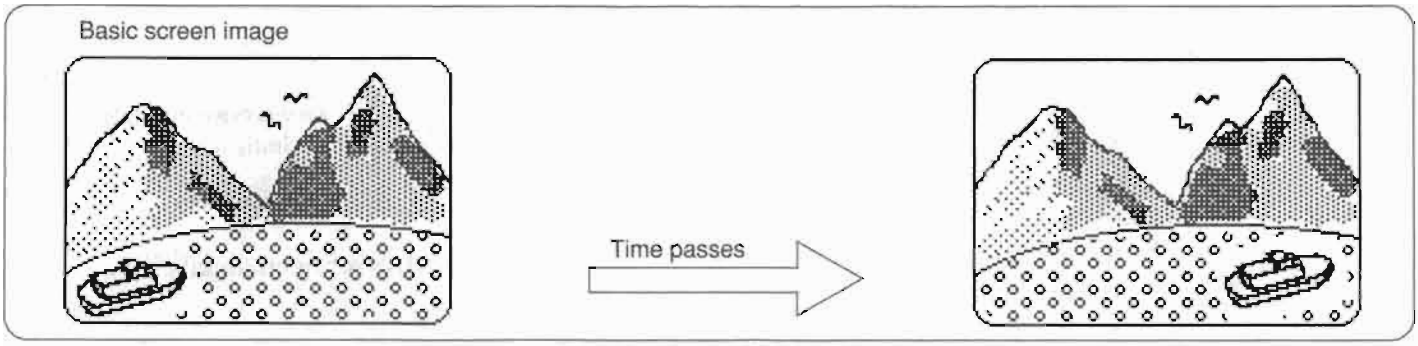
Thanks to MPEG2, the digital image compression technology, you can enjoy a DVD-Video movie which features the same image quality as that of a film shown in a theater. MPEG2 is the technology that superseded the MPEG1, which is employed in video CDs. MPEG2 technology produces a higher level of image quality.

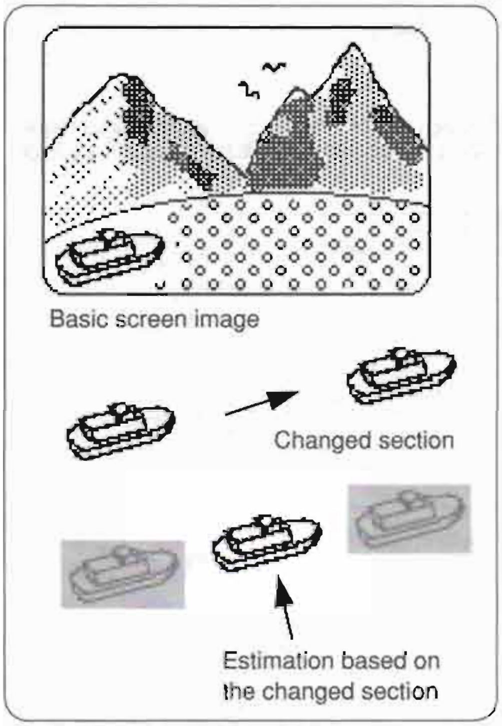
	DVD	Video-CD
Video compression	MPEG2	MPEG1
Number of pixels (NTSC)	720 × 480	352 × 240
Number of pixels (PAL)	720 × 576	352 × 288
Horizontal resolution	more than 500 lines	240 lines
Cording bit rate	variable / constant	constant
Frame rate	30 frame / sec	30 frame / sec
	(60 field / sec)	—
Max. data transfer late	10.08 Mbit / s	1.15 Mbit / s
Average date transfer rate	3.5 Mbit / s	1.15 Mbit / s
Playback time	133 min. (1 layer / 1 sided)	74 minutes
	480 min. (2 layer / 2 sided)	—
subtitles	32 subtitles	—
other	multi aspect ratio	—

For example, below is one of the actually bit rate of DVD.

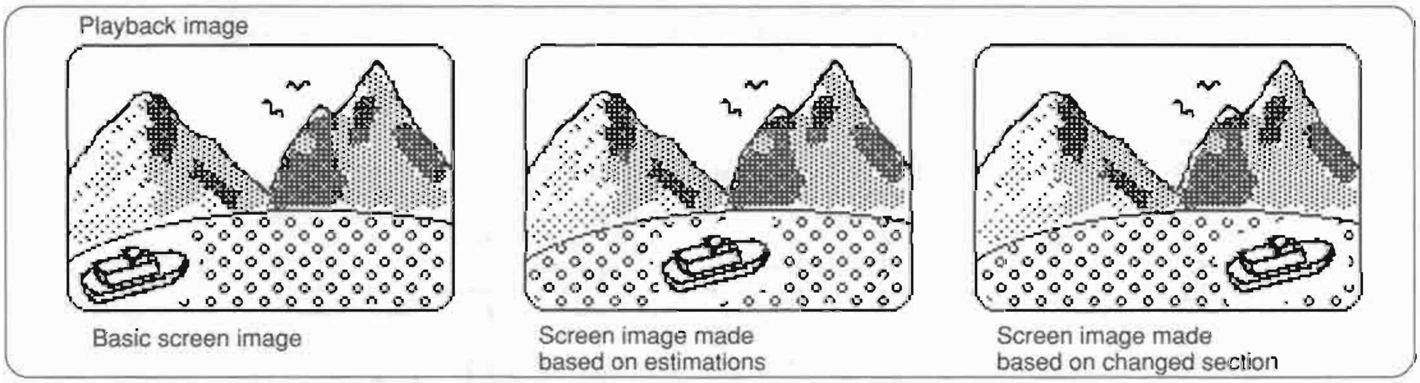


- **Principle of MPEG2**





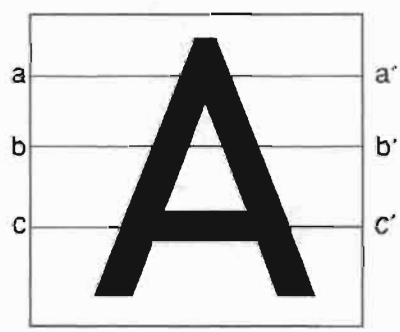
1. Reads and records the basic screen image from the original image.
2. Compares the read screen image with the next screen image, and records only the information about the changed parts and how much and which direction are changed.
3. As needed, estimates and records the changing information (data) rather than the changed information.
4. Play backs the basic screen image and the image made from the changed data with inserting the image made from the estimated changing data.
   With this process, a highly precise and smooth-moving image can be played back.



- **Principle of Run Length Compression**

To reduce the volume of information, the sub-video image such as superimposition is processed using a compression method called run length coding.

When a letter is expressed using the digital signal with one pixel each (blank areas where there is no letter are expressed as "0" and shaded areas where there is a letter are expressed as "1"), there is a series of "0"s and "1"s which is repeated as shown below. In such cases, it is possible to code how many "0"s follow and "1"s follow, and thereby reduce the volume of information.



Blank areas where there is no letter are expressed as "0" and shaded areas where there is a letter as "1".

Data between a - a'   0 0 0 0 0 0 0 0 1 1 1 1 0 0 0 0 0 0 0 0

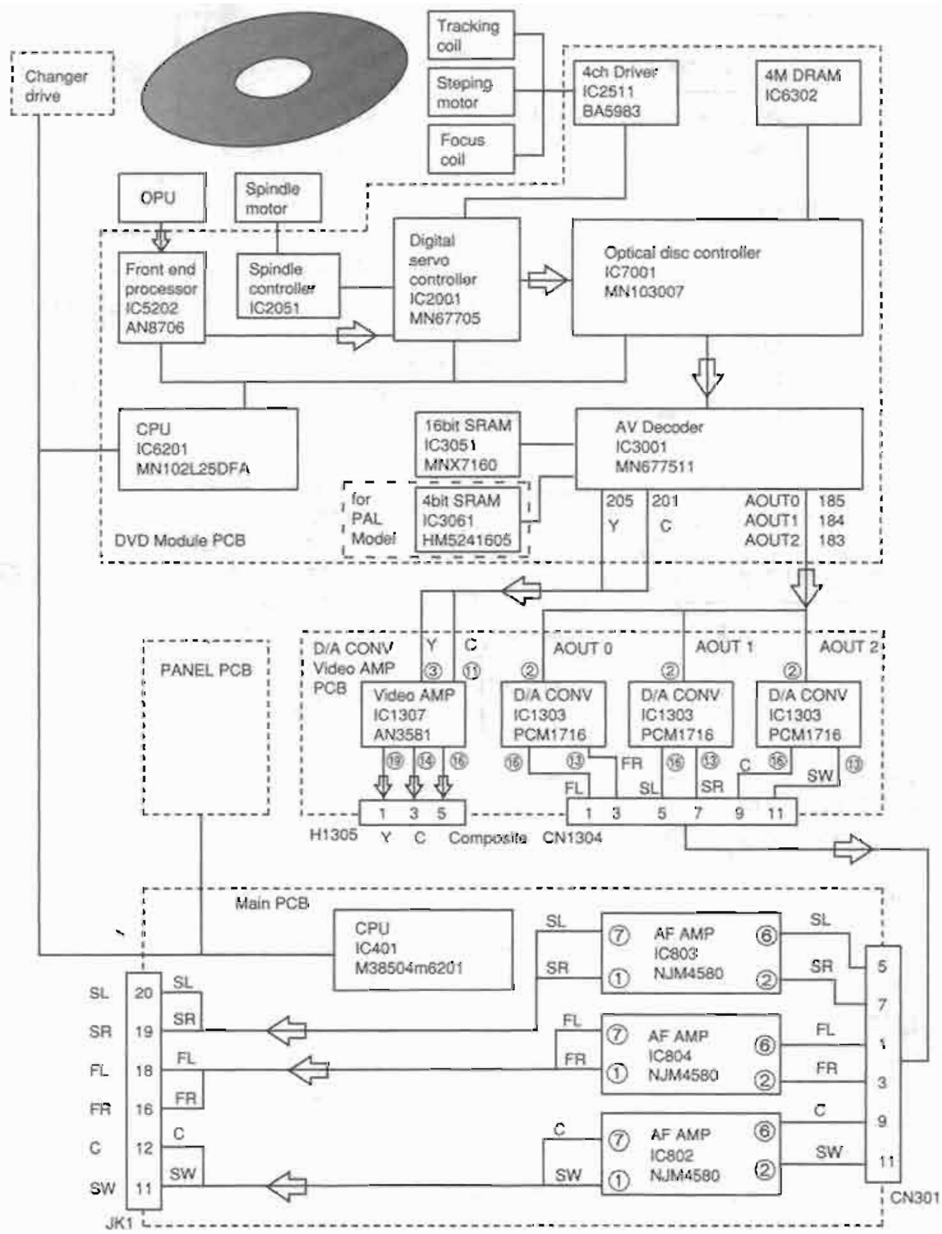
Data between b - b'   0 0 0 0 0 0 1 1 1 0 0 0 1 1 1 0 0 0 0 0

Data between c - c'   0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 0 0 0 0

■ Operation Description

1. The optical pickup reads the signals recorded on the disc.
2. The read-in signals are amplified by the front-end processor (IC5202: AN8706).
   The read-in signals are also used to detect the tracking status and the focus status and to generate the corresponding error signals (TE: tracking error, FE: focus error).
3. The digital servo controller (IC2001: MN67705) detects whether the loaded disc is a DVD or a CD from the read-in signals and controls the focus, tracking and spindle.
   At the same time, the error signals (TE and FE) are read and used as reference to control the focus and tracking.
4. The optical disc controller (IC7001: MN103007) demodulates the signals and performs error correction.
   (If the loaded disc is a CD, the signals recorded on the disc have been 8-14 bit modulated (EFM), and if it is a DVD, the signals have been 8-16 bit modulated. The optical disc controller performs the appropriate demodulation for each type of disc.)
5. The AV decoder (IC3001: MN677511) decodes the MPEG1 and MPEG2 video signals, the Dolby AC3 and other audio signals, and the sub-picture signals, and performs D/A conversion for the video signals and the sub-picture signals.
   (The analog-converted video signals are separated into the Y (brightness) and C (chroma) signals.)
6. The analog-converted video signals (Y and C) are output using the video amplifier (IC1307: AN3581) as a buffer amplifier. Inside the IC, the Y and C signals are mixed and a composite signal is generated and output.
7. The decoded audio signals are converted to analog signals by the three D/A converters (IC1301, IC1302 and IC1303: PCM1716).
   (At this point, the signals for each channel (FL, FR, C, SL, SR and SW) are all independent signals.
8. The analog-converted audio signals are amplified by the three AF amplifiers (IC802, IC803 and IC804: NJM4580) and output.
   (When the audio signals are 6-channel signals, all three ICs are used for both the D/A converters and the AF amplifiers. If the signals are 2-channel signals, only one of the D/A converters and one of the AF amplifiers are used.)

• Block Diagram



■ Optical Pickup Self-Diagnosis and Replacement Procedure

When repairing, use the following procedure for effective Self-diagnosis and tilte adjustment.
Be sure to use the self-diagnosis function before replacing the optical pickup when "NO DISC" is displayed. As a guideline, you should replace the optical pickup when the value of the laser drive current is more than 50.

Note

Press the power button to turn on the power, and check the value before the unit warms up (within three minutes).

•Use the self-diagnosis function below when "NO DISC" is displayed or unit doesn't read a disc, before replacing the OPU.

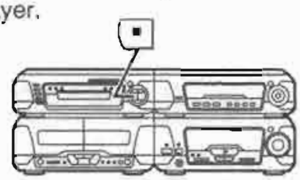
"NO DISC" is displayed, unit does not play smoothly, etc.

↓

Check the laser drive current.

•Use the optical pickup self-diagnosis function.

method: With no disc in the player:
•Press the "DISPLAY" button on the remote control unit while pressing the "STOP" button on the player.



Display content

LD OOO OOO

Factory preset value — Present value

Value is 50 or less → Do the optical pickup tilt adjustment.

Value is more than 50 ↓

Replace the optical pickup. (Refer to Operation Checks and Component Replacement Procedures.)

↓

Check the laser drive current after replacement.

Replace with a new optical pickup if the present value is more than 40.
Cause:
Damage due to static electricity during replacement.

method: With no disc in the player:
•Press the "DISPLAY" button on the remote control unit while pressing the "STOP" button on the player.

↓

Do the optical pickup tilt adjustment. (Refer to Optical Pickup Tilt Adjustment.)

Use the tilt adjustment check function.

↓

Initialize the player.
Press the "≧10/-/--" button on the remote control unit while pressing the "STOP" button on the player.

↓

End.

■ Self-Diagnosis Function and Service Modes

This unit has two types of self-diagnosis function. The one is to diagnose the module P.C.B. and Traverse Deck. The another is to diagnose the part of changer and loading mechanism. The system control IC and FL display are part of the Tuner/Amplifier (SA-DV150) so make sure the system has been connected properly before using these functions. (This unit can be operated independently, although self-diagnosis function cannot be used.)

•Service Mode Table

The service modes can be activated by pressing various button combinations on the player and remote control unit.

Player button	Remote control unit buttons	Application	Note
STOP	0	Displaying the UHF display DVD F_ _ _	Refer to Self-Diagnosis Function (UHF Display).
	5	Tilt adjustment	Refer to Optical Pickup Tilt Adjustment.
	6	Checking the region numbers and broadcast system	
	7	Checking the program version	Check the IC6302 FLASH ROM program.
	DISPLAY	Checking the laser drive current	Refer to Optical Pickup Self-Diagnosis and Replacement.
	≧10/-/--	Initializing the DVD player (restoring factory preset settings) *Use when replacing a microprocessor, microprocessor peripheral parts, or P.C.B.	

•Self-Diagnosis Function (UHF Display) for the module P.C.B. and Traverse Deck

This unit incorporates a convenient self-diagnosis function for use in troubleshooting.

Display method	Display	Diagnosis	Checkpoints
Service numbers displayed during use	DVD U11	Focus error	IC2001, IC2511, IC5201, pickup
	DVD H01	Tray loading error	IC2001, IC2511, loading motor
	DVD H02	Spindle servo error	Spindle motor, IC2501, IC2001
	DVD H03	Traverse error	Stepping motor, IC2511, IC2001
	DVD H04	Tracking servo error	IC2001, IC2501, IC5201, pickup, disc
	DVD H05	Seek error	Stepping motor, IC2511, IC2001
	DVD H06	Power supply error	IC1021, IC1121, IC1151, IC6001
Press the "0" button on the remote control unit while pressing the "STOP" button on the player.	DVD F0**	Disc format error	If this type of error occurs, refer to Examples of Repairs Using Error Codes.
	DVD F1**	Disc code error	
	DVD F2**	Decoder LSI error	
	DVD F3**	SDRAM error	
	DVD F4**	IIC BUS error	
	DVD F5**	DSC	
	DVD F6**	ECC error	
	DVD F7**	Microprocessor error	
	DVD F8**	Microprocessor error	

•Examples of Repairs Using Error Codes

Refer to this section when carrying out repairs.

Error Display	Malfunction example
F0**	Disc, IC7001
F103	Disc, IC7001
F4FF	IC6001
F500	Optical pickup, IC2001, IC5201, IC2511, IC2501
F501	IC2001, IC6201
F502	IC2501, IC2511, IC2001, IC5202
F504	IC5202, IC2001
F505	Disc, IC2501, IC2511, IC5202, IC2001
F506	Disc, Optical pickup, IC2001
F600	Disc, IC7001, IC5202, IC2001
F601	Disc, IC7001
F602	Disc, IC5202, IC2001
F603	Disc, IC5202, IC2001
F610	IC7001
F611	IC7001, IC5202, IC2001
F612	IC7001, IC5202, IC2001
F620	Laser drive circuit
F621	Laser drive circuit
F700	IC6201
F701	IC6201
F702	IC6201
F880	IC6201
F890	IC6201
F891	IC6201
F8A0	IC6201
F893	IC6302
F894	IC6303

•Self-Diagnosis Function for the part of Changer and loading mechanism

Turn the power ON.

↓

Hold down the REPEAT button for at least 2 seconds, and then press the STOP button for at least 2 seconds while continuing to hold down the REPEAT button.

↓

A mechanism OK/NG error code is displayed. (See **Table 1**.) If the error code "**E0**" is displayed, the unit is "OK (No problem)."

↓

Press the F. SKIP button.

↓

The error code is displayed.
This error code can be used diagnose whether the mechanism is OK or not. If there are multiple errors, these can be displayed successively by pressing the F. SKIP button.

↓

Press the STOP button. (The error code stored in memory is erased.)

↓

Turn the power OFF. (The error code display mode is canceled.)

•Table 1

FL display	Symptom	Cause
H15	When CD tray opens, it closes by itself.	Tray open detect switch (S3) fault.
F16	Disc tray goes on up.	Clump switch (S4) fault.
F17	Disc tray goes on down.	Bottom switch (S5) fault.
F27	Tray keeps moving for a while, or selected tray does not open.	Tray position detect switch (S1, S2) fault
F28		
F29		

Schematic Diagram

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

Notes:

- **S1** : Tray position 1 detect switch in "OFF" position
- **S2** : Tray position 2 detect switch in "OFF" position
- **S3** : Tray open detect switch in "OFF" position
- **S4** : Clump switch in "OFF" position
- **S5** : Bottom switch in "OFF" position
- **S601** : Disc select switch (DISC 5)
- **S602** : Disc select switch (DISC 4)
- **S603** : Disc select switch (DISC 3)
- **S604** : Disc select switch (DISC 2)
- **S605** : Disc select switch (DISC 1)
- **S606** : Disc direct open switch (DIRECT OPEN DISC 1)
- **S607** : Disc direct open switch (DIRECT OPEN DISC 2)
- **S608** : Disc direct open switch (DIRECT OPEN DISC 3)
- **S609** : Disc direct open switch (DIRECT OPEN DISC 4)
- **S610** : Disc direct open switch (DIRECT OPEN DISC 5)
- **S611** : Disc tray open/close switch (⏏ OPEN/CLOSE)
- **S612** : Repeat function switch (A-B REPEAT)
- **S613** : Repeat function switch (REPEAT)
- **S614** : CD edit switch (CD EDIT)
- **S615** : Disc management select switch (1 DISC/ALL)
- **S616** : R.Slow-motion/search switch (◀◀, SLOW/SEARCH)
- **S617** : F.Slow-motion/search switch (▶▶, SLOW/SEARCH)
- **S618** : Pause switch (❚❚)
- **S619** : Stop switch (■)
- **S620** : Play switch (▷)
- **S621** : R.Skip switch (|◀◀, SKIP)
- **S622** : F.Skip switch (▶▶|, SKIP)
- **VR1301** : Y level adjustment VR
- **VR1302** : C level adjustment VR

- Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.

- 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.

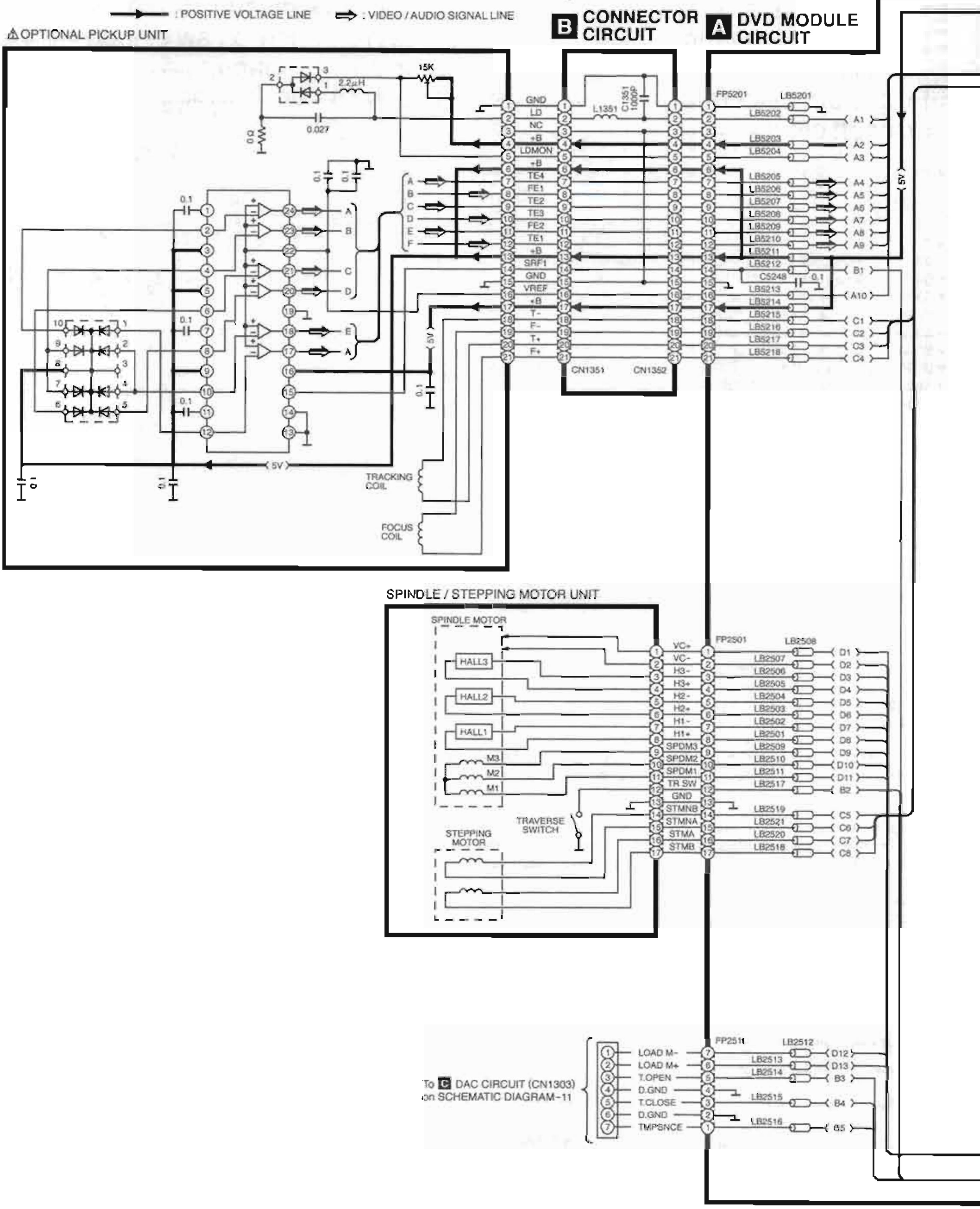
- **Caution!**
  IC and LSI are sensitive to static electricity.
  Secondary trouble can be prevented by taking care during repair.
  Cover the parts boxes made of plastics with aluminum foil.
  Ground the soldering iron.
  Put a conductive mat on the work table.
  Do not touch the legs of IC or LSI with the fingers directly.

- **Voltage and signal line**

:	Positive voltage line	:	Audio signal line
:	Video signal line	:	Video/Audio signal line
:	Center sp.drive signal line	:	Surround sp.drive signal line
:	Sub woofer signal line		

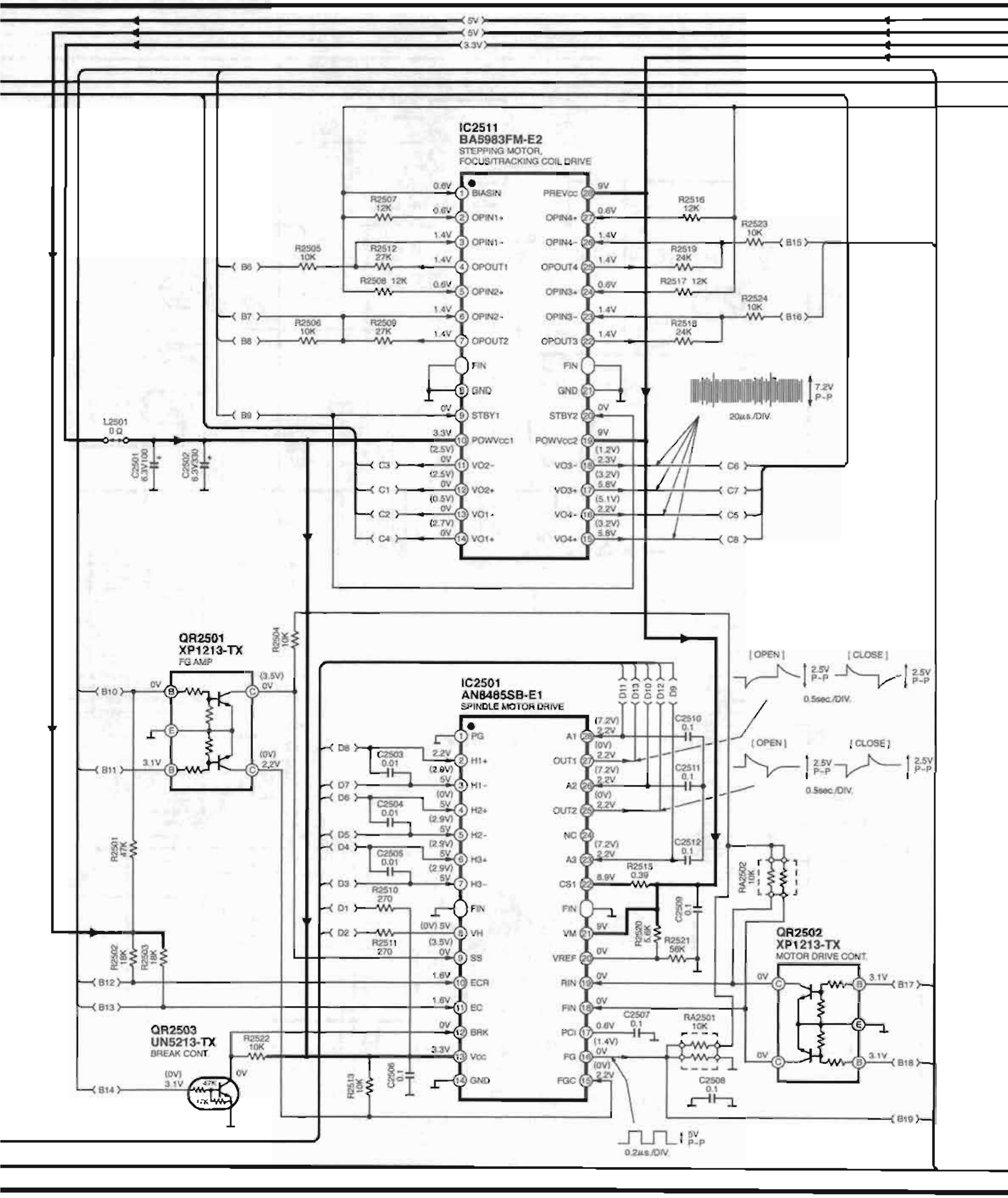
SCHEMATIC DIAGRAM-1

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.



SCHEMATIC DIAGRAM-2

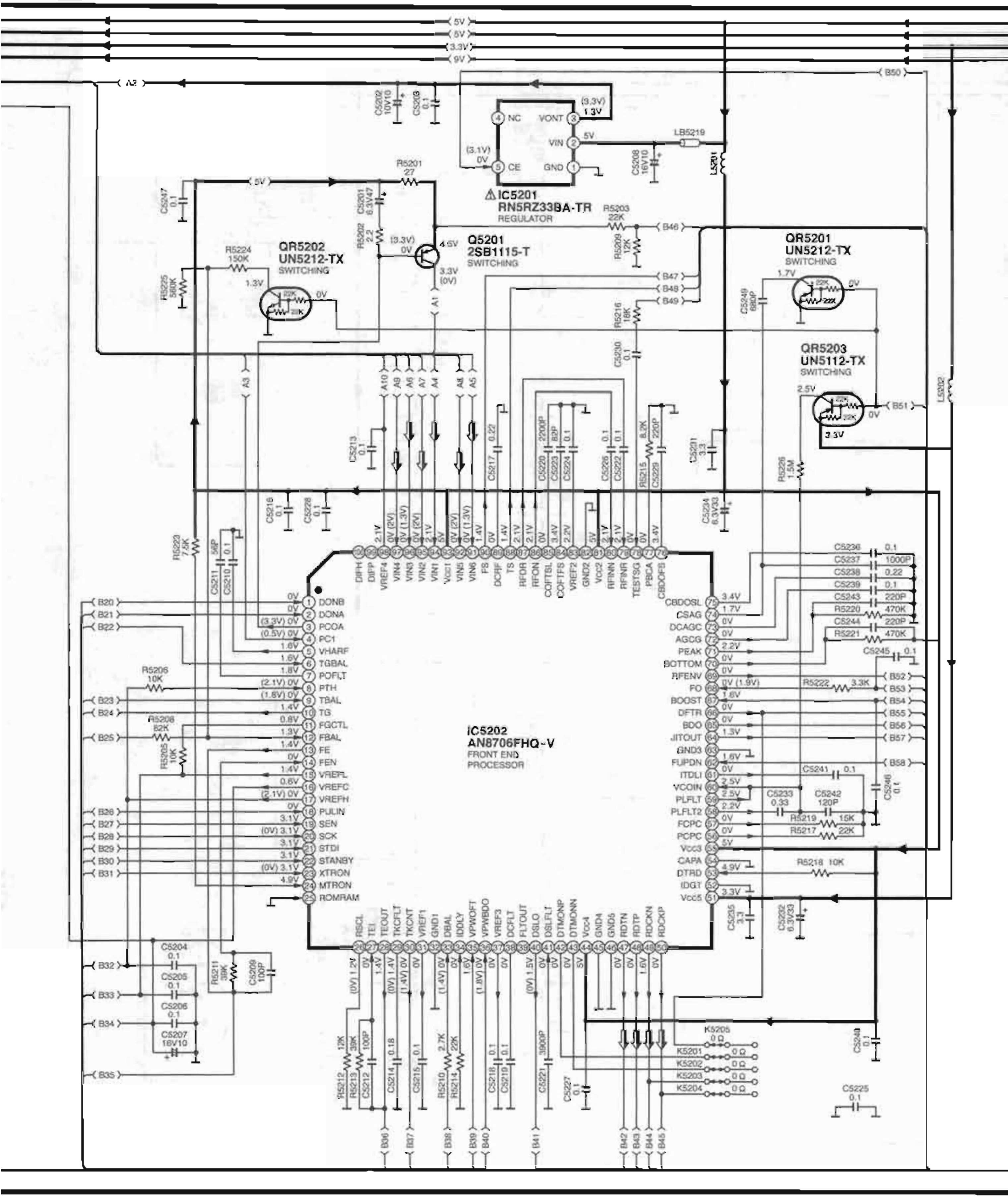
: POSITIVE VOLTAGE LINE



SCHEMATIC DIAGRAM-3

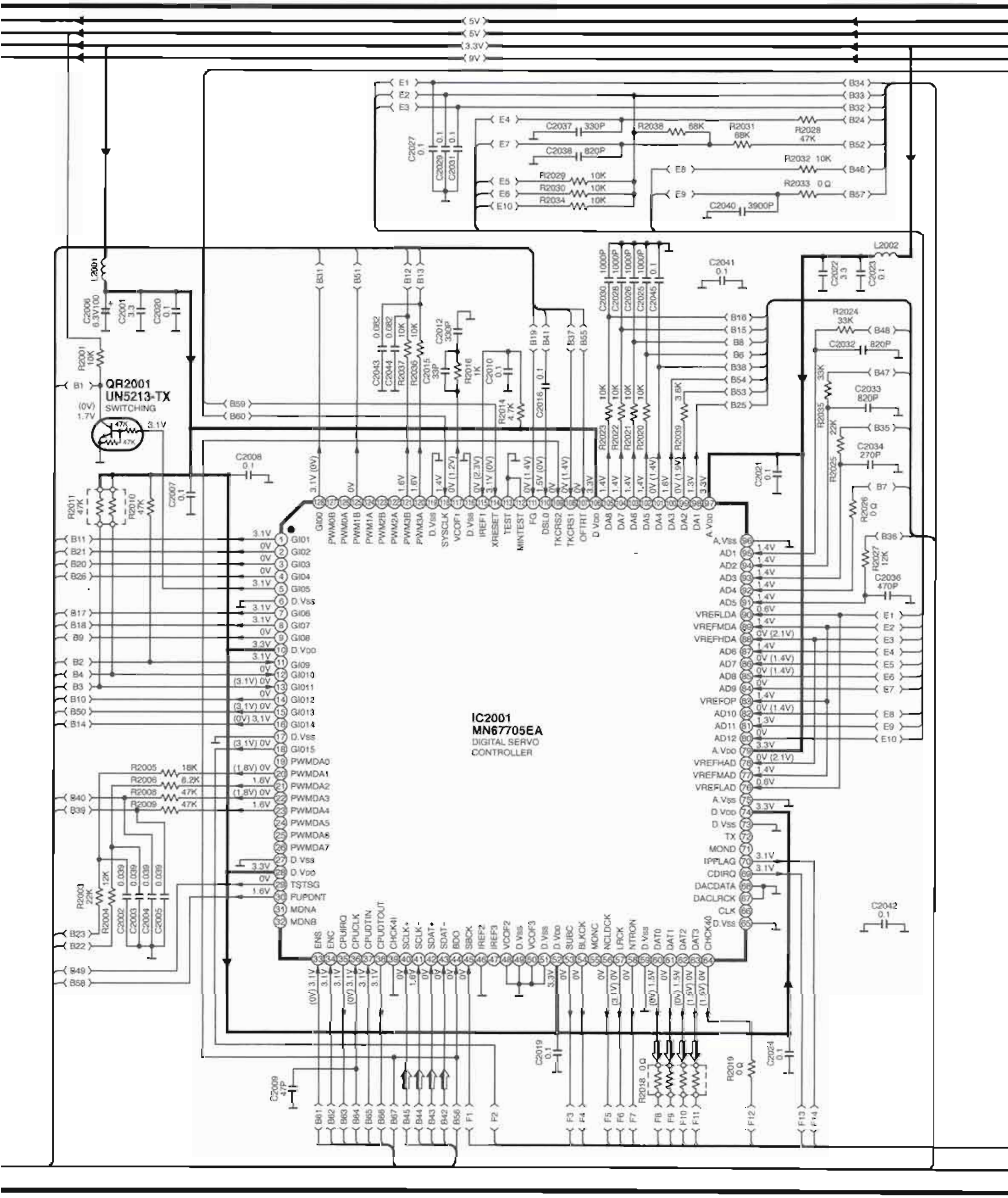
A DVD MODULE CIRCUIT

: POSITIVE VOLTAGE LINE   : VIDEO / AUDIO SIGNAL LINE



SCHEMATIC DIAGRAM-4

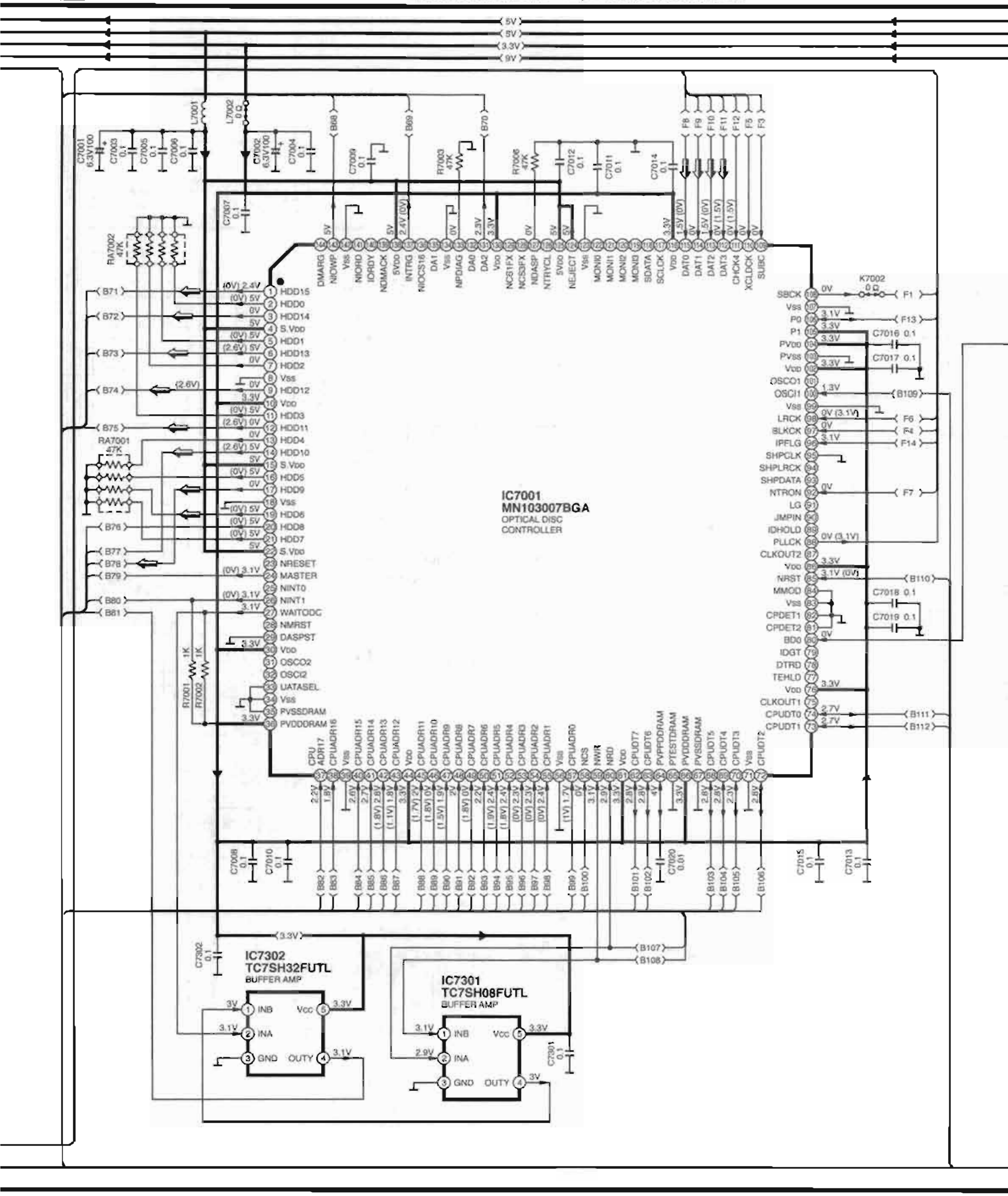
POSITIVE VOLTAGE LINE   VIDEO / AUDIO SIGNAL LINE



SCHEMATIC DIAGRAM-5

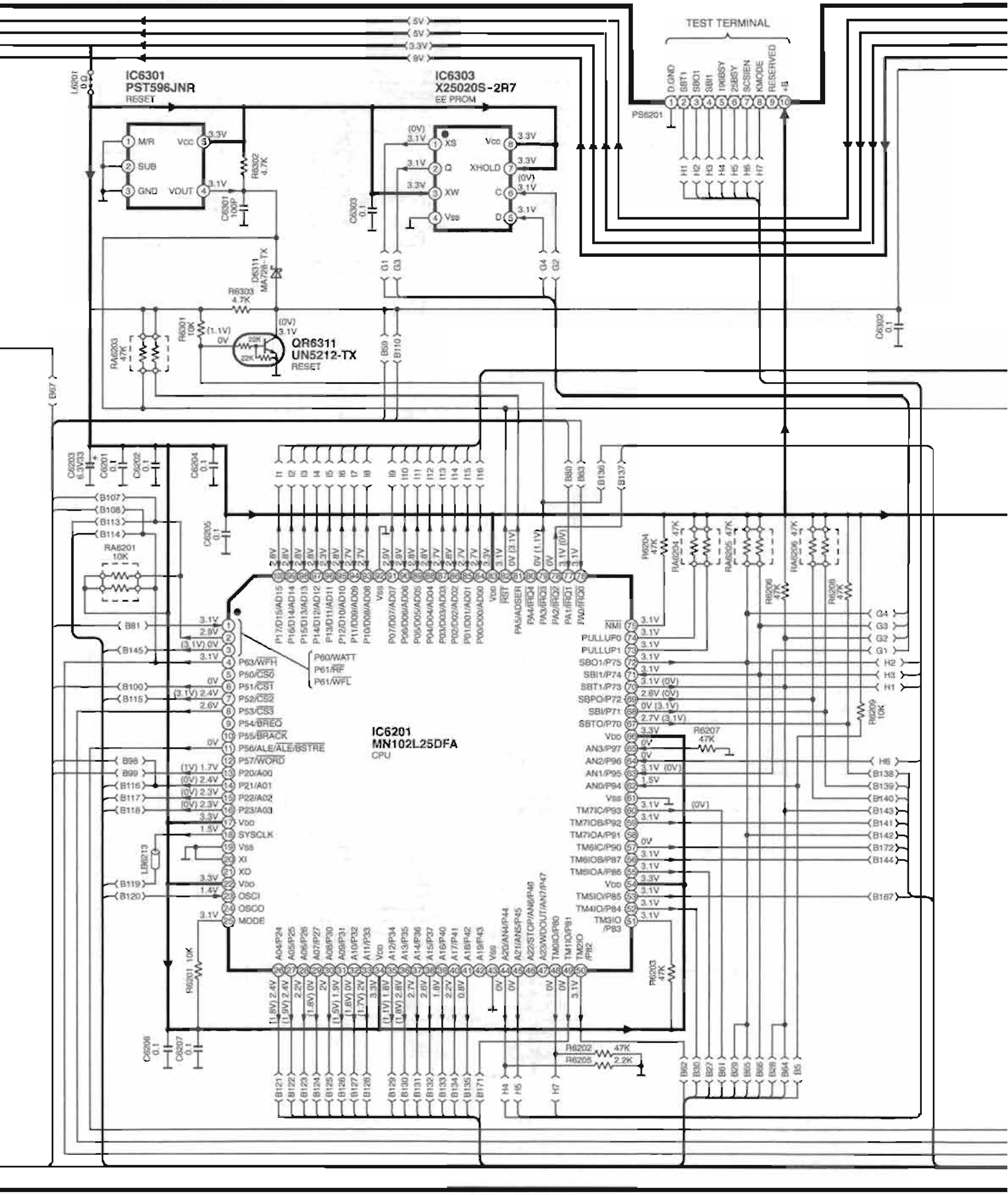
A DVD MODULE CIRCUIT

: POSITIVE VOLTAGE LINE : VIDEO / AUDIO SIGNAL LINE



SCHEMATIC DIAGRAM-6

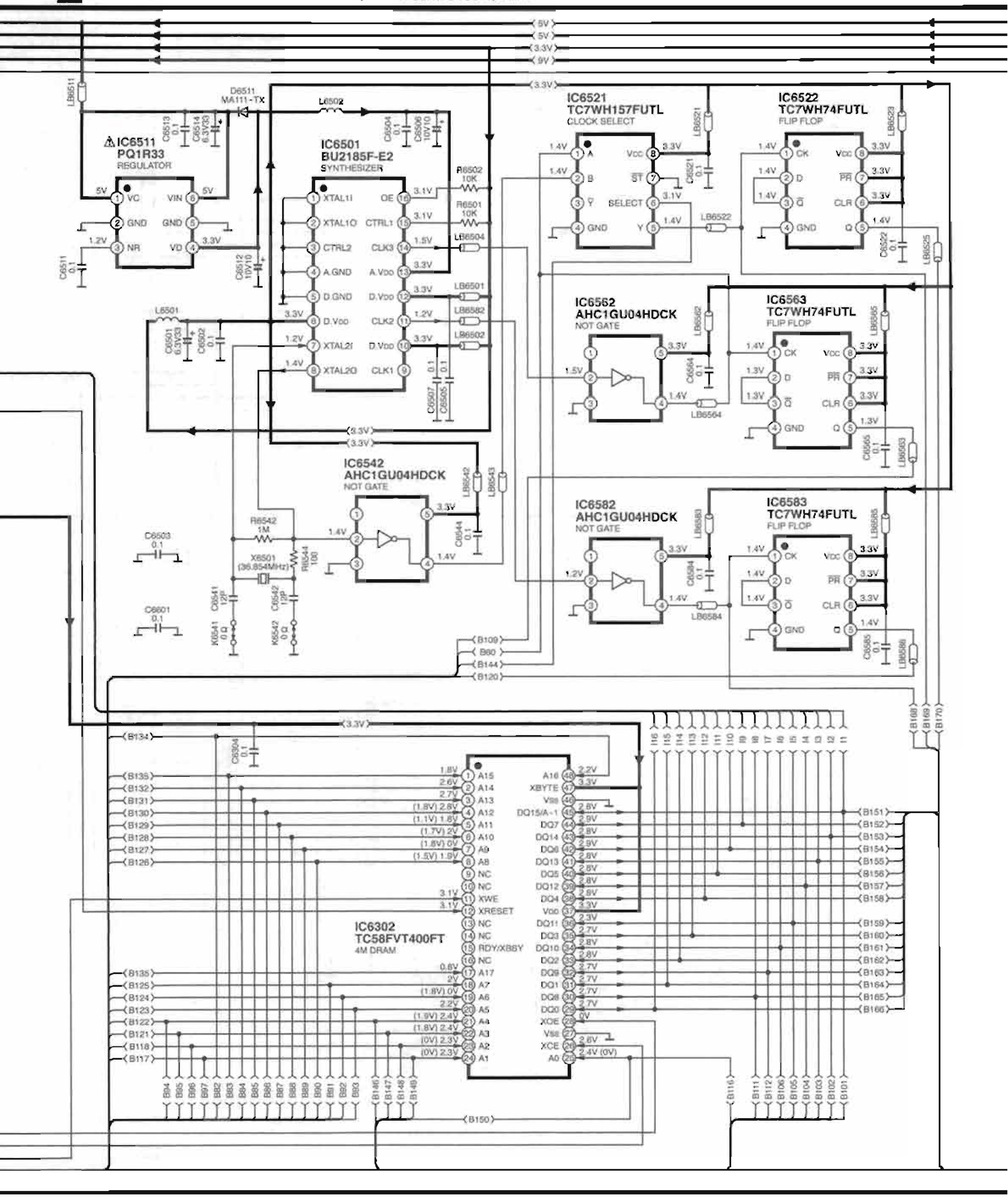
→ : POSITIVE VOLTAGE LINE



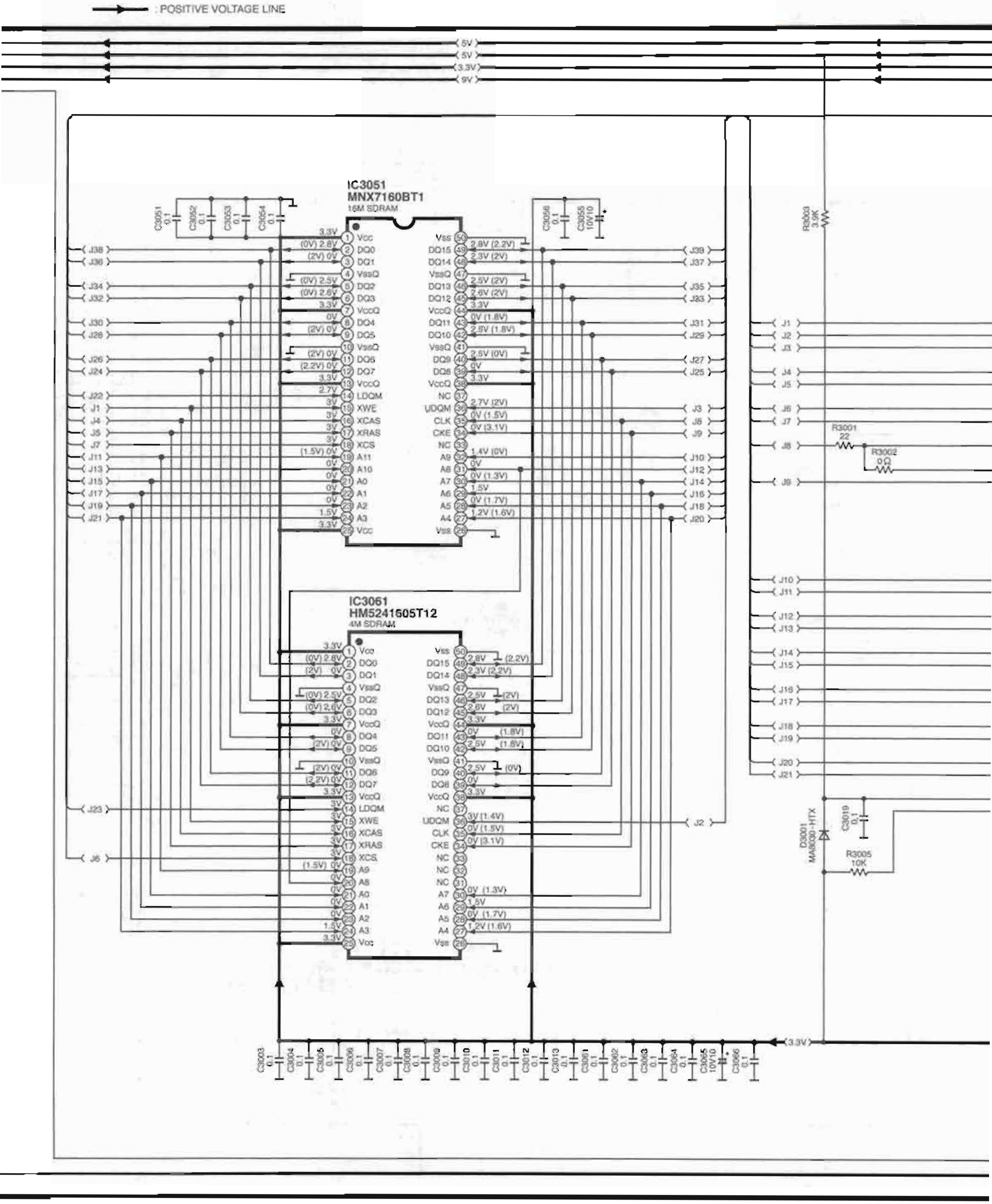
SCHEMATIC DIAGRAM-7

A DVD MODULE CIRCUIT

: POSITIVE VOLTAGE LINE



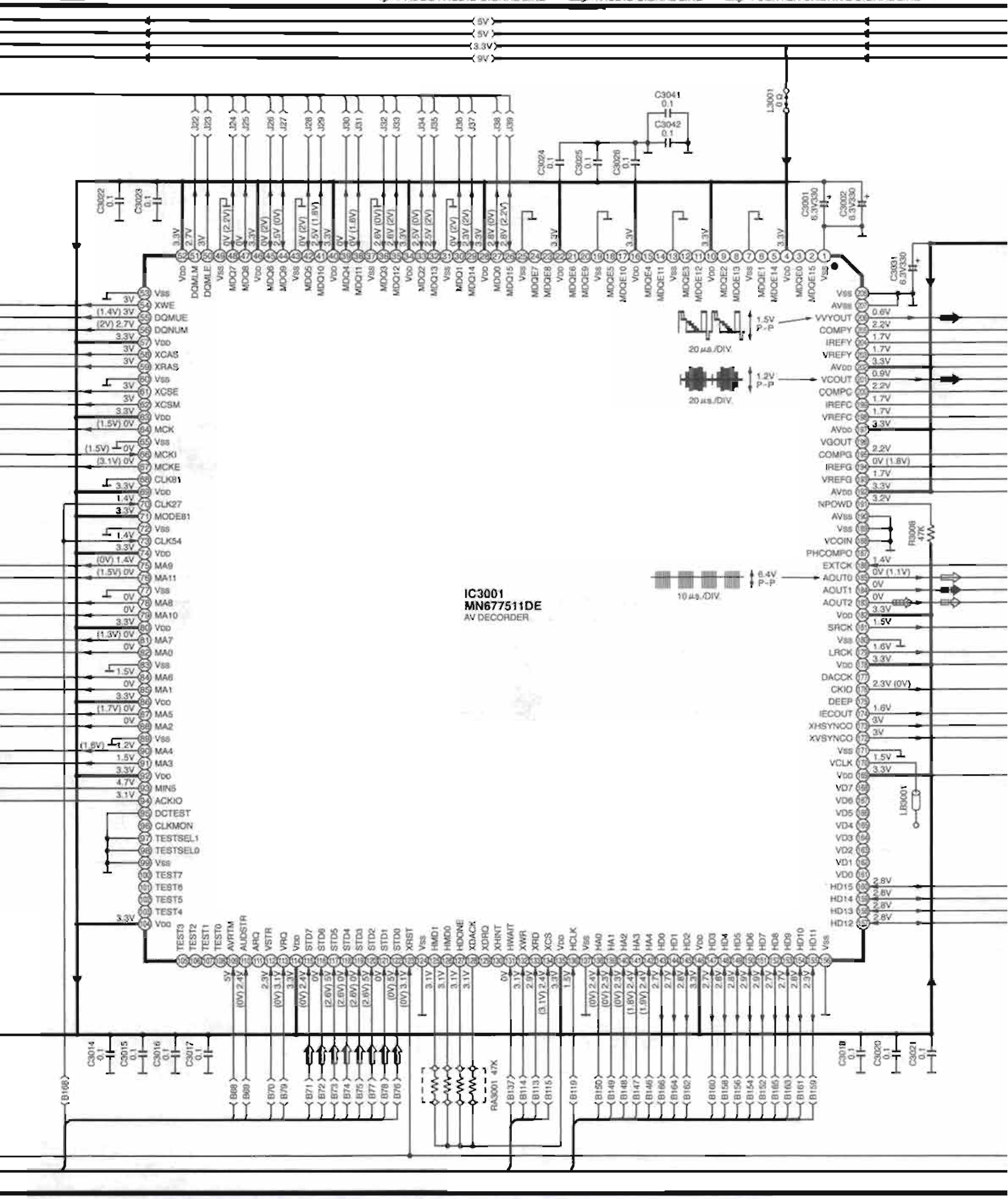
SCHEMATIC DIAGRAM-8



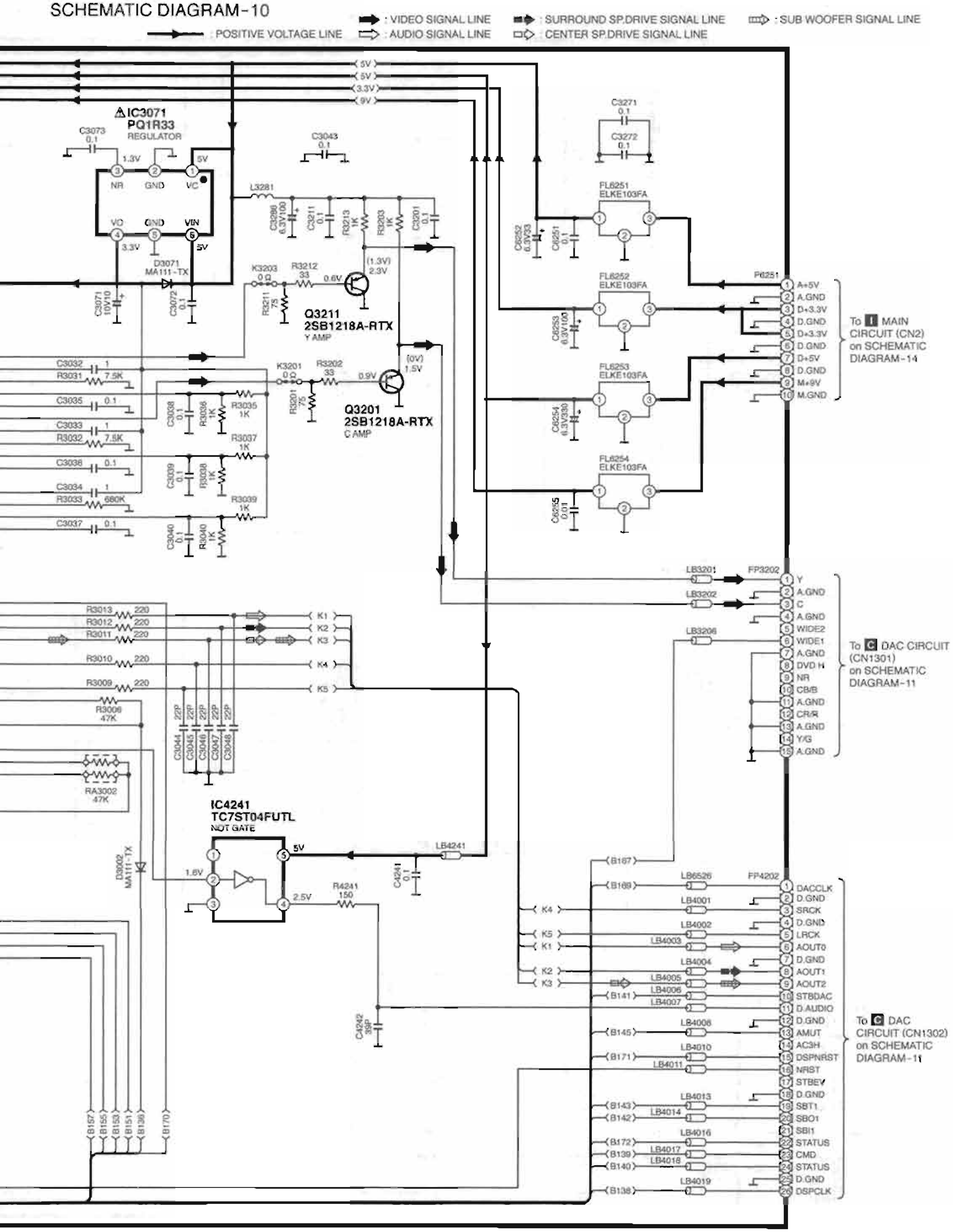
SCHEMATIC DIAGRAM-9

A DVD MODULE CIRCUIT

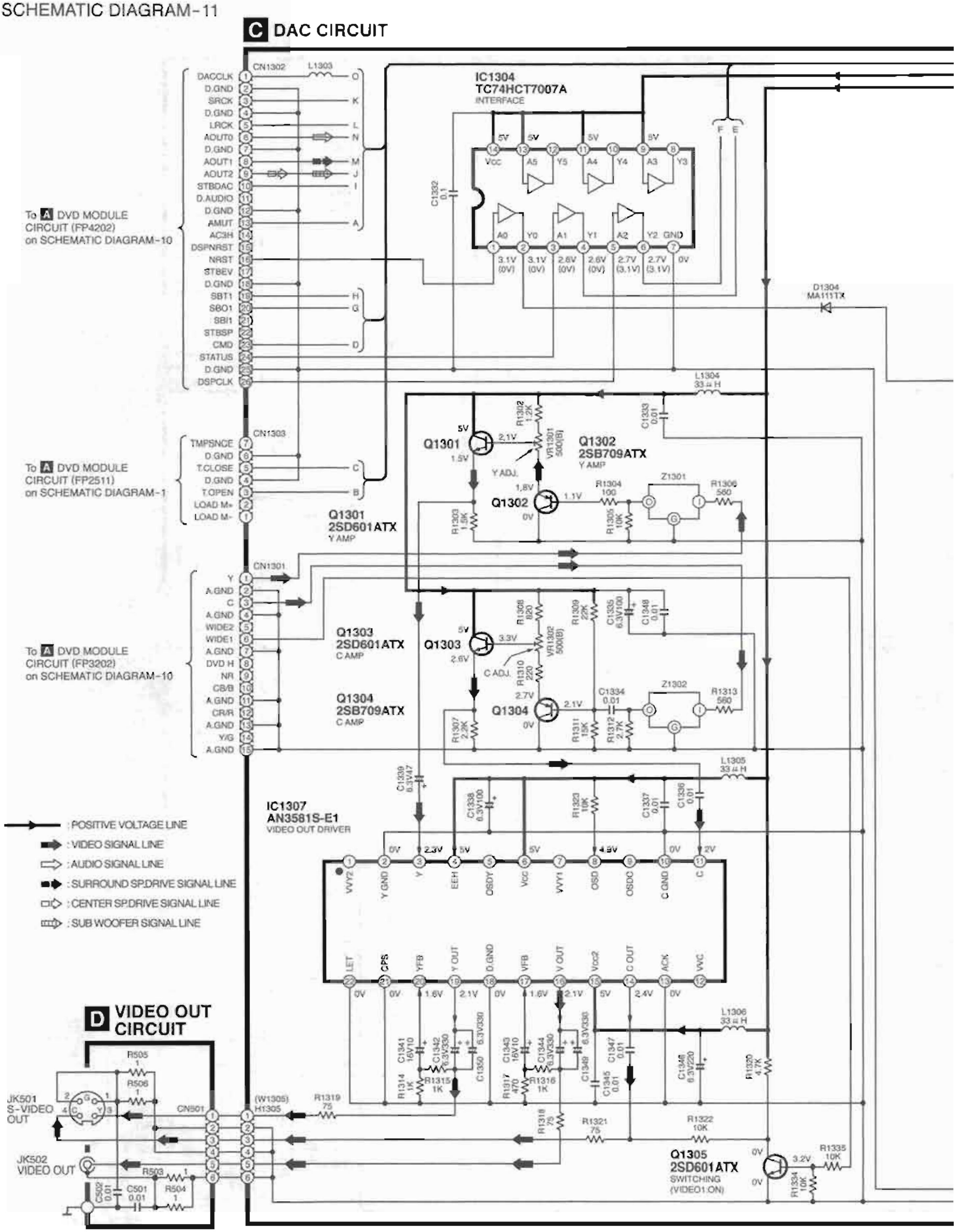
- : POSITIVE VOLTAGE LINE
- : VIDEO / AUDIO SIGNAL LINE
- : VIDEO SIGNAL LINE
- : AUDIO SIGNAL LINE
- : SUB WOOFER SIGNAL LINE
- : SURROUND SP.DRIVE SIGNAL LINE
- : CENTER SP.DRIVE SIGNAL LINE



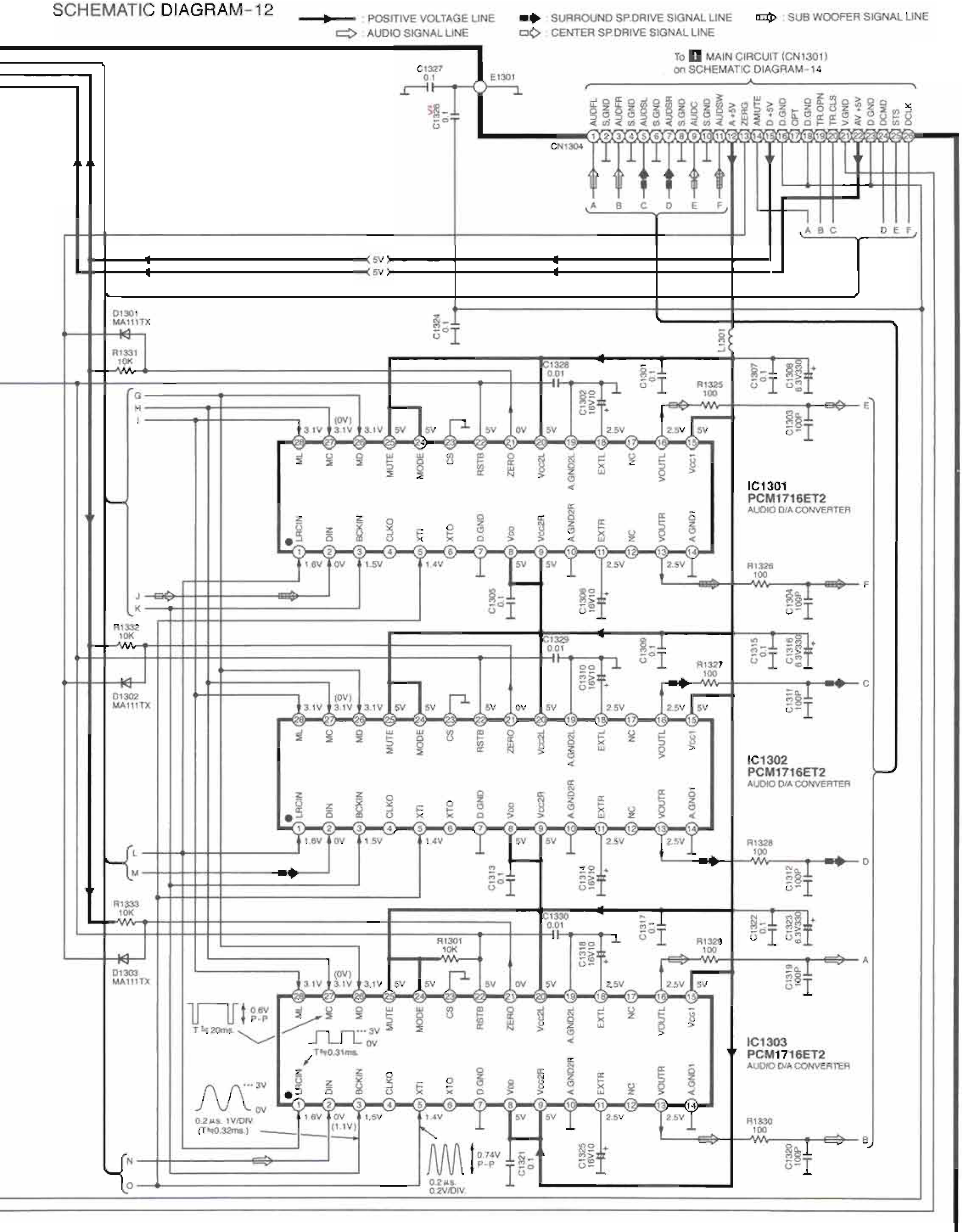
SCHEMATIC DIAGRAM-10



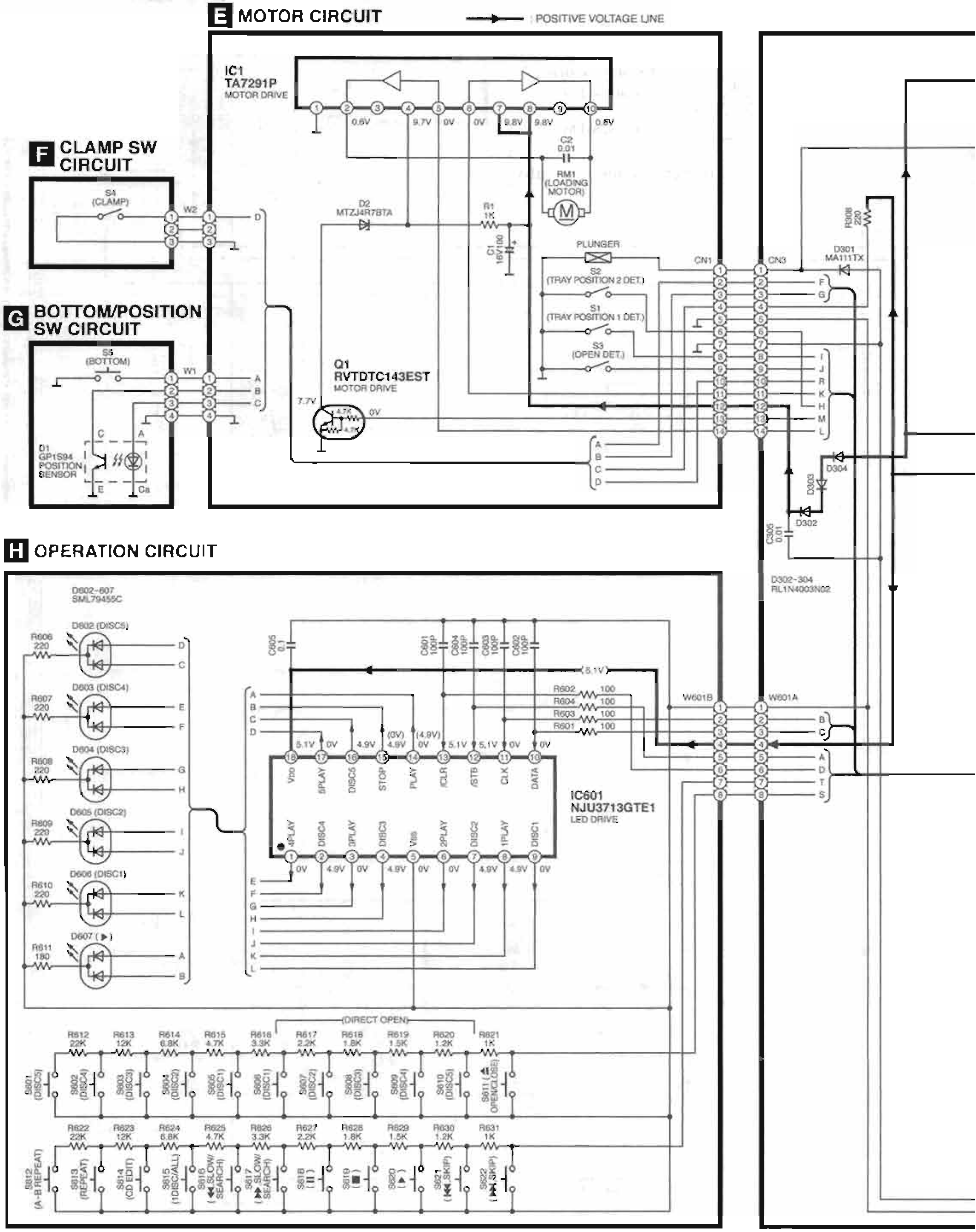
SCHEMATIC DIAGRAM-11



SCHEMATIC DIAGRAM-12

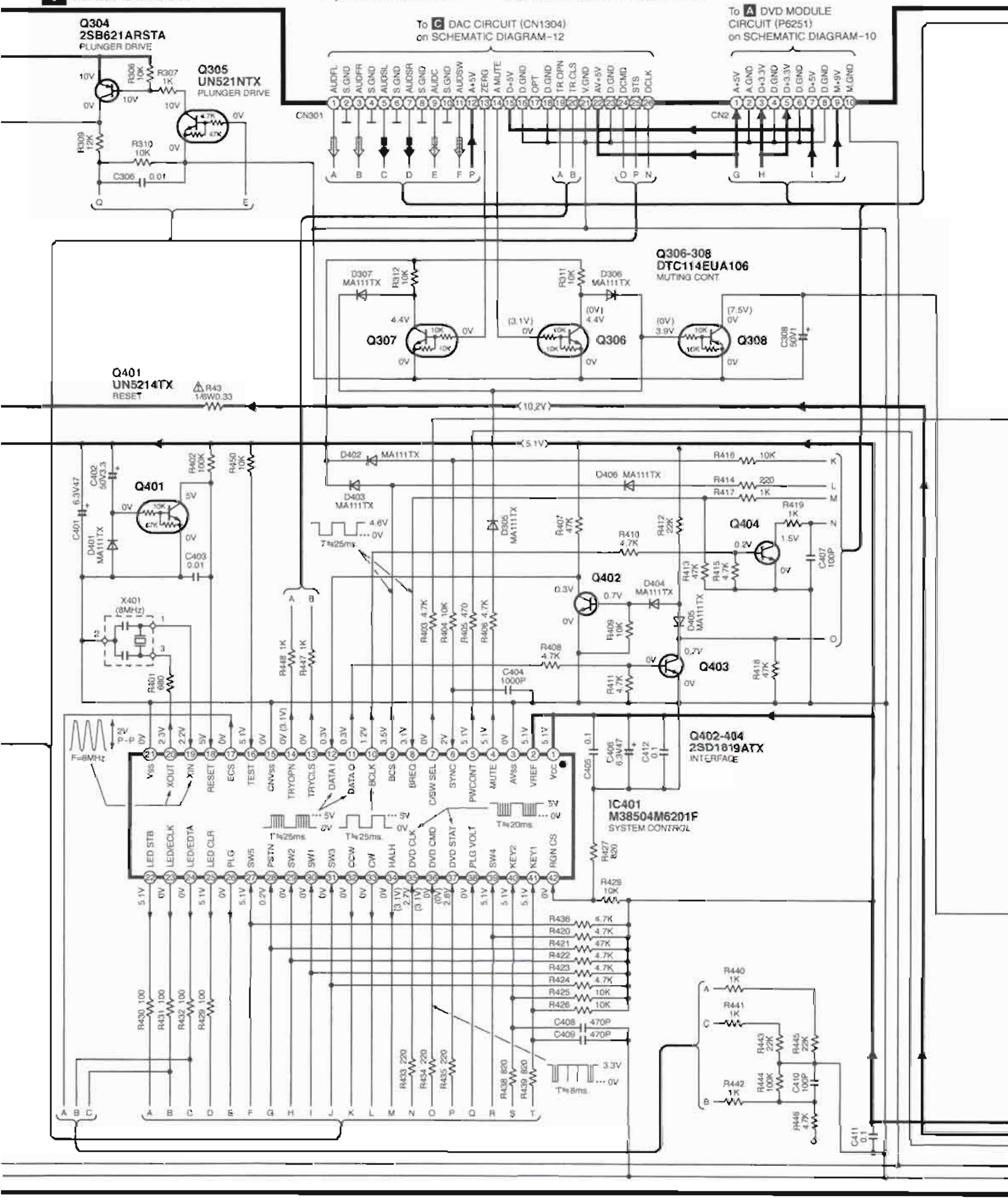


SCHEMATIC DIAGRAM-13



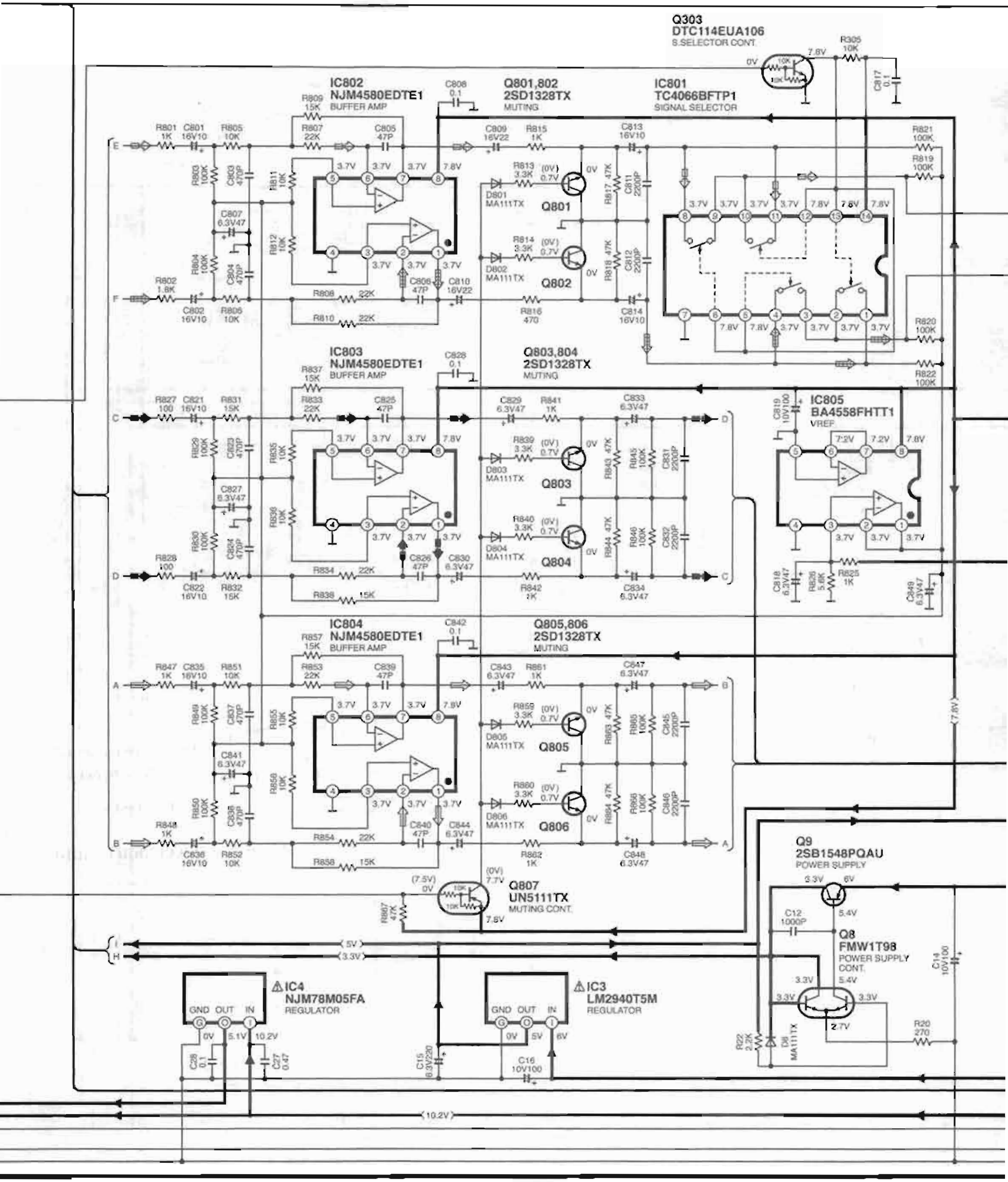
SCHEMATIC DIAGRAM-14

I MAIN CIRCUIT



SCHEMATIC DIAGRAM-15

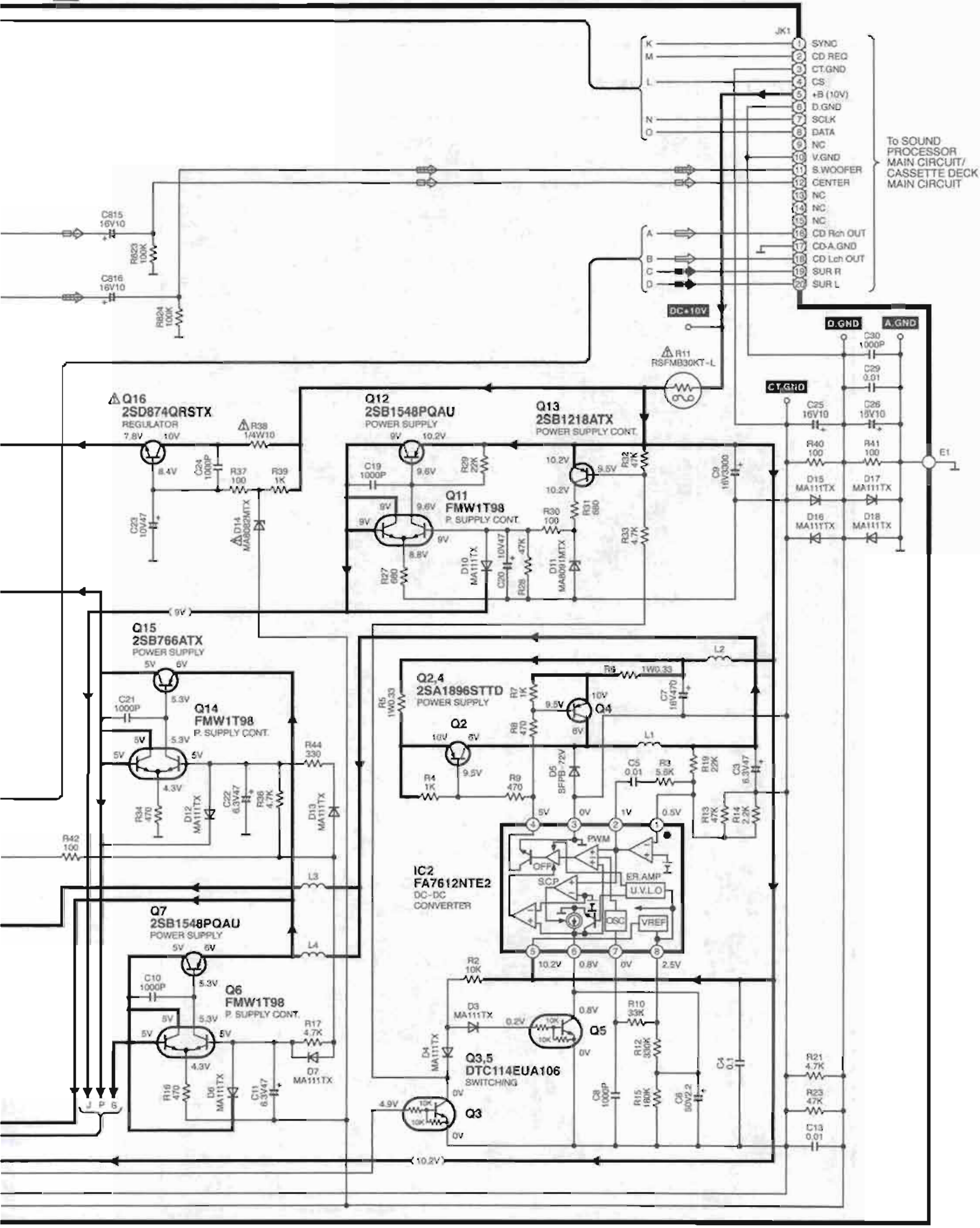
: POSITIVE VOLTAGE LINE
: AUDIO SIGNAL LINE
: SURROUND SP.DRIVE SIGNAL LINE
: CENTER SP.DRIVE SIGNAL LINE
: SUB WOOFER SIGNAL LINE



SCHEMATIC DIAGRAM-16

I MAIN CIRCUIT

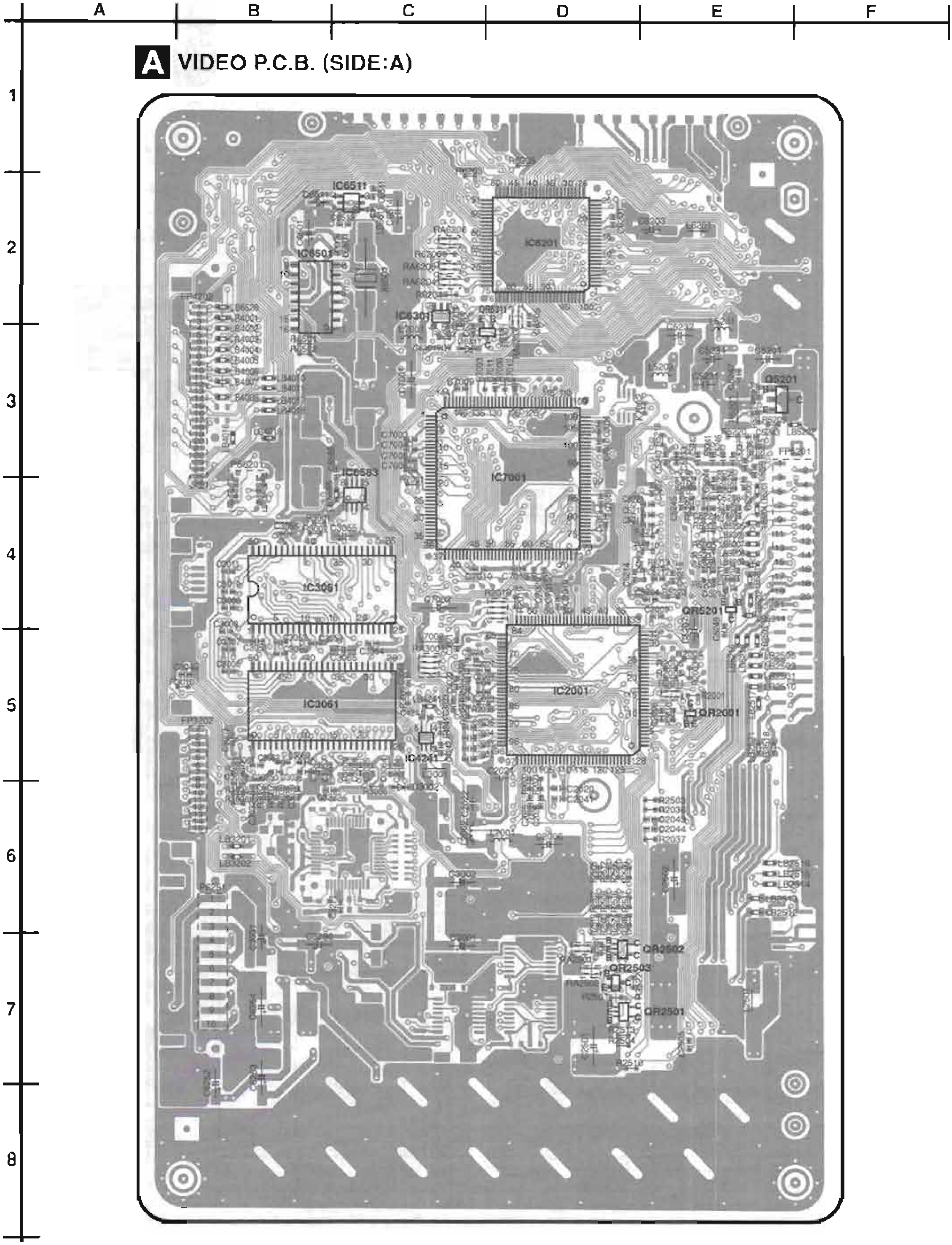
: POSITIVE VOLTAGE LINE
: AUDIO SIGNAL LINE
: SURROUND SP.DRIVE SIGNAL LINE
: CENTER SP.DRIVE SIGNAL LINE
: SUB WOOFER SIGNAL LINE



Printed Circuit Board Diagram

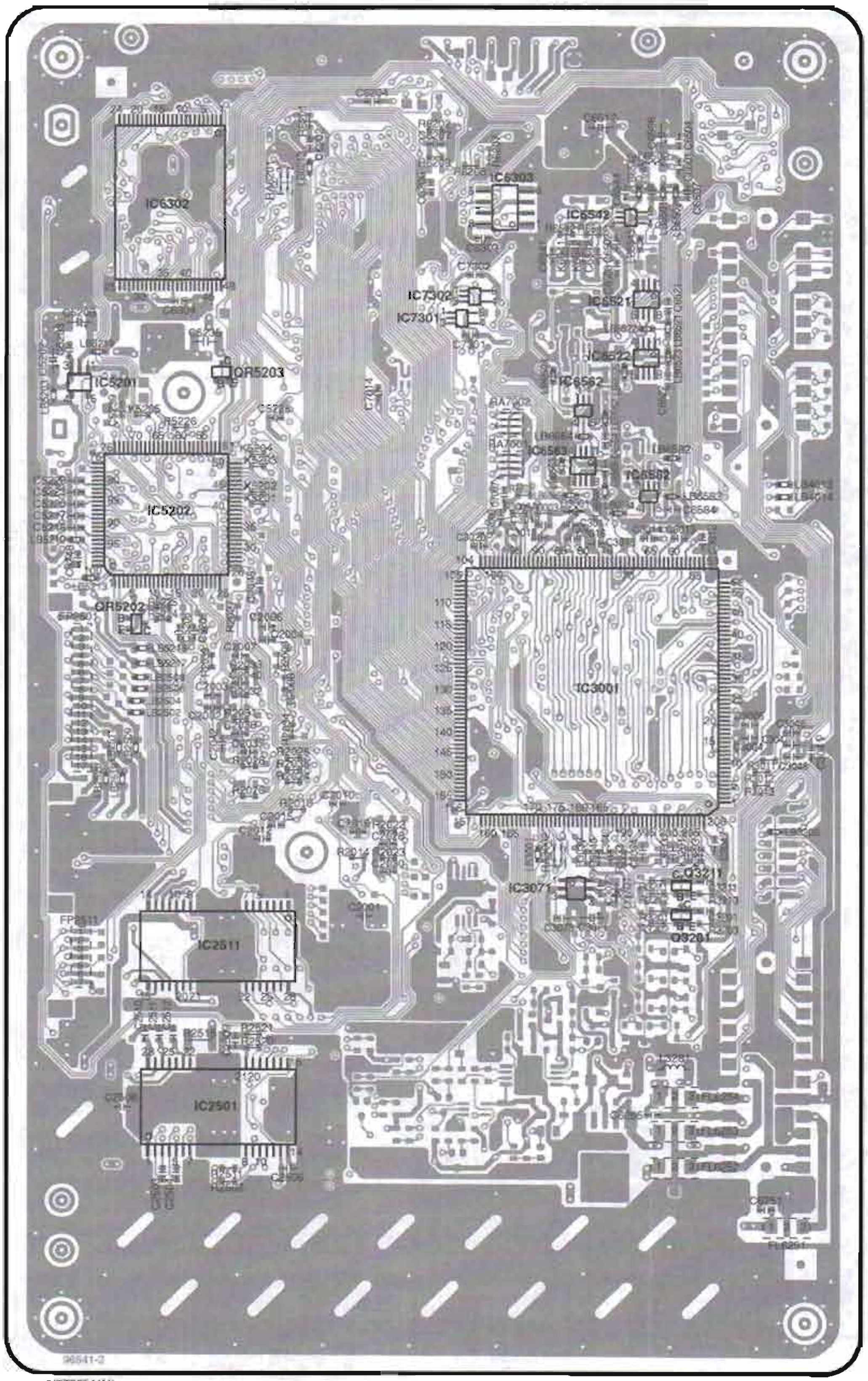
- This printed circuit board diagram may be modified at any time with the development of new technology.

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



G	H	I	J	K	L

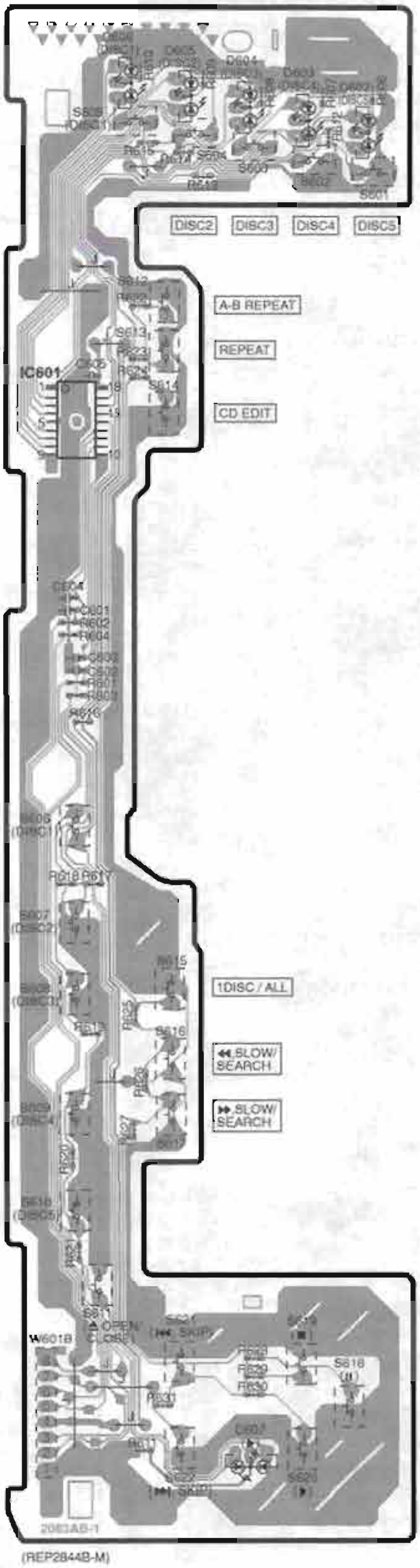
A VIDEO P.C.B. (SIDE:B)



(VEP96541M)

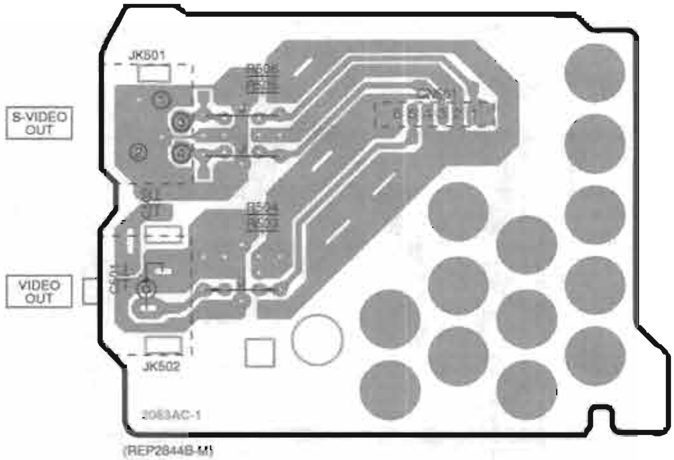
A B C D E F

H OPERATION P.C.B.



(REP2844B-M)

D VIDEO OUT P.C.B.



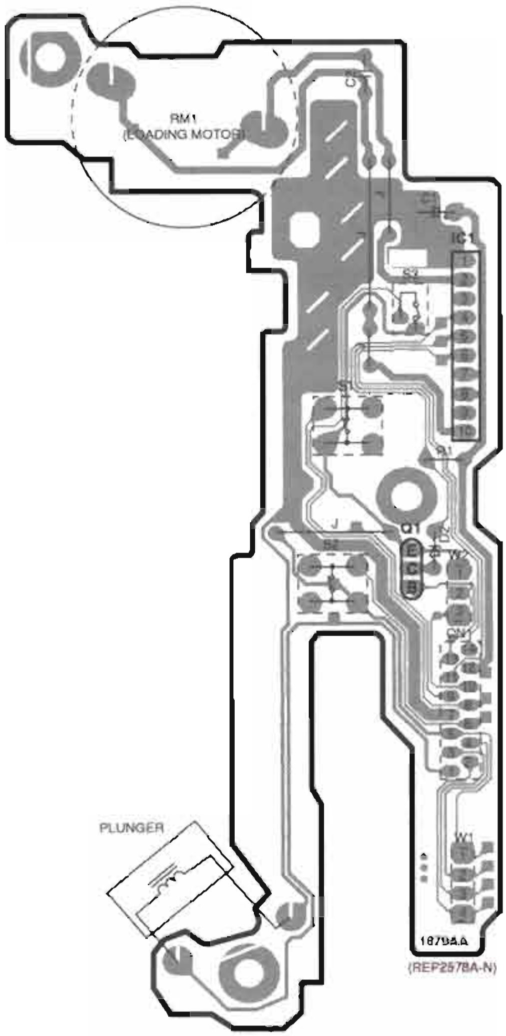
(REP2844B-M)

■ ELECTRICAL PARTS LOCATION

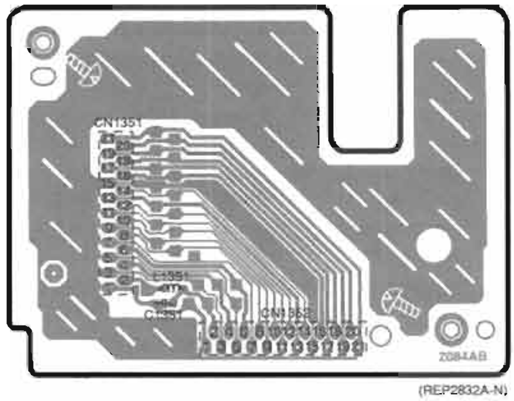
Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.
A VIDEO P.C.B. (SIDE:A)																	
IC2001	6D	FP5201	4F	LB5202	3E	R2505	6D	R5209	3E	C2006	6D	C3021	5C	C5204	4E	C6201	2D
IC3051	4B	P6251	7B	LB5204	4E	R2506	6D	R5210	4E	C2008	5E	C3022	5C	C5207	4E	C6203	2E
IC3061	5B	PS6201	4B	LB5205	4E	R2507	6D	R5211	4E	C2009	4E	C3023	5C	C5209	4E	C6205	2D
IC4241	5C	LB2501	5E	LB5206	4E	R2508	6D	R5212	4E	C2019	4D	C3024	5C	C5210	4E	C6252	7B
IC6201	2D	LB2503	5E	LB5207	4E	R2509	6D	R5213	4E	C2020	6D	C3025	5C	C5211	4E	C6253	7B
IC6301	2C	LB2505	5E	LB5208	4E	R2510	7D	R5214	4E	C2021	5D	C3026	5C	C5212	4E	C6254	7B
IC6501	2B	LB2507	5E	LB5209	4E	R2512	6D	R5215	3E	C2022	6C	C3031	7B	C5213	4E	C6301	3C
IC6511	2C	LB2510	5E	LB5211	4E	R2513	7D	R5216	4E	C2023	5C	C3032	6B	C5214	4D	C6302	3C
IC6583	4C	LB2512	6E	LB5212	4E	R2516	6D	R5217	4E	C2024	5C	C3035	5B	C5215	4E	C6501	2B
IC7001	3D	LB2513	6E	LB5214	4E	R2517	6D	R5218	3E	C2025	6D	C3036	5B	C5218	4E	C6511	2C
Q6201	3E	LB2514	6E	LB5216	5E	R2518	6D	R5219	4E	C2026	6D	C3037	5C	C5219	4E	C6513	2C
QR2001	5E	LB2515	6E	LB5218	5E	R2519	6D	R5220	3E	C2027	5C	C3038	6B	C5221	4E	C6514	2C
QR2501	7D	LB2516	6E	LB6511	2C	R2522	7D	R5221	4E	C2029	5C	C3039	6B	C5222	4E	C6585	3C
QR2502	7D	LB2517	5E	LB6526	2B	R2523	6D	R5222	4E	C2031	5C	C3042	5B	C5224	4E	C7001	3C
QR2503	7D	LB2518	5E	LB6585	4C	R2524	6D	R5223	4E	C2032	5C	C3044	5C	C5226	4E	C7002	4C
QR5201	4E	LB2521	5E	R2001	5E	R3001	4B	R6203	2C	C2033	5C	C3045	5B	C5227	4E	C7003	3C
QR6311	3D	LB3201	6B	R2003	5E	R3002	4B	R6204	2C	C2034	5C	C3051	5B	C5229	3E	C7004	3C
D3002	6C	LB3202	6B	R2004	5E	R3006	6C	R6205	1D	C2036	5C	C3052	5B	C5230	4E	C7005	3C
D6311	3C	LB4001	2B	R2005	5E	R3008	5C	R6206	2C	C2041	6D	C3053	5B	C5231	3E	C7006	3C
D6511	2B	LB4002	3B	R2006	5E	R3009	5C	R6301	3D	C2043	6E	C3054	5C	C5232	3E	C7009	3C
K7002	3E	LB4003	3B	R2010	5E	R3010	5B	R6302	3C	C2044	6E	C3055	4C	C5233	3E	C7010	4C
L2001	6D	LB4004	3B	R2011	5E	R3031	5B	R6303	2C	C2501	7D	C3056	4B	C5234	3E	C7011	3D
L2002	6C	LB4005	3B	R2018	4D	R3032	6B	R6501	3B	C2502	6E	C3061	5B	C5236	3E	C7012	3D
L2501	7E	LB4006	3B	R2019	4D	R3035	6B	R6502	3B	C2505	7E	C3062	5B	C5237	3E	C7013	4D
L3001	5C	LB4007	3B	R2020	6D	R3036	6B	R7001	4C	C2507	7D	C3063	5B	C5238	4E	C7015	4D
L5201	3E	LB4008	3B	R2021	6D	R3037	6B	R7003	3C	C3001	7C	C3064	5C	C5240	3E	C7016	3D
L5202	3E	LB4010	3B	R2029	5C	R3038	6B	R7006	3D	C3002	6C	C3065	5C	C5241	3E	C7017	3D
L6201	2E	LB4011	3B	R2030	5C	R4241	5C	RA2501	7D	C3003	5B	C3066	5B	C5242	3E	C7018	4D
L6501	2C	LB4016	3B	R2036	6E	R5201	3E	RA2502	7D	C3006	5B	C3271	6C	C5243	3E	C7019	4D
L7001	3C	LB4017	3B	R2037	6E	R5202	3E	RA3001	5C	C3007	5B	C3272	6B	C5244	4E	C7020	4D
L7002	5C	LB4018	3B	R2038	5C	R5203	3E	RA6203	2D	C3008	5B	C3266	7B	C5245	4E		
X6501	2C	LB4019	3B	R2501	7D	R5205	4E	RA6204	2C	C3009	4B	C4241	5C	C5246	3E		
FP3202	5B	LB4241	5C	R2503	6E	R5206	4E	RA6205	2C	C3010	4B	C4242	5C	C5247	3E		
FP4202	3B	LB5201	4E	R2504	7D	R5208	4E	RA6206	2C	C3011	4B	C5201	3E	C5249	4E		
A VIDEO P.C.B. (SIDE:B)																	
IC2501	7H	FL6252	7K	LB4014	4K	R2008	5I	R3012	5K	RA7002	3J	C2512	7H	C5202	3G	C6505	2K
IC2511	6H	FL6253	7K	LB6203	3G	R2009	5I	R3013	5K	C2001	6I	C3004	5K	C5203	3H	C6506	2K
IC3001	5J	FL6254	7K	LB5210	4H	R2014	6I	R3033	6J	C2002	5H	C3005	5K	C5205	4H	C6507	2K
IC3071	6J	FP2501	5H	LB5213	4H	R2016	5I	R3039	6J	C2003	5H	C3012	4K	C5206	4H	C6512	2J
IC5201	3H	FP2511	6H	LB5215	4H	R2022	5I	R3040	6J	C2004	4I	C3013	4K	C5208	3H	C6521	3K
IC5202	4H	K3201	6K	LB5217	5H	R2023	6I	R3201	6K	C2005	4I	C3014	4K	C6216	4H	C6522	3K
IC6302	2H	K3203	6K	LB5219	3H	R2024	5I	R3202	6K	C2007	5H	C3015	4J	C5217	4H	C6541	2J
IC6303	2J	K5201	4I	LB6213	2I	R2025	5I	R3203	6K	C2010	5I	C3016	4J	C5220	4H	C6542	2J
IC6521	3K	K5202	4I	LB6501	2K	R2026	5H	R3211	6K	C2012	5I	C3017	4J	C5223	4H	C6544	2K
IC6522	3K	K5203	3I	LB6502	2K	R2027	4H	R3212	6K	C2015	5I	C3018	4J	C5225	3I	C6564	3J
IC6542	2K	K5204	3I	LB6504	3J	R2028	5H	R3213	6K	C2016	5I	C3019	4J	C5228	4H	C6565	3J
IC6562	3J	K5205	3H	LB6521	3K	R2031	5H	R5224	4H	C2028	6I	C3020	4J	C5235	3H	C6584	4K
IC6563	3J	K6541	2J	LB6522	3K	R2032	5H	R5225	4H	C2030	6I	C3033	6K	C5239	3H	C6601	2K
IC6582	4K	K6542	2J	LB6523	3K	R2033	5H	R5226	3H	C2037	5H	C3034	6K	C5248	4H	C7007	4J
IC7301	3J	LB2502	5H	LB6525	3K	R2034	5I	R6201	2I	C2038	5H	C3040	6J	C6202	2I	C7008	4J
IC7302	3J	LB2504	5H	LB6542	2K	R2035	5I	R6202	2I	C2040	5H	C3041	5K	C6204	2I	C7014	3I
Q3201	6K	LB2506	5H	LB6543	2K	R2039	5H	R6207	2J	C2042	5H	C3043	6K	C6206	2I	C7301	3J
Q3211	6K	LB2508	5H	LB6562	3J	R2502	7H	R6208	2J	C2045	4I	C3046	5K	C6207	2I	C7302	2J
QR5202	4H	LB2509	5H	LB6563	3J	R2511	7H	R6209	2I	C2503	7H	C3047	5K	C6251	8K		
QR5203	3H	LB2511	5H	LB6564	3J	R2515	7H	R6542	2J	C2504	7H	C3048	5K	C6255	7K		
D3001	4J	LB2519	5H	LB6565	4J	R2520	7I	R6544	2J	C2506	7I	C3071	6J	C6303	2J		
D3701	6J	LB2520	5H	LB6582	3K	R2521	7I	R7002	4J	C2508	7H	C3072	6J	C6304	3H		
L3281	7K	LB3001	6J	LB6583	4K	R3003	4J	RA3002	6J	C2509	7H	C3073	6J	C6502	2J		
L6502	2K	LB3206	5K	LB6584	4J	R3005	4J	RA6201	2I	C2510	7H	C3201	6K	C6503	2J		
FL6251	8K	LB4013	4K	LB6586	4J	R3011	5K	RA7001	3J	C2511	7H	C3211	6K	C6504	2K		
D VIDEO OUT P.C.B.																	
CN501	2E	JK501	1D	JK502	3D	C501	2D	C502	2D	R503	2D	R504	2D	R505	1D	R506	1D
H OPERATION P.C.B.																	
IC601	3A	S602	2B	S610	7A	S618	8B	R603	4A	R612	2B	R620	6A	R628	7B	C605	3A
D602	2B	S603	2B	S611	7A	S619	7B	R604	4A	R613	2B	R621	7A	R629	7B		
D603	1B	S604	2B	S612	2A	S620	8B	R606	1B	R614	2B	R622	2A	R630	8B		
D604	1B	S605	2A	S613	3A	S621	7B	R607	1B	R615	2A	R623	3A	R631	8A		
D605	1B	S606	5A	S614	3A	S622	8B	R608	1B	R616	4A	R624	3A	C601	4A		
D606	1A	S607	5A	S615	6B	W601B	7A	R609	1B	R617	5A	R625	6A	C602	4A		
D607	6B	S608	6A	S616	6B	R601	4A	R610	1A	R618	5A	R626	6A	C603	4A		
S601	2B	S609	6A	S617	6B	R602	4A	R611	8A	R619	6A	R627	6A	C604	4A		

A B C D E F

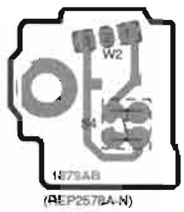
E MOTOR P.C.B.



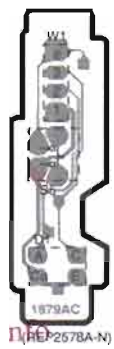
B CONNECTOR P.C.B.



F CLAMP SW P.C.B.



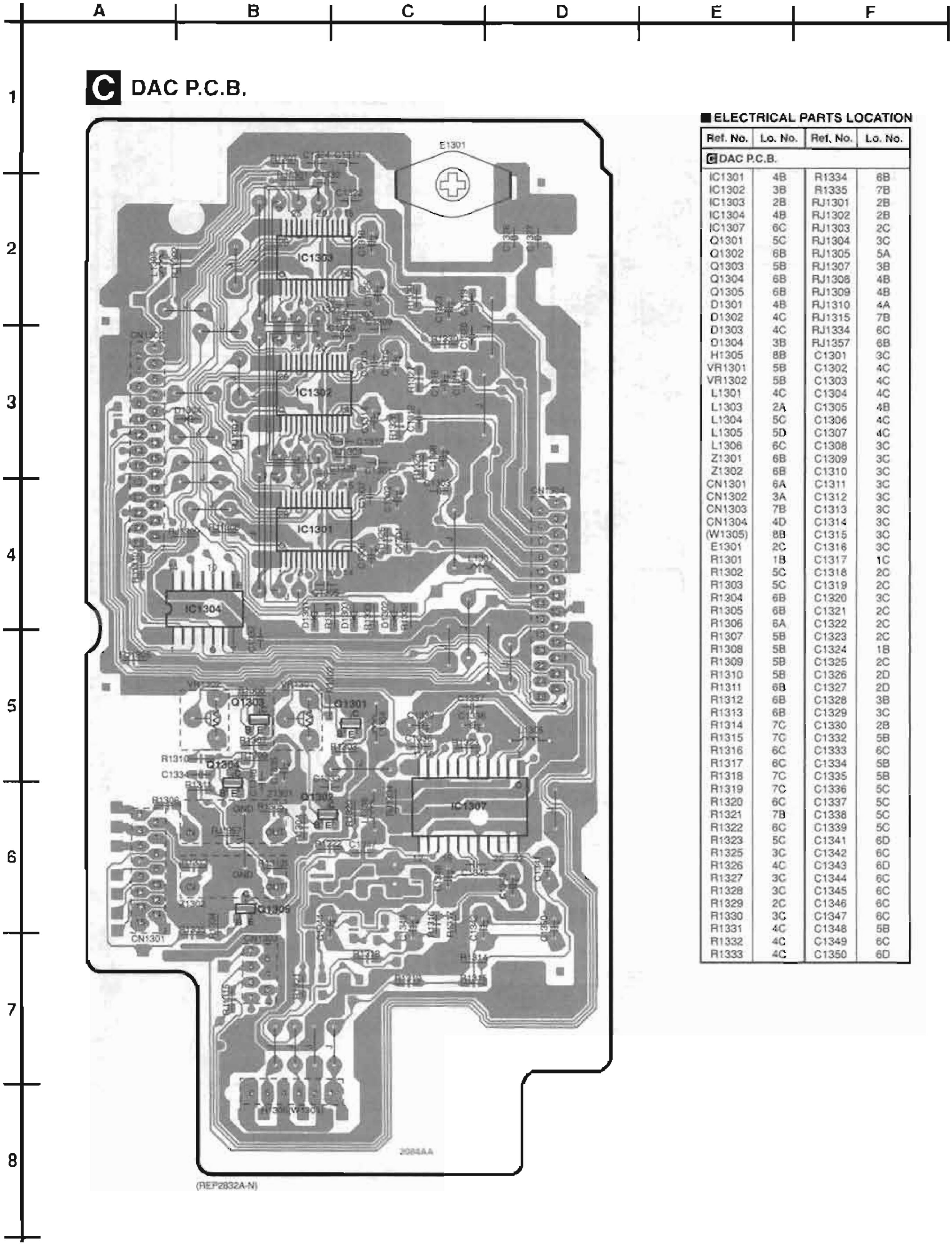
G BOTTOM/POSITION SW P.C.B.



■ ELECTRICAL PARTS LOCATION

Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.
B CONNECTOR P.C.B.							
L1351	2E	CN1351	2D	CN1352	3E	C1351	2E
E MOTOR P.C.B.							
IC1	3C	S2	4B	W2	4C	C2	2B
Q1	4C	S3	3C	RM1	2B		
D2	4C	CN1	4C	R1	3C		
S1	3B	W1	5C	C1	2C		
F CLAMP SW P.C.B.							
S4	4E	W2	4E				
G BOTTOM/POSITION SW P.C.B.							
D1	6E	S5	6E	W1	5E		

C DAC P.C.B.



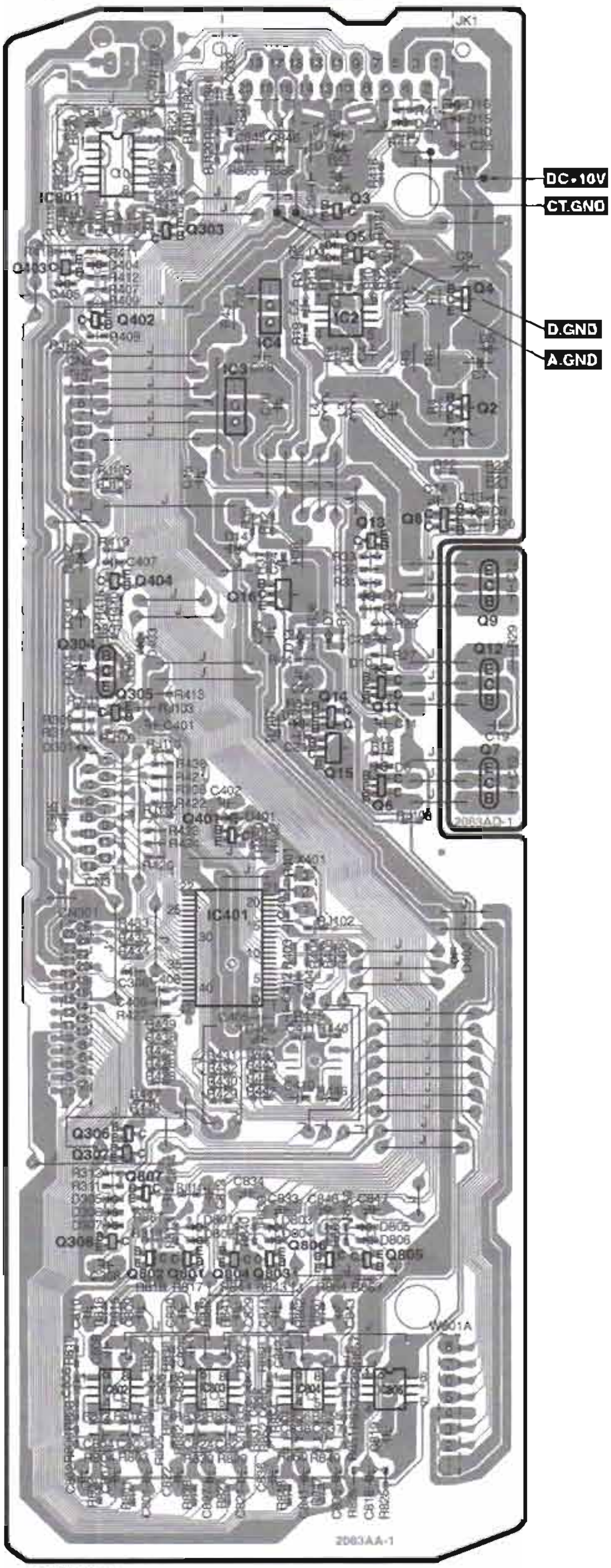
(REP2832A-N)

■ ELECTRICAL PARTS LOCATION

Ref. No.	Lo. No.	Ref. No.	Lo. No.
C DAC P.C.B.			
IC1301	4B	R1334	6B
IC1302	3B	R1335	7B
IC1303	2B	RJ1301	2B
IC1304	4B	RJ1302	2B
IC1307	6C	RJ1303	2C
Q1301	5C	RJ1304	3C
Q1302	6B	RJ1305	5A
Q1303	5B	RJ1307	3B
Q1304	6B	RJ1308	4B
Q1305	6B	RJ1309	4B
D1301	4B	RJ1310	4A
D1302	4C	RJ1315	7B
D1303	4C	RJ1334	6C
D1304	3B	RJ1357	6B
H1305	8B	C1301	3C
VR1301	5B	C1302	4C
VR1302	5B	C1303	4C
L1301	4C	C1304	4C
L1303	2A	C1305	4B
L1304	5C	C1306	4C
L1305	5D	C1307	4C
L1306	6C	C1308	3C
Z1301	6B	C1309	3C
Z1302	6B	C1310	3C
CN1301	6A	C1311	3C
CN1302	3A	C1312	3C
CN1303	7B	C1313	3C
CN1304	4D	C1314	3C
(W1305)	8B	C1315	3C
E1301	2C	C1316	3C
R1301	1B	C1317	1C
R1302	5C	C1318	2C
R1303	5C	C1319	2C
R1304	6B	C1320	3C
R1305	6B	C1321	2C
R1306	6A	C1322	2C
R1307	5B	C1323	2C
R1308	5B	C1324	1B
R1309	5B	C1325	2C
R1310	5B	C1326	2D
R1311	6B	C1327	2D
R1312	6B	C1328	3B
R1313	6B	C1329	3C
R1314	7C	C1330	2B
R1315	7C	C1332	5B
R1316	6C	C1333	6C
R1317	6C	C1334	5B
R1318	7C	C1335	5B
R1319	7C	C1336	5C
R1320	6C	C1337	5C
R1321	7B	C1338	5C
R1322	6C	C1339	5C
R1323	5C	C1341	6D
R1325	3C	C1342	6C
R1326	4C	C1343	6D
R1327	3C	C1344	6C
R1328	3C	C1345	6C
R1329	2C	C1346	6C
R1330	3C	C1347	6C
R1331	4C	C1348	5B
R1332	4C	C1349	6C
R1333	4C	C1350	6D

I MAIN P.C.B.

To SOUND PROCESSOR/
CASSETE DECK

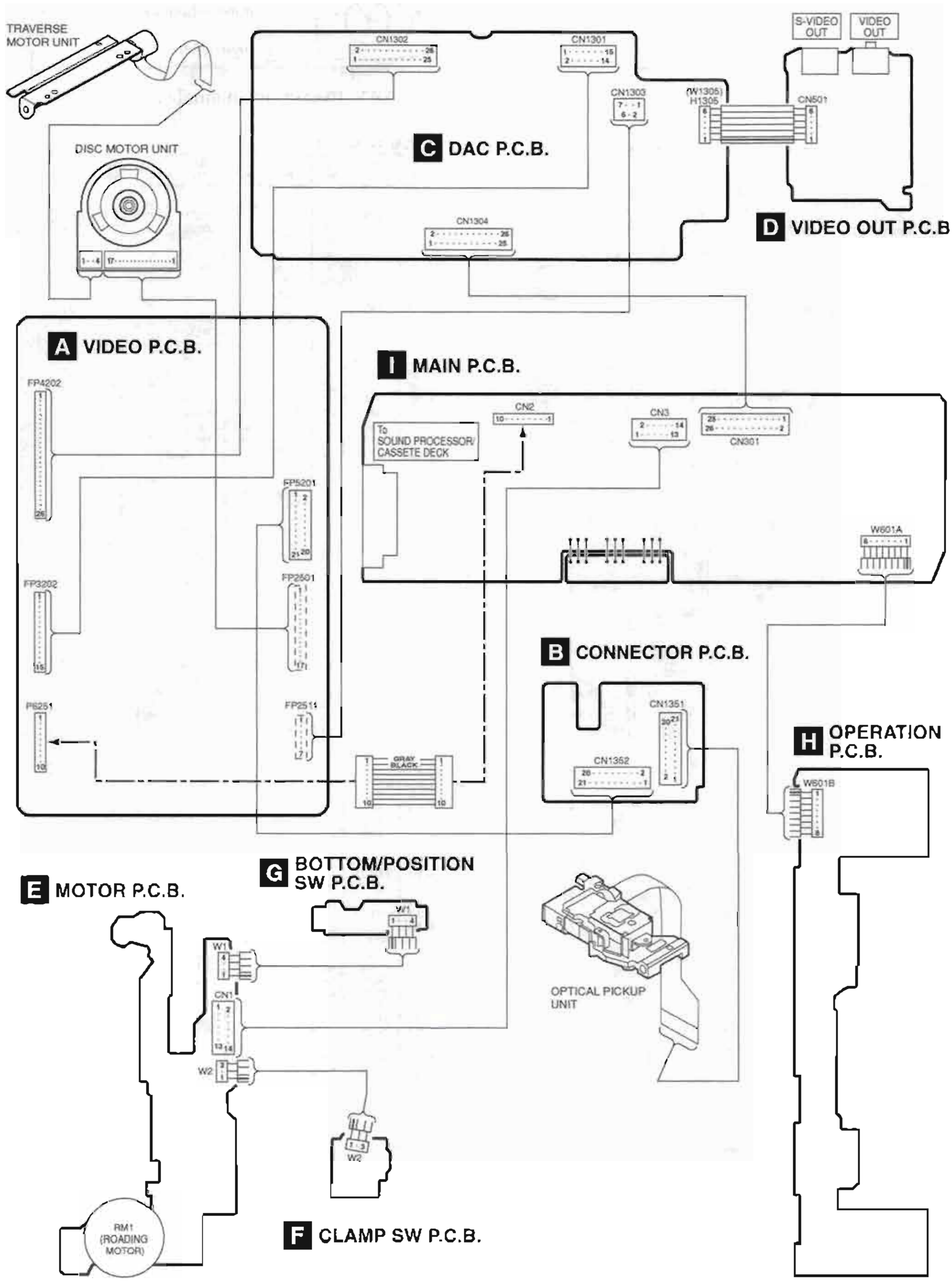


(REP2844B-M)

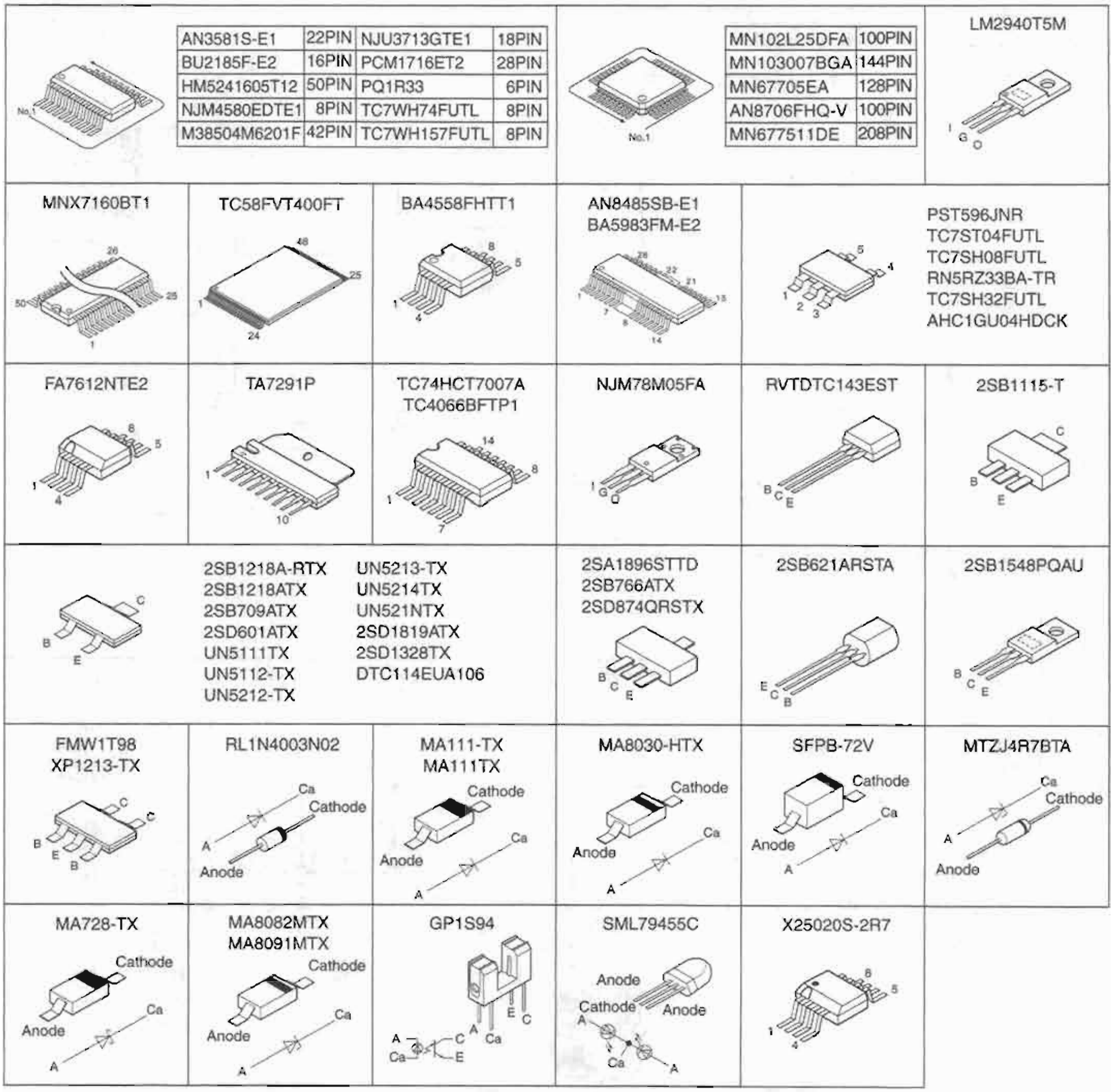
■ ELECTRICAL PARTS LOCATION

Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.
I MAIN P.C.B.									
IC2	2B	D804	7B	R412	2A	R835	8B	C23	4B
IC3	3B	D805	7B	R413	4A	R836	8B	C24	4B
IC4	2B	D806	7B	R414	1C	R837	7B	C25	2C
IC401	5B	L1	3C	R415	4A	R838	7B	C26	2B
IC801	2A	L2	2C	R416	2B	R839	7B	C27	2B
IC802	7A	L3	3B	R417	2C	R840	7B	C28	3B
IC803	7B	L4	3B	R418	2A	R841	7B	C29	2B
IC804	7B	X401	5B	R419	4A	R842	7B	C30	1A
IC805	7C	CN2	3A	R420	5A	R843	7B	C305	5A
Q2	3C	CN3	5A	R421	5A	R844	7B	C306	6A
Q3	2B	CN301	6A	R422	5A	R845	2B	C308	7A
Q4	2C	W601A	7C	R423	5A	R846	1B	C401	4A
Q5	2B	JK1	1B	R424	5A	R847	8B	C402	5B
Q6	5B	E1	2B	R425	6A	R848	8B	C403	5B
Q7	5C	R2	2B	R426	6A	R849	8B	C404	6B
Q8	3C	R3	2B	R427	6A	R850	8B	C405	6B
Q9	4C	R4	3C	R428	6A	R851	8B	C406	6B
Q11	4B	R5	3C	R429	6B	R852	8B	C407	4A
Q12	4C	R6	3C	R430	6B	R853	8B	C408	6A
Q13	3B	R7	2C	R431	6B	R854	8B	C409	6A
Q14	4B	R8	3B	R432	6B	R855	8B	C410	6B
Q15	4B	R9	3B	R433	5A	R856	8B	C411	6B
Q16	4B	R10	2B	R434	5A	R857	7B	C412	6B
Q303	2A	R11	2C	R435	5A	R858	7B	C801	8A
Q304	4A	R12	2B	R436	5A	R859	7B	C802	8A
Q305	4A	R13	2B	R438	6A	R860	7B	C803	8A
Q306	6A	R14	2B	R439	6A	R861	7B	C804	8A
Q307	6A	R15	2C	R440	6B	R862	7B	C805	7A
Q308	7A	R16	4B	R441	6B	R863	7B	C806	7A
Q401	5B	R17	4B	R442	6B	R864	7B	C807	8A
Q402	2A	R19	3B	R443	6B	R865	2B	C808	7A
Q403	2A	R20	3C	R444	6B	R866	2B	C809	7A
Q404	4A	R21	3C	R445	6B	R867	7A	C810	7A
Q801	7B	R22	3C	R446	6B	RJ102	5B	C811	2A
Q802	7A	R23	3C	R447	6A	RJ103	4A	C812	2A
Q803	7B	R27	4B	R448	6A	RJ104	3A	C813	7B
Q804	7B	R28	4B	R450	5B	RJ105	3A	C814	7A
Q805	7B	R29	4C	R801	8A	RJ106	3A	C815	2A
Q806	7B	R30	4B	R802	8A	RJ107	4B	C816	2A
Q807	7A	R31	4B	R803	8A	RJ108	5C	C817	2A
D3	2B	R32	4B	R804	8A	RJ109	4A	C818	8B
D4	2B	R33	4B	R805	8A	RJ110	4A	C819	8B
D5	3C	R34	4B	R806	8A	RJ111	4A	C821	8B
D6	5B	R36	4B	R807	8A	RJ112	5A	C822	8B
D7	4B	R37	4B	R808	8A	RJ114	7B	C823	8B
D8	3C	R38	4B	R809	7A	RJ115	2A	C824	8B
D10	4B	R39	3B	R810	7A	RJ116	2A	C825	7B
D11	4B	R40	2C	R811	8A	RJ117	2A	C826	7B
D12	4B	R41	2B	R812	8A	RJ118	2A	C827	8B
D13	4B	R42	3B	R813	7B	RJ119	2B	C828	7B
D14	4B	R43	2B	R814	7A	RJ120	2B	C829	7B
D15	2C	R44	4B	R815	7A	RJ121	2B	C830	7B
D16	1C	R305	2A	R816	7A	RJ123	1A	C831	2B
D17	2B	R306	4A	R817	7B	C3	3C	C832	1B
D18	2B	R307	4A	R818	7A	C4	3B	C833	7B
D301	4A	R308	5A	R819	2A	C5	2B	C834	7B
D302	4A	R309	4A	R820	2A	C6	2C	C835	8B
D303	4A	R310	4A	R821	2A	C7	3C	C836	8B
D304	4A	R311	7A	R822	2A	C8	2B	C837	8B
D305	7A	R312	6A	R823	2B	C9	2C	C838	8B
D306	7A	R401	5B	R824	1B	C10	5C	C839	7B
D307	7A	R402	5B	R825	8B	C11	4B	C840	7B
D401	5B	R403	5B	R826	8B	C12	4C	C841	8B
D402	5C	R404	5B	R827	8B	C13	3C	C842	7B
D403	4A	R405	5B	R828	8B	C14	3C	C843	7B
D404	2A	R406	5B	R829	8B	C15	3B	C844	7B
D405	2A	R407	2A	R830	8B	C16	3B	C845	2B
D406	2C	R408	3A	R831	8B	C19	4C	C846	2B
D801	7B	R409	2A	R832	8B	C20	4B	C847	7B
D802	7B	R410	4A	R833	8B	C21	4B	C848	7B
D803	7B	R411	2A	R834	8B	C22	4B	C849	2A

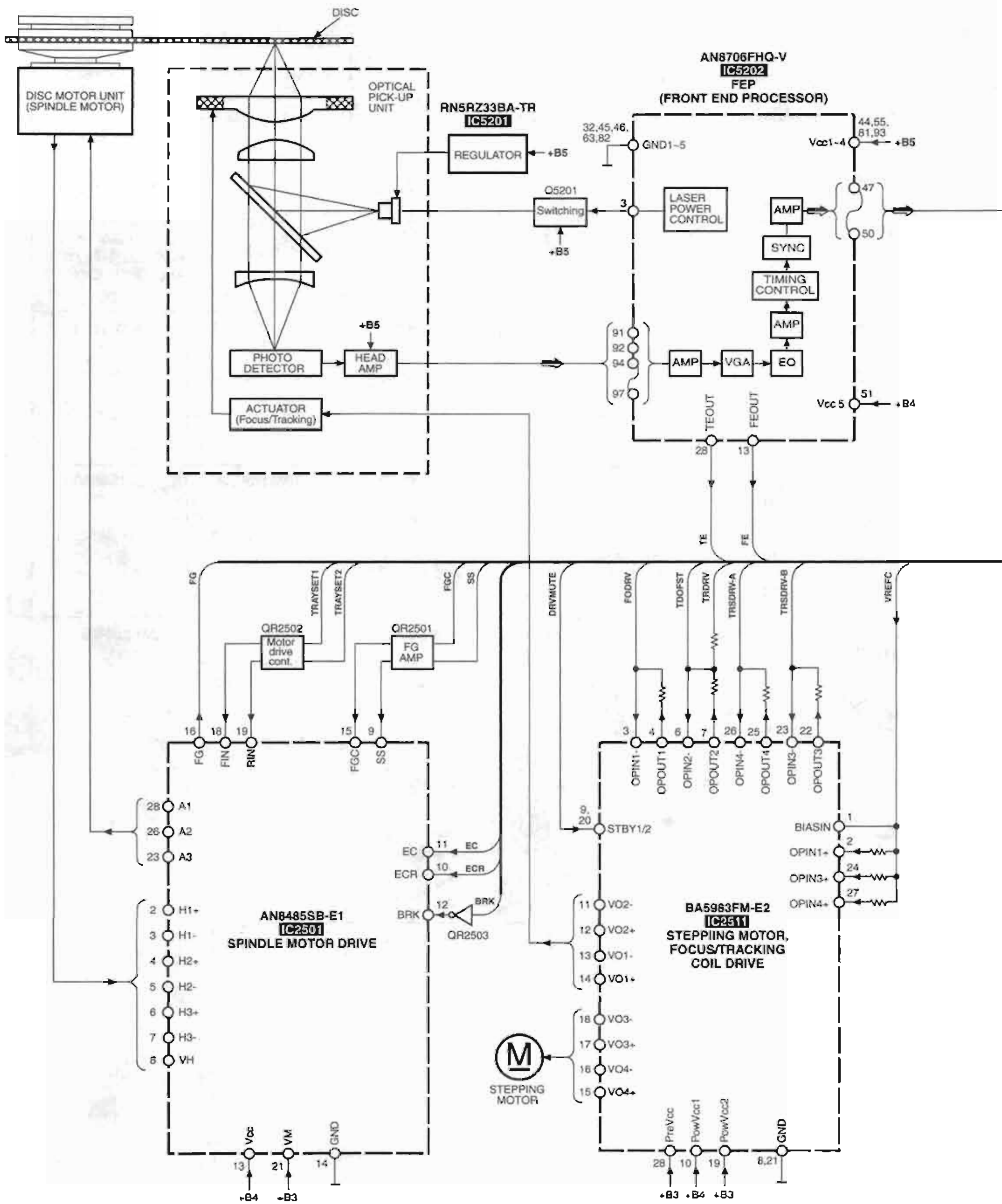
■ Wiring Connection Diagram

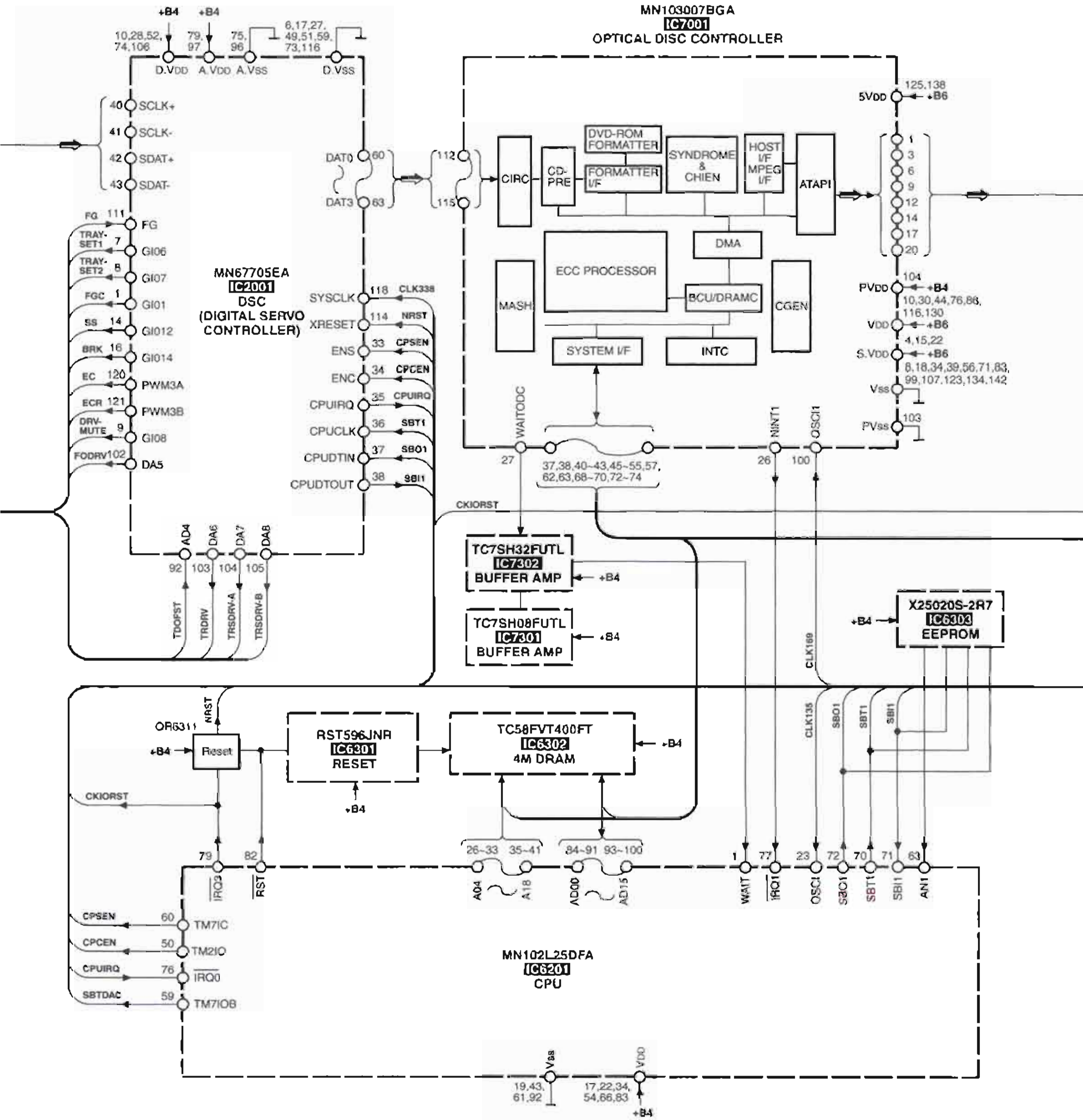


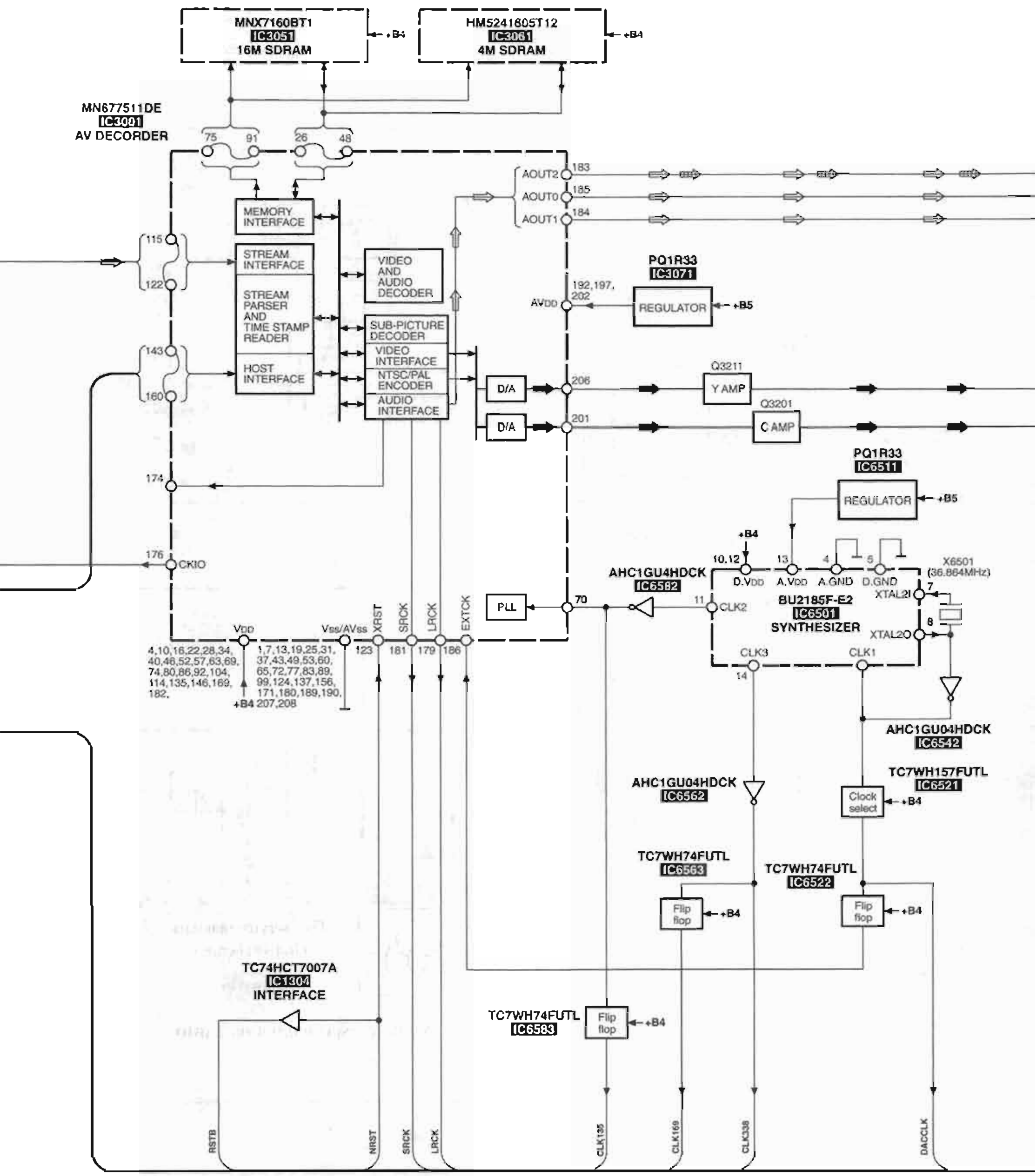
■ Type Illustration of IC's, Transistors and Diodes

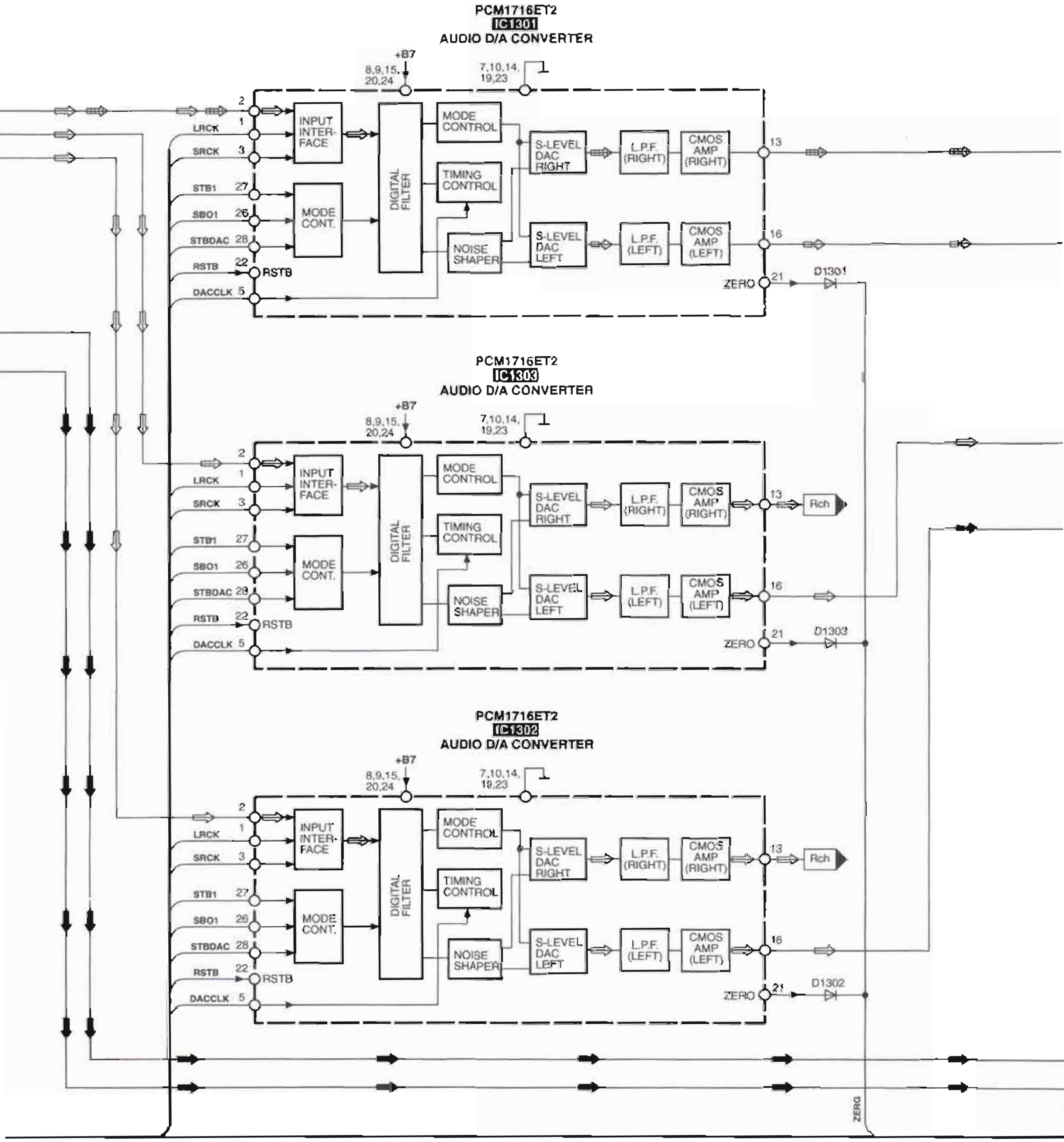


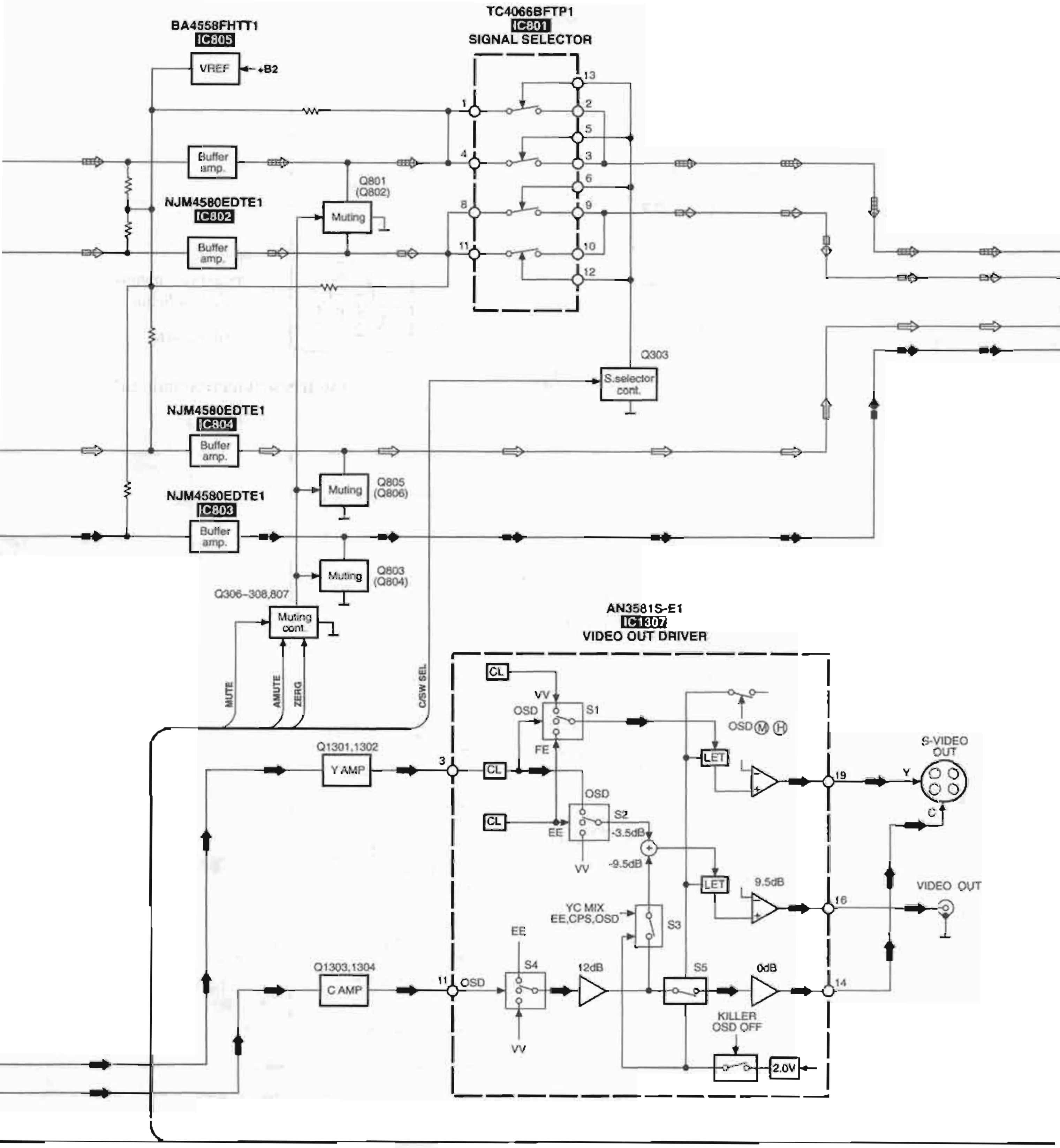
■ Block Diagram

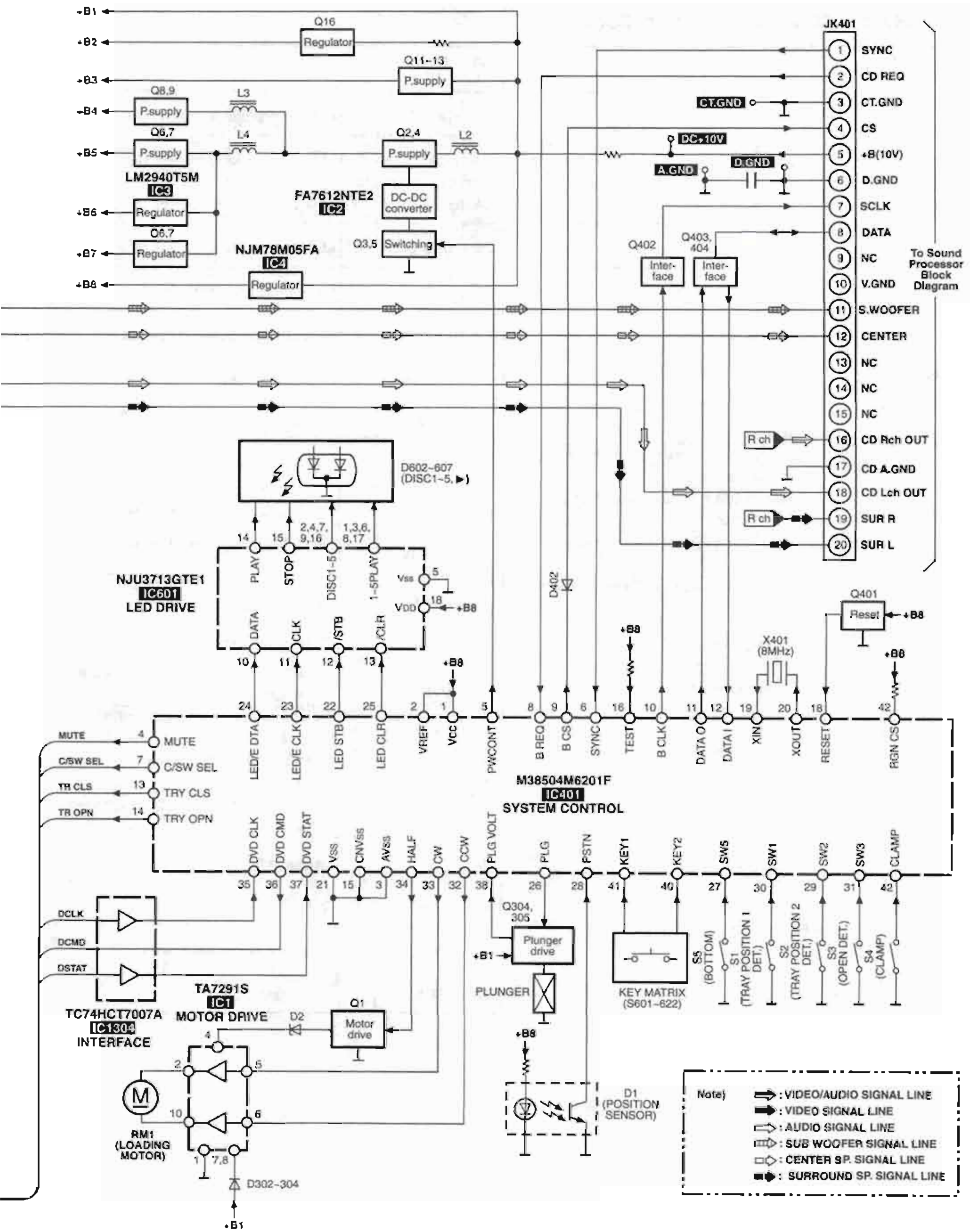



MN67705EA
IC2001
DSC
(DIGITAL SERVO CONTROLLER)
D.VDD A.VDD A.VSS D.VSS
SCLK+
SCLK-
SDAT+
SDAT-
FG
GI06
GI07
GI01
GI012
GI014
PWM3A
PWM3B
GI08
DA5
DAT0
DAT3
SYSCLK
XRESET
ENS
ENC
CPUIRQ
CPUCLK
CPUDTIN
CPUDTOUT
AD4 DA6 DA7 DA8
TRAY-SET1
TRAY-SET2
FGC
SS
BRK
EC
ECR
DRV-MUTE
FODRV
CLK338
NRST
CPSEN
CPCEN
CPUIRQ
SBT1
SBO1
SBI1
TDOFST
TRDRV
TRSDRV-A
TRSDRV-B
MN103007BGA
IC7001
OPTICAL DISC CONTROLLER
CIRC
CD-PRE
DVD-ROM FORMATTER
FORMATTER I/F
SYNDROME & CHIEN
HOST I/F MPEG I/F
ATAPI
DMA
ECC PROCESSOR
MASH
BCU/DRAMC
CGEN
SYSTEM I/F
INTC
5VDD
PVDD
VDD
S.VDD
VSS
PVSS
WAITODC
NINT1
OSCI1
CKIORST
TC7SH32FUTL
IC7302
BUFFER AMP
TC7SH08FUTL
IC7301
BUFFER AMP
X25020S-2R7
IC6303
EEPROM
CLK169
CLK135
SBO1
SBT1
SBI1
OR6311
Reset
NRST
RST596JNR
IC6301
RESET
TC58FVT400FT
IC6302
4M DRAM
CKIORST
IRQ3
RST
A04 A18
AD00 AD15
WAIT
IRQ1
OSCI
SBO1
SBT1
SBI1
AN1
CPSEN
CPCEN
CPUIRQ
SBTDAC
TM7IC
TM2IO
IRQ0
TM7IOB
MN102L25DFA
IC6201
CPU
VSS
VDD
+B4
+B6


MNX7160BT1
IC3051
16M SDRAM
HM5241605T12
IC3061
4M SDRAM
+B4
MN677511DE
IC3001
AV DECORDER
MEMORY INTERFACE
STREAM INTERFACE
STREAM PARSER AND TIME STAMP READER
HOST INTERFACE
VIDEO AND AUDIO DECODER
SUB-PICTURE DECODER
VIDEO INTERFACE
NTSC/PAL ENCODER
AUDIO INTERFACE
AOUT2
AOUT0
AOUT1
AVDD
PQ1R33
IC3071
REGULATOR
+B5
D/A
Q3211
Y AMP
Q3201
C AMP
PQ1R33
IC6511
REGULATOR
CKIO
VDD
VSS/AVSS
XRST
SRCK
LRCK
EXTCK
PLL
4,10,16,22,28,34, 40,46,52,57,63,69, 74,80,86,92,104, 114,135,146,169, 182,
1,7,13,19,25,31, 37,43,49,53,60, 65,72,77,83,89, 99,124,137,156, 171,180,189,190, 207,208
AHC1GU4HDCK
IC6582
D.VDD
A.VDD
A.GND
D.GND
X6501 (36.864MHz)
XTAL2I
XTAL2O
CLK2
BU2185F-E2
IC6501
SYNTHESIZER
CLK3
CLK1
AHC1GU04HDCK
IC6542
TC7WH157FUTL
IC6521
Clock select
AHC1GU04HDCK
IC6562
TC7WH74FUTL
IC6563
TC7WH74FUTL
IC6522
Flip flop
TC74HCT7007A
IC1304
INTERFACE
TC7WH74FUTL
IC6583
RSTB
NRST
SRCK
LRCK
CLK135
CLK169
CLK338
DACCLK


PCM1716ET2
IC1301
AUDIO D/A CONVERTER
+B7
8,9,15, 20,24
7,10,14, 19,23
LRCK
SRCK
STB1
SBO1
STBDAC
RSTB
DACCLK
INPUT INTER-FACE
MODE CONT.
DIGITAL FILTER
MODE CONTROL
TIMING CONTROL
NOISE SHAPER
S-LEVEL DAC RIGHT
S-LEVEL DAC LEFT
L.P.F. (RIGHT)
L.P.F. (LEFT)
CMOS AMP (RIGHT)
CMOS AMP (LEFT)
ZERO
D1301
PCM1716ET2
IC1303
AUDIO D/A CONVERTER
Rch
D1303
PCM1716ET2
IC1302
AUDIO D/A CONVERTER
D1302
ZERO


BA4558FHTT1
IC805
VREF
+B2
TC4066BFTP1
IC801
SIGNAL SELECTOR
Buffer amp.
NJM4580EDTE1
IC802
Q801 (Q802)
Muting
Q303
S.selector cont.
NJM4580EDTE1
IC804
Q805 (Q806)
NJM4580EDTE1
IC803
Q803 (Q804)
Q306~308,807
Muting cont.
MUTE
AMUTE
ZERG
C/SW SEL
AN3581S-E1
IC1307
VIDEO OUT DRIVER
Q1301,1302
Y AMP
Q1303,1304
C AMP
CL
VV
OSD
FE
S1
EE
S2
-3.5dB
-9.5dB
OSD (M) (H)
LET
9.5dB
YC MIX
EE,CPS,OSD
S3
S4
12dB
S5
0dB
KILLER
OSD OFF
2.0V
S-VIDEO OUT
Y
C
VIDEO OUT



Q16
Regulator
Q11~13
P.supply
Q8,9
P.supply
L3
Q6,7
P.supply
L4
Q2,4
P.supply
L2
LM2940T5M
IC3
Regulator
FA7612NTE2
IC2
DC-DC converter
Q3,5
Switching
NJM78M05FA
IC4
Regulator
+B1
+B2
+B3
+B4
+B5
+B6
+B7
+B8
JK401
SYNC
CD REQ
CT.GND
CS
+B(10V)
D.GND
SCLK
DATA
NC
V.GND
S.WOOFER
CENTER
NC
NC
NC
CD Rch OUT
CD A.GND
CD Lch OUT
SUR R
SUR L
To Sound Processor Block Diagram
DC+10V
A.GND
D.GND
Q402
Interface
Q403, 404
Interface
R ch
D602~607 (DISC1~5, ▶)
NJU3713GTE1
IC601
LED DRIVE
PLAY
STOP
DISC1~5
1~5PLAY
DATA
CLK
/STB
/CLR
Vss
VDD
D402
Q401
Reset
X401 (8MHz)
M38504M6201F
IC401
SYSTEM CONTROL
LED/E DTA
LED/E CLK
LED STB
LED CLR
VREF
Vcc
PWCONT
B REQ
B CS
SYNC
TEST
B CLK
DATA O
DATA I
XIN
XOUT
RESET
RGN CS
MUTE
C/SW SEL
TRY CLS
TRY OPN
TR CLS
TR OPN
DVD CLK
DVD CMD
DVD STAT
Vss
CNVss
AVss
HALF
CW
CCW
PLG VOLT
PLG
PSTN
KEY1
KEY2
SW5
SW1
SW2
SW3
CLAMP
DCLK
DCMD
DSTAT
TC74HCT7007A
IC1304
INTERFACE
TA7291S
IC1
MOTOR DRIVE
D2
Q1
Motor drive
RM1 (LOADING MOTOR)
D302~304
Q304, 305
Plunger drive
PLUNGER
D1 (POSITION SENSOR)
KEY MATRIX (S601~622)
S5 (BOTTOM)
S1 (TRAY POSITION 1 DET.)
S2 (TRAY POSITION 2 DET.)
S3 (OPEN DET.)
S4 (CLAMP)
Note)
: VIDEO/AUDIO SIGNAL LINE
: VIDEO SIGNAL LINE
: AUDIO SIGNAL LINE
: SUB WOOFER SIGNAL LINE
: CENTER SP. SIGNAL LINE
: SURROUND SP. SIGNAL LINE

■ Terminal Function of IC's

● IC401 (M38504M6201F) : System Control

Pin No.	Terminal Name	I/O	Function
1	Vcc	I	Power supply terminal
2	VREF	I	Reference voltage input
3	AVss	–	GND terminal
4	MUTE	O	Muting control signal output
5	PWCONT	O	DVD module power control signal output
6	SYNC	I	Power failure detect signal input
7	C/SW SEL	O	Center/Sub woofer speaker select signal output
8	B REQ	I	Serial communication signal to Sound Processor (Request signal input)
9	B CS	O	Serial communication signal to Sound Processor (Chip select signal output)
10	B CLK	O	Serial communication signal to Sound Processor (Clock signal output)
11	DATA O	O	Serial communication signal to Sound Processor (Data signal output)
12	DATA I	I	Serial communication signal to Sound Processor (Data signal input)
13	TRY CLS	O	Tray close signal output
14	TRY OPN	O	Tray open signal input
15	CNVss	–	Connected to Vss
16	TEST	I	Test mode signal input
17	E CS	–	EEPROM serial communication signal (Not used)
18	RESET	I	Reset signal input
19	XIN	I	Oscillator connected terminal (8 MHz)
20	XOUT	O	
21	Vss	–	GND terminal

Pin No.	Terminal Name	I/O	Function
22	LED STB	O	LED drive signal output (strobe)
23	LED/E CLK	O	LED drive signal output (clock)
24	LED/E DATA	O	LED drive signal output (data)
25	LED CLR	O	LED drive signal output (clear)
26	PLG	O	Plunger control signal output
27	SW5	I	Bottom switch detect signal input
28	PSTN	I	Position sensor detect signal input
29	SW2	I	Disc tray position 2 detect signal input
30	SW1	I	Disc tray position 1 detect signal input
31	SW3	I	Disc tray open detect signal input
32	CCW	O	Motor drive control signal output (forward direction)
33	CW	O	Motor drive control signal output (reverse direction)
34	HALH	O	Motor drive control signal output (speed)
35	DVD CLK	I	Serial communication signal to DVD module (clock signal input)
36	DVD CMD	O	Serial communication signal to DVD module (command signal output)
37	DVD STAT	I	Serial communication signal to DVD module (status signal input)
38	PLG VOLT	I	Plunger voltage unusual condition detect signal input
39	SW4	I	Clump switch detect signal input
40	KEY2	I	Operation key signal input
41	KEY1	I	Operation key signal input
42	RGN CS	I	Area select signal input

■ Abbreviations

INITIAL/LOGO		ABBREVIATIONS
A	A0~UP	ADDRESS
	ACLK	AUDIO CLOCK
	AD0~UP	ADDRESS BUS
	ADATA	AUDIO PES PACKET DATA
	ALE	ADDRESS LATCH ENABLE
	AMUTE	AUDIO MUTE
	AREQ	AUDIO PES PACKET REQUEST
	ARF	AUDIO RF
	ASI	SERVO AMP INVERTED INPUT
	ASO	SERVO AMP OUTPUT
	ASYNC	AUDIO WORD DISTINCTION SYNC
B	BCK	BIT CLOCK (PCM)
	BCKIN	BIT CLOCK INPUT
	BDO	BLACK DROP OUT
	BLKCK	SUB CODE BLOCK CLOCK
	BOTTOM	CAP. FOR BOTTOM HOLD
	BYP	BYPATH
	BYTCK	BYTE CLOCK
C	CAV	CONSTANT ANGULAR VELOCITY
	CBDO	CAP. BLACK DROP OUT
	CD	COMPACT DISC
	CDSCK	CD SERIAL DATA CLOCK
	CDSRDATA	CD SERIAL DATA
	CDRF	CD RF (EFM) SIGNAL
	CDV	COMPACT DISC-VIDEO
	CHNDATA	CHANNEL DATA
	CKSL	SYSTEM CLOCK SELECT
	CLV	CONSTANT LINEAR VELOCITY
	COFTR	CAP. OFF TRACK
	CPA	CPU ADDRESS
	CPCS	CPU CHIP SELECT
	CPDT	CPU DATA
	CPUADR	CPU ADDRESS LATCH
	CPUADT	CPU ADDRESS DATA BUS
	CPUIRQ	CPU INTERRUPT REQUEST
	CPRD	CPU READ ENABLE
	CPWR	CPU WRITE ENABLE
	CS	CHIP SELECT
	CSYNCIN	COMPOSITE SYNC IN
	CSYNCOUT	COMPOSITE SYNC OUT
D	DACCK	D/A CONVERTER CLOCK
	DEEMP	DEEMPHASIS BIT ON/OFF
	DEMPH	DEEMPHASIS SWITCHING
	DIG0~UP	FL DIGIT OUTPUT
	DIN	DATA INPUT
	DMSRCK	DM SERIAL DATA READ CLOCK
	DMUTE	DIGITAL MUTE CONTROL
	DO	DROP OUT
	DOUT0~UP	DATA OUTPUT
	DRF	DATA SLICE RF (BIAS)
	DRPOUT	DROP OUT SIGNAL
	DREQ	DATA REQUEST
	DRESP	DATA RESPONSE
	DSC	DIGITAL SERVO CONTROLLER
	DSLF	DATA SLICE LOOP FILTER
	DVD	DIGITAL VIDEO DISC
E	EC	ERROR TORQUE CONTROL
	ECR	ERROR TORQUE CONTROL REFERENCE
	ENCSEL	ENCODER SELECT
	ETMCLK	EXTERNAL M CLOCK (81MHz/40.5MHz)
	ETSCLK	EXTERNAL S CLOCK (54MHz)
F	FBAL	FOCUS BALANCE
	FCLK	FRAME CLOCK
	FE	FOCUS ERROR
	FFI	FOCUS ERROR AMP INVERTED INPUT
	FEO	FOCUS ERROR AMP OUTPUT
	FG	FREQUENCY GENERATOR
	FSC	FREQUENCY SUB CARRIER
	FSCK	FS (384 OVER SAMPLING) CLOCK
G	GND	COMMON GROUNDING (EARTH)
H	HA0~UP	HOST ADDRESS
	HD0~UP	HOST DATA
	HINT	HOST INTERRUPT
	HRXW	HOST READ/WRITE
I	IECOUT	IEC958 FORMAT DATA OUTPUT
	IPFLAG	INTERPOLATION FLAG
	IREF	I (CURRENT) REFERENCE
	ISEL	INTERFACE MODE SELECT
L	LDON	LASER DIODE CONTROL
	LPC	LASER POWER CONTROL
	LRCK	L CH/R CH DISTINCTION CLOCK
M	MA0~UP	MEMORY ADDRESS
	MCK	MEMORY CLOCK
	MCKI	MEMORY CLOCK INPUT
	MCLK	MEMORY SERIAL COMMAND CLOCK
	MDATA	MEMORY SERIAL COMMAND DATA
	MDQ0~UP	MEMORY DATA INPUT/OUTPUT
	MDQM	MEMORY DATA I/O MASK
	MLD	MEMORY SERIAL COMMAND LOAD
	MPEG	MOVING PICTURE EXPERTS GROUP
O	ODC	OPTICAL DISC CONTROLLER
	OFTR	OFF TRACKING
	OSCI	OSCILLATOR INPUT
	OSCO	OSCILLATOR OUTPUT
	OSD	ON SCREEN DISPLAY
P	P1~UP	PORT
	PCD	CD TRACKING PHASE DIFFERENCE
	PCK	PLL CLOCK
	PDVD	DVD TRACKING PHASE DIFFERENCE
	PEAK	CAP. FOR PEAK HOLD
	PLLCLK	CHANNEL PLL CLOCK
	PLLOK	PLL LOCK

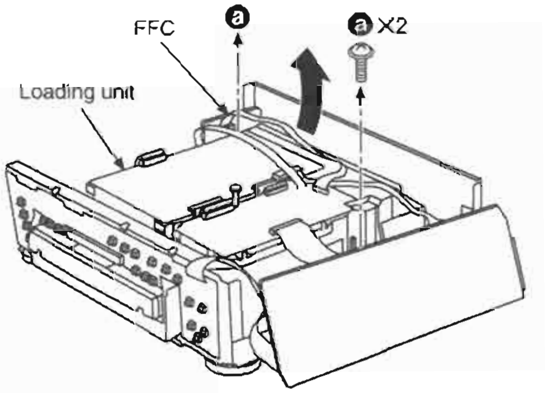
INITIAL/LOGO		ABBREVIATIONS
	PWMCTL	PWM OUTPUT CONTROL
	PWMDA	PULSE WAVE MOTOR DRIVE A
	PWMOA, B	PULSE WAVE MOTOR OUT A, B
R	RE	READ ENABLE
	RFENV	RF ENVELOPE
	RFO	RF PHASE DIFFERENCE OUTPUT
	RS	(CD-ROM) REGISTER SELECT
	RSEL	RF POLARITY SELECT
	RST	RESET
	RSV	RESERVE
S	SBI0, 1	SERIAL DATA INPUT
	SBO0	SERIAL DATA OUTPUT
	SBT0, 1	SERIAL CLOCK
	SCK	SERIAL DATA CLOCK
	SCKR	AUDIO SERIAL CLOCK RECEIVER
	SCL	SERIAL CLOCK
	SCLK	SERIAL CLOCK
	SDA	SERIAL DATA
	SEG0~UP	FL SEGMENT OUTPUT
	SELCLK	SELECT CLOCK
	SEN	SERIAL PORT ENABLE
	SIN1, 2	SERIAL DATA IN
	SOUT1, 2	SERIAL DATA OUT
	SPDI	SERIAL PORT DATA INPUT
	SPDO	SERIAL PORT DATA OUTPUT
	SPEN	SERIAL PORT R/W ENABLE
	SPRCLK	SERIAL PORT READ CLOCK
	SPWCLK	SERIAL PORT WRITE CLOCK
	SQCK	SUB CODE Q CLOCK
	SQCX	SUB CODE Q DATA READ CLOCK
	SRDATA	SERIAL DATA
	SRMADR	SRAM ADDRESS BUS
	SRMDT0~7	SRAM DATA BUS 0~7
	SS	START/STOP
	STAT	STATUS
	STCLK	STREAM DATA CLOCK
	STD0~UP	STREAM DATA
	STENABLE	STREAM DATA INPUT ENABLE
	STSEL	STREAM DATA POLARITY SELECT
	STVALID	STREAM DATA VALIDITY
	SUBC	SUB CODE SERIAL
	SBCK	SUB CODE CLOCK
	SUBQ	SUB CODE Q DATA
	SYSCLK	SYSTEM CLOCK
T	TE	TRACKING ERROR
	TIBAL	BALANCE CONTROL
	TID	BALANCE OUTPUT 1
	TIN	BALANCE INPUT
	TIP	BALANCE INPUT
	TIS	BALANCE OUTPUT 2
	TPSN	OP AMP INPUT
	TPSO	OP AMP OUTPUT
	TPSP	OP AMP INVERTED INPUT
	TRCRS	TRACK CROSS SIGNAL
	TRON	TRACKING ON
	TRSON	TRAVERSE SERVO ON
V	VBLANK	V BLANKING
	VCC	COLLECTOR POWER SUPPLY VOLTAGE
	VCDCONT	VIDEO CD CONTROL (TRACKING BALANCE)
	VDD	DRAIN POWER SUPPLY VOLTAGE
	VFB	VIDEO FEED BACK
	VREF	VOLTAGE REFERENCE
	VSS	SOURCE POWER SUPPLY VOLTAGE
W	WAIT	BUS CYCLE WAIT
	WDCK	WORD CLOCK
	WEH	WRITE ENABLE HIGH
	WSR	WORD SELECT RECEIVER
X	X	X' TAL
	XALE	X ADDRESS LATCH ENABLE
	XAREQ	X AUDIO DATA REQUEST
	XCDROM	X CD ROM CHIP SELECT
	XCS	X CHIP SELECT
	XCSYNC	X COMPOSITE SYNC
	XDS	X DATA STROBE
	XHSYNCO	X HORIZONTAL SYNC OUTPUT
	XHINT	XH INTERRUPT REQUEST
	XI	X' TAL OSCILLATOR INPUT
	XINT	X INTERRUPT
	XMW	X MEMORY WRITE ENABLE
	XO	X' TAL OSCILLATOR OUTPUT
	XRE	X READ ENABLE
	XSRMCE	X SRAM CHIP ENABLE
	XSRMOE	X SRAM OUTPUT ENABLE
	XSRMWE	X SRAM WRITE ENABLE
	XVCS	X V-DEC CHIP SELECT
	XVDS	X V-DEC CONTROL BUS STROBE
	XVSYNCO	X VERTICAL SYNC OUTPUT

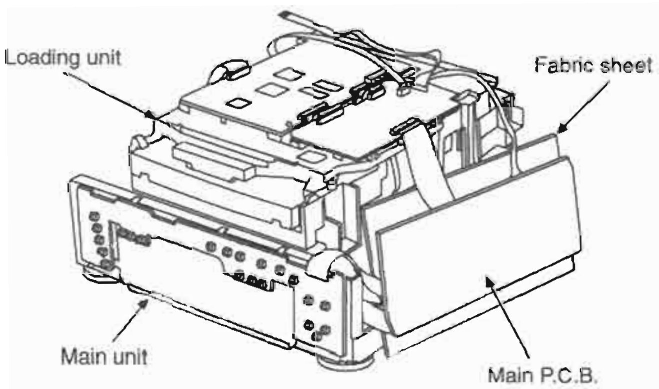
■ Optical Pickup Tilt Adjustment

Preparation for optical pickup dump adjustment

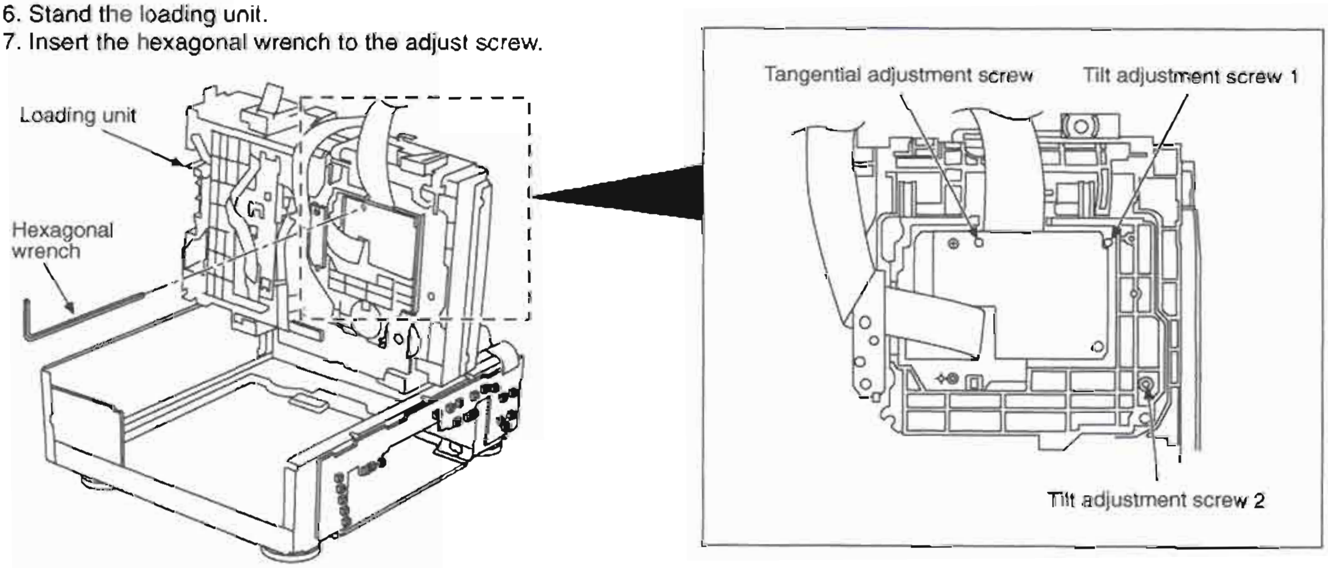
- Perform the procedure Step 1 ~ Step 11 in item 1 of "Disassembly procedure for operation check of each P.C.B..".

1. Remove the 2 screws (ⓐ).
2. Remove the FFC from the connector (CN501).
3. Remove the loading unit.
4. Locate the loading unit on the main unit.
5. Place the fabric sheet to insulate the back side of main P.C.B.

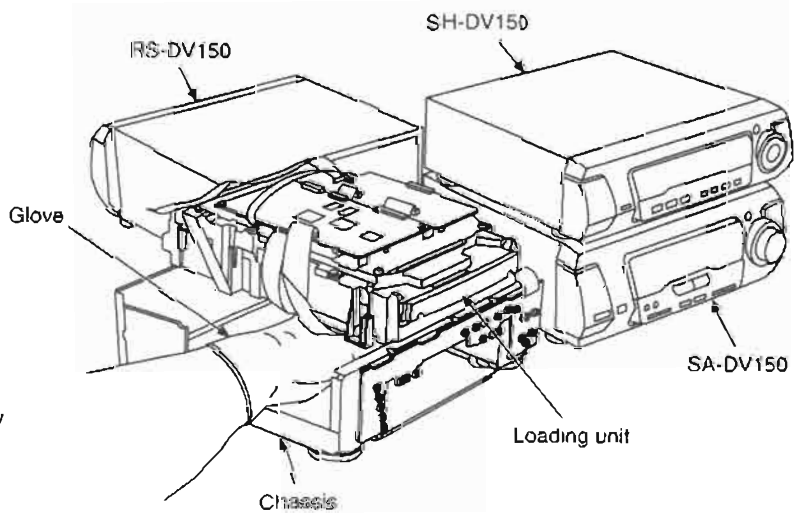




6. Stand the loading unit.
7. Insert the hexagonal wrench to the adjust screw.



8. Restore the loading unit horizontally.
9. Connect the unit to other units (SH-DV150, SA-DV150 and RS-DV150) with cables.
10. Insert the hand into the unit to rotate the hexagonal screw for adjustment.



NOTE

Use care in handling unit to avoid possible injury to hand from the edge of chassis.
Be sure to use the glove when servicing.

Measurement point	Adjustment point	Mode	Disc
Main unit service display	Tangential adjustment screw Tilt adjustment screw	T1 (inner periphery) play T43 (outer periphery) play	DVDT-S15 or DVDT-S01

Measuring equipment, tools	Adjustment value
Hex wrench (part number: JZS0100) Screw lock (part number: RZZ0L01)	Adjust to the minimum jitter value.

Start

- •Replaced the optical pickup.
- •Replaced the spindle motor.
- •Replaced the peripheral parts of the optical pickup, etc.

STEP1

Press the "5" button on the remote control unit while pressing the "STOP" button on the player.

STEP2

Tuner/Amplifier display
Check to see that "JIT xxx" is displayed.
Present jitter value.

STEP3

Play test disc title 1
(inner periphery)
Tangential adjustment screw
Adjust to the minimum jitter value.

Do steps 3-5 from the bottom of the loading unit using a hex wrench.

STEP4

Play test disc title 43
(outer periphery)
Tilt adjustment screw 1
Adjust to the minimum jitter value.

STEP5

Play test disc title 43
(outer periphery)
Tilt adjustment screw 2
Adjust to the minimum jitter value.

Repeat adjusting tilt adjustment screws 1 and 2 alternately, two or three times.

STEP6

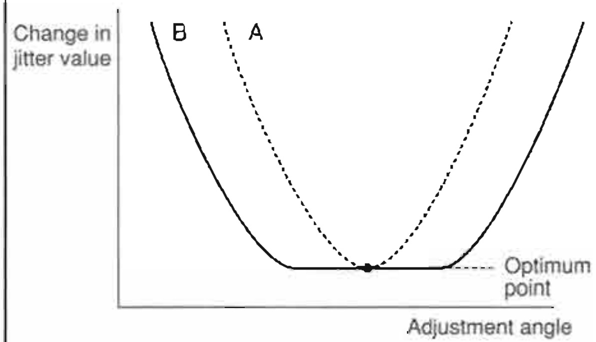
Check condition after adjustment

NG

OK

Play the disc to make sure there is no picture degradration in the inner, middle and outer peripheries, and no audio skipping.

STEP7



•Jitter value depends on the model:
(1) If the jitter value changes like A, the optimum point is easy to find.
(2) If the jitter value changes like B, set the optimum point near the middle.

STEP6

STEP7

Pull out the traverse unit.
(Refer to Operation Checks and Component Replacement Procedures)

STEP8

Lock the adjustment screw in position using screw lock (part number: RZZ0L01).

STEP9

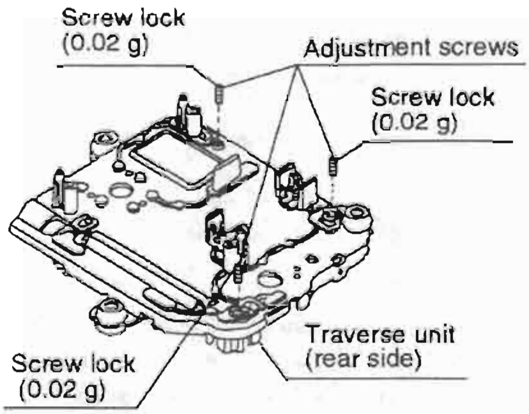
Assemble the main unit.

STEP10

Follow procedure for handling after repairs are completed.

With the power supply turned on:
1. Use the OPEN/CLOSE button to close the tray.
2. Use the POWER button to turn off the power.
3. Disconnect the power plug from the outlet.

End



Notes

- Adjustment is generally unnecessary after replacing other parts of traverse unit. However, adjust if there is a noticeable degradation in picture quality.
- Optical adjustments cannot be made inside the optical pickup.
- Adjustment is generally unnecessary after replacing the traverse unit.

■ To Supply Power Source

Cautions:
- It is very dangerous to look at or touch the laser beam. (Laser radiation is invisible.) With the unit turned "on", laser radiation is emitted from the pickup lens.
- Avoid exposure to the laser beam, especially when performing adjustments.

This unit SL-DV150 is designed to operate on power supplied from the system connected. (For system connection, refer to Fig.1)

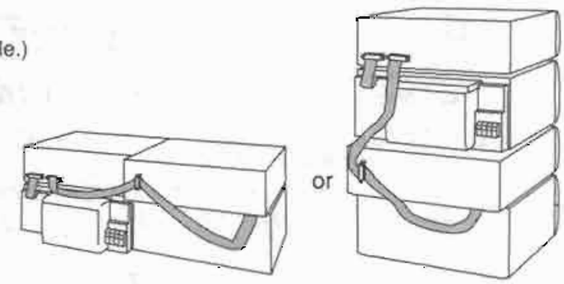


Fig. 1

When the unit SL-DV150 has to test and service alone, use the following method to supply power source.

1. Short **JK1-3 pin, JK1-6 pin, JK1-10 pin** and **JK1-17 pin.** **A** (Refer to Fig. 2)
2. Connect a DC power supply to **JK1-5 pin** and **A**. Then adjust the output to 10 V. (Refer to Fig. 3)

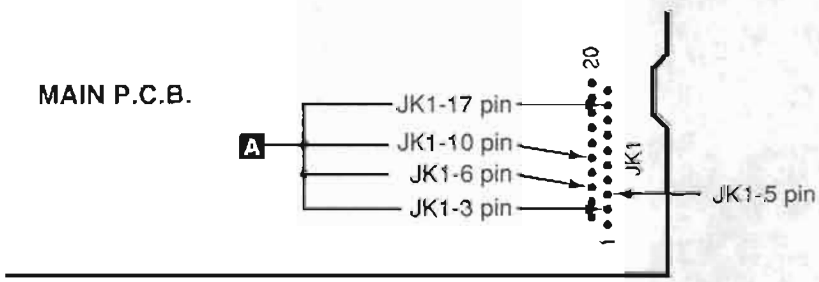


Fig. 2

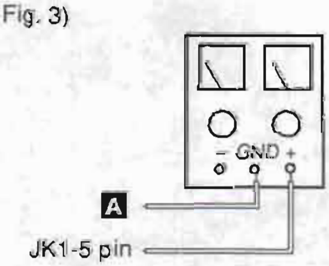


Fig. 3

Notes: Use only this method when checking the voltage etc..
In case of checking operations, use the system connections to supply power source.

■ Electrical Adjustment

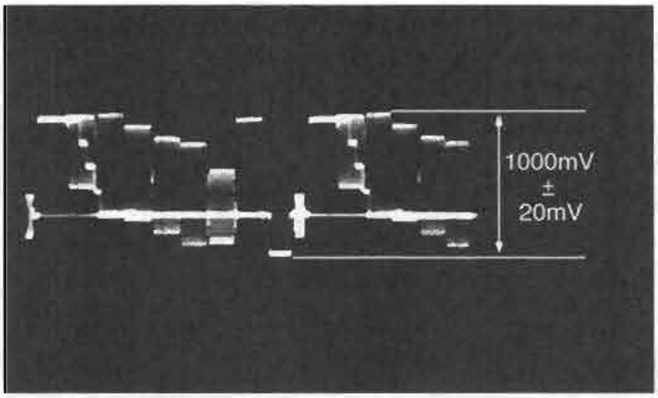
•Video Output (Luminance Signal) Adjustment

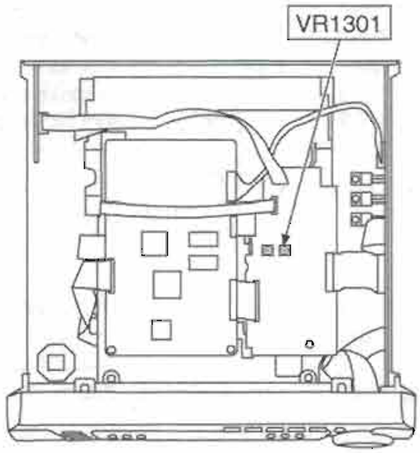
Do this adjustment after replacing a P.C.B.

Measurement point	Adjustment point	Mode	Disc
Video output terminal	VR1301 (DAC P.C.B.)	Color bar 75 % PLAY (Title 46):DVDT-S15 PLAY (Title 10):DVDT-S01	DVDT-S15 or DVDT-S01
Measuring equipment, tools		Adjustment value	
Screwdriver, Oscilloscope 200mV/div, 10μsec/div		1000mVp-p±20mV	

Purpose: To maintain video signal output compatibility.

1. Connect the oscilloscope to the video output terminal and terminate at 75 ohms.
2. Adjust **VR1301** so that the luminance signal (Y+S) level becomes 1000 mVp-p±20 mV.





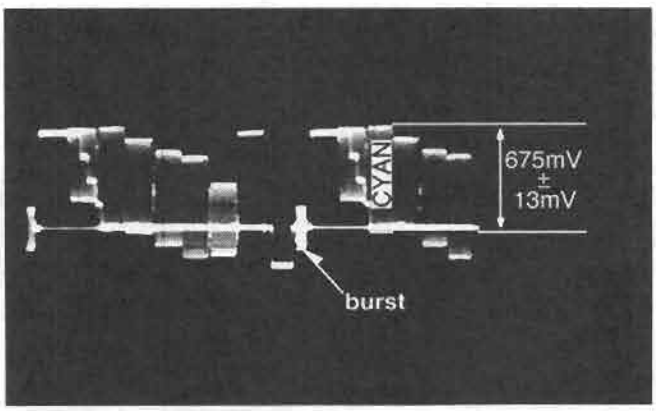
•Video Output (Chrominance Signal) Adjustment

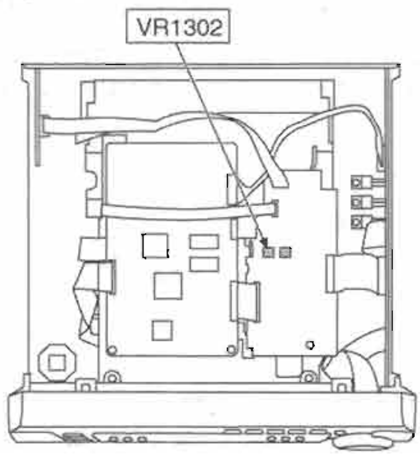
Do this adjustment after replacing a P.C.B.

Measurement point	Adjustment point	Mode	Disc
Video output terminal	VR1302 (DAC P.C.B.)	Color bar 75 % PLAY (Title 46):DVDT-S15 PLAY (Title 10):DVDT-S01	DVDT-S15 or DVDT-S01
Measuring equipment, tools		Adjustment value	
Screwdriver, Oscilloscope 200mV/div, 10μsec/div		675mVp-p±13mV	

Purpose: To maintain video signal output compatibility.

1. Connect the oscilloscope to the video output terminal and terminate at 75 ohms.
2. Adjust **VR1302** so that the Chrominance signal (C) level becomes 675 mVp-p±13 mV.





■ 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 manufacture's specified parts shown in the parts list.

* All parts are supplied by MESA.
* The <ODSD> mark in Remarks indicates source of supply.
* The marking (RTL) indicates that the Retention Time is Limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependent on the type of assembly, and in accordance with the laws governing part and product retention. After the end of period, the assembly will no longer be available.

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
1	RKM0399-S	TOP CABINET	1	
2	RHD30007-S	SCREW	4	
3	XTBS3+8JFZ1	SCREW	1	
4	RYF0521-S	CD LID ASS'Y	1	
5	RKA0105-K	RUBBER	4	
6	RKA0106-N	FOOT RING	4	
7	RYP0896A-S	FRONT PANEL	1	
7-1	RGB0025-A	TECHNICS BADGE	1	
8	XTBS3+8JFZ1	SCREW	5	
9	XTB3+8JFZ	SCREW	3	
10	XTW3+8T	SCREW	2	
11	RHD30078	SCREW	3	
12	XTB3+8JFZ	SCREW	2	
13	REX0970	WIRE ASS'Y	1	
14	REZ1221	FFC(26P)	1	
15	REZ1222	FFC(26P)	1	
16	REZ1223	FFC(15P)	1	
17	REZ1224	FFC(7P)	1	
18	REZ1225	FFC(14P)	1	
19	REZ1198	FFC(17P)	1	
20	REZ1220	FFC(21P)	1	
21	XTW3+10T	SCREW	4	
22	XTB3+8JFZ	SCREW	1	
		Electric parts except for module P.C.B.		
C1	ECEA1CKS101	16V 100U	1	
C2	ECBT1E103ZF	25V 0.01U	1	
C3	RCE0JSA470IX	6.3V 47U	1	
C4	ECUV1H104ZFN	50V 0.1U	1	
C5	ECUV1H103KBN	50V 0.01U	1	
C6	ECEA1HKS2R2	50V 2.2U	1	
C7	ECA1CM471	16V 470U	1	
C8	ECUV1H102KBN	50V 1000P	1	
C9	ECA1CM332	16V 3300U	1	
C10	ECUV1H102KBN	50V 1000P	1	
C11	RCE0JKA470IG	6.3V 47U	1	
C12	ECUV1H102KBN	50V 1000P	1	
C13	ECUV1H103KBN	50V 0.01U	1	
C14	ECEA1AKS101	10V 100U	1	
C15	ECEA1AKS221	6.3V 220U	1	
C16	ECEA1AKS101	10V 100U	1	
C19	ECUV1H102KBN	50V 1000P	1	
C20	RCE1AKA470IG	10V 47U	1	
C21	ECUV1H102KBN	50V 1000P	1	
C22	RCE0JKA470IG	6.3V 47U	1	
C23	RCE1AKA470IG	10V 47U	1	
C24	ECUV1H102KBN	50V 1000P	1	
C25,26	ECEA1CKS100	16V 10U	2	
C27	ECUV1C474ZFN	16V 0.47U	1	
C28	ECUV1H104ZFN	50V 0.1U	1	
C29	ECUV1H103KBN	50V 0.01U	1	
C30	ECUV1H102KBN	50V 1000P	1	
C305,06	ECUV1H103KBN	50V 0.01U	2	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C308	ECEA1HKS010	50V 1U	1	
C401	RCE0JKA470IG	6.3V 47U	1	
C402	ECEA1HKS3R3	50V 3.3U	1	
C403	ECUV1H103KBN	50V 0.01U	1	
C404	ECUV1H102KBN	50V 1000P	1	
C405	ECUV1H104ZFN	50V 0.1U	1	
C406	RCE0JKA470IG	6.3V 47U	1	
C407	ECUV1H101JCN	50V 100P	1	
C408,09	ECUV1H471JCN	50V 470P	2	
C410	ECUV1H101JCN	50V 100P	1	
C411,12	ECUV1H104ZFN	50V 0.1U	2	
C501,02	ECUV1H103KBN	50V 0.01U	2	
C601-04	ECUV1H101JCN	50V 100P	4	
C605	ECUV1H104ZFN	50V 0.1U	1	
C801,02	ECEA1CKS100	16V 10U	2	
C803,04	ECUV1H471JCN	50V 470P	2	
C805,06	ECUV1H470JCN	50V 47P	2	
C807	RCE0JKA470IG	6.3V 47U	1	
C808	ECUV1H104ZFN	50V 0.1U	1	
C809,10	ECEA1CKS220	16V 22U	2	
C811,12	ECUV1H222KBN	50V 2200P	2	
C813-16	ECEA1CKS100	16V 10U	4	
C817	ECUV1H104ZFN	50V 0.1U	1	
C818	RCE0JKA470IG	6.3V 47U	1	
C819	ECEA1AKS101	10V 100U	1	
C821,22	ECEA1CKS100	16V 10U	2	
C823,24	ECUV1H471JCN	50V 470P	2	
C825,26	ECUV1H470JCN	50V 47P	2	
C827	RCE0JKA470IG	6.3V 47U	1	
C828	ECUV1H104ZFN	50V 0.1U	1	
C829,30	RCE0JKA470IG	6.3V 47U	2	
C831,32	ECUV1H222KBN	50V 2200P	2	
C833,34	RCE0JKA470IG	6.3V 47U	2	
C835,36	ECEA1CKS100	16V 10U	2	
C837,38	ECUV1H471JCN	50V 470P	2	
C839,40	ECUV1H470JCN	50V 47P	2	
C841	RCE0JKA470IG	6.3V 47U	1	
C842	ECUV1H104ZFN	50V 0.1U	1	
C843,44	RCE0JKA470IG	6.3V 47U	2	
C845,46	ECUV1H222KBN	50V 2200P	2	
C847-49	RCE0JKA470IG	6.3V 47U	3	
C1301	ECUV1H104ZFN	50V 0.1U	1	
C1302	ECEA1CKS100	16V 10U	1	
C1303,04	ECUV1H101JCN	50V 100P	2	
C1305	ECUV1H104ZFN	50V 0.1U	1	
C1306	ECEA1CKS100	16V 10U	1	
C1307	ECUV1H104ZFN	50V 0.1U	1	
C1308	ECEA0JKS331	6.3V 330	1	
C1309	ECUV1H104ZFN	50V 0.1U	1	
C1310	ECEA1CKS100	16V 10U	1	
C1311,12	ECUV1H101JCN	50V 100P	2	
C1313	ECUV1H104ZFN	50V 0.1U	1	
C1314	ECEA1CKS100	16V 10U	1	
C1315	ECUV1H104ZFN	50V 0.1U	1	
C1316	ECEA0JKS331	6.3V 330	1	
C1317	ECUV1H104ZFN	50V 0.1U	1	
C1318	ECEA1CKS100	16V 10U	1	
C1319,20	ECUV1H101JCN	50V 100P	2	
C1321,22	ECUV1H104ZFN	50V 0.1U	2	
C1323	ECEA0JKS331	6.3V 330	1	
C1324	ECUV1H104ZFN	50V 0.1U	1	
C1325	ECEA1CKS100	16V 10U	1	
C1326,27	ECUV1H104ZFN	50V 0.1U	2	
C1328-30	ECUV1H103KBN	50V 0.01U	3	
C1332	ECUV1H104ZFN	50V 0.1U	1	
C1333,34	ECUV1H103KBN	50V 0.01U	2	
C1335	ECEA0JKS101	6.3V 100U	1	
C1336,37	ECUV1H103KBN	50V 0.01U	2	
C1338	ECEA0JKS101	6.3V 100U	1	
C1339	RCE0JKA470IG	6.3V 47U	1	
C1341	ECEA1CKS100	16V 10U	1	
C1342	ECEA0JKS331	6.3V 330	1	
C1343	ECEA1CKS100	16V 10U	1	
C1344	ECEA0JKS331	6.3V 330	1	
C1345	ECUV1H103KBN	50V 0.01U	1	
C1346	ECEA1AKS221	6.3V 220U	1	
C1347,48	ECUV1H103KBN	50V 0.01U	2	
C1349,50	ECEA0JKS331	6.3V 330	2	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C1351	ECUV1H102KBN	50V 1000P	1	
CN1	RJS1A9414	CONNECTOR(14P)	1	
CN2	RJP10G17ZA	CONNECTOR(10P)	1	
CN3	RJS1A6714	CONNECTOR(14P)	1	
CN301	RJS2A5726	CONNECTOR(26P)	1	
CN501	RJS6T7ZA	CONNECTOR(6P)	1	
CN1301	RJS2A5615	CONNECTOR(15P)	1	
CN1302	RJS2A5626	CONNECTOR(26P)	1	
CN1303	RJS7Q11ZA	CONNECTOR(7P)	1	
CN1304	RJS2A5726	CONNECTOR(26P)	1	
CN1351	RJS2A5621	CONNECTOR(21P)	1	
CN1352	RJS2A5721	CONNECTOR(21P)	1	
D1	GP1S94	DIODE	1	
D2	MTZJ4R7B	DIODE	1	
D3,D4	MA111TX	DIODE	2	
D5	SFPB-72V	DIODE	1	
D6-D8	MA111TX	DIODE	3	
D10	MA111TX	DIODE	1	
D11	MA8091MTX	DIODE	1	
D12,13	MA111TX	DIODE	2	
⚠ D14	MA8082M	DIODE	1	
D15-18	MA111TX	DIODE	4	
D301	MA111TX	DIODE	1	
D302-04	RL1N4003N02	DIODE	3	
D305-07	MA111TX	DIODE	3	
D401-06	MA111TX	DIODE	6	
D602-07	SML79455C	LED	6	
D801-06	MA111TX	DIODE	6	
D1301-04	MA111TX	DIODE	4	
IC1	TA7291P	IC	1	
IC2	FA7612NTE2	IC	1	
⚠ IC3	LM2940T5	IC	1	
⚠ IC4	NJM78M05FA	IC	1	
IC401	M38504M6201F	IC	1	
IC601	NJU3713GTE1	IC	1	
IC801	TC4066BFTP1	IC	1	
IC802-04	NJM4580EDTE1	IC	3	
IC805	BA4558FHTT1	IC	1	
IC1301-03	PCM1716ET2	IC	3	
IC1304	TC74HCT7007A	IC	1	
IC1307	AN3581S-E1	IC	1	
JK1	RJT065K20	JACK,SYSTEM CONNECTOR(20P)	1	
JK501	SJS9418-1	JACK	1	
JK502	SJFD7-6	JACK	1	
L1	RLQX360M-T	COIL	1	
L2-L4	RLL500050T-Y	COIL	3	
L1301	RLBN102V-Y	COIL	1	
L1303	RLBN601V-W	COIL	1	
L1304-06	ELESN330KA	COIL,CHOKE	3	
L1351	RLBN601V-W	COIL	1	
PCB1	REP2844B-M	MAIN PCB	1	(RTL)
PCB2	REP2832AB-N	RELAY PCB	1	(RTL)
PCB3	REP2832AA-N	D/A PCB	1	(RTL)
Q1	RVTDTC143EST	TRANSISTOR	1	
Q2	2SA1896STTD	TRANSISTOR	1	
Q3	DTC114EUA106	TRANSISTOR	1	
Q4	2SA1896STTD	TRANSISTOR	1	
Q5	DTC114EUA106	TRANSISTOR	1	
Q6	FMW1T98	TRANSISTOR	1	
Q7	2SB1548PQAU	TRANSISTOR	1	
Q8	FMW1T98	TRANSISTOR	1	
Q9	2SB1548PQAU	TRANSISTOR	1	
Q11	FMW1T98	TRANSISTOR	1	
Q12	2SB1548PQAU	TRANSISTOR	1	
Q13	2SB1218ATX	TRANSISTOR	1	
Q14	FMW1T98	TRANSISTOR	1	
Q15	2SB766ATX	TRANSISTOR	1	
⚠ Q16	2SD874QRSTX	TRANSISTOR	1	
Q303	DTC114EUA106	TRANSISTOR	1	
Q304	2SB621A-R	TRANSISTOR	1	
Q305	UN521NTX	TRANSISTOR	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
Q306-08	DTC114EUA106	TRANSISTOR	3	
Q401	UN5214TX	TRANSISTOR	1	
Q402-04	2SD1819ATX	TRANSISTOR	3	
Q801-06	2SD1328QRSTX	TRANSISTOR	6	
Q807	UN5111TX	TRANSISTOR	1	
Q1301	2SD601ATX	TRANSISTOR	1	
Q1302	2SB709ATX	TRANSISTOR	1	
Q1303	2SD601ATX	TRANSISTOR	1	
Q1304	2SB709ATX	TRANSISTOR	1	
Q1305	2SD601ATX	TRANSISTOR	1	
R1	ERDS2FJ102	1/4W 1K	1	
R2	ERJ6GEYJ103V	1/10W 10K	1	
R3	ERJ6GEYJ562V	1/10W 5.6K	1	
R4	ERJ6GEYJ102Z	1/10W 1K	1	
R5,R6	ERX1SJR33	1W 0.33	2	
R7	ERJ6GEYJ102Z	1/10W 1K	1	
R8,R9	ERJ6GEYJ471V	1/10W 470	2	
R10	ERJ6GEYJ333V	1/10W 33K	1	
⚠ R11	RSFMB30KT-L	FUSE PROTECTOR	1	
R12	ERJ6GEYJ334V	1/10W 330K	1	
R13	ERJ6GEYJ473V	1/10W 47K	1	
R14	ERJ6GEYJ222V	1/10W 2.2K	1	
R15	ERJ6GEYJ184V	1/10W 180K	1	
R16	ERJ6GEYJ471V	1/10W 470	1	
R17	ERJ6GEYJ472V	1/10W 4.7K	1	
R19	ERJ6GEYJ223V	1/10W 22K	1	
R20	ERJ6GEYJ271V	1/10W 270	1	
R21	ERJ6GEYJ472V	1/10W 4.7K	1	
R22	ERJ6GEYJ222V	1/10W 2.2K	1	
R23	ERJ6GEYJ473V	1/10W 47K	1	
R27	ERJ6GEYJ681V	1/10W 680	1	
R28	ERJ6GEYJ473V	1/10W 47K	1	
R29	ERJ6GEYJ223V	1/10W 22K	1	
R30	ERJ6GEYJ101V	1/10W 100	1	
R31	ERJ6GEYJ681V	1/10W 680	1	
R32	ERJ6GEYJ473V	1/10W 47K	1	
R33	ERJ6GEYJ472V	1/10W 4.7K	1	
R34	ERJ6GEYJ471V	1/10W 470	1	
R36	ERJ6GEYJ472V	1/10W 4.7K	1	
R37	ERJ6GEYJ101V	1/10W 100	1	
⚠ R38	ERD2FCG100	1/4W 10	1	
R39	ERJ6GEYJ102Z	1/10W 1K	1	
R40-42	ERJ6GEYJ101V	1/10W 100	3	
⚠ R43	ERQ16NKWR33E	1/6W 0.33	1	
R44	ERJ6GEYJ331V	1/10W 330	1	
R305,06	ERJ6GEYJ103V	1/10W 10K	2	
R307	ERJ6GEYJ102Z	1/10W 1K	1	
R308	ERJ6GEYJ221V	1/10W 220	1	
R309	ERJ6GEYJ123V	1/10W 12K	1	
R310-12	ERJ6GEYJ103V	1/10W 10K	3	
R401	ERJ6GEYJ681V	1/10W 680	1	
R402	ERJ6GEYJ104V	1/10W 100K	1	
R403	ERJ6GEYJ472V	1/10W 4.7K	1	
R404	ERJ6GEYJ103V	1/10W 10K	1	
R405	ERJ6GEYJ471V	1/10W 470	1	
R406	ERJ6GEYJ472V	1/10W 4.7K	1	
R407	ERJ6GEYJ473V	1/10W 47K	1	
R408	ERJ6GEYJ472V	1/10W 4.7K	1	
R409	ERJ6GEYJ103V	1/10W 10K	1	
R410,11	ERJ6GEYJ472V	1/10W 4.7K	2	
R412	ERJ6GEYJ223V	1/10W 22K	1	
R413	ERJ6GEYJ473V	1/10W 47K	1	
R414	ERJ6GEYJ221V	1/10W 220	1	
R415	ERJ6GEYJ472V	1/10W 4.7K	1	
R416	ERJ6GEYJ103V	1/10W 10K	1	
R417	ERJ6GEYJ102Z	1/10W 1K	1	
R418	ERJ6GEYJ473V	1/10W 47K	1	
R419	ERJ6GEYJ102Z	1/10W 1K	1	
R420	ERJ6GEYJ472V	1/10W 4.7K	1	
R421	ERJ6GEYJ473V	1/10W 47K	1	
R422-24	ERJ6GEYJ472V	1/10W 4.7K	3	
R425,26	ERJ6GEYJ103V	1/10W 10K	2	
R427	ERJ6GEYJ821V	1/10W 820	1	
R428	ERJ6GEYJ103V	1/10W 10K	1	
R429-32	ERJ6GEYJ101V	1/10W 100	4	
R433-35	ERJ6GEYJ221V	1/10W 220	3	
R436	ERJ6GEYJ472V	1/10W 4.7K	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R438,39	ERJ6GEYJ821V	1/10W 820	2	
R440-42	ERJ6GEYJ102Z	1/10W 1K	3	
R443	ERJ6GEYJ223V	1/10W 22K	1	
R444	ERJ6GEYJ104V	1/10W 100K	1	
R445	ERJ6GEYJ223V	1/10W 22K	1	
R446	ERJ6GEYJ472V	1/10W 4.7K	1	
R447,48	ERJ6GEYJ102Z	1/10W 1K	2	
R450	ERJ6GEYJ103V	1/10W 10K	1	
R601-04	ERJ6GEYJ101V	1/10W 100	4	
R606-10	ERJ6GEYJ221V	1/10W 220	5	
R611	ERJ6GEYJ181V	1/10W 180	1	
R612	ERJ6GEYJ223V	1/10W 22K	1	
R613	ERJ6GEYJ123V	1/10W 12K	1	
R614	ERJ6GEYJ682V	1/10W 6.8K	1	
R615	ERJ6GEYJ472V	1/10W 4.7K	1	
R616	ERJ6GEYJ332V	1/10W 3.3K	1	
R617	ERJ6GEYJ222V	1/10W 2.2K	1	
R618	ERJ6GEYJ182V	1/10W 1.8K	1	
R619	ERJ6GEYJ152V	1/10W 1.5K	1	
R620	ERJ6GEYJ122V	1/10W 1.2K	1	
R621	ERJ6GEYJ102Z	1/10W 1K	1	
R622	ERJ6GEYJ223V	1/10W 22K	1	
R623	ERJ6GEYJ123V	1/10W 12K	1	
R624	ERJ6GEYJ682V	1/10W 6.8K	1	
R625	ERJ6GEYJ472V	1/10W 4.7K	1	
R626	ERJ6GEYJ332V	1/10W 3.3K	1	
R627	ERJ6GEYJ222V	1/10W 2.2K	1	
R628	ERJ6GEYJ182V	1/10W 1.8K	1	
R629	ERJ6GEYJ152V	1/10W 1.5K	1	
R630	ERJ6GEYJ122V	1/10W 1.2K	1	
R631	ERJ6GEYJ102Z	1/10W 1K	1	
R801	ERJ6GEYJ102Z	1/10W 1K	1	
R802	ERJ6GEYJ182V	1/10W 1.8K	1	
R803,04	ERJ6GEYJ104V	1/10W 100K	2	
R805,06	ERJ6GEYJ103V	1/10W 10K	2	
R807,08	ERJ6GEYJ223V	1/10W 22K	2	
R809	ERJ6GEYJ153V	1/10W 15K	1	
R810	ERJ6GEYJ223V	1/10W 22K	1	
R811,12	ERJ6GEYJ103V	1/10W 10K	2	
R813,14	ERJ6GEYJ332V	1/10W 3.3K	2	
R815	ERJ6GEYJ102Z	1/10W 1K	1	
R816	ERJ6GEYJ471V	1/10W 470	1	
R817,18	ERJ6GEYJ473V	1/10W 47K	2	
R819-24	ERJ6GEYJ104V	1/10W 100K	6	
R825	ERJ6GEYJ102Z	1/10W 1K	1	
R826	ERJ6GEYJ562V	1/10W 5.6K	1	
R827,28	ERJ6GEYJ101V	1/10W 100	2	
R829,30	ERJ6GEYJ104V	1/10W 100K	2	
R831,32	ERJ6GEYJ153V	1/10W 15K	2	
R833,34	ERJ6GEYJ223V	1/10W 22K	2	
R835,36	ERJ6GEYJ103V	1/10W 10K	2	
R837,38	ERJ6GEYJ153V	1/10W 15K	2	
R839,40	ERJ6GEYJ332V	1/10W 3.3K	2	
R841,42	ERJ6GEYJ102Z	1/10W 1K	2	
R843,44	ERJ6GEYJ473V	1/10W 47K	2	
R845,46	ERJ6GEYJ104V	1/10W 100K	2	
R847,48	ERJ6GEYJ102Z	1/10W 1K	2	
R849,50	ERJ6GEYJ104V	1/10W 100K	2	
R851,52	ERJ6GEYJ103V	1/10W 10K	2	
R853,54	ERJ6GEYJ223V	1/10W 22K	2	
R855,56	ERJ6GEYJ103V	1/10W 10K	2	
R857,58	ERJ6GEYJ153V	1/10W 15K	2	
R859,60	ERJ6GEYJ332V	1/10W 3.3K	2	
R861,62	ERJ6GEYJ102Z	1/10W 1K	2	
R863,64	ERJ6GEYJ473V	1/10W 47K	2	
R865,66	ERJ6GEYJ104V	1/10W 100K	2	
R867	ERJ6GEYJ473V	1/10W 47K	1	
R1301	ERJ6GEYJ103V	1/10W 10K	1	
R1302	ERJ6GEYJ122V	1/10W 1.2K	1	
R1303	ERJ6GEYJ152V	1/10W 1.5K	1	
R1304	ERJ6GEYJ101V	1/10W 100	1	
R1305	ERJ6GEYJ103V	1/10W 10K	1	
R1306	ERJ6GEYJ561V	1/10W 560	1	
R1307	ERJ6GEYJ222V	1/10W 2.2K	1	
R1308	ERJ6GEYJ821V	1/10W 820	1	
R1309	ERJ6GEYJ223V	1/10W 22K	1	
R1310	ERJ6GEYJ221V	1/10W 220	1	
R1311	ERJ6GEYJ153V	1/10W 15K	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R1312	ERJ6GEYJ272V	1/10W 2.7K	1	
R1313	ERJ6GEYJ561V	1/10W 560	1	
R1314-16	ERJ6GEYD102V	1/10W 1K	3	
R1317	ERJ6GEYJ471V	1/10W 470	1	
R1318,19	ERJ6GEYD750V	1/10W 75	2	
R1320	ERJ6GEYJ472V	1/10W 4.7K	1	
R1321	ERJ6GEYD750V	1/10W 75	1	
R1322,23	ERJ6GEYJ103V	1/10W 10K	2	
R1325-30	ERJ6GEYJ101V	1/10W 100	6	
R1331-35	ERJ6GEYJ103V	1/10W 10K	5	
RJ102-12	ERJ6GEY0R00	CHIP JUMPER	11	
RJ114-20	ERJ6GEY0R00	CHIP JUMPER	7	
RJ121	ERJ8GEY0R00V	CHIP JUMPER	1	
RJ123	ERJ6GEY0R00	CHIP JUMPER	1	
RJ1301-05	ERJ6GEY0R00	CHIP JUMPER	5	
RJ1307-10	ERJ6GEY0R00	CHIP JUMPER	4	
RJ1315	ERJ6GEY0R00	CHIP JUMPER	1	
RJ1334	ERJ6GEY0R00	CHIP JUMPER	1	
RJ1357	ERJ6GEY0R00	CHIP JUMPER	1	
S1,S2	RSH1A032-U	SW,TRAY POSITION DET.	2	
S3	RSH1A005	SW,OPEN DET.	1	
S4	RSH1A91ZA-A	SW,CLAMP	1	
S5	RSP1A017-A	SW,BOTTOM	1	
S601-22	EVQ11G05R	SW,PUSH	22	
VR1301,02	EVNDXAA00B52	VR,Y/C ADJ.	2	
X401	RSXY8M00D01T	OSCILLATOR	1	
Z1301	ELB4K163B	COMPONENT COMBINATION	1	
Z1302	ELB4K164B	COMPONENT COMBINATION	1	
		Electric parts for module P.C.B.		
C2001	ECUM1A335KBM	10V 3.3U	1	<ODSD>
C2002-05	ECUX1C393KBV	16V 0.039U	4	<ODSD>
C2006	EEVHB0J101	6.3V 100U	1	<ODSD>
C2007,08	ECUX1C104ZFV	16V 0.1U	2	<ODSD>
C2009	ECUX1H470JCV	50V 47P	1	<ODSD>
C2010	ECUX1C104ZFV	16V 0.1U	1	<ODSD>
C2012	ECUX1H331JCV	50V 330P	1	<ODSD>
C2015	ECUX1H330JCV	50V 33P	1	<ODSD>
C2016	ECUX1C104KBV	16V 0.1U	1	<ODSD>
C2019-21	ECUX1C104ZFV	16V 0.1U	3	<ODSD>
C2022	ECUM1A335KBM	10V 3.3U	1	<ODSD>
C2023,24	ECUX1C104ZFV	16V 0.1U	2	<ODSD>
C2025,26	ECUX1H102KBV	50V 1000P	2	<ODSD>
C2027	ECUX1C104ZFV	16V 0.1U	1	<ODSD>
C2028	ECUX1H102KBV	50V 1000P	1	<ODSD>
C2029	ECUX1C104ZFV	16V 0.1U	1	<ODSD>
C2030	ECUX1H102KBV	50V 1000P	1	<ODSD>
C2031	ECUX1C104ZFV	16V 0.1U	1	<ODSD>
C2032,33	ECUX1H821JCV	50V 820P	2	<ODSD>
C2034	ECUX1H271JCV	50V 270P	1	<ODSD>
C2036	ECUX1H471JCV	50V 470P	1	<ODSD>
C2037	ECUX1H331JCV	50V 330P	1	<ODSD>
C2038	ECUX1H821JCV	50V 820P	1	<ODSD>
C2040	ECUX1H392KBV	50V 3900P	1	<ODSD>
C2041,42	ECUX1C104ZFV	16V 0.1U	2	<ODSD>
C2043,44	ECUX1C823KBV	16V 0.082U	2	<ODSD>
C2045	ECUX1C104KBV	16V 0.1U	1	<ODSD>
C2501	EEVHB0J101	6.3V 100U	1	<ODSD>
C2502	ECEV0JA331	6.3V 330U	1	<ODSD>
C2503-05	ECUX1H103KBV	50V 0.01U	3	<ODSD>
C2506	ECUX1C104ZFV	16V 0.1U	1	<ODSD>
C2507,08	ECUX1C104KBV	16V 0.1U	2	<ODSD>
C2509	ECUX1C104ZFV	16V 0.1U	1	<ODSD>
C2510-12	ECUX1C104KBV	16V 0.1U	3	<ODSD>
C3001,02	ECEV0JA331	6.3V 330U	2	<ODSD>
C3003-26	ECUX1C104ZFV	16V 0.1U	24	<ODSD>
C3031	ECEV0JA331	6.3V 330U	1	<ODSD>
C3032-34	ECUM1A105KBN	10V 1U	3	<ODSD>
C3035-43	ECUX1C104ZFV	16V 0.1U	9	<ODSD>
C3044-48	ECUX1H220JCV	50V 22P	5	<ODSD>
C3051-54	ECUX1C104ZFV	16V 0.1U	4	<ODSD>

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C3055	ECST1AY106Z	10V 10U	1	<ODSD>
C3056	ECUX1C104ZFV	16V 0.1U	1	<ODSD>
C3061-64	ECUX1C104ZFV	16V 0.1U	4	<ODSD>
C3065	ECST1AY106Z	10V 10U	1	<ODSD>
C3066	ECUX1C104ZFV	16V 0.1U	1	<ODSD>
C3071	ECST1AY106Z	10V 10U	1	<ODSD>
C3072,73	ECUX1C104ZFV	16V 0.1U	2	<ODSD>
C3201	ECUX1C104ZFV	16V 0.1U	1	<ODSD>
C3211	ECUX1C104ZFV	16V 0.1U	1	<ODSD>
C3271,72	ECUX1C104ZFV	16V 0.1U	2	<ODSD>
C3286	EEVHB0J101	6.3V 100U	1	<ODSD>
C4241	ECUX1C104ZFV	16V 0.1U	1	<ODSD>
C4242	ECUX1H390JCV	50V 39P	1	<ODSD>
C5201	EEVHB0J470	6.3V 47U	1	<ODSD>
C5202	ECST1AY106Z	10V 10U	1	<ODSD>
C5203-06	ECUX1C104KBV	16V 0.1U	4	<ODSD>
C5207	EEVHB1C100	16V 10U	1	<ODSD>
C5208	ECST1CX106Z	16V 10U	1	<ODSD>
C5209	ECUX1H101JCV	50V 100P	1	<ODSD>
C5210	ECUX1C104KBV	16V 0.1U	1	<ODSD>
C5211	ECUX1H560JCV	50V 56P	1	<ODSD>
C5212	ECUX1H101JCV	50V 100P	1	<ODSD>
C5213	ECUX1C104KBV	16V 0.1U	1	<ODSD>
C5214	ECUX1A184KBV	10V 0.18U	1	<ODSD>
C5215	ECUX1C104KBV	16V 0.1U	1	<ODSD>
C5216	ECUX1C104ZFV	16V 0.1U	1	<ODSD>
C5217	ECUX1A224KBV	10V 0.22U	1	<ODSD>
C5218,19	ECUX1C104KBV	16V 0.1U	2	<ODSD>
C5220	ECUX1H222KBV	50V 2200P	1	<ODSD>
C5221	ECUX1H392KBV	50V 3900P	1	<ODSD>
C5222	ECUX1C104KBV	16V 0.1U	1	<ODSD>
C5223	ECUX1H820JCV	50V 82P	1	<ODSD>
C5224	ECUX1C104KBV	16V 0.1U	1	<ODSD>
C5225	ECUX1C104ZFV	16V 0.1U	1	<ODSD>
C5226	ECUX1C104KBV	16V 0.1U	1	<ODSD>
C5227,28	ECUX1C104ZFV	16V 0.1U	2	<ODSD>
C5229	ECUX1H221JCV	50V 220P	1	<ODSD>
C5230	ECUX1C104KBV	16V 0.1U	1	<ODSD>
C5231	ECUM1A335KBM	10V 3.3U	1	<ODSD>
C5232	EEVHB0J330	6.3V 33U	1	<ODSD>
C5233	ECUX1A334KBV	10V 0.33U	1	<ODSD>
C5234	EEVHB0J330	6.3V 33U	1	<ODSD>
C5235	ECUM1A335KBM	10V 3.3U	1	<ODSD>
C5236	ECUX1C104KBV	16V 0.1U	1	<ODSD>
C5237	ECUX1H102KBV	50V 1000P	1	<ODSD>
C5238	ECUX1A224KBV	10V 0.22U	1	<ODSD>
C5239-41	ECUX1C104ZFV	16V 0.1U	3	<ODSD>
C5242	ECUX1H121JCV	50V 120P	1	<ODSD>
C5243,44	ECUX1H221JCV	50V 220P	2	<ODSD>
C5245,46	ECUX1C104KBV	16V 0.1U	2	<ODSD>
C5247,48	ECUX1C104ZFV	16V 0.1U	2	<ODSD>
C5249	ECUX1H681JCV	50V 680P	1	<ODSD>
C6201,02	ECUX1C104ZFV	16V 0.1U	2	<ODSD>
C6203	EEVHB0J330	6.3V 33U	1	<ODSD>
C6204-07	ECUX1C104ZFV	16V 0.1U	4	<ODSD>
C6251	ECUX1C104ZFV	16V 0.1U	1	<ODSD>
C6252	EEVHB0J330	6.3V 33U	1	<ODSD>
C6253	EEVHB0J101	6.3V 100U	1	<ODSD>
C6254	ECEV0JA331	6.3V 330U	1	<ODSD>
C6255	ECUX1H103KBV	50V 0.01U	1	<ODSD>
C6301	ECUX1H101JCV	50V 100P	1	<ODSD>
C6302	ECUX1C104KBV	16V 0.1U	1	<ODSD>
C6303,04	ECUX1C104ZFV	16V 0.1U	2	<ODSD>
C6501	EEVHB0J330	6.3V 33U	1	<ODSD>
C6502-05	ECUX1C104ZFV	16V 0.1U	4	<ODSD>
C6506	ECST1AY106Z	10V 10U	1	<ODSD>
C6507	ECUX1C104ZFV	16V 0.1U	1	<ODSD>
C6511	ECUX1C104ZFV	16V 0.1U	1	<ODSD>
C6512	ECST1AY106Z	10V 10U	1	<ODSD>
C6513	ECUX1C104ZFV	16V 0.1U	1	<ODSD>
C6514	EEVHB0J330	6.3V 33U	1	<ODSD>
C6521,22	ECUX1C104ZFV	16V 0.1U	2	<ODSD>
C6541,42	ECUX1H120JCV	50V 12P	2	<ODSD>
C6544	ECUX1C104ZFV	16V 0.1U	1	<ODSD>
C6564,65	ECUX1C104ZFV	16V 0.1U	2	<ODSD>
C6584,85	ECUX1C104ZFV	16V 0.1U	2	<ODSD>
C6601	ECUX1C104ZFV	16V 0.1U	1	<ODSD>
C7001,02	EEVHB0J101	6.3V 100U	2	<ODSD>

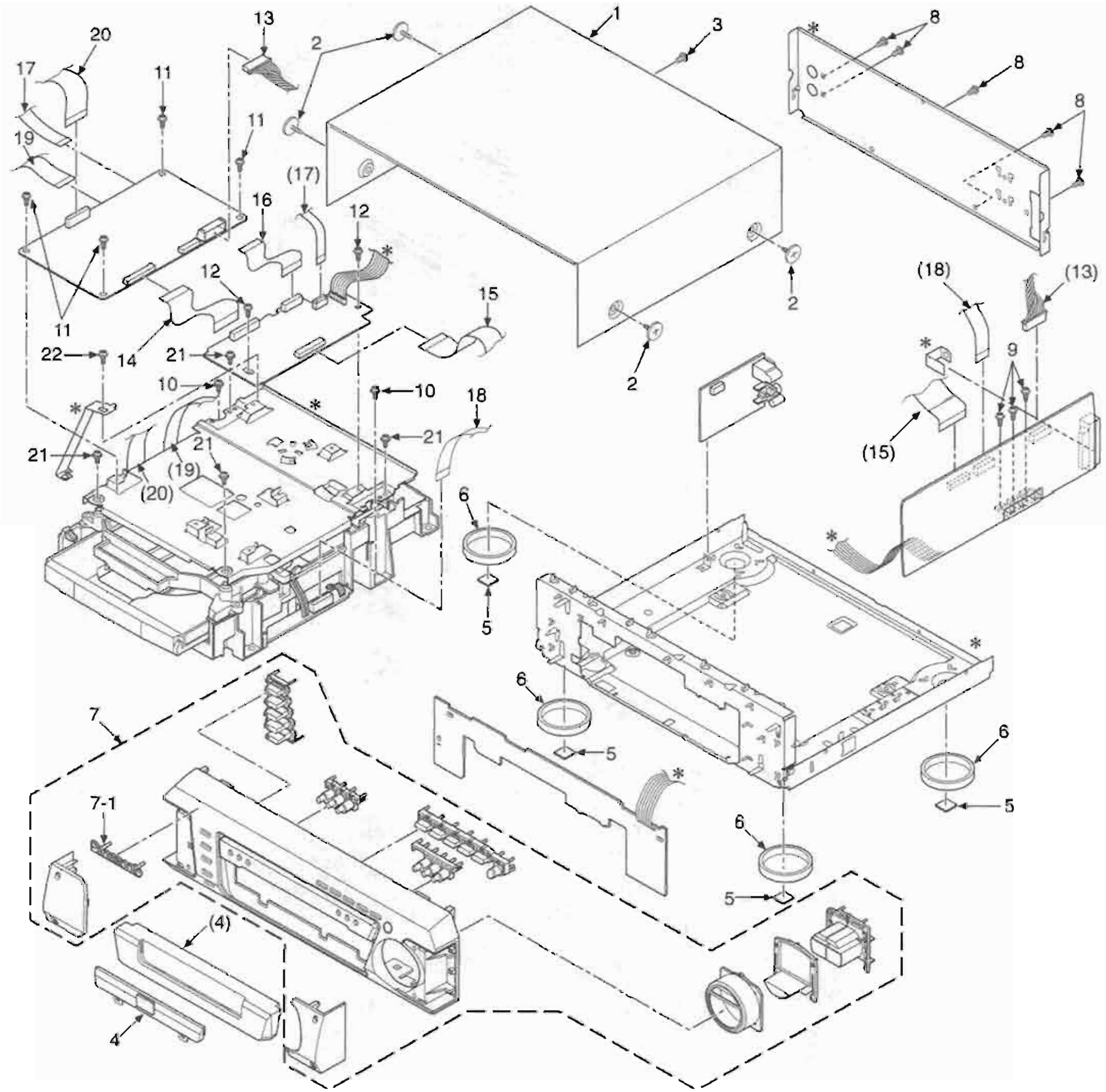
Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C7003-19	ECUX1C104ZFV	16V 0.1U	17	<ODSD>
C7020	ECUX1H103ZFV	50V 0.01U	1	<ODSD>
C7301,02	ECUX1C104ZFV	16V 0.1U	2	<ODSD>
D3001	MA8030-H	DIODE	1	<ODSD>
D3002	MA111	DIODE	1	<ODSD>
D3071	MA111	DIODE	1	<ODSD>
D6311	MA728	DIODE	1	<ODSD>
D6511	MA111	DIODE	1	<ODSD>
FL6251-54	ELKE103FA	FILTER	4	<ODSD>
FP2501	VJS4241B017W	CONNECTOR(17P)	1	<ODSD>
FP2511	VJS4241B007W	CONNECTOR(7P)	1	<ODSD>
FP3202	VJS4241B015W	CONNECTOR(15P)	1	<ODSD>
FP4202	VJS4241B026W	CONNECTOR(26P)	1	<ODSD>
FP5201	VJS3913A021	CONNECTOR(21P)	1	<ODSD>
IC2001	MN67705EA	IC	1	<ODSD>
IC2501	AN8485SB	IC	1	<ODSD>
IC2511	BA5983FM	IC	1	<ODSD>
IC3001	MN677511DD	IC	1	<ODSD>
IC3051	MNX7160BT1	IC	1	<ODSD>
IC3061	HM5241605T12	IC	1	<ODSD>
⚠ IC3071	PQ1R33	IC	1	<ODSD>
IC4241	TC7ST04FU	IC	1	<ODSD>
⚠ IC5201	RN5RZ33BA	IC	1	<ODSD>
IC5202	AN8706FHQ	IC	1	<ODSD>
IC6201	MN102L25DFA	IC	1	<ODSD>
IC6301	PST596JNR	IC	1	<ODSD>
IC6302	TC58FVT400FT	IC	1	<ODSD>
IC6303	X25020S-2R7	IC	1	<ODSD>
IC6501	BU2185F	IC	1	<ODSD>
⚠ IC6511	PQ1R33	IC	1	<ODSD>
IC6521	TC7WH157FUTL	IC	1	<ODSD>
IC6522	TC7WH74FU	IC	1	<ODSD>
IC6542	AHC1GU04HDCK	IC	1	<ODSD>
IC6562	AHC1GU04HDCK	IC	1	<ODSD>
IC6563	TC7WH74FU	IC	1	<ODSD>
IC6582	AHC1GU04HDCK	IC	1	<ODSD>
IC6583	TC7WH74FU	IC	1	<ODSD>
IC7001	MN103007BGA	IC	1	<ODSD>
IC7301	TC7SH08FU	IC	1	<ODSD>
IC7302	TC7SH32FU	IC	1	<ODSD>
K3201	ERJ3GEY0R00	CHIP JUMPER	1	<ODSD>
K3203	ERJ3GEY0R00	CHIP JUMPER	1	<ODSD>
K5201-05	ERJ3GEY0R00	CHIP JUMPER	5	<ODSD>
K6541,42	ERJ3GEY0R00	CHIP JUMPER	2	<ODSD>
K7002	ERJ3GEY0R00	CHIP JUMPER	1	<ODSD>
L2001,02	VLQ0779K100	COIL	2	<ODSD>
L2501	ERJ14Y0R00	COIL	1	<ODSD>
L3001	ERJ14Y0R00	COIL	1	<ODSD>
L3281	VLQ0779K100	COIL	1	<ODSD>
L5201,02	VLQ0779K100	COIL	2	<ODSD>
L6201	ERJ14Y0R00	COIL	1	<ODSD>
L6501,02	ELJFA220KB	COIL	2	<ODSD>
L7001	VLQ0779K100	COIL	1	<ODSD>
L7002	ERJ14Y0R00	COIL	1	<ODSD>
LB2501-08	VLP0323A601R	COIL	8	<ODSD>
LB2509-13	JALBK2HS470T	COIL	5	<ODSD>
LB2514-17	VLP0323A601R	COIL	4	<ODSD>
LB2518-21	JALBK2HS470T	COIL	4	<ODSD>
LB3001	VLP0155	COIL	1	<ODSD>
LB3201,02	VLP0323A601R	COIL	2	<ODSD>
LB3206	VLP0323A601R	COIL	1	<ODSD>
LB4001-05	VLP0155	COIL	5	<ODSD>
LB4006-08	VLP0323A601R	COIL	3	<ODSD>
LB4010,11	VLP0323A601R	COIL	2	<ODSD>
LB4013,14	VLP0323A601R	COIL	2	<ODSD>
LB4016-19	VLP0323A601R	COIL	4	<ODSD>
LB4241	VLP0323A601R	COIL	1	<ODSD>
LB5201,02	VLP0323A601R	COIL	2	<ODSD>
LB5203	JALBK2HS470T	COIL	1	<ODSD>
LB5204-10	VLP0323A601R	COIL	7	<ODSD>
LB5211	JALBK2HS470T	COIL	1	<ODSD>

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
LB5212-14	VLP0323A601R	COIL	3	<ODSD>
LB5215	JALBK2HS470T	COIL	1	<ODSD>
LB5216	VLP0323A601R	COIL	1	<ODSD>
LB5217	JALBK2HS470T	COIL	1	<ODSD>
LB5218	VLP0323A601R	COIL	1	<ODSD>
LB5219	JALBK2HS470T	COIL	1	<ODSD>
LB6213	VLP0155	COIL	1	<ODSD>
LB6501,02	VLP0323A601R	COIL	2	<ODSD>
LB6504	VLP0155	COIL	1	<ODSD>
LB6511	VLP0323A601R	COIL	1	<ODSD>
LB6521	VLP0323A601R	COIL	1	<ODSD>
LB6522	VLP0155	COIL	1	<ODSD>
LB6523	VLP0323A601R	COIL	1	<ODSD>
LB6525,26	VLP0155	COIL	2	<ODSD>
LB6542	VLP0323A601R	COIL	1	<ODSD>
LB6543	VLP0157	COIL	1	<ODSD>
LB6562	VLP0323A601R	COIL	1	<ODSD>
LB6563	VLP0155	COIL	1	<ODSD>
LB6564	VLP0157	COIL	1	<ODSD>
LB6565	VLP0323A601R	COIL	1	<ODSD>
LB6582	VLP0155	COIL	1	<ODSD>
LB6583	VLP0323A601R	COIL	1	<ODSD>
LB6584	VLP0157	COIL	1	<ODSD>
LB6585	VLP0323A601R	COIL	1	<ODSD>
LB6586	VLP0155	COIL	1	<ODSD>
P6251	VJP4027B010	CONNECTOR(10P)	1	<ODSD>
PCB1	VEP63541M	PCB ASS'Y	1	<ODSD>(RTL)
PS6201	VJS2961A010	CONNECTOR(10P)	1	<ODSD>
Q3201	2SB1218A-R	TRANSISTOR	1	<ODSD>
Q3211	2SB1218A-R	TRANSISTOR	1	<ODSD>
Q5201	2SB1115	TRANSISTOR	1	<ODSD>
QR2001	UN5213	TRANSISTOR	1	<ODSD>
QR2501,02	XP1213	TRANSISTOR	2	<ODSD>
QR2503	UN5213	TRANSISTOR	1	<ODSD>
QR5201,02	UN5212	TRANSISTOR	2	<ODSD>
QR5203	UN5112	TRANSISTOR	1	<ODSD>
QR6311	UN5212	TRANSISTOR	1	<ODSD>
R2001	ERJ3GEYJ103	1/16W 10K	1	<ODSD>
R2003	ERJ3GEYJ223	1/16W 22K	1	<ODSD>
R2004	ERJ3GEYJ123	1/16W 12K	1	<ODSD>
R2005	ERJ3GEYJ183	1/16W 18K	1	<ODSD>
R2006	ERJ3GEYJ822	1/16W 8.2K	1	<ODSD>
R2008-10	ERJ3GEYJ473	1/16W 47K	3	<ODSD>
R2011	EXBV4V473J	RESISTOR	1	<ODSD>
R2014	ERJ3GEYJ472	1/16W 4.7K	1	<ODSD>
R2016	ERJ3GEYJ102	1/16W 1K	1	<ODSD>
R2018	EXBV8VR000	RESISTOR	1	<ODSD>
R2019	ERJ3GEY0R00	1/16W 0	1	<ODSD>
R2020-23	ERJ3GEYJ103	1/16W 10K	4	<ODSD>
R2024	ERJ3GEYJ333	1/16W 33K	1	<ODSD>
R2025	ERJ3GEYJ223	1/16W 22K	1	<ODSD>
R2026	ERJ3GEY0R00	1/16W 0	1	<ODSD>
R2027	ERJ3GEYJ123	1/16W 12K	1	<ODSD>
R2028	ERJ3GEYJ473	1/16W 47K	1	<ODSD>
R2029,30	ERJ3GEYJ103	1/16W 10K	2	<ODSD>
R2031	ERJ3GEYF683	1/16W 68K	1	<ODSD>
R2032	ERJ3GEYJ103	1/16W 10K	1	<ODSD>
R2033	ERJ3GEY0R00	1/16W 0	1	<ODSD>
R2034	ERJ3GEYJ103	1/16W 10K	1	<ODSD>
R2035	ERJ3GEYJ333	1/16W 33K	1	<ODSD>
R2036,37	ERJ3RBD103	1/16W 10K	2	<ODSD>
R2038	ERJ3GEYF683	1/16W 68K	1	<ODSD>
R2039	ERJ3GEYF362	1/16W 3.6K	1	<ODSD>
R2501	ERJ3GEYJ473	1/16W 47K	1	<ODSD>
R2502,03	ERJ3RBD183	1/16W 18K	2	<ODSD>
R2504-06	ERJ3GEYJ103	1/16W 10K	3	<ODSD>
R2507,08	ERJ3GEYJ123	1/16W 12K	2	<ODSD>
R2509	ERJ3GEYJ273	1/16W 27K	1	<ODSD>
R2510,11	ERJ3GEYJ271	1/16W 270	2	<ODSD>
R2512	ERJ3GEYJ273	1/16W 27K	1	<ODSD>
R2513	ERJ3GEYJ103	1/16W 10K	1	<ODSD>
R2515	ERJ14YKR39	1/4W 0.39	1	<ODSD>

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R2516,17	ERJ3GEYJ123	1/16W 12K	2	<ODSD>
R2518,19	ERJ3GEYJ243	1/16W 24K	2	<ODSD>
R2520	ERJ3RBD562	1/16W 5.6K	1	<ODSD>
R2521	ERJ3RBD563	1/16W 56K	1	<ODSD>
R2522-24	ERJ3GEYJ103	1/16W 10K	3	<ODSD>
R3001	ERJ3GEYJ220	1/16W 22	1	<ODSD>
R3002	ERJ3GEY0R00	1/16W 0	1	<ODSD>
R3003	ERJ3GEYJ392	1/16W 3.9K	1	<ODSD>
R3005	ERJ3GEYJ103	1/16W 10K	1	<ODSD>
R3006	ERJ3GEYJ473	1/16W 47K	1	<ODSD>
R3008	ERJ3GEYJ473	1/16W 47K	1	<ODSD>
R3009-13	ERJ3GEYJ221	1/16W 220	5	<ODSD>
R3031,32	ERJ3RBD752	1/16W 7.5K	2	<ODSD>
R3033	ERJ3GEYJ684	1/16W 680K	1	<ODSD>
R3035-38	ERJ3RBD102	1/16W 1K	4	<ODSD>
R3039,40	ERJ3GEYJ102	1/16W 1K	2	<ODSD>
R3201	ERJ3GEYF750	1/16W 75	1	<ODSD>
R3202	ERJ3GEYJ330	1/16W 33	1	<ODSD>
R3203	ERJ3GEYJ102	1/16W 1K	1	<ODSD>
R3211	ERJ3GEYF750	1/16W 75	1	<ODSD>
R3212	ERJ3GEYJ330	1/16W 33	1	<ODSD>
R3213	ERJ3GEYJ102	1/16W 1K	1	<ODSD>
R4241	ERJ3GEYJ151	1/16W 150	1	<ODSD>
R5201	ERJ12YJ270	1/2W 27	1	<ODSD>
R5202	ERJ3GEYJ2R2	1/16W 2.2	1	<ODSD>
R5203	ERJ3GEYJ223	1/16W 22K	1	<ODSD>
R5205,06	ERJ3GEYJ103	1/16W 10K	2	<ODSD>
R5208	ERJ3GEYJ823	1/16W 82K	1	<ODSD>
R5209	ERJ3GEYJ123	1/16W 12K	1	<ODSD>
R5210	ERJ3GEYJ272	1/16W 2.7K	1	<ODSD>
R5211	ERJ3GEYJ393	1/16W 39K	1	<ODSD>
R5212	ERJ3GEYF123	1/16W 12K	1	<ODSD>
R5213	ERJ3GEYJ393	1/16W 39K	1	<ODSD>
R5214	ERJ3GEYJ223	1/16W 22K	1	<ODSD>
R5215	ERJ3GEYJ822	1/16W 8.2K	1	<ODSD>
R5216	ERJ3GEYJ183	1/16W 18K	1	<ODSD>
R5217	ERJ3GEYJ223	1/16W 22K	1	<ODSD>
R5218	ERJ3GEYJ103	1/16W 10K	1	<ODSD>
R5219	ERJ3GEYJ153	1/16W 15K	1	<ODSD>
R5220,21	ERJ3GEYJ474	1/16W 470K	2	<ODSD>
R5222	ERJ3GEYF332	1/16W 3.3K	1	<ODSD>
R5223	ERJ3GEYJ752	1/16W 7.5K	1	<ODSD>
R5224	ERJ3GEYJ154	1/16W 150K	1	<ODSD>
R5225	ERJ3GEYJ564	1/16W 560K	1	<ODSD>
R5226	ERJ3GEYJ155	1/16W 1.5M	1	<ODSD>
R6201	ERJ3GEYJ103	1/16W 10K	1	<ODSD>
R6202-04	ERJ3GEYJ473	1/16W 47K	3	<ODSD>
R6205	ERJ3GEYJ222	1/16W 2.2K	1	<ODSD>
R6206-08	ERJ3GEYJ473	1/16W 47K	3	<ODSD>
R6209	ERJ3RBD103	1/16W 10K	1	<ODSD>
R6301	ERJ3GEYJ103	1/16W 10K	1	<ODSD>
R6302,03	ERJ3GEYJ472	1/16W 4.7K	2	<ODSD>
R6501,02	ERJ3GEYJ103	1/16W 10K	2	<ODSD>
R6542	ERJ3GEYJ105	1/16W 1M	1	<ODSD>
R6544	ERJ3RBD101	1/16W 100	1	<ODSD>
R7001,02	ERJ3GEYJ102	1/16W 1K	2	<ODSD>
R7003	ERJ3GEYJ473	1/16W 47K	1	<ODSD>
R7006	ERJ3GEYJ473	1/16W 47K	1	<ODSD>
RA2501,02	EXBV4V103JV	RESISTOR	2	<ODSD>
RA3001	EXBV8V473J	RESISTOR	1	<ODSD>
RA3002	EXBV4V473J	RESISTOR	1	<ODSD>
RA6201	EXBV4V103JV	RESISTOR	1	<ODSD>
RA6203-06	EXBV4V473J	RESISTOR	4	<ODSD>
RA7001,02	EXBV8V473J	RESISTOR	2	<ODSD>
X6501	VSX1044	CRYSTAL OSCILLATOR	1	<ODSD>
		Loading mechanism parts		
301	RML0517	LEVER	1	
302	RML0516	LEVER	1	
303	RMB0551	UPPER SPINDLE SPRING	1	
304	RMQ0744	LOWER HOOK	1	
305	RDV0056	BELT	1	
306	RML0525	FRONT LOCK	1	
307	RML0526	DISC SPRING	1	
308	RDG0424	GEAR,DRIVE	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
309	RDG0425	GEAR,CHANGE	1	
310	RDG0427	TRAVERSE CAM GEAR	1	
311	RDG0428	TRAVERSE RELAY GEAR	1	
312	RDG0426	GEAR,UP/DOWN	1	
313	RDG0429	GEAR,PULLEY	1	
314	RMB0549	CHANGE GEAR SPRING	1	
315	RMQ0748	GEAR HOLDER	1	
316	RMB0553	SPRING	1	
317	RML0530	LEVER	1	
318	RML0518	LEVER	1	
319	RMM0201	SLIDE PLATE 1	1	
320	RME0258	REAR LOCK SPRING	1	
321	RML0521	REAR LOCK	1	
322	RME0257	TRAY LOCK SPRING	1	
323	RML0520	TRAY LOCK	1	
324	RMM0202	SLIDE PLATE 2	1	
325	XTB3+10J	SCREW	11	
326	RMR0334	MAGNET HOLDER	1	
327	RMR0624-W2	CLAMPER	1	
328	RMB0561	ASSIST LEVER SPRING	1	
329	RMR1121-K	MECHANISM COVER	1	
330	RMQ0742	SPINDLE BASE	1	
331	RXQ0561	TRAY BASE	1	
331-1	XTN2+4F	SCREW	1	
332	RME0261	FRONT LOCK SPRING	1	
333	RMX0140	DISC SPACER	5	
334	RHM245ZA	MAGNET	1	
335	RMQ0749	UPPER SPINDLE	1	
336	RMX0141	SPACER	1	
337	XTN2+6G	SCREW	3	
338	RMS0632	PIN	3	
339	RXQ0595	MOTOR	1	
341	RXQ0470	SOLENOIDE	1	
341-1	RMS0398-1	SHAFT	1	
344	RML0519	CD LEVER	1	
346	RML0522	LOADING STOPPER	1	
347	RMQ0745	LOWER SPINDLE	1	
348	RMQ0746	UP/DOWN BASE	1	
349	RMB0550	LOWER SPINDLE SPRING	1	
350	RMQ0747	UPPER HOOK	1	
351	RME0263	SPRING	1	
352	RMQ0743	SPINDLE SHAFT	1	
353	RMB0552	SPRING	1	
354	RDG0430	GEAR,RELAY A	1	
355	RDG0431	GEAR,RELAY B	1	
356	RME0262	DISC LEVER SPRING	1	
C1	ECEA1CKS101	16V 100U	1	
C2	ECBT1E103ZF	25V 0.01U	1	
CN1	RJS1A9414	CONNECTOR(14P)	1	
D1	GP1S94	PHOTO INTERRUPTOR	1	
D2	MTZJ4R7B	DIODE	1	
IC1	TA7291P	IC	1	
PCB1	REP2578A-N	PCB ASS'Y	1	(RTL)
Q1	RVTDTC143EST	TRANSISTOR	1	
R1	ERDS2FJ102	1/4W 1K	1	
SW1,W2	RSH1A032-U	SW,TRAY POSITION DET.	2	
SW3	RSH1A005	SW,OPEN DET.	1	
SW4	RSH1A91ZA-A	SW,CLAMP	1	
SW5	RSP1A017-A	SW,BOTTOM	1	
W2	REZ1024	FLAT CABLE(3P)	1	
		Traverse unit parts		
421	REZ1198	FFC(17P)	1	<ODSD>
422	VEM0665	SPINDLE MOTOR UNIT	1	<ODSD>
423	VEM0666	TRAVERSE MOTOR UNIT	1	<ODSD>
424	VMB3278	FAN SPRING	2	<ODSD>
425	VMC1487	SUB SHAFT FAN SPRING	1	<ODSD>
426	VMC1488	PUSH SPRING 1	1	<ODSD>
427	VMC1489	PUSH SPRING 2	1	<ODSD>
428	VMD3261	FPC HOLDER	1	<ODSD>
429	VMG1166	FLOATING RUBBER	3	<ODSD>
430	RMR1236-K	TRAVERSE CHASSIS	1	<ODSD>
431	VMS6471	GUIDE SHAFT 1	1	<ODSD>
432	VMS6472	GUIDE SHAFT 2	2	<ODSD>
433	VED0402	OPTICAL PICK UP	1	<ODSD>
434	VMC1491	SUB SHAFT PRESSURI. SPRIN	1	<ODSD>
435	VMC1490	SPRING	1	<ODSD>
436	VMD3260	HOLDER	1	<ODSD>
437	VHD1224	SCREW	5	<ODSD>
438	VHD1225	SCREW	3	<ODSD>
439	VHD1057	SCREW	1	<ODSD>
440	XQNQC17+3	SCREW	1	<ODSD>
441	XXE26C6FN	SCREW	3	<ODSD>
442	VHD1223	SCREW	3	<ODSD>
443	REZ1220	FFC(21P)	1	<ODSD>
444	XTV2+6G	SCREW	2	<ODSD>
445	VXK1496	DVD OPTICAL PICK UP	1	<ODSD>
PCB2	VEP90407A	MECHA LOADING P.C.B	1	<ODSD>(RTL)

■ Cabinet Parts Location



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

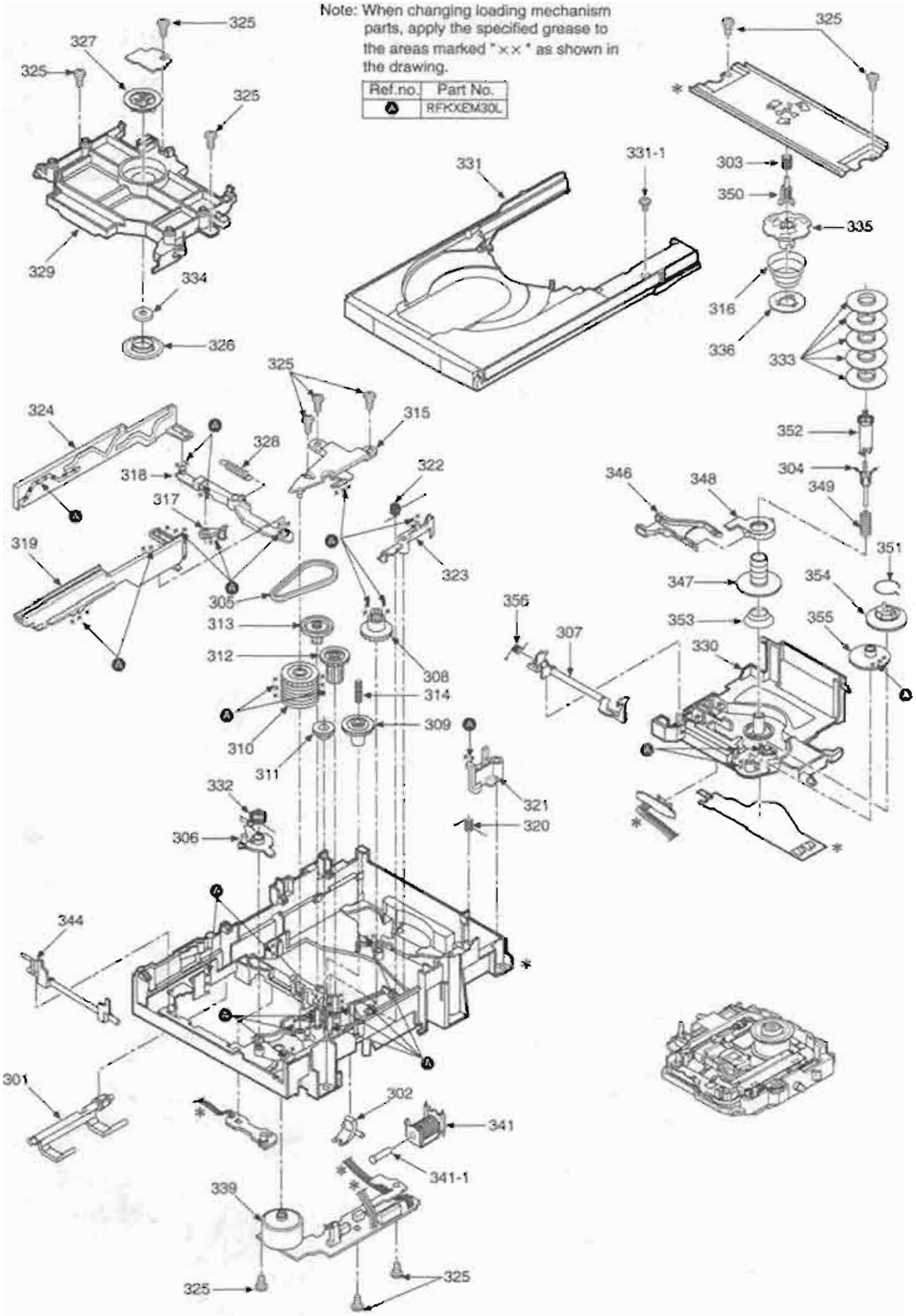
Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
1	RKM0399-S	TOP CABINET	1	
2	RHD30007-S	SCREW	4	
3	XTBS3+8JFZ1	SCREW	1	
4	RYF0521-S	CD LID ASS'Y	1	
5	RKA0105-K	RUBBER	4	
6	RKA0106-N	FOOT RING	4	
7	RYP0896A-S	FRONT PANEL	1	
7-1	RGB0025-A	TECHNICS BADGE	1	
8	XTBS3+8JFZ1	SCREW	5	
9	XTB3+8JFZ	SCREW	3	
10	XTW3+8T	SCREW	2	
11	RHD30078	SCREW	3	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
12	XTB3+8JFZ	SCREW	2	
13	REX0970	WIRE ASS'Y	1	
14	REZ1221	FFC(26P)	1	
15	REZ1222	FFC(26P)	1	
16	REZ1223	FFC(15P)	1	
17	REZ1224	FFC(7P)	1	
18	REZ1225	FFC(14P)	1	
19	REZ1198	FFC(17P)	1	
20	REZ1220	FFC(21P)	1	
21	XTW3+10T	SCREW	4	
22	XTB3+8JFZ	SCREW	1	

■ Loading Unit Parts Location

Note: When changing loading mechanism parts, apply the specified grease to the areas marked "××" as shown in the drawing.

Ref.no.	Part No.
A	RFKXEM30L



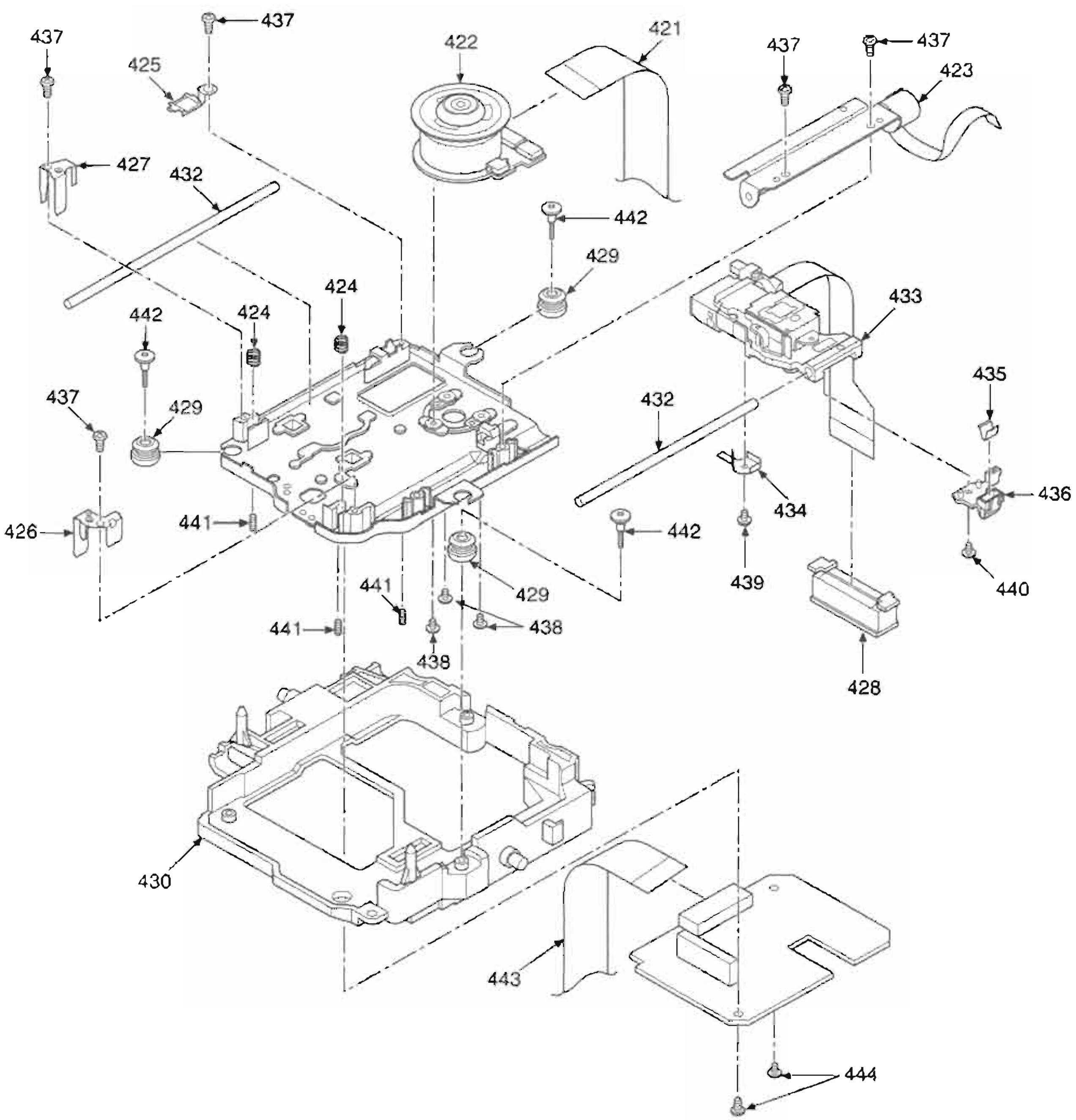
Note: We do not supply those items of parts marked *.

Ref.No.	Part No.	Part Name & Description	Pcs
301	RML0517	LEVER	1
302	RML0516	LEVER	1
303	RMB0551	UPPER SPINDLE SPRING	1
304	RMQ0744	LOWER HOOK	1
305	RDV0056	BELT	1
306	RML0525	FRONT LOCK	1
307	RML0526	DISC SPRING	1
308	RDG0424	GEAR,DRIVE	1
309	RDG0425	GEAR,CHANGE	1
310	RDG0427	TRAVERSE CAM GEAR	1
311	RDG0428	TRAVERSE RELAY GEAR	1
312	RDG0426	GEAR,UP/DOWN	1
313	RDG0429	GEAR,PULLEY	1
314	RMB0549	CHANGE GEAR SPRING	1
315	RMQ0748	GEAR HOLDER	1
316	RMB0553	SPRING	1
317	RML0530	LEVER	1
318	RML0518	LEVER	1

Ref.No.	Part No.	Part Name & Description	Pcs
319	RMM0201	SLIDE PLATE 1	1
320	RME0258	REAR LOCK SPRING	1
321	RML0521	REAR LOCK	1
322	RME0257	TRAY LOCK SPRING	1
323	RML0520	TRAY LOCK	1
324	RMM0202	SLIDE PLATE 2	1
325	XTB3+10J	SCREW	11
326	RMR0334	MAGNET HOLDER	1
327	RMR0624-W2	CLAMPER	1
328	RMB0561	ASSIST LEVER SPRING	1
329	RMR1121-K	MECHANISM COVER	1
330	RMQ0742	SPINDLE BASE	1
331	RXQ0561	TRAY BASE	1
331-1	XTN2+4F	SCREW	1
332	RME0261	FRONT LOCK SPRING	1
333	RMX0140	DISC SPACER	5
334	RHM245ZA	MAGNET	1
335	RMQ0749	UPPER SPINDLE	1

Ref.No.	Part No.	Part Name & Description	Pcs
336	RMX0141	SPACER	1
337	XTN2+6G	SCREW	3
338	RMS0632	PIN	3
339	RXQ0595	MOTOR	1
341	RXQ0470	SOLENOIDE	1
341-1	RMS0398-1	SHAFT	1
344	RML0519	CD LEVER	1
346	RML0522	LOADING STOPPER	1
347	RMQ0745	LOWER SPINDLE	1
348	RMQ0746	UP/DOWN BASE	1
349	RMB0550	LOWER SPINDLE SPRING	1
350	RMQ0747	UPPER HOOK	1
351	RME0263	SPRING	1
352	RMQ0743	SPINDLE SHAFT	1
353	RMB0552	SPRING	1
354	RDG0430	GEAR,RELAY A	1
355	RDG0431	GEAR,RELAY B	1
356	RME0262	DISC LEVER SPRING	1

■ Traverse Unit Parts Location



Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
421	REZ1198	FFC(17P)	1	<ODSD>
422	VEM0665	SPINDLE MOTOR UNIT	1	<ODSD>
423	VEM0666	TRAVERSE MOTOR UNIT	1	<ODSD>
424	VMB3278	FAN SPRING	2	<ODSD>
425	VMC1487	SUB SHAFT FAN SPRING	1	<ODSD>
426	VMC1488	PUSH SPRING 1	1	<ODSD>
427	VMC1489	PUSH SPRING 2	1	<ODSD>
428	VMD3261	FPC HOLDER	1	<ODSD>
429	VMG1166	FLOATING RUBBER	3	<ODSD>
430	RMR1236-K	TRAVERSE CHASSIS	1	<ODSD>
431	VMS6471	GUIDE SHAFT 1	1	<ODSD>
432	VMS6472	GUIDE SHAFT 2	2	<ODSD>
433	VED0402	OPTICAL PICK UP	1	<ODSD>

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
434	VMC1491	SUB SHAFT PRESSURI. SPRIN	1	<ODSD>
435	VMC1490	SPRING	1	<ODSD>
436	VMD3260	HOLDER	1	<ODSD>
437	VHD1224	SCREW	5	<ODSD>
438	VHD1225	SCREW	3	<ODSD>
439	VHD1057	SCREW	1	<ODSD>
440	XQNQC17+3	SCREW	1	<ODSD>
441	XXE26C6FN	SCREW	3	<ODSD>
442	VHD1223	SCREW	3	<ODSD>
443	REZ1220	FFC(21P)	1	<ODSD>
444	XTV2+6G	SCREW	2	<ODSD>
445	VXK1496	DVD OPTICAL PICK UP	1	<ODSD>

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