ORDER NO. AD9903065C8

Service Manual

CD Player

Compact Disc Player

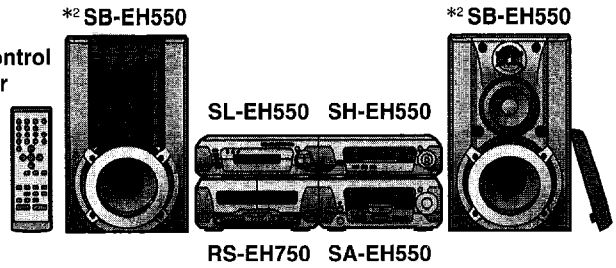
SL-EH550

COMPACT disc DIGITAL AUDIO

Colour
(S) ..... Silver Type

Area
(E) ..... Europe.

MASH *1
multi-stage noise shaping



System	SC-EH550
Sound Processor	SH-EH550
Tuner/Amplifier	SA-EH550
CD Player	**SL-EH550**
Cassette Deck	RS-EH750
Front Speakers*2	SB-EH550

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

Traverse Deck : RAE0152Z-1 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 kΩ
Load impedance:	More than 10 kΩ

Pickup Section

Wavelength:	780 nm

General

Dimensions (W×H×D):	293×89×268 mm
Weight:	1.6 kg

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

*1: MASH is a trademark of NTT.
*2: Made in Singapore.

⚠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-EH550 (ORDER No. AD9903062C2) for information on "Accessories", "Connections", "Installation" , "Operations" and "Packaging".

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

■ Handling Precautions for Traverse Deck

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).

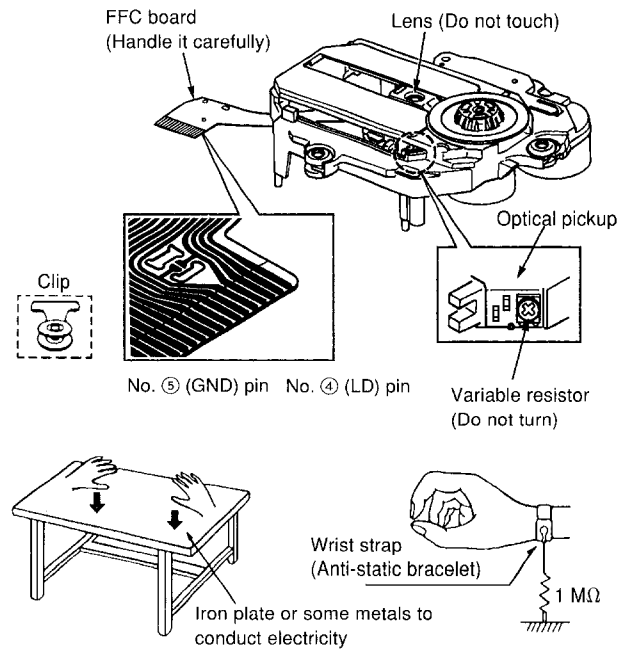
• Handling of traverse deck (optical pickup)

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).

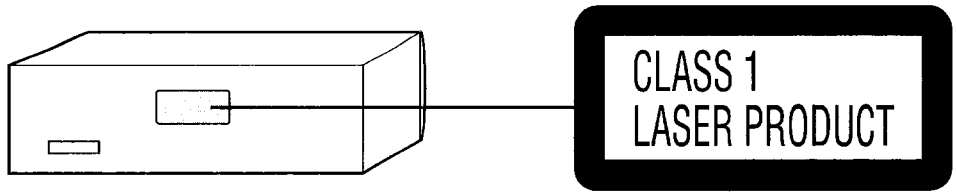


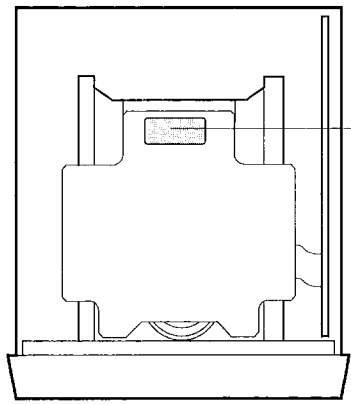
■ Precaution of Laser Diode

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: 100 μW/VDE

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

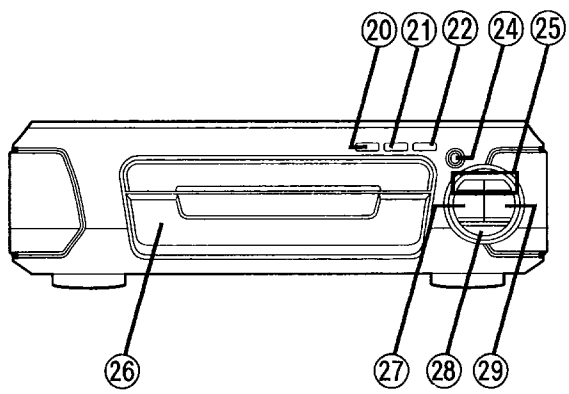
1. Do not disassemble the pick up unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pick up unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pick up lens for a long time.





DANGER	INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCK DEFEATED. AVOID DIRECT EXPOSURE TO BEAM.	(Inside of product)
ADVARSEL	USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.	(Indersiden at apparatet)
VARO!	AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTÖNTÄ LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.	(Tuotteen sisällä)
VARNING	OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STARÅLEN.	(Apparatens insida)
ADVARSEL	USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES. UNNGÅ EKSPONERING FOR STRÅLEN.	(Produktets innside)
VORSICHT	UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET UND SICHERHEITSVERRIEGELUNG ÜBERBRÜCKT. NICHT DEM STRAHL AUSSETZEN.	(Im Inneren des Gerätes)

■ Location of Controls



⑳ **Random play button (RANDOM)**
㉑ **Repeat button (REPEAT)**
㉒ **CD edit button (EDIT)**
㉔ **Disc tray open/close button (⏏ OPEN/CLOSE)**
㉕ **Skip/search buttons (⏮/◀◀, ▶▶/⏭)**
㉖ **Disc tray**
㉗ **Stop button (■)**
㉘ **Pause button (II)**
㉙ **Play button and indicator (▷)**
The color of the indicator depends on the operation.
If stopped: orange
If playing: green
If paused: flashes

■ Operation Checks and Component Replacement Procedures

NOTE **1. This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.**

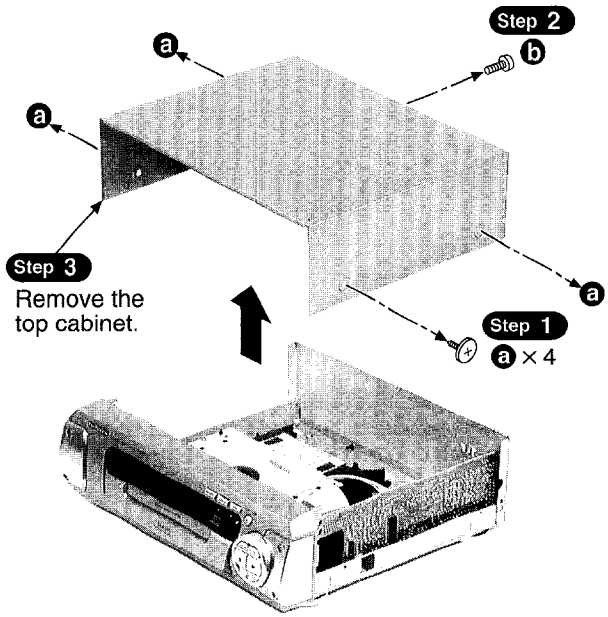
2. For reassembly after operation checks or replacement, reverse the respective procedures. Special reassembly procedures are described only when required.

3. Select item from the following index when checks or replacement are required.

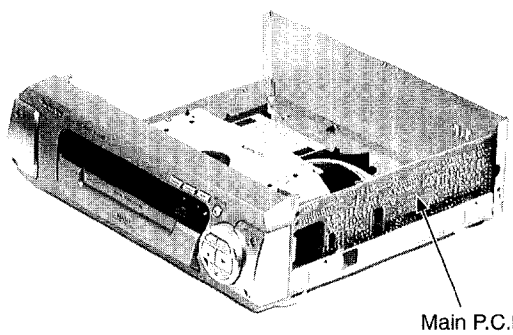
• Contents

■ Checking Procedures for each P.C.B.

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

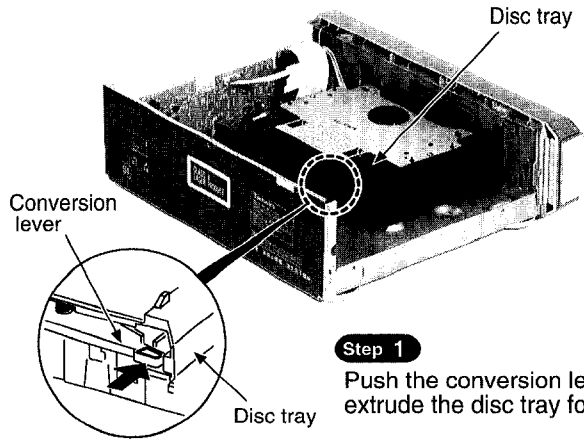


· Check the main P.C.B. as shown below.



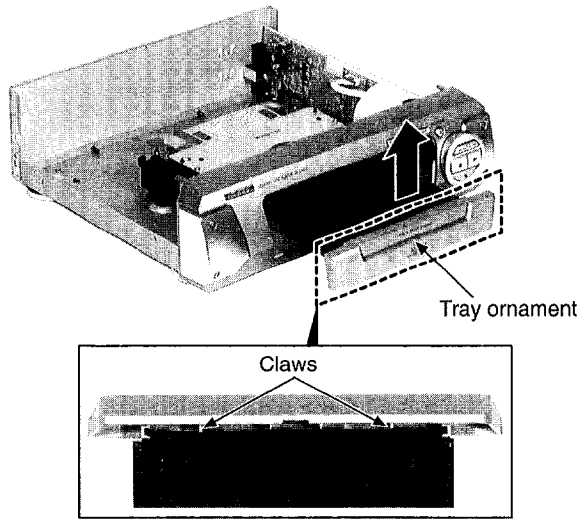
2. Checking for the CD servo P.C.B.

· Follow the Step 1 ~ Step 3 of the item 1 in checking procedure for each P.C.B. on page 4.

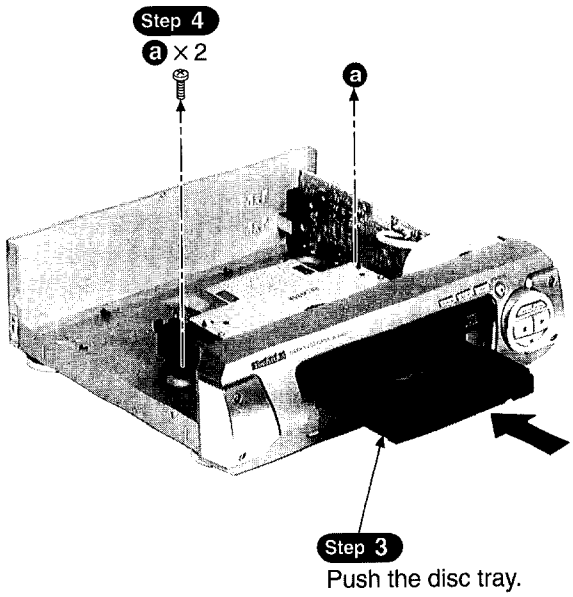


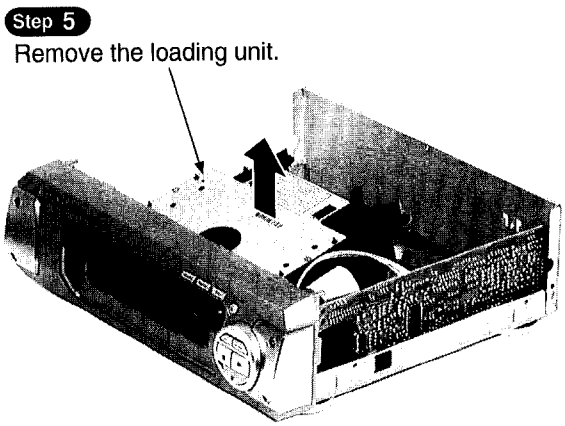
Step 1
Push the conversion lever and extrude the disc tray forward.

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

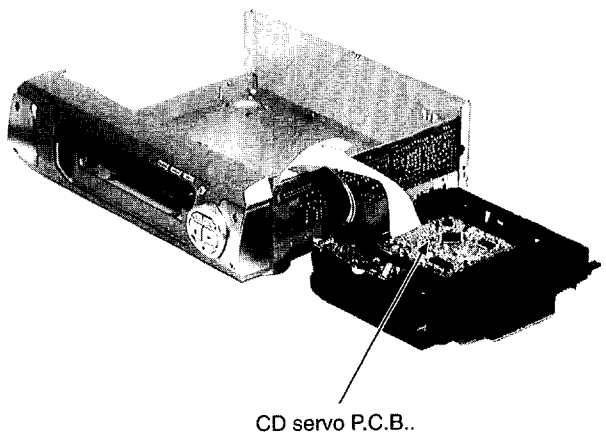


(Bottom side)





· **Check the CD servo P.C.B. as shown below.**

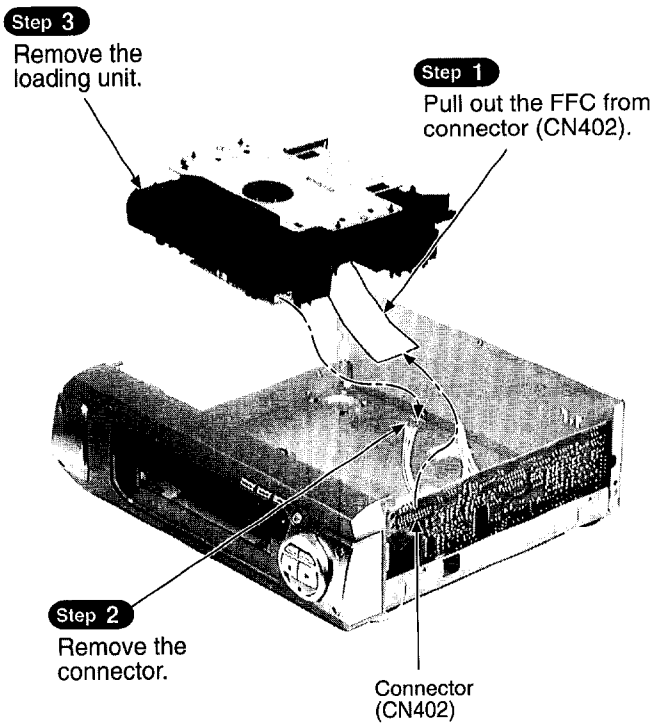


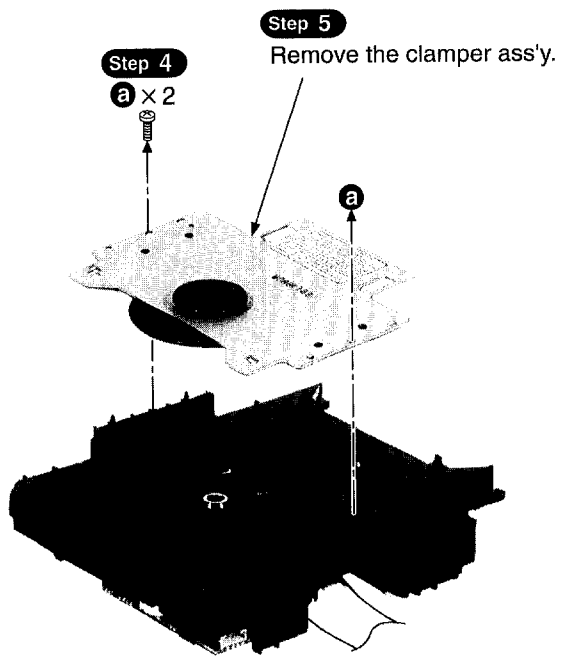
■ Main Component Replacement Procedures

1. Replacement for the traverse deck ass'y

· Follow the Step 1 ~ Step 3 of the item 1 in checking procedure for each P.C.B. on page 4.

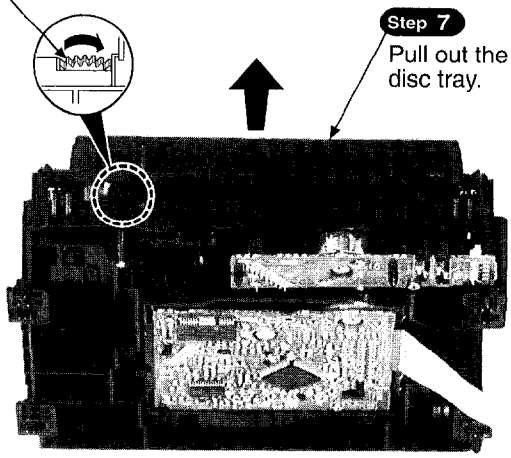
· Follow the Step 1 ~ Step 5 of the item 2 in checking procedure for each P.C.B. on pages 4 and 5.



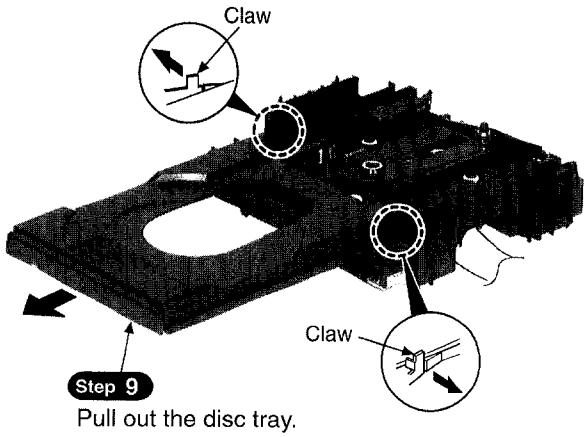


Step 6
Rotate the gear.

Step 7
Pull out the disc tray.

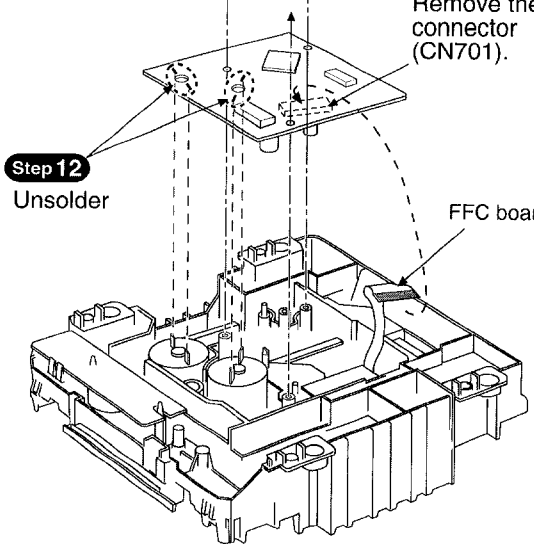


Step 8
Release the 2 claws.



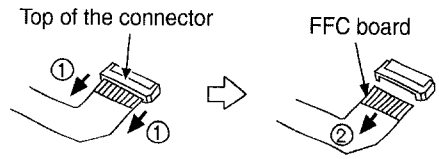
Step 9
Pull out the disc tray.

Step 10
Step 11
ⓒ ×2
ⓑ
Step 13
Remove the connector (CN701).
Step 12
Unsolder
FFC board

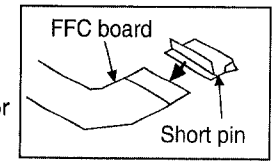


■ Removal of the FFC board

※ Push the top of the connector in the direction of arrow ①, and then pull out the FFC board in the direction of arrow ②.

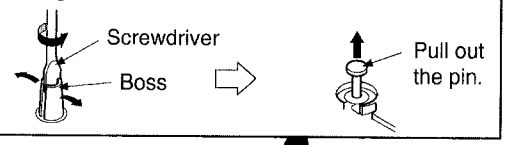


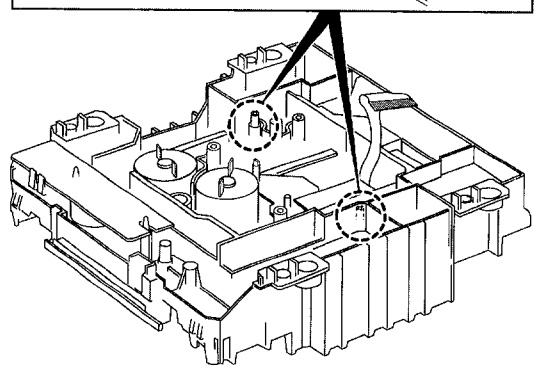
NOTE
Insert a short pin into the traverse unit FFC board.
(Refer to "Handling Precautions for Traverse Deck".)

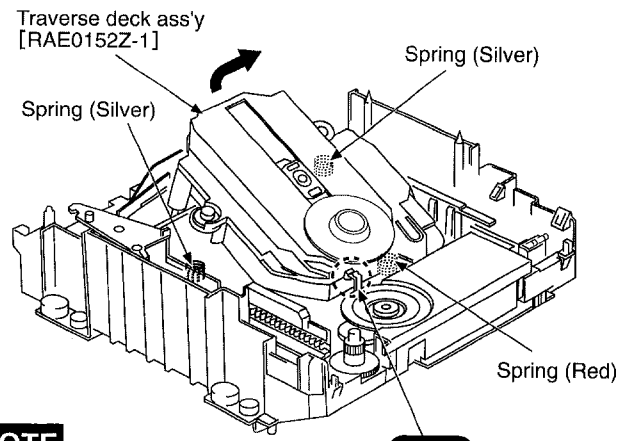


Step 14

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





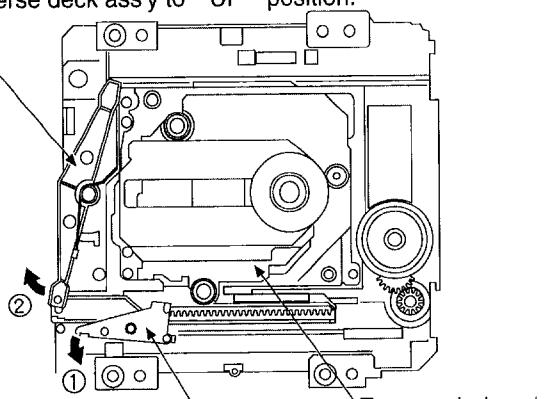


NOTE
Be careful not to lose the 3 springs because those will also be removed on removal of the traverse deck ass'y.

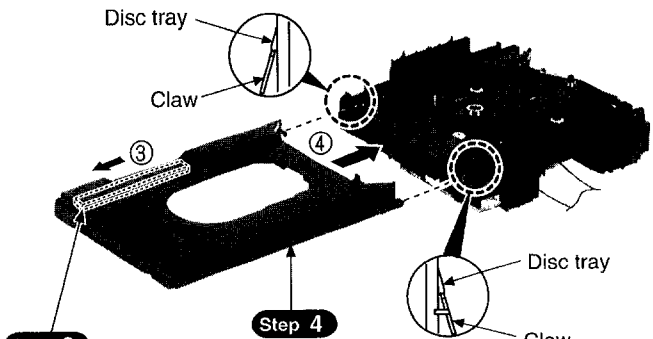
Step 15
Remove the claw.

Installation of the disc tray after replacement

Step 2
Operate the conversion lever, and then locate the traverse deck ass'y to "UP" position.



Step 1
Release the lock lever.

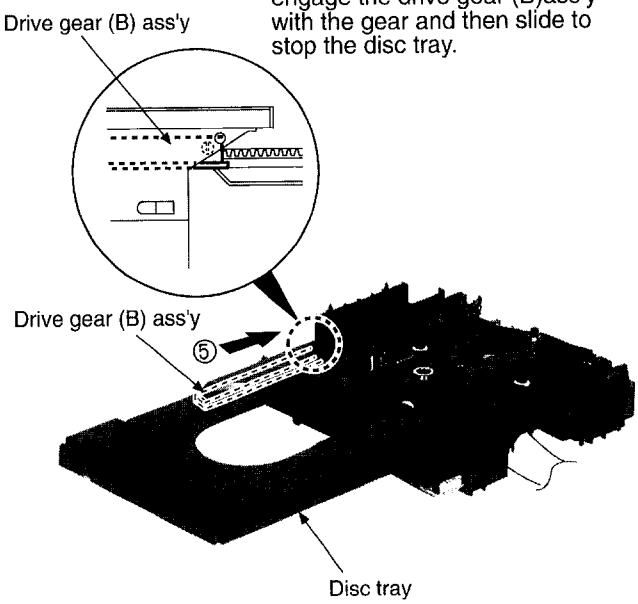


Step 3
Move the drive ruck ass'y in the direction of arrow ③.

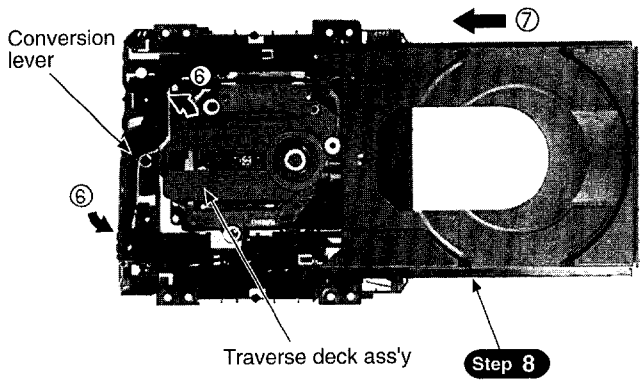
Step 4
Install the disc tray.

Step 5
Latch the claw to the disc tray.

Step 6
Supporting the disc tray manually, engage the drive gear (B)ass'y with the gear and then slide to stop the disc tray.

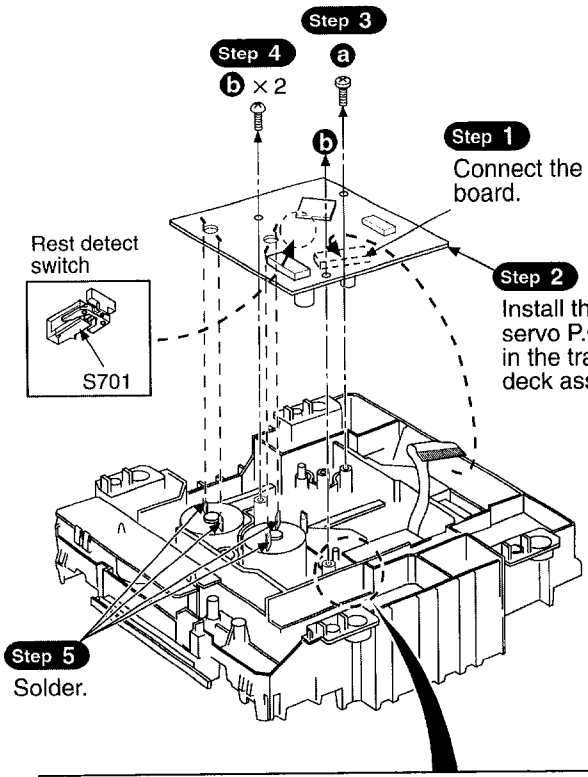


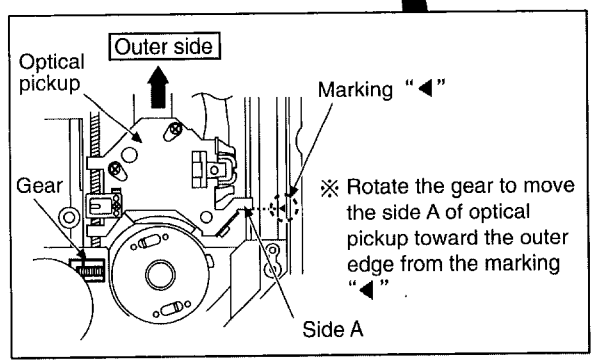
Step 7
Operate the conversion lever, and then locate the traverse deck to "DOWN" position.



Step 8
Press the disc tray.

Installation of the CD servo P.C.B. after replacement

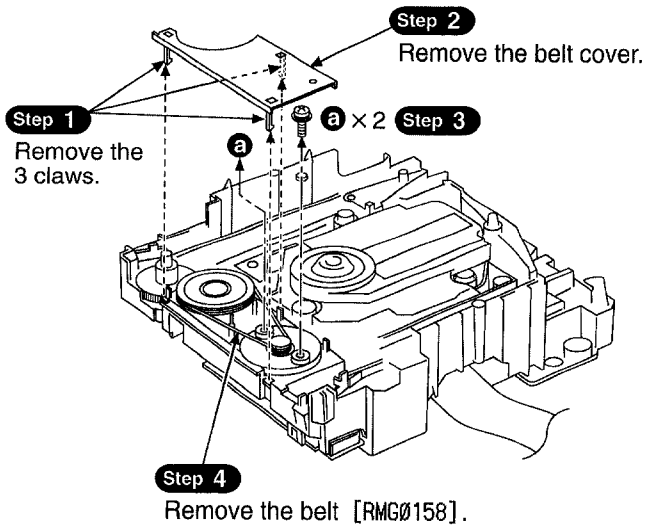


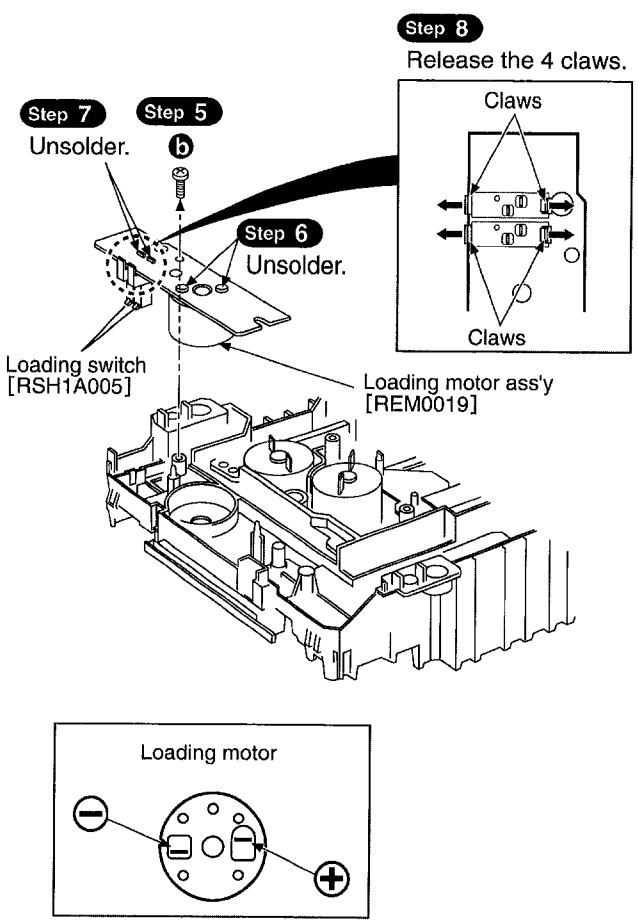


NOTE
Before installing the CD servo P.C.B., move the optical pickup toward the outer edge from the mark "◀".
[Otherwise, the rest detect switch (S701) mounted on the CD servo P.C.B. may be damaged.]

2. Replacement for the belt, loading motor ass'y and loading switch.

- Follow the Step 1 ~ Step 3 of the item 1 in checking procedure for each P.C.B. on page 4.
- Follow the Step 1 ~ Step 5 of the item 2 in checking procedure 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 pages 5 and 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-EH550). 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

Turn the power ON.

↓

Load the test disc (SZZP1054C).

↓

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 servo section error code is displayed. (See **Table 2**.)
Use this error code display as a guideline for finding the malfunction point in the servo circuitry. If the error code **"E00"** is displayed, the unit is "OK (No problem)."

Checking the mechanism switches

Press the F. SKIP button.

↓

A mechanism OK/NG error code is displayed. (See **Table 1**.)
This error code can be used diagnose whether or not the mechanism is OK. If there are multiple errors, these can be displayed successively by pressing the F. SKIP button.

↓

Remove the disc and turn the power OFF. (The error code display mode is canceled.)

• Servo adjustment procedure

Turn the power ON.

↓

Load the test disc (SZZP1054C).

↓

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

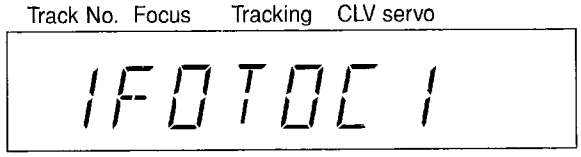
↓

Press the ▶ (PLAY) button, and play for 10 seconds.

↓

Servo adjustment results are displayed.

Track No. Focus Tracking CLV servo



↓

Remove the disc and turn the power OFF.

(Example)

➡ Normal

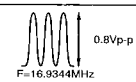
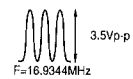
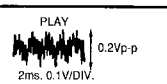
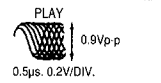
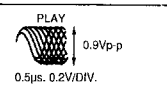
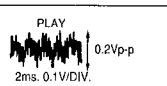
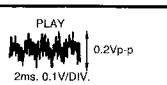
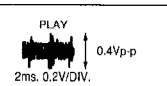
	"0" level	"1" level
Focus system	normal	defective
Tracking system	normal	defective
CLV servo system	defective	normal

• Table 1

FL display	Symptom	Cause
H15	When CD tray opens, it closes by itself.	Tray open detect switch (S3) fault.
H16	When CD tray closes, it open by itself.	Tray close detect switch (S4) fault.
F15	Does not play, even when CD play button is pressed.	Pickup rest position detection switch (S701) fault.
F26	Does not move even when " ▶ " (PLAY) button is pressed.	System control or servo processor IC (IC451, IC702) fault.

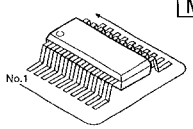
- **Table 2 (Error code based troubleshooting)**

* The unit is satisfactory if the error code is "**E00**" of "**E02**".
* Before testing, check that the test disc is free of scratches and optical pickup is clean.

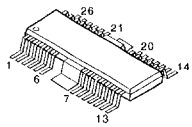
FL error code display	Symptom	Probable cause	Signal to check		Normal voltage and waveform values	
			Signal name	Location	PLAY	STOP
E01	Focus and tracking offset adjustments not completed in the specified time period.	1. Clocks X1 and X2, power supply V_{DD} and reset/RST, all on IC702. 2. MDATA, MCLK, MLD, and SENSE signals to/from mechanism controller.	MDATA	IC702 ⑧ pin		4.4 V
			MCLK	IC702 ⑦ pin		4.3 V
			MLD	IC702 ⑨ pin		4.4 V
			SENSE	IC702 ⑩ pin	—	—
			/RST	IC702 ⑱ pin	4.9 V	4.9 V
			X1	IC702 ⑱ pin		
			X2	IC702 ⑲ 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.	F E	IC702 ㉜ pin		2.5 V
			T E	IC702 ㉝ pin		2.5 V
			FOD	IC702 ㉘ pin	2.5 V	2.5 V
			TRD	IC702 ㉗ pin	2.5 V	2.5 V
			KICK	IC702 ㉖ pin	2.5 V	2.5 V
			/FLOCK	IC702 ⑪ pin	—	—
			/RF DET	IC702 ㊳ pin	0 V	5.0 V
			R F	TJ701		1.7 V
			STAT	IC702 ⑰ 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 ㉚ pin	2.5V	2.5 V
			R F	IC701		1.7 V
			F E	IC702 ㉜ pin		2.5 V
			/TLOCK	IC702 ⑫ pin	—	—
			OFT	IC702 ㊱ pin	0 V	0 V
E08 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.	F E	IC702 ㉜ pin		2.5 V
			T E	IC702 ㉝ pin		2.5 V
			/TLOCK	IC702 ⑫ pin	—	—
			O F T	IC702 ㊱ pin	0 V	0 V

■ Type Illustration of IC's, Transistors and Diodes

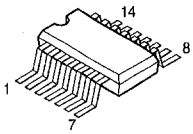
AN8839NSBE2 28PIN
M38504M6200F 42PIN



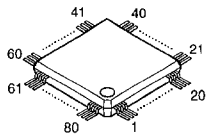
AN8739SBE2



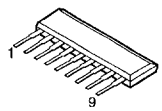
TC74HCT7007A



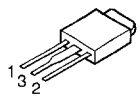
M662790RSA1



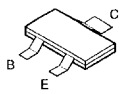
TA7291S



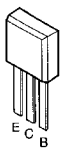
UPC29M33HB



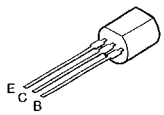
2SB709STX
DTC143XUA106



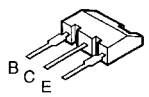
2SC3311ATA
UN411FTA
UN4214TA



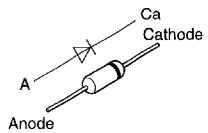
2SB621ARSTA



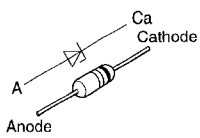
2SD1862QRTV6



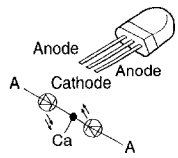
MA165TA



MA4082LTA



SML79455C



■ Schematic Diagram

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

Notes:

- **S601** : CD edit switch (EDIT)
- **S602** : Repeat switch (REPEAT)
- **S603** : Random play switch (RANDOM)
- **S611** : Disc tray open/close switch (▲ OPEN/CLOSE)
- **S612** : Pause switch (II)
- **S613** : F. Skip/Search switch (►►/ ►►I)
- **S614** : Play switch (►)
- **S615** : Stop switch (■)
- **S616** : R. Skip/Search switch (I◄◄/◄◄)
- **S701** : Rest detect switch in "OFF" position
- **S790** : Disc tray close detect switch in "OFF" position
- **S791** : Disc tray open 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 signal line

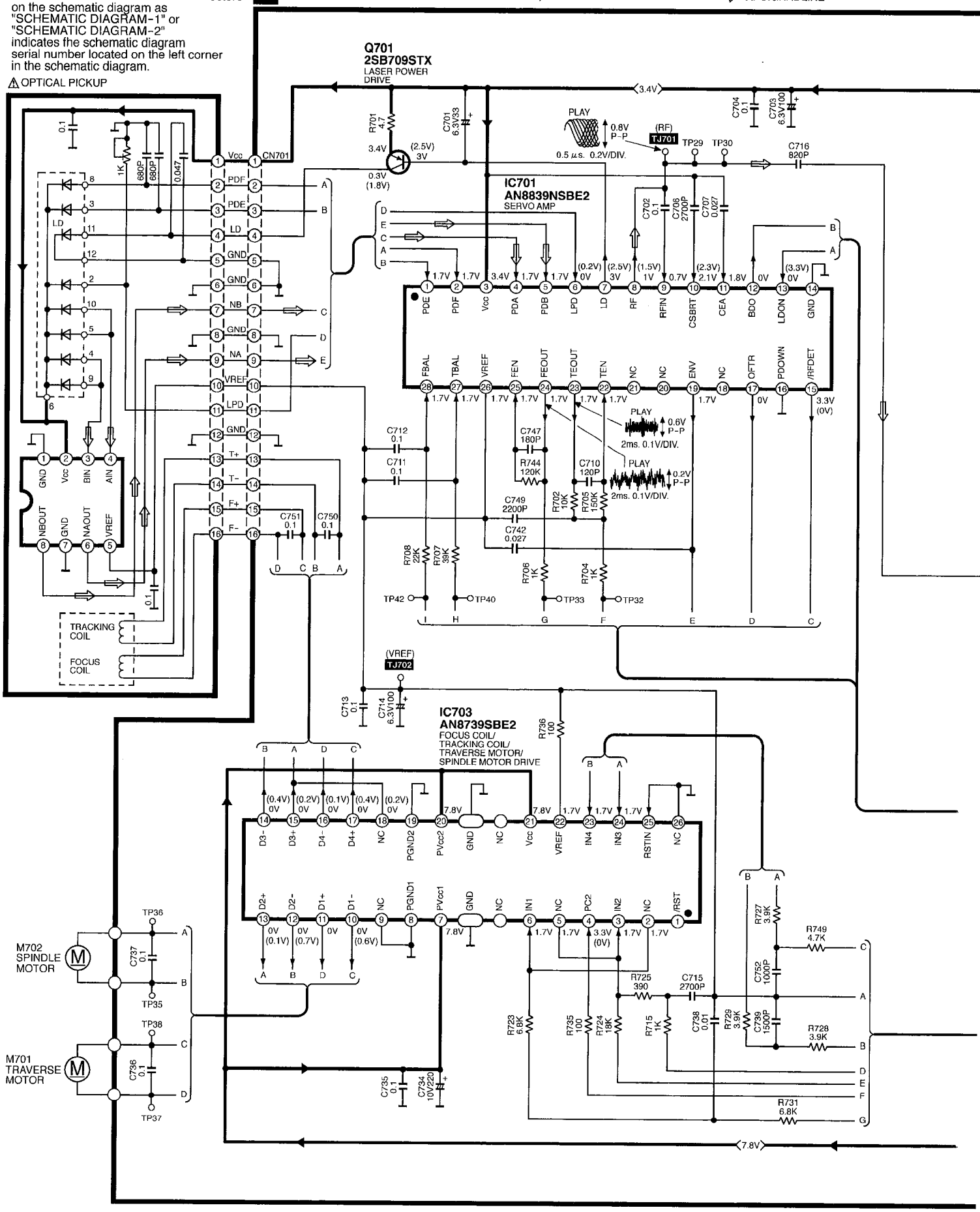
SCHEMATIC DIAGRAM-1

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.

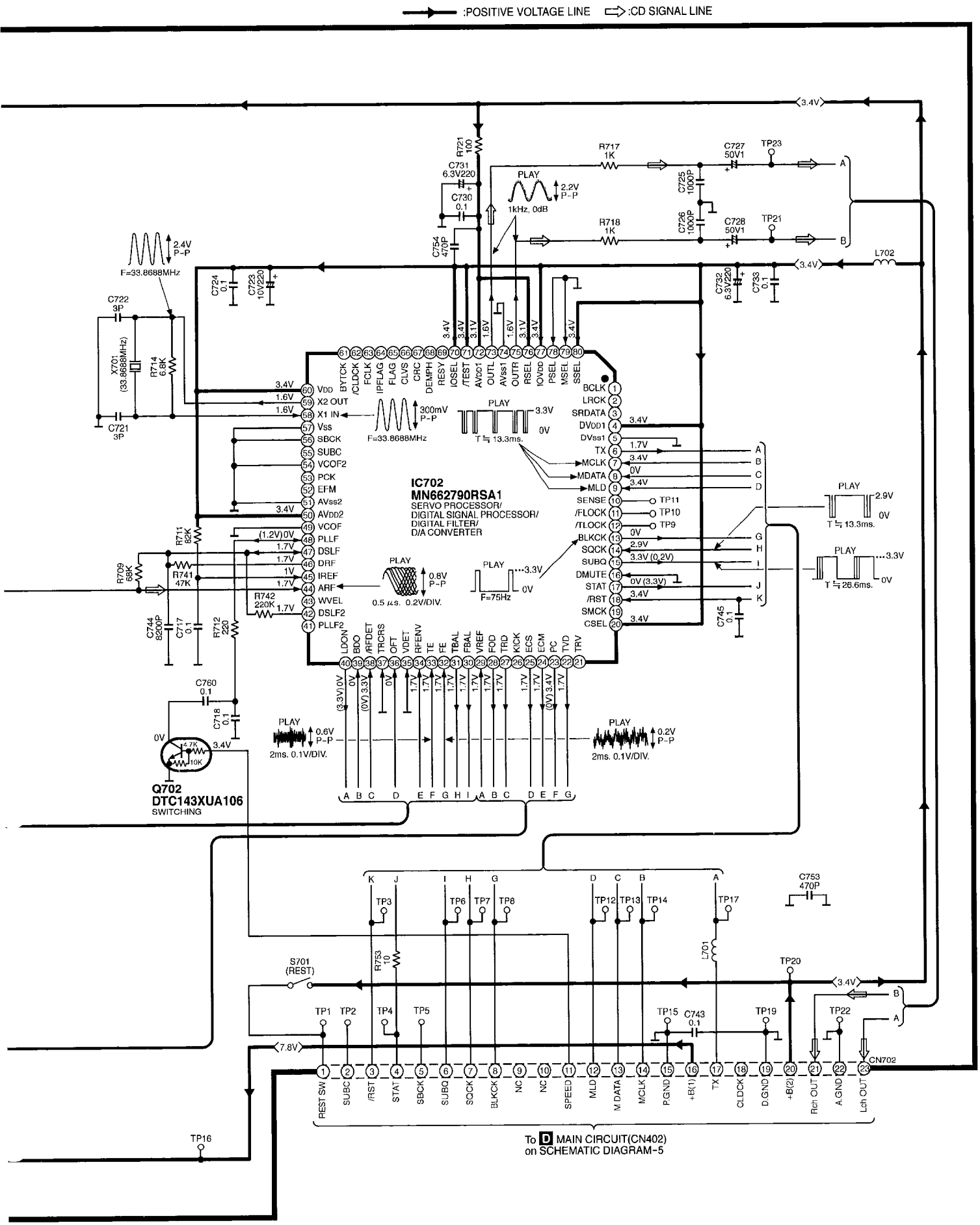
⚠ OPTICAL PICKUP

A CD SERVO CIRCUIT

:POSITIVE VOLTAGE LINE :CD SIGNAL LINE

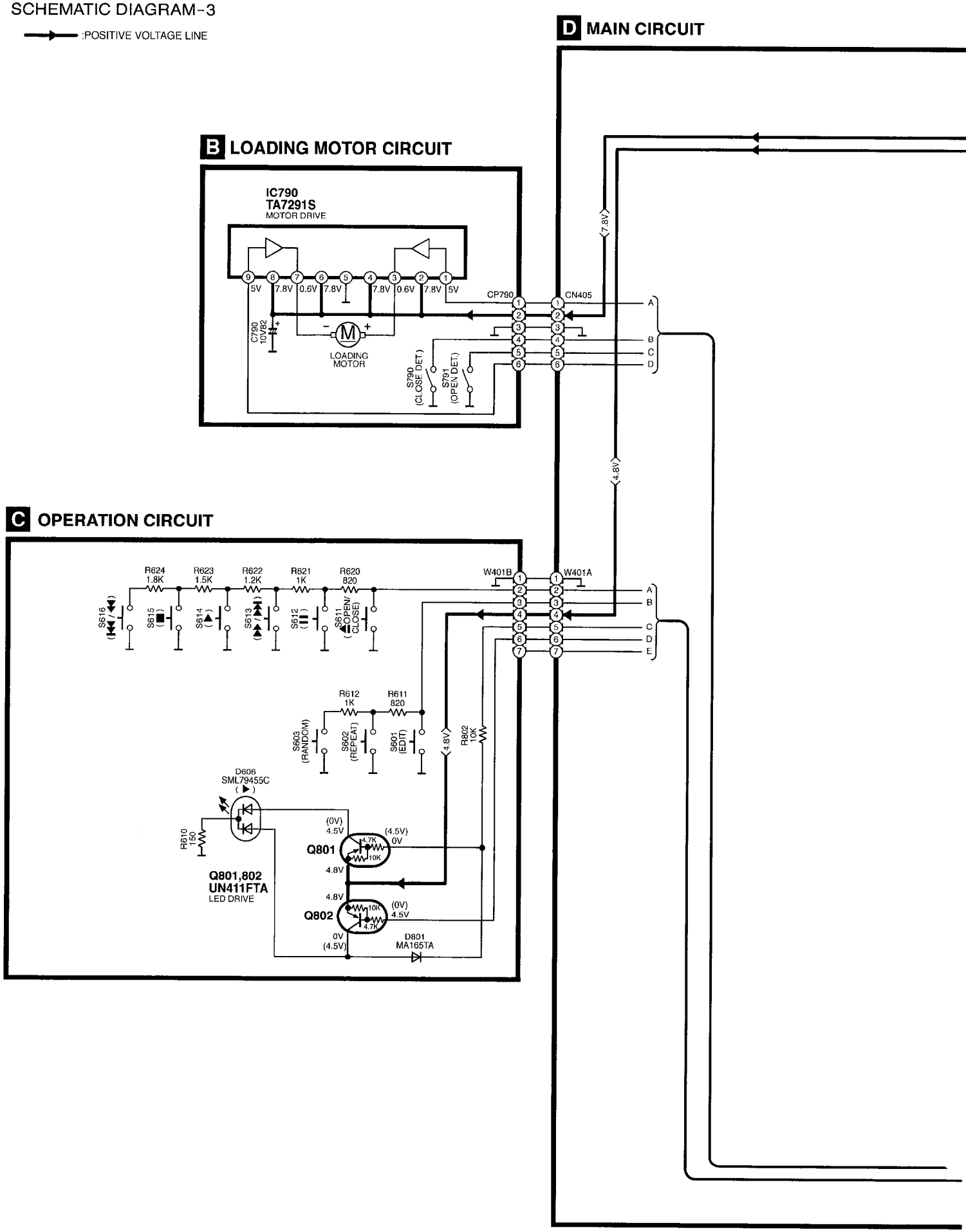


SCHEMATIC DIAGRAM-2



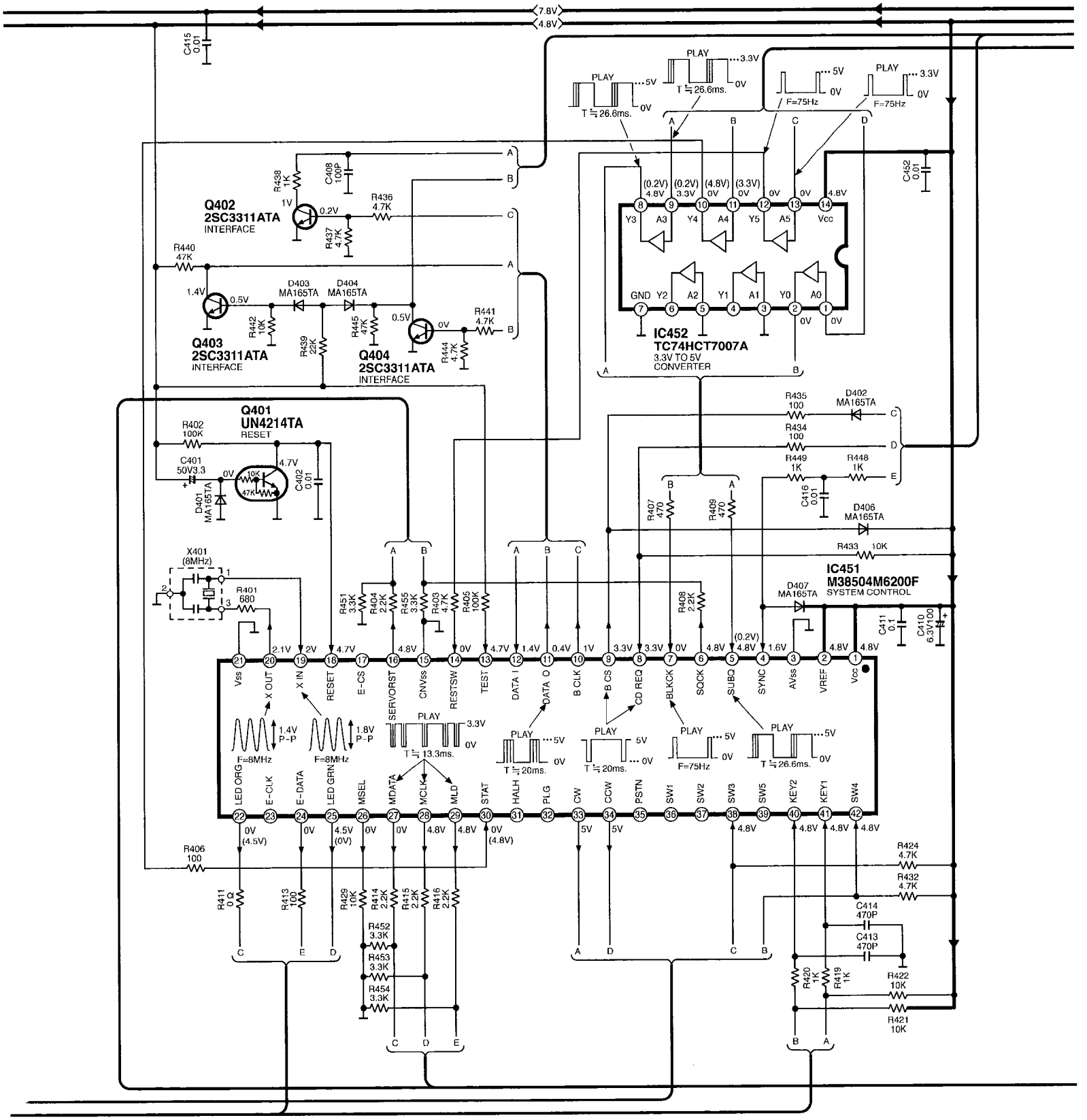
SCHEMATIC DIAGRAM-3

→ :POSITIVE VOLTAGE LINE



SCHEMATIC DIAGRAM-4

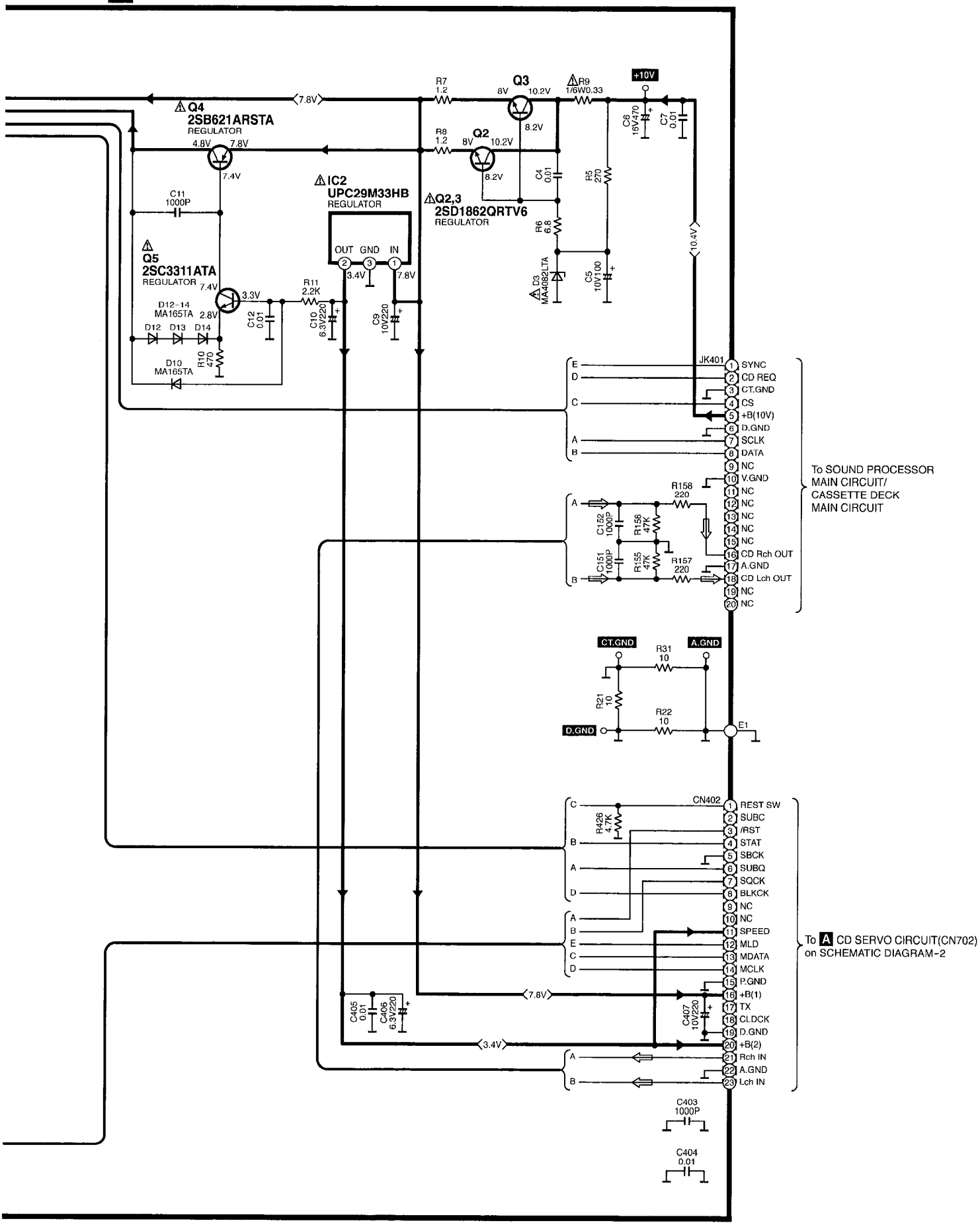
:POSITIVE VOLTAGE LINE



SCHEMATIC DIAGRAM-5

D MAIN CIRCUIT

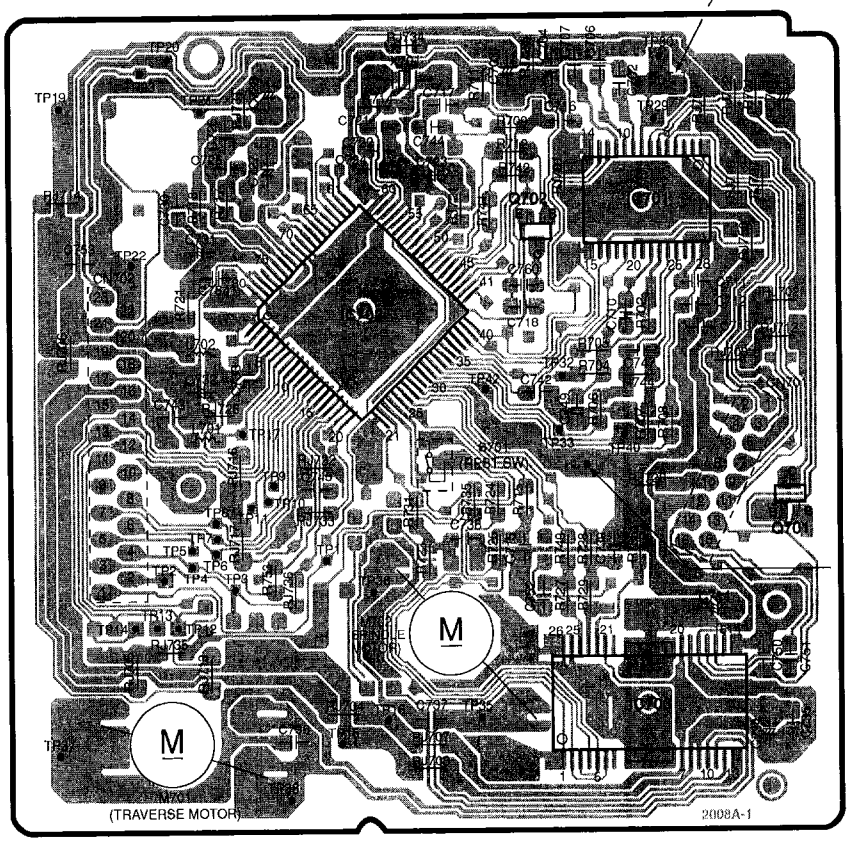
:POSITIVE VOLTAGE LINE :CD SIGNAL LINE



■ Printed Circuit Board Diagram

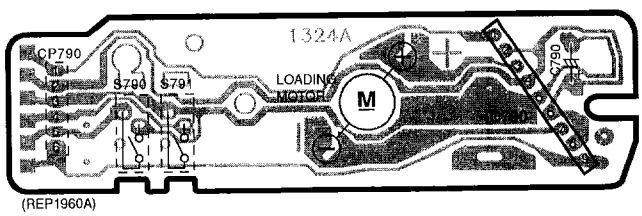
● This printed circuit board diagram may be modified at any time with the development of new technology.

A CD SERVO P.C.B.



(REP2772A-N)

B LOADING MOTOR P.C.B.

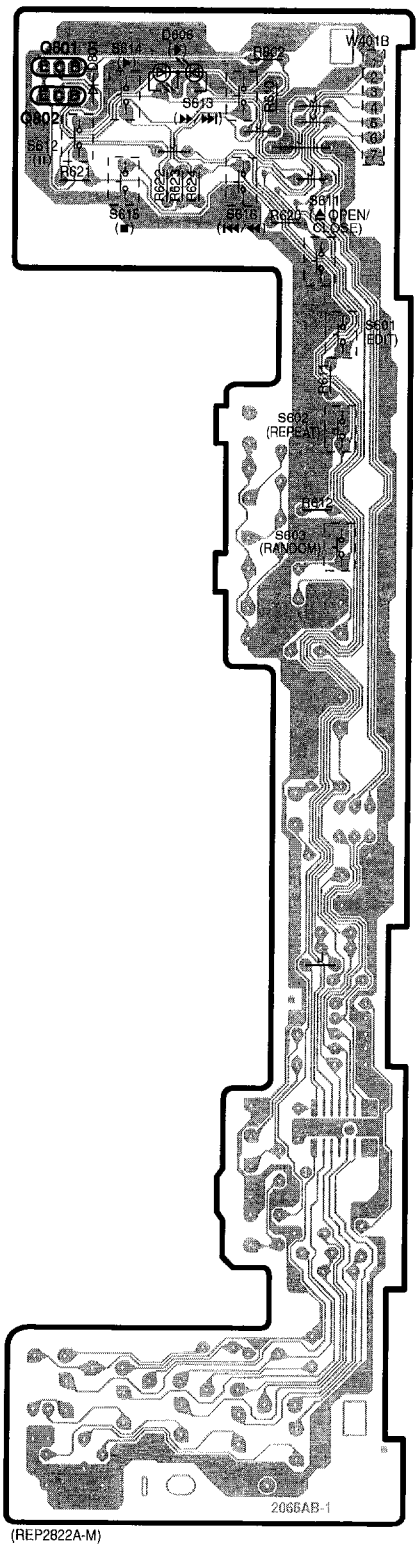


(REP1960A)

■ ELECTRICAL PARTS LOCATION

Ref. No.	Lo. No.	Ref. No.	Lo. No.
A CD SERVO P.C.B.			
IC701	2D	R753	4B
IC702	3B	RJ701	2C
IC703	4D	RJ702	2D
Q701	3D	RJ703	3D
Q702	2C	RJ704	4B
L701	3B	RJ705	4A
L702	3B	RJ706	3A
X701	2C	RJ707	4C
S701	3C	RJ708	5C
CN701	3D	RJ709	2D
CN702	3A	RJ710	2D
M701	4A	RJ712	3D
M702	4C	RJ713	4B
TJ701	2D	RJ714	2A
TJ702	3C	RJ716	3B
TP1	4B	RJ717	4B
TP2	4A	RJ721	2C
TP3	4B	RJ722	2D
TP4	4B	RJ724	1C
TP5	4B	RJ726	3B
TP6	4B	RJ727	2D
TP7	4B	RJ728	3D
TP8	3B	RJ731	2B
TP9	3B	RJ732	3B
TP10	3B	RJ733	3B
TP11	3B	RJ734	1C
TP12	4B	RJ735	4A
TP13	4A	RJ736	4B
TP14	4A	RJ750	2D
TP15	4B	C701	2D
TP16	4B	C702	2D
TP17	3B	C703	1C
TP19	2A	C704	1C
TP20	1A	C706	1C
TP21	2B	C707	1C
TP22	2A	C710	3D
TP23	1A	C711	2D
TP29	2D	C712	3D
TP30	1D	C713	3D
TP32	3C	C714	4D
TP33	3C	C715	4C
TP35	4C	C716	2C
TP36	4B	C717	2C
TP37	5A	C718	3C
TP38	5B	C721	2B
TP40	3D	C722	2B
TP42	3C	C723	2C
R701	2D	C724	2B
R702	3D	C725	2B
R704	3C	C726	2B
R705	3C	C727	2B
R706	3C	C728	2B
R707	3D	C730	2B
R708	3D	C731	2B
R709	2C	C732	3B
R711	2C	C733	3B
R712	2C	C734	4D
R714	2B	C735	4D
R715	3C	C736	4B
R717	2B	C737	4C
R718	2B	C738	4C
R721	3B	C739	4C
R723	4C	C742	3C
R724	3C	C743	3A
R725	4C	C744	2C
R727	4C	C745	3B
R728	4C	C747	3D
R729	4C	C749	3C
R731	3C	C750	4D
R735	3C	C751	4D
R736	4D	C752	4C
R741	2C	C753	2A
R742	2C	C754	2B
R744	3D	C760	2C
R749	4C		
B LOADING MOTOR P.C.B.			
IC790	7D	CP790	7B
S790	7B	C790	7D
S791	7B		

C OPERATION P.C.B.

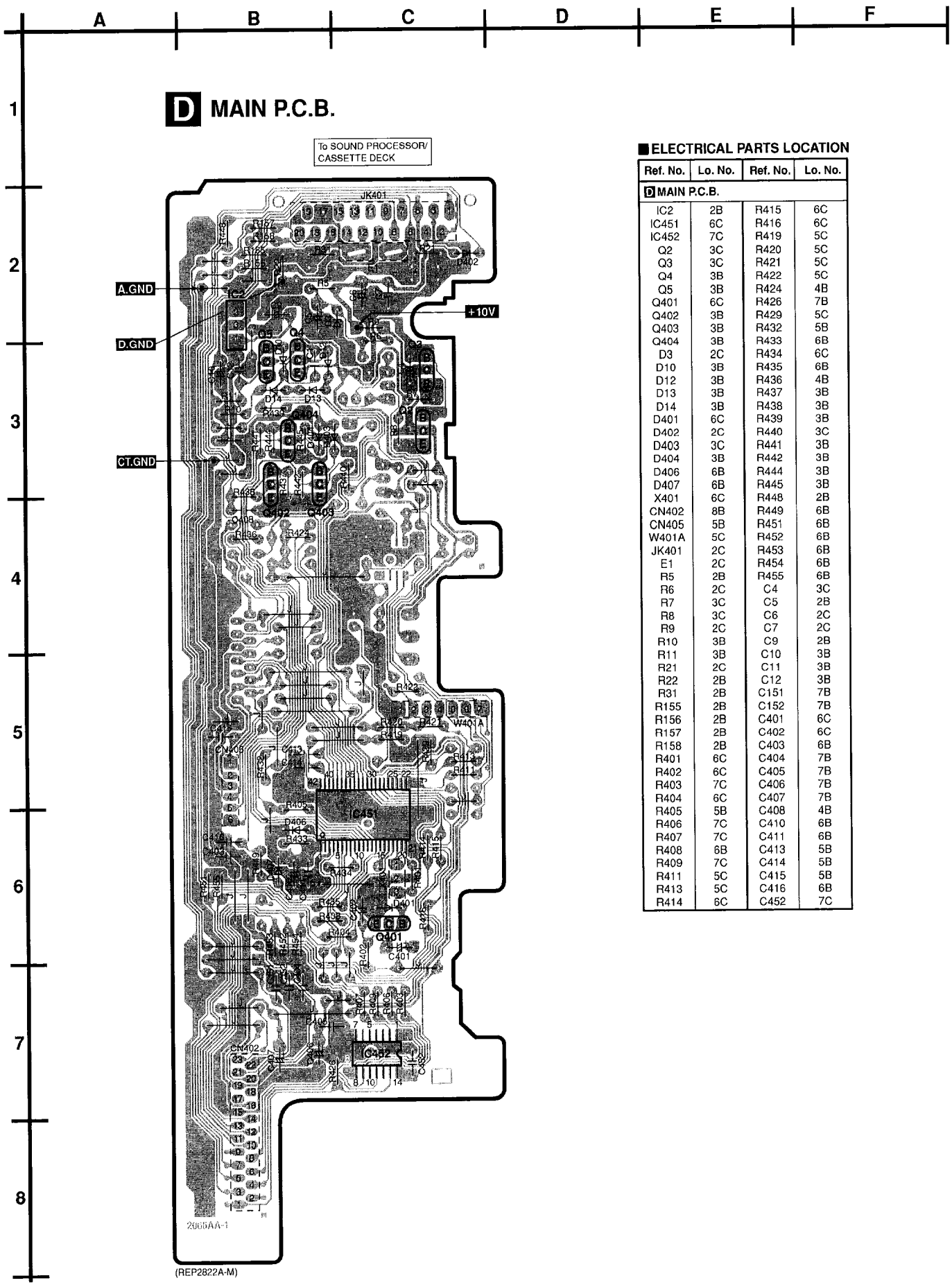


(REP2822A-M)

■ ELECTRICAL PARTS LOCATION

Ref. No.	Lo. No.	Ref. No.	Lo. No.
C OPERATION P.C.B.			
Q801	2B	S616	2C
Q802	2B	W401B	2C
D606	2C	R610	2C
D801	2B	R611	3C
S601	3C	R612	3C
S602	3C	R620	2C
S603	4C	R621	2B
S611	2C	R622	2B
S612	2B	R623	2C
S613	2C	R624	2C
S614	2B	R802	1C
S615	2B		

D MAIN P.C.B.

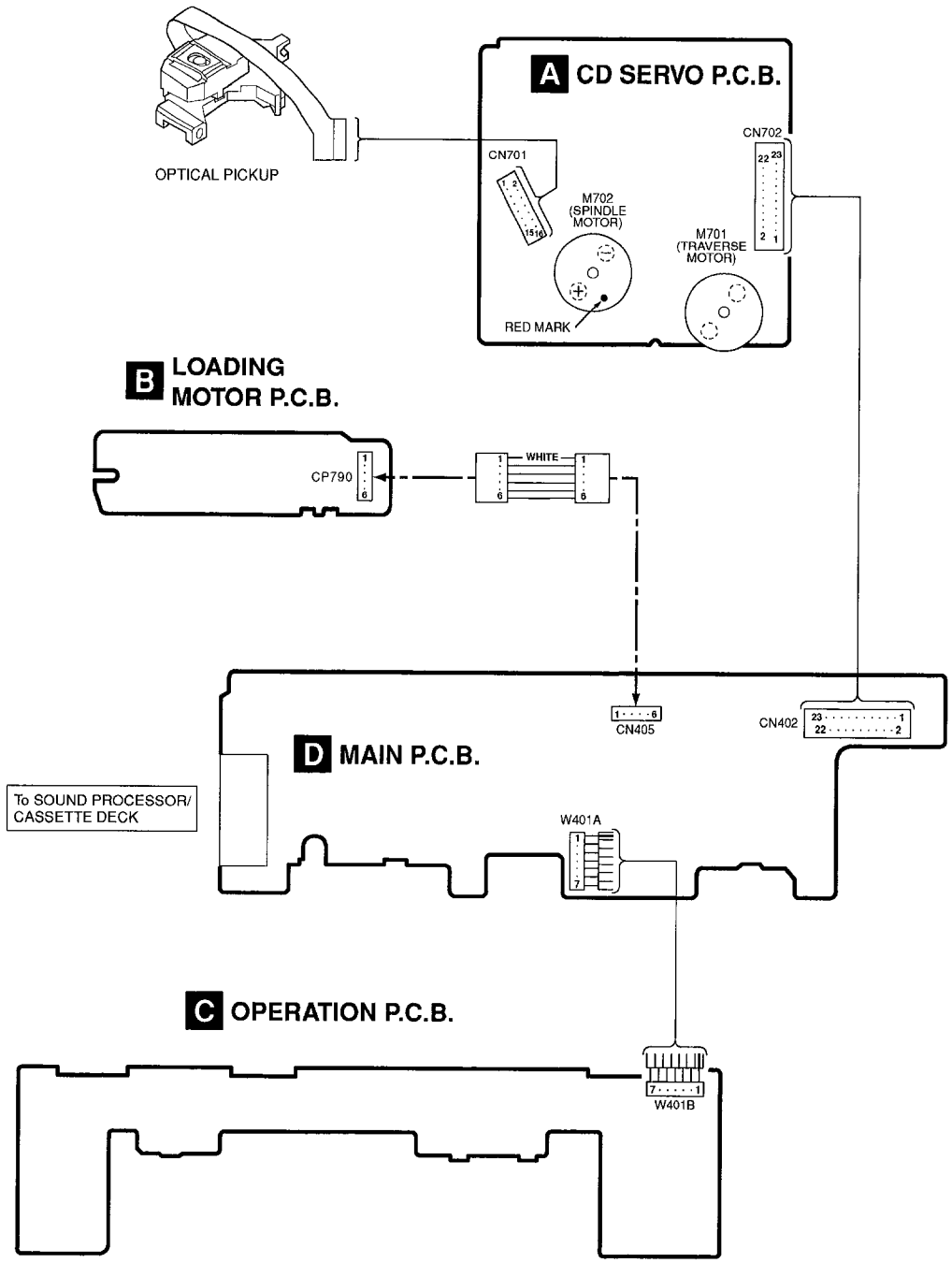


(REP2822A-M)

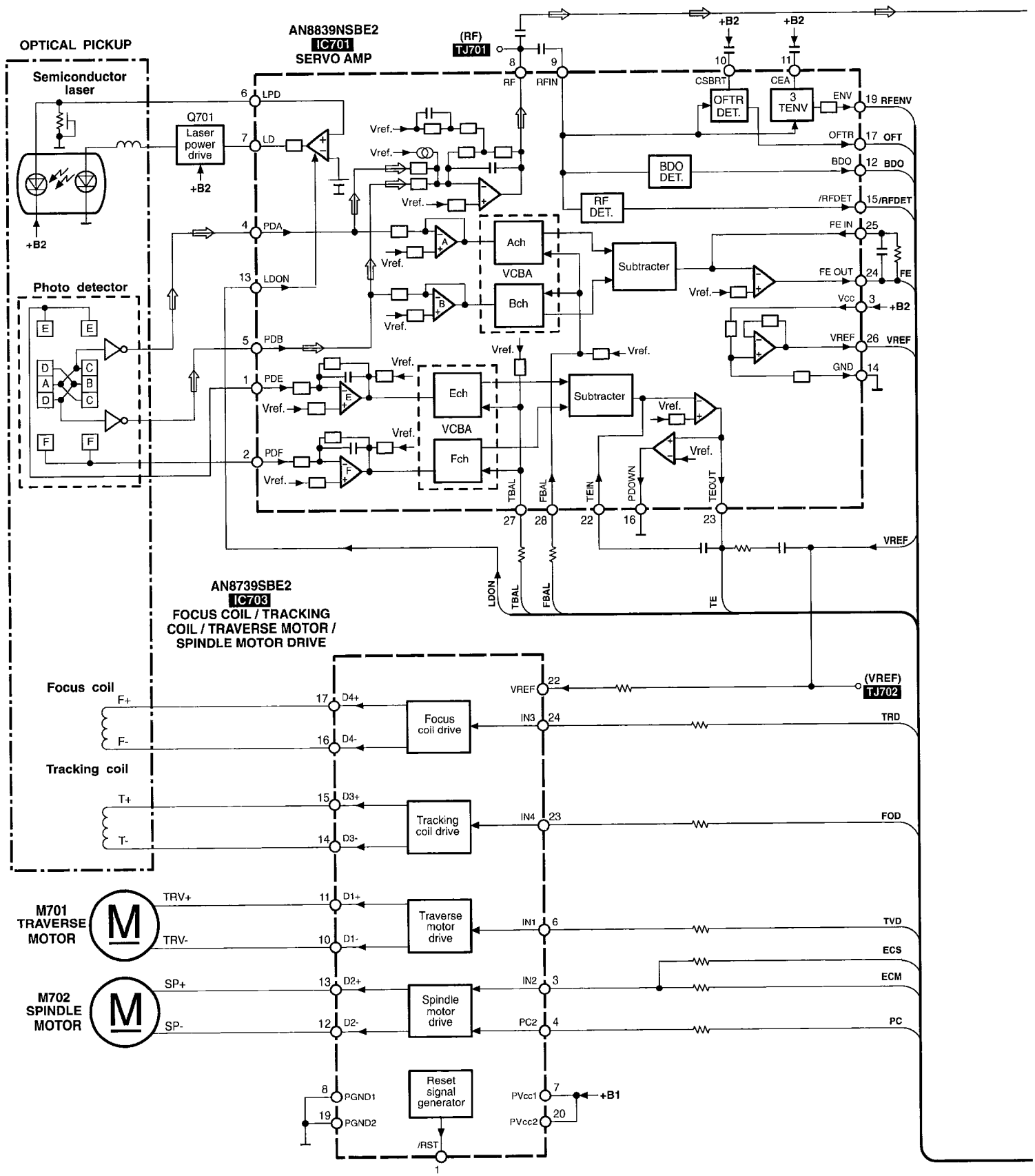
■ELECTRICAL PARTS LOCATION

Ref. No.	Lo. No.	Ref. No.	Lo. No.
D MAIN P.C.B.			
IC2	2B	R415	6C
IC451	6C	R416	6C
IC452	7C	R419	5C
Q2	3C	R420	5C
Q3	3C	R421	5C
Q4	3B	R422	5C
Q5	3B	R424	4B
Q401	6C	R426	7B
Q402	3B	R429	5C
Q403	3B	R432	5B
Q404	3B	R433	6B
D3	2C	R434	6C
D10	3B	R435	6B
D12	3B	R436	4B
D13	3B	R437	3B
D14	3B	R438	3B
D401	6C	R439	3B
D402	2C	R440	3C
D403	3C	R441	3B
D404	3B	R442	3B
D406	6B	R444	3B
D407	6B	R445	3B
X401	6C	R448	2B
CN402	8B	R449	6B
CN405	5B	R451	6B
W401A	5C	R452	6B
JK401	2C	R453	6B
E1	2C	R454	6B
R5	2B	R455	6B
R6	2C	C4	3C
R7	3C	C5	2B
R8	3C	C6	2C
R9	2C	C7	2C
R10	3B	C9	2B
R11	3B	C10	3B
R21	2C	C11	3B
R22	2B	C12	3B
R31	2B	C151	7B
R155	2B	C152	7B
R156	2B	C401	6C
R157	2B	C402	6C
R158	2B	C403	6B
R401	6C	C404	7B
R402	6C	C405	7B
R403	7C	C406	7B
R404	6C	C407	7B
R405	5B	C408	4B
R406	7C	C410	6B
R407	7C	C411	6B
R408	6B	C413	5B
R409	7C	C414	5B
R411	5C	C415	5B
R413	5C	C416	6B
R414	6C	C452	7C

■ Wiring Connection Diagram



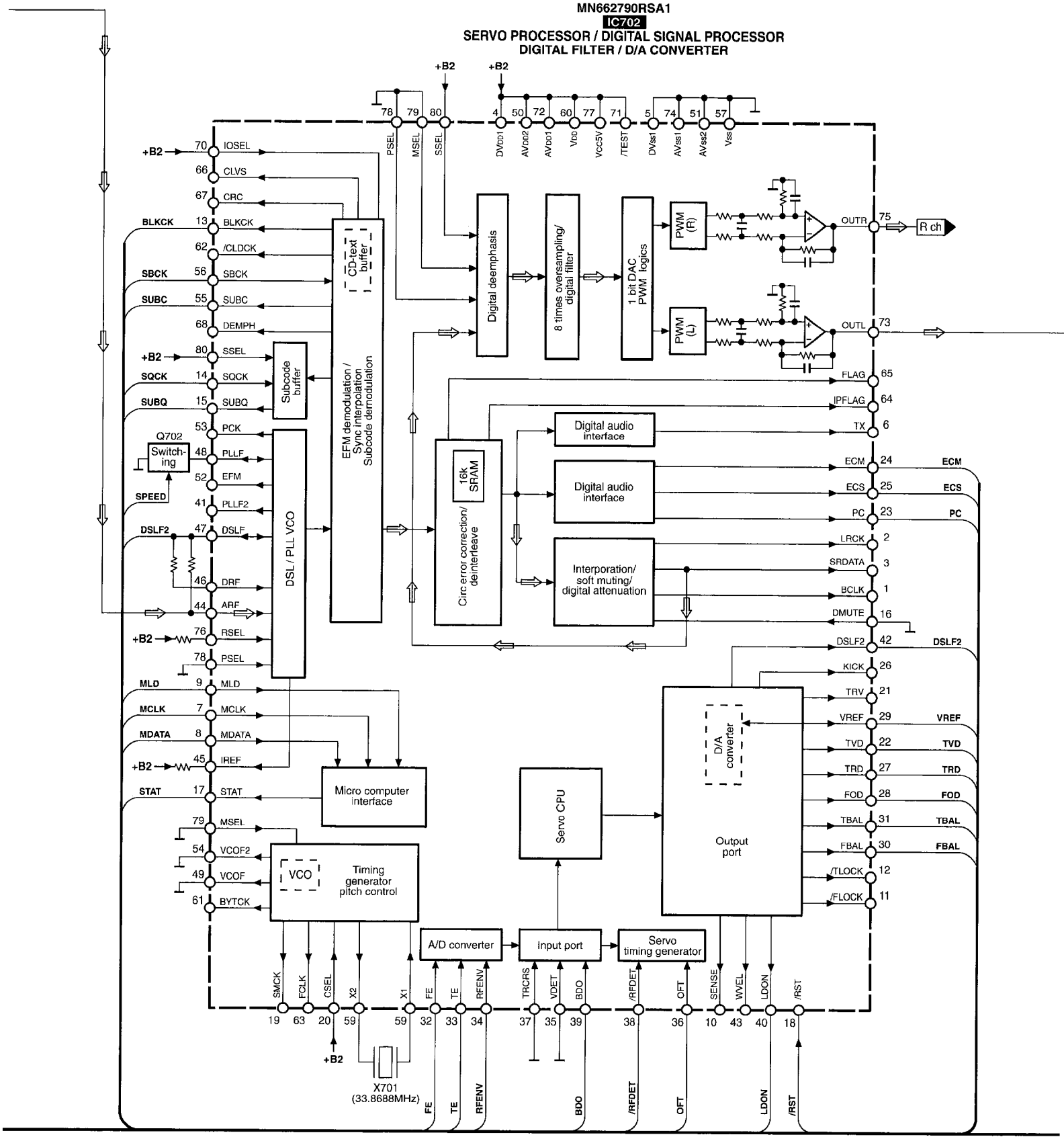
■ Block Diagram

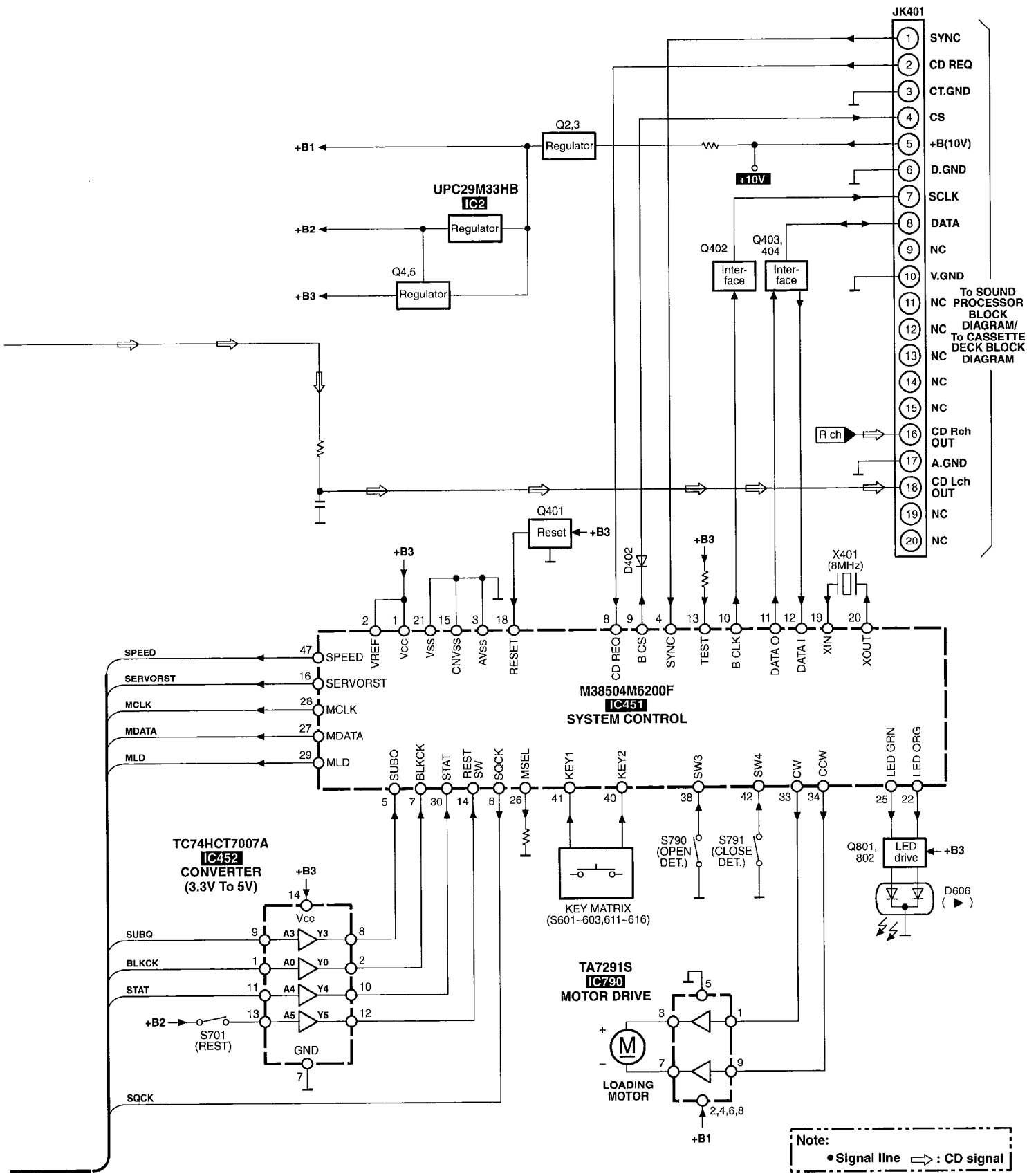


MN662790RSA1

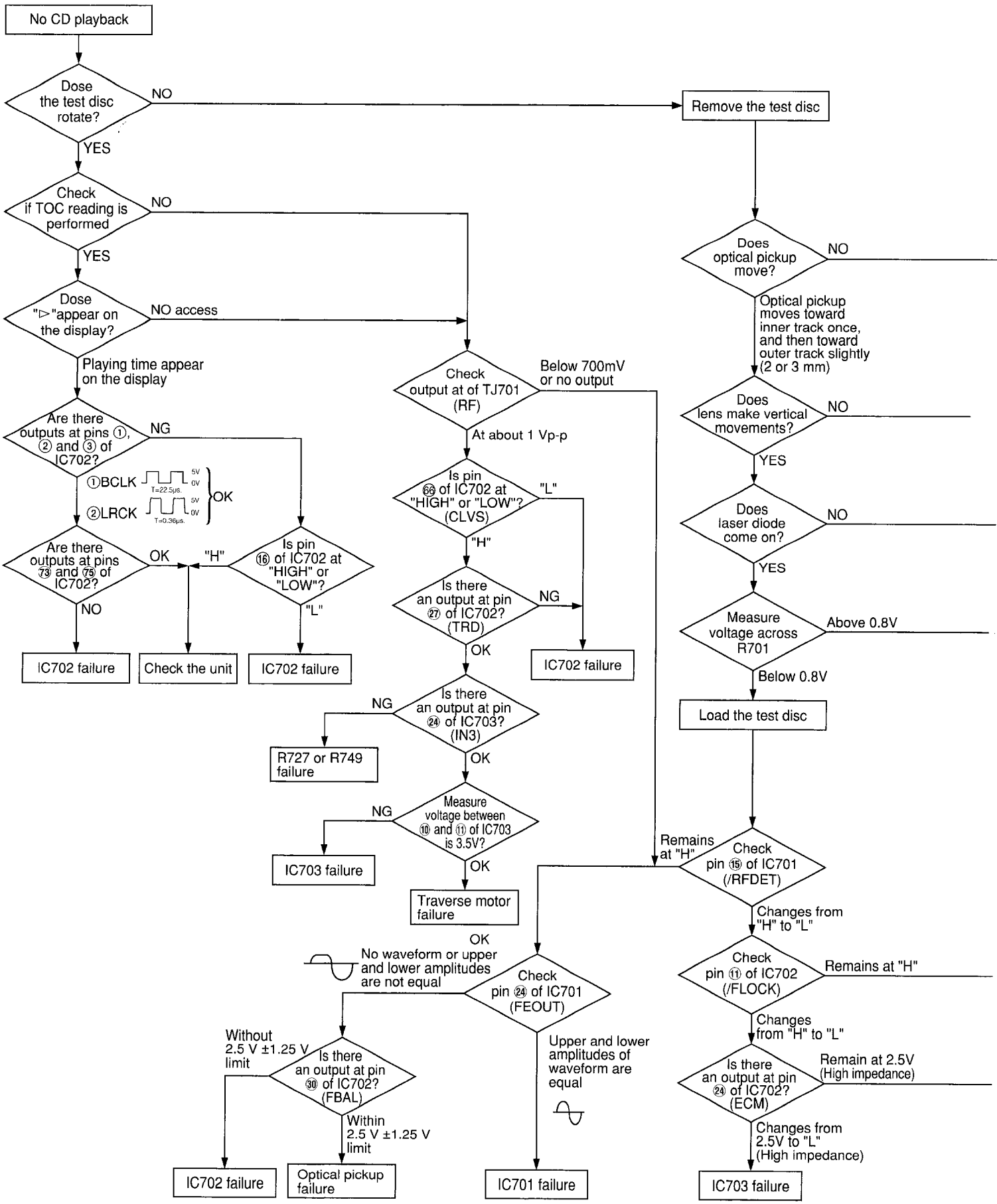
IC702

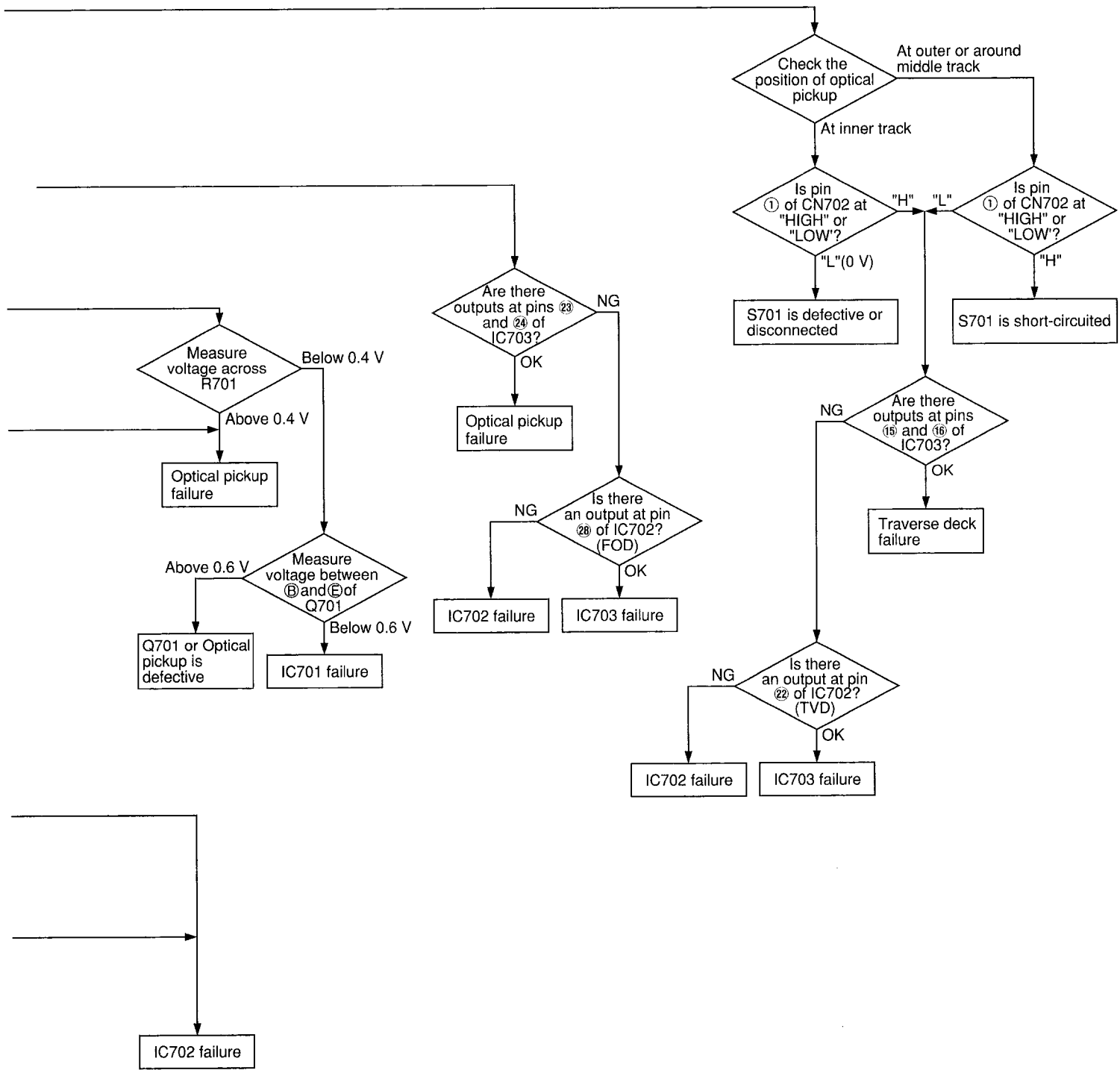
SERVO PROCESSOR / DIGITAL SIGNAL PROCESSOR
DIGITAL FILTER / D/A CONVERTER




JK401
1 SYNC
2 CD REQ
3 CT.GND
4 CS
5 +B(10V)
6 D.GND
7 SCLK
8 DATA
9 NC
10 V.GND
11 NC
12 NC
13 NC
14 NC
15 NC
16 CD Rch OUT
17 A.GND
18 CD Lch OUT
19 NC
20 NC
To SOUND PROCESSOR BLOCK DIAGRAM/ To CASSETTE DECK BLOCK DIAGRAM
+B1
+B2
+B3
Q2,3 Regulator
UPC29M33HB IC2
Regulator
Q4,5 Regulator
+10V
Q402 Inter-face
Q403, 404 Inter-face
R ch
Q401 Reset
+B3
D402
X401 (8MHz)
M38504M6200F IC451 SYSTEM CONTROL
VREF VCC VSS CNVSS AVSS RESET CD REQ B CS SYNC TEST B CLK DATA O DATA I XIN XOUT
SPEED SERVORST MCLK MDATA MLD
SUBQ BLKCK STAT REST SW SQCK MSEL KEY1 KEY2 SW3 SW4 CW CCW LED GRN LED ORG
TC74HCT7007A IC452 CONVERTER (3.3V To 5V)
Vcc GND A3 A0 A4 A5 Y3 Y0 Y4 Y5
S701 (REST)
KEY MATRIX (S601~603,611~616)
S790 (OPEN DET.)
S791 (CLOSE DET.)
Q801, 802 LED drive
D606
TA7291S IC790 MOTOR DRIVE
LOADING MOTOR
Note:
• Signal line ⇨ : CD signal

■ Troubleshooting Guide




Check the position of optical pickup
At outer or around middle track
At inner track
Is pin ① of CN702 at "HIGH" or "LOW"?
"H"
"L"
Is pin ① of CN702 at "HIGH" or "LOW"?
"L"(0 V)
"H"
S701 is defective or disconnected
S701 is short-circuited
Are there outputs at pins ㉓ and ㉔ of IC703?
NG
OK
Optical pickup failure
Is there an output at pin ㉘ of IC702? (FOD)
NG
OK
IC702 failure
IC703 failure
Measure voltage across R701
Below 0.4 V
Above 0.4 V
Optical pickup failure
Measure voltage between Ⓑ and Ⓔ of Q701
Above 0.6 V
Below 0.6 V
Q701 or Optical pickup is defective
IC701 failure
Are there outputs at pins ⑮ and ⑯ of IC703?
NG
OK
Traverse deck failure
Is there an output at pin ㉒ of IC702? (TVD)
NG
OK
IC702 failure
IC703 failure
IC702 failure

■ Terminal Function of IC's

• 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

No.	Mark	I/O Division	Function
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, open
19	ENV	O	Envelope signal output terminal
20	NC	–	Not used, open
21	NC	–	Not used, open
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
28	FBAL	I	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	—	———
3	IN2	I	Motor driver (2) input
4	PC2	I	Turntable motor drive signal ("L": ON)
5	NC	—	Not used, open
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 (+)

No.	Mark	I/O Division	Function
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, open
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	I	Reset terminal (Not used, connected to GND)
26	NC	—	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	–	Serial bit clock output (Not used, open)
2	LRCK	–	L/R discriminating signal output (Not used, open)
3	SRDATA	–	Serial data (Not used, open)
4	$DV_{DD}1$	I	Power supply (digital circuit) terminal
5	$DV_{SS}1$	–	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	–	Sense signal (OFT, FESL, NACEND, NAJEND, POSAD, SFG) (Not used, open)
11	/FLOCK	–	Optical servo condition (focus) ("L": lead-in) (Not used, open)
12	/TLOCK	–	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 V_{DD})
21	TRV	–	Traverse servo control (Not used, open)
22	TVD	O	Traverse drive signal

No.	Mark	I/O Division	Function
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	KICK	–	Kick pulse output (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	–	Oscillation det. signal ("H": det.) (Not used, open)
36	OFT	I	Off track signal ("H": Off track)
37	TRCRS	–	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	PLLF2	–	PLL loop filter terminal (Not used, open)
42	DSLF2	I/O	DSL loop filter terminal
43	WVEL	–	Double velocity status signal ("H": double) (Not used, open)
44	ARF	I	RF signal input

No.	Mark	I/O Division	Function
45	IREF	I	Reference current input
46	DRF	I	DSL bias terminal
47	DSLF	I/O	DSL loop filter terminal
48	PLLF	I/O	PLL loop filter terminal
49	VCOF	–	VCO loop filter terminal (Not used, connected to GND)
50	$AV_{DD}2$	I	Power supply (analog circuit) terminal 2
51	$AV_{SS}2$	—	GND (analog circuit) terminal
52	EFM	–	EFM signal (Not used, open)
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	V_{SS}	–	GND terminal
58	X1 IN	I	Crystal oscillator terminal (f=33.8688MHz)
59	X2 OUT	O	
60	V_{DD}	I	Power supply terminal
61	BYTCK	–	Byte clock signal (Not used, open)
62	/CLDCK	–	Sub-code frame clock signal (f=CLDCK=7.35kHz: Normal) (Not used, open)
63	FCLK	–	Crystal frame clock (Not used, open)
64	IPFLAG	–	Interpolation flag terminal (Not used, open)

No.	Mark	I/O Division	Function
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/O select signal input (Connected to V_{DD})
71	/TEST	I	Test terminal (Normal: "H") (Not used, connected to power supply)
72	$AV_{DD}1$	I	Power supply (analog circuit) terminal (1)
73	OUTL	O	L ch audio signal
74	$AV_{SS}1$	–	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	IOV_{DD}	I	Power supply terminal
78	PSEL	I	Test terminal (Normal: "L") (Connected to GND)
79	MSEL	I	Output frequency select signal input (Not used, connected to GND)
80	SSEL	I	SUBQ terminal output mode select signal input ("H": Q code buffer mode) (Connected to V_{DD})

● IC451 (M38504M6200F) : System Control

Pin No.	Terminal Name	I/O	Function
1	V_{CC}	—	Power supply terminal
2	VREF	I	Reference voltage input
3	AV_{SS}	–	GND terminal
4	SYNC	I	Power failure detect signal input
5	SUBQ	I	Sub-code Q data signal input
6	SQCK	O	Sub-code Q resistor clock signal output
7	BLKCK	I	Block clock signal input
8	CD 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	TEST	I	Test mode select signal input (Connected to V_{CC} via resistor)
14	RESTSW	I	Rest switch signal input
15	CNV_{SS}	–	Connected to V_{SS}
16	SERVORST	O	Reset signal output for CD servo IC
17	E-CS	–	EEPROM serial communication signal (Not used, open)
18	RESET	I	Reset signal input
19	X IN	I	Oscillator connected terminal (8 MHz)
20	X OUT	O	
21	V_{SS}	–	GND terminal
22	LED ORG	O	ORANGE LED signal output
23	E-CLK	O	LED serial clock signal output (Not used, open)
24	E-DATA	O	LED serial data signal output
25	LED GRN	O	GREEN LED signal output
26	MSEL	O	Function select signal output (Connected to V_{CC} via resistor)
27	MDATA	O	Command data output
28	MCLK	O	Command clock output
29	MLD	O	Command load output
30	STAT	I	Status signal input
31	HALH	–	CD mechanism motor speed control signal output (Not used, open)
32	PLG	–	CD mechanism solenoid control signal output (Not used, open)
33	CW	O	CD mechanism motor control signal output (forward direction)
34	CCW	O	CD mechanism motor control signal output (reverse direction)
35	PSTN	–	Position sensor detect signal input (Not used, open)
36	SW1	–	Disc tray position 1 detect signal input (Not used, open)
37	SW2	–	Disc tray position 2 detect signal input (Not used, open)
38	SW3	I	Disc tray open detect signal input
39	SW5	–	Bottom switch detect signal input (Not used, open)
40	KEY2	I	Operation key signal input
41	KEY1	I	Operation key signal input
42	SW4	I	Disc tray close detect signal input

■ Replacement Parts List

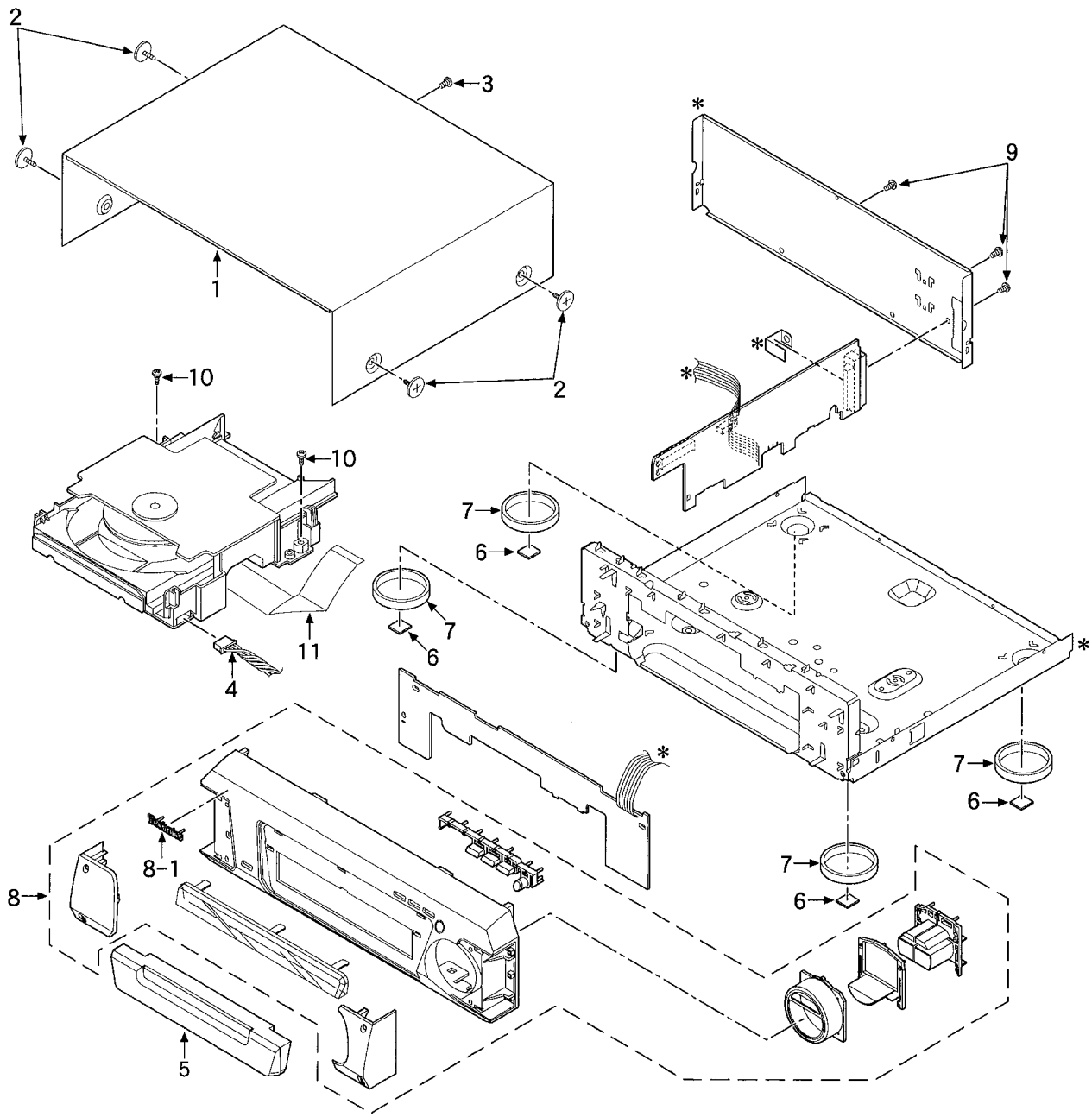
Notes: * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-(resistors), etc. are used. When replacing any of components, be sure to use only manufacture's specified parts shown in the parts list.
* ALL parts are supplied by MESA.

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
1	RKM0400-S	TOP CABINET	1	
2	RHD30007-K1	SCREW	4	
3	XTBS3+8JFZ1	SCREW	1	
4	REX0976	WIRE ASS'Y	1	
5	RGK1136-S	TRAY ORNAMENT	1	
6	RKA0105-K	RUBBER	4	
7	RKA0106-N	FOOT	4	
8	RYP0897-S	FRONT PANEL	1	
8-1	RGB0025-A	TECHNICS BADGE	1	
9	XTBS3+8JFZ1	SCREW	3	
10	XTB3+8FFZ	SCREW	2	
11	REZ1199	FFC	1	
301	RFKJXDT07-K	LOADING CHASSIS ASS'Y	1	
301-1	RDG0142	GEAR	1	
301-2	RDG0193	GEAR	1	
301-3	RDP0065	PULLEY	1	
302	REM0019	MOTOR ASS'Y	1	
303	RMK0255	BELT COVER	1	
304	RGQ0144-K	DISC TRAY	1	
⚠ 305	RAE0152Z-1	TRAVERSE DECK ASS'Y	1	
305-1	SHGD113-1	RUBBER	3	
305-2	SNSD38	SCREW	2	
306	RMS0350-1	PIN(A)	1	
307	RMS0627	PIN(B)	1	
308	RME0109	SPRING(A)	2	
309	RME0142	SPRING(B)	1	
310	RMR0698-K	TRAVERSE CHASSIS	1	
311	XTV2+6G	SCREW	2	
312	RME0063	SPRING	1	
313	RMM0079-1	SLIDE PLATE(1)	1	
314	RML0178-1	LEVER	1	
315	RFKNLPG440-K	GEAR ASS'Y	1	
316	RHD20009-1	SCREW	1	
317	RME0087	SPRING	1	
318	RML0349	LEVER	1	
319	RMM0059-1	SLIDE PLATE(2)	1	
320	RMR0334	HOLDER	1	
321	RHM245ZA	MAGNET	1	
322	RXQ0380	HOLDER	1	
323	XTN26+6G	SCREW	3	
324	RMA0793-1	DISC CLAMPER ASS'Y	1	
325	XYN2+F6FZ	SCREW	2	
326	RMG0158	BELT	1	
327	XTN2+6G	SCREW	1	
C4	ECBT1E103ZF	25V 0.01U	1	
C5	RCE1AKA101BG	10V 100U	1	
C6	ECA1CM471	16V 470U	1	
C7	ECBT1E103ZF	25V 0.01U	1	
C9	ECEA1AKS221	10V 220U	1	
C10	ECEA1AKS221	6.3V 220U	1	
C11	ECBT1H102KB5	50V 1000P	1	
C12	ECBT1C103MS5	16V 0.01U	1	
C151,52	ECBT1H102KB5	50V 1000P	2	
C401	RCE1HKA3R3BG	50V 3.3U	1	
C402	ECBT1E103ZF	25V 0.01U	1	
C403	ECBT1H102KB5	50V 1000P	1	
C404,05	ECBT1E103ZF	25V 0.01U	2	
C406	ECEA1AKS221	6.3V 220U	1	
C407	ECEA1AKS221	10V 220U	1	
C408	ECBT1H101KB5	50V 100P	1	
C410	EEAFC0J101B	6.3V 100U	1	
C411	ECBT1H104ZF5	50V 0.1U	1	
C413,14	ECBT1H471KB5	50V 470P	2	
C415,16	ECBT1E103ZF	25V 0.01U	2	
C452	ECBT1E103ZF	25V 0.01U	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	ECUV1H821KBN	50V 820P	1	
C717	ECUWNE104ZFN	25V 0.1U	1	
C718	ECUV1E104KBN	25V 0.1U	1	
C721,22	ECUV1H030CCN	50V 3P	2	
C723	ECEA1AKS221	10V 220U	1	
C724	ECUZNE104MBN	25V 0.1U	1	
C725,26	ECUE1H102KBN	50V 1000P	2	
C727,28	ECEA1HKS010	50V 1U	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	ECUE1E822KBN	25V 8200P	1	
C745	ECUV1E104KBN	25V 0.1U	1	
C747	ECUV1H181KCN	50V 180P	1	
C749	ECUE1H222KBN	50V 2200P	1	
C750,51	ECUZNE104MBN	25V 0.1U	2	
C752	ECUE1H102KBN	50V 1000P	1	
C753	ECUV1H471KBM	50V 470P	1	
C754	ECUE1H471KBN	50V 470P	1	
C760	ECUV1E104KBN	25V 0.1U	1	
C790	ECA1AKF820	10V 82U	1	
CN402	RJS1A6723-Q	CONNECTOR(23P)	1	
CN405	RJP6G18ZA	CONNECTOR(6P)	1	
CN701	RJU035T016-1	CONNECTOR(16P)	1	
CN702	RJS1A6723-1Q	CONNECTOR(23P)	1	
CP790	RJP6G17ZA	CONNECTOR(6P)	1	
⚠ D3	MA4082LTA	DIODE	1	
D10	MA165	DIODE	1	
D401-04	MA165	DIODE	4	
D406,07	MA165	DIODE	2	
D606	SML79455C	LED	1	
D801	MA165	DIODE	1	
⚠ IC2	UPC29M33HB	IC	1	
IC451	M38504M6200F	IC	1	
IC452	TC74HCT7007A	IC	1	
IC701	AN8839NSBE2	IC	1	
IC702	MN662790RSA	IC	1	
IC703	AN8739SBE2	IC	1	
IC790	TA7291S	IC	1	
JK401	RJT065K20	JACK	1	
L701,02	RLBN102V-Y	COIL	2	
⚠ Q2,Q3	2SD1862QRTV6	TRANSISTOR	2	
⚠ Q4	2SB621A-R	TRANSISTOR	1	
⚠ Q5	2SC3311ATA	TRANSISTOR	1	
Q401	UN4214TA	TRANSISTOR	1	
Q402-04	2SC3311ATA	TRANSISTOR	3	
Q701	2SB709S	TRANSISTOR	1	
Q702	DTC143XUA106	TRANSISTOR	1	
R5	ERDS2FJ271	1/4W 270	1	
R6	ERDS2FJ6R8	1/4W 6.8	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R7,R8	ERDS2FJ1R2	1/4W 1.2	2	
⚠ R9	ERQ16NKWR33E	1/6W 0.33	1	
R10	ERDS2FJ471	1/4W 470	1	
R11	ERDS2FJ222	1/4W 2.2K	1	
R21,22	ERDS2FJ100	1/4W 10	2	
R31	ERDS2FJ100	1/4W 10	1	
R155,56	ERDS2FJ473	1/4W 47K	2	
R157,58	ERDS2FJ221	1/4W 220	2	
R401	ERDS2FJ681	1/4W 680	1	
R402	ERDS2FJ104	1/4W 100K	1	
R403	ERDS2FJ472	1/4W 4.7K	1	
R404	ERDS2FJ222	1/4W 2.2K	1	
R405	ERDS2FJ104	1/4W 100K	1	
R406	ERDS2FJ101	1/4W 100	1	
R407	ERDS2FJ471	1/4W 470	1	
R408	ERDS2FJ222	1/4W 2.2K	1	
R409	ERDS2FJ471	1/4W 470	1	
R411	ERD16TJ000T	1/6W 0	1	
R413	ERDS2FJ101	1/4W 100	1	
R414-16	ERDS2FJ222	1/4W 2.2K	3	
R419,20	ERDS2FJ102	1/4W 1K	2	
R421,22	ERDS2FJ103	1/4W 10K	2	
R424	ERDS2FJ472	1/4W 4.7K	1	
R426	ERDS2FJ472	1/4W 4.7K	1	
R429	ERDS2FJ103	1/4W 10K	1	
R432	ERDS2FJ472	1/4W 4.7K	1	
R433	ERDS2FJ103	1/4W 10K	1	
R434,35	ERDS2FJ101	1/4W 100	2	
R436,37	ERDS2FJ472	1/4W 4.7K	2	
R438	ERDS2FJ102	1/4W 1K	1	
R439	ERDS2FJ223	1/4W 22K	1	
R440	ERDS2FJ473	1/4W 47K	1	
R441	ERDS2FJ472	1/4W 4.7K	1	
R442	ERDS2FJ103	1/4W 10K	1	
R444	ERDS2FJ472	1/4W 4.7K	1	
R445	ERDS2FJ473	1/4W 47K	1	
R448,49	ERDS2FJ102	1/4W 1K	2	
R451-55	ERDS2FJ332	1/4W 3.3K	5	
R610	ERDS2FJ151	1/4W 150	1	
R611	ERDS2FJ821	1/4W 820	1	
R612	ERDS2FJ102	1/4W 1K	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	
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	ERJ6GEYJ393V	1/10W 39K	1	
R708	ERJ6GEYJ223Z	1/10W 22K	1	
R709	ERJ6GEYJ683Z	1/10W 68K	1	
R711	ERJ6GEYJ823	1/10W 82K	1	
R712	ERJ8GEYJ221V	1/8W 220	1	
R714	ERJ6GEYJ682V	1/10W 6.8K	1	
R715	ERJ6GEYJ102A	1/10W 1K	1	
R717,18	ERJ6GEYJ102A	1/10W 1K	2	
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	
R753	ERJ6GEYJ100	1/10W 10	1	
R802	ERDS2FJ103	1/4W 10K	1	
RJ701	ERJ6GEY0R00A	CHIP JUMPER	1	
RJ702-10	ERJ8GEY0R00A	CHIP JUMPER	9	
RJ712-14	ERJ8GEY0R00A	CHIP JUMPER	3	
RJ716,17	ERJ8GEY0R00A	CHIP JUMPER	2	
RJ721,22	ERJ6GEY0R00A	CHIP JUMPER	2	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
RJ724	ERJ6GEY0R00A	CHIP JUMPER	1	
RJ726-28	ERJ6GEY0R00A	CHIP JUMPER	3	
RJ731-36	ERJ6GEY0R00A	CHIP JUMPER	6	
RJ750	ERJ6GEY0R00A	CHIP JUMPER	1	
S601-03	EVQ11G05R	SW,PUSH	3	
S611-16	EVQ11G05R	SW,PUSH	6	
S701	RSH1A043-U	SW,REST	1	
S790,91	RSH1A005	SW,OPEN/CLOSE DET.	2	
SA1	SZZP1054C	TEST DISC	1	
SA2	RFKXPG671	GREASE	1	
X401	RSXY8M00D01T	CERAMIC RESONATOR	1	
X701	RSXB33M8J01T	OSCILLATOR	1	

■ Cabinet Parts Location



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

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
1	RKM0400-S	TOP CABINET	1	
2	RHD30007-K1	SCREW	4	
3	XTBS3+8JFZ1	SCREW	1	
4	REX0976	WIRE ASS'Y	1	
5	RGK1136-S	TRAY ORNAMENT	1	
6	RKA0105-K	RUBBER	4	

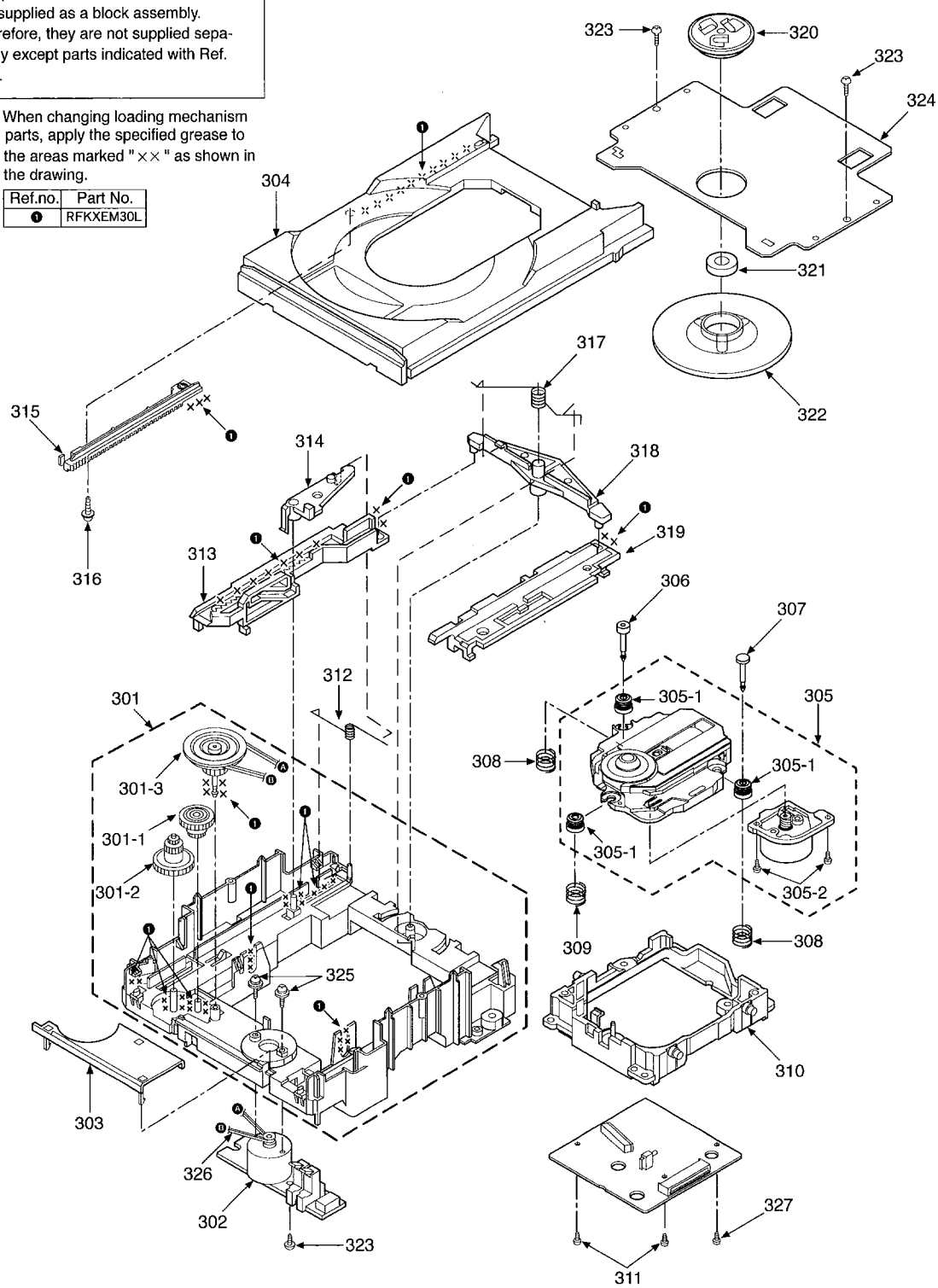
Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
7	RKA0106-N	FOOT	4	
8	RYP0897-S	FRONT PANEL	1	
8-1	RGB0025-A	TECHNICS BADGE	1	
9	XTBS3+8JFZ1	SCREW	3	
10	XTB3+8FFZ	SCREW	2	
11	REZ1199	FFC	1	

■ Loading Unit Parts Location

The parts enclosed in the dotted boxes are supplied as a block assembly. Therefore, they are not supplied separately except parts indicated with Ref. No. .

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

Ref.no.	Part No.
❶	RFKXEM30L



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

Ref.No.	Part No.	Part Name & Description	Pcs
301	RFKJXDT07-K	LOADING CHASSIS ASS'Y	1
301-1	RDG0142	GEAR	1
301-2	RDG0193	GEAR	1
301-3	RDP0065	PULLEY	1
302	REM0019	MOTOR ASS'Y	1
303	RMK0255	BELT COVER	1
304	RGQ0144-K	DISC TRAY	1
305 ⚠	RAE0152Z-1	TRAVERSE DECK ASS'Y	1
305-1	SHGD113-1	RUBBER	3
305-2	SNSD38	SCREW	2
306	RMS0350-1	PIN(A)	1

Ref.No.	Part No.	Part Name & Description	Pcs
307	RMS0627	PIN(B)	1
308	RME0109	SPRING(A)	2
309	RME0142	SPRING(B)	1
310	RMR0698-K	TRAVERSE CHASSIS	1
311	XTV2+6G	SCREW	2
312	RME0063	SPRING	1
313	RMM0079-1	SLIDE PLATE(1)	1
314	RML0178-1	LEVER	1
315	RFKNLPG440-K	GEAR ASS'Y	1
316	RHD20009-1	SCREW	1
317	RME0087	SPRING	1

Ref.No.	Part No.	Part Name & Description	Pcs
318	RML0349	LEVER	1
319	RMM0059-1	SLIDE PLATE(2)	1
320	RMR0334	HOLDER	1
321	RHM245ZA	MAGNET	1
322	RXQ0380	HOLDER	1
323	XTN26+6G	SCREW	3
324	RMA0793-1	DISC CLAMPER ASS'Y	1
325	XYN2+F6FZ	SCREW	2
326	RMG0158	BELT	1
327	XTN2+6G	SCREW	1

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