

Service Manual

AD9906137C3

Service Manual

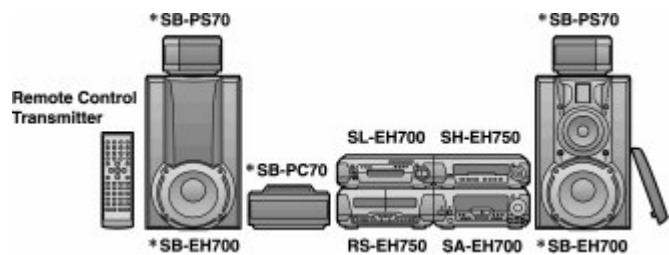
Compact Disc Changer



SL-EH700

Colour (S)..... Silver Type

Area (GC)..... Asia, Latin America, Middle East and Africa.



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

System	SC-EH700V
Sound Processor	SH-EH750
Tuner/Amplifier	SA-EH700
CD Changer	SL-EH700
Cassette Deck	RS-EH750
Front Speakers*	SB-EH700
Center Speaker*	SB-PC70
Surround Speakers*	SB-PS70

Traverse Deck : RAE0152Z MECHANISM SERIES

Specifications

Audio Section

No. of channels: 2 (left and right, stereo)
Frequency response: 20 to 20,000 Hz (+0.5 dB to -2 dB)
Output voltage: 0.78 V (at 0 dB)
Dynamic range: 85 dB
S/N: 95 dB
Total harmonic distortion: 0.02 % (1 kHz, 0 dB)
Wow and flutter: Below measurable limit
Digital filter: 8 fs
DA converter: 1 bit DAC MASH
Output impedance: 1 k Ω
Load impedance: More than 10 k Ω
Video output:
Video format: NTSC/PAL
Output voltage: 1V p-p 75 Ω

Pickup Section

Beam source: Semiconductor Laser
Wavelength: 780 nm

General

Dimensions (W×H×D): 293×89×288 mm
Weight: 2.2 kg

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

*: Made in Singapore.

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Panasonic®

2 Handling Precautions for Traverse Deck

[TOP](#) [PREVIOUS](#) [NEXT](#)

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

Handling of traverse deck (optical pickup)

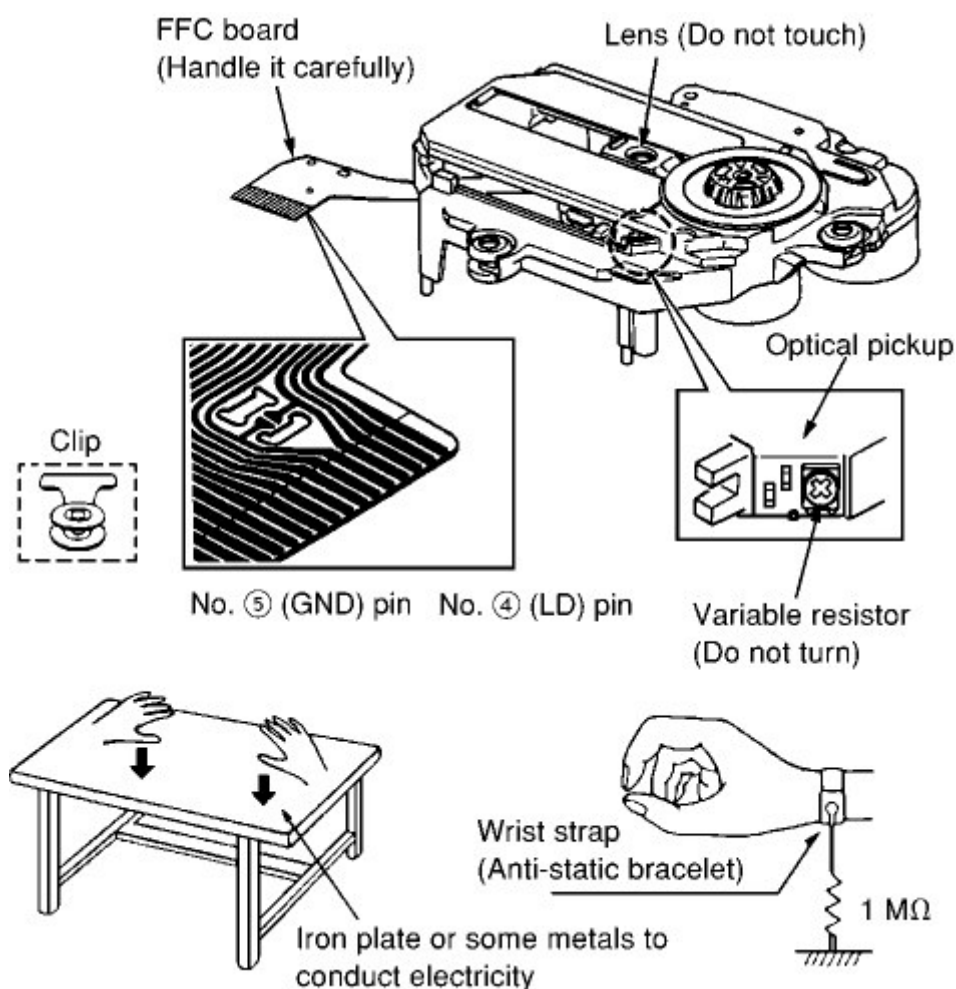
1. Do not subject the traverse deck (optical pickup) to static electricity as it is extremely sensitive to electrical shock.
2. To protect the laser diode against electrostatic breakdown, short the flexible board (FFC board) with a clip or similar object.
3. Take care not to apply excessive stress to the flexible board (FFC board).
4. Do not turn the variable resistor (laser power adjustment). It has already been adjusted.

Grounding for electrostatic breakdown prevention

1. Human body grounding/Use the anti-static 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 traverse deck (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 traverse deck (optical pickup).

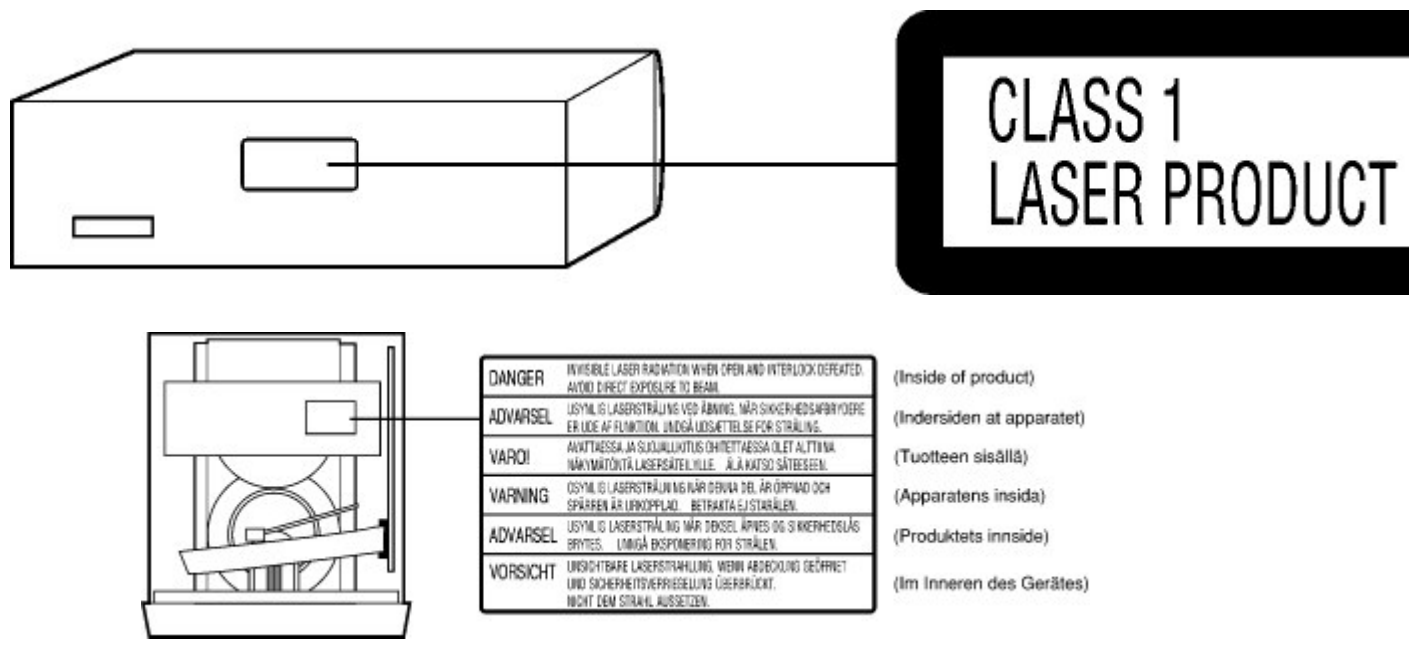


3 Precaution of Laser Diode

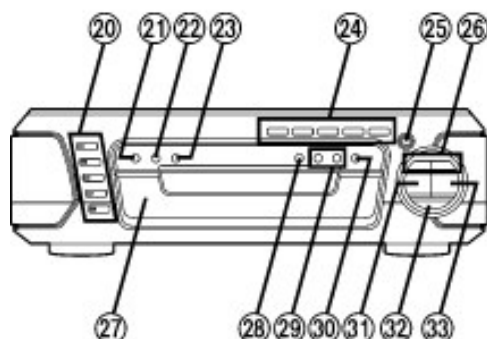
CAUTION:

This product utilizes a laser diode with the unit turned“on”, invisible laser radiation is emitted from the pick up lens./Wave length: 780 nm/Maximum output radiation power from pick up: 100μW/VDE//Laserradiation from the pick up unit is safety level, but be sure the followings:

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



4 Location of Controls



The functions labeled in blue are used with menu play.

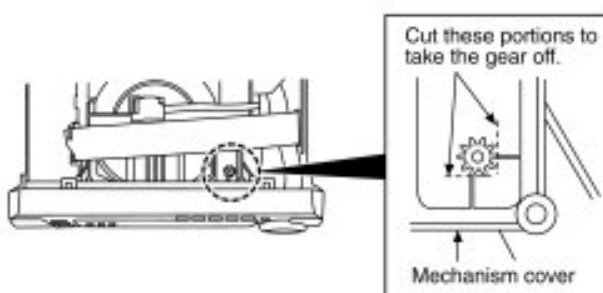
- ⑳ **Disc select buttons and indicators (DISC, 1–5)**
Green: Indicates that the tray is ready to play its CD or to be opened.
 - ㉑ **Random play button (RANDOM)**
 - ㉒ **Repeat button (REPEAT)**
 - ㉓ **CD edit button (EDIT)**
 - ㉔ **Disc direct open buttons**
(DIRECT OPEN, DISC 1–DISC 5)
 - ㉕ **Disc tray open/close button (▲ OPEN/CLOSE)**
 - ㉖ **Skip/search, previous/next buttons**
(PREV, ◀◀/◀, NEXT, ▶/▶▶)
 - ㉗ **Disc tray**
 - ㉘ **On screen display on/off button (OSD)**
 - ㉙ **Menu number select buttons (MENU, –, +)**
 - ㉚ **Return button (↶)**
 - ㉛ **Stop/PBC button (■, PBC)**
 - ㉜ **Pause button (⏸)**
 - ㉝ **Play/select button and indicator (▶, SELECT)**
The color of the indicator depends on the operation.
If stopped: orange
If playing: green
If paused: flashes
-

5 Operation Checks and Component Replacement Procedures

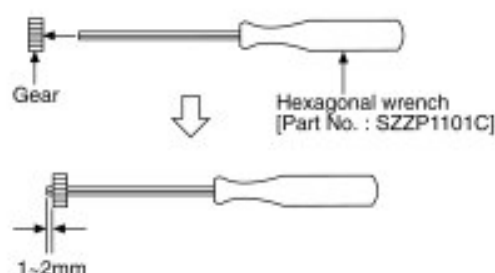
Gear for servicing (as jig) information

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.

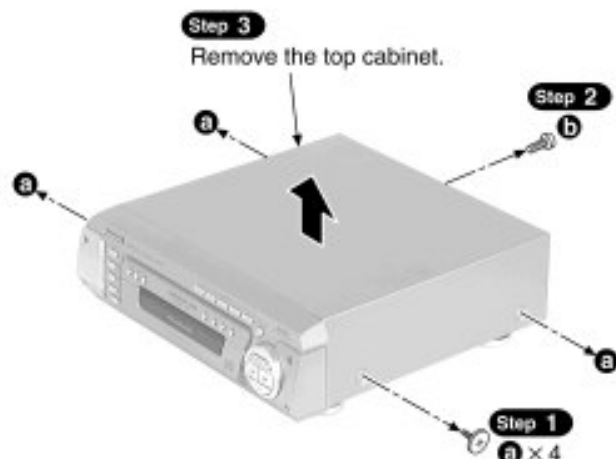
1. Checking for the main P.C.B. and video P.C.B..
2. Checking for the operation P.C.B..
3. Checking for the CD servo P.C.B..

■ Main Component Replacement Procedures/Each parts disassembly and reassembly

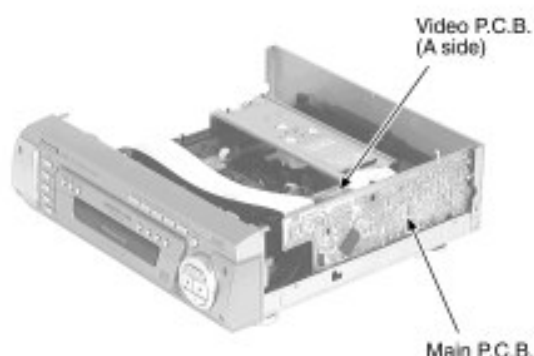
1. Replacement for the traverse desk ass'y.
2. Replacement for the disc tray.
3. Disassembly and reassembly for mechanism base drive unit.
4. Replacement for the motor ass'y.

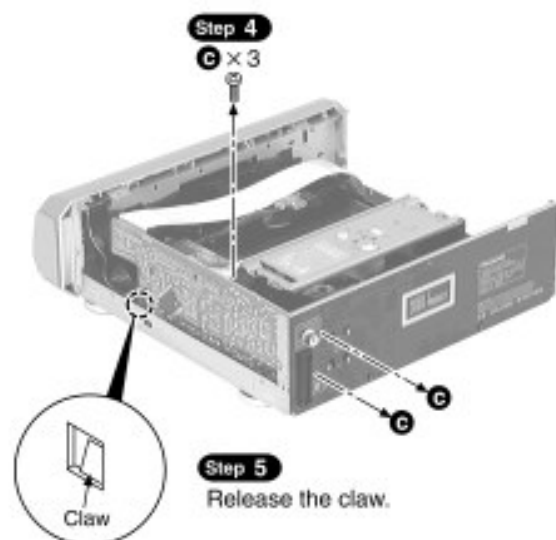
■ Checking Procedures for each P.C.B.

1. Checking for the main P.C.B. and video P.C.B.



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

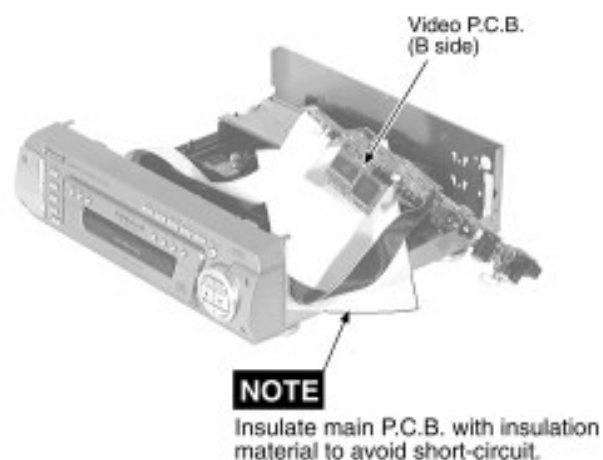




Step 6
Upset the main P.C.B.
in the direction of arrow.

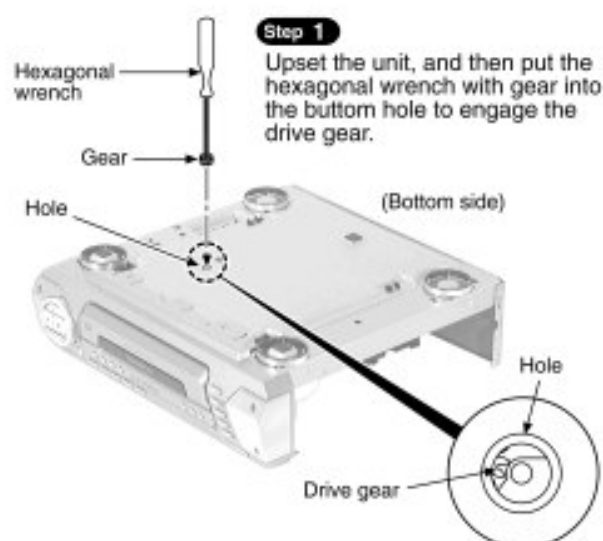


• Check the video P.C.B. (B side) as shown below.

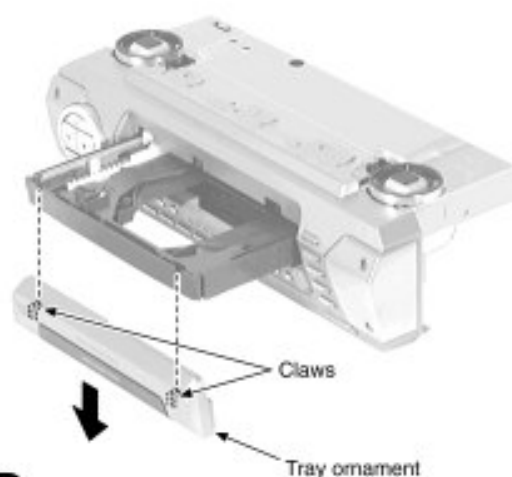
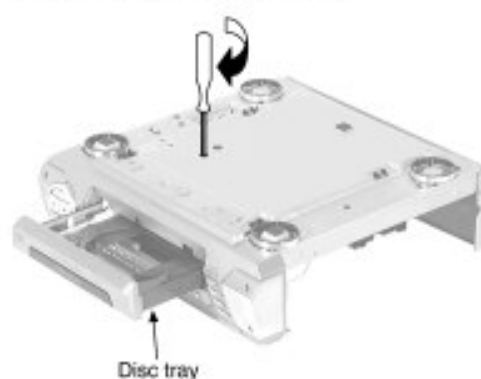


2. Checking for the operation P.C.B.

• Follow the **Step 1** ~ **Step 3** of the item 1 in checking procedures for each P.C.B..



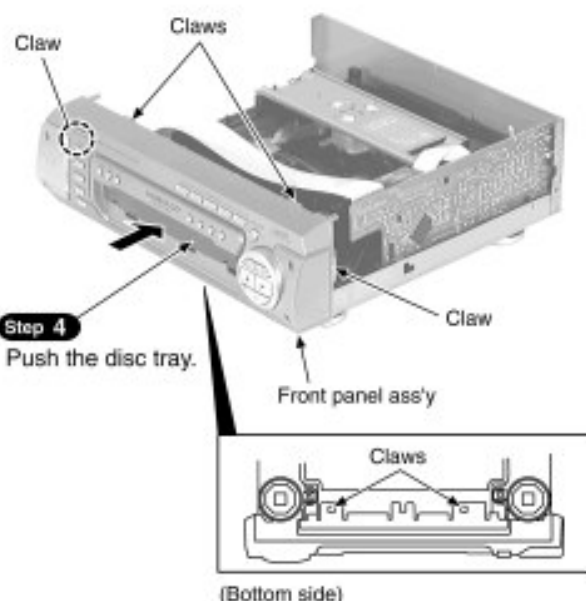
Step 2
Rotate the hexagonal wrench with gear in direction of arrow, and then open the disc tray.



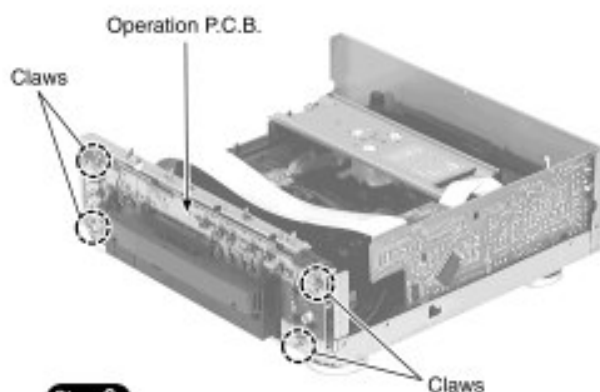
Step 3
Release the 2 claws, and then
remove the tray ornament.

Step 5

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

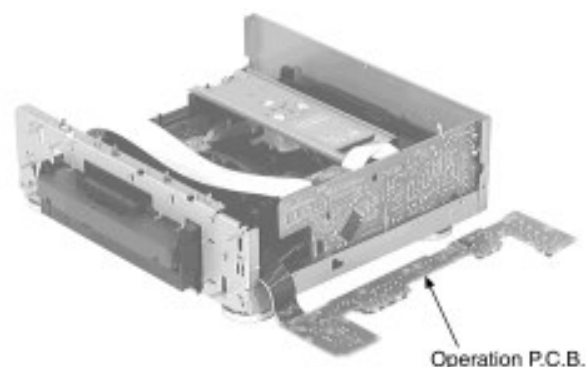
**Step 4**

Push the disc tray.

**Step 6**

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

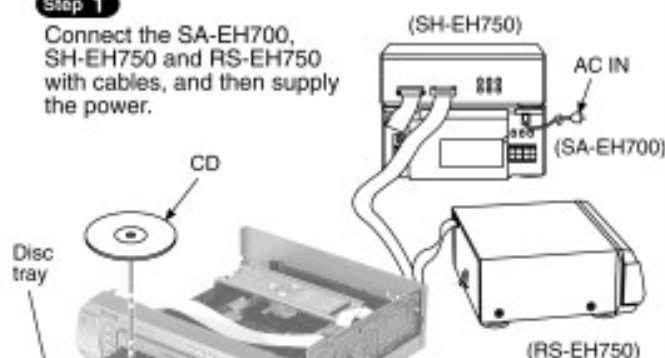
• Check the operation P.C.B. as shown below.

**3. Checking for the CD servo P.C.B.**

- Follow the **Step 1** ~ **Step 3** of the item 1 in checking procedures for each P.C.B..
- Follow the **Step 1** ~ **Step 4** of the item 2 in checking procedures for each P.C.B..

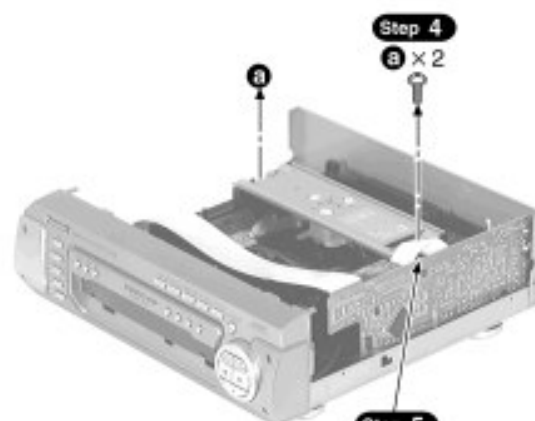
Step 1

Connect the SA-EH700, SH-EH750 and RS-EH750 with cables, and then supply the power.

**Step 2**

Push the open/close button, and then open the disc tray.

Put the CD into the disc tray.

**Step 4**

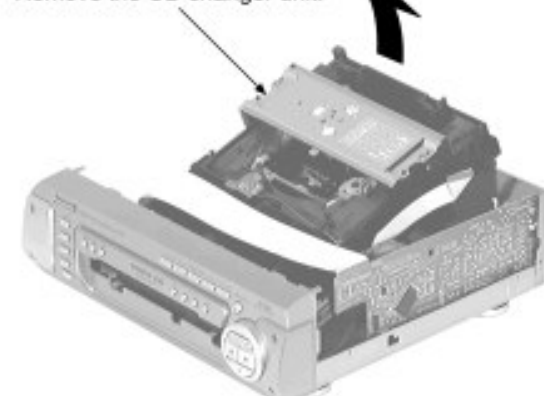
a x 2

Step 5

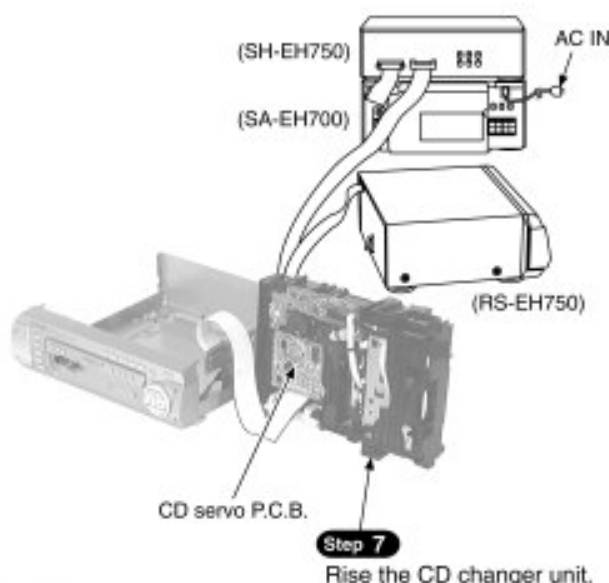
Remove the FFC from connector (CN401).

Step 6

Remove the CD changer unit.



- Check the CD servo P.C.B. as shown below.



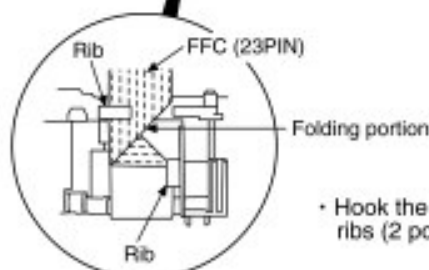
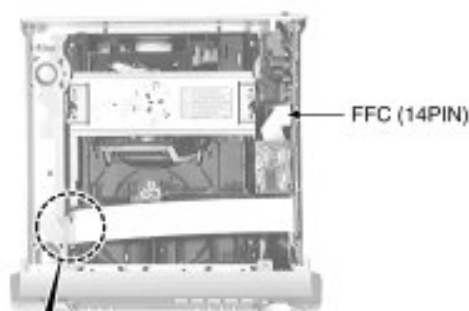
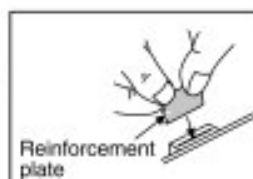
NOTE

- The CD unit should be checked under "PLAY MODE".
- Do not operate the "DISC change" while the unit is stayed vertically.

Cable arrangement

Notice for installing the FFC

When connecting the FFC, insert it straight with nipping the reinforcement plate by finger.

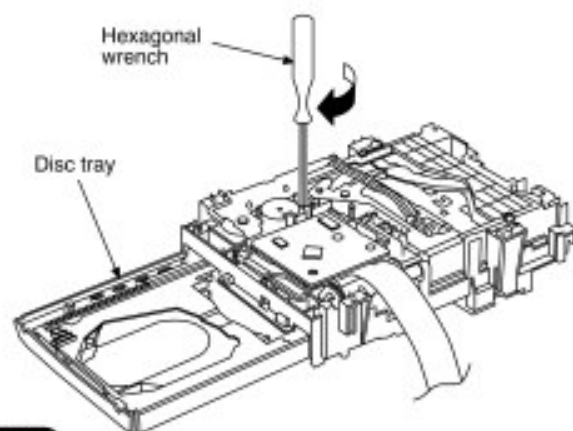
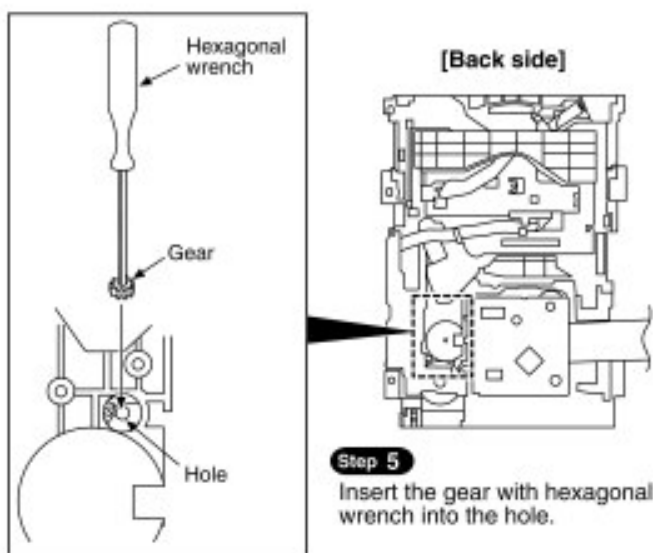
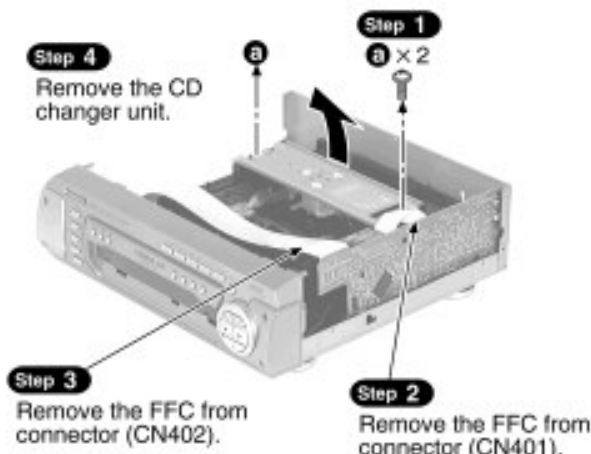


- Hook the FFC to the ribs (2 portions).

Main Component Replacement Procedures / Each parts disassembly and reassembly

1. Replacement for the traverse deck ass'y

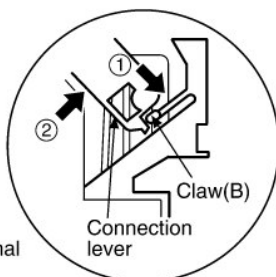
- Follow the **Step 1** - **Step 3** of the item 1 in checking procedures for each P.C.B..
- Follow the **Step 1** - **Step 4** of the item 2 in checking procedures for each P.C.B..



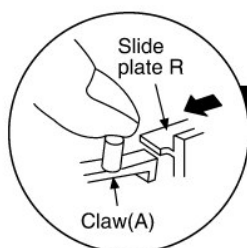
- Step 6**
Rotate the hexagonal wrench in the direction of arrow (clockwise), and then open the disc tray fully.

Step 8

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

**Step 7**

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

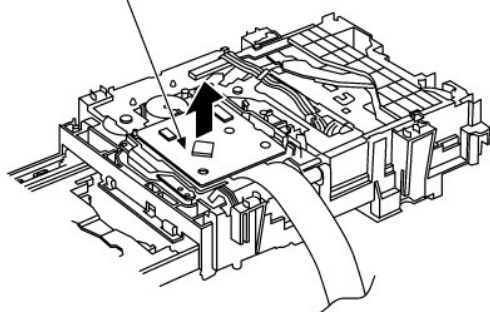


Hexagonal wrench

Connection lever

Step 9

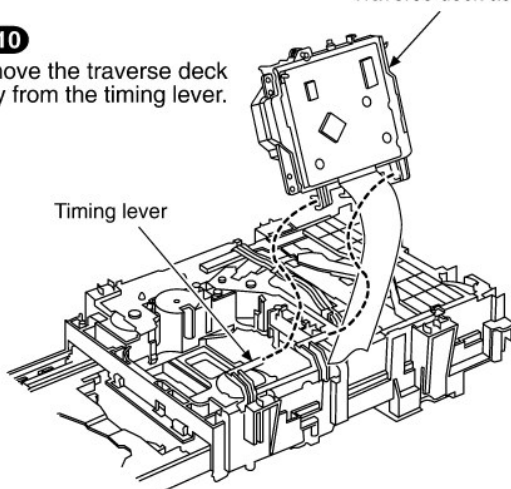
Lift up the traverse deck ass'y.



Traverse deck ass'y

Step 10

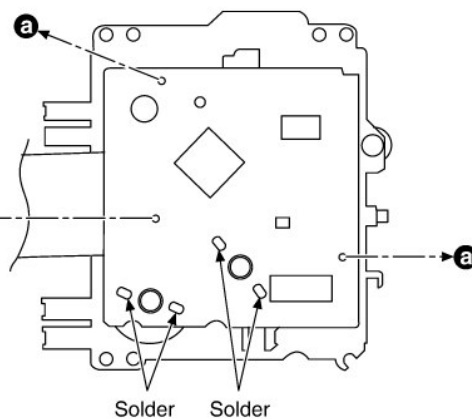
Remove the traverse deck ass'y from the timing lever.



Timing lever

Step 11

a × 3



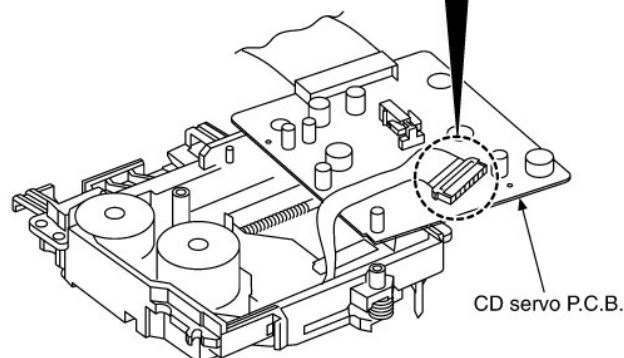
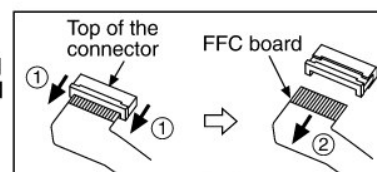
Solder Solder

Step 12

Unsolder the motor terminals (4 points).

Step 13

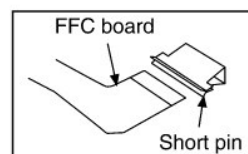
Remove the FFC board from the connector, and then remove the CD servo P.C.B..



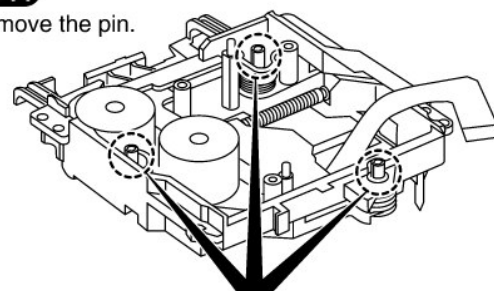
CD servo P.C.B.

Caution:

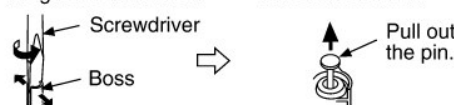
Insert a short pin into the traverse unit FFC board.
(Refer to "Handling Precautions for Traverse Deck".)

**Step 14**

Remove the pin.

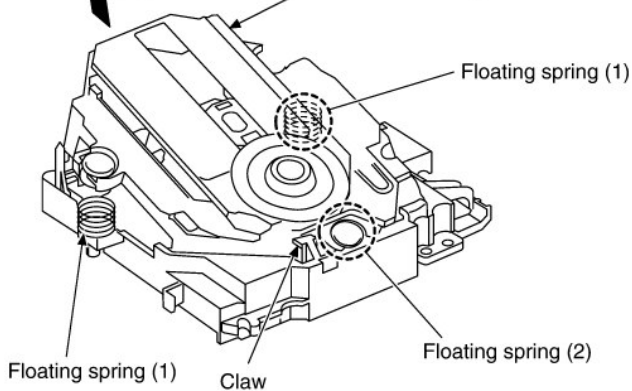


1. Widen the boss using a regular screwdriver. 2. Pull out the pin in the direction of arrow.



Step 15

Release the claw, and then remove the traverse deck ass'y.

**NOTE**

Be careful not to lose the 3 floating springs because those will also be removed on removal of the traverse deck ass'y.

Installation of the CD servo P.C.B. after replacement**Step 3**

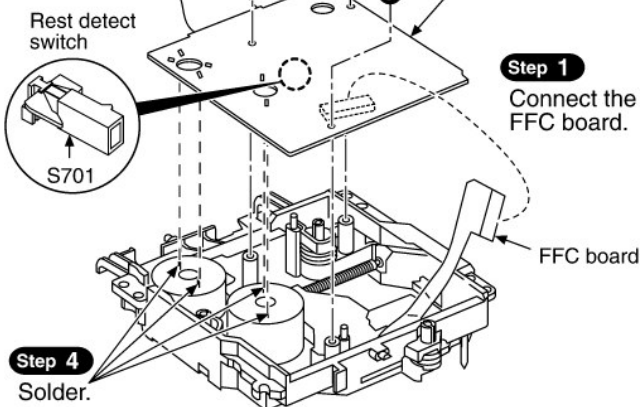
a × 3

Step 2

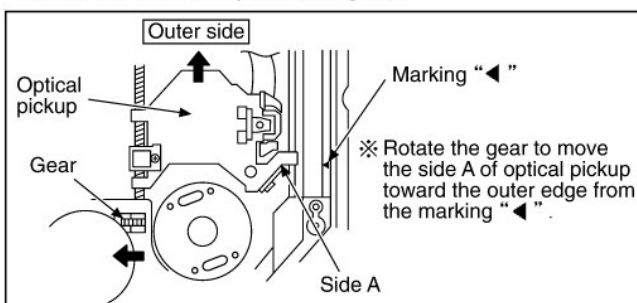
Install the CD servo P.C.B. in the traverse deck ass'y.

Step 1

Connect the FFC board.

**Note for installation of the CD servo P.C.B.**

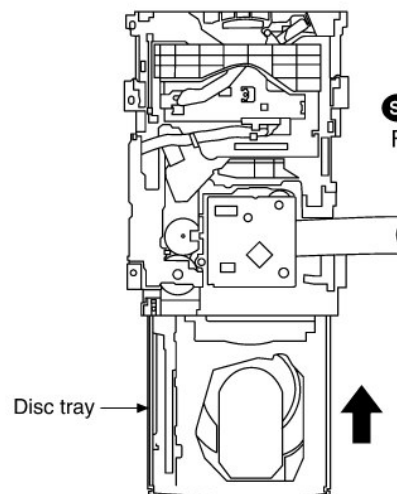
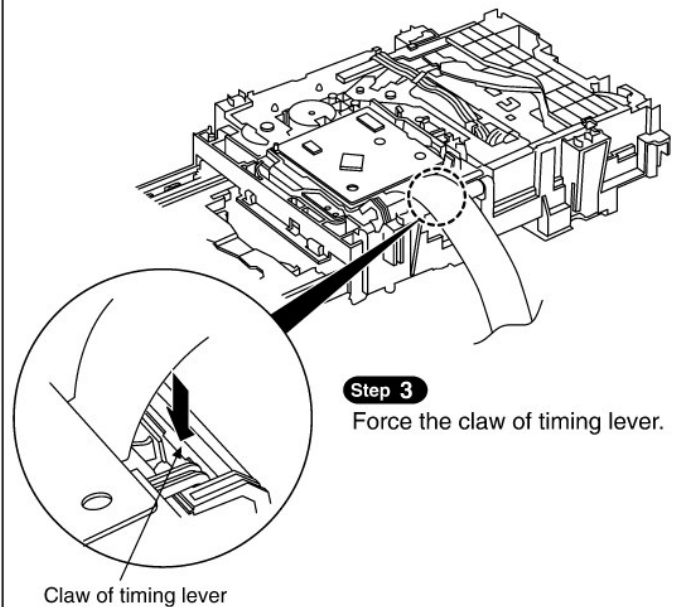
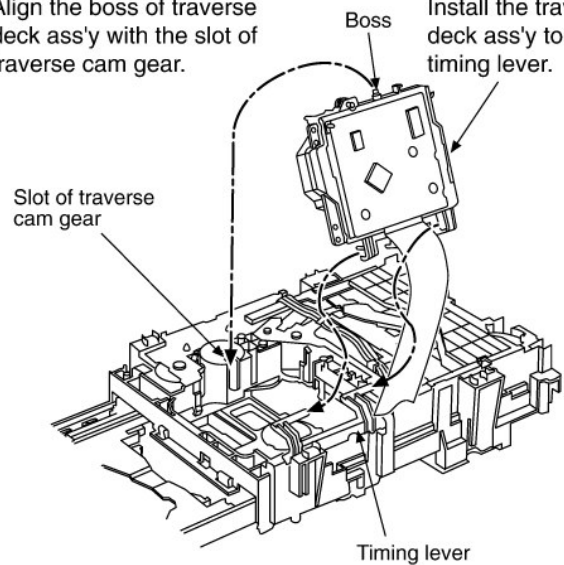
Before installing the CD servo P.C.B., move the optical pickup toward the outer edge from the mark "◀".
[Otherwise, the rest detect switch (S701) mounted on the CD servo P.C.B. may be damaged.]

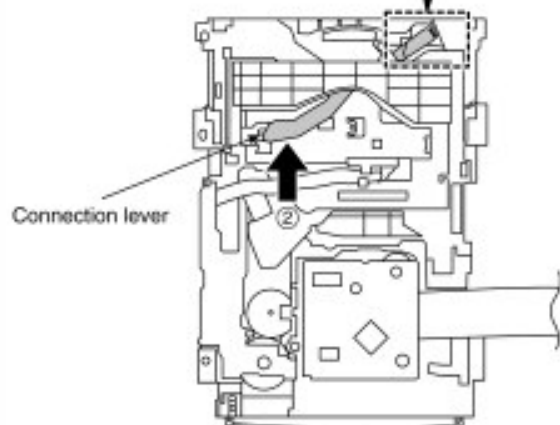
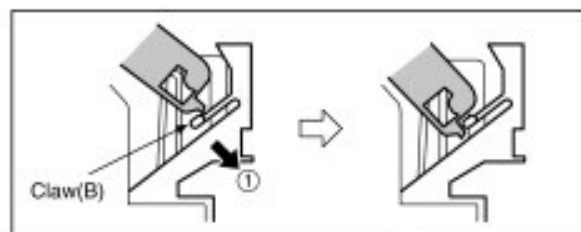
**Installation for traverse deck ass'y****Step 2**

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

Step 1

Install the traverse deck ass'y to the timing lever.



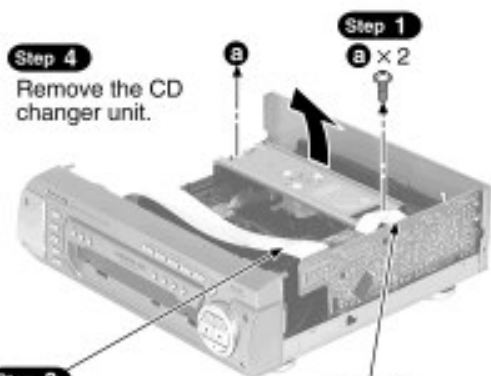


Step 5

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 3** of the item 1 in checking procedures for each P.C.B..
- Follow the **Step 1** - **Step 4** of the item 2 in checking procedures for each P.C.B..

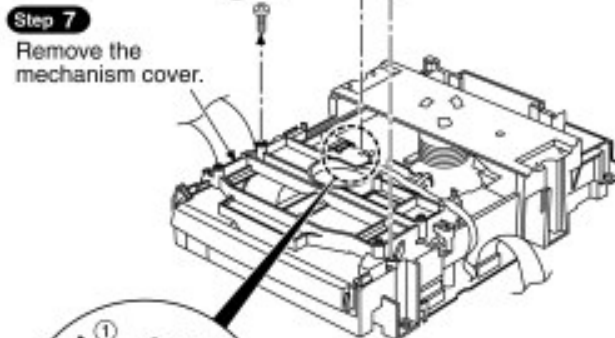


Step 3

Remove the FFC from connector (CN402).

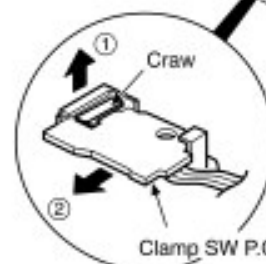
Step 2

Remove the FFC from connector (CN401).



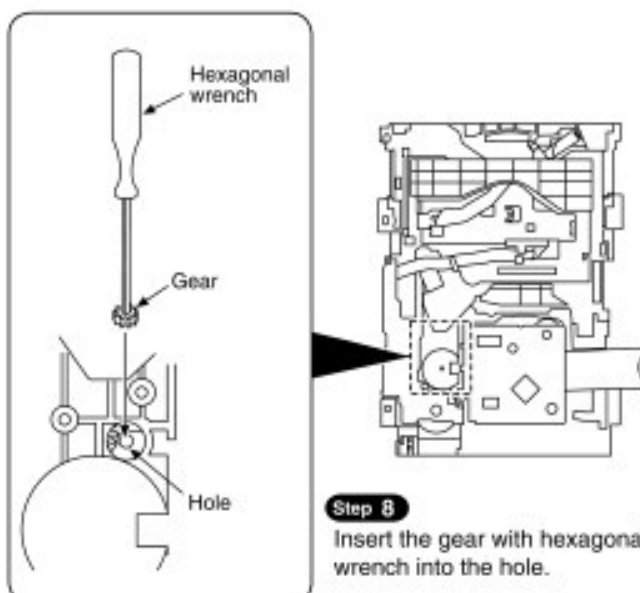
Step 7

Remove the mechanism cover.



Step 6

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

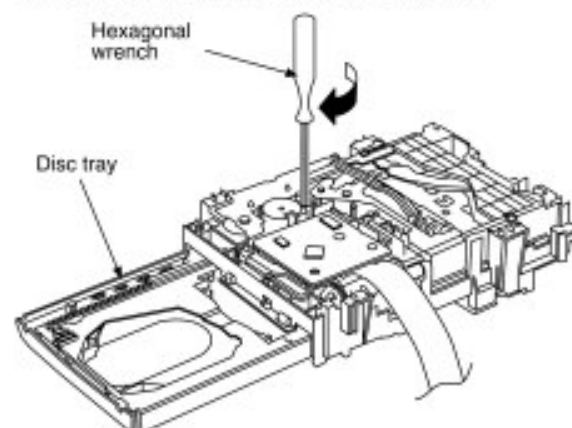


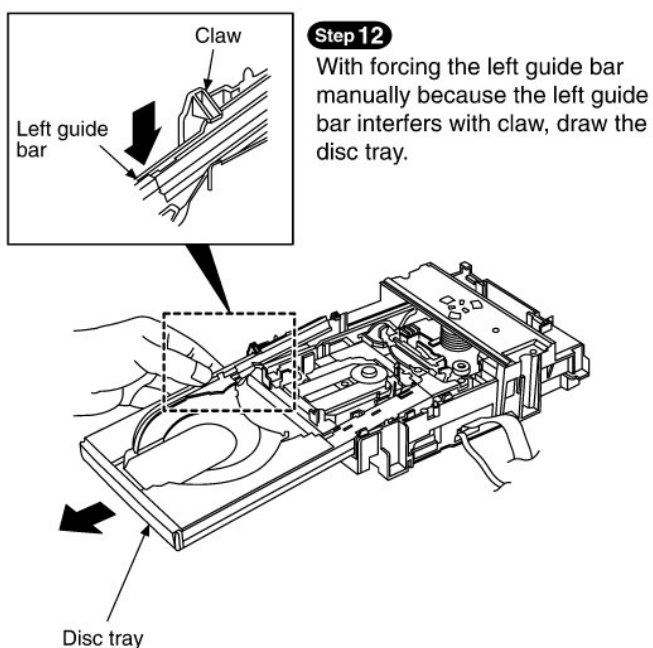
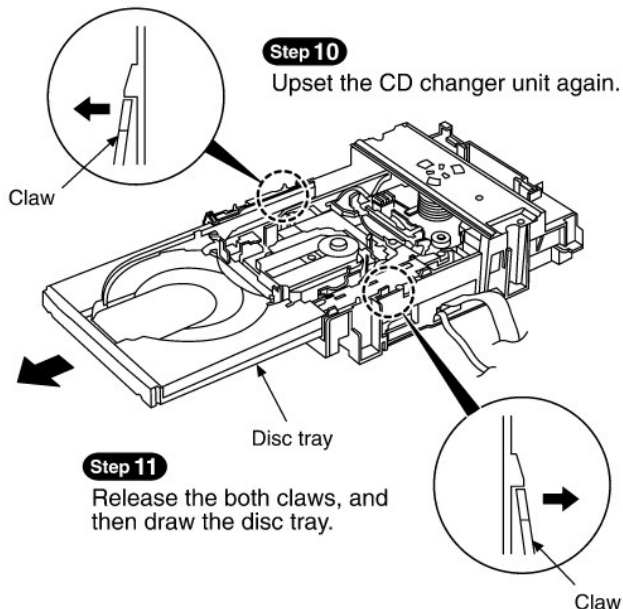
Step 8

Insert the gear with hexagonal wrench into the hole.

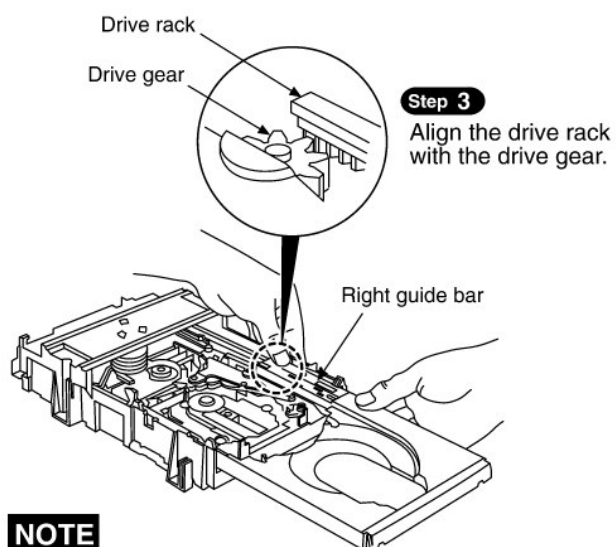
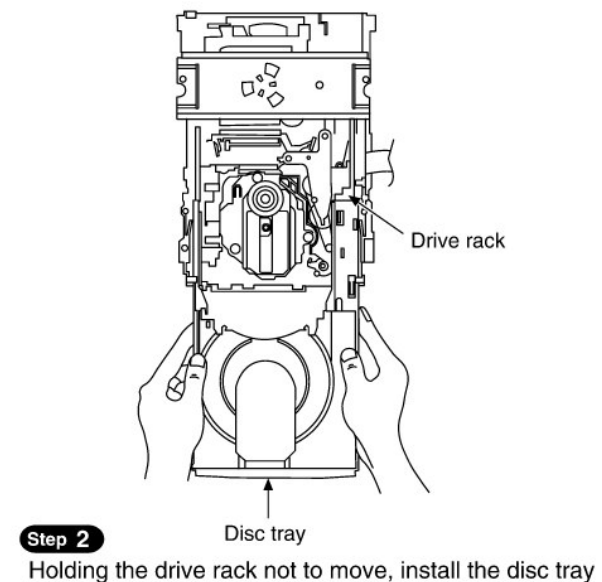
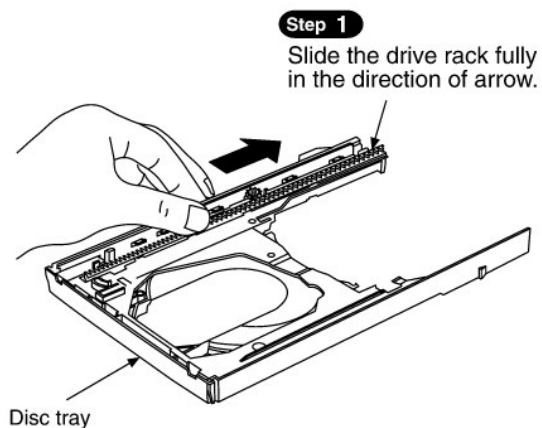
Step 9

Rotate the hexagonal wrench in the direction of arrow (clockwise), and then open the disc tray fully.

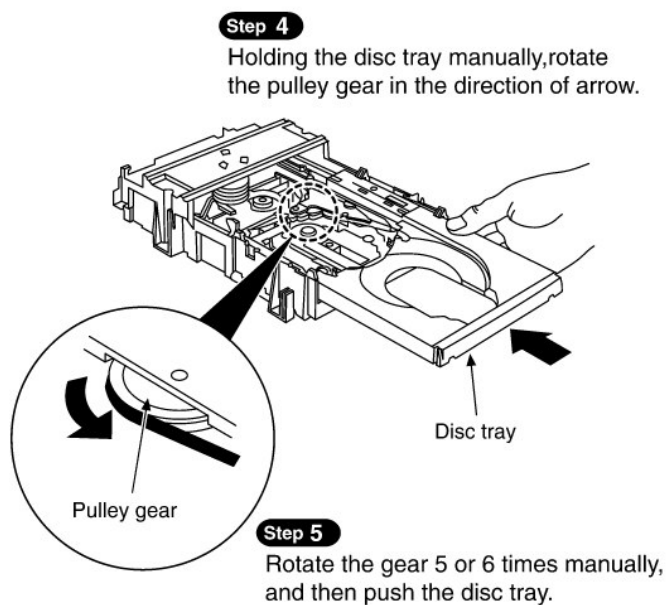




Installation of the disc tray after replacement



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



3. Disassembly and reassembly for mechanism base drive unit

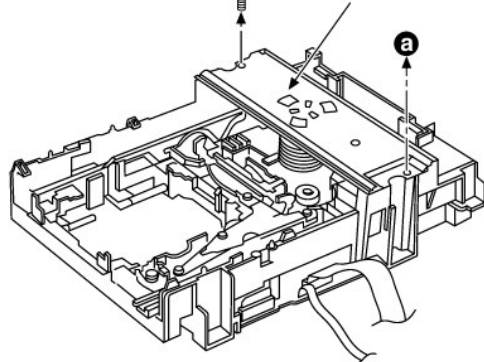
Disassembly for mechanism base drive unit

- Follow the **Step 1** ~ **Step 3** of the item 1 in checking procedures for each P.C.B..
- Follow the **Step 1** ~ **Step 4** of the item 2 in checking procedures for each P.C.B..
- Follow the **Step 1** ~ **Step 10** of the item 1 in main component replacement procedures.
- Follow the **Step 1** ~ **Step 12** of the item 2 in main component replacement procedures.

Step 1
a × 2

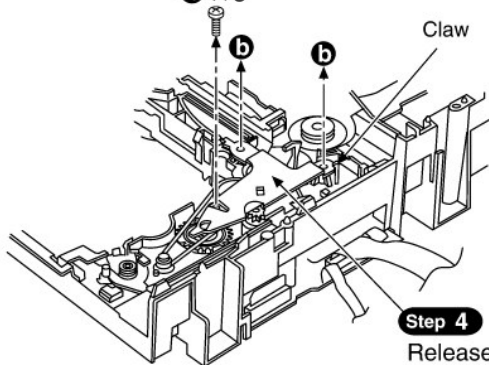
Step 2

Remove the upper plate.



Step 3
b × 3

Claw

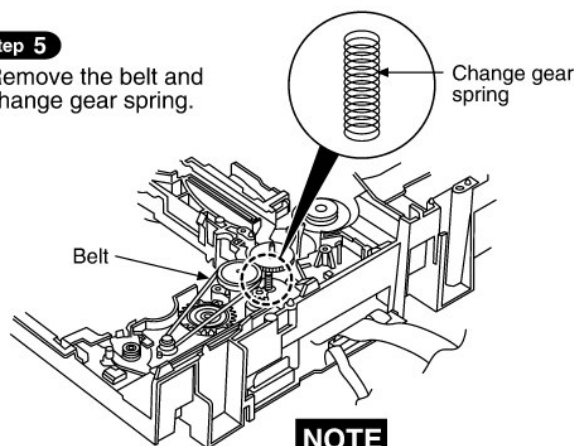


Step 4

Release the claw, and then remove the gear holder.

Step 5

Remove the belt and change gear spring.

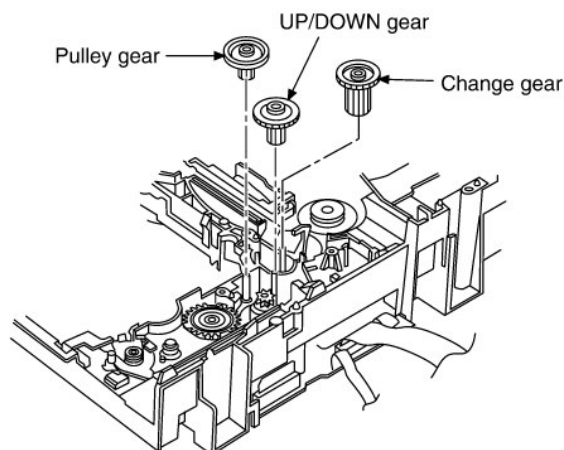


NOTE

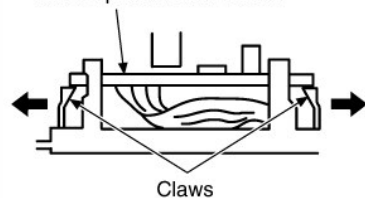
Take care not to lose the change gear spring.

Step 6

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



Bottom/position SW P.C.B.

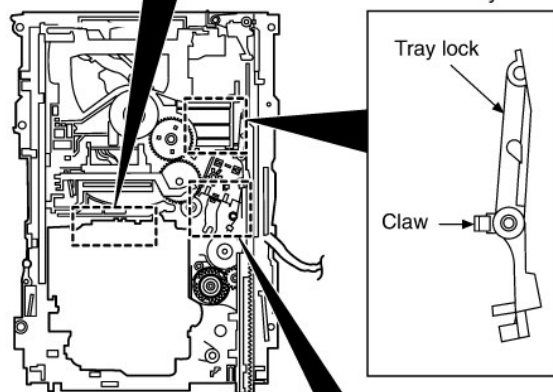


Step 7

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

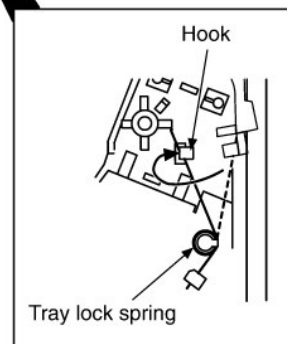
Step 9

Release the claw, and then remove the tray lock.



Step 8

Install the tray lock spring to the hook temporarily.

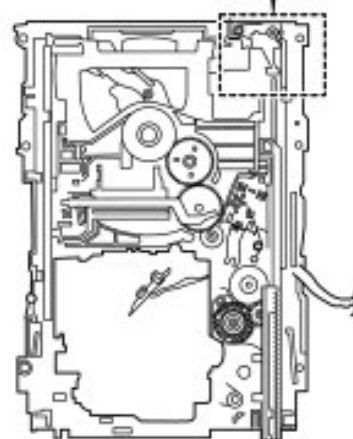
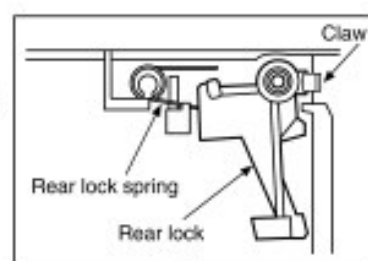


Step 10

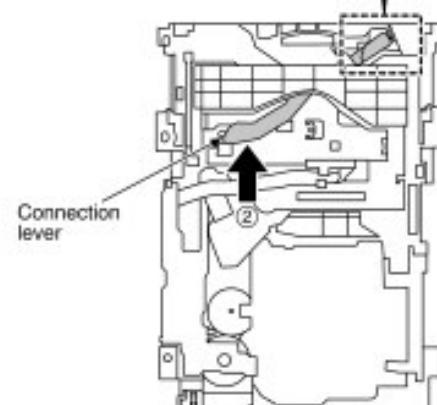
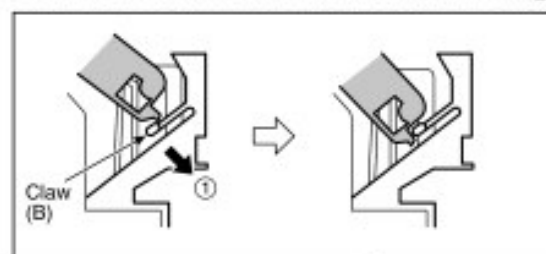
Release the claw, and then remove the rear lock.

NOTE

Take care not to take the rear lock spring off.

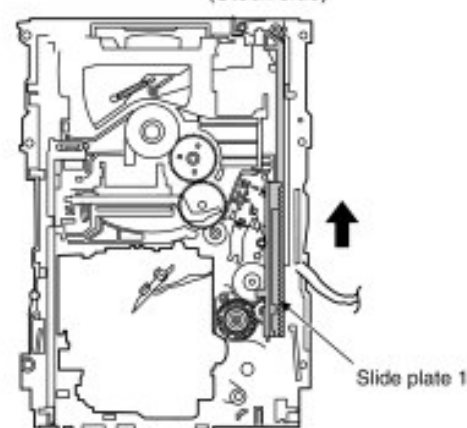
**Step 11**

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

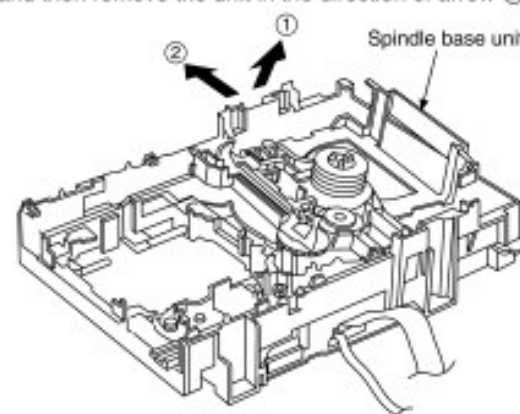
**Step 12**

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

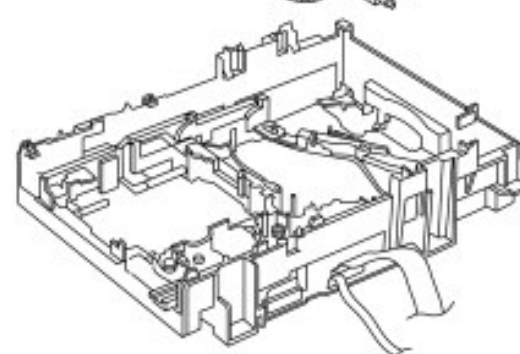
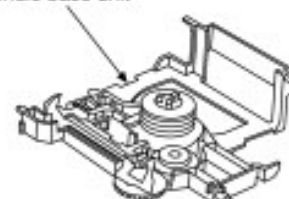
(Stock side)

**Step 13**

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.

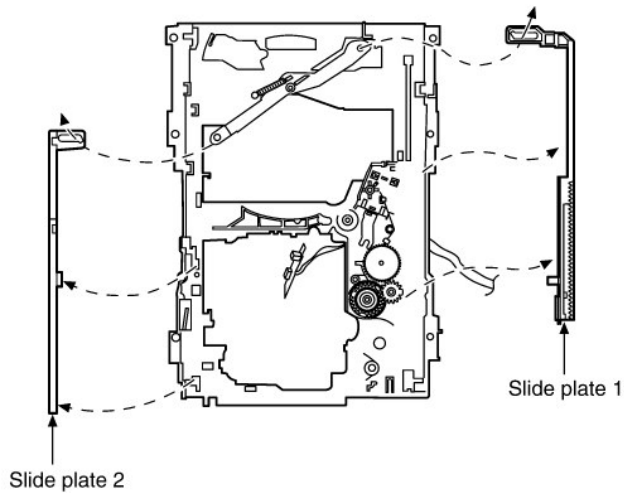


Spindle base unit

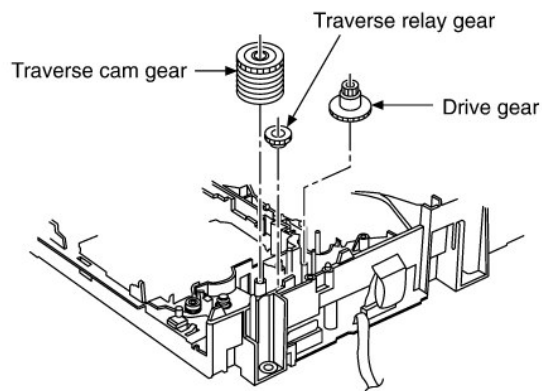


Step 14

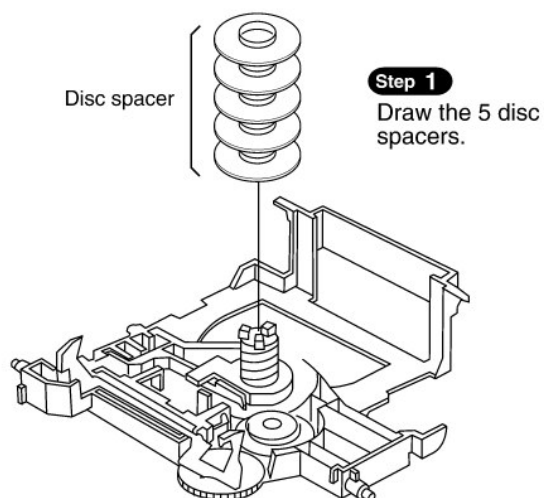
Remove the slide plate 1 and slide plate 2.

**Step 15**

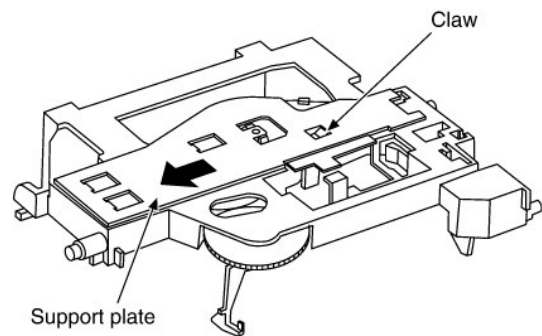
Remove the traverse relay gear, traverse cam gear and drive gear.



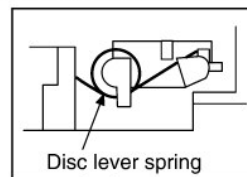
Disassembly/reassembly for the spindle base unit

**Step 2**

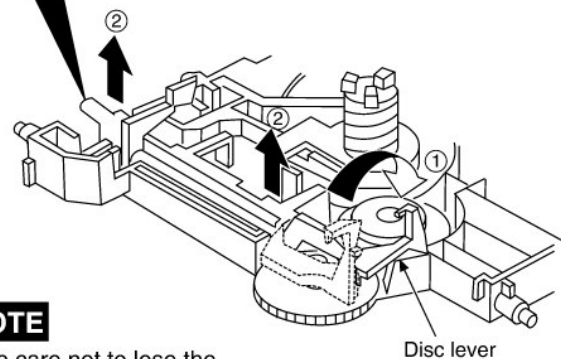
Pushing the claw, slide the support plate in the direction of arrow, and then remove it.



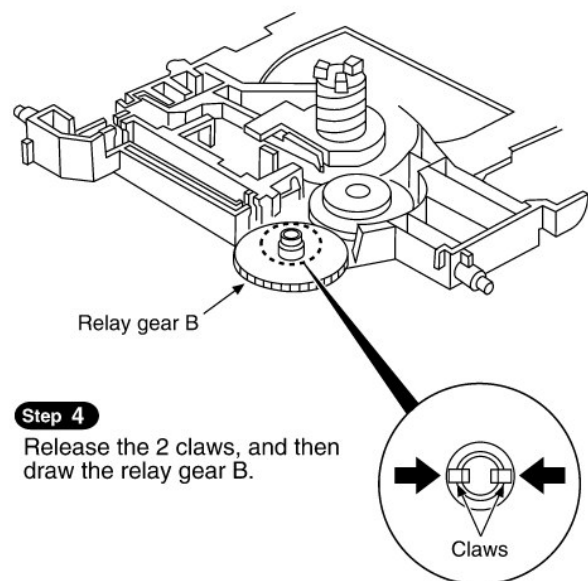
(Installation for disc lever spring)

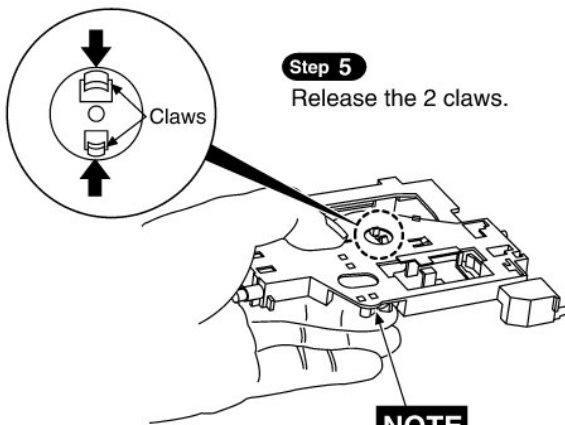
**Step 3**

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

**NOTE**

Take care not to lose the disc lever spring.

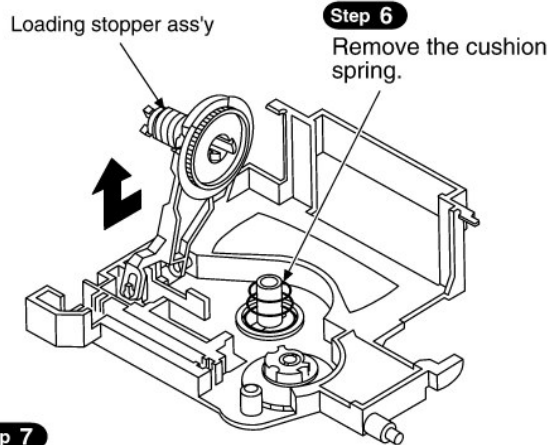




Step 5
Release the 2 claws.

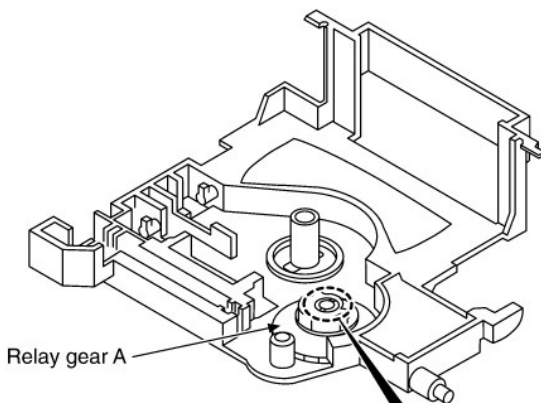
NOTE

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

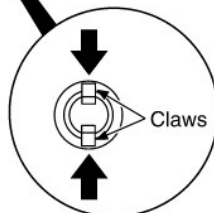


Step 6
Remove the cushion spring.

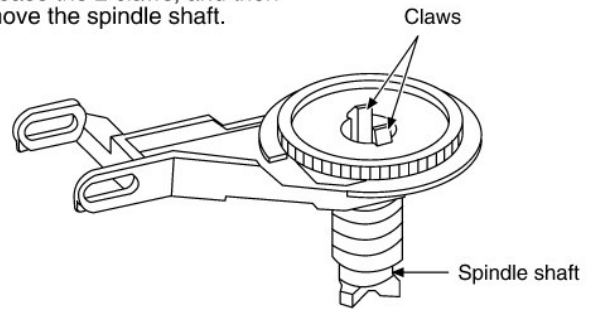
Step 7
Remove the loading stopper ass'y in the direction of arrow.



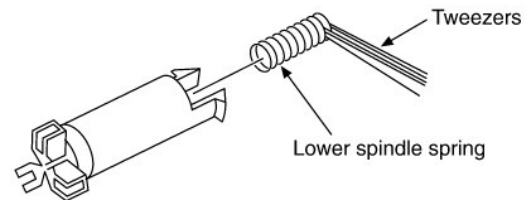
Step 8
Release the 2 claws, and then remove the relay gear A.



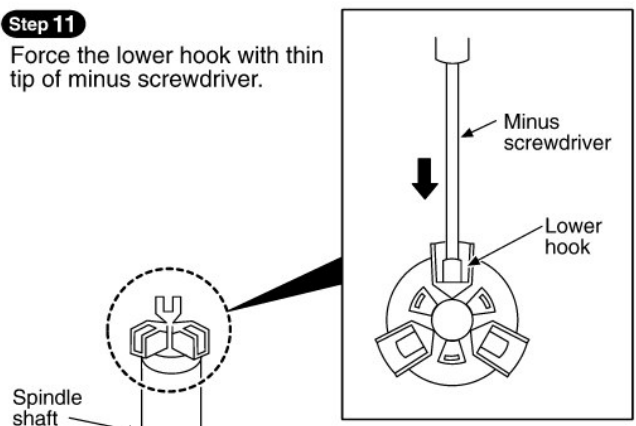
Step 9
Release the 2 claws, and then remove the spindle shaft.



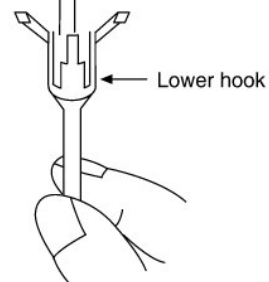
Step 10
Remove the lower spindle spring with tweezers.



Step 11
Force the lower hook with thin tip of minus screwdriver.

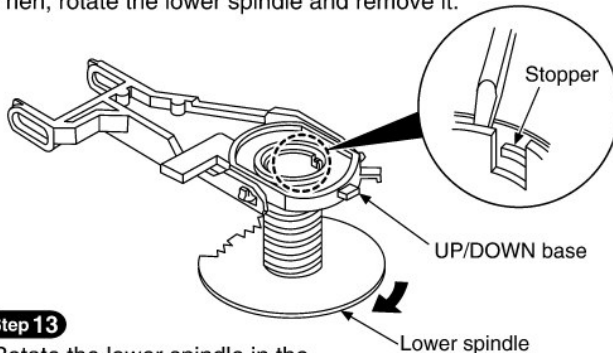


Step 12
Squeeze the shaft of lower hook, and then draw it.

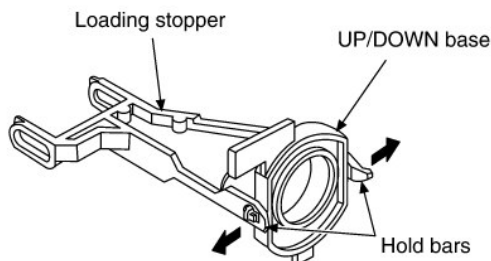


Step 14

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.

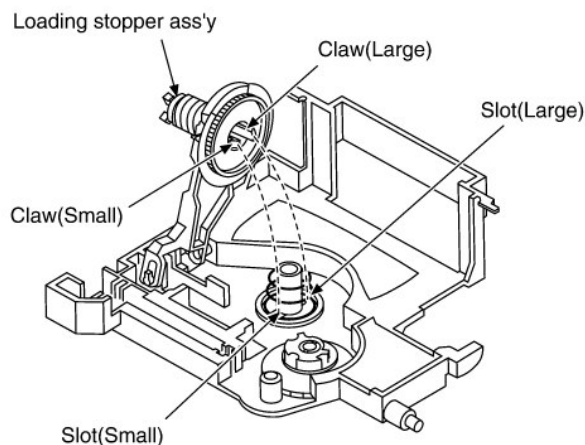
**Step 15**

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

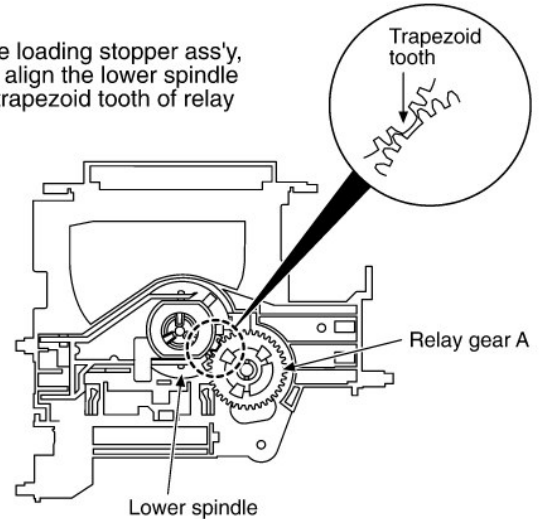
Installation for loading stopper ass'y

Step 1

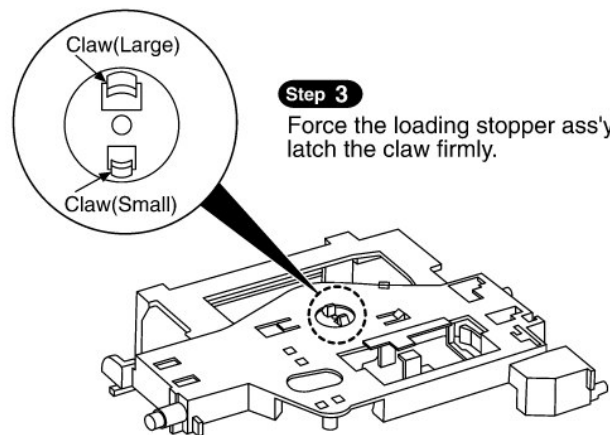
Align the claw of loading stopper ass'y with the slot of spindle base. (Caution should be exercised when alignment of claw due to the size of claws.)

**Step 2**

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

**Step 3**

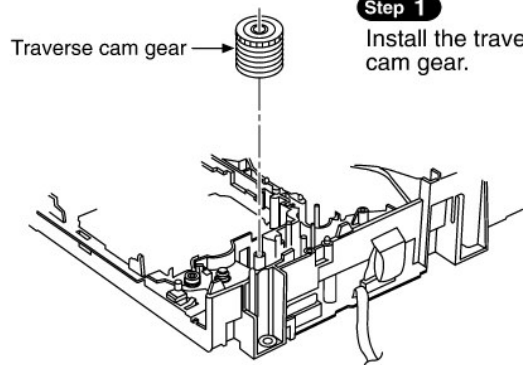
Force the loading stopper ass'y, latch the claw firmly.



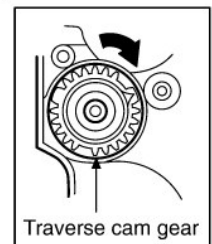
Reassembling for mechanism base drive unit

Step 1

Install the traverse cam gear.

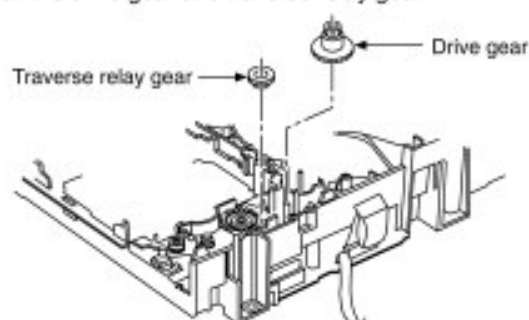
**Step 2**

Rotate the traverse cam gear to the direction of arrow.

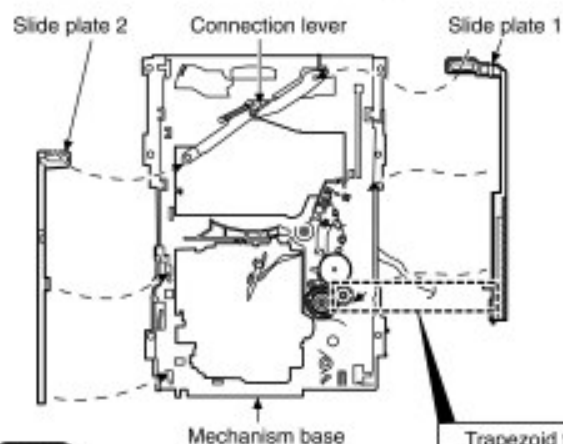
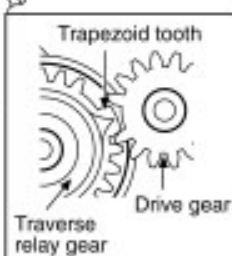


Step 3

Install the drive gear and traverse relay gear.



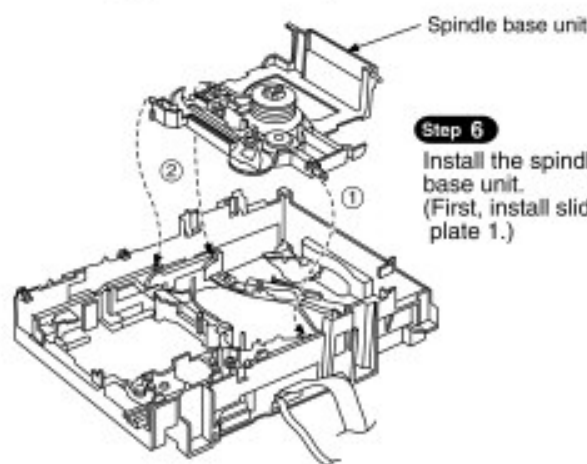
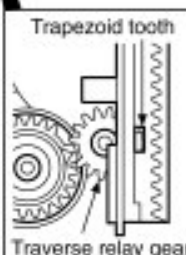
※ When installing the traverse relay gear, align the trapezoid tooth of gear with tooth of drive gear.

**Step 4**

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

Step 5

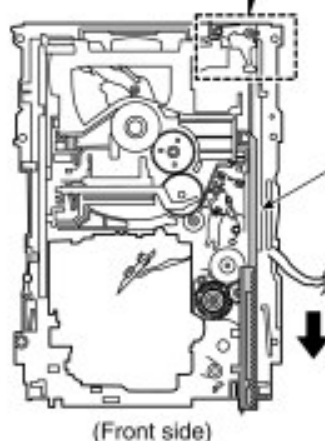
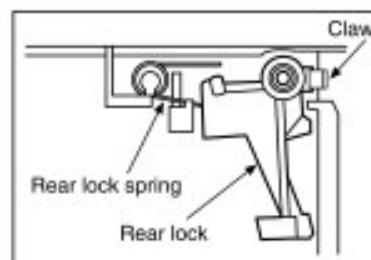
Install the slide plate 1 to the mechanism base, and then match to the connection lever and align the trapezoid tooth of traverse relay gear with the slide plate 1.

**Step 6**

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

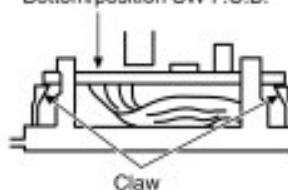
Step 8

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

**Step 7**

Move the slide plate 1 to forward fully.

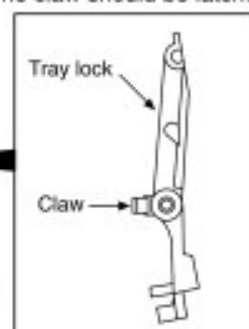
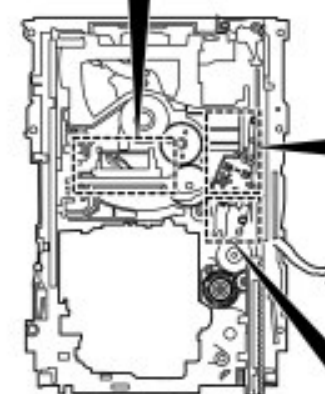
Bottom/position SW P.C.B.

**Step 9**

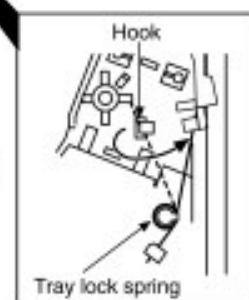
Install the bottom/position SW P.C.B.. (The claw should be latched.)

Step 10

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

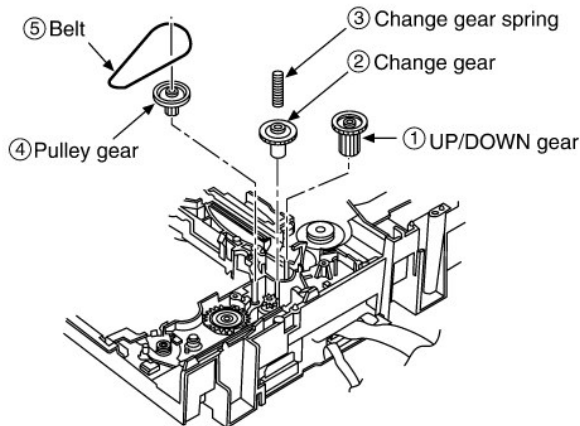
**Step 11**

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

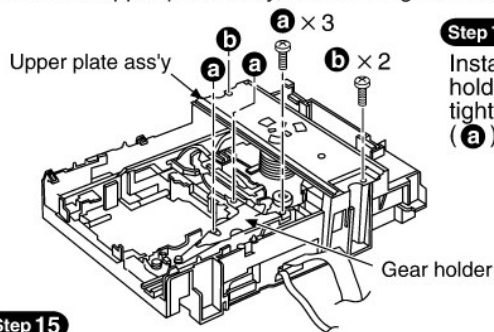


Step 12

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

**Step 14**

Install the upper plate ass'y, and then tighten the screw (b).

**Step 13**

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

Step 15

Install the tray base, traverse deck and mechanism cover. (Refer to the items 1 and 2 of Main Component Replacement Procedures.)

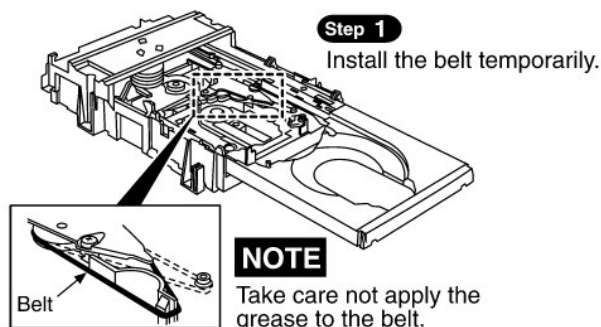
[Operation check after servicing]

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 unit.

4. Replacement for the motor ass'y

- Follow the **Step 1** ~ **Step 3** of the item 1 in checking procedures for each P.C.B..
- Follow the **Step 1** ~ **Step 4** of the item 2 in checking procedures for each P.C.B..
- Follow the **Step 1** ~ **Step 10** of the item 2 in main component replacement procedures.

**Step 2**

Upset the CD changer unit.

Step 3

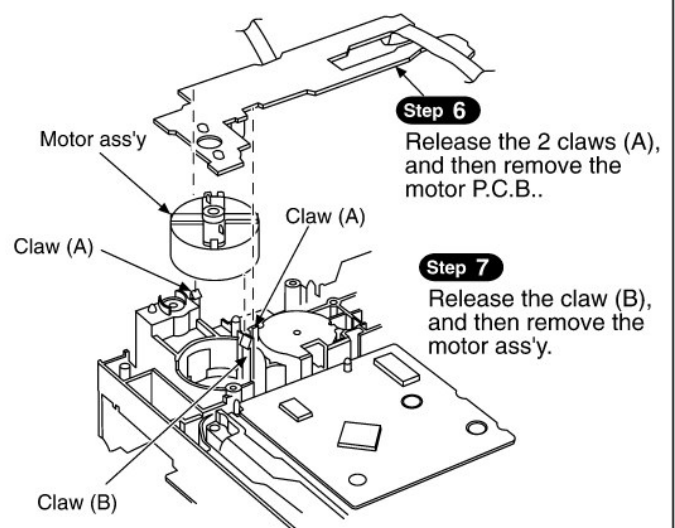
a x 3

Step 4

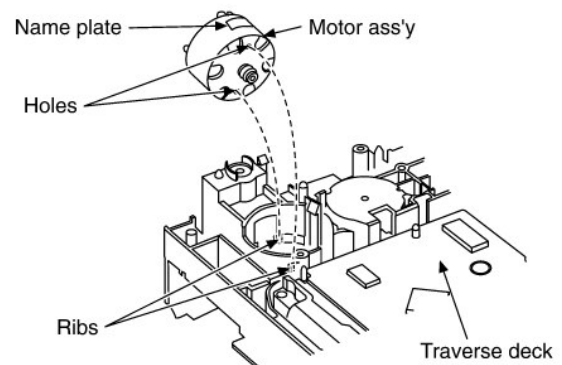
Unsolder the plunger terminals (2 points).

Step 5

Unsolder the motor terminals (2 points).

**Notice for motor ass'y installation**

1. Locate the name plate of motor to the traverse deck.
2. Align the hole of motor with the ribs.



6 Error Code Display and Servo Adjustment Function

This unit has an error code display function, so that if the unit operates incorrectly, the fault is displayed using an error code on the FL display of the Tuner/Amplifier (SA-EH700). It also has a servo adjustment function for displaying the status of servo system functions (Focus, Tracking, CLV Servo) on the FL display of the Tuner/Amplifier.

The system control IC and FL display are part of the Tuner/Amplifier so make sure the system has been connected properly before using three functions. (This unit can be operated independently, although the error code display and servo adjustment functions cannot be used.)

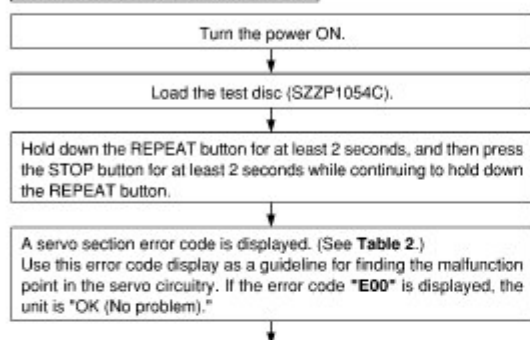
Use these two functions for guidance during fault diagnosis and repair.

Note:

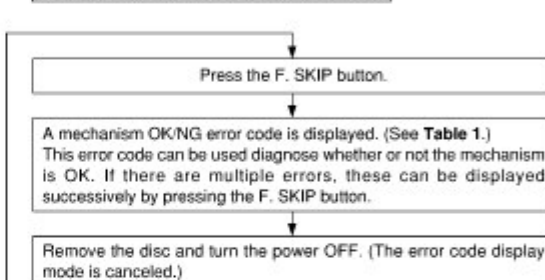
Check beforehand for scratching or soiling of the test disc (SZZP1054C), and soiling or other problems with the pickup lens.

• Error code display procedure

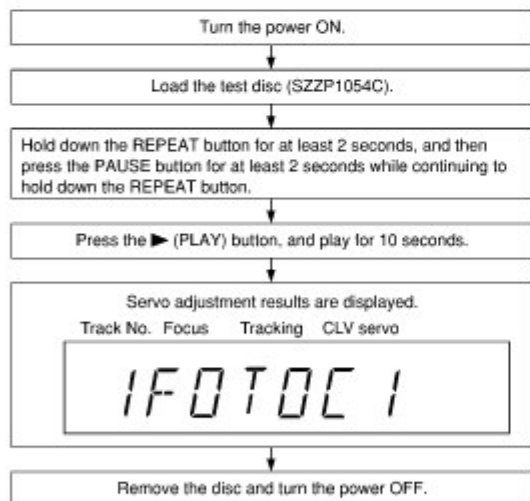
Automatic adjustment results



Checking the mechanism switches



• Servo adjustment procedure



(Example)



	"0" level	"1" level
Focus system	normal	defective
Tracking system	normal	defective
CLV servo system	defective	normal

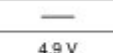
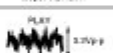
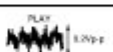
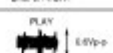
• Table 1

FL display	Symptom	Cause
H15	When CD tray opens, it closes by itself.	Tray open detect switch (S3) fault.
F15	Does not play, even when CD play button is pressed.	Pickup rest position detection switch (S701) fault.
F16	Disc tray goes on up.	Clump switch (S4) fault.
F17	Disc tray goes on down.	Bottom switch (S5) fault.
F26	Does not move even when "►" (PLAY) button is pressed.	System control or servo processor IC (IC401, IC702) fault.
F27	Tray keeps moving for a while, or selected tray does not open.	Tray position detect switch (S1, S2) fault
F28		
F29		

● **Table 2 (Error code based troubleshooting)**

* The unit is satisfactory if the error code is "E00" or "E02".

* Before testing, check that the test disc is free of scratches and optical pickup is clean.

FL error code display	Symptom	Probable cause	Signal to check		Normal voltage and waveform values	
			Signal name	Location	PLAY	STOP
E01	Focus and tracking offset adjustments not completed in the specified time period.	1. Clocks X1 and X2, power supply V _{DD} and reset/RST, all on IC702. 2. MDATA, MCLK, MLD, and SENSE signals to/from mechanism controller.	MDATA	IC702 ⑧ pin		4.8 V
			MCLK	IC702 ⑦ pin		4.8 V
			MLD	IC702 ⑨ pin		4.8 V
			SENSE	IC702 ⑩ pin	—	—
			/RST	IC702 ⑱ pin	4.9 V	4.9 V
			X1 IN	IC702 ⑤⑧ pin		
E03 E05 E07 E09 E0B E0D E0F	Disc play unstable.	1. Scratches or contaminants on disc surface. 2. Focus and Tracking servo circuits (check waveforms, voltages, and part values.) 3. Spindle driver circuit. 4. Optical pickup.	FE	IC702 ⑩② pin		1.7 V
			TE	IC702 ⑩③ pin		1.7 V
			FOD	IC702 ⑩④ pin	1.7 V	1.7 V
			TRD	IC702 ⑩⑤ pin	1.7 V	1.7 V
			NC	IC702 ⑩⑥ pin	—	—
			/FLOCK	IC702 ⑩⑦ pin	—	—
			/RFDET	IC702 ⑩⑧ pin	0 V	3.2 V
			R F	TJ701		1.7 V
			STAT	IC702 ⑩⑨ pin	0.7 V	0 V
E04 E06 E0C E0E	Best "Eye" (PD Balance) adjustment not completed in the specified time period.	1. Scratches or contaminants on disc surface. 2. Focus and Tracking servo circuit (check waveforms, voltages, and part values.) 3. Optical pickup.	FBAL	IC702 ⑩⑩ pin	3.3V	2.5 V
			RF	IC701 ⑩① pin		1.7 V
			FE	IC702 ⑩② pin		1.7 V
			/TLOCK	IC702 ⑩③ pin	—	—
			OFTR	IC702 ⑩④ pin	0 V	0 V
E0B E0A	Focus or Tracking gain adjustment not completed in the specified time period.	1. Scratches or contaminants on disc surface. 2. Focus and Tracking servo circuit (check waveforms, voltages, and part values.) 3. Optical pickup.	FE	IC702 ⑩② pin		1.7 V
			TE	IC702 ⑩③ pin		1.7 V
			/TLOCK	IC702 ⑩③ pin	—	—
			OFTR	IC702 ⑩④ pin	0 V	0 V

7.1 Schematic Diagram Notes

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 direct open switch (DIRECT OPEN DISC 5)

S602

Disc direct open switch (DIRECT OPEN DISC 4)

S603

Disc direct open switch (DIRECT OPEN DISC 3)

S604

Disc direct open switch (DIRECT OPEN DISC 2)

S605

Disc direct open switch (DIRECT OPEN DISC 1)

S606

Disc select switch (DISC 1)

S607

Disc select switch (DISC 2)

S608

Disc select switch (DISC 3)

S609

Disc select switch (DISC 4)

S610

Disc select switch (DISC 5)

S611

Disc tray open/close switch (OPEN/CLOSE)

S612

Pause switch ()

S613

F. Skip/Search, next switch (NEXT,)

S614

Play/Select switch (, SELECT)

S615

Stop/PBC switch (, PBC)

S616

R. Skip/Search, previous switch (PREV,)

S617

Random play switch (RANDOM)

S618

Repeat switch (REPEAT)

S619

CD edit switch (EDIT)

S620

Return switch ()

S621

Menu number select switch (MENU, +)

S622

Menu number select switch (MENU, -)

S623

On screen display on/off switch (OSD)

S701

Rest detect switch in "OFF" position

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.//No mark: CD STOP/(): CD PLAY [1kHz, L+ R, 0 dB]

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

CD-DA/VCD (AUDIO) signal line

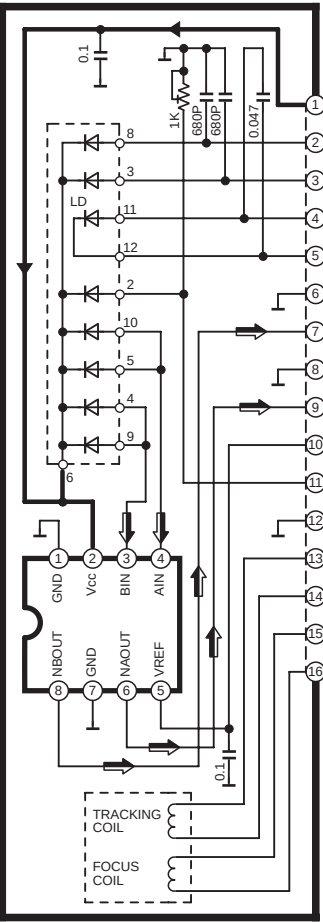
CD-DA/VCD (AUDIO& VIDEO) signal line

VCD (VIDEO) signal line

SCHEMATIC DIAGRAM-1

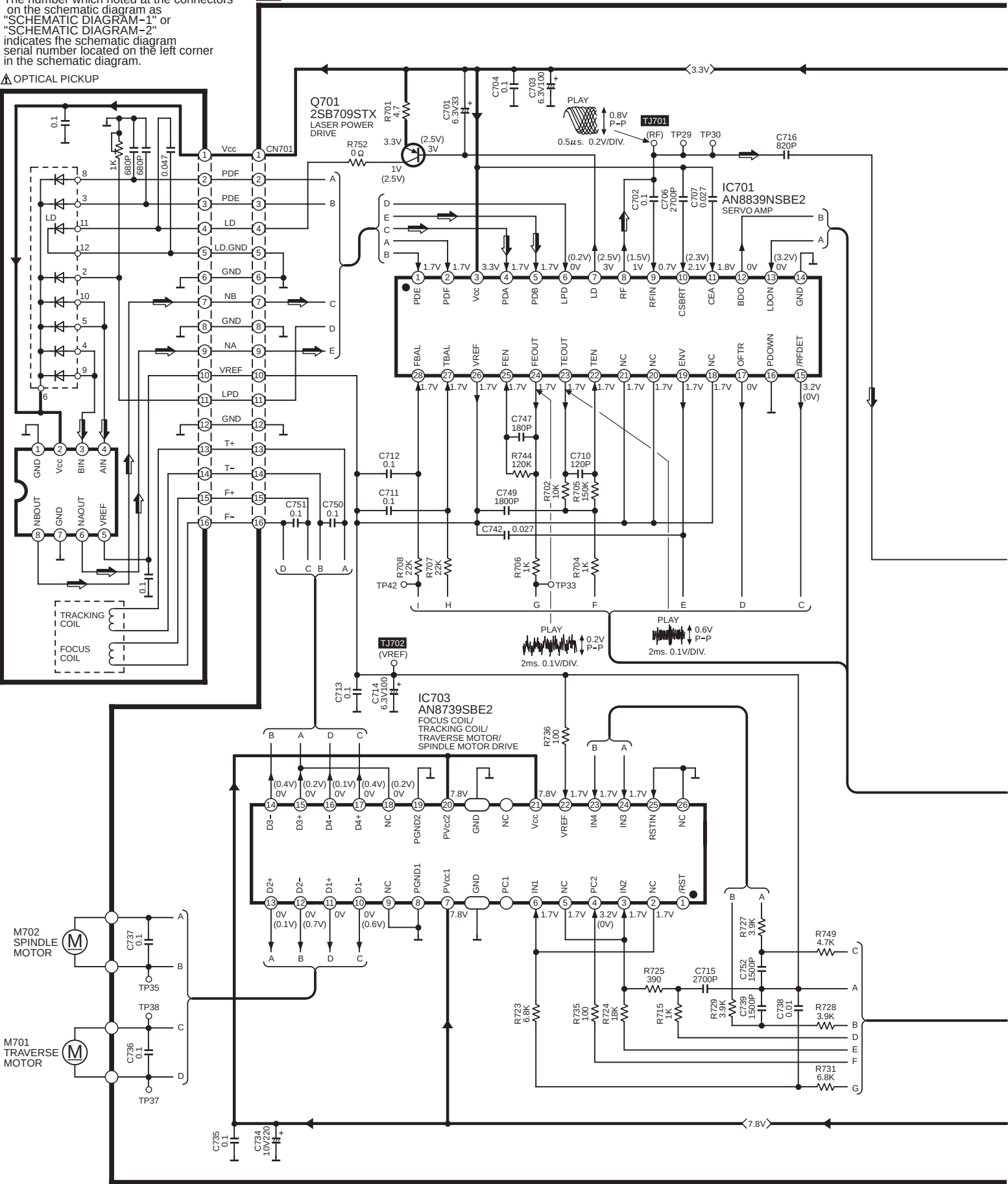
NOTE:
The number which noted at the connectors
on the schematic diagram as
"SCHEMATIC DIAGRAM-1" or
"SCHEMATIC DIAGRAM-2"
indicates the schematic diagram
serial number located on the left corner
in the schematic diagram.

▲ OPTICAL PICKUP

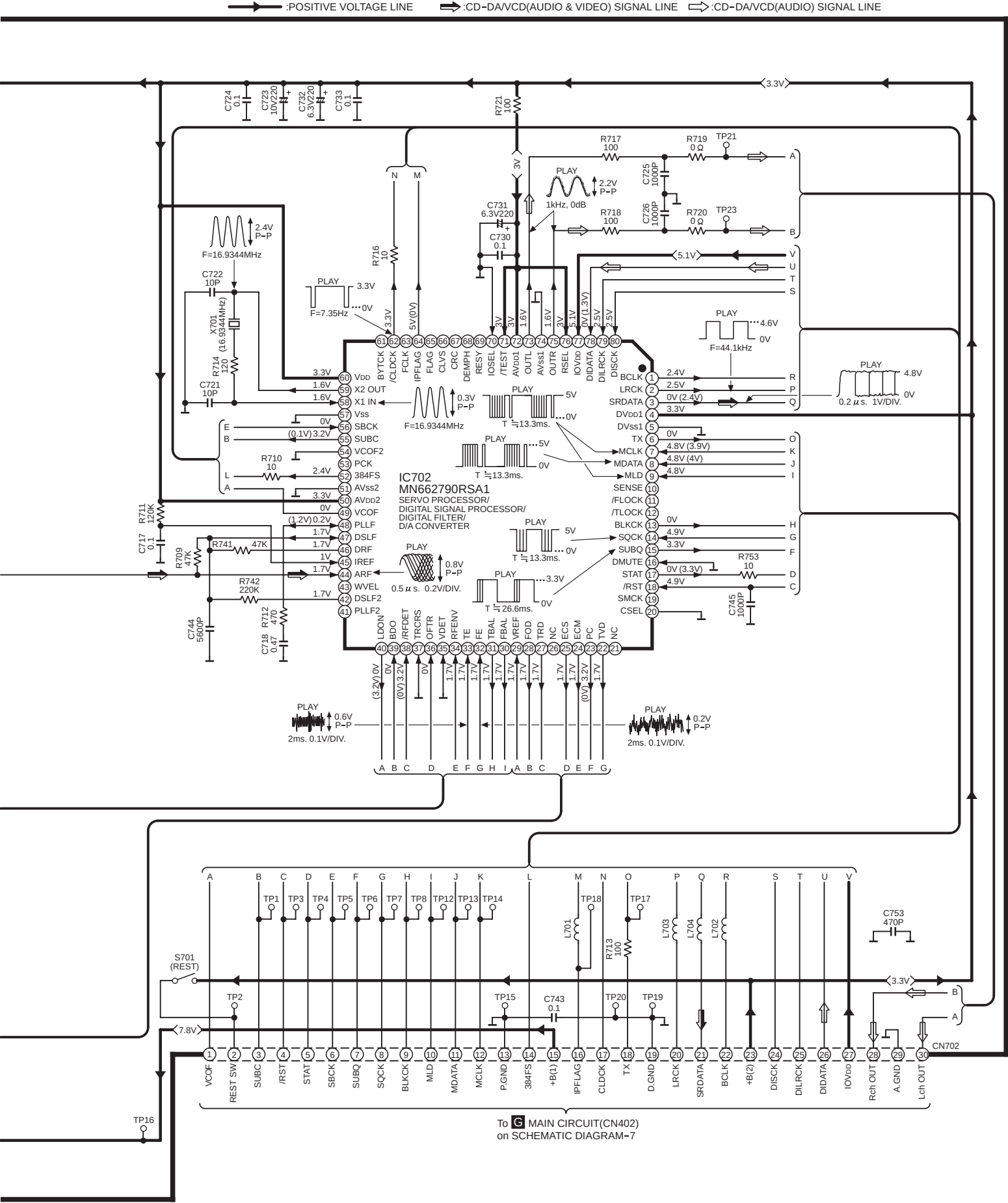


A CD SERVO CIRCUIT

→ : POSITIVE VOLTAGE LINE
⇒ : CD-DA/VCD(AUDIO & VIDEO) SIGNAL LINE



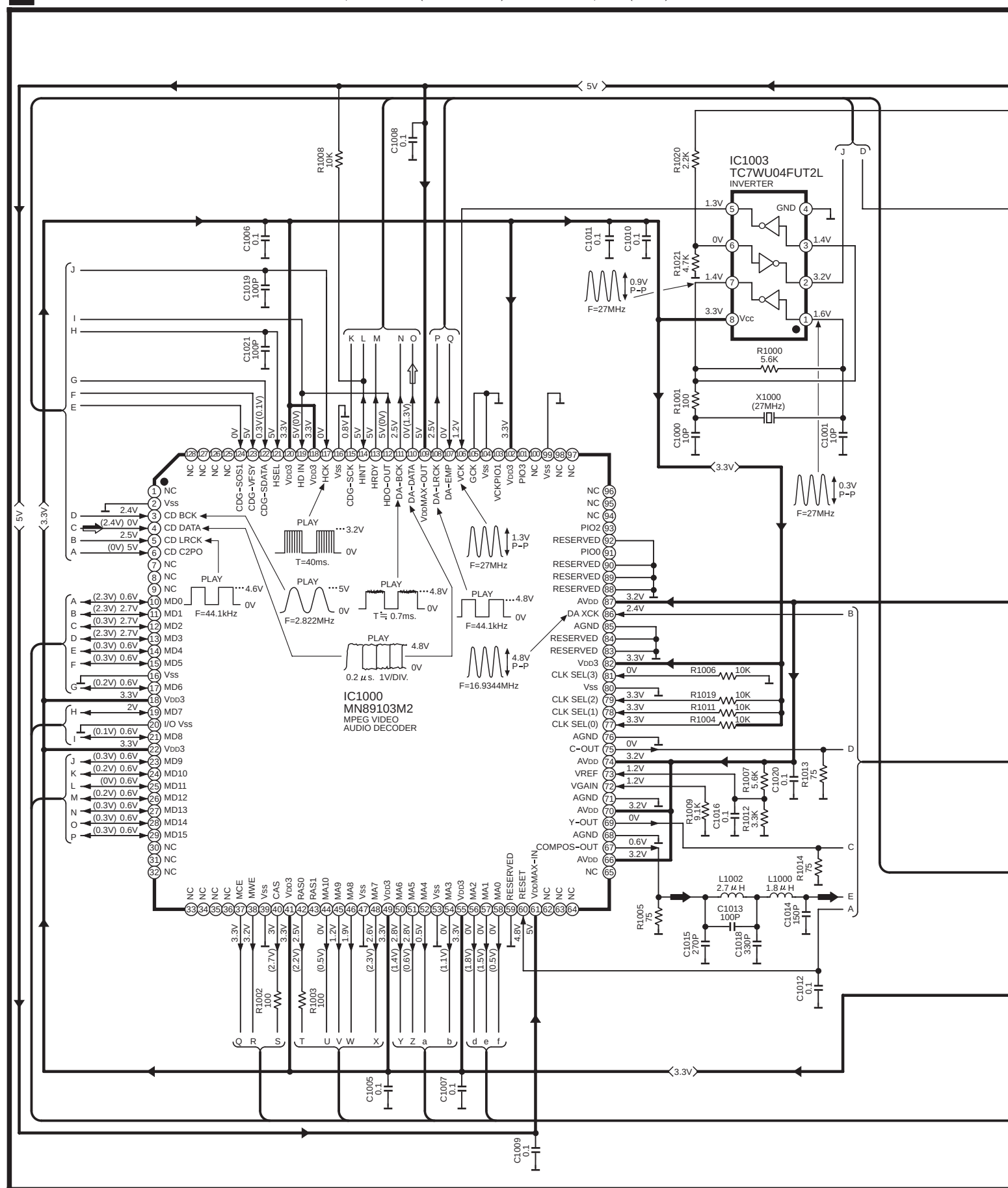
SCHEMATIC DIAGRAM-2



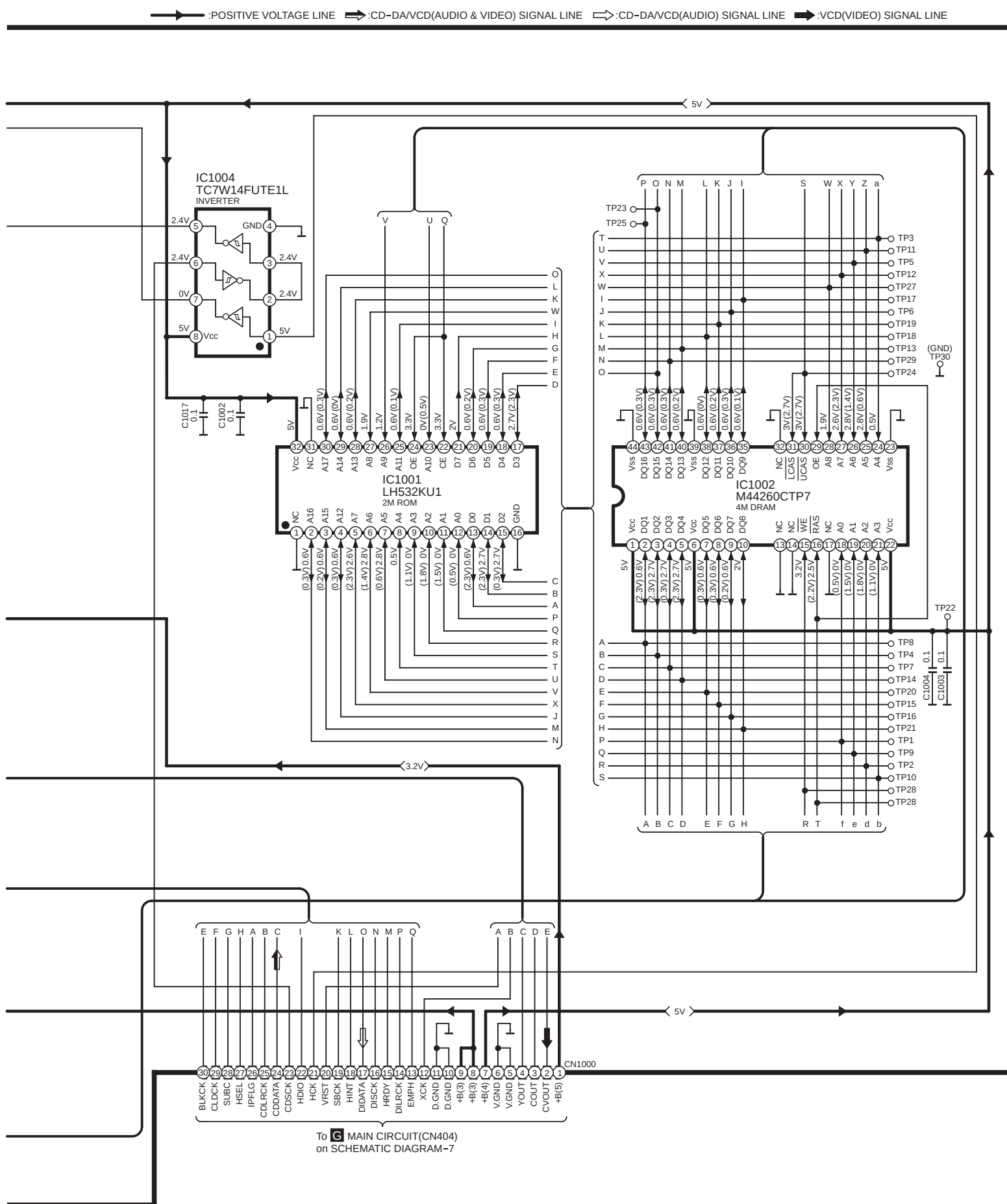
B VIDEO CIRCUIT

⇒:CD-DA/VCD(AUDIO) SIGNAL LINE

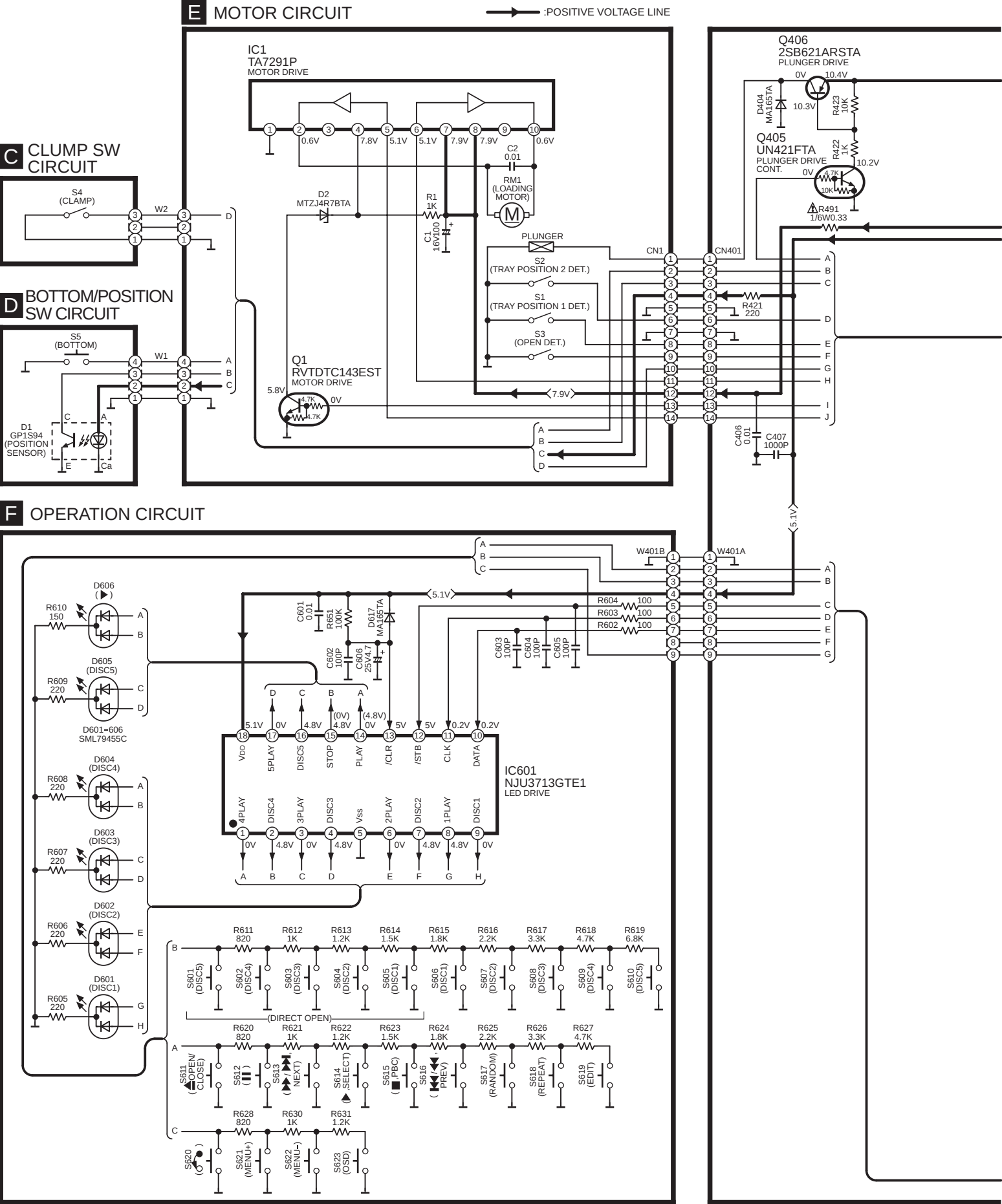
➡:VCD(VIDEO) SIGNAL LINE



SCHEMATIC DIAGRAM-4

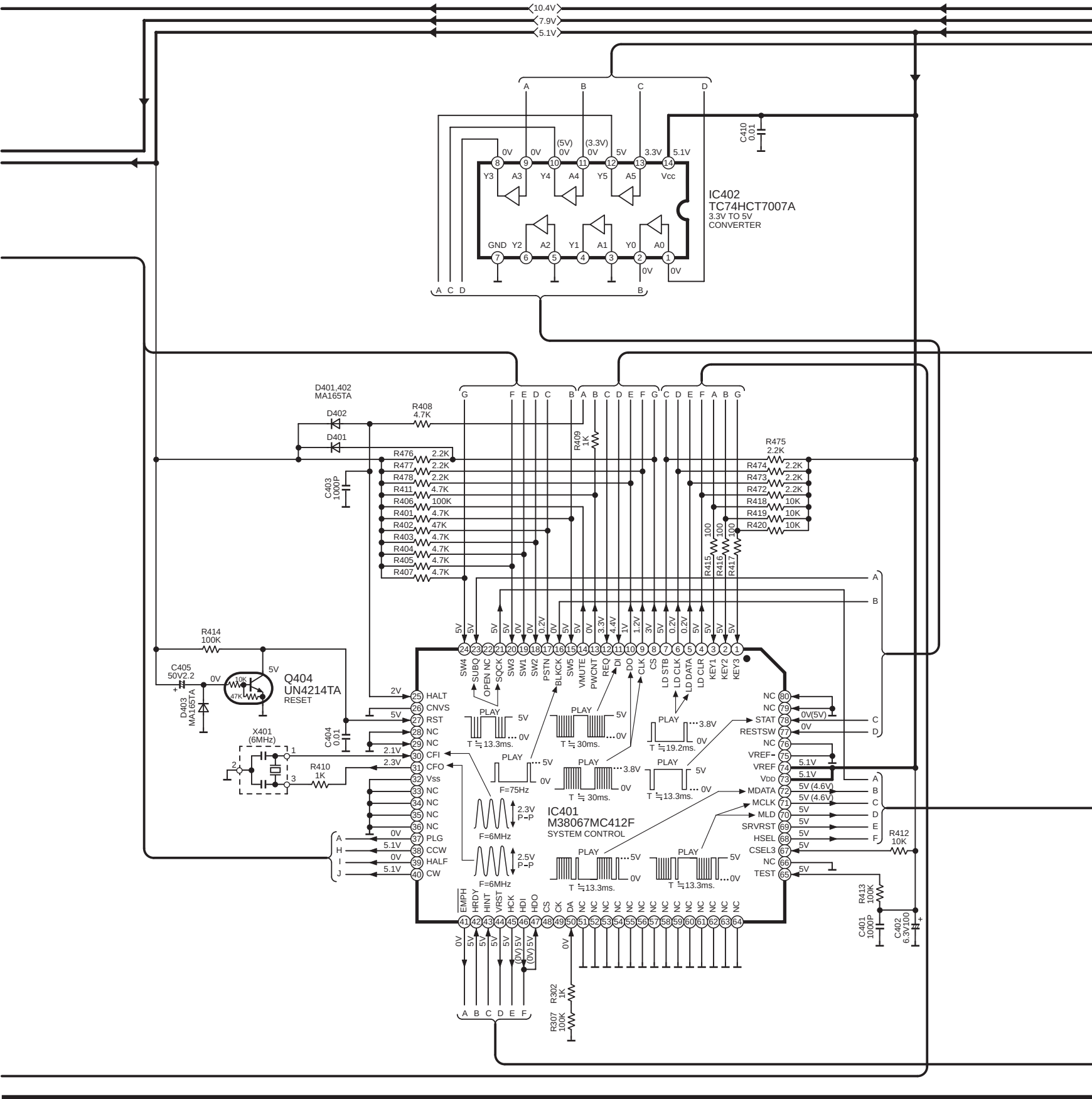


SCHEMATIC DIAGRAM-5

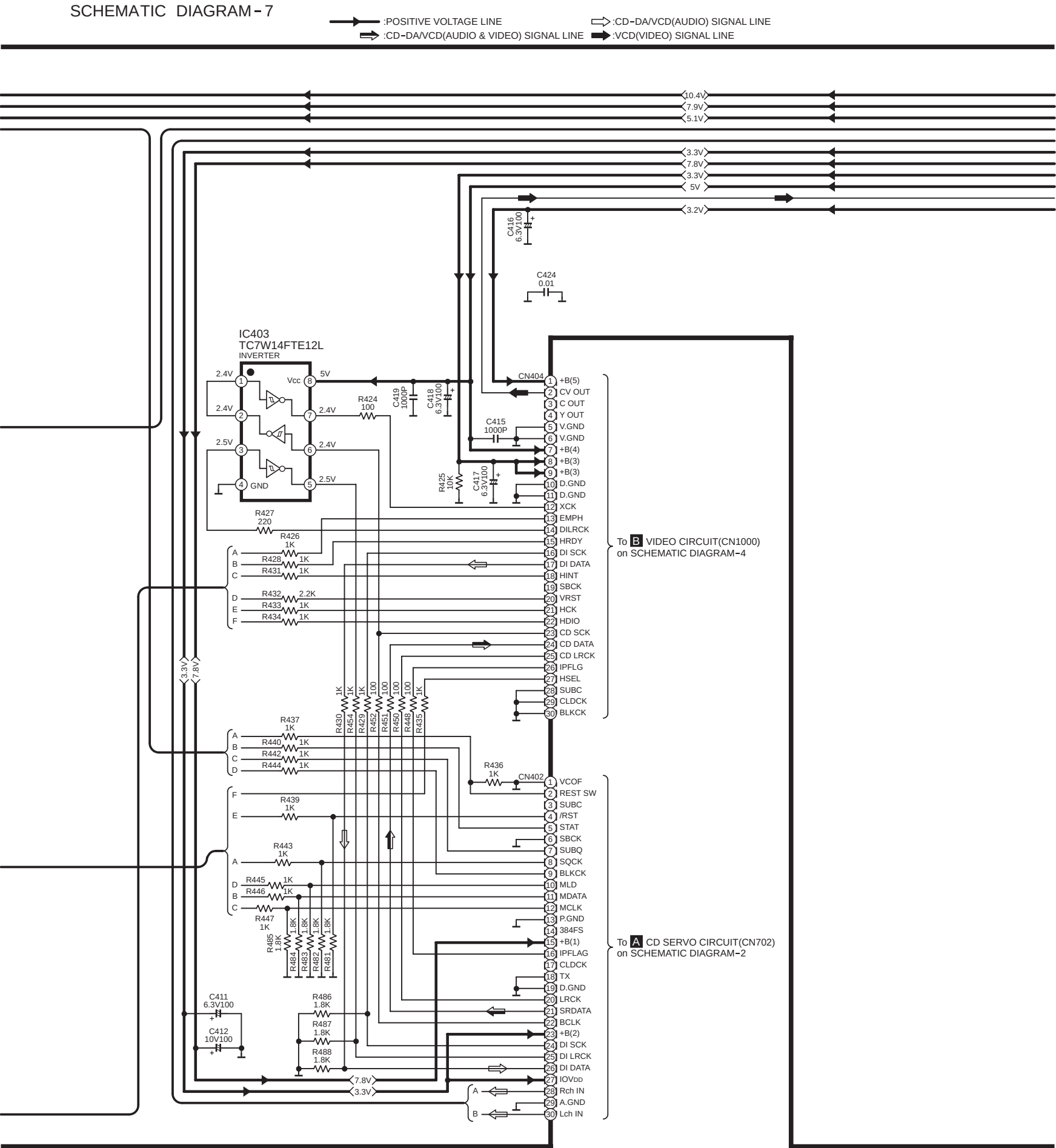


SCHEMATIC DIAGRAM-6
G MAIN CIRCUIT

→ : POSITIVE VOLTAGE LINE

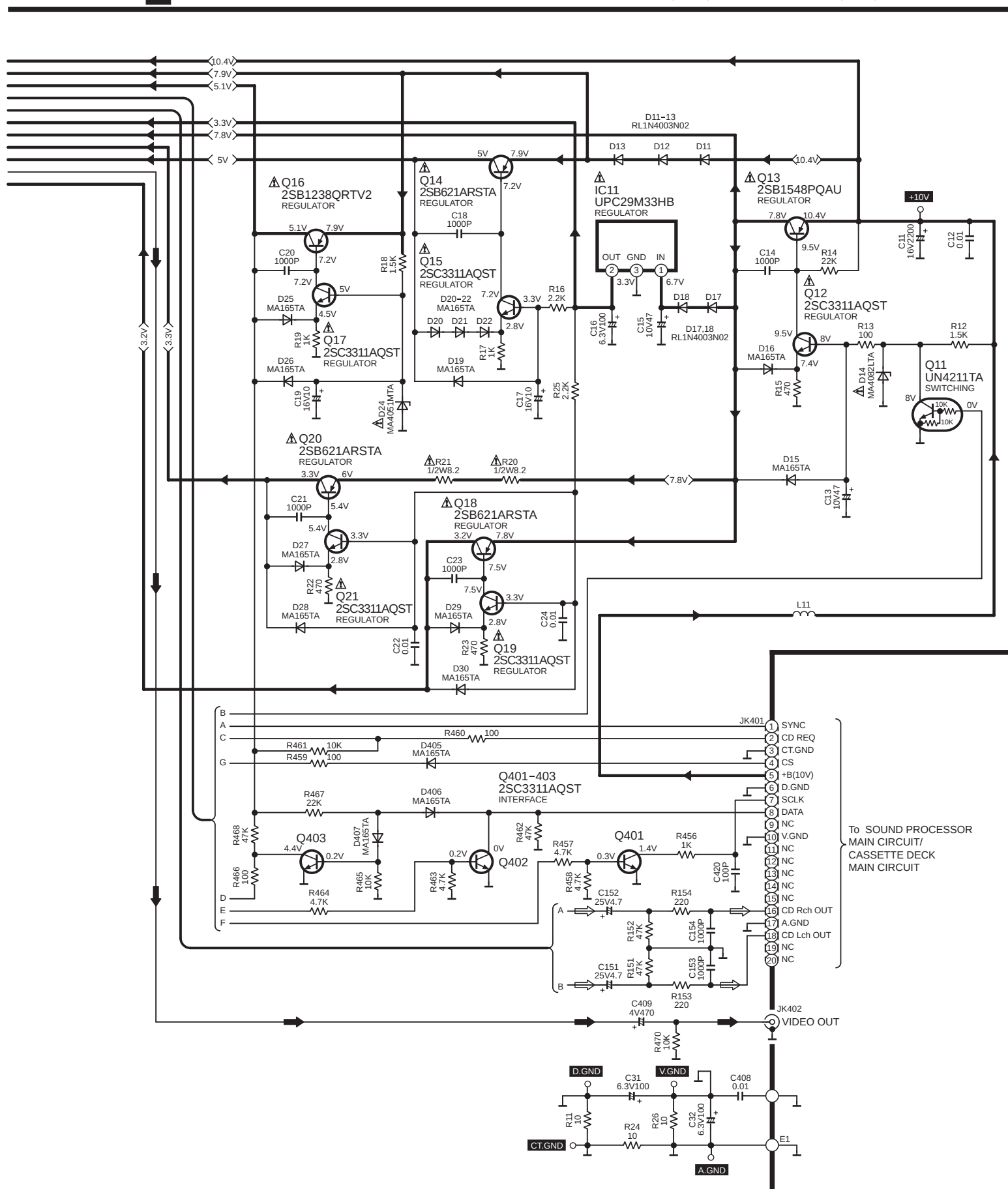


SCHEMATIC DIAGRAM-7

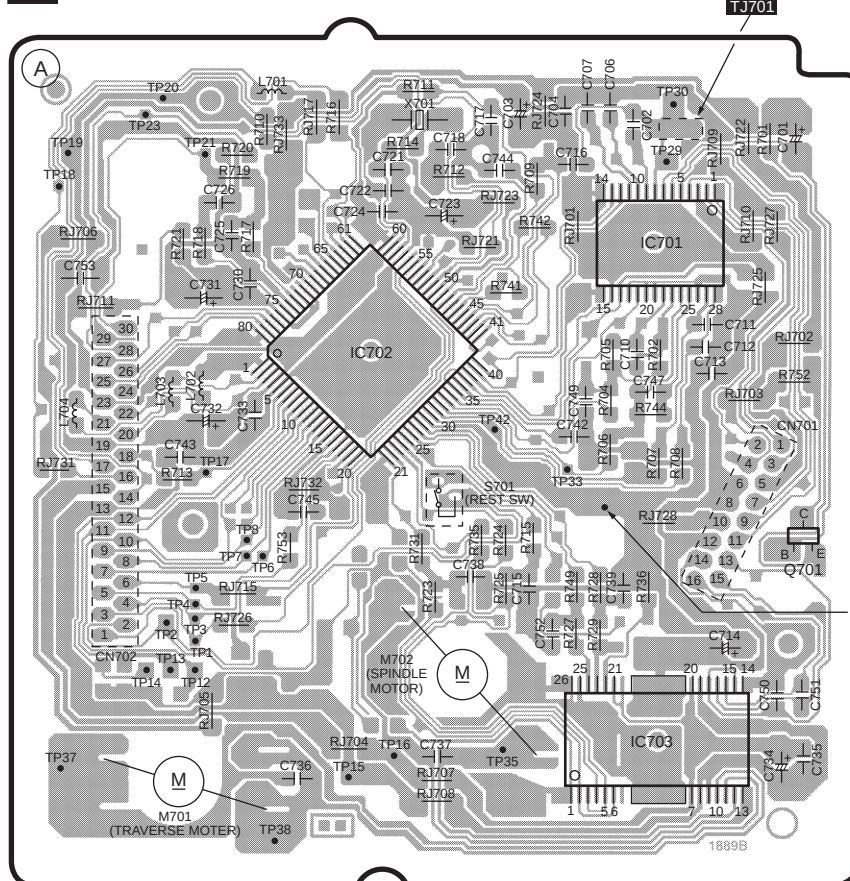


G MAIN CIRCUIT

→ : POSITIVE VOLTAGE LINE ⇨ : CD-DA/VCD(AUDIO) SIGNAL LINE ➡ : VCD(VIDEO) SIGNAL LINE



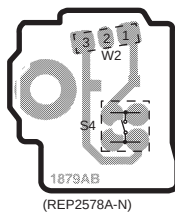
A CD SERVO P.C.B.



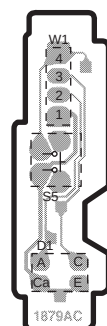
ELECTRICAL PARTS LOCATION

Ref. No.	Lo. No.	Ref. No.	Lo. No.
A CD SERVO P.C.B.			
IC701	2D	R741	3C
IC702	3B	R742	2C
IC703	5D	R744	3D
Q701	4D	R749	4C
L701	2B	R752	3D
L702	3B	R753	4B
L703	3B	RJ701	2C
L704	3A	RJ702	3D
X701	2C	RJ703	3D
S701	3C	RJ704	5B
CN701	3D	RJ705	4B
CN702	4A	RJ706	2A
M701	5B	RJ707	5C
M702	4C	RJ708	5C
TJ701	2D	RJ709	2D
TJ702	4C	RJ710	2D
TP1	4B	RJ711	3A
TP2	4B	RJ715	4B
TP3	4B	RJ717	2B
TP4	4B	RJ721	2C
TP5	4B	RJ722	2D
TP6	4B	RJ723	2C
TP7	4B	RJ724	2C
TP8	4B	RJ725	2D
TP12	4B	RJ726	4B
TP13	4B	RJ727	2D
TP14	4A	RJ728	4D
TP15	5B	RJ731	3A
TP16	5C	RJ732	3B
TP17	3B	RJ733	2B
TP18	2A	C701	2D
TP19	2A	C702	2D
TP20	2A	C703	2C
TP21	2B	C704	2C
TP23	2A	C706	2D
TP29	2D	C707	2C
TP30	2D	C710	3D
TP33	3C	C711	3D
TP35	5C	C712	3D
TP37	5A	C713	3D
TP38	5B	C714	4D
TP42	3C	C715	4C
R701	2D	C716	2C
R702	3D	C717	2C
R704	3D	C718	2C
R705	3D	C721	2C
R706	3D	C722	2C
R707	3D	C723	2C
R708	3D	C724	2B
R709	2C	C725	2B
R710	2B	C726	2B
R711	2C	C730	3B
R712	2C	C731	3B
R713	3B	C732	3B
R714	2C	C733	3B
R715	4C	C734	5D
R716	2B	C735	5D
R717	2B	C736	5B
R718	2B	C737	5C
R719	2B	C738	4C
R720	2B	C739	4D
R721	2B	C742	3C
R723	4C	C743	3B
R724	4C	C744	2C
R725	4C	C745	4B
R727	4C	C747	3D
R728	4C	C749	3C
R729	4C	C750	4D
R731	4C	C751	4D
R735	4C	C752	4C
R736	4D	C753	2A

C CLAMP SW P.C.B.

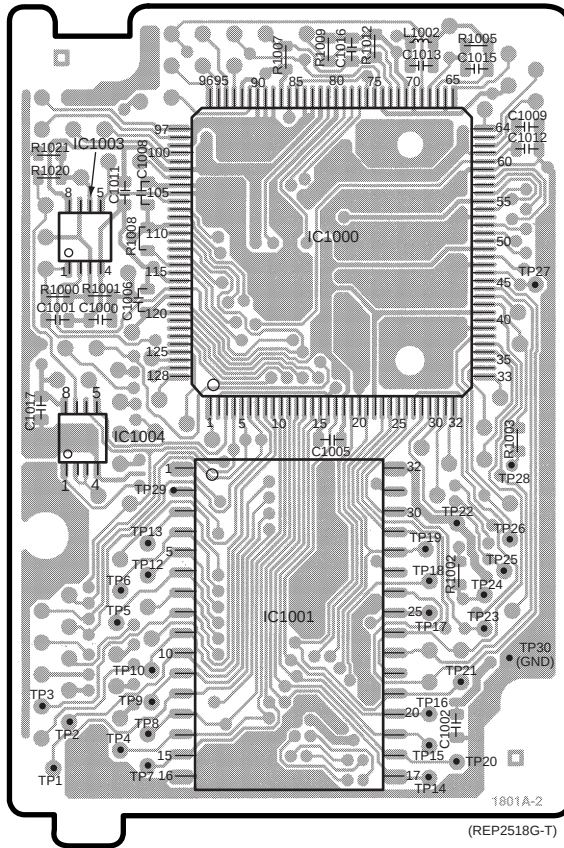


D BOTTOM/POSITION SW P.C.B.

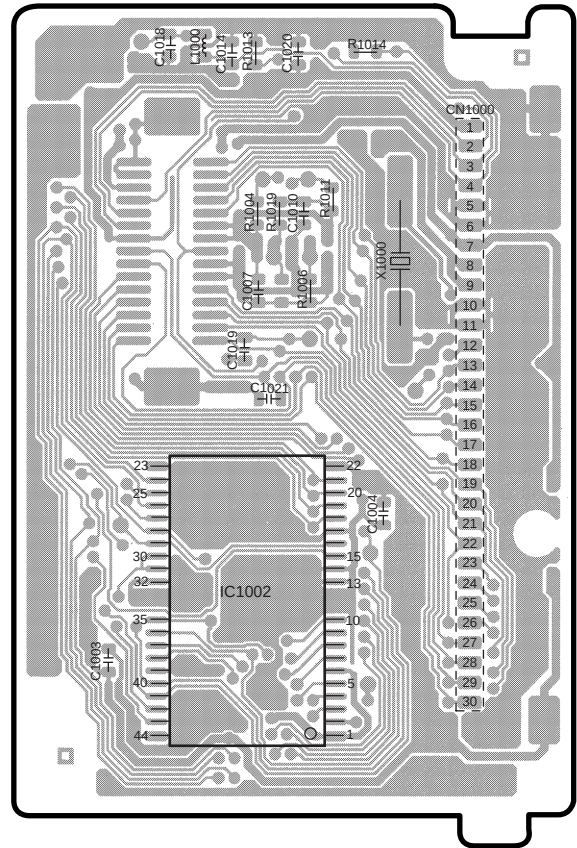


C CLAMP SW P.C.B.			
S4	7B	W2	6A
D BOTTOM/POSITION SW P.C.B.			
D1	7D	W1	6D
S5	7D		

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



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



ELECTRICAL PARTS LOCATION

Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.
B VIDEO P.C.B.							
IC1000	3B	TP13	4B	R1002	4C	C1005	3B
IC1001	4B	TP14	5C	R1003	3C	C1006	3A
IC1002	4E	TP15	5C	R1004	2E	C1007	3E
IC1003	2A	TP16	5C	R1005	2C	C1008	2B
IC1004	3A	TP17	4C	R1006	3E	C1009	2C
L1000	2E	TP18	4C	R1007	2B	C1010	2E
L1002	2C	TP19	4C	R1008	2A	C1011	2A
X1000	3F	TP20	5C	R1009	2B	C1012	2C
CN1000	2F	TP21	4C	R1011	2E	C1013	2C
TP1	5A	TP22	4C	R1012	2C	C1014	2E
TP2	5A	TP23	4C	R1013	2E	C1015	2C
TP3	5A	TP24	4C	R1014	2E	C1016	2B
TP4	5A	TP25	4C	R1019	2E	C1017	3A
TP5	4A	TP26	4C	R1020	2A	C1018	2E
TP6	4A	TP27	3C	R1021	2A	C1019	3E
TP7	5B	TP28	4C	C1000	3A	C1020	2E
TP8	5B	TP29	4B	C1001	3A	C1021	3E
TP9	5B	TP30	4C	C1002	5C		
TP10	4B	R1000	3A	C1003	4D		
TP12	4B	R1001	3A	C1004	4E		

A

B

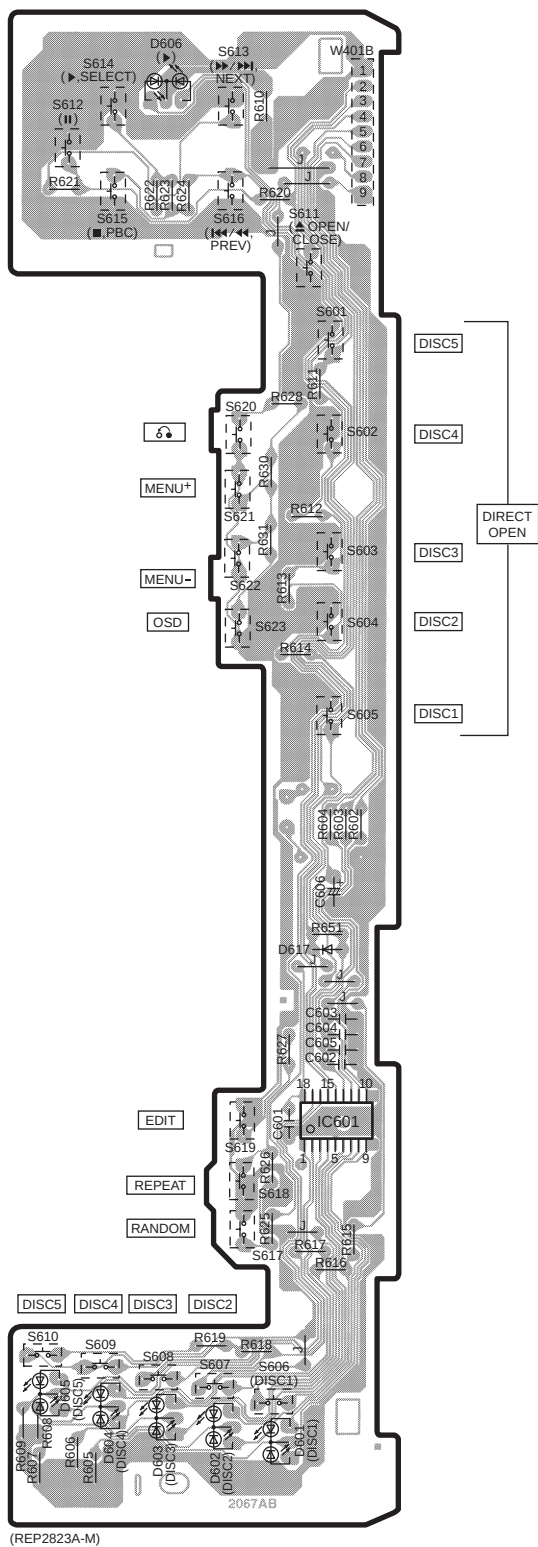
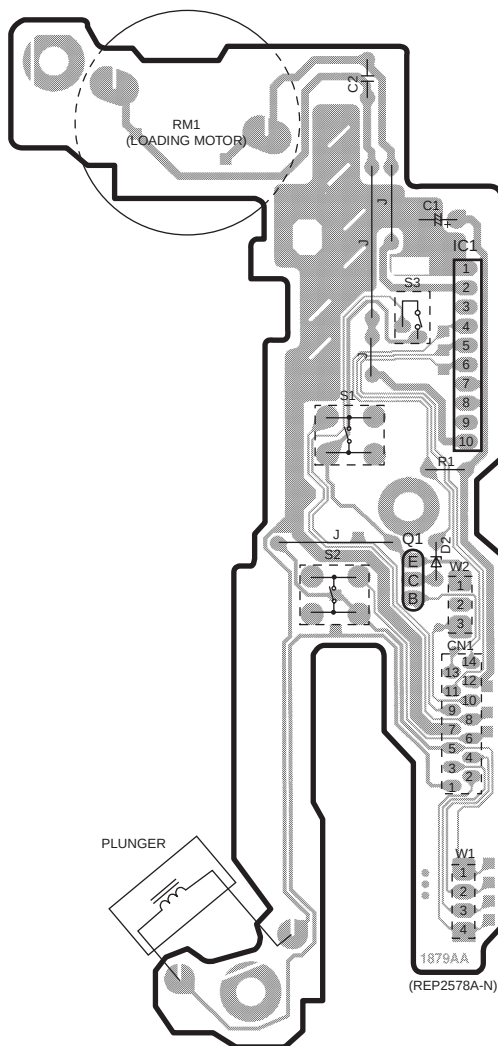
C

D

E

F

1

F OPERATION P.C.B.**E** MOTOR P.C.B.**E** ELECTRICAL PARTS LOCATION

Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.
E MOTOR P.C.B.							
IC1	3F	S2	4E	W2	4F	C2	1F
Q1	4F	S3	3F	RM1	2E		
D2	4F	CN1	4F	R1	3F		
S1	3E	W1	5F	C1	2F		
F OPERATION P.C.B.							
IC601	6C	S610	7A	R604	5C	R621	2A
D601	8B	S611	2B	R605	8B	R622	2B
D602	8B	S612	2A	R606	8A	R623	2B
D603	8B	S613	2B	R607	8A	R624	2B
D604	8B	S614	2B	R608	8A	R625	7B
D605	7A	S615	2B	R609	8A	R626	6B
D606	2B	S616	2B	R610	2B	R627	6B
D617	5C	S617	7B	R611	3C	R628	3B
S601	3C	S618	7B	R612	4B	R630	3B
S602	3C	S619	6B	R613	4B	R631	4B
S603	4C	S620	3B	R614	4B	R651	5C
S604	4C	S621	3B	R615	7C	C601	6B
S605	4C	S622	4B	R616	7C	C602	6C
S606	7B	S623	4B	R617	7B	C603	6C
S607	7B	W401B	2C	R618	7B	C604	6C
S608	7B	R602	5C	R619	7B	C605	6C
S609	7B	R603	5C	R620	2B	C606	5C

A

B

C

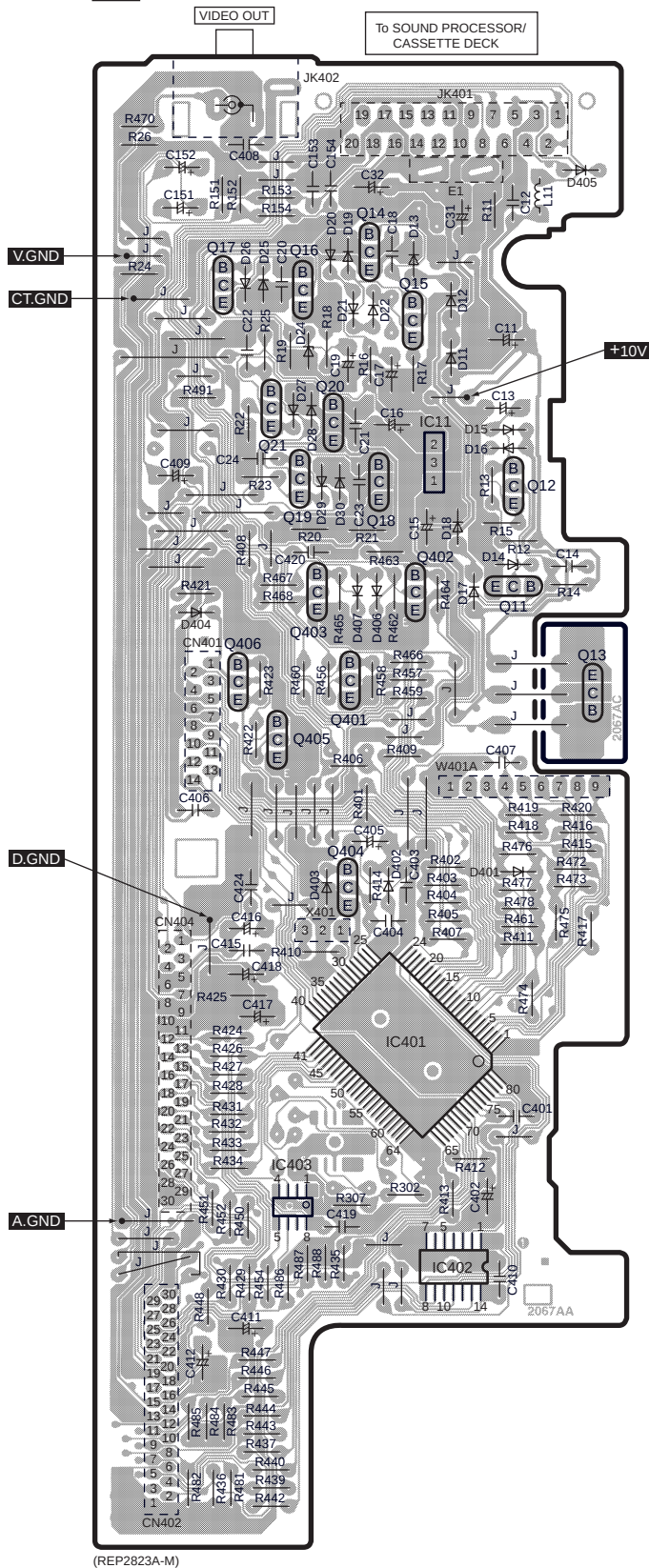
D

E

F

G

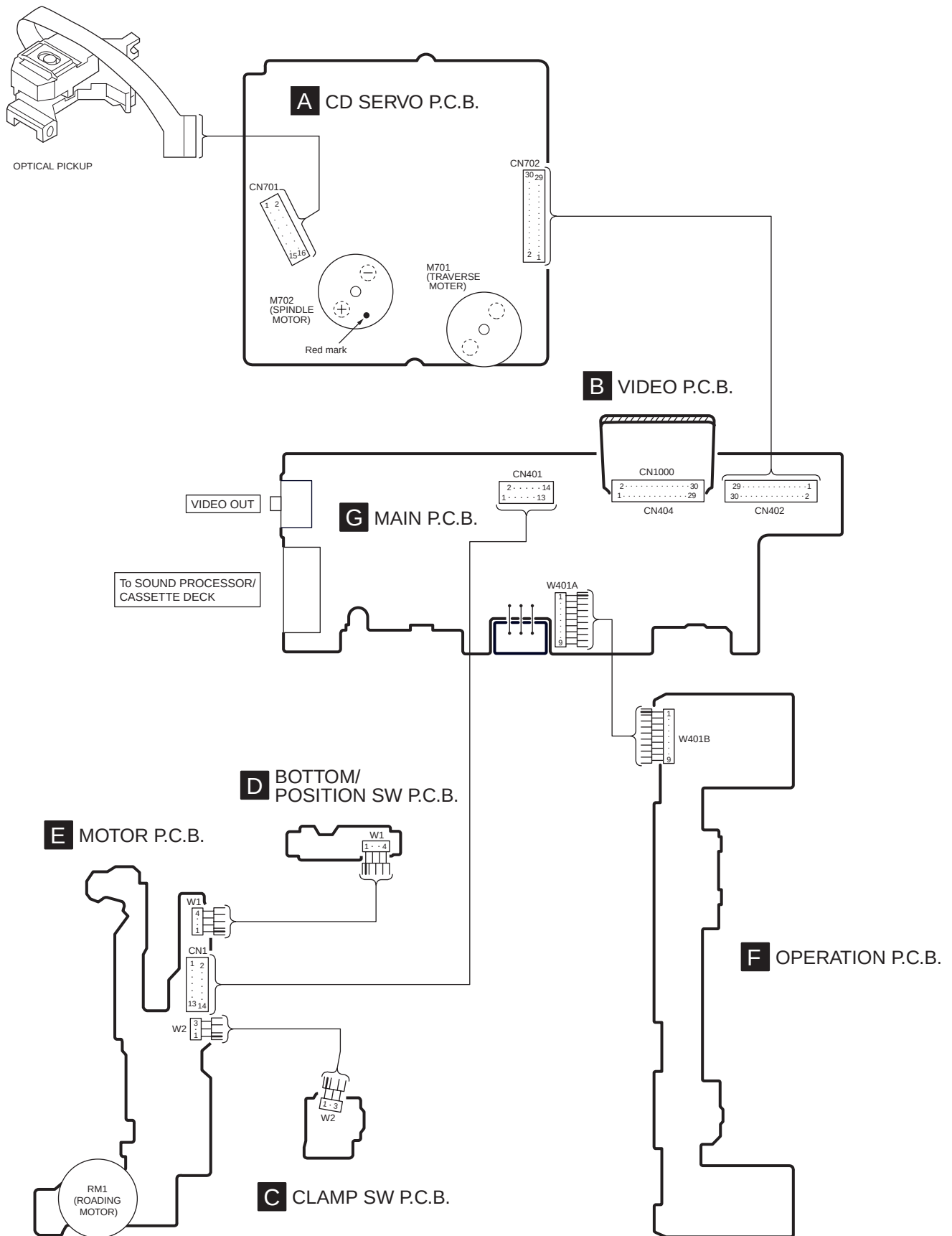
MAIN P.C.B.

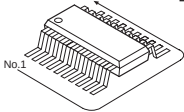
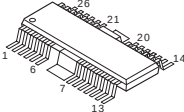
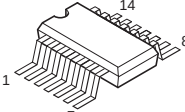
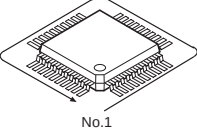
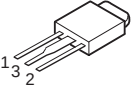
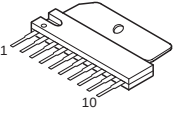
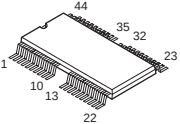
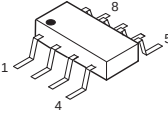
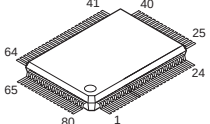
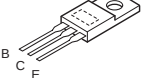
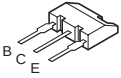
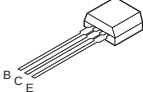
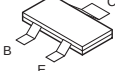
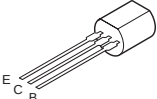
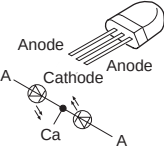
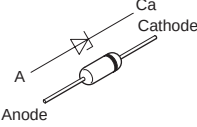
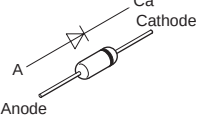
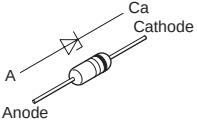
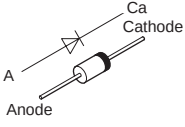
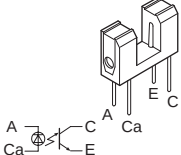


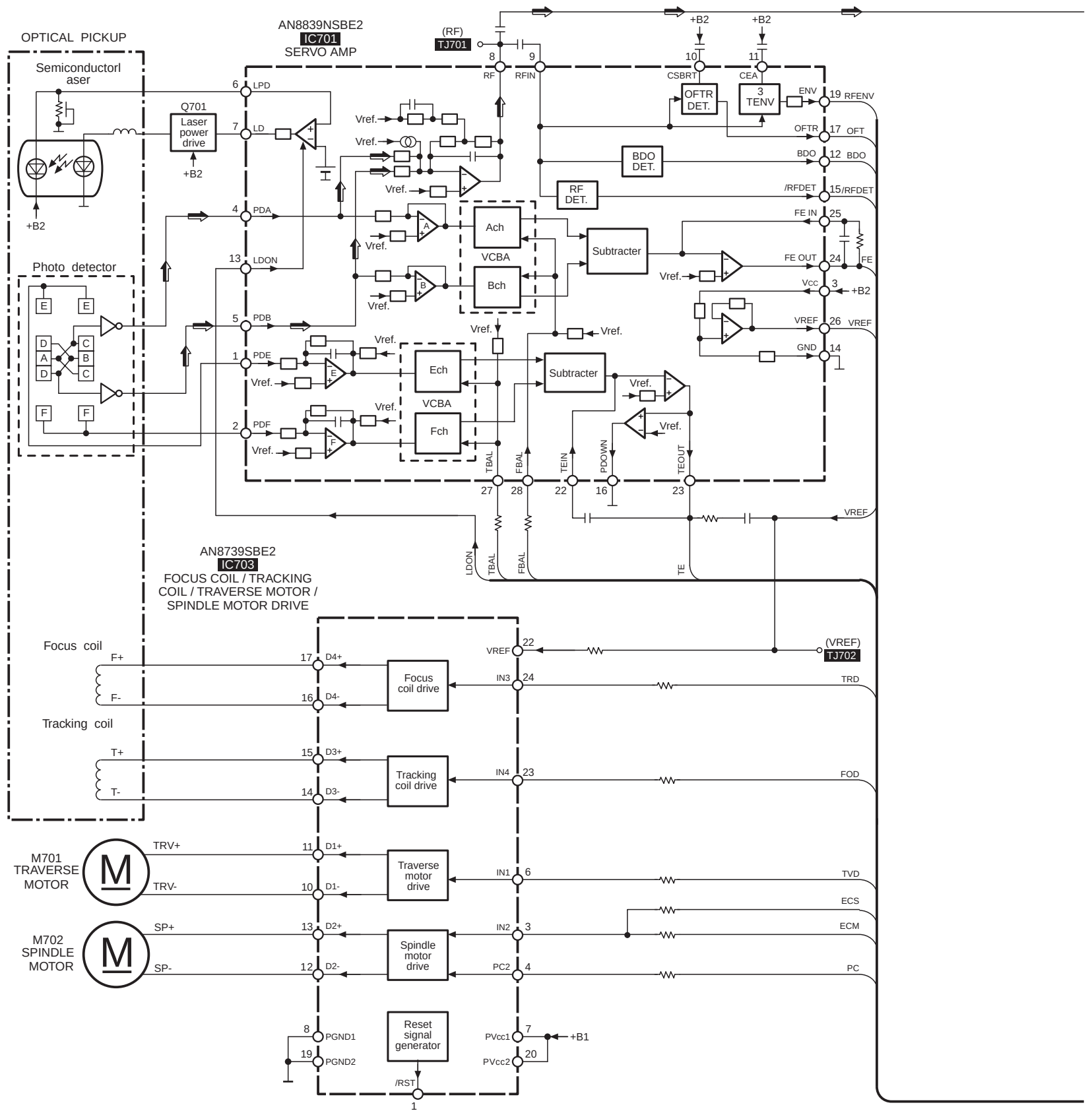
(REP2823A-M)

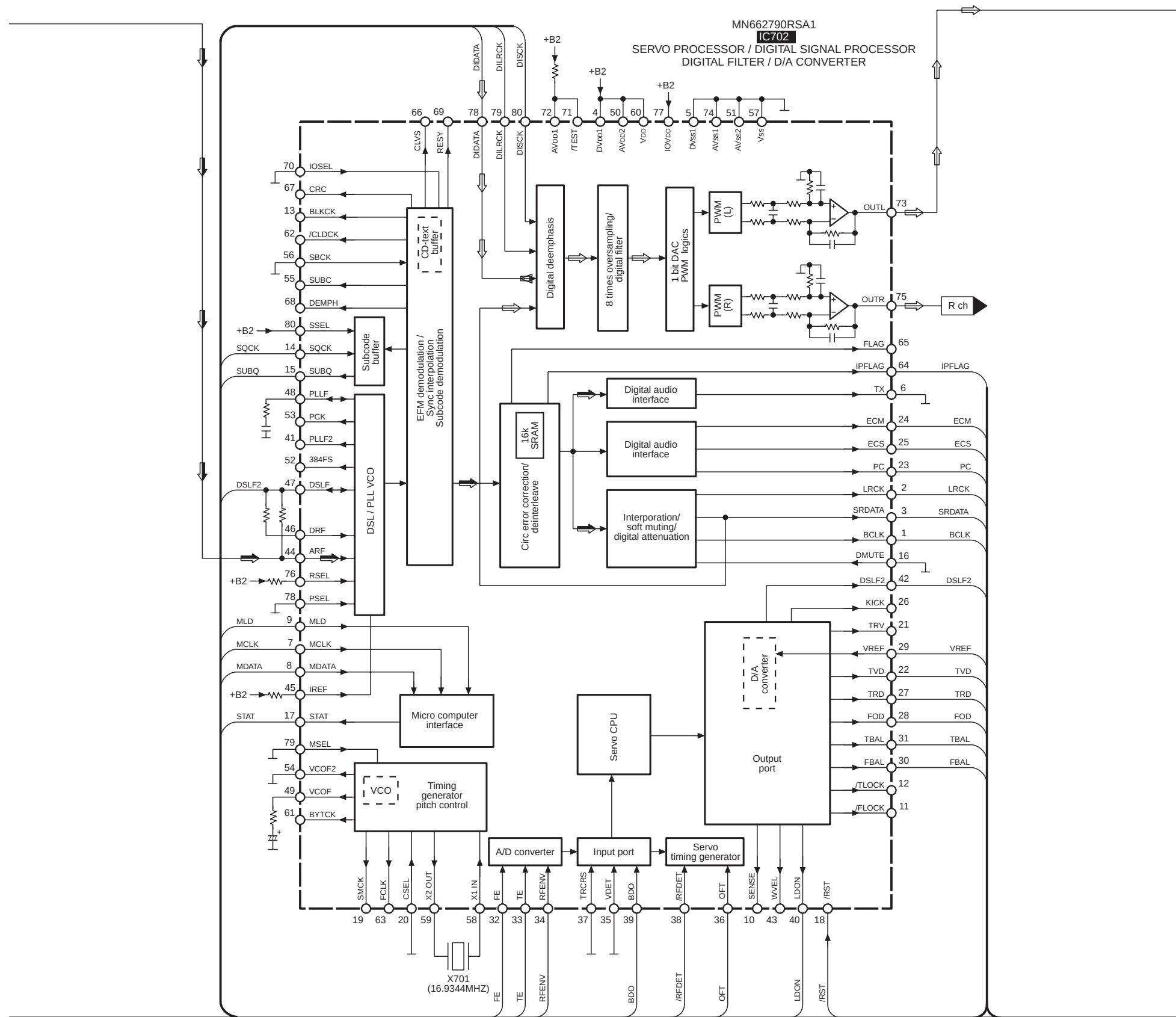
ELECTRICAL PARTS LOCATION

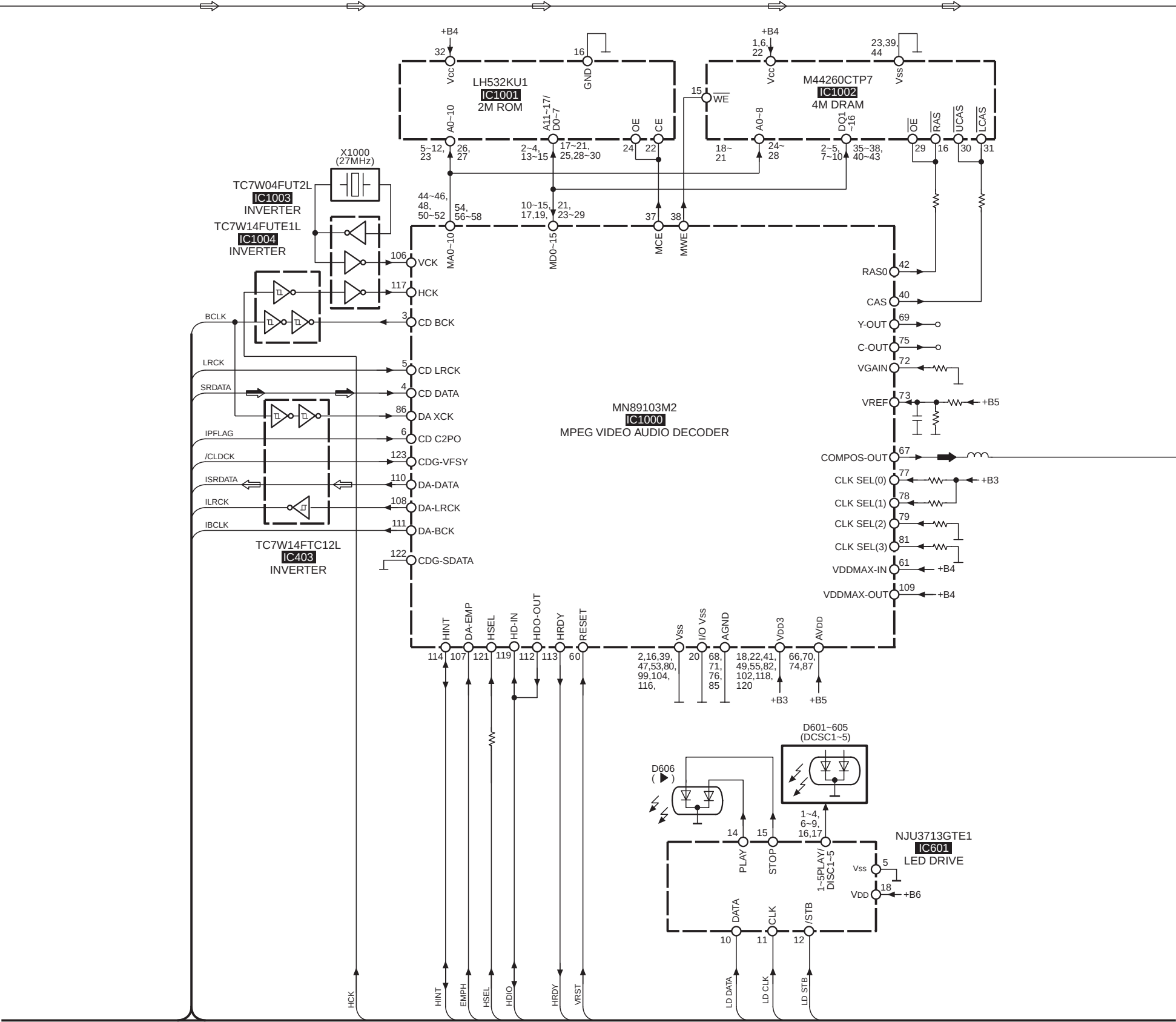
Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.
MAIN P.C.B.					
IC11	3C	R21	3C	R460	4B
IC401	6C	R22	3B	R461	5C
IC402	7C	R23	3B	R462	4C
IC403	7B	R24	2A	R463	4C
Q11	4C	R25	3B	R464	4C
Q12	3C	R26	2A	R465	4B
Q13	4D	R151	2B	R466	4C
Q14	2C	R152	2B	R467	4B
Q15	2C	R153	2B	R468	4B
Q16	2B	R154	2B	R470	2A
Q17	2B	R302	7C	R472	5C
Q18	3C	R307	7B	R473	5C
Q19	3B	R401	5B	R474	6C
Q20	3B	R402	5C	R475	5C
Q21	3B	R403	5C	R476	5C
Q401	4B	R404	5C	R477	5C
Q402	4C	R405	5C	R478	5C
Q403	4B	R406	5B	R481	8B
Q404	5B	R407	5C	R482	8B
Q405	4B	R408	4B	R483	8B
Q406	4B	R409	5C	R484	8B
D11	3C	R410	5B	R485	8B
D12	2C	R411	5C	R486	7B
D13	2C	R412	6C	R487	7B
D14	4C	R413	7C	R488	7B
D15	3C	R414	5C	R491	3B
D16	3C	R415	5C	C11	3C
D17	4C	R416	5C	C12	2C
D18	3C	R417	5D	C13	3C
D19	2B	R418	5C	C14	4C
D20	2B	R419	5C	C15	3C
D21	2B	R420	5C	C16	3C
D22	2C	R421	4B	C17	3C
D24	3B	R422	4B	C18	2C
D25	2B	R423	4B	C19	3B
D26	2B	R424	6B	C20	2B
D27	3B	R425	6B	C21	3B
D28	3B	R426	6B	C22	3B
D29	3B	R427	6B	C23	3B
D30	3B	R428	6B	C24	3B
D401	5C	R429	7B	C31	2C
D402	5C	R430	7B	C32	2C
D403	5B	R431	6B	C151	2B
D404	4B	R432	6B	C152	2B
D405	2D	R433	6B	C153	2B
D406	4C	R434	6B	C154	2B
D407	4B	R435	7B	C401	6C
L11	2C	R436	8B	C402	7C
X401	5B	R437	8B	C403	5C
CN401	4B	R439	8B	C404	5C
CN402	8B	R440	8B	C405	5C
CN404	6B	R442	8B	C406	5B
JK401	2C	R443	8B	C407	5C
JK402	1B	R444	8B	C408	2B
E1	2C	R445	8B	C409	3B
W401A	5C	R446	7B	C410	7C
R11	2C	R447	7B	C411	7B
R12	4C	R448	7B	C412	7B
R13	3C	R450	7B	C415	5B
R14	4C	R451	7B	C416	5B
R15	3C	R452	7B	C417	6B
R16	3C	R454	7B	C418	6B
R17	3C	R456	4B	C419	7B
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R19	3B	R458	4C	C424	5B
R20	3B	R459	4C		

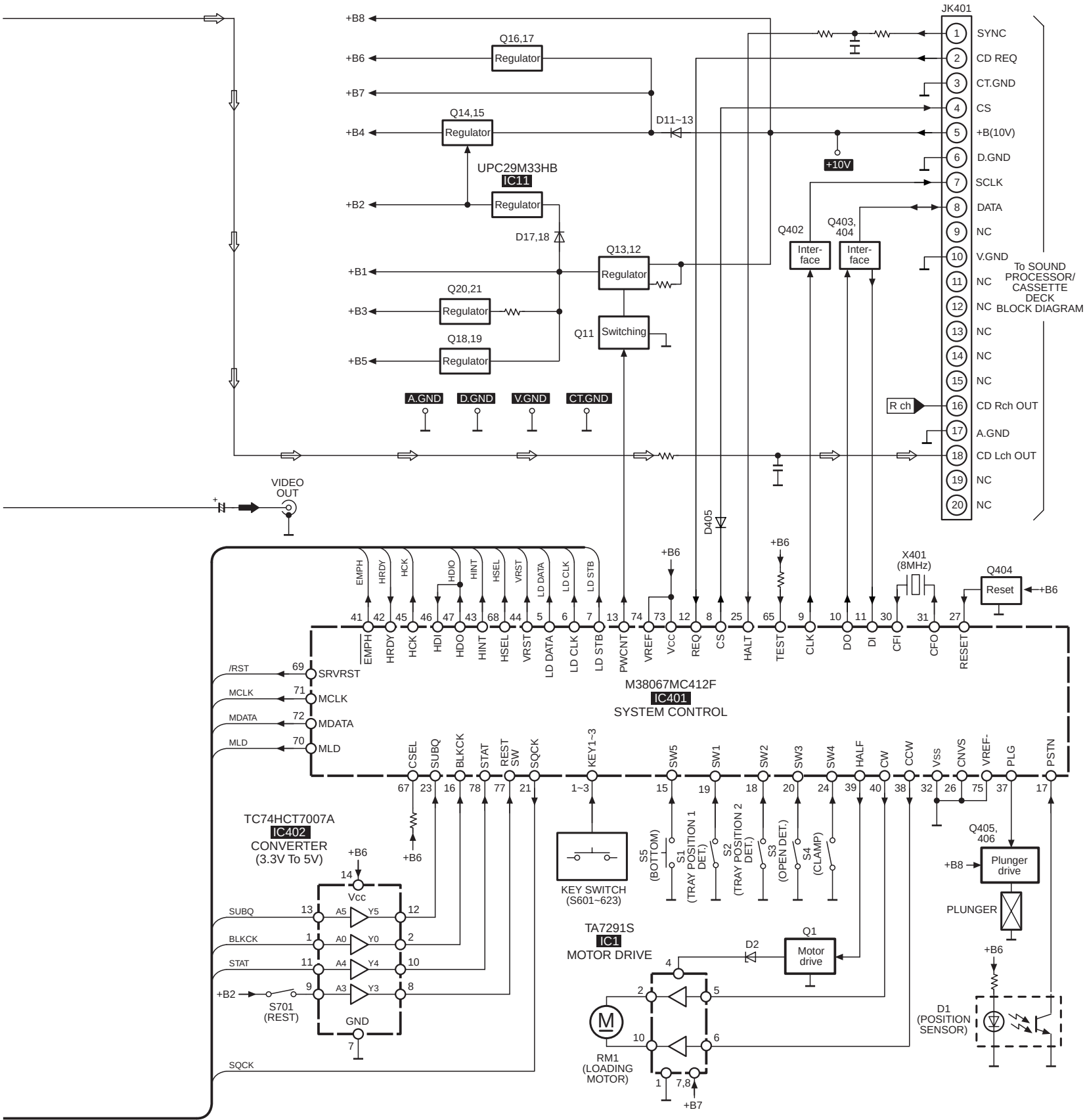


AN8839NSBE2 28PIN LH532KU1 32PIN NJU3713GTE1 18PIN 		AN8739SBE2 	TC74HCT7007A 	MN662790RSA1 80PIN MN89103M2 128PIN 	
UPC29M33HB 	TA7291P 	M44260CTP7 	TC7WU04FUT2L TC7W14FTE12L TC7W14FUTE1L 	M38067MC412F 	2SB1548PQAU 
2SB1238QRTV2 	RVTDTTC143EST 	2SB709STX 	 2SC3311AQST UN421FTA UN4214TA UN4211TA		2SB621ARSTA 
SML79455C 	MTZJ4R7BTA 	MA165TA 	MA4082LTA MA4051MTA 	RL1N4003N02 	GP1S94 









Note:

➡ : CD-DA/VCD(audio&video) signal ➡ : CD-DA/VCD(audio) signal

➡ : VCD(video) signal

12 Terminal Function of ICs

IC701 (AN8839NSBE2): SERVO AMP No.	Mark	I/O Division	Function
1	PDE	I	Tracking signal input terminal 1 (E ch)
2	PDF	I	Tracking signal input terminal 2 (F ch)
3	Vcc	I	Power supply terminal
4	PDA	I	Focus signal input terminal 1 (A ch)
5	PDB	I	Focus signal input terminal 2 (B ch)
6	LPD	I	Laser PD signal
7	LD	O	Laser power auto control output
8	RF	O	RF amp terminal
9	RFIN	I	AGC input terminal
10	CSBRT	I	OFTR capacitor connection terminal
11	CEA	I	HPF-AMP capacitor connection terminal
12	BDO	O	Dropout detection control
13	LDON	I	LD APC ON/OFF ("H": ON, "L": OFF)
14	GND	-	GND terminal
15	/RFDET	O	RF det. signal output terminal ("L": det.)
16	PDOWN	-	Power down terminal
17	OFTR	O	Off track detection ("H": det.)
18	NC	-	Not used
19	ENV	O	Envelope signal output terminal
20	NC	-	Not used
21	NC	-	Not used
22	TEN	I	Tracking error signal
23	TEOUT	O	Tracking error signal
24	FEOUT	O	Focus error signal
25	FEN	I	Focusing error signal
26	VREF	O	Reference voltage output terminal
27	TBAL	I	Tracking balance adj. input
Focus balance adj. input			

IC703 (AN8739SBE2): FOCUS COIL/ TRACKING COIL/ TRAVERSE MOTOR/ SPINDLE MOTOR DRIVE No.	Mark	I/O Division	Function
1	/RST	-	Not used, open
2	NC	-	Not used
3	IN2	I	Motor driver (2) input
4	PC2	I	Turntable motor drive signal ("L": ON)
5	NC	-	Not used
6	IN1	I	Motor driver (1) input
7	PVcc1	I	Driver power supply terminal (1)
8	PGND1	-	Driver GND terminal (1)
9	NC	-	Not used, connected to GND
10	D1-	O	Motor driver (1) output terminal (-)
11	D1+	O	Motor driver (1) output terminal (+)
12	D2-	O	Motor driver (2) output

				terminal (-)
13	D2+	O		Motor driver (2) output terminal (+)
14	D3-	O		Motor driver (3) output terminal (-)
15	D3+	O		Motor driver (3) output terminal (+)
16	D4-	O		Motor driver (4) output terminal (-)
17	D4+	O		Motor driver (4) output terminal (+)
18	NC	-		Not used
19	PGND2	-		Driver GND terminal (2)
20	PVcc2	I		Driver power supply terminal (2)
21	Vcc	I		Power supply terminal
22	VREF	I		Reference voltage input terminal
23	IN4	I		Motor driver (4) input
24	IN3	I		Motor driver (3) input
25	RSTIN	-		Reset terminal (Not used, connected to GND)

Not used, connected to GND

IC702 (MN662790RSA1): SERVO PROCESSOR/ DIGITAL SIGNAL PROCESSOR/ DIGITAL FILTER/ D/A CONVERTER				
No.	Mark	I/O Division	Function	
1	BCLK	O	Serial bit clock output	
2	LRCK	O	L/R discriminating signal output	
3	SRDATA	O	Serial data	
4	DVDD1	I	Power supply (digital circuit) terminal	
5	DVSS1	-	GND (digital circuit) terminal	
6	TX	O	Digital audio interface signal	
7	MCLK	I	Command clock signal	
8	MDATA	I	Command data signal	
9	MLD	I	Command load signal ("L": LOAD)	
10	SENSE	O	Sense signal (OFT, FESL, NACEND, NAJEND, POSAD, SFG) (Not used, open)	
11	/FLOCK	O	Optical servo condition (focus) ("L": lead-in) (Not used, open)	
12	/TLOCK	O	Optical servo condition (tracking) ("L": lead-in) (Not used, open)	
13	BLKCK	O	Sub-code block clock (f=75Hz)	
14	SQCK	I	Sub-code Q register clock	
15	SUBQ	O	Sub-code Q data	
16	DMUTE	-	Muting input ("H": MUTE) (Not used, connected to GND)	
17	STAT	O	Status signal (CRC, CUE, CLVS, TTSTOP, FCLV, SQCK)	
18	/RST	I	Reset signal ("L": reset)	
19	SMCK	-	System clock (f=4.2336MHz) (Not used, open)	
20	CSEL	I	Frequency control terminal of crystal oscillator (Connected to VDD)	
21	NC	-	Not used, open	
22	TVD	O	Traverse drive signal	

23	PC	O	Turntable motor drive signal ("L": ON)
24	ECM	O	Turntable motor drive signal (Forced mode)
25	ECS	O	Turntable motor drive signal (Servo error signal)
26	NC	-	Not used, open
27	TRD	O	Tracking drive signal output
28	FOD	O	Focus drive signal output
29	VREF	I	D/A drive output (TVD, ECS, TRD, FOD, FBAL, TBAL) normal voltage input terminal
30	FBAL	O	Focus balance adj. output
31	TBAL	O	Tracking balance adj. output
32	FE	I	Focus error signal (analog input)
33	TE	I	Tracking error signal (analog input)
34	RFENV	I	RF envelope signal
35	VDET	I	Oscillation det. signal ("H": det.) (Not used, open)
36	OFT	I	Off track signal ("H": Off track)
37	TRCRS	I	Track cross signal input (Not used, open)
38	/RFDET	I	RF detection signal ("L": detection)
39	BDO	I	Dropout detection signal ("H": dropout)
40	LDON	O	Laser power control ("H": ON)
41	PLL2	-	PLL loop filter terminal (Not used, open)
42	DSL2	I/O	DSL loop filter terminal
43	WVEL	O	Double velocity status signal ("H": double) (Not used, open)
44	ARF	I	RF signal input
45	IREF	I	Reference current input
46	DRF	I	DSL bias terminal
47	DSL	I/O	DSL loop filter terminal
48	PLL	I/O	PLL loop filter terminal
49	VCOF	-	VCO loop filter terminal
50	AVDD2	I	Power supply (analog circuit) terminal 2
51	AVSS2	-	GND (analog circuit) terminal
52	384FS	-	Not used
53	PCK	-	PLL extract clock (f=4.3218MHz) (Not used, open)
54	VCOF2	-	VCO loop filter terminal (Not used, connected to GND)
55	SUBC	O	Sub-code serial output clock
56	SBCK	I	Sub-code serial input data
57	VSS	-	GND terminal
58	X1 IN	I	Crystal oscillator terminal (f=16.9344MHz)
59	X2 OUT	O	Crystal oscillator terminal (f=16.9344MHz)
60	VDD	I	Power supply terminal
61	BYTCK	-	Byte clock signal (Not used, open)
62	/CLDCK	O	Sub-code frame clock signal (f=CLDCK=7.35kHz: Normal)
63	FCLK	-	Crystal frame clock (Not used, open)
64	IPFLAG	O	Interpolation flag terminal
65	FLAG	-	Flag terminal (Not used, open)
66	CLVS	-	Turntable servo phase synchro signal ("H": CLV, "L": Rough servo) (Not used, open)
67	CRC	-	Sub-code CRC check terminal ("H": ON, "L": NG) (Not used, open)
68	DEMPH	-	De-emphasis ON signal ("H": ON) (Not used,

			open)
69	RESY	-	Re-synchronizing signal of frame sync. (Not used, open)
70	IOSEL	I	I/O select signal input (Connected to VDD)
71	/TEST	I	Test terminal (Normal:"H") (Not used, connected to power supply)
72	AVDD1	I	Power supply (analog circuit) terminal (1)
73	OUTL	O	L ch audio signal
74	AVSS1	-	GND (analog circuit) terminal (1)
75	OUTR	O	R ch audio signal
76	RSEL	I	Polarity direction control terminal of RF signal (Not used, connected to power supply)
77	IOVDD	I	Power supply terminal
78	DIDATA	I	Audio serial data input
79	DILRCK	I	Audio LR clock input
Audio bit clock input			

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IC401 (M38067MC412F): SYSTEM CONTROL No.	Mark	I/O Division	Function
1	KEY3	I	Operation key signal input
2	KEY2	I	Operation key signal input
3	KEY1	I	Operation key signal input
4	LD CLR	O	LED drive signal output
5	LD DATA	O	LED drive signal output
6	LD CLK	O	LED drive signal output
7	LD STB	O	LED drive signal output
8	CS	O	Serial communication control signal output
9	CLK	O	Clock signal output for tuner/ amplifier
10	DO	O	Serial communication data signal output
11	DI	I	Serial communication data signal input
12	REQ	I	Serial communication request signal input
13	PWCNT	O	Power control signal output
14	VMUTE	O	Video muting control signal output
15	SW5	I	Bottom switch detect signal input
16	BLKCK	I	Block clock signal input
17	PSTN	I	Position sensor detect signal input
18	SW2	I	Disc tray position detect signal input
19	SW1	I	Disc tray position detect signal input
20	SW3	I	Disc tray open detect signal input
21	SQCK	O	Serial clock signal output
22	OPEN NC	-	Not used, open
23	SUBQ	I	Serial data signal input
24	SW4	I	Clump switch detect signal input
25	HALT	I	Power failure detect signal input
26	CNVS	-	Connected to GND
27	RST	I	Reset signal input
28 29	NC	-	Connected to GND
30	CFI	I	Crystal oscillator input (6 MHz)
31	CFO	O	Crystal oscillator output (6 MHz)
32	VSS	-	GND terminal
33	NC	-	Not used, connected to GND

36			
37	PLG	O	Plunger signal output
38	CCW	O	CD mechanism motor control signal output (reverse direction)
39	HALF	O	Loading motor control signal output
40	CW	O	CD mechanism motor control signal output (forward direction)
41	EMPH	O	Emphasis control signal output
42	HRDY	I	Ready signal input
43	HINT	I	Soft interrupt signal input
44	ORST	O	Reset signal output for IC1000
45	HCK	O	Clock signal output for IC1000
46	HDI	I	Data signal input for IC1000
47	HDO	O	Data signal output for IC1000
48	CS	-	Not used, open
49	CK	-	Not used, open
50	DA	O	Not used, connected to GND
51 ⋮ 64	NC	-	Not used, connected to GND
65	TEST	I	Test mode select signal input
66	NC	-	Connected to GND
67	CSEL3	I	Function select terminal
68	HSEL	O	Select signal output for IC1000
69	SRV RST	O	Reset signal output for IC702
70	MLD	O	Command load signal output
71	MCLK	O	Command clock output
72	MDATA	O	Command data output
73	VDD	I	Power supply terminal
74	VREF	I	Reference voltage input (+)
75	VREF-	-	Reference voltage GND
76	NC	-	Not used, connected to GND
77	REST SW	I	Rest switch signal input
78	STAT	I	Status signal input

Not used, connected to GND

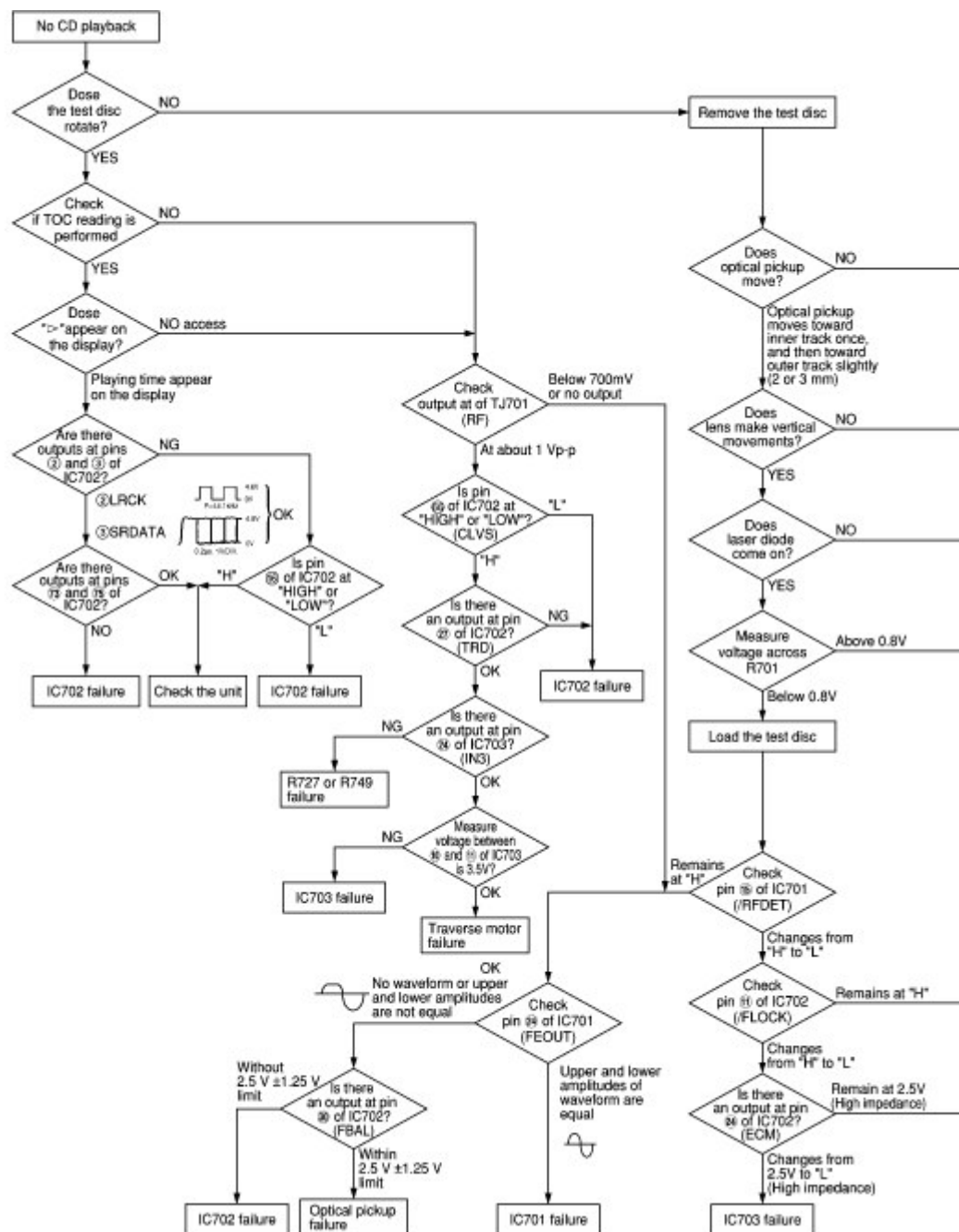
IC1000 (MN89103M2): MPEG VIDEO AUDIO VIDEO DECODER				
No.	Mark	I/O Division	Function	Remarks
1	NC	-	-	Not used, open
2	VSS	-	GND terminal	0V
3	CD BCK	I	CD bit clock input	F=2.822MHz
4	CD DATA	I	CD Serial data input	-
5	CD LRCK	I	CD LR clock input	F=44.1kHz
6	CD C2PO	I	Data Error Flag signal input	Accepts a flag signal when serial data error is uncorrectable
7 ⋮ 9	NC	-	-	Not used, open
10 ⋮ 15	MD0 ⋮ MD5	I/O	DRAM/ROM data I/O lines	Used to exchange data with DRAM (IC1002) and ROM (IC1001). Data used to control MPEG (IC1000) is transferred from ROM, while video data with CD-ROM format comes from DRAM.

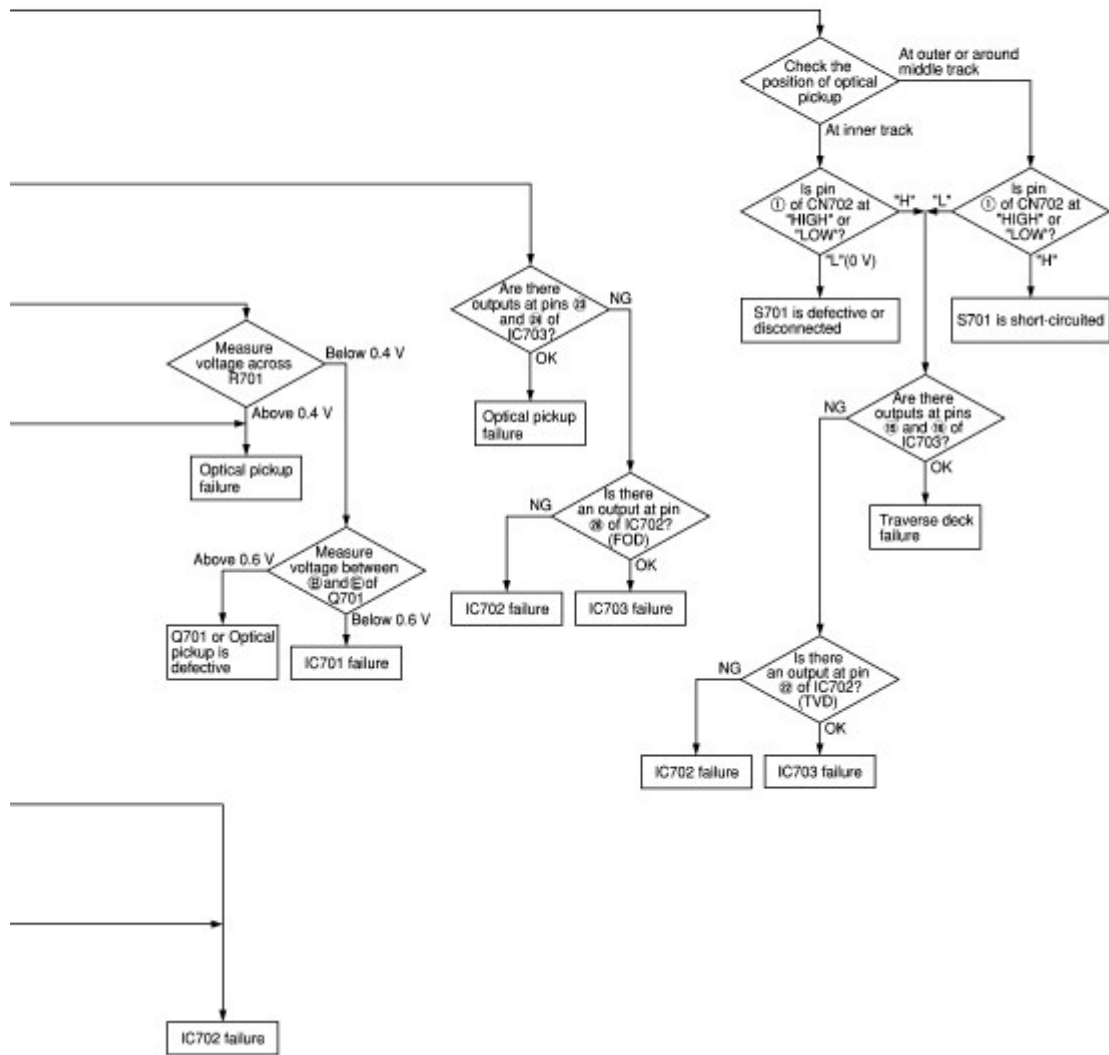
16	VSS	-	GND terminal	0V
17	MD6	I/O	DRAM/ROM data I/O lines	Used to exchange data with DRAM (IC1002) and ROM (IC1001).
18	VDD3	I	Power supply terminal	+3.3V
19	MD7	I/O	DRAM/ROM data I/O lines	Used to exchange data with DRAM (IC1002) and ROM (IC1001).
20	I/O VSS	-	GND terminal	0V
21	MD8	I/O	DRAM/ROM data I/O lines	Used to exchange data with DRAM (IC1002) and ROM (IC1001).
22	VDD3	I	Power supply terminal	+3.3V
23 ⋮ 29	MD9 ⋮ MD15	I/O	DRAM data/ROM address I/O lines	Used to exchange data with DRAM (IC1002) and ROM (IC1001).
30 ⋮ 36	NC	-	-	Not used, open
37	MCE	O	ROM chip enable signal output	Low selects ROM (IC1001)
38	MWE	O	DRAM write enable signal output	Low write to IC1002, High reads from IC1002.
39	VSS	-	GND terminal	0V
40	CAS	O	DRAM LCAS/ROM address output	Lower address/data command output for DRAM (IC1002).
41	VDD3	I	Power supply terminal	+3.3V
42	RAS0	O	DRAM RAS0 output	Higher address output for DRAM (IC1002)
43	RAS1	-	-	Not used, open
44 45	MA10,MA9	O	ROM address output	Address output for ROM (IC1001)
46	MA8	O	DRAM address output	Address output for DRAM (IC1002)
47	VSS	-	GND terminal	0V
48	MA7	O	DRAM/ROM address output	Address output for DRAM (IC1002)
49	VDD3	I	Power supply terminal	+3.3V
50 ⋮ 52	MA6 ⋮ MA4	O	DRAM/ROM address output	Address output for DRAM (IC1002)
53	VSS	-	GND terminal	0V
54	MA3	O	DRAM/ROM address output	Address output for DRAM (IC1002)
55	VDD3	I	Power supply terminal	+3.3V
56 ⋮ 58	MA2 ⋮ MA0	O	DRAM/ROM address output	Address output for DRAM (IC1002).
59	RESERVED	-	GND terminal	0V
60	RESET	I	Reset signal input	Active low reset signal from the system controller (IC401).
61	VDD MAX-IN	I	Power supply terminal	+5.0V
62 ⋮ 65	NC	-	-	Not used, open
66	AVDD	I	Power supply terminal	+3.2V
67	COMPOS-OUT	O	Composite video signal output	Video output signal video output jack (JK402).
68	AGND	-	GND terminal	0V

69	Y-OUT	O	Y signal output	Not used, open
70	AVDD	I	Power supply terminal	+3.2V
71	AGND	-	GND terminal	0V
72	VGAIN	I	Video gain signal input	9.1k Ω resistor connected between terminal and ground.
73	VREF	I	Internal reference voltage	0.1 μ F capacitor connected between terminal and ground.
74	AVDD	I	Power supply terminal	+3.2V
75	C-OUT	O	C signal output	Not used, open
76	AGND	-	GND terminal	0V
77 ⋮ 79	CLKSEL(0) ⋮ CLKSEL(2)	I	Clock selector signal input	10k Ω resistor connected between terminal and ground.
80	VSS	-	GND terminal	0V
81	CLKSEL (3)	I	Clock selector signal input	10k Ω resistor connected between terminal and ground.
82	VDD3	I	Power supply terminal	+3.3V
83 84	RESERVED	-	GND terminal	0V
85	AGND	-	GND terminal	0V
86	DA XCK	I	Audio read clock input	F=16.9344MHz
87	AVDD	I	Power supply terminal	+3.2V
88 ⋮ 90	RESERVED	-	GND terminal	0V
91	PIO 0	-	-	Not used, open
92	RESERVED	-	GND terminal	0V
93	PIO2	-	-	Not used, open
94 ⋮ 98	NC	-	-	Not used, open
99	VSS	-	GND terminal	0V
100	NC	-	-	Not used, open
101	PIO3	-	-	Not used, open
102	VDD3	I	Power supply terminal	+3.3V
103	VCKPIO1	-	-	Not used, open
104	VSS	-	GND terminal	0V
105	GCK	-	GND terminal	0V
106	VCK	I	Video read clock input	F=27MHz
107	DA-EMP	I	DAC emphasis input	High frequency emphasis signal input
108	DA-LRCK	O	Audio LR clock output	F=44.1kHz
109	VDDMAX-OUT	I	Power supply terminal	+5.0V
110	DA-DATA	O	Audio serial data output	F=2MHz (T=0.5ms)
111	DA-BCK	O	Audio bit clock output	-
112	HDO-OUT	O	Address/data output	Address/data signal to IC401
113	HRDY	O	Ready signal output	Ready signal output to IC401
114	HINT	I/O	Soft interrupt signal	Soft interrupt signal from/to IC401
115	CDG-SCK	O	Serial clock signal	Not used
116	VSS	-	GND terminal	0V

117	HCK	I	Serial clock signal input	Receive a clock signal from IC401
118	VDD3	I	Power supply terminal	+3.3V
119	HD IN	I	Address/data input	Address/data signal from IC401
120	VDD3	I	Power supply terminal	+3.3V
121	HSEL	I	Serial data signal input	Receive a data signal from IC401
122	CDG-SDATA	I	Serial data signal input	Not used, connected to GND
123	CDG-VFSY	I	Sub-code frame clock signal	Not used, connected to GND
124	CDG-SOS1	I	Sub-code block clock signal	Not used, connected to GND
Not used, open				

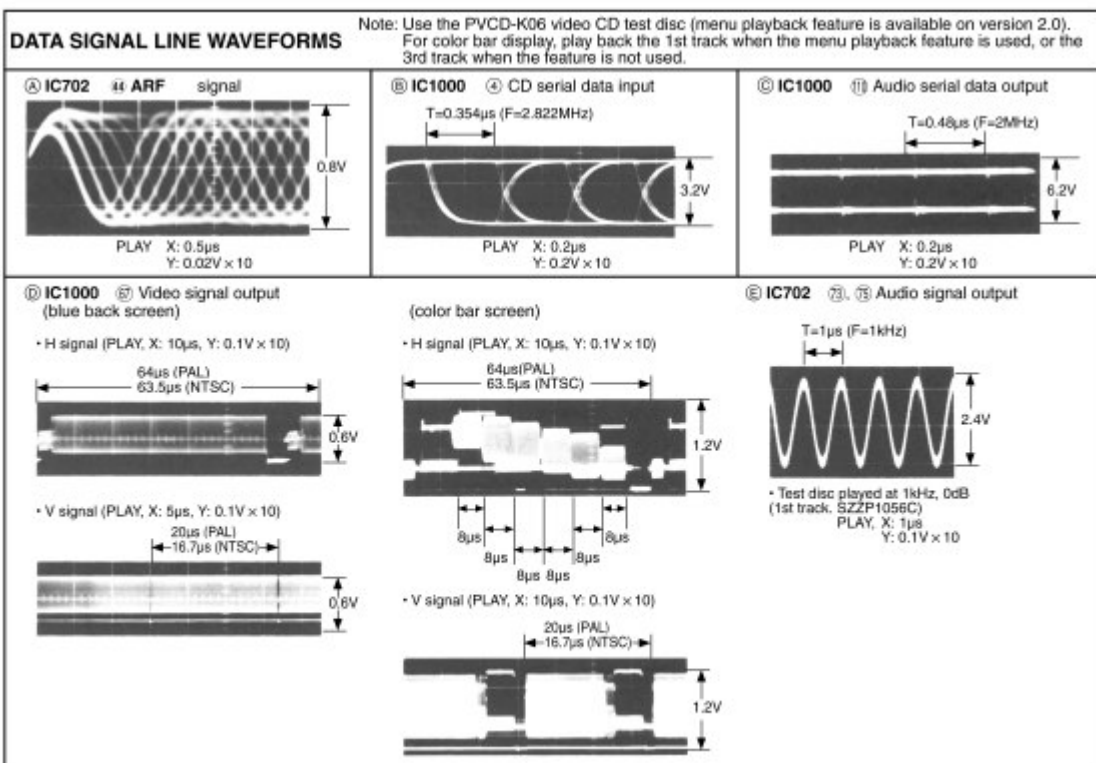
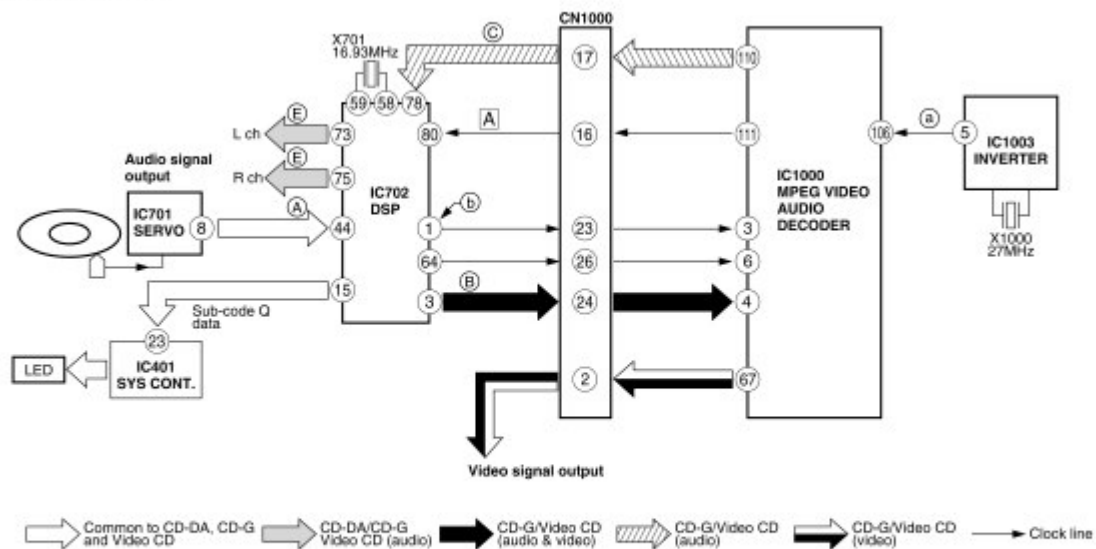
13 Troubleshooting Guide



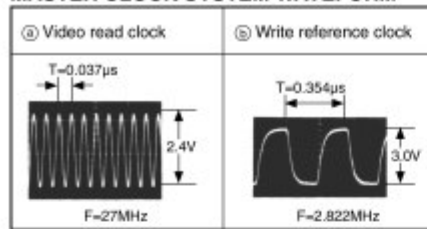


14 Troubleshooting Guide for Video Circuit

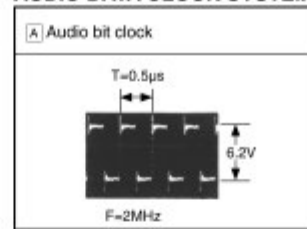
• Circuit diagram



MASTER CLOCK SYSTEM WAVEFORM



AUDIO DATA CLOCK SYSTEM WAVEFORM

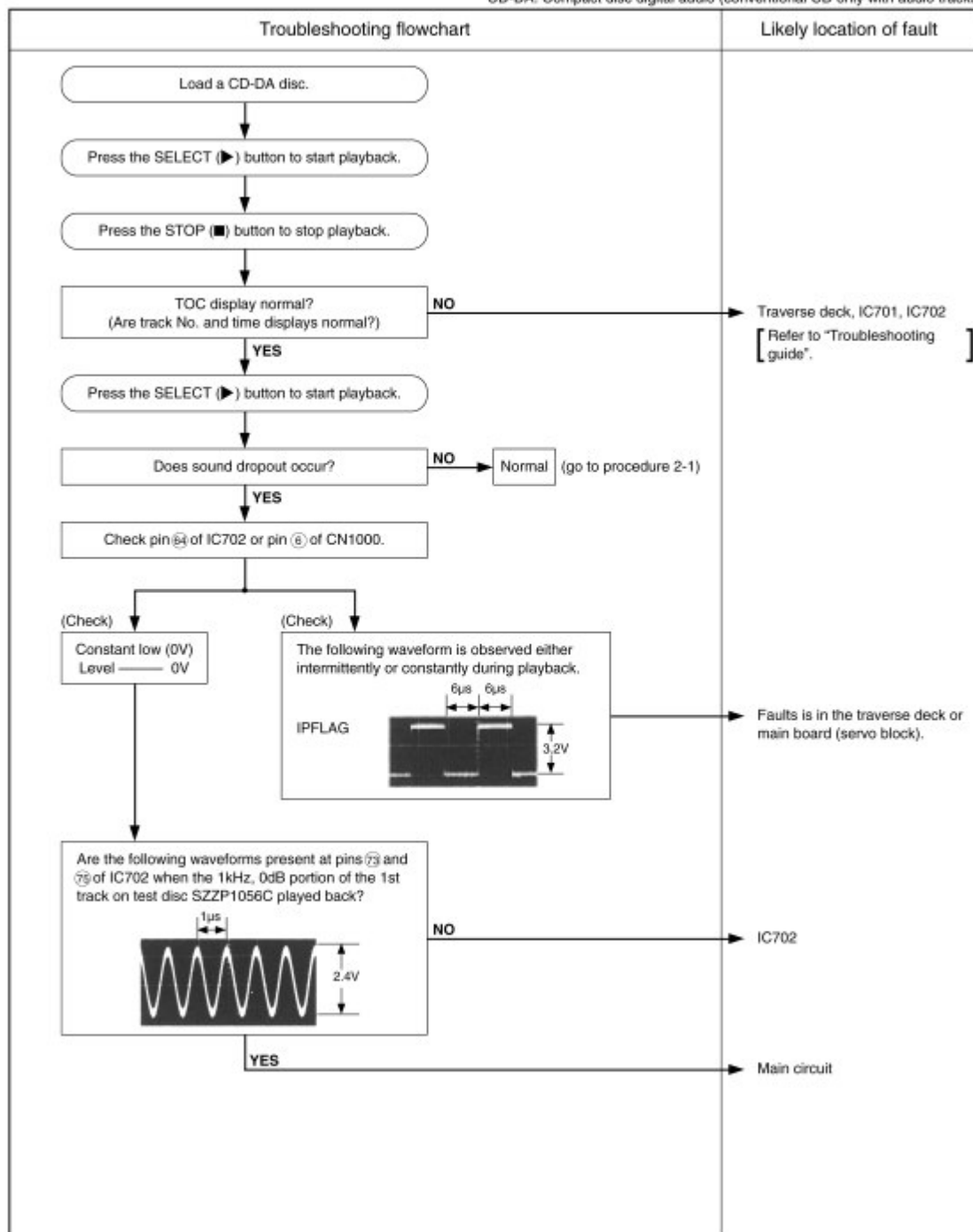


Diagnostic Procedures by Symptom

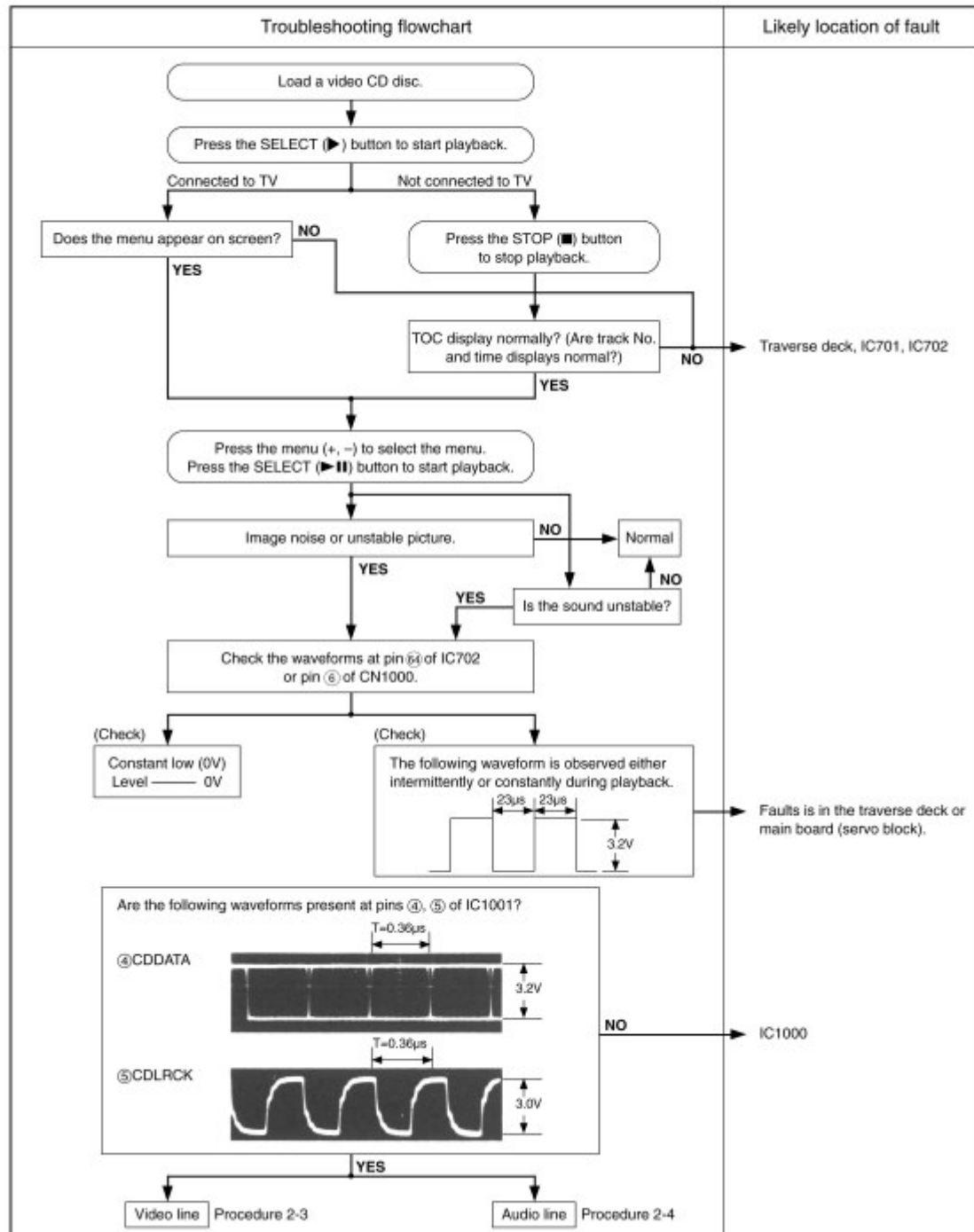
Symptom		Likely Location Fault
CD-DA	Video-CD	
TOC NG	TOC NG (both audio and video are NG.) Blue back display.	For TOC NG, fault in the CD-DA circuit. IC701, IC702, IC703, or traverse system.
Turntable fails to rotate.	Fails to rotate.	Traverse system, focus servo system (IC701, IC703), supply line, clock line system control.
Turntable rotates.	Rotates.	Traverse system, tracking servo system / CLV servo system/traverse servo system (IC701, IC702, IC703).
Audio normal	Audio normal, Video NG.	IC1000
Audio normal	No sound, Video NG.	IC1000
TOC OK, counter OK, but no sound.	TOC OK, counter OK, but no sound and video NG.	CD disc other than DV "Karaoke" soft, video CD and CD-DA.

Troubleshooting Procedure 1	CD-DA	No sound
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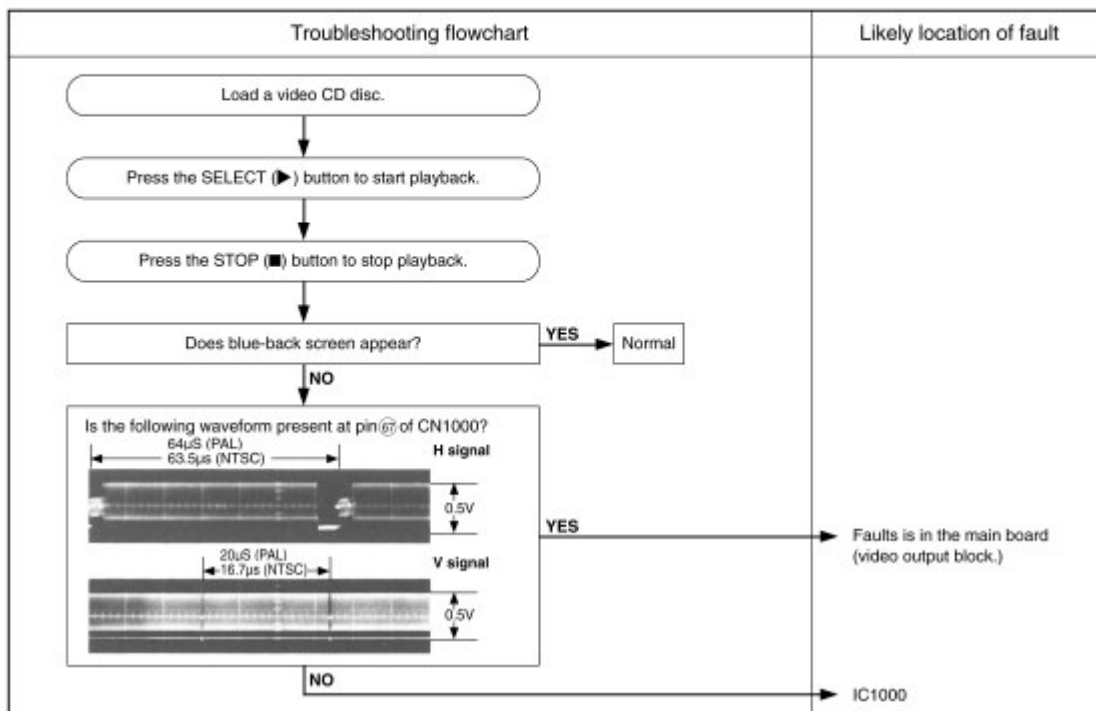
CD-DA: Compact disc digital audio (conventional CD only with audio tracks)



Troubleshooting Procedure 2-1	Video CD	No picture or No sound
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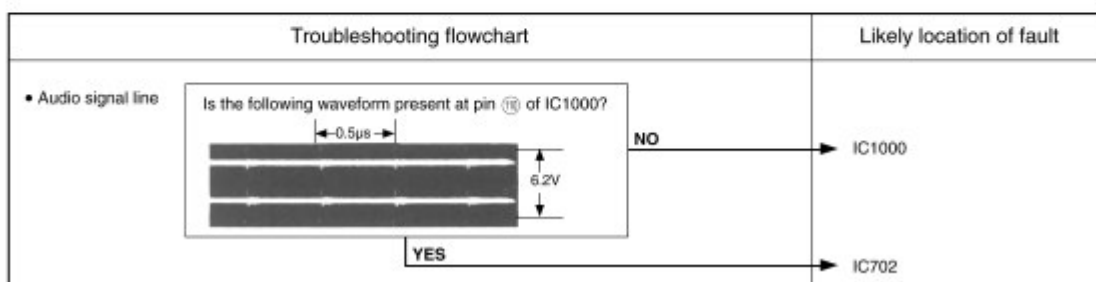


Troubleshooting Procedure 2-2	Video CD blue back	No blue back
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Troubleshooting Procedure 2-3	Video portion of video CD	No picture	----- Likely location of fault: IC1000
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Troubleshooting Procedure 2-4	Audio portion of video CD	No sound
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15 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 shown in the parts list.

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 this period, the assembly will no longer be available.

All parts are supplied by MESA.

Ref. No.	Part No.	Part Name& Description	Pcs.	Remarks
<u>1</u>	RKM0399-S	TOP CABINET	1	
<u>2</u>	RHD30007-S	SCREW	4	
<u>3</u>	XTBS3+8JFZ1	SCREW	1	
<u>4</u>	REZ1238	FFC	1	
<u>5</u>	REZ1257	FFC(14P)	1	
<u>6</u>	RYF0520A-S	CD LID ASS'Y	1	
<u>7</u>	XTW3+8T	SCREW	2	
<u>8</u>	RKA0105-K	RUBBER	4	
<u>9</u>	RKA0106-N	FOOT RING	4	
<u>10</u>	RYP0896D-S	FRONT PANEL ASS'Y	1	
<u>10-1</u>	RGB0022-A	PANASONIC BADGE	1	
<u>11</u>	XTBS3+8JFZ1	SCREW	4	
<u>12</u>	XTB3+8JFZ	SCREW	1	
<u>301</u>	RAE0152Z-1	TRAVERSE DECK ASS'Y	1	
<u>301-1</u>	SHGD113-1	FLOATING RUBBER	3	
<u>301-2</u>	SNSD38	SCREW	2	
<u>302</u>	RDV0056	BELT	1	
<u>303</u>	RMB0549	SPRING	1	
<u>304</u>	RMB0561	SPRING	1	
<u>305</u>	RME0257	SPRING	1	
<u>306</u>	RME0258	SPRING	1	
<u>307</u>	RME0261	SPRING	1	
<u>308</u>	RML0516	LEVER	1	

<u>309</u>	RML0517	LEVER	1	
<u>310</u>	RML0518	LEVER	1	
<u>311</u>	RML0519	LEVER	1	
<u>312</u>	RML0520	TRAY LOCK	1	
<u>313</u>	RML0521	REAR LOCK	1	
<u>314</u>	RML0525	FRONT LOCK	1	
<u>315</u>	RML0530	LEVER	1	
<u>316</u>	RMM0201	SLIDE PLATE 1	1	
<u>317</u>	RMM0202	SLIDE PLATE 2	1	
<u>318</u>	RMB0551	SPRING	1	
<u>319</u>	RMB0553	SPRING	1	
<u>320</u>	RMQ0747	UPPER HOOK	1	
<u>321</u>	RMQ0749	UPPER SPINDLE	1	
<u>322</u>	RMX0140	DISC SPACER	5	
<u>323</u>	RMX0141	SPACER	1	
<u>324</u>	RHM245ZA	MAGNET	1	
<u>325</u>	RMR0334	MAGNET HOLDER	1	
<u>326</u>	RMR0624-W2	CLAMPER	1	
<u>327</u>	RMR1121-K	MECHANISM COVER	1	
<u>328</u>	RXQ0561	TRAY BASE	1	
<u>329</u>	RDG0430	GEAR,RELAY A	1	
<u>330</u>	RDG0431	GEAR,RELAY B	1	
<u>331</u>	XTV2+6G	SCREW	2	
<u>332</u>	RMB0552	SPRING	1	
<u>333</u>	RME0262	SPRING	1	
<u>334</u>	RME0263	SPRING	1	
<u>335</u>	RML0526	SPRING	1	
<u>336</u>	RMQ0742	SPINDLE BASE	1	
<u>337</u>	RMB0550	SPRING	1	
<u>338</u>	RML0522	LOADING STOPPER	1	
<u>339</u>	RMQ0743	SPINDLE SHAFT	1	
<u>340</u>	RMQ0744	LOWER HOOK	1	
<u>341</u>	RMQ0745	LOWER SPINDLE	1	
<u>342</u>	RMQ0746	UP/DOWN BASE	1	
<u>343</u>	RXQ0595	MOTOR	1	
<u>344</u>	XTB3+10J	SCREW	11	
<u>345</u>	RDG0424	GEAR,DRIVE	1	
<u>346</u>	RDG0425	GEAR,CHANGE	1	
<u>347</u>	RDG0426	GEAR,UP/DOWN	1	

348	RDG0427	GEAR, TRAVERSE CAM	1	
349	RDG0428	GEAR, TRAVERSE RELAY	1	
350	RDG0429	GEAR, PULLEY	1	
351	RME0109	FLOATING SPRING(1)	2	
352	RME0142	FLOATING SPRING(2)	1	
353	RMR1124-K	TRAVERSE CHASSIS	1	
354	RMS0632	TRAVERSE FIXED PIN	3	
355	XTN2+6G	SCREW	1	
356	RMQ0748	GEAR HOLDER	1	
C1	ECEA1CKS101	16V 100U	1	
C2	ECBT1E103ZF	25V 0.01U	1	
C11	ECA1CM222	16V 2200U	1	
C12	ECBT1E103ZF	25V 0.01U	1	
C13	RCE1AKA470BG	10V 47U	1	
C14	ECBT1H102KB5	50V 1000P	1	
C15	RCE1AKA470BG	10V 47U	1	
C16	ECEA0JKS101	6.3V 100U	1	
C17	RCE1CKA100BG	16V 10U	1	
C18	ECBT1H102KB5	50V 1000P	1	
C19	RCE1CKA100BG	16V 10U	1	
C20,21	ECBT1H102KB5	50V 1000P	2	
C22	ECBT1C103MS5	16V 0.01U	1	
C23	ECBT1H102KB5	50V 1000P	1	
C24	ECBT1C103MS5	16V 0.01U	1	
C31,32	EEAFC0J101B	6.3V 100U	2	
C151,52	ECEA1EKS4R7	25V 4.7U	2	
C153,54	ECBT1H102KB5	50V 1000P	2	
C401	ECBT1H102KB5	50V 1000P	1	
C402	EEAFC0J101B	6.3V 100U	1	
C403	ECBT1H102KB5	50V 1000P	1	
C404	ECBT1E103ZF	25V 0.01U	1	
C405	ECEA1HKS2R2	50V 2.2U	1	
C406	ECBT1E103ZF	25V 0.01U	1	
C407	ECBT1H102KB5	50V 1000P	1	
C408	ECBT1E103ZF	25V 0.01U	1	
C409	ECEA0GKS471	4V 470U	1	
C410	ECBT1E103ZF	25V 0.01U	1	
C411	EEAFC0J101B	6.3V 100U	1	

C412	RCE1AKA101BG	10V 100U	1	
C415	ECBT1H102KB5	50V 1000P	1	
C416	ECEA0JKS101	6.3V 100U	1	
C417	EEAFC0J101B	6.3V 100U	1	
C418	ECEA0JKS101	6.3V 100U	1	
C419	ECBT1H102KB5	50V 1000P	1	
C420	ECBT1H101KB5	50V 100P	1	
C424	ECBT1E103ZF	25V 0.01U	1	
C601	ECBT1E103ZF	25V 0.01U	1	
C602-05	ECBT1H101KB5	50V 100P	4	
C606	ECEA1EKS4R7	25V 4.7U	1	
C701	ECEA0JKA330I	6.3V 33U	1	
C702	ECUZNE104MBN	25V 0.1U	1	
C703	ECEA0JKS101	6.3V 100U	1	
C704	ECUZNE104MBN	25V 0.1U	1	
C706	ECUV1H272KBN	50V 2700P	1	
C707	ECUV1E273KBN	25V 0.027U	1	
C710	ECUV1H121KCN	50V 120P	1	
C711,12	ECUWNE104ZFN	25V 0.1U	2	
C713	ECUZNE104MBN	25V 0.1U	1	
C714	ECEA0JKS101	6.3V 100U	1	
C715	ECUV1H272KBN	50V 2700P	1	
C716	ECUE1H821KBN	50V 820P	1	
C717	ECUWNE104ZFN	25V 0.1U	1	
C718	ECUVNC474KBN	16V 0.47U	1	
C721,22	ECUE1H100DCN	50V 10P	2	
C723	ECEA1AKS221	10V 220U	1	
C724	ECUZNE104MBN	25V 0.1U	1	
C725,26	ECUE1H102KBN	50V 1000P	2	
C730	ECUWNE104ZFN	25V 0.1U	1	
C731,32	ECEA1AKS221	6.3V 220U	2	
C733	ECUZNE104MBN	25V 0.1U	1	
C734	ECEA1AKS221	10V 220U	1	
C735-37	ECUWNE104ZFN	25V 0.1U	3	
C738	ECUE1H103KBN	50V 0.01U	1	
C739	ECUE1H152KBN	50V 1500P	1	
C742	ECUV1E273KBN	25V 0.027U	1	
C743	ECUWNE104ZFN	25V 0.1U	1	
C744	ECUV1H562KBN	50V 5600P	1	

C745	ECUE1H102KBN	50V 1000P	1	
C747	ECUV1H181KCN	50V 180P	1	
C749	ECUV1H182KBN	50V 1800P	1	
C750,51	ECUZNE104MBN	25V 0.1U	2	
C752	ECUE1H152KBN	50V 1500P	1	
C753	ECUV1H471KBM	50V 470P	1	
C1000 01	ECUV1H100DCV	50V 10P	2	
C1002-12	ECUZNC104ZFV	16V 0.1U	11	
C1013	ECUV1H101KCV	50V 100P	1	
C1014	ECUV1H151KBV	50V 150P	1	
C1015	ECUV1H271KBV	50V 270P	1	
C1016 17	ECUZNC104ZFV	16V 0.1U	2	
C1018	ECUV1H331KBV	50V 330P	1	
C1019	ECUV1H101KCV	50V 100P	1	
C1020	ECUZNC104ZFV	16V 0.1U	1	
C1021	ECUV1H101KCV	50V 100P	1	
CN1	RJS1A9414	CONNECTOR(14P)	1	
CN401	RJS1A6714	CONNECTOR(14P)	1	
CN402	RJS2A4230	CONNECTOR(30P)	1	
CN404	RJU107K30M	CONNECTOR(30P)	1	
CN701	RJU035T016-1	CONNECTOR(16P)	1	
CN702	RJS2A4230	CONNECTOR(30P)	1	
CN1000	RJT107K30T	CONNECTOR(30P)	1	
D1	GP1S94	DIODE	1	
D2	MTZJ4R7B	DIODE	1	
D11-13	RL1N4003N02	DIODE	3	
D14	MA4082LTA	DIODE	1	
D15,16	MA165	DIODE	2	
D17,18	RL1N4003N02	DIODE	2	
D19-22	MA165	DIODE	4	
D24	MA4051M	DIODE	1	
D25-30	MA165	DIODE	6	
D401-07	MA165	DIODE	7	
D601-06	SML79455C	LED	6	
D617	MA165	DIODE	1	
IC1	TA7291P	IC	1	

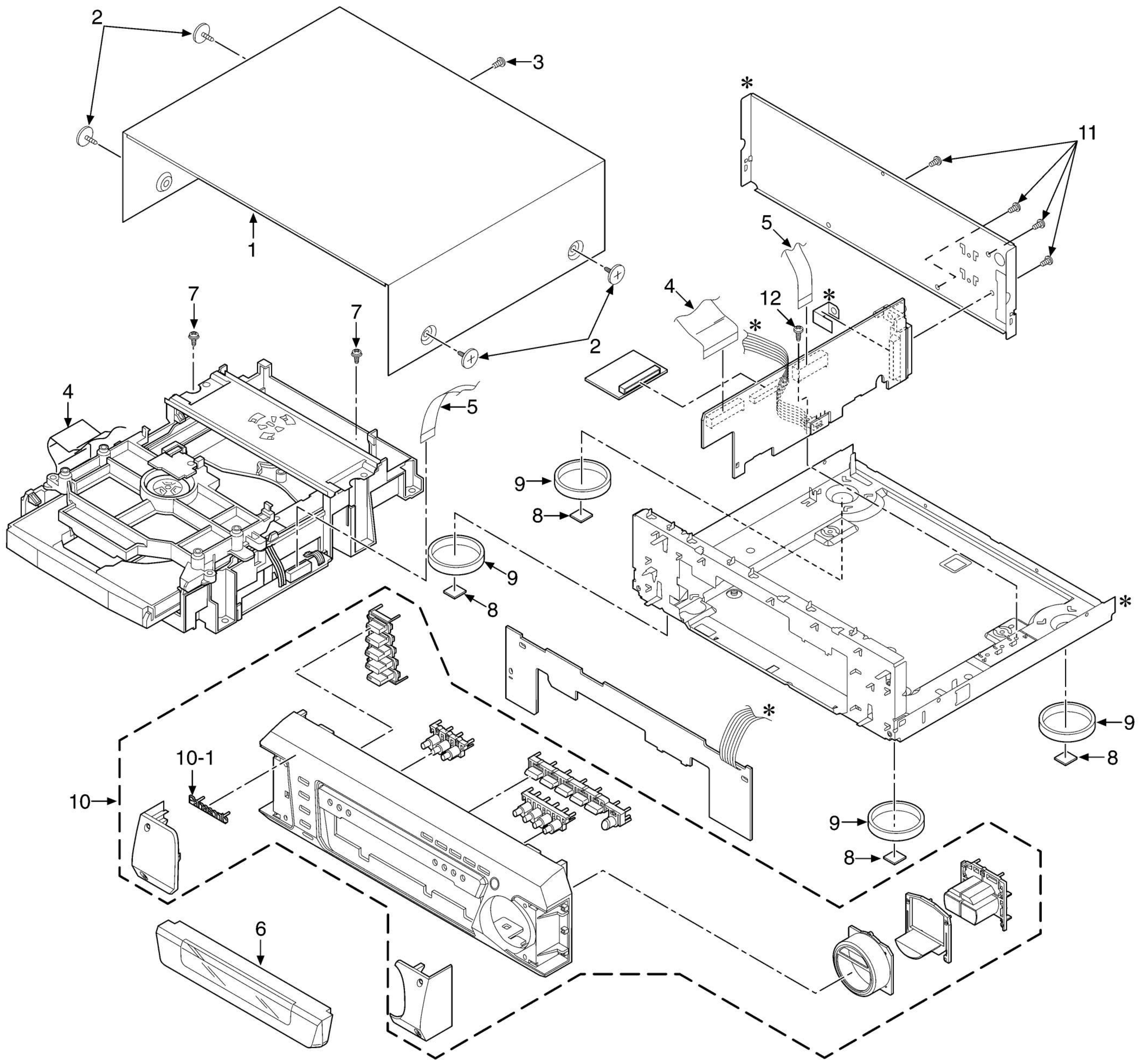
IC11	UPC29M33HB	IC	1	
IC401	M38067MC412F	IC	1	
IC402	TC74HCT7007A	IC	1	
IC403	TC7W14FTE12L	IC	1	
IC601	NJU3713GTE1	IC	1	
IC701	AN8839NSBE2	IC	1	
IC702	MN662790RSA	IC	1	
IC703	AN8739SBE2	IC	1	
IC1000	MN89103M2	IC	1	
IC1001	LH532KVA	IC	1	
IC1002	M44260CTP7	IC	1	
IC1003	TC7WU04FUT2L	IC	1	
IC1004	TC7W14FUTE1L	IC	1	
JK401	RJT065K20	JACK	1	
JK402	SJFD7-6	JACK,VIDEO OUT	1	
L11	BL02RN2R65T2	COIL	1	
L701-04	RLBN102V-Y	COIL	4	
L1000	RLQP1R8KT2-Y	COIL	1	
L1002	RLQP2R7KT2-Y	COIL	1	
PCB1	REP2823A-M	MAIN P.C.B.	1	(RTL)
PCB2	REP2518C-T	P.C.B.	1	(RTL)
Q1	RVTDT143EST	TRANSISTOR	1	
Q11	UN4211	TRANSISTOR	1	
Q12	2SC3311AQST	TRANSISTOR	1	
Q13	2SB1548PQAU	TRANSISTOR	1	
Q14	2SB621A-R	TRANSISTOR	1	
Q15	2SC3311AQST	TRANSISTOR	1	
Q16	2SB1238QRTV2	TRANSISTOR	1	
Q17	2SC3311AQST	TRANSISTOR	1	
Q18	2SB621A-R	TRANSISTOR	1	
Q19	2SC3311AQST	TRANSISTOR	1	
Q20	2SB621A-R	TRANSISTOR	1	
Q21	2SC3311AQST	TRANSISTOR	1	
Q401-03	2SC3311AQST	TRANSISTOR	3	
Q404	UN4214TA	TRANSISTOR	1	
Q405	UN421FTA	TRANSISTOR	1	

Q406	2SB621A-R	TRANSISTOR	1	
Q701	2SB709S	TRANSISTOR	1	
R1	ERDS2FJ102	1/4W 1K	1	
R11	ERDS2FJ100	1/4W 10	1	
R12	ERDS2FJ152	1/4W 1.5K	1	
R13	ERDS2FJ101	1/4W 100	1	
R14	ERDS2FJ223	1/4W 22K	1	
R15	ERDS2FJ471	1/4W 470	1	
R16	ERDS2FJ222	1/4W 2.2K	1	
R17	ERDS2FJ102	1/4W 1K	1	
R18	ERDS2FJ152	1/4W 1.5K	1	
R19	ERDS2FJ102	1/4W 1K	1	
R20,21	ERDS1FJ8R2	1/2W 8.2	2	
R22,23	ERDS2FJ471	1/4W 470	2	
R24	ERDS2FJ100	1/4W 10	1	
R25	ERDS2FJ222	1/4W 2.2K	1	
R26	ERDS2FJ100	1/4W 10	1	
R151,52	ERDS2FJ473	1/4W 47K	2	
R153,54	ERDS2FJ221	1/4W 220	2	
R302	ERDS2FJ102	1/4W 1K	1	
R307	ERDS2FJ104	1/4W 100K	1	
R401	ERDS2FJ472	1/4W 4.7K	1	
R402	ERDS2FJ473	1/4W 47K	1	
R403-05	ERDS2FJ472	1/4W 4.7K	3	
R406	ERDS2FJ104	1/4W 100K	1	
R407,08	ERDS2FJ472	1/4W 4.7K	2	
R409,10	ERDS2FJ102	1/4W 1K	2	
R411	ERDS2FJ472	1/4W 4.7K	1	
R412	ERDS2FJ103	1/4W 10K	1	
R413,14	ERDS2FJ104	1/4W 100K	2	
R415-17	ERDS2FJ101	1/4W 100	3	
R418-20	ERDS2FJ103	1/4W 10K	3	
R421	ERDS2FJ221	1/4W 220	1	
R422	ERDS2FJ102	1/4W 1K	1	
R423	ERDS2FJ103	1/4W 10K	1	
R424	ERDS2FJ101	1/4W 100	1	
R425	ERDS2FJ103	1/4W 10K	1	
R426	ERDS2FJ102	1/4W 1K	1	

R427	ERDS2FJ221	1/4W 220	1	
R428-31	ERDS2FJ102	1/4W 1K	4	
R432	ERDS2FJ222	1/4W 2.2K	1	
R433-37	ERDS2FJ102	1/4W 1K	5	
R439,40	ERDS2FJ102	1/4W 1K	2	
R442-47	ERDS2FJ102	1/4W 1K	6	
R448	ERDS2FJ101	1/4W 100	1	
R450-52	ERDS2FJ101	1/4W 100	3	
R454	ERDS2FJ102	1/4W 1K	1	
R456	ERDS2FJ102	1/4W 1K	1	
R457,58	ERDS2FJ472	1/4W 4.7K	2	
R459,60	ERDS2FJ101	1/4W 100	2	
R461	ERDS2FJ103	1/4W 10K	1	
R462	ERDS2FJ473	1/4W 47K	1	
R463,64	ERDS2FJ472	1/4W 4.7K	2	
R465	ERDS2FJ103	1/4W 10K	1	
R466	ERDS2FJ101	1/4W 100	1	
R467	ERDS2FJ223	1/4W 22K	1	
R468	ERDS2FJ473	1/4W 47K	1	
R470	ERDS2FJ103	1/4W 10K	1	
R472-78	ERDS2FJ222	1/4W 2.2K	7	
R481-88	ERDS2FJ182	1/4W 1.8K	8	
R491	ERQ16NKWR33E	1/6W 0.33	1	
R602-04	ERDS2FJ101	1/4W 100	3	
R605-09	ERDS2FJ221	1/4W 220	5	
R610	ERDS2FJ151	1/4W 150	1	
R611	ERDS2FJ821	1/4W 820	1	
R612	ERDS2FJ102	1/4W 1K	1	
R613	ERDS2FJ122	1/4W 1.2K	1	
R614	ERDS2FJ152	1/4W 1.5K	1	
R615	ERDS2FJ182	1/4W 1.8K	1	
R616	ERDS2FJ222	1/4W 2.2K	1	
R617	ERDS2FJ332	1/4W 3.3K	1	
R618	ERDS2FJ472	1/4W 4.7K	1	
R619	ERDS2FJ682	1/4W 6.8K	1	
R620	ERDS2FJ821	1/4W 820	1	
R621	ERDS2FJ102	1/4W 1K	1	
R622	ERDS2FJ122	1/4W 1.2K	1	
R623	ERDS2FJ152	1/4W 1.5K	1	

R624	ERDS2FJ182	1/4W 1.8K	1	
R625	ERDS2FJ222	1/4W 2.2K	1	
R626	ERDS2FJ332	1/4W 3.3K	1	
R627	ERDS2FJ472	1/4W 4.7K	1	
R628	ERDS2FJ821	1/4W 820	1	
R630	ERDS2FJ102	1/4W 1K	1	
R631	ERDS2FJ122	1/4W 1.2K	1	
R651	ERDS2FJ104	1/4W 100K	1	
R701	ERJ6GEYJ4R7V	1/10W 4.7	1	
R702	ERJ6GEYJ103V	1/10W 10K	1	
R704	ERJ6GEYJ102A	1/10W 1K	1	
R705	ERJ6GEYJ154V	1/10W 150K	1	
R706	ERJ6GEYJ102A	1/10W 1K	1	
R707,08	ERJ6GEYJ223Z	1/10W 22K	2	
R709	ERJ6GEYJ473V	1/10W 47K	1	
R710	ERJ6GEYJ100	1/10W 10	1	
R711	ERJ6GEYJ124V	1/10W 120K	1	
R712	ERJ6GEYJ471V	1/10W 470	1	
R713	ERJ6GEYJ101V	1/10W 100	1	
R714	ERJ6GEYJ121V	1/10W 120	1	
R715	ERJ6GEYJ102A	1/10W 1K	1	
R716	ERJ8GEYJ100V	1/8W 10	1	
R717,18	ERJ6GEYJ101V	1/10W 100	2	
R719	ERJ8GEY0R00A	1/8W 0	1	
R720	ERJ6GEY0R00A	1/10W 0	1	
R721	ERJ6GEYJ101V	1/10W 100	1	
R723	ERJ6GEYJ682V	1/10W 6.8K	1	
R724	ERJ6GEYJ183V	1/10W 18K	1	
R725	ERJ6GEYJ391V	1/10W 390	1	
R727-29	ERJ6GEYJ392V	1/10W 3.9K	3	
R731	ERJ6GEYJ682V	1/10W 6.8K	1	
R735,36	ERJ6GEYJ101V	1/10W 100	2	
R741	ERJ6GEYJ473V	1/10W 47K	1	
R742	ERJ6GEYJ224Z	1/10W 220K	1	
R744	ERJ6GEYJ124V	1/10W 120K	1	
R749	ERJ6GEYJ472V	1/10W 4.7K	1	
R752	ERJ8GEY0R00A	1/8W 0	1	
R753	ERJ6GEYJ100	1/10W 10	1	
R1000	ERJ3GEYJ562V	1/16W 5.6K	1	

R1001-03	ERJ3GEYJ101V	1/16W 100	3	
R1004	ERJ3GEYJ103Z	1/16W 10K	1	
R1005	ERJ3GEYD750V	1/16W 75	1	
R1006	ERJ3GEYJ103Z	1/16W 10K	1	
R1007	ERJ3GEYD562V	1/16W 5.6K	1	
R1008	ERJ3GEYJ103Z	1/16W 10K	1	
R1009	ERJ3GEYD912V	1/16W 9.1K	1	
R1011	ERJ3GEYJ103Z	1/16W 10K	1	
R1012	ERJ3GEYD332V	1/16W 3.3K	1	
R1013 14	ERJ3GEYD750V	1/16W 75	2	
R1019	ERJ3GEYJ103Z	1/16W 10K	1	
R1020	ERJ3GEYJ222V	1/16W 2.2K	1	
R1021	ERJ3GEYJ472V	1/16W 4.7K	1	
RJ701	ERJ6GEY0R00A	CHIP JAMPER	1	
RJ702-11	ERJ8GEY0R00A	CHIP JAMPER	10	
RJ715	ERJ8GEY0R00A	CHIP JAMPER	1	
RJ717	ERJ8GEY0R00A	CHIP JAMPER	1	
RJ721-28	ERJ6GEY0R00A	CHIP JAMPER	8	
RJ731-33	ERJ6GEY0R00A	CHIP JAMPER	3	
S1,S2	RSH1A032-U	SW,TRAY POSITION	2	
S3	RSH1A005	SW,OPEN DET.	1	
S4	RSH1A91ZA-A	SW,CLAMP	1	
S5	RSP1A017-A	SW,BOTTOM	1	
S601-23	EVQ11G05R	SW,PUSH	23	
S701	RSH1A043-U	SW,REST	1	
X401	EF0MC6004T4	CERAMIC RESONATOR	1	
X701	RSXB16M9J02T	OSCILLATOR	1	
X1000	RSXC27M0S02T	OSCILLATOR	1	



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	REZ1238	FFC	1	
5	REZ1257	FFC(14P)	1	
6	RYF0520A-S	CD LID ASS'Y	1	
7	XTW3+8T	SCREW	2	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
8	RKA0105-K	RUBBER	4	
9	RKA0106-N	FOOT RING	4	
10	RYP0896D-S	FRONT PANEL ASS'Y	1	
10-1	RGB0022-A	PANASONIC BADGE	1	
11	XTBS3+8JFZ1	SCREW	4	
12	XTB3+8JFZ	SCREW	1	

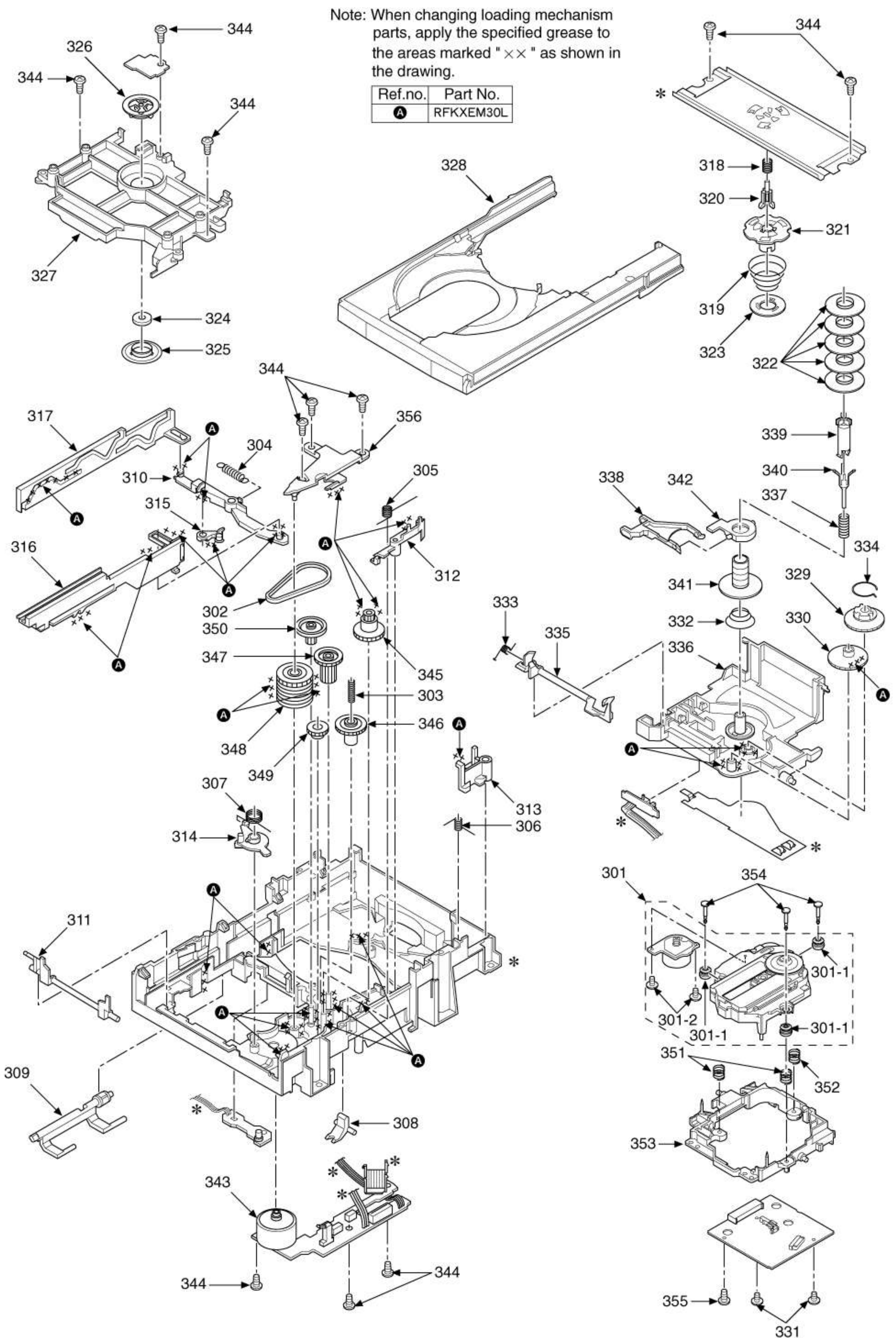
17 Loading Unit Parts Location

Ref. No.	Part No.	Part Name& Description	Pcs.	Remarks
301	RAE0152Z-1C	TRAVERSE DECK ASS`Y	1	
301-1	SHGD113-1	FLOATING RUBBER	3	
301-2	SNSD38	SCREW	2	
302	RDV0056	BELT	1	
303	RMB0549	SPRING	1	
304	RMB0561	SPRING	1	
305	RME0257	SPRING	1	
306	RME0258	SPRING	1	
307	RME0261	SPRING	1	
308	RML0516	LEVER	1	
309	RML0517	LEVER	1	
310	RML0518	LEVER	1	
311	RML0519	LEVER	1	
312	RML0520	TRAY LOCK	1	
313	RML0521	REAR LOCK	1	
314	RML0525	FRONT LOCK	1	
315	RML0530	LEVER	1	
316	RMM0201	SLIDE PLATE 1	1	
317	RMM0202	SLIDE PLATE 2	1	
318	RMB0551	SPRING	1	
319	RMB0553	SPRING	1	
320	RMQ0747	UPPER HOOK	1	
321	RMQ0749	UPPER SPINDLE	1	
322	RMX0140	DISC SPACER	5	
323	RMX0141	SPACER	1	
324	RHM245ZA	MAGNET	1	
325	RMR0334	MAGNET HOLDER	1	
326	RMR0624-W2	CLAMPER	1	
327	RMR1121-K	MECHANISM COVER	1	
328	RXQ0561	TRAY BASE	1	

329	RDG0430	GEAR,RELAY A	1	
330	RDG0431	GEAR,RELAY B	1	
331	XTV2+6G	SCREW	2	
332	RMB0552	SPRING	1	
333	RME0262	SPRING	1	
334	RME0263	SPRING	1	
335	RML0526	SPRING	1	
336	RMQ0742	SPINDLE BASE	1	
337	RMB0550	SPRING	1	
338	RML0522	LOADING STOPPER	1	
339	RMQ0743	SPINDLE SHAFT	1	
340	RMQ0744	LOWER HOOK	1	
341	RMQ0745	LOWER SPINDLE	1	
342	RMQ0746	UP/DOWN BASE	1	
343	RXQ0595	MOTOR	1	
344	XTB3+10J	SCREW	11	
345	RDG0424	GEAR,DRIVE	1	
346	RDG0425	GEAR,CHANGE	1	
347	RDG0426	GEAR,UP/DOWN	1	
348	RDG0427	GEAR,TRAVERSE CAM	1	
349	RDG0428	GEAR,TRAVERSE RELAY	1	
350	RDG0429	GEAR,PULLEY	1	
351	RME0109	FLOATING SPRING(1)	2	
352	RME0142	FLOATING SPRING(2)	1	
353	RMR1124-K	TRAVERSE CHASSIS	1	
354	RMS0632	TRAVERSE FIXED PIN	3	
355	XTN2+6G	SCREW	1	
356	RMQ0748	GEAR HOLDER	1	

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 *.