

Service Manual

Tuner/Compact Disc Player

Tuner/Compact Disc Player



SL-CH700

Colour

(K) Black Type

Areas

Suffix for Model No.	Area	Colour
(E)	Continental Europe, Great Britain.	
(EG)	Germany and Italy.	
(GC)	Asia, Latin America, Middle Near East and Africa.	(K)
(GN)	Oceania.	

RX-DT55 TRAVERSE DECK SERIES (S0DD110)

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

SPECIFICATIONS

FM TUNER SECTION

Frequency range	87.50-108.00 MHz (0.05 MHz step)
Sensitivity	1.5 μ V (IHF, usable)
S/N 30 dB	1.5 μ V (75 Ω)
S/N 26 dB	1.3 μ V (75 Ω)
S/N 20 dB	1.2 μ V (75 Ω)
IHF 46 dB stereo quieting sensitivity	28 μ V (75 Ω)
Total harmonic distortion	
MONO	0.2%
STEREO	0.3%
S/N	
MONO	60 dB (74 dB, IHF)
STEREO	58 dB (70 dB, IHF)
Frequency response 20 Hz-15 kHz	+0.5~-2.0 dB
Alternate channel selectivity \pm 400 kHz	70 dB
Stereo separation 1 kHz	35 dB
Channel balance 250 Hz~6300 kHz	\pm 1.5 dB
Limiting point	1.2 μ V
Band width	
IF amplifier	180 kHz
FM demodulator	1000 kHz
Antenna terminals	75 Ω (unbalanced)

System: SC-CH700

MW/LW TUNER SECTION

Frequency range	
MW: for (E) (EG) (GN) area;	522~1611 kHz (9 kHz step)
	530~1620 kHz (10 kHz step)
: for (GC) area;	531~1602 kHz (9 kHz step)
	530~1600 kHz (10 kHz step)
LW: for (E) (EG) (GN) area;	144~288 kHz (9 kHz step)
: for (GC) area;	153~279 kHz (9 kHz step)
Sensitivity (S/N 20 dB)	
MW	20 μ V, 330 μ V/m
LW	50 μ V

Selectivity (\pm 9 kHz)

MW (at 999 kHz)	50 dB
LW (at 216 kHz)	50 dB

CD PLAYER SECTION

Pick up	
Beam source	780 nm Semiconductor laser
Type	1 beam
Spindle motor	DC motor

GENERAL

Power consumption	14 W
Dimensions (W×H×D)	215.4×83.2×290 mm
Weight	2.0 kg

Notes:

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

System	Tuner/CD player	Sound Processor	Amplifier	Cassette Deck	Speakers
SC-CH700	SL-CH700	SH-CH700	SU-CH700	RS-CH700	*SB-CH700

*(E), (EG) areas...Made in PAES

Technics

CONTENTS

	Page
HANDLING PRECAUTIONS FOR TRAVERSE DECK	2
PRECAUTION OF LASER DIODE	2, 3
LOCATION OF CONTROLS	3
DISASSEMBLY INSTRUCTIONS	4~11
MEASUREMENTS AND ADJUSTMENTS	12~14
DESCRIPTION OF FL PANEL	15
SCHEMATIC DIAGRAM (Servo circuit)	16~18
SCHEMATIC DIAGRAM (Operation/Main/Loading Motor circuit)	19~21

	Page
SCHEMATIC DIAGRAM (Tuner circuit)	22~24
PRINTED CIRCUIT BOARDS	25~27
WIRING CONNECTION DIAGRAM	28
BLOCK DIAGRAM	29~32
TROUBLESHOOTING GUIDE	33, 34
FUNCTION OF IC TERMINALS	35~39
REPLACEMENT PARTS LIST	40~44, 46
CABINET PARTS LOCATION	45, 46

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)

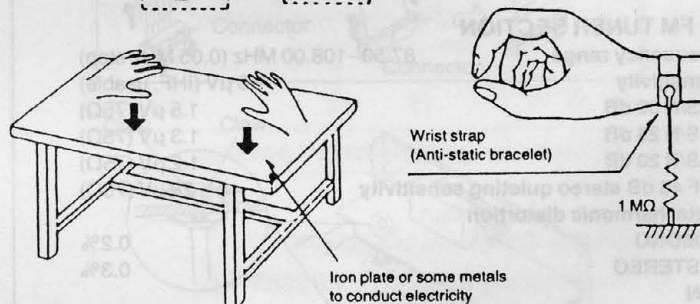
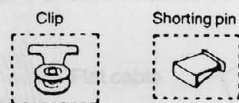
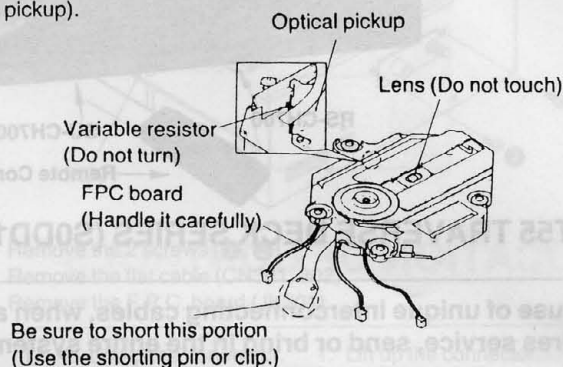
- Do not subject the traverse deck (optical pickup) to static electricity as it is extremely sensitive to electrical shock.
- To prevent the breakdown of the laser diode, an anti-static shorting pin is inserted into the flexible board (FPC board). When removing or connecting the short pin, finish the job in as short time as possible.
- Take care not to apply excessive stress to the flexible board (FPC board).
- Do not turn the variable resistor (laser power adjustment). It has already been adjusted.

Grounding for electrostatic breakdown prevention

- Human body grounding**
Use the anti-static wrist strap to discharge the static electricity from your body.
- 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 μ W/VDE

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

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

ACHTUNG: Dieses produkt enthält eine laserdioden. Im eingeschalteten zustand wird unsichtbare laserstrahlung von der lasereinheit abgestrahlt.

Wellenlänge: 780 nm

Maximale strahlungsleistung der lasereinheit: 100 μ W/VDE

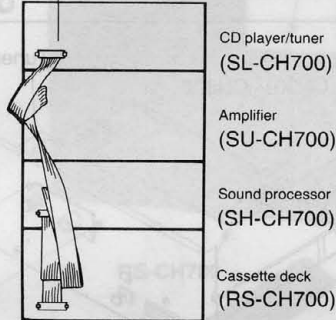
Die strahlung an der lasereinheit ist ungefährlich, wenn folgende punkte beachtet werden:

- Die lasereinheit nicht zerlegen, da die strahlung an der freigelegten laserdioden gefährlich ist.
- Den werksseitig justierten einstellregler der lasereinheit nicht verstellen.
- Nicht mit optischen instrumenten in die fokussierlinse blicken.
- Nicht über längere zeit in die fokussierlinse blicken.

ADVARSEL: I dette a apparat anvendes laser



LUOKAN 1 LASERLAITE
KLASS 1 LASER APPARAT



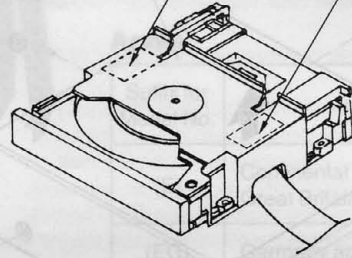
ADVARSEL: USYNLIG LASERSTRÅLING
VED ÅBNING, NÅR SIKKERHEDSAF-
BRYDERE ER UDE AF FUNKTION.
UNDGÅ UDSÆTTELSE FOR STRÅLING.

VARO! Avattaessa ja
suojalukitus
ohitettaessa olet
alltiina näkymättömälle
lasersäteilylle.
Älä katso säteeseen.

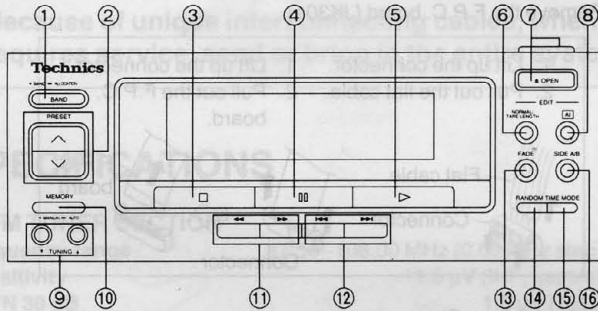
VORSICHT- Unsichtbare
Laserstrahlung, wenn
Abdeckung geöffnet.
Nicht dem Strahl
aussetzen. NOL50021

DANGER- Invisible
laser radiation when
open.
AVOID DIRECT EX-
POSURE TO BEAM.

WARNING! Osynlig
laserstråling når
denne del er åpnad
och spårren är
urkopplad.
Betrakta ej strålen.

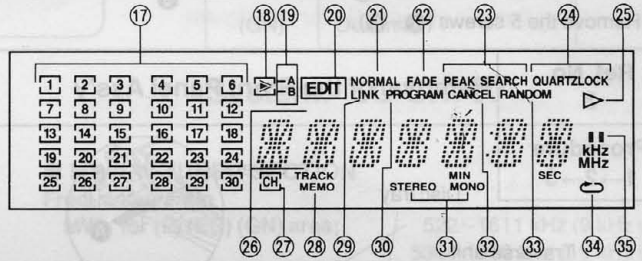


LOCATION OF CONTROLS



Compact disc player/tuner section

- ① Band select button (BAND, -BAND -ALLOCATION)
- ② Preset tuning buttons (∨ PRESET ∧)
- ③ Stop button (□)
- ④ Pause button (⏸)
- ⑤ Play button (▶)
- ⑥ Normal/tape length edit button (NORMAL/TAPE LENGTH)
- ⑦ Disc tray open/close button (▲ OPEN/CLOSE)
- ⑧ AI edit button (AI)
- ⑨ Tuning buttons (∇ TUNING ▲)
- ⑩ Preset memory button (MEMORY, -MANUAL -AUTO)
- ⑪ Search buttons (◀◀, ▶▶)
- ⑫ Skip buttons (◀◀, ▶▶)
- ⑬ Fade-in edit button (FADE)
- ⑭ Random button (RANDOM)
- ⑮ Time mode select button (TIME MODE)
- ⑯ Tape-side select button (SIDE A/B)



Display section

- ⑰ Matrix display (1 ~ 30)
- ⑱ Over indicator (⏹)
- ⑲ Tape side indicator (-A, -B)
- ⑳ Compact disc edit recording indicator (EDIT)
- ㉑ Normal edit indicator (NORMAL)
- ㉒ Fade edit indicator (FADE)
- ㉓ Peak search indicator (PEAK SEARCH)
- ㉔ Quartz lock indicator (QUARTZ LOCK)
- ㉕ Play indicator (▶)
- ㉖ Multi display
- ㉗ Channel indicator (CH)
- ㉘ Memory indicator (MEMO)
- ㉙ Link indicator (LINK)
- ㉚ Program indicator (PROGRAM)
- ㉛ FM stereo indicator (STEREO, MONO)
- ㉜ Cancel indicator (CANCEL)
- ㉝ Random indicator (RANDOM)
- ㉞ Repeat play indicator (↺)
- ㉟ Pause indicator (⏸)

Note: Refer to the service manual for Model No. SU-CH700, Order No. AD9202022C8 for information on ACCESSORIES, CONNECTIONS and PACKAGING.

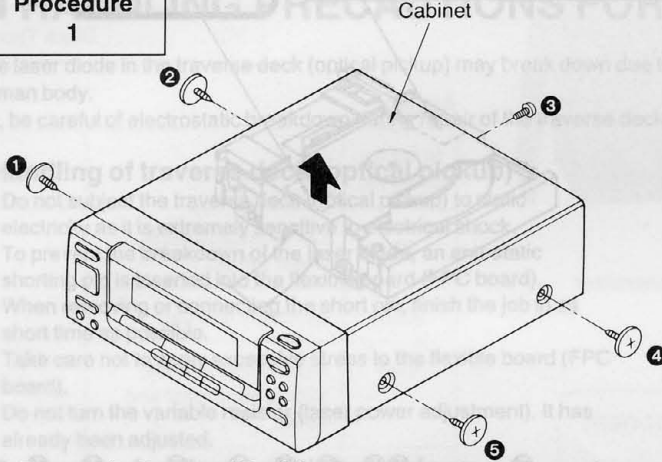
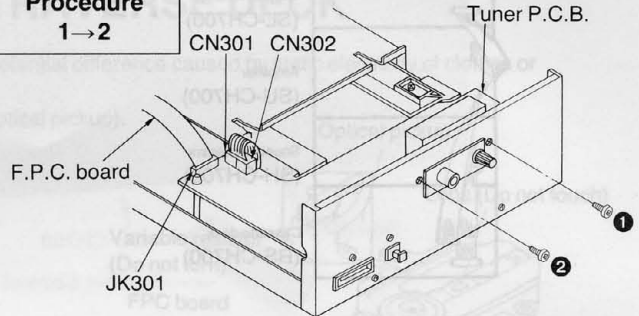
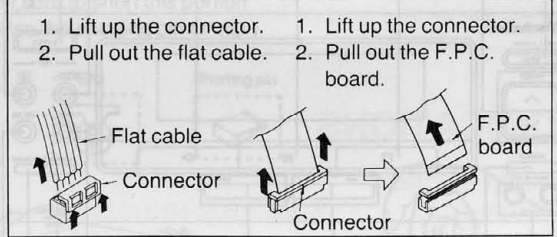
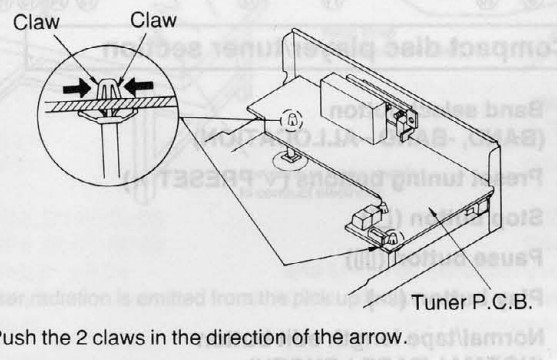
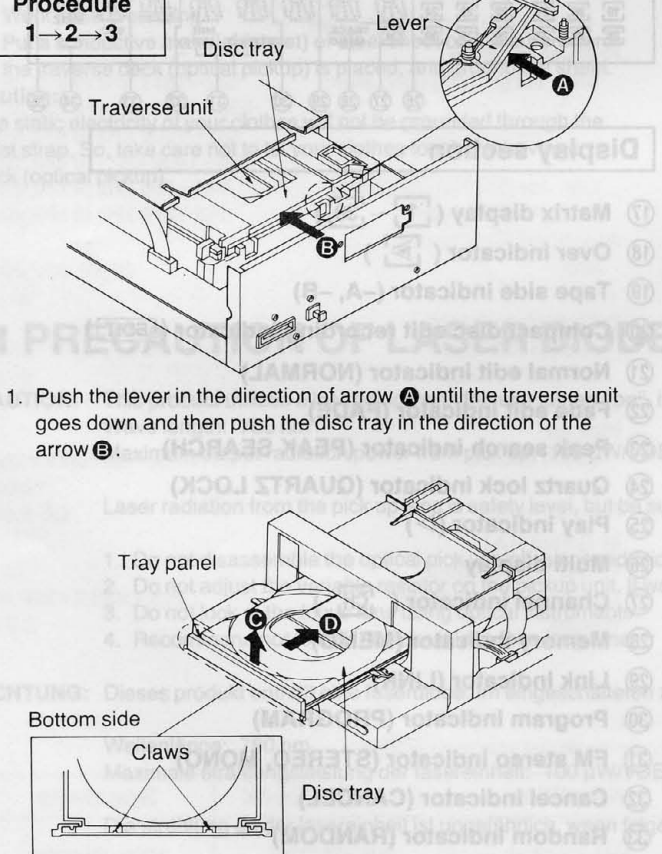
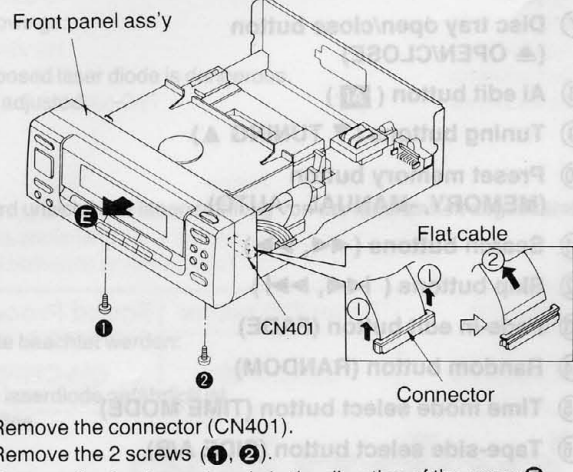
DISASSEMBLY INSTRUCTIONS

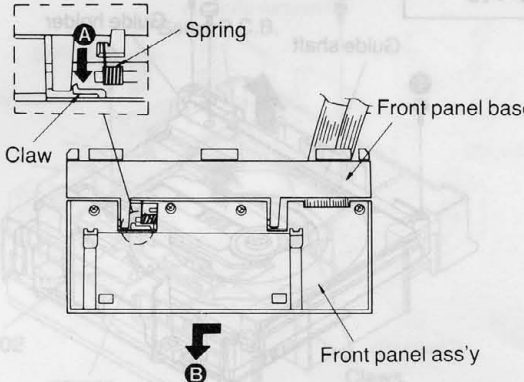
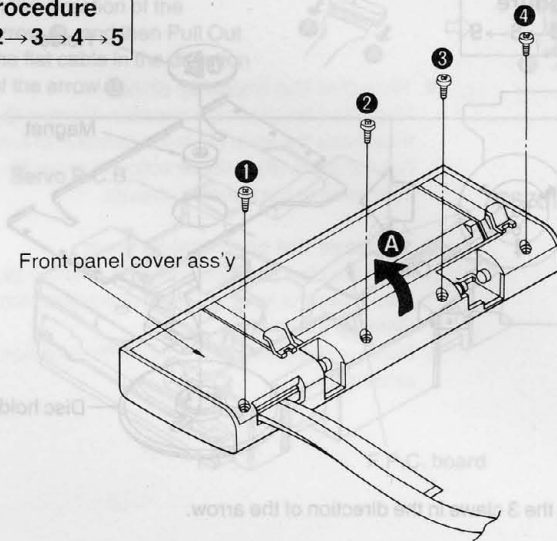
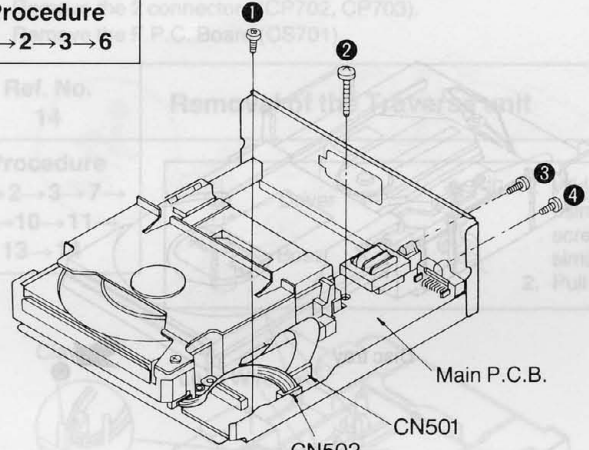
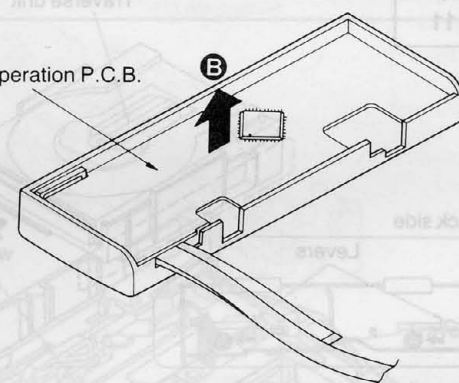
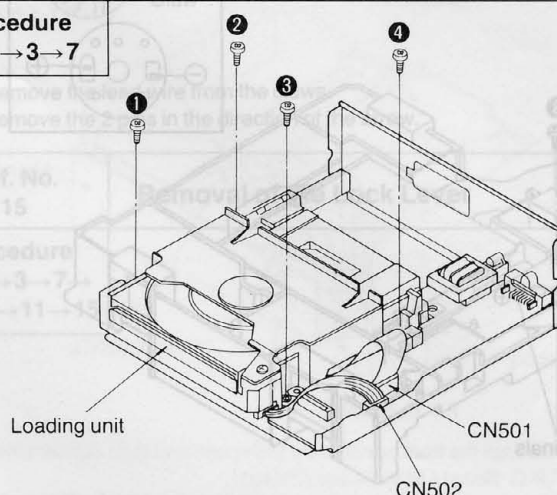
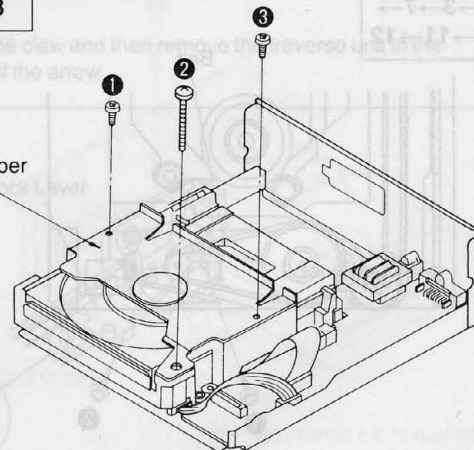
Warning: This product uses a laser diode. Refer to caution statements on page 2.

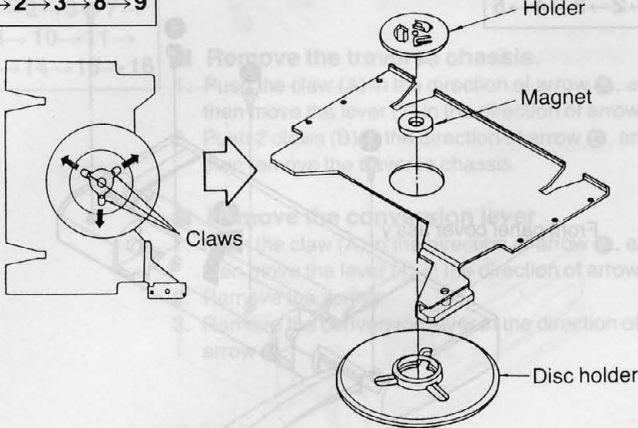
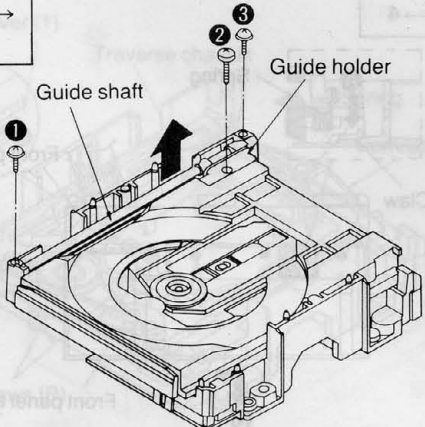
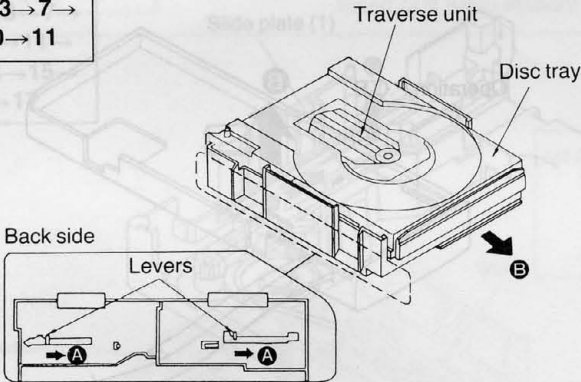
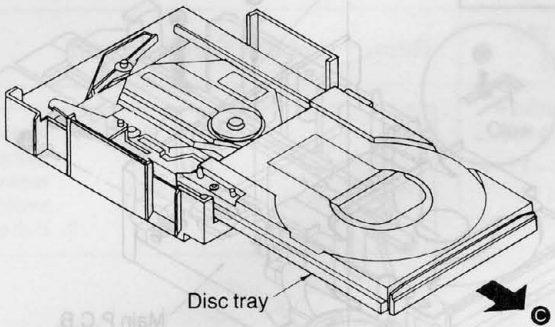
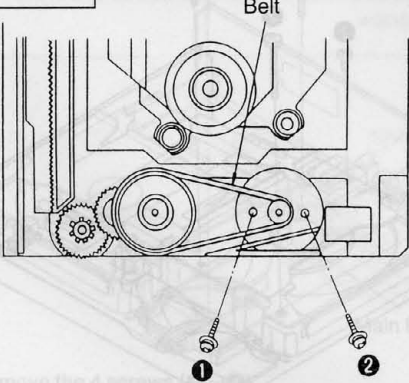
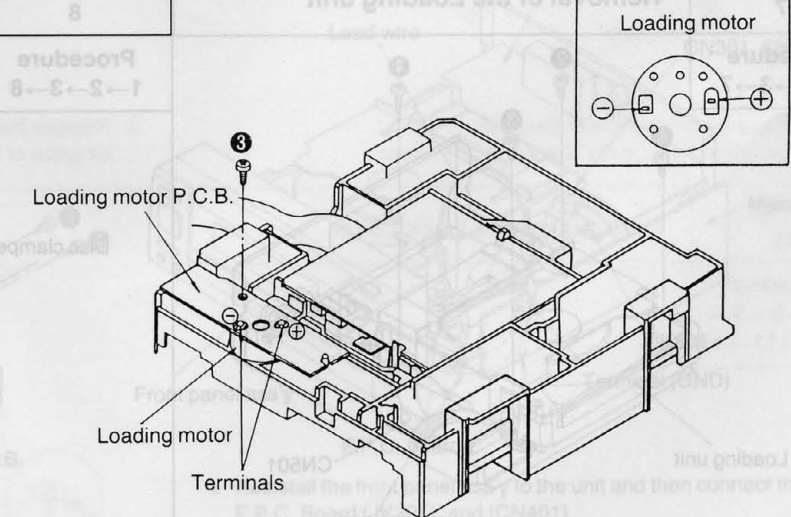
ACHTUNG: ●Die lasereinheit nicht zerlegen.
●Die lasereinheit darf nur gegen eine vom hersteller spezifizierte einheit ausgetauscht werden.

“ATTENTION SERVICER”

Some chassis components may have sharp edges. Be careful when disassembling and servicing.

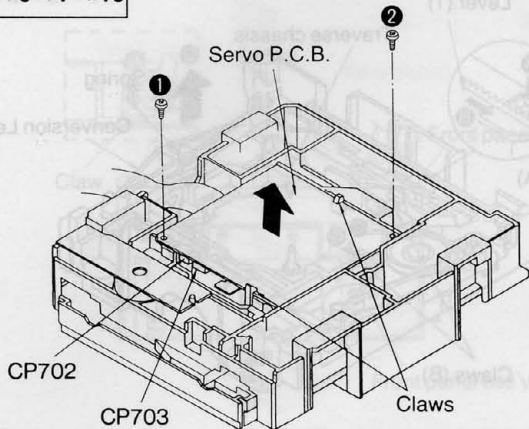
Ref. No. 1	Removal of the Cabinet	Ref. No. 2	Removal of the Tuner P.C.B.
<p>Procedure 1</p>  <p>●Remove the 5 screws (1-5).</p>		<p>Procedure 1→2</p>  <ol style="list-style-type: none"> 1. Remove the 2 screws (1, 2). 2. Remove the flat cable (CN301, 302). 3. Remove the F.P.C. board (JK301). 	 <ol style="list-style-type: none"> 1. Lift up the connector. 2. Pull out the flat cable.  <ol style="list-style-type: none"> 1. Lift up the connector. 2. Pull out the F.P.C. board. <ol style="list-style-type: none"> 4. Push the 2 claws in the direction of the arrow.
<p>Ref. No. 3</p>	<p>Removal of the Front Panel Ass'y</p>		
<p>Procedure 1→2→3</p>  <ol style="list-style-type: none"> 1. Push the lever in the direction of arrow A until the traverse unit goes down and then push the disc tray in the direction of the arrow B. 2. Remove the 2 claws and then remove the tray panel in the direction of the arrow C. 3. Push the disc tray in the direction of the arrow D to insert it in the unit again. 			 <ol style="list-style-type: none"> 4. Remove the connector (CN401). 5. Remove the 2 screws (1, 2). 6. Remove the front panel ass'y in the direction of the arrow E.

<p>Ref. No. 4</p>	<p>Removal of the Front Panel Ass'y and Front Panel Base</p>	<p>Ref. No. 5</p>	<p>Removal of the Operation P.C.B.</p>
<p>Procedure 1→2→3→4</p>	 <p>1. Remove the spring. 2. Push the claw in the direction of the arrow A and remove the front panel ass'y in the direction of the arrow B.</p>	<p>Procedure 1→2→3→4→5</p>	 <p>1. Remove the 4 screws (1~4). 2. Remove the front panel cover ass'y in the direction of the arrow A.</p>
<p>Ref. No. 6</p>	<p>Removal of the Main P.C.B.</p>	<p>Ref. No. 8</p>	<p>Removal of the Disc clamber</p>
<p>Procedure 1→2→3→6</p>	 <p>1. Remove the 2 connectors (CN501, CN502). 2. Remove the 4 screws (1~4).</p>	<p>Procedure 1→2→3→8</p>	 <p>3. Remove the operation P.C.B. in the direction of the arrow B.</p>
<p>Ref. No. 7</p>	<p>Removal of the Loading unit</p>	<p>Ref. No. 8</p>	<p>Removal of the Disc clamber</p>
<p>Procedure 1→2→3→7</p>	 <p>1. Remove the 2 connectors (CN501, CN502). 2. Remove the 4 screws (1~4).</p>	<p>Procedure 1→2→3→8</p>	 <p>• Remove the 3 screws (1~3).</p>

<p>Ref. No. 9</p>	<p>Removal of the Magnet, Disc Holder and Holder</p>	<p>Ref. No. 10</p>	<p>Removal of the Guide shaft and Guide holder</p>
<p>Procedure 1→2→3→8→9</p>	 <p>●Push the 3 claws in the direction of the arrow.</p>	<p>Procedure 1→2→3→7→8→10</p>	 <ol style="list-style-type: none"> 1. Remove the 3 screws (1~3). 2. Remove the guide shaft and guide holder in the direction of the arrow.
<p>Ref. No. 11</p>	<p>Removal of the Disc tray</p>		
<p>Procedure 1→2→3→7→8→10→11</p>	 <ol style="list-style-type: none"> 1. Push the 2 levers in the direction of the arrow A until the traverse unit goes down and the disc tray slightly in the direction of the arrow B. 		 <ol style="list-style-type: none"> 3. Remove the disc tray in the direction of the arrow C.
<p>Ref. No. 12</p>	<p>Removal of the Loading motor P.C.B. and Loading motor</p>		
<p>Procedure 1→2→3→7→8→10→11→12</p>	 <ol style="list-style-type: none"> 1. Remove the belt. 2. Remove the 2 screws (1, 2). 		 <ol style="list-style-type: none"> 3. Remove the screw (3). 4. Unsolder the 2 terminals of loading motor.

Ref. No. 13
Removal of the Servo P.C.B.

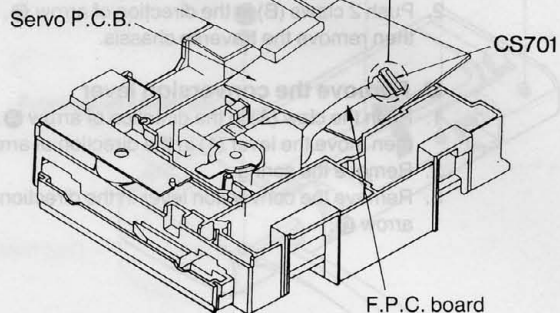
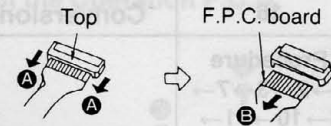
Procedure
1→2→3→7→13



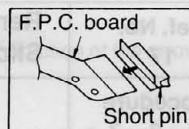
1. Remove the 2 screws (1, 2).
2. Remove the 2 claws.
3. Remove the servo P.C.B. in the direction of the arrow.
4. Remove the 2 connectors (CP702, CP703).
5. Remove the F.P.C. Board (CS701).

Removal of the F.P.C. board

Push the top of the connector in the direction of the arrow A, and then Pull Out the flat cable in the direction of the arrow B.

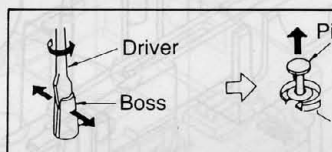


Note:
Insert a short pin into the traverse unit F.P.C. board.

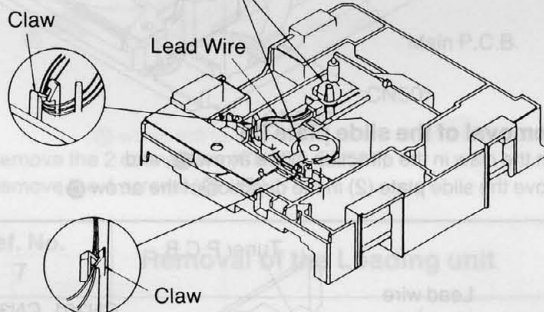


Ref. No. 14
Removal of the Traverse unit

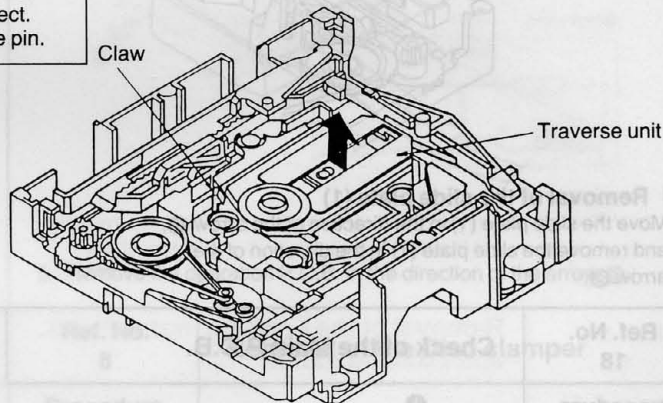
Procedure
1→2→3→7→
8→10→11→
13→14



1. Widen the boss by using a regular screwdriver or similar object.
2. Pull out the pin.



1. Remove the lead wire from the claws.
2. Remove the 2 pins in the direction of the arrow.

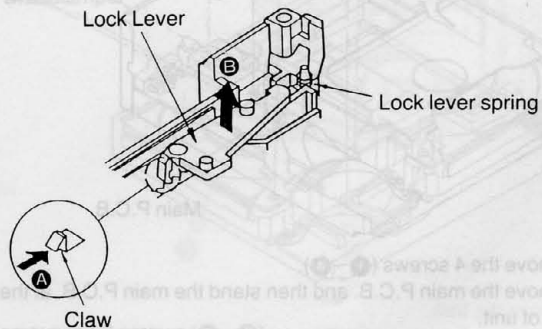


3. Release the claw and then remove the traverse unit in the direction of the arrow.

Ref. No. 15
Removal of the Lock Lever

Procedure
1→2→3→7→
8→10→11→15

1. Remove the lock lever spring.
2. Remove the claw in the direction of the arrow A and then remove the lock lever in the direction of the arrow B.



Ref. No. 16
Removal of the Traverse chassis and Conversion Lever

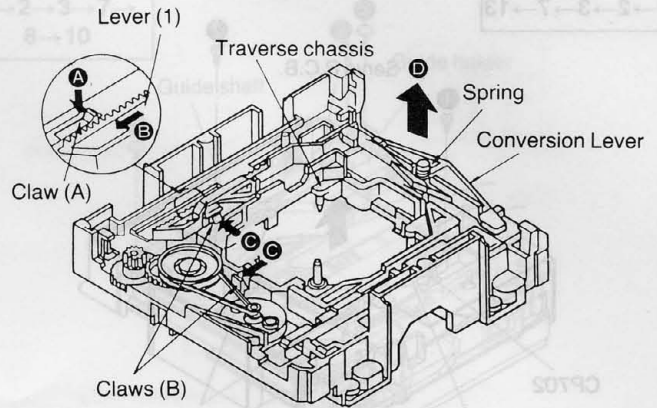
Procedure
 1→2→3→7→
 8→10→11→
 13→14→15→16

■ **Remove the traverse chassis.**

1. Push the claw (A) in the direction of arrow (A), and then move the lever (1) in the direction of arrow (B).
2. Push 2 claws (B) in the direction of arrow (C), and then remove the traverse chassis.

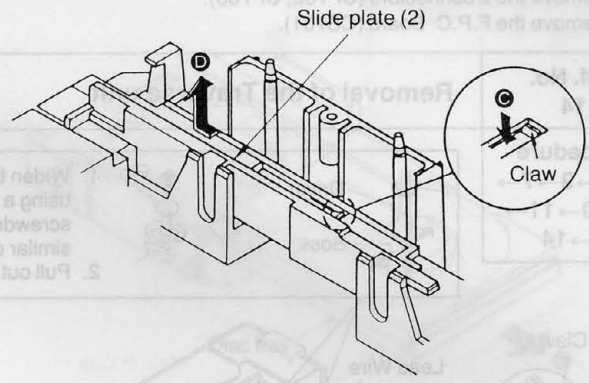
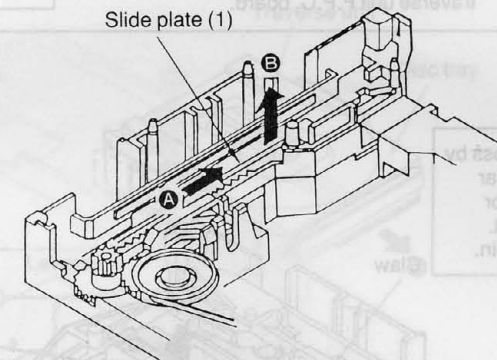
■ **Remove the conversion lever**

1. Push the claw (A) in the direction of arrow (A), and then move the lever (1) in the direction of arrow (B).
2. Remove the spring.
3. Remove the conversion lever in the direction of arrow (D).



Ref. No. 17
Removal of the Slide plate (1) and Slide plate (2)

Procedure
 1→2→3→7→
 8→10→11→
 13→14→15→
 16→17



■ **Removal of the slide plate (1)**

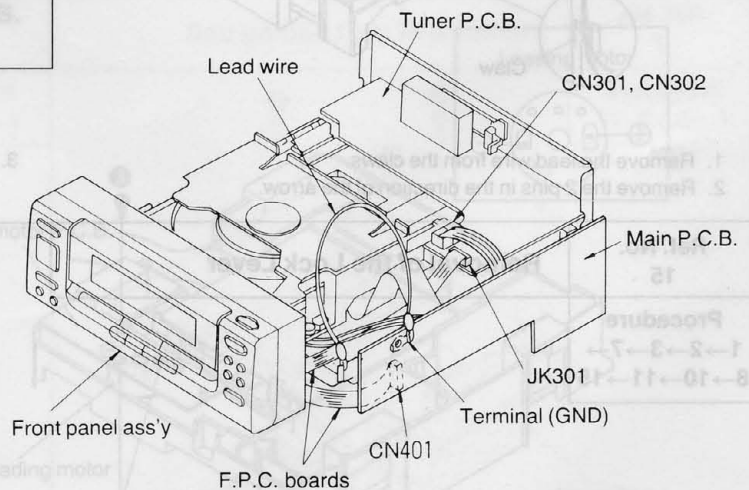
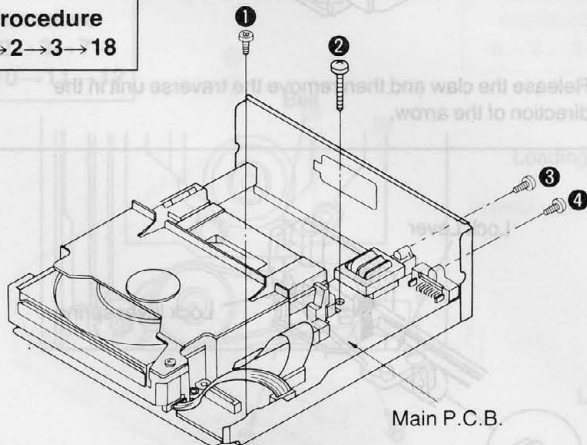
- Move the slide plate (1) in the direction of the arrow (A), and remove the slide plate (1) in the direction of the arrow (B).

■ **Removal of the slide plate (2)**

- Push the claw in the direction of the arrow (C), and remove the slide plate (2) in the direction of the arrow (D).

Ref. No. 18
Check of the Main P.C.B.

Procedure
 1→2→3→18



1. Remove the 4 screws (1~4).
2. Remove the main P.C.B. and then stand the main P.C.B. at the side of unit.
3. Reinstall the tuner P.C.B. to the unit.

4. Reinstall the front panel ass'y to the unit and then connect the F.P.C. Board (JK301), and (CN401).
5. Connect the connector (CN301/302).
6. When checking the soldered surface of the main P.C.B., do as shown in the figure above.

Ref. No. 19	Check of the Operation P.C.B. and Servo P.C.B.
----------------	---

Procedure
1→2→3→4→
5→19

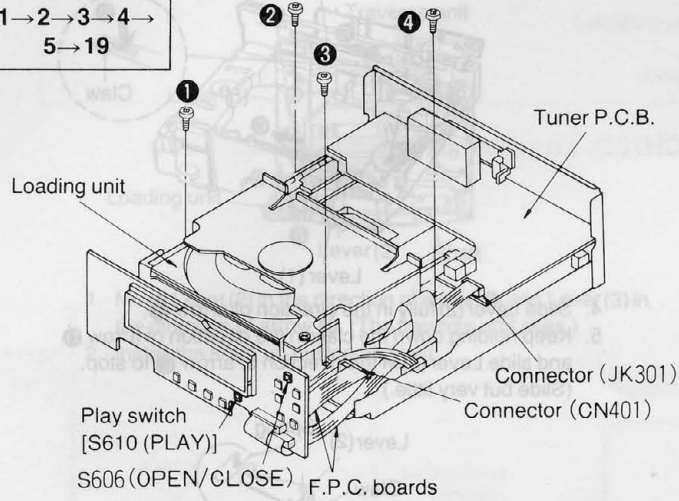


Fig. 1

1. Connect the F.P.C. boards to connector (CN401) and (JK301).
2. Remove the 4 screws (1-4).
3. Place the Loading unit as shown in Fig. 2.

Note:

Make sure not to damage the F.P.C. Boards.

To play a disc

1. Push the S606 (OPEN/CLOSE) switch so that the loading unit comes up.
2. Playing the test disc on the tray. Then, push the S606 (OPEN/CLOSE) switch to set the test disc.
3. Push the S610 (PLAY) switch to start the test disc play.

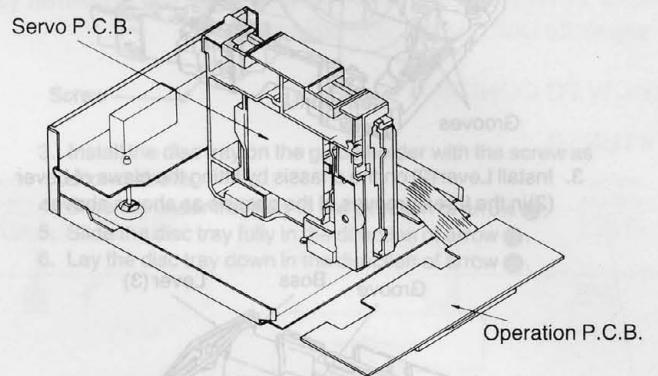
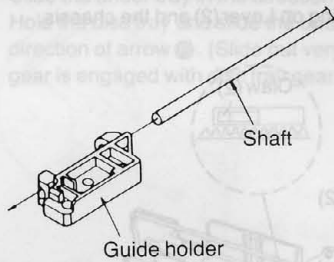


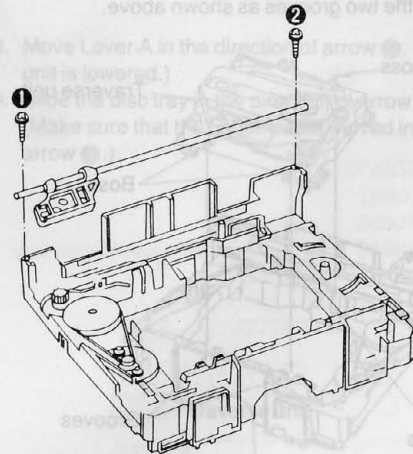
Fig. 2

4. When checking the solder surface of the operation P.C.B. and servo P.C.B., do as shown in Fig. 2.

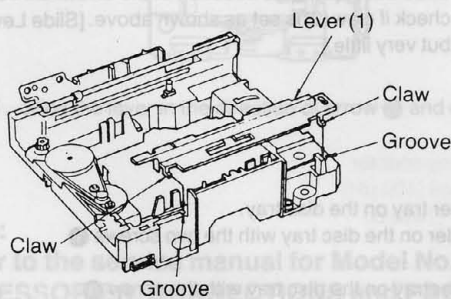
■ INSTALLING OF SHAFT



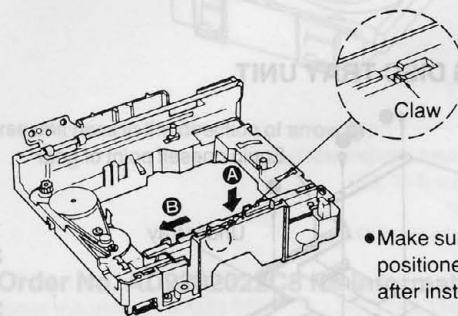
1. Insert the shaft into the guide holder.
2. Install the shaft on the chassis with the 2 screws (1, 2).



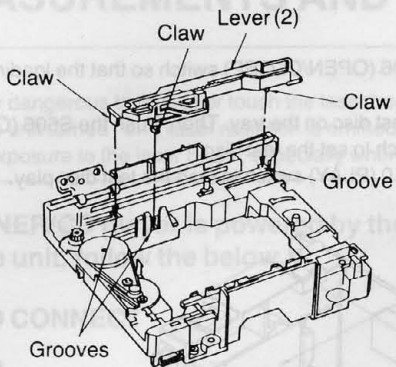
■ CD UNIT ASSEMBLY



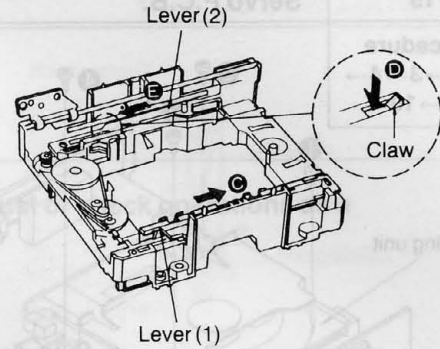
1. Install Lever (1) on the chassis by fitting the claws of Lever (1) in the two grooves of the chassis.



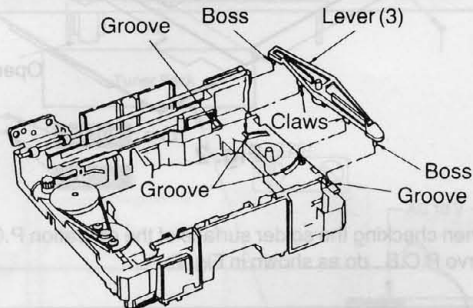
2. Slide Lever (1) in the direction of arrow B while keeping it held down lightly in the direction of arrow A.



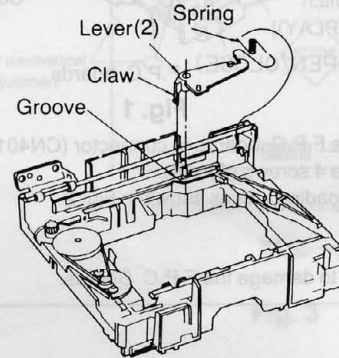
3. Install Lever (2) on the chassis by fitting the claws of Lever (2) in the three grooves of the chassis as shown above.



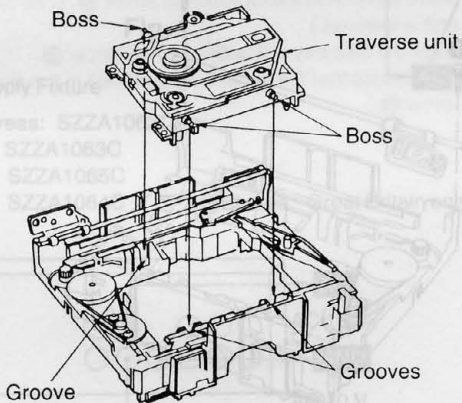
4. Slide Lever (2) fully in the direction of arrow **C**.
5. Keep holding down the claw in the direction of arrow **D** and slide Lever (2) in the direction of arrow **E** to stop. (Slide but very little.)



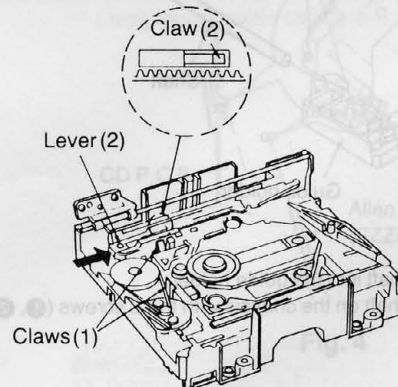
6. Install Lever (3) on the chassis by fitting the two claws of Lever (3) in the two grooves of the chassis and the two bosses in the two grooves as shown above.



7. Install Lever (2) on the chassis by fitting the claw of Lever (2) in the groove of the chassis.
8. Install the spring on Lever (2) and the chassis.

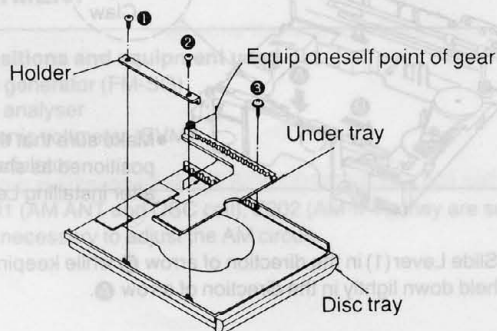


9. Install the traverse unit on the chassis by fitting the three bosses of the traverse unit in the three grooves of the chassis.



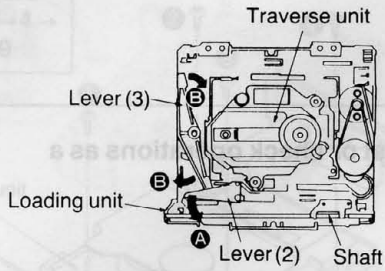
10. Make sure that the traverse unit is engaged with the two claws (1).
11. Slide Lever (2) in the direction of the arrow. Be sure to check if claw (2) is set as shown above. [Slide Lever (2) but very little.]

■ INSTALLING DISC TRAY UNIT

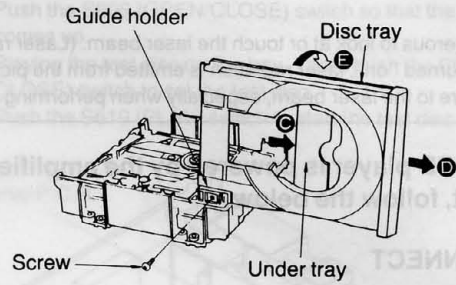


1. Install the under tray on the disc tray.
2. Install the holder on the disc tray with the two screws **1** and **2**.
3. Install the under tray on the disc tray with the screw **3**. Make sure that the under tray moves smoothly after installing the disc tray unit.

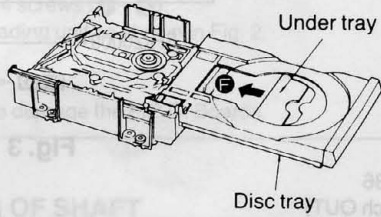
■ INSTALLING DISC TRAY



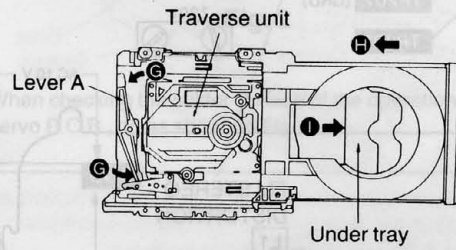
1. Move Lever (2) in the direction of arrow A and Lever (3) in the direction of arrow B. (The traverse unit rises.)
2. Install the shaft on the loading unit.



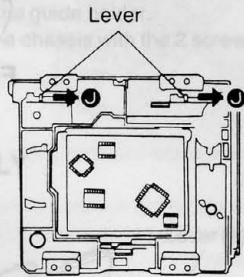
3. Install the disc tray on the guide holder with the screw as shown above.
4. Slide the under tray fully in the direction of arrow C.
5. Slide the disc tray fully in the direction of arrow D.
6. Lay the disc tray down in the direction of arrow E.



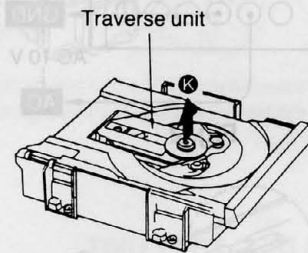
7. Slide the under tray in the direction of arrow F.
8. Hold the disc tray and slide the under tray fully in the direction of arrow G. (Slide but very little and the loading gear is engaged with disc tray gear.)



9. Move Lever A in the direction of arrow H. (The traverse unit is lowered.)
10. Slide the disc tray in the direction of arrow I. (Make sure that the under tray is moved in the direction of arrow J.)



11. Slide the lever in the direction of arrow K and check if the traverse unit rises in the direction of arrow L.



Note:

Refer to the service manual for Model No. SU-CH700, Order No. AD9202022C8 for information on ACCESSORIES, CONNECTIONS and PACKAGING.

MEASUREMENTS AND ADJUSTMENTS

Caution:

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

• This TUNER/CD player is powered by the amplifier (SU-CH700). To adjust or check operations as a separate unit, follow the below.

HOW TO CONNECT

TUNER

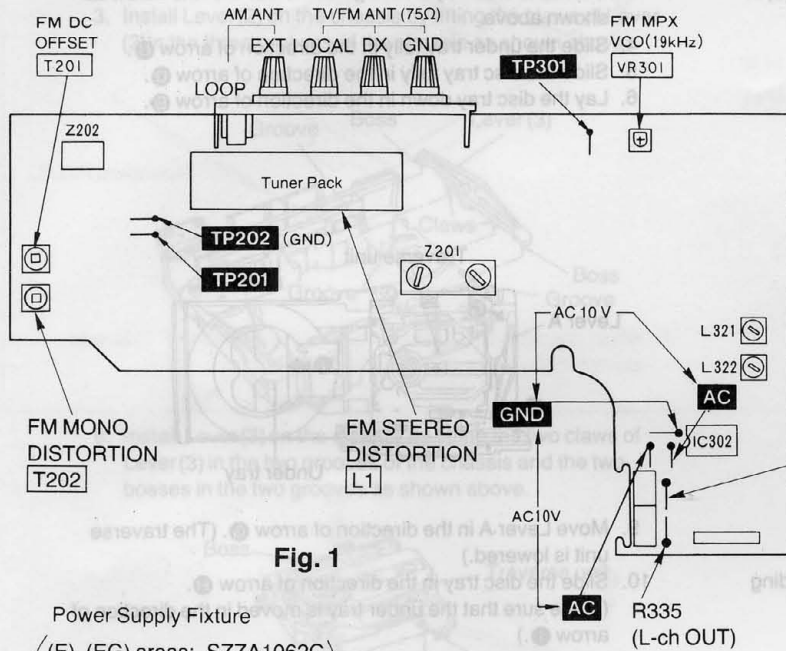


Fig. 1

Power Supply Fixture
 (E), (EG) areas: SZZA1062C
 (EB) area: SZZA1063C
 (GC) area: SZZA1065C
 (GN) area: SZZA1064C
 (EB) area: Great Britain only

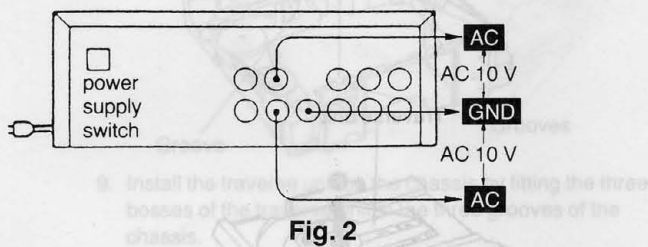


Fig. 2

CD

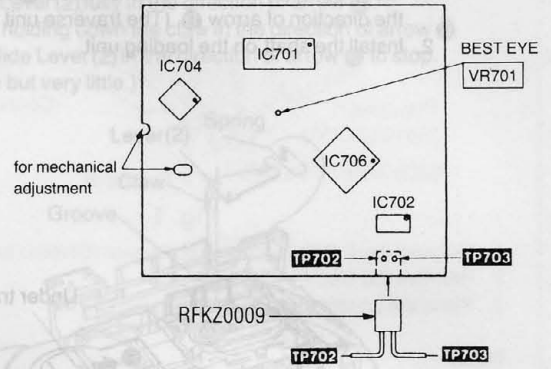


Fig. 3

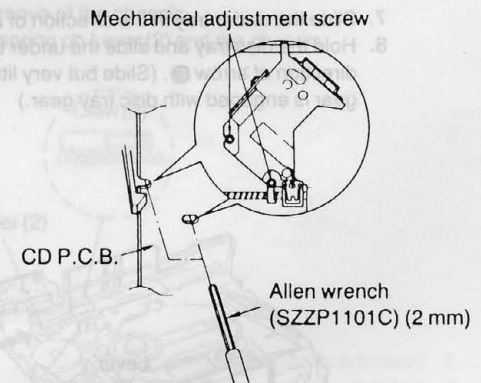


Fig. 4

FM ADJUSTMENT

Control positions and equipment used

- FM signal generator (FM-SG)
- Distortion analyser
- DC electronic voltmeter (EVM)
- Stereo modulator
- Frequency counter
- Choke coil (100 μH)
- Resistor (100 kΩ)

Note: For Z201 (AM ANT and OSC coil), Z202 (AM-IFT), they are supplied as adjusted parts. So, do not turn the cores of the parts. If is not necessary to adjust the AM circuit.

FM OFFSET VOLTAGE AND MONO DISTORTION ADJUSTMENT

1. Test equipment connection is shown in figure 1, 5.
2. Set the unit to "FM" mode.
3. Set the radio frequency display and signal generator to **100.10±0.001 MHz**.
4. Adjust the core of **T201** so that the voltage measured in signal mode is **0 mV (0±20 mV)** in 300 mV range.
5. Adjust **T202** so that the distortion factor of L-ch and R-ch is minimized.
6. Repeat steps 4 and 5.

Note: The adjusting screwdriver used should be made of resin.

FM SIGNAL GENERATOR CONDITION
 Modulation 100%
 Modulation frequency..... 1 kHz
 Output level 66 dB

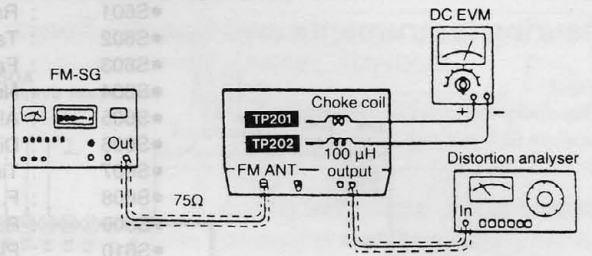


Fig. 5

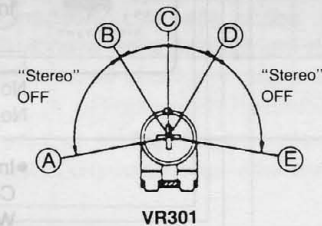
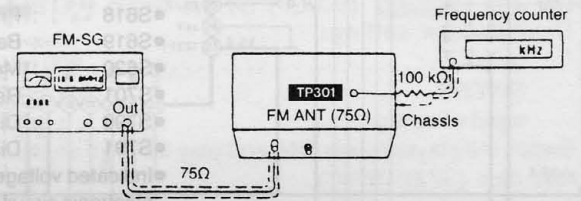
FM MPX VCO ADJUSTMENT

1. Test equipment connection is shown in figure 1, 6.
2. Set the unit to "stereo" position.
3. Set the radio frequency display and signal generator to **83±0.005 MHz**.
4. Adjust **VR301** for **19 kHz±30 Hz** on frequency counter reading.

USING ALTERNATE SYSTEM

1. Receive the stereo broadcast.
2. Adjust **VR301** until stereo indicator lights up. Fix the arm of **VR301** as shown in figure.

FM SIGNAL GENERATOR CONDITION
 Modulation 100%
 Modulation frequency 0 kHz
 Output level 66 dB



- (A)-(B)
- (D)-(E) "Stereo" OFF position
- (B)-(D) "Stereo" ON position (Indicator lighting)
- (C) Adjust point of pilot circuit

Fig. 6

FM STEREO DISTORTION ADJUSTMENT (EG only)

1. Test equipment connection is shown in figure.
2. Set the unit to "FM" mode.
3. Set the radio frequency display and signal generator to **100.10±0.001 MHz**.
4. Adjust **L1** so that the distortion factor of L-CH is minimized.
5. Make sure that the distortion factors of L-CH and R-CH are nearly the same with each other to minimum.

Notes:

1. The adjusting screwdriver used should be made of resin.
2. **L1** should be rotated no more 1/4 turn (90 deg.) on either side.

FM SIGNAL GENERATOR CONDITION
 Modulation Stereo "L" mode or "R" mode 45%, Pilot 10%
 Modulation frequency 1 kHz (Pilot 19 kHz)
 Output level 66 dB

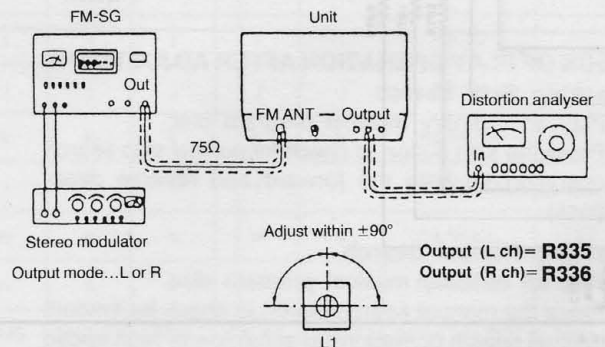


Fig. 7

CD ADJUSTMENT

Caution:

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

Measuring Instruments and Special Tools

- Test disc
 1. Playability test disc (SZZP1054C)
 2. Uneven test disc (SZZP1056C)
- Allen wrench (M2.0) (SZZP1101C)
- Oscilloscope
- Connector (RFKZ0009)

(1) MECHANICAL ADJUSTMENT

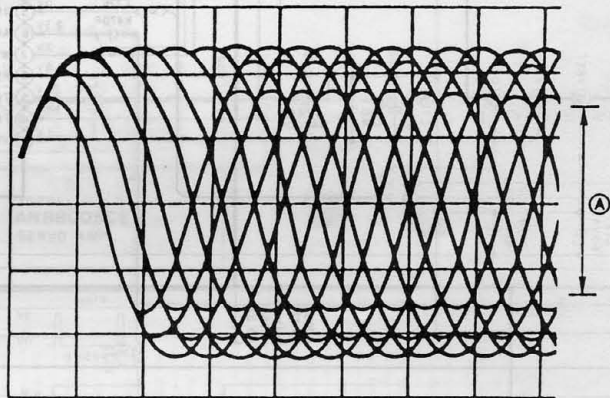
- When the traverse deck is replaced, making adjustments is not necessary. (The traverse deck ass'y is already adjusted.)
- Make adjustments to improve playability when the traverse deck has not been replaced. Make the electrical adjustments first.

1. Connect the oscilloscope's CH. 1 probe across **TP702** (+) and **TP703** (V-REF) on the Servo P.C.B.

Oscilloscope setting:

VOLT 200 mV
 SWEEP 0.5 μ sec
 Input coupling AC

2. Switch the player power **ON**, and play track 19 on the test disc (SZZP1056C).
3. Leave the player in Play mode and place it as shown in the figure on the right.
4. Alternately adjust the two mechanical adjusting screws with the 2.0 mm allen wrench (SZZP1101C) until the RF signal amplitude variation on the oscilloscope is minimized. (Shown in Fig. 4)
5. After completing the adjustment, lock the **mechanical adjustments** with lock paint (RZZOL01).

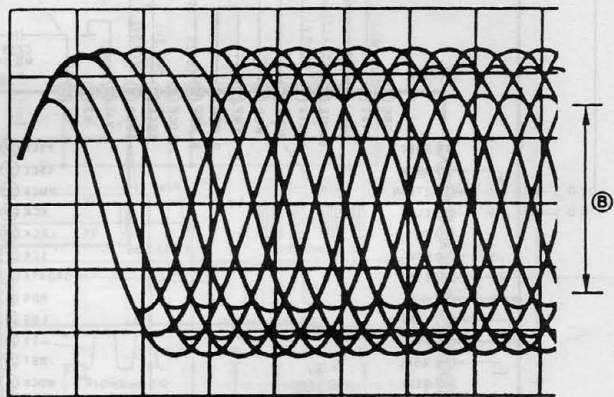
**(A)** Minimize the variation of amplitude.**(2) BEST EYE (PD BALANCE) ADJUSTMENT**

1. Connect the oscilloscope's CH. 1 probe across **TP702** (+) and **TP703** (V-REF) on the Servo P.C.B.

Oscilloscope setting:

VOLT 200 mV
 SWEEP 0.5 μ sec
 Input coupling AC

2. Switch the player power **ON**, and play the 1 kHz (track 1) on test disc (SZZP1054C).
3. Adjust **VR701** until the RF signal eye pattern amplitude is maximized.

**(B)** Maximize the amplitude**(3) CHECK OF PLAY OPERATION AFTER ADJUSTMENT*****Checking Skip Search**

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

***Checking Manual Search**

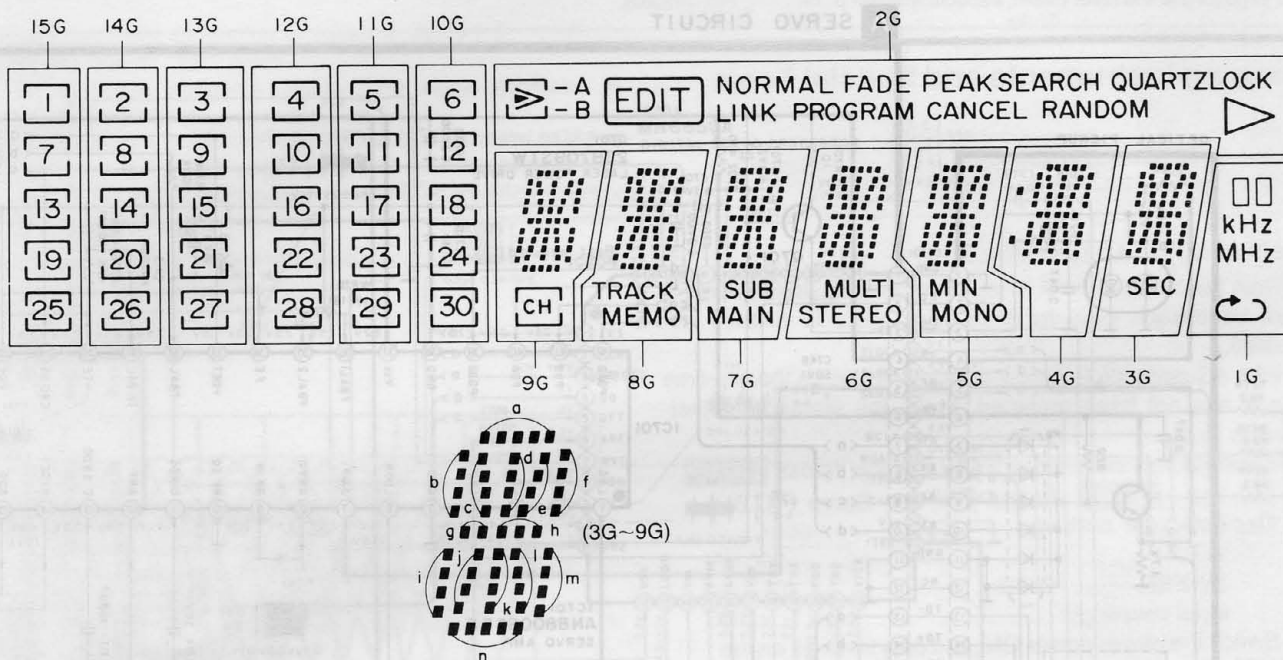
1. Play an ordinary musical program disc.
2. Press the manual search button to check for smooth manual search operations at either low or high speed (in both the forward and reverse directions).

***Checking Playability**

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

DESCRIPTION OF FL PANEL [FL601 (RSL0111-F)]

Grid assignment



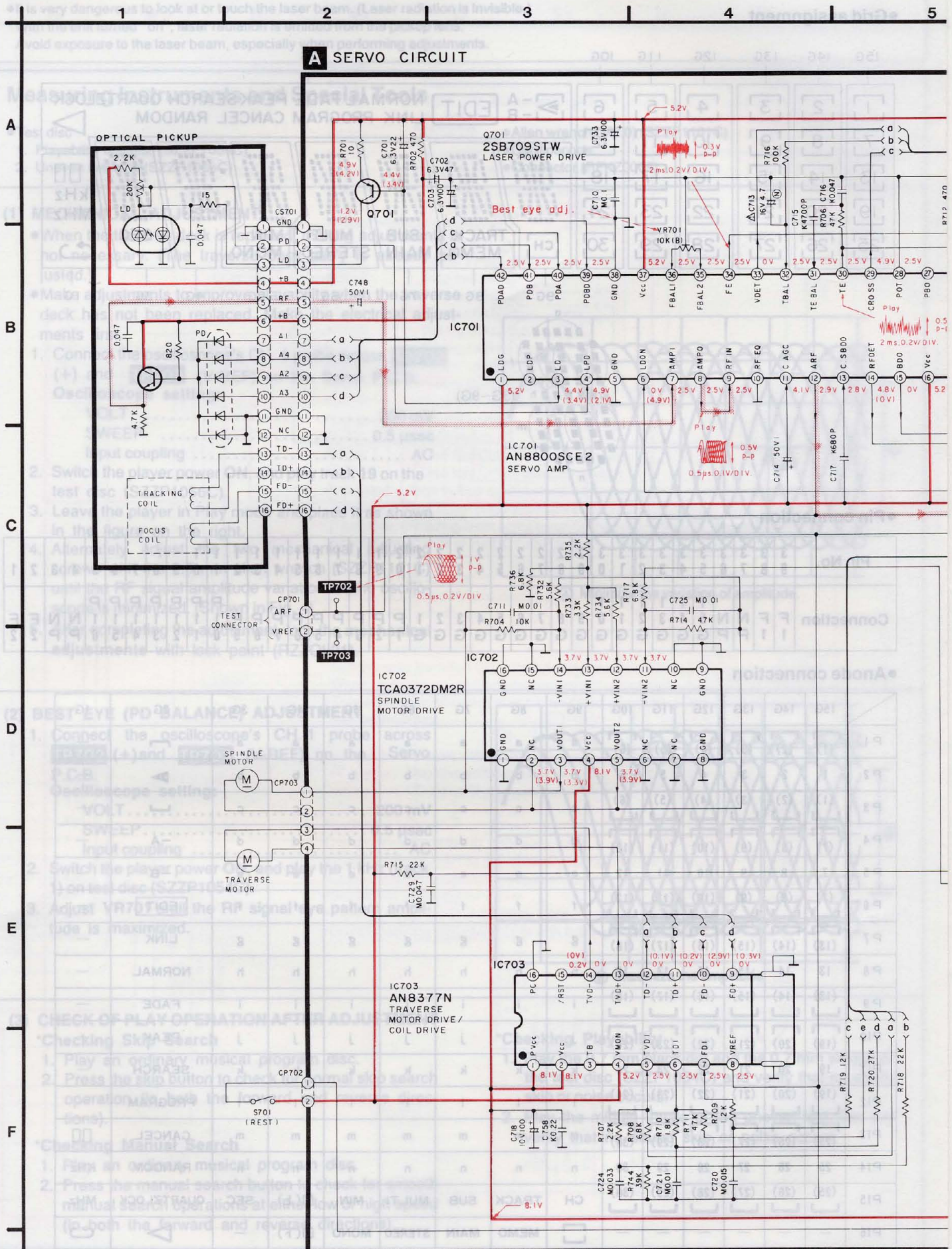
Pin connection

Pin No.	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	9	8	7	6	5	4	3	2	1	
Connection	F	F	N	N	1	1	1	1	1	0	9	8	7	6	5	4	3	2	1	P	P	P	P	P	P	P	P	P	P	P	P	P	P	N	N	F	F
	1	1	P	P	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	P	P

Anode connection

	15G	14G	13G	12G	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	(1)	(2)	(3)	(4)	(5)	(6)	a	a	a	a	a	a	a	[—
P2	1	2	3	4	5	6	b	b	b	b	b	b	b	▷	—
P3	(1)	(2)	(3)	(4)	(5)	(6)	c	c	c	c	c	c	c	[—
P4	(7)	(8)	(9)	(10)	(11)	(12)	d	d	d	d	d	d	d	-A	—
P5	7	8	9	10	11	12	e	e	e	e	e	e	e	-B	—
P6	(7)	(8)	(9)	(10)	(11)	(12)	f	f	f	f	f	f	f	EDIT	—
P7	(13)	(14)	(15)	(16)	(17)	(18)	g	g	g	g	g	g	g	LINK	—
P8	13	14	15	16	17	18	h	h	h	h	h	h	h	NORMAL	—
P9	(13)	(14)	(15)	(16)	(17)	(18)	i	i	i	i	i	i	i	FADE	—
P10	(19)	(20)	(21)	(22)	(23)	(24)	j	j	j	j	j	j	j	PEAK	—
P11	19	20	21	22	23	24	k	k	k	k	k	k	k	SEARCH	—
P12	(19)	(20)	(21)	(22)	(23)	(24)	l	l	l	l	l	l	l	PROGRAM	—
P13	(25)	(26)	(27)	(28)	(29)	(30)	m	m	m	m	m	m	m	CANCEL	□
P14	25	26	27	28	29	30	n	n	n	n	n	n	n	RANDOM	KHz
P15	(25)	(26)	(27)	(28)	(29)	(30)	CH	TRACK	SUB	MULTI	MIN	□(上)	SEC	QUARTZLOCK	MHz
P16	—	—	—	—	—	—	□	MEMO	MAIN	STEREO	MONO	□(下)	—	▷	↻

SCHEMATIC DIAGRAM (Servo circuit) (Parts list on pages 40~44)



Notes:

- S601 : Random switch
- S602 : Tape side A/B selector switch
- S603 : Fade switch
- S604 : Normal/Tape length switch
- S605 : AI switch
- S606 : Disc tray OPEN/CLOSE switch
- S607 : Time mode selector switch
- S608 : F. skip switch
- S609 : R. skip switch
- S610 : Play switch
- S611 : Pause switch
- S612 : Stop switch
- S613 : F. search switch
- S614 : R. search switch
- S615 : Tuning UP switch
- S616 : Tuning DOWN switch
- S617 : Preset UP switch
- S618 : Preset DOWN switch
- S619 : Band selector switch
- S620 : Memory switch
- S701 : Rest switch
- S790 : Disc tray CLOSE detection switch
- S791 : Disc tray OPEN detection switch

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.

□ : MUTING voltage

No mark: (Operation/Main/Loading Motor circuit) Standard Play

No mark: (CD circuit) stop

Important safety notice

Components identified by Δ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

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

— : Positive voltage line

- - - : Negative voltage line

⋯ : CD signal line

Caution!

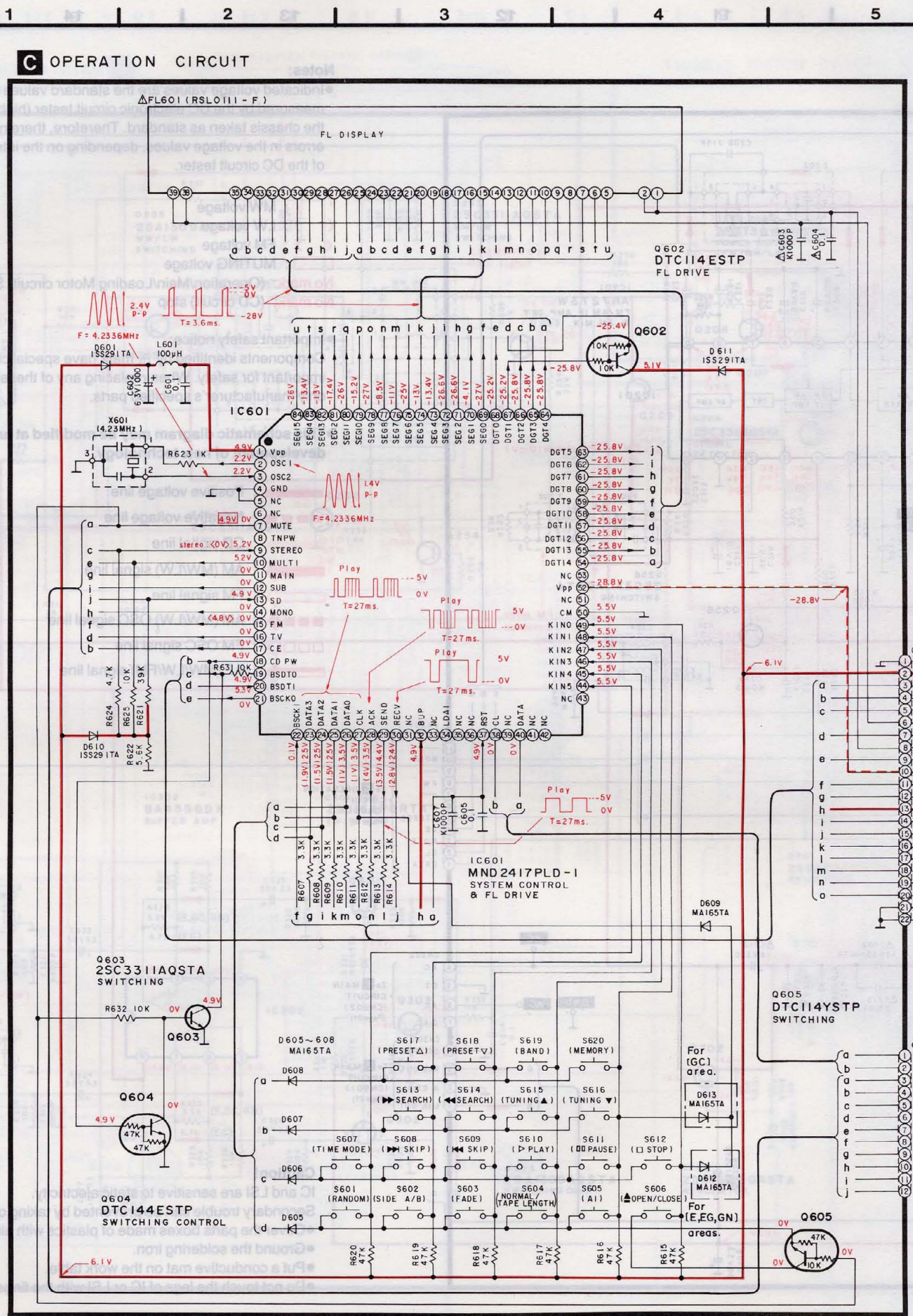
IC and LSI are sensitive to static electricity.

Secondary trouble can be prevented by taking care during repair.

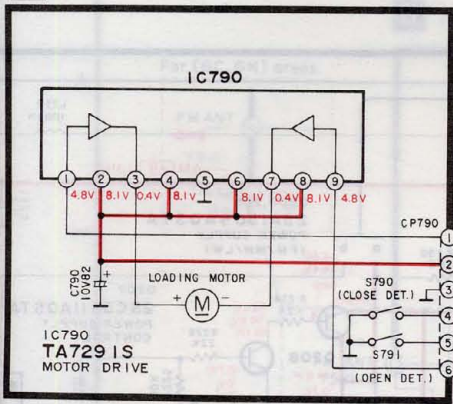
- Cover the parts boxes made of plastics with aluminum coil.
- Ground the soldering iron.
- Put a conductive mat on the work table.
- Do not touch the legs of IC or LSI with the fingers directly.

To E MAIN
CIRCUIT (CN501)
(Page 20)

SCHEMATIC DIAGRAM (Operation/Main/Loading Motor circuit) (Parts list on page 19)

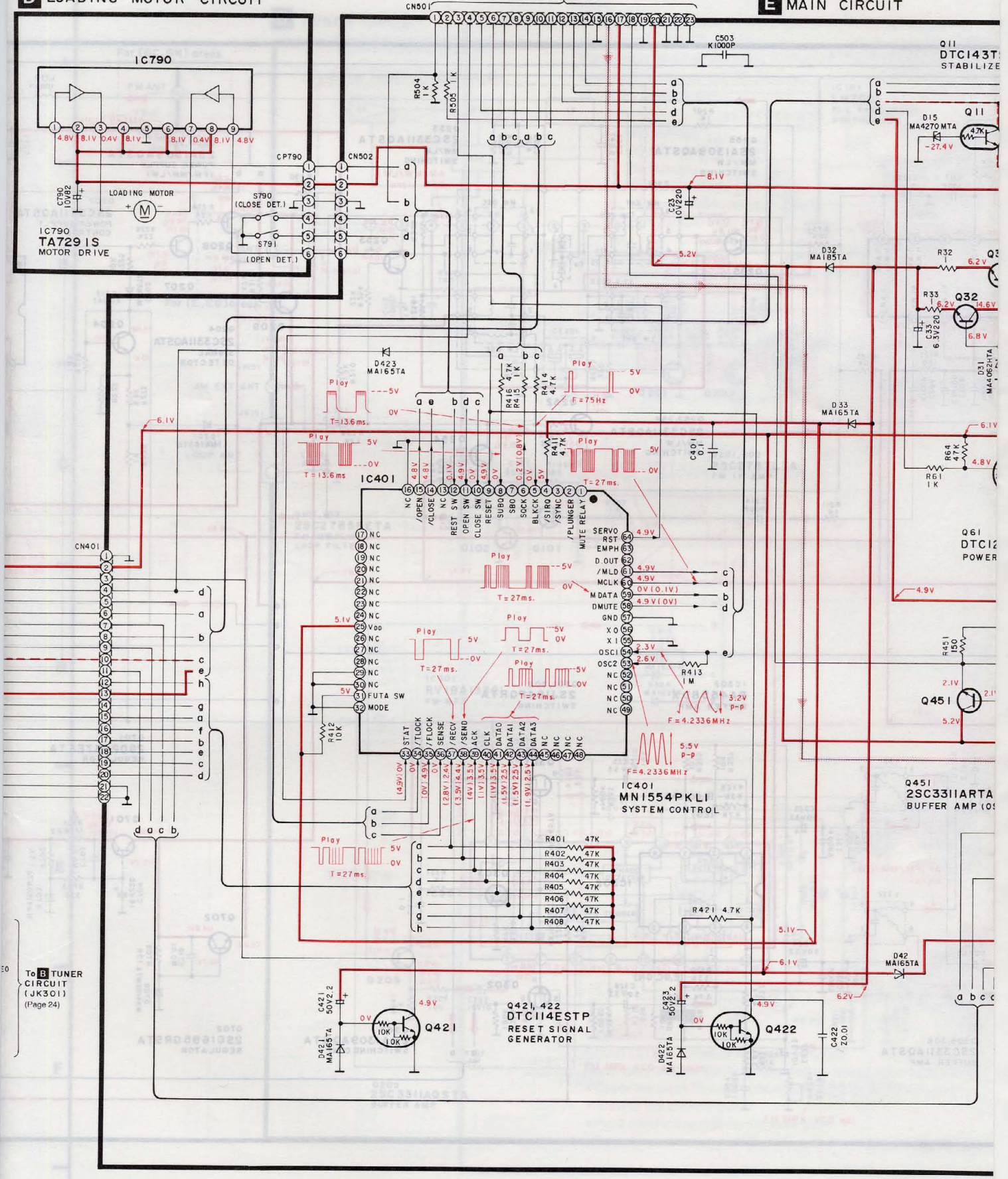


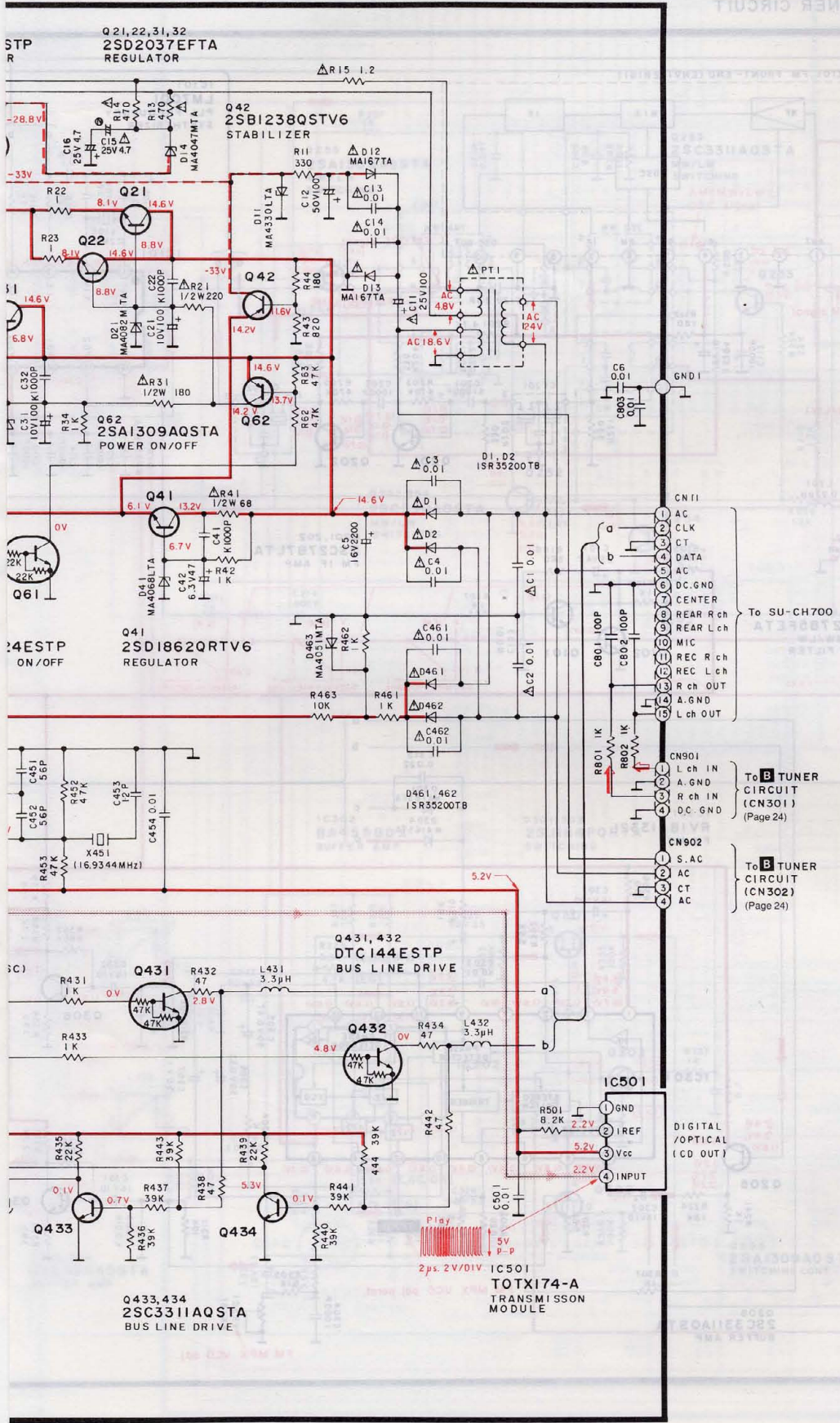
D LOADING MOTOR CIRCUIT



To A SERVO CIRCUIT (CS702) (Page 18)

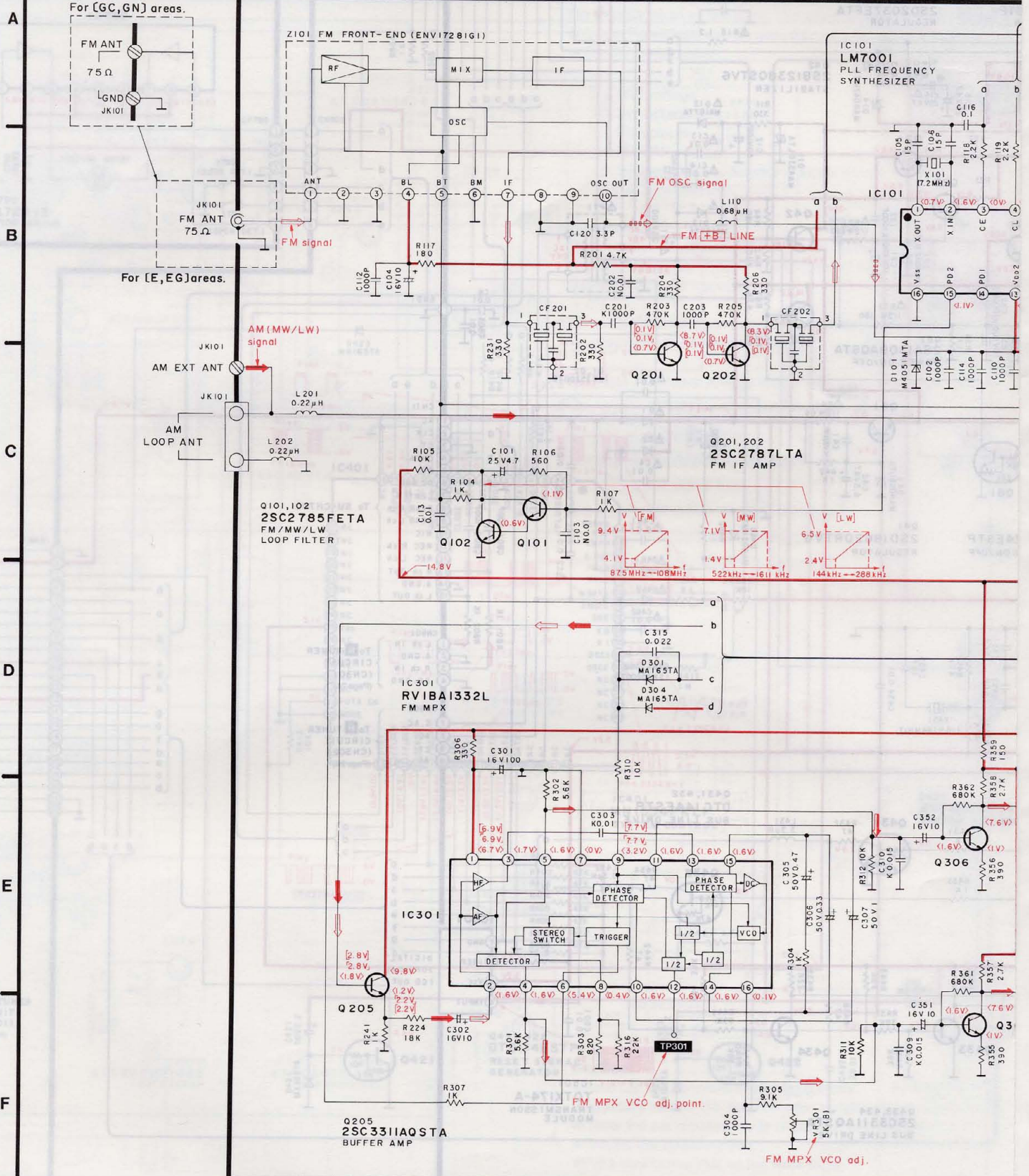
E MAIN CIRCUIT

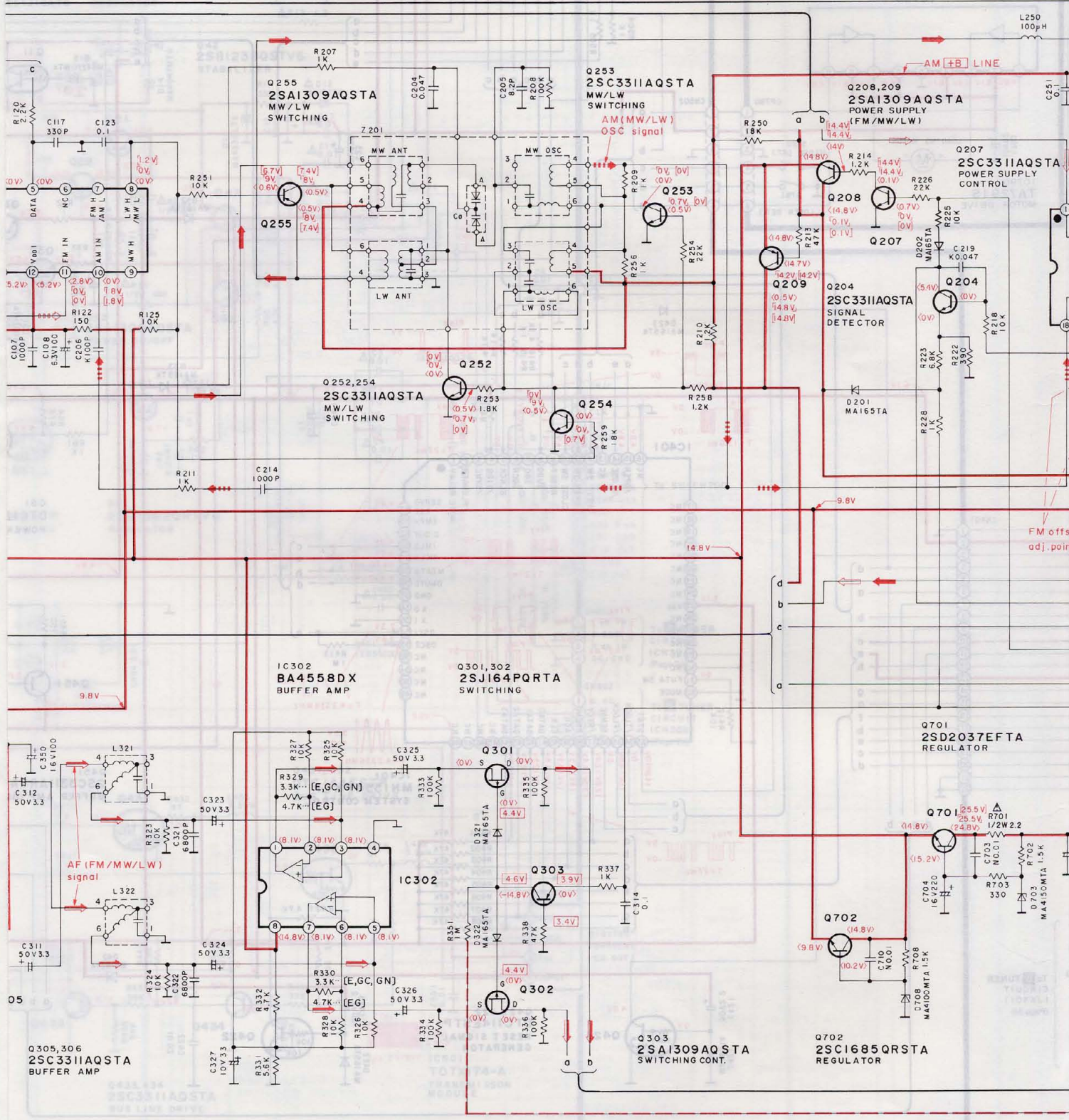


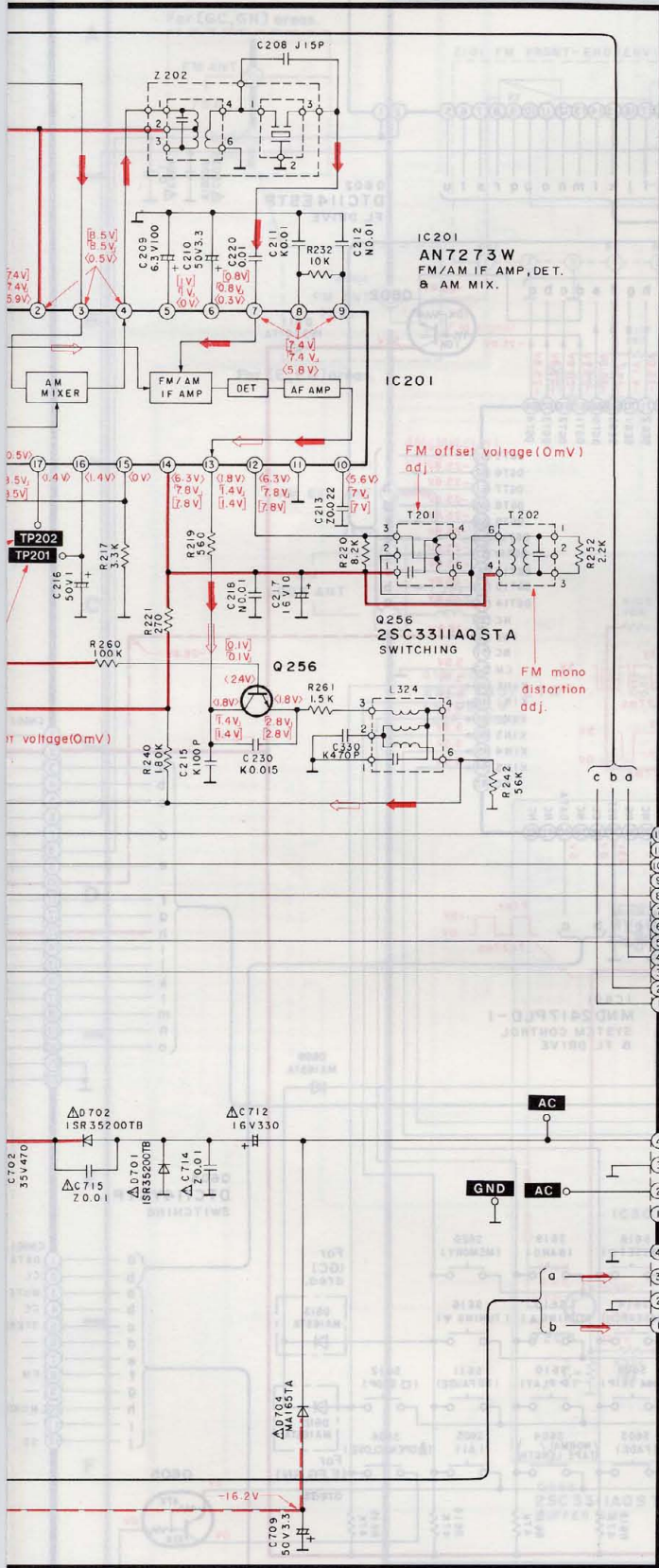


SCHEMATIC DIAGRAM (Tuner circuit) (Parts list on pages 40~44)

B TUNER CIRCUIT



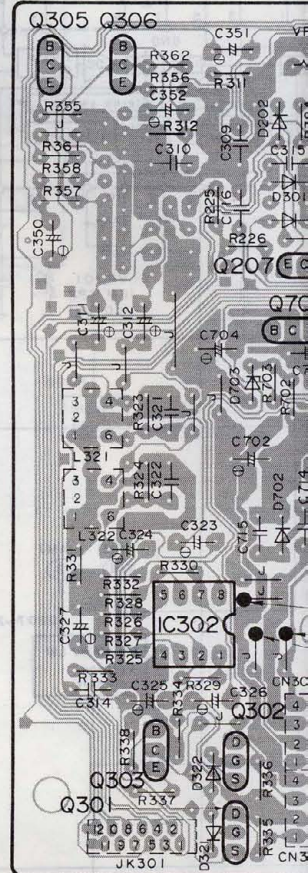
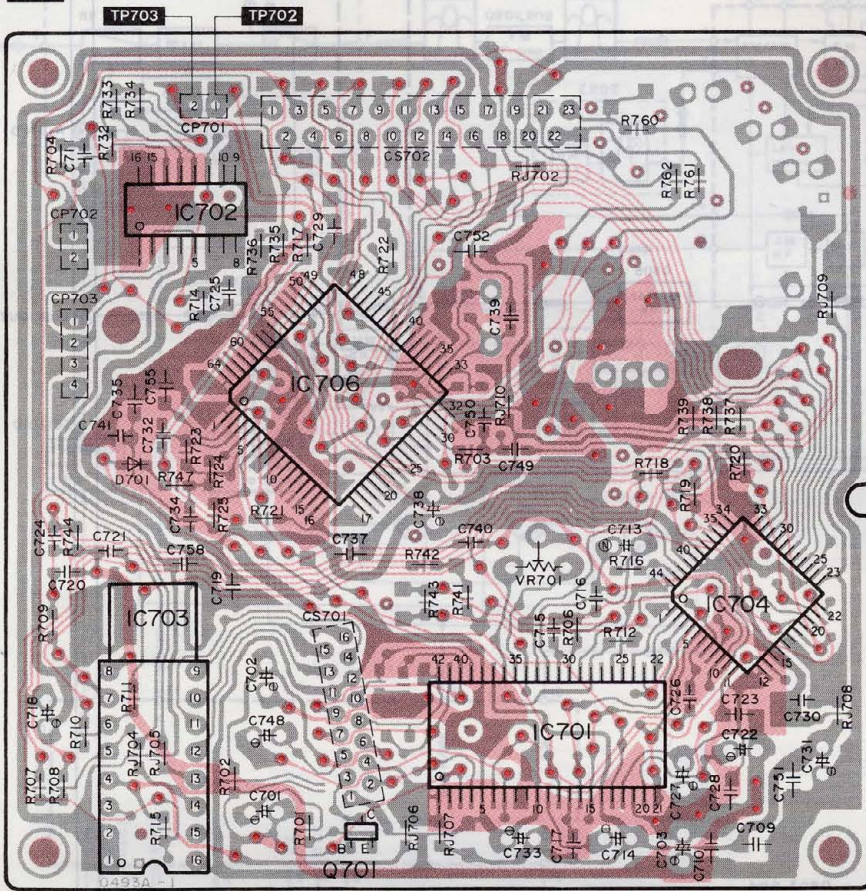




PRINTED CIRCUIT BOARDS (Parts list on pages 40~44)

A SERVO P.C.B.

B TUNER P.C.B.

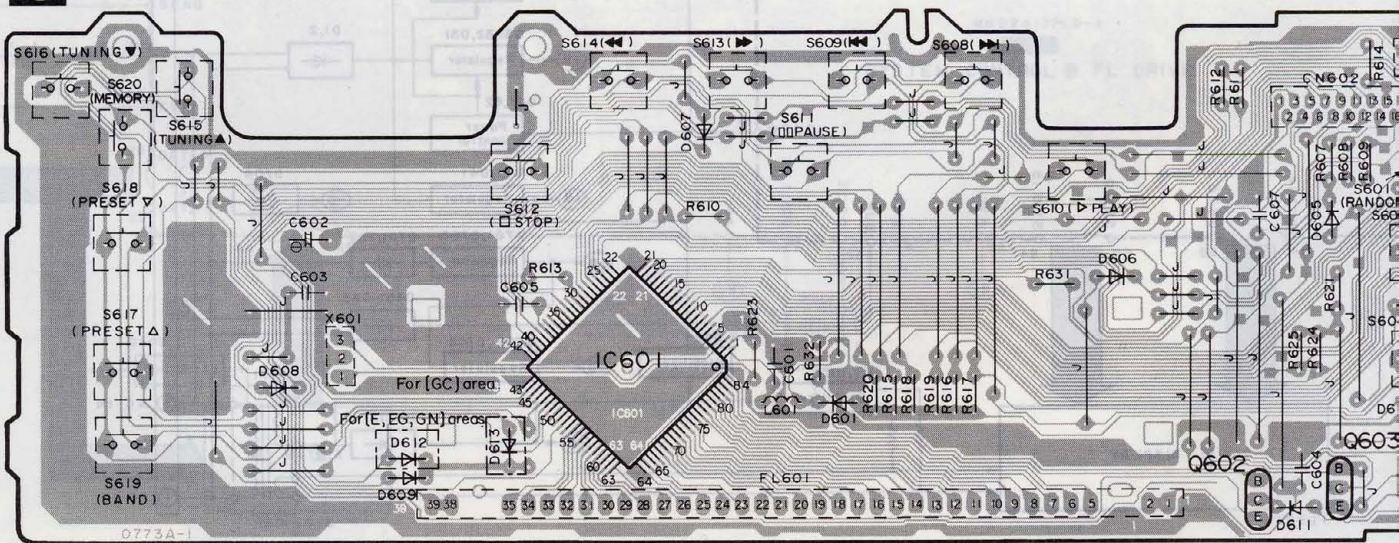


Notes:

- The circuit shown in (■) on the conductor indicates printed circuit on the back side of the printed circuit board.
- The circuit shown in (■) on the conductor indicates printed circuit on the front side of the printed circuit board.
- The symbols (●) shown in the circuit board indicates connection points between conductors on the front side and back side of the circuit board.

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

C OPERATION P.C.B.



WIRING CONNECTION DIAGRAM

6

7

8

9

10

For [GC,GN] areas.

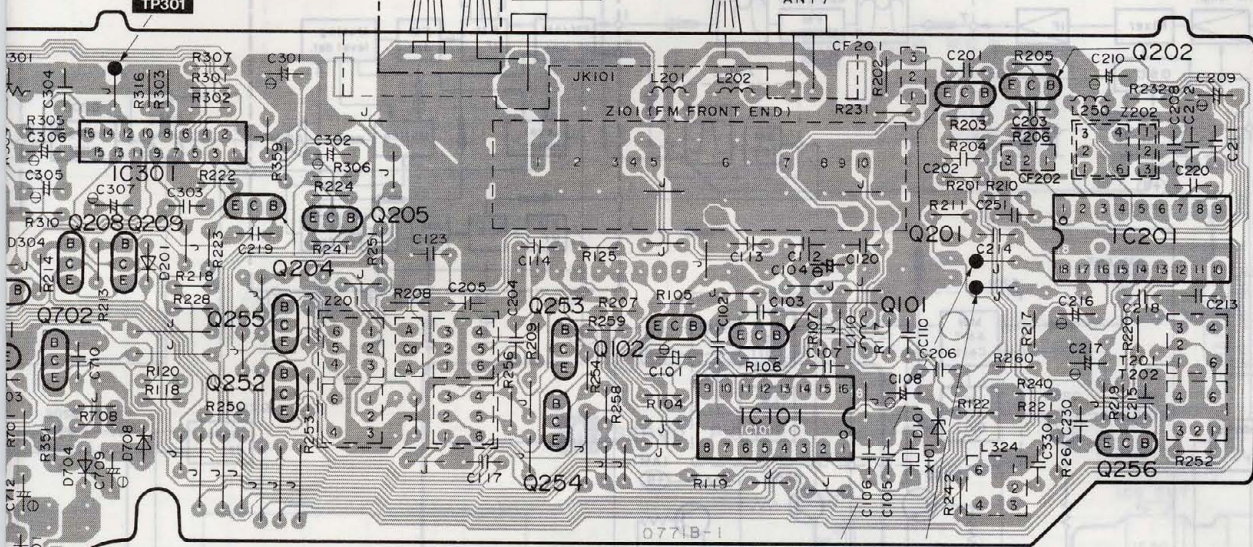
AM ANT

FM MPX VCO adj. point.

(GND-H75Ω)

FM ANT 75Ω

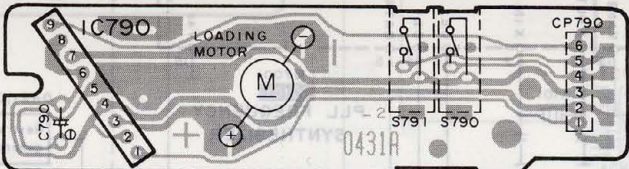
(EXT ANT) (LOOP ANT)



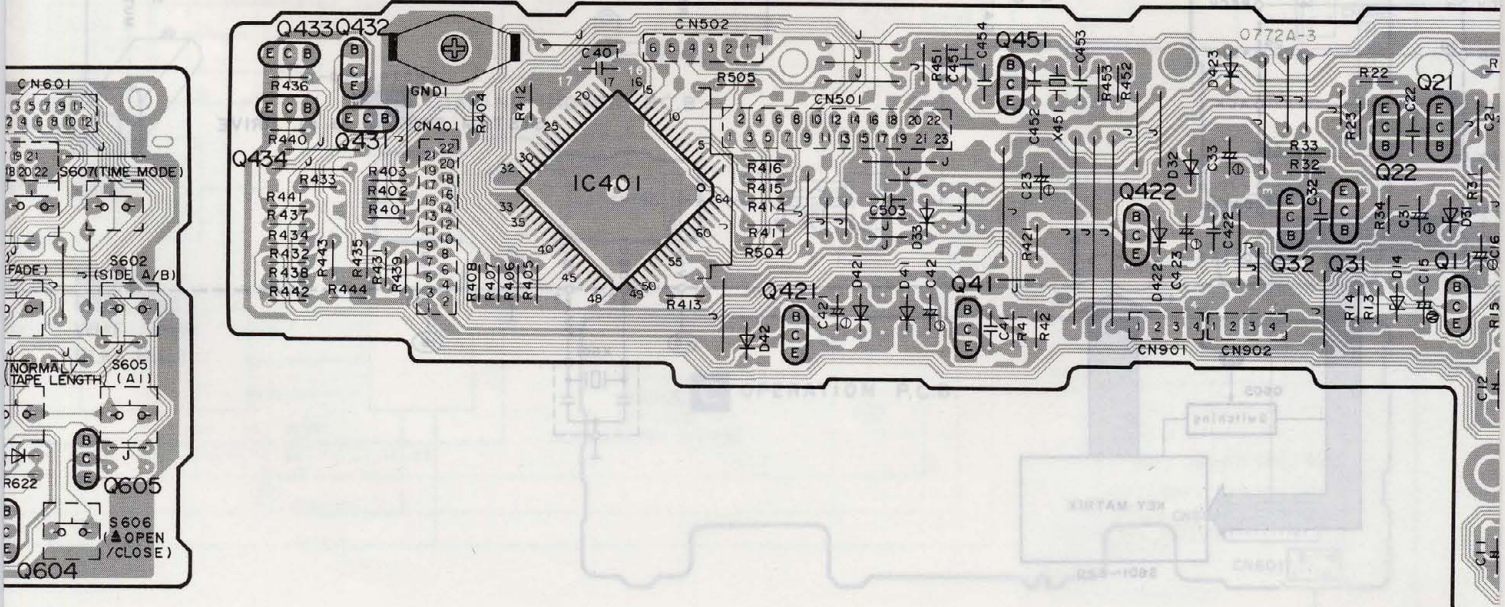
TP202 TP201
FM offset voltage (0mV) adj. point.

GND
AC
AC
Power supply point.

D LOADING MOTOR P.C.B.



E MAIN P.C.B.



WIRING CONNECTION DIAGRAM

AM ANT FM ANT
75 Ω

B TUNER P.C.B.

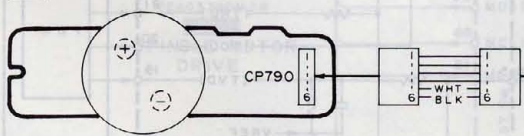
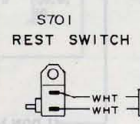
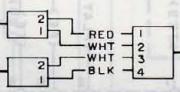
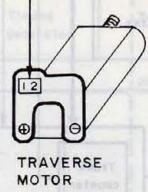
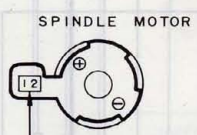
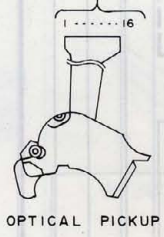
A SERVO P.C.B.

DIGITAL (OPTICAL) SU-CH700
IC501

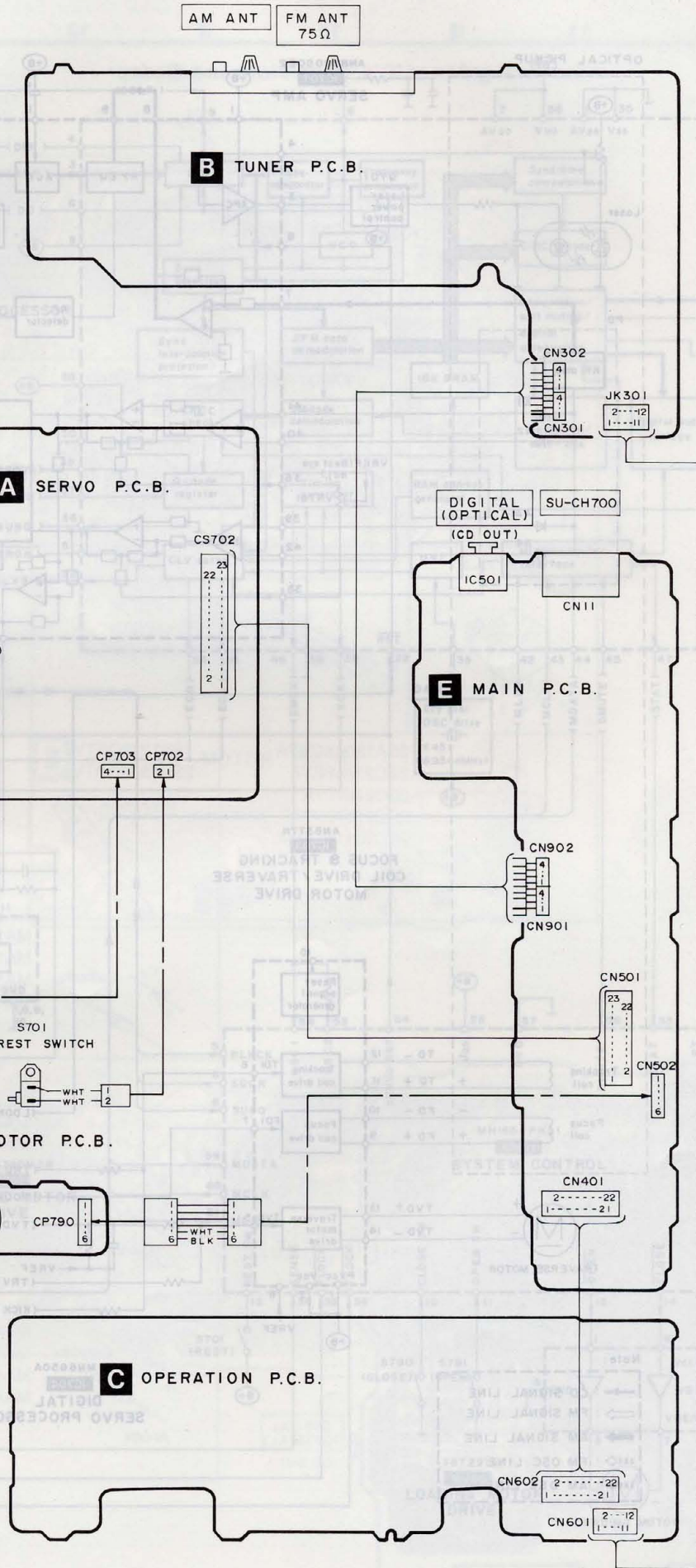
E MAIN P.C.B.

D LOADING MOTOR P.C.B.

C OPERATION P.C.B.

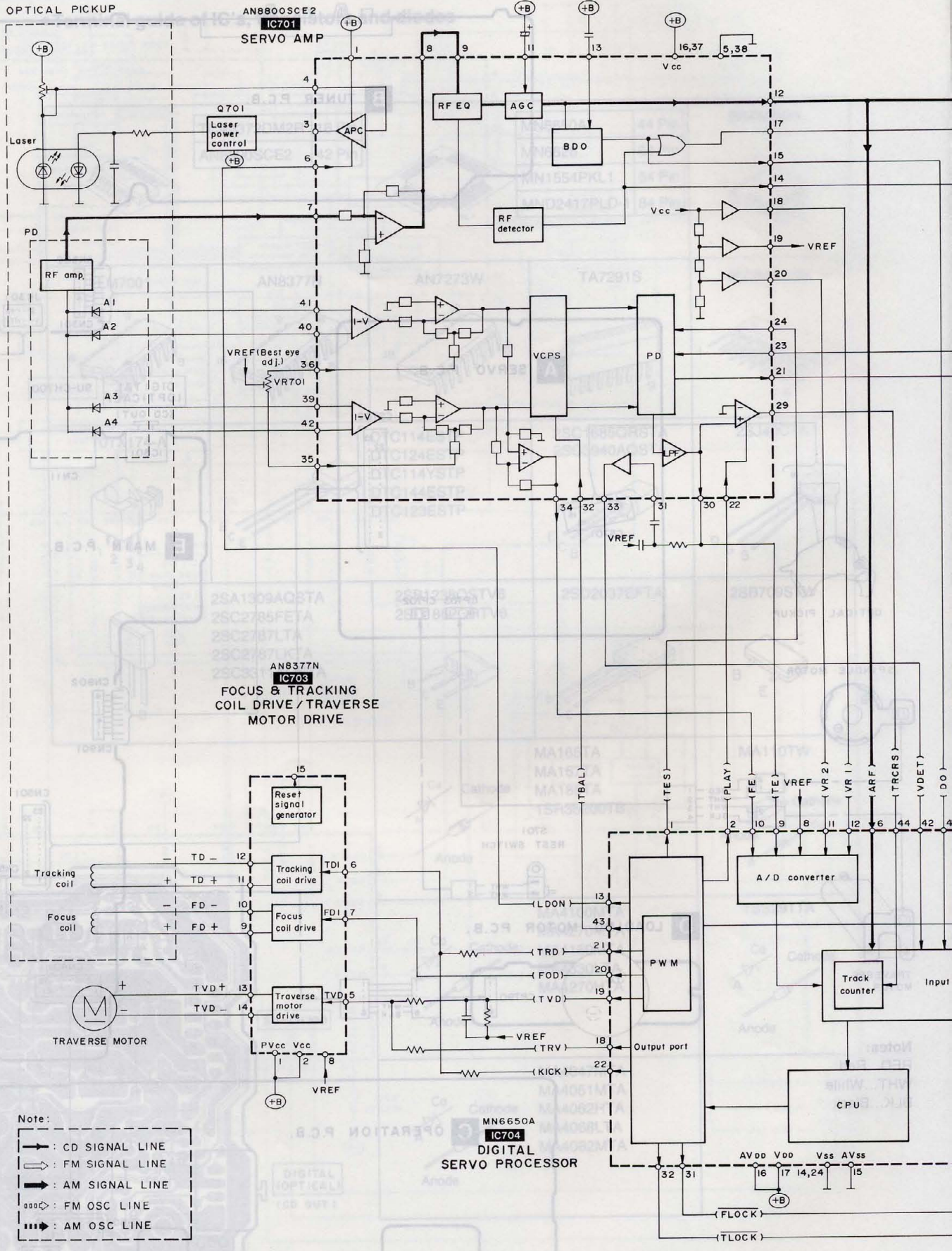


Notes:
RED...Red
WHT...White
BLK...Black

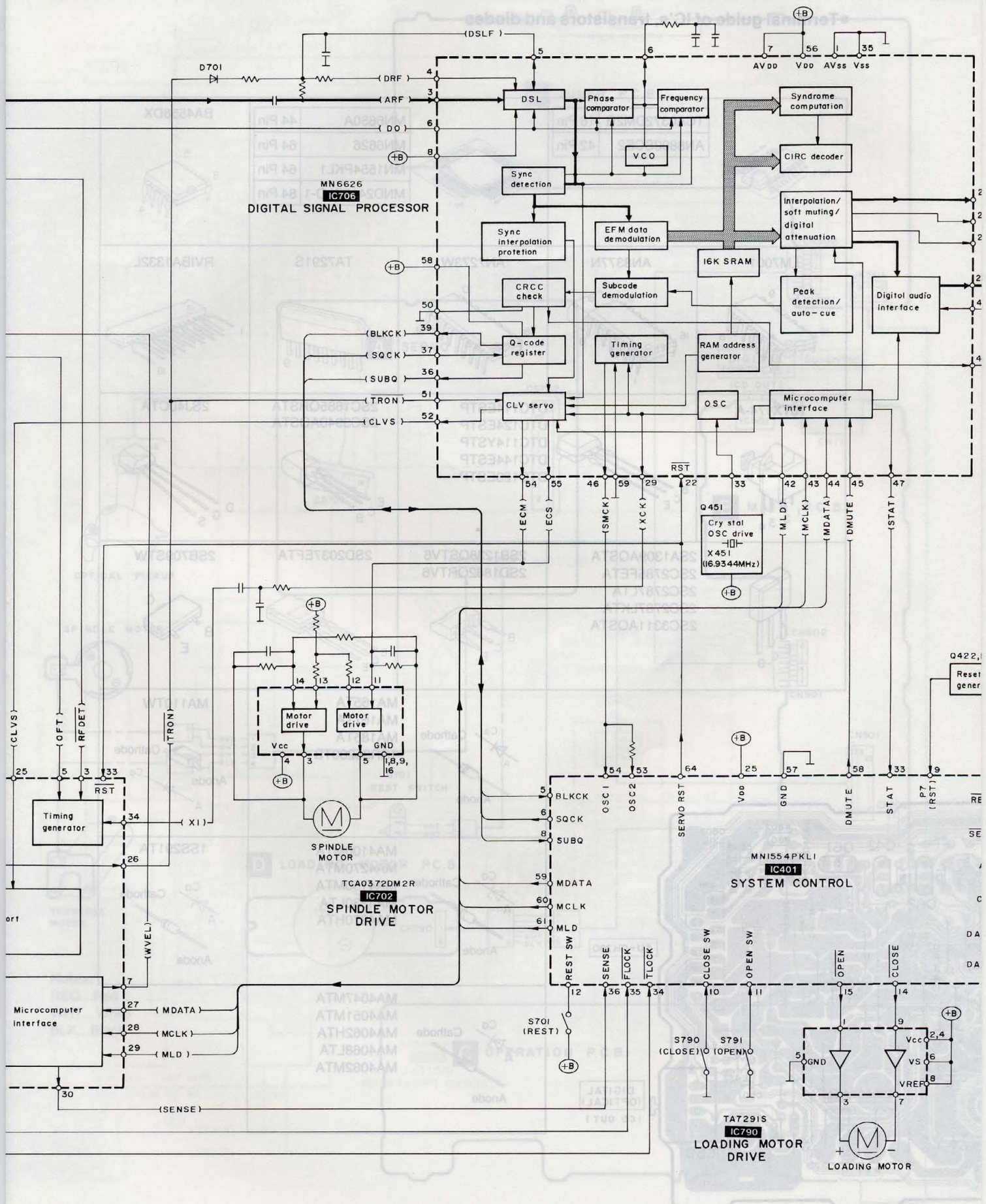


■ BLOCK DIAGRAM

WIRING CONNECTION DIAGRAM



WIRING CONNECTION DIAGRAM



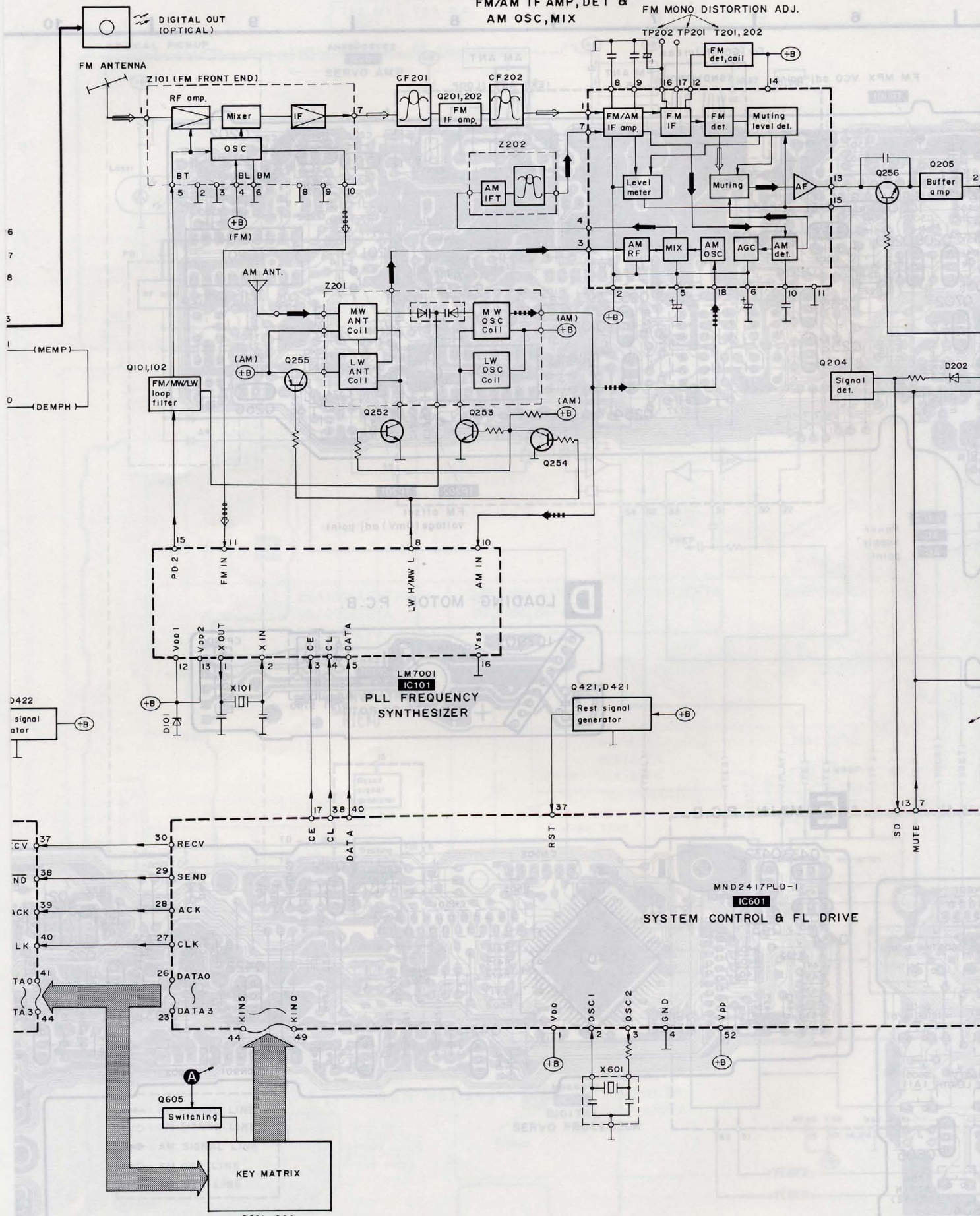
TOTX174-A

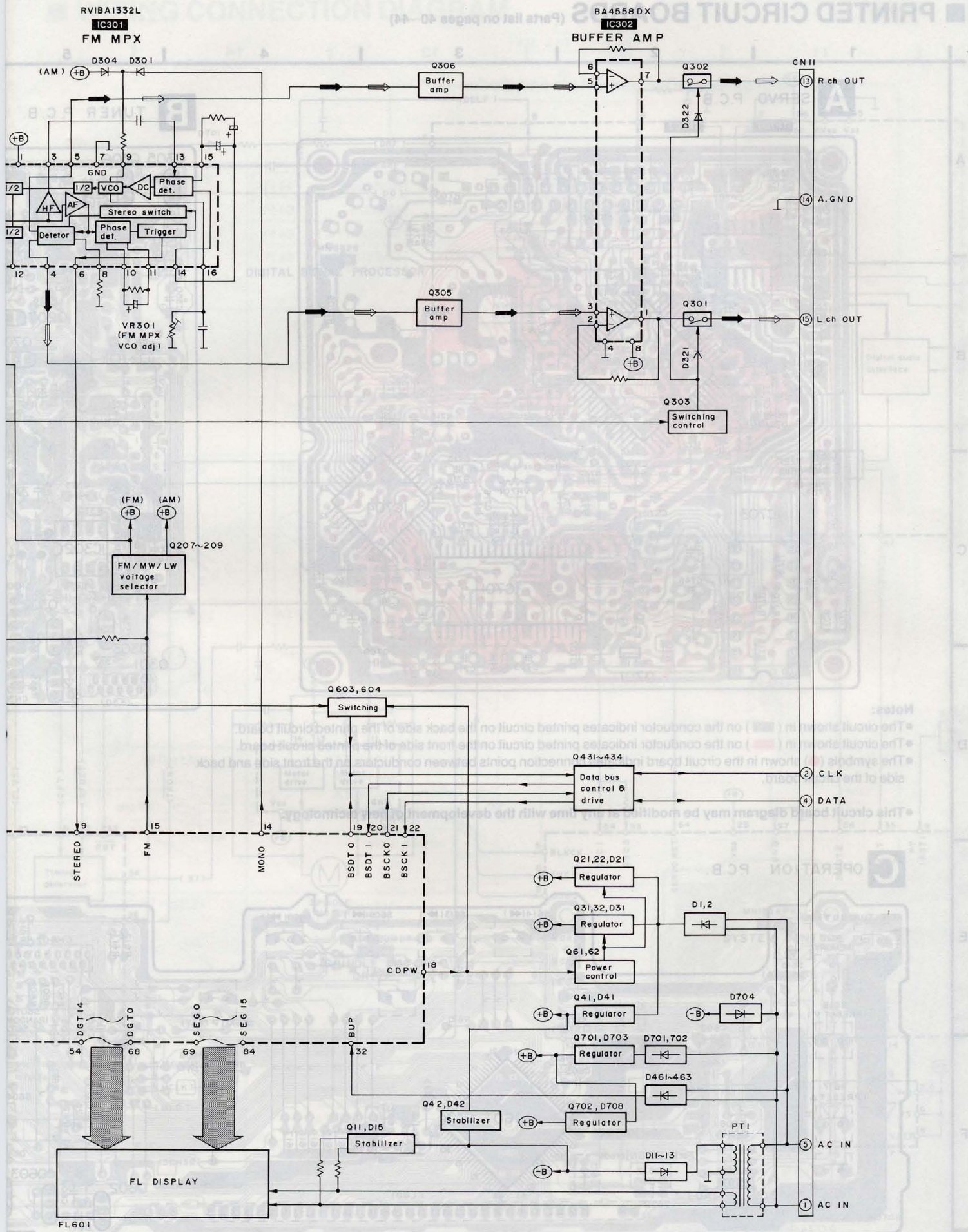
IC501

AN7273W

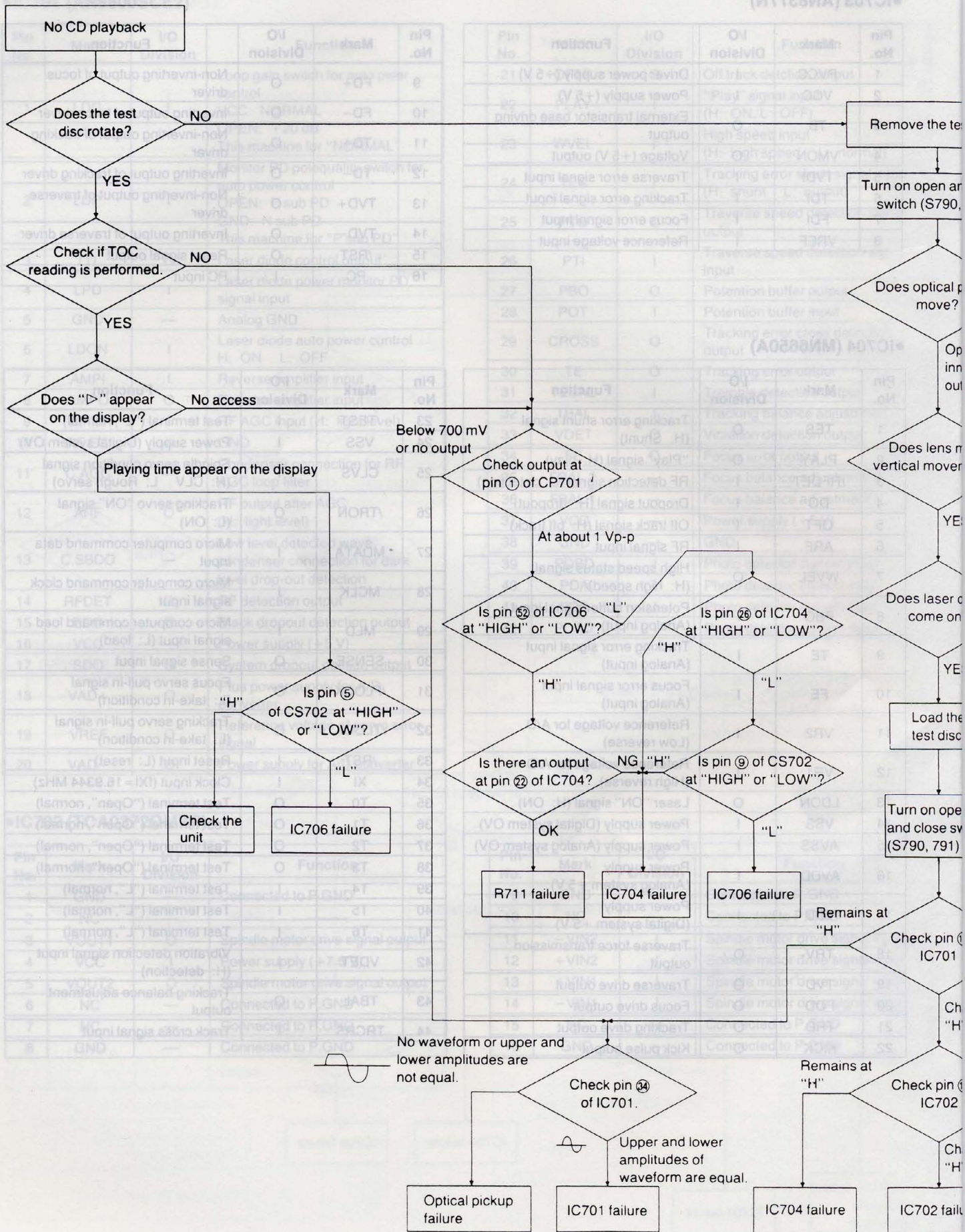
IC201

FM/AM IF AMP, DET & AM OSC, MIX FM MONO DISTORTION ADJ.





■ TROUBLESHOOTING GUIDE



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791)

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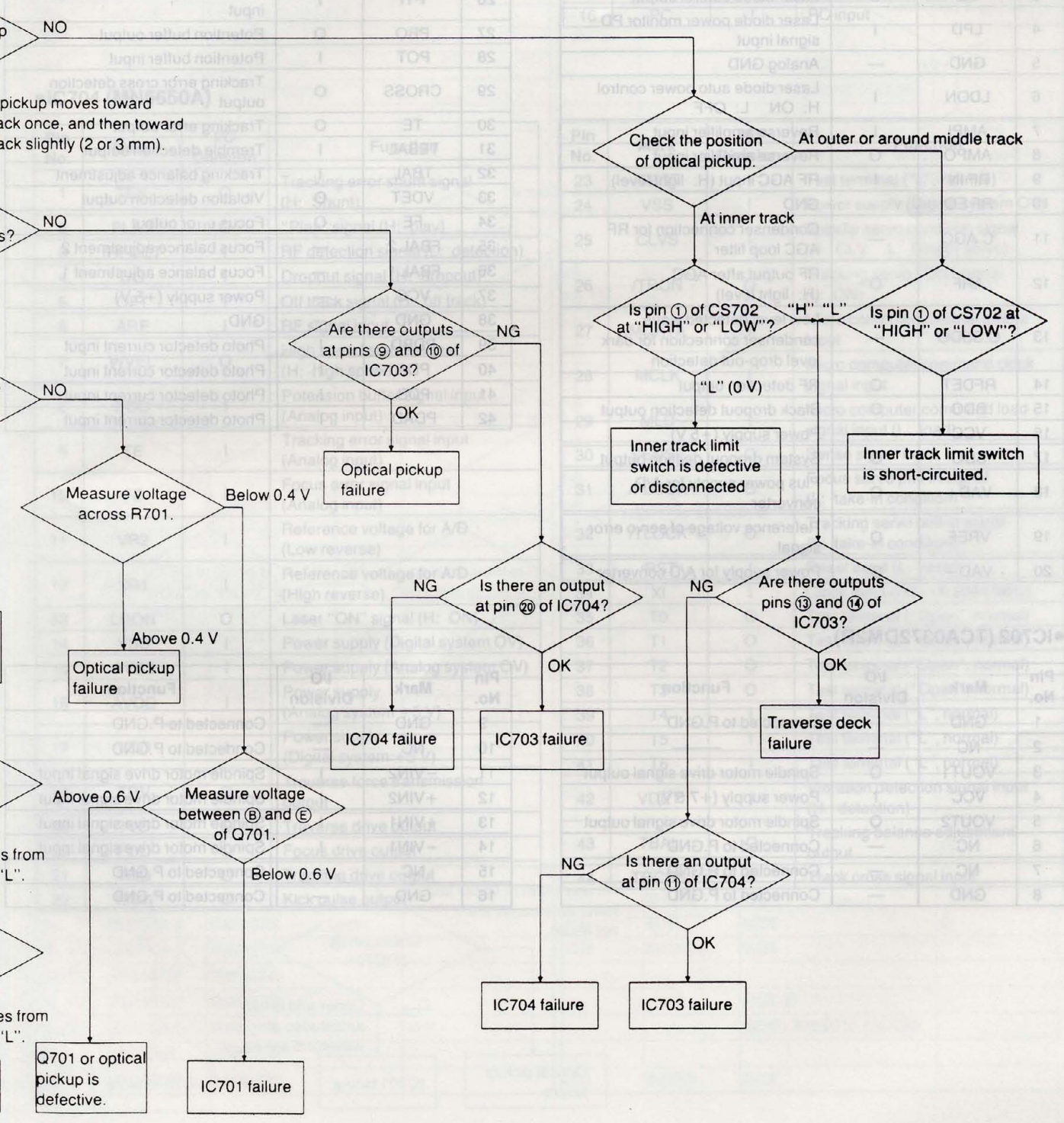
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Pin No.	Marking	Division	Function
1			Off track detector output
2			Play signal input
3			High speed input
4			Traverse error signal input
5			Traverse speed detection signal output
6			Traverse speed detection signal input
7			Potential buffer input
8			Potential buffer output
9			Traverse error cross detection output
10			Traverse error cross detection output
11			Traverse error cross detection output
12			Traverse error cross detection output
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58			Traverse error cross detection output
59			Traverse error cross detection output
60			Traverse error cross detection output



FUNCTION OF IC TERMINALS

•IC701 (AN8800SCE2)

Pin No.	Mark	I/O Division	Function
1	LDG	I	Loop gain switch for auto pwr control VCC: NORMAL OPEN: +20 dB This machine for "NORMAL"
2	LDP	I	Monitor PD polequality switch for auto power control OPEN: P sub PD GND: N sub PD This machine for "P sub PD"
3	LD	O	Laser diode control output
4	LPD	I	Laser diode power monitor PD signal input
5	GND	—	Analog GND
6	LDON	I	Laser diode auto power control H: ON L: OFF
7	AMPI	I	Reverse amplifier input
8	AMPO	O	Reverse amplifier output
9	RF IN	I	RF AGC input (H: light level)
10	RF EQ	—	GND
11	C.AGC	—	Condenser connection for RF AGC loop filter
12	ARF	O	RF output after AGC (H: light level)
13	C.SBDO	—	Low level detected wave condenser connection for dark level drop-out detection
14	RFDET	O	RF detection output
15	BDO	O	Black dropout detection output
16	VCC	—	Power supply (+5 V)
17	SDO	O	System dropout detection output
18	VAD+	O	Plus power supply for A/D converter
19	VREF	O	Reference voltage of servo error signal
20	VAD-	O	Power supply for A/D converter

Pin No.	Mark	I/O Division	Function
21	OFTR	O	Off track detection output
22	PLAY	I	"Play" signal input (H: ON, L: OFF)
23	WVEL	I	High speed input (H: high speed L: normal)
24	TES	I	Tracking error shunt signal input (H: shunt L: output)
25	PTO	O	Traverse speed detection signal output
26	PTI	I	Traverse speed detection signal input
27	PBO	O	Potention buffer output
28	POT	I	Potention buffer input
29	CROSS	O	Tracking error cross detection output
30	TE	O	Tracking error output
31	TEBAL	I	Tremble detection output
32	TBAL	I	Tracking balance adjustment
33	VDET	O	Vibration detection output
34	FE	O	Focus error output
35	FBAL 2	—	Focus balance adjustment 2
36	FBAL 1	—	Focus balance adjustment 1
37	VCC	—	Power supply (+5 V)
38	GND	—	GND
39	PDBD	I	Photo detector current input
40	PDA	I	Photo detector current input
41	PDB	I	Photo detector current input
42	PDAD	I	Photo detector current input

•IC702 (TCA0372DM2R)

Pin No.	Mark	I/O Division	Function
1	GND	—	Connected to P.GND
2	NC	—	—
3	VOU1	O	Spindle motor drive signal output
4	VCC	I	Power supply (+7.5 V)
5	VOU2	O	Spindle motor drive signal output
6	NC	—	Connected to P.GND
7	NC	—	Connected to P.GND
8	GND	—	Connected to P.GND

Pin No.	Mark	I/O Division	Function
9	GND	—	Connected to P.GND
10	NC	—	Connected to P.GND
11	-VIN2	I	Spindle motor drive signal input
12	+VIN2	I	Spindle motor drive signal input
13	+VIN1	I	Spindle motor drive signal input
14	-VIN1	I	Spindle motor drive signal input
15	NC	—	Connected to P.GND
16	GND	—	Connected to P.GND

●IC703 (AN8377N)

Pin No.	Mark	I/O Division	Function
1	PVCC	I	Driver power supply (+5 V)
2	VCC	I	Power supply (+5 V)
3	TB	O	External transistor base driving output
4	VMON	O	Voltage (+5 V) output
5	TVDI	I	Traverse error signal input
6	TDI	I	Tracking error signal input
7	FDI	I	Focus error signal input
8	VREF	I	Reference voltage input

Pin No.	Mark	I/O Division	Function
9	FD+	O	Non-inverting output of focus driver
10	FD-	O	Inverting output of focus driver
11	TD+	O	Non-inverting output of tracking driver
12	TD-	O	Inverting output of tracking driver
13	TVD+	O	Non-inverting output of traverse driver
14	TVD-	O	Inverting output of traverse driver
15	/RST	O	Reset signal output
16	PC	I	PC input

●IC704 (MN6650A)

Pin No.	Mark	I/O Division	Function
1	TES	O	Tracking error shunt signal (H: Shunt)
2	PLAY	O	"Play" signal (H: play)
3	/RFDET	I	RF detection signal (L: detection)
4	DO	I	Dropout signal (H: dropout)
5	OFT	I	Off track signal (H: off track)
6	ARF	I	RF signal input
7	WVEL	O	High speed status signal (H: high speed)
8	PBO	I	Potension buffer signal input (Analog input)
9	TE	I	Tracking error signal input (Analog input)
10	FE	I	Focus error signal input (Analog input)
11	VR2	I	Reference voltage for A/D (Low reverse)
12	VR1	I	Reference voltage for A/D (High reverse)
13	LDON	O	Laser "ON" signal (H: ON)
14	VSS	I	Power supply (Digital system OV)
15	AVSS	I	Power supply (Analog system OV)
16	AVDD	I	Power supply (Analog system +5 V)
17	VDD	I	Power supply (Digital system +5 V)
18	TRV	O	Traverse force transmission output
19	TVD	O	Traverse drive output
20	FOD	O	Focus drive output
21	TRD	O	Tracking drive output
22	KICK	O	Kick pulse output

Pin No.	Mark	I/O Division	Function
23	/TEST	I	Test terminal ("L", normal)
24	VSS	I	Power supply (Digital system OV)
25	CLVS	I	Spindle servo condition signal (H: CLV L: Rough servo)
26	/TRON	O	Tracking servo "ON" signal (L: ON)
27	MDATA	I	Micro computer command data input
28	MCLK	I	Micro computer command clock signal input
29	MLD	I	Micro computer command load signal input (L: load)
30	SENSE	O	Sense signal input
31	/FLOCK	O	Focus servo pull-in signal (L: take-in condition)
32	/TLOCK	O	Tracking servo pull-in signal (L: take-in condition)
33	/RST	I	Reset input (L: reset)
34	XI	I	Clock input (fXI= 16.9344 MHz)
35	T0	O	Test terminal ("Open", normal)
36	T1	O	Test terminal ("Open", normal)
37	T2	O	Test terminal ("Open", normal)
38	T3	O	Test terminal ("Open", normal)
39	T4	I	Test terminal ("L", normal)
40	T5	I	Test terminal ("L", normal)
41	T6	I	Test terminal ("L", normal)
42	VDET	I	Vibration detection signal input (H: detection)
43	TBAL	O	Tracking balance adjustment output
44	TRCRS	I	Track cross signal input

●IC706 (MN6626)

Pin No.	Mark	I/O Division	Function
1	AVSS	I	GND for DSL, PLL circuit (OV)
2	IREF	I	Reference electric current input
3	ARF	I	RF signal input
4	DRF	I	DSL bias
5	DSLIF	O	DSL loop filter
6	PLLF	—	PLL loop filter
7	AVDD	I	Power supply for DSL, PLL
8	RSEL	I	RF signal quality decision terminal
9	TBUS7	O	Test terminal (normal: Open)
16	TBUS0		
17	FLAG	O	Error/frag output
18	IPFLAG	O	Interpolation flag
19	FCLK	O	Crystal frame clock
20	BYTCK	O	Byte clock
21	WDCK	O	Ward clock
22	/RST	I	Reset input
23	TX	O	Digital audio interface output
24	LDG	O	Lch deglitch signal
25	RDG	O	Rch deglitch signal
26	SRDATA	O	Serial data signal (To GND)
27	SCK	O	Bit clock for SRDATA (To GND)
28	LRCK	O	L, R discrimination signal (To GND)
29	XCK	O	Crystal oscillator clock output
30	PMCK	O	$\frac{1}{192}$ devided frequency clock signal of crystal oscillator
31	CSEL	I	Test terminal (normal: L)
32	PSEL	I	Test terminal (normal: L)
33	X1	—	Crystal oscillator circuit input
34	X2	—	Crystal oscillator circuit output
35	VSS	I	Power supply (OV)
36	SUBQ	O	Sub-code Q-code output
37	SQCK	I	External clock for sub-code Q resistor
38	/CLDCK	O	Sub-code frame clock signal
39	BLKCK	O	Sub-code block clock signal
40	DEMPH	O	De-emphasis ON signal
41	MEMP	I	Emphasis signal input (For digital audio interface)
42	MLD	I	Micro computer command load signal input (L: load)

Pin No.	Mark	I/O Division	Function
43	MCLK	I	Micro computer command clock signal input
44	MDATA	I	Micro computer command data input
45	DMUTE	I	Muting input
46	SMCK	O	MSEL = $\frac{1}{2}$ devided frequency clock signal of crystal oscillator when "H" level MSEL = $\frac{1}{4}$ devided frequency clock signal of crystal oscillator when "L" level
47	STAT	O	Status signal
48	CRC	O	Sub-code CRC check result (H: OK, L: NG)
49	SUBC	O	Sub-code serial output data
50	SBCK	I	Clock input for sub-code serial output
51	/TRON	I	Tracking servo ON signal
52	CLVS	O	Spindle servo phase synchronization condition signal (H: CLV L: rough servo)
53	PC	O	Spindle motor ON signal (L: ON)
54	ECM	O	Spindle motor drive signal (Force mode output)
55	ECS	O	Spindle motor drive signal (Servo error signal output)
56	VDD	I	Power supply (+5 V)
57	/TEST	I	Test terminal (normal: H)
58	SSEL	I	SUBQ terminal Output mode switch terminal (H: Q code buffer mode)
59	MSEL	I	SMCK terminal output frequency switch terminal
60	RESY	O	Resynchronization signal of frame synchronization (H: synchronization, L: not)
61	DO	I	Drop-out signal (H: drop-out)
62	EFM	O	EFM signal output
63	PCK	O	PLL extract clock output
64	PDO	—	Phase comparison signal of EFM signal and PCK signal

REPLACEMENT PARTS LIST

●IC401 (MN1554PKL1)

Pin No.	Mark	I/O Division	Function
1	MUTE RELAY	—	(Not used, open)
2	/PLUNGER	—	(Not used, open)
3	/SYNC	O	(Not used, open)
4	/SIRQ	I	Not used (connected to +5 V)
5	BLKCK	I	Sub-code block (Q data) clock input (75 Hz)
6	SQCK	I	Sub-code block (Q data) clock input (7.35 kHz)
7	SBO	I	(Not used, open)
8	SUBQ	I	Sub-code (Q data) input
9	RESET	I	Reset signal input
10	CLOSE SW	I	Loading switch close detection terminal
11	OPEN SW	I	Loading switch open detection terminal
12	REST SW	I	Rest switch detection terminal
13	NC	—	Not used connected to GND
14	/CLOSE	O	Loading motor "Close" command
15	/OPEN	O	Loading motor "Open" command
16	NC	O	Not used connected to GND
17	NC	O	Muting control (Not used, open)
18	NC	O	Traverse servo control (Not used, open)
19	NC	—	(Not used, open)
20	NC	O	Traverse "Reverse" command signal (Not used, open)
21	NC	O	Traverse "Forward" command signal (Not used, open)
22	NC	O	Optical servo IC control signal [KICKR: Kick direction (reverse) command] (Not used, open)
23	NC	O	Optical servo IC control signal [KICKF: Kick direction (forward) command] (Not used, open)
24	NC	O	Optical servo IC control (TRON: Tracking servo) (Not used, open)
25	VDD	I	Power supply (connected to +5 V)
26	NC	O	(Not used, open)
27	NC	O	(Not used, open)

Pin No.	Mark	I/O Division	Function
28	NC	O	Optical servo IC control signal (FOON: Focus servo) (Not used, open)
29	NC	I	(Not used, connected to GND)
30	NC	I	(Not used, connected to GND)
31	FUTA SW	I	(Not used, connected to R412)
32	MODE	I	(Not used, connected to GND)
33	STAT	I	Processing status input from signal processing LSI
34	/TLOCK	I	TOC reading control (ON at "L")
35	/FLOCK	I	Optical servo condition (focus) input
36	SENSE	I	Optical servo condition (track cross) input
37	/RECV	I	Data receipt command signal
38	/SEND	I	Data transmission command signal
39	ACK	I	Data discrimination signal
40	CLK	I	Data lock signal
41 }	DATA0	I	Key scan signal
44	DATA3		
45 }	NC	I	(Not used, open)
52			
53	OSC2	I	Clock terminal
54	OSC1	I	Clock input
55	X1	I	Optical servo condition input (Not used, connected to GND)
56	X0	O	(Not used, open)
57	GND	I	(Not used, connected to GND)
58	DMUTE	O	Muting control
59	MDATA	O	Command data output
60	MCLK	O	Data clock output (command clock signal)
61	/MLD	O	Data output (command load signal)
62	D. OUT	O	Optical output control signal (Not used, open)
63	EMPH	O	Emphasis signal output (Not used, open)
64	SERVO RST	I	Reset signal input

■ IC601 (MND2417PLD-1)

Pin No.	Terminal name	I/O Division	Function
1	VDD	I	Power supply (+5 V)
2	OSC1	O	Crystal oscillator (4 MHz)
3	OSC2	I	
4	GND	I	GND
5, 6	NC	I/O	Not used
7	MUTE	O	Muting (TUNER) signal output
8	TNPW	O	Power down (TUNER) control signal output
9	STEREO	I	FM STEREO DET signal input
10	MULTI	I	TV MULTI DET signal input
11, 12	MAIN SUB	O	TV MULTI DET mood signal output
13	SD	I	Receiving (TUNER) signal input
14	MONO	O	FM MONO control signal output
15	FM	O	FM BAND control signal output
16	TV	O	TV BAND control signal output
17	CE	O	Serial data output
18	CD PW	O	CD POWER ON control signal output
19	BSDT0	O	DATA BUS output
20	BSDT1	I	DATA BUS input
21	BSCK0	O	Clock signal output
22	BSCK1	I	Clock signal input
23	DATA3	I/O	KEY control signal and mechanism control signal data output
24	DATA2	I/O	KEY control signal and CD control signal data output
25	DATA1	I/O	KEY control signal and CD control signal data output
26	DATA 0	I/O	KEY control signal and mechanism control signal data output

Pin No.	Terminal name	I/O Division	Function
27	CLK	I/O	Clock signal output
28	ACK	I/O	Acknowledge clock signal output (mechanism)
29	SEND	O	Mechanism request data output (send request)
30	RECV	O	Mechanism request data output (receipt request)
31	NC	—	Not used
32	BUP	I	Power supply detection signal input
33 34 35 36	NC LDAI NC NC	—	Not used
37	RST	I	Reset signal input
38	CL	O	Serial clock output
39	NC	—	Not used
40	DATA	O	Serial data output
41 43	NC	—	Not used
44 49	KIN5 KIN0	I	KEY control signal input
50	CM	I	Not used (connect to GND)
51	NC	—	Not used
52	VPP	I	Pull up voltage input
53	NC	—	Not used
54 68	DGT14 DGT0	O	Digit signal output for FL
69 84	SEG0 SEG15	O	Segment signal output for FL

REPLACEMENT PARTS LIST

Notes : * Important safety notice:

Components identified by Δ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

* The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.) Parts without these indications can be used for all areas.

* Warning: This product uses a diode. Refer to caution statements on page 2.

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)		Q603	2SC3311A-Q	TRANSISTOR	
				Q604	DTC144ESTP	TRANSISTOR	
				Q605	DTC114YSTP	TRANSISTOR	
IC101	LM7001	I. C, PLL FREQ SYNTHESIZER		Q701	2SD2037EFTA	TRANSISTOR	
IC201	AN7273W	I. C, FM/AM IF/DET/MIX		Q702	2SC1685QRSTA	TRANSISTOR	
IC301	RV1BA1332L	I. C, FM MPX				TRANSISTOR(S)	
IC302	BA4558DX	I. C, BUFFER AMP				(SERVO SCHEMATIC DIAGRAM)	
IC401	MN1554PKL1	I. C, SYSTEM CONTROL					
IC501	TOTX174-A	I. C, T. MODULE		Q701	2SB709S	TRANSISTOR	
IC601	MND2417PLD-1	I. C, SYSTEM CONT. /FL DRIVE				DIODE(S)	
IC790	TA7291S	I. C, MOTOR DRIVE					
		INTEGRATED CIRCUIT(S)		D1, 2	1SR35200TB	DIODE	Δ
		(SERVO SCHEMATIC DIAGRAM)		D11	MA4330L	DIODE	
IC701	AN8800SCE2	I. C, SERVO. AMP.		D12, 13	MA167	DIODE	Δ
IC702	TCA0372DM2R	I. C, SPINDLE MOTOR DRIVE		D14	MA4047MTA	DIODE	
IC703	AN8377N	I. C, TRAVERSE MOTOR/DRIVE		D15	MA4270	DIODE	
IC704	MN6650	I. C, DIGITAL SERVO PRO.		D21	MA4082MTA	DIODE	
IC706	MN6626	I. C, DIGITAL SIGNAL PRO.		D31	MA4062-H	DIODE	
		TRANSISTOR(S)		D32	MA185TA	DIODE	
				D33	MA165	DIODE	
Q11	DTC143TSTP	TRANSISTOR		D41	MA4068L	DIODE	
Q21, 22	2SD2037EFTA	TRANSISTOR		D42	MA165	DIODE	
Q31, 32	2SD2037EFTA	TRANSISTOR		D101	MA4051MTA	DIODE	
Q41	2SD1862QRTV6	TRANSISTOR		D201, 202	MA165	DIODE	
Q42	2SB1238QSTV6	TRANSISTOR		D301	MA165	DIODE	
Q61	DTC124EST	TRANSISTOR		D304	MA165	DIODE	
Q62	2SA1309A-R	TRANSISTOR		D321, 322	MA165	DIODE	
Q101, 102	2SC2785FE	TRANSISTOR		D421-423	MA165	DIODE	
Q201, 202	2SC2787L	TRANSISTOR		D461, 462	1SR35200TB	DIODE	Δ
Q204, 205	2SC3311A-Q	TRANSISTOR		D463	MA4051MTA	DIODE	
Q207	2SC3311A-Q	TRANSISTOR		D601	1SS291TA	DIODE	
Q208, 209	2SA1309A-R	TRANSISTOR		D605-609	MA165	DIODE	
Q252-254	2SC3311A-Q	TRANSISTOR		D610, 611	1SS291TA	DIODE	
Q255	2SA1309A-R	TRANSISTOR		D612	MA165	DIODE	(E, EG, GN)
Q256	2SC3311A-Q	TRANSISTOR		D613	MA165	DIODE	(GC)
Q301, 302	2SJ164PQRTA	TRANSISTOR		D701, 702	1SR35200TB	DIODE	Δ
Q303	2SA1309A-R	TRANSISTOR		D703	MA4150M	DIODE	
Q305, 306	2SC3311A-Q	TRANSISTOR		D704	MA165	DIODE	Δ
Q421, 422	DTC114ESTP	TRANSISTOR		D708	MA4100MTA	DIODE	
Q431, 432	DTC144ESTP	TRANSISTOR				DIODE(S)	
Q433, 434	2SC3311A-Q	TRANSISTOR				(SERVO SCHEMATIC DIAGRAM)	
Q451	2SC3311AR	TRANSISTOR					
Q602	DTC114ESTP	TRANSISTOR		D701	MA110TW	DIODE	

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		VARIABLE RESISTOR(S)		S604	EVQ21405R	S. W, NORMAL/TAPE LENGTH	
				S605	EVQ21405R	S. W, AI	
				S606	EVQ21405R	S. W, OPEN/CLOSE	
VR301	EVNDXAA00B53	V. R, FM MPX VCO ADJ.		S607	EVQ21405R	S. W, TIME MODE	
		VARIABLE RESISTOR(S)		S608	EVQ21405R	S. W, F. SKIP	
		(SERVO SCHEMATIC DIAGRAM)		S609	EVQ21405R	S. W, R. SKIP	
				S610	EVQ21405R	S. W, PALY	
VR701	EVNDXAA00B14	V. R, BEST EYE ADJ.		S611	EVQ21405R	S. W, PAUSE	
		COMPONENT COMBINATION (S)		S612	EVQ21405R	S. W, STOP	
				S613	EVQ21405R	S. W, F. SEARCH	
Z101	ENV17281G1	FM FRONT END		S614	EVQ21405R	S. W, R. SEARCH	
Z201	RLA6Z002M-T	COMPONENT COMBINATION		S615	EVQ21405R	S. W, TUNING UP	
Z202	RL12Z003M-T	COMPONENT COMBINATION		S616	EVQ21405R	S. W, TUNING DOWN	
		COIL (S)		S617	EVQ21405R	S. W, PRESET UP	
				S618	EVQ21405R	S. W, PRESET DOWN	
L110	RLQZPR68KT-Y	COIL		S619	EVQ21405R	S. W, BAND	
L201, 202	ELEPLR22MA	COIL		S620	EVQ21405R	S. W, MEMORY	
L250	RLQZP101KT-Y	COIL		S790	RSH1A005	S. W, LOADING CLOSE DETECT	
L321, 322	RLM2B003M-K	COIL		S791	RSH1A005	S. W, LOADING OPEN DETECT	
L324	SLM1B10M-1M	COIL				SWITCH(ES)	
L431, 432	RLQZP3R3KT-Y	COIL				(SERVO SCHEMATIC DIAGRAM)	
L601	ELEXT101KA9	COIL		S701	SSHDS-E	S. W, REST	
		TRANSFORMER (S)				CONNECTOR (S)	
				CN11	RJT055K015-1	CONNECTOR (15P)	
PT1	RTP1I4G001AX	POWER TRANSFORMER	△	CN301, 302	RJS1A6604	SOCKET (4P)	
T201	RL14B002M-Z	TRANSFORMER		CN401	RJS22Q11ZA	SOCKET (22P)	
T202	RL14B003M-Z	TRANSFORMER		CN501	RJS1A6823	SOCKET (23P)	
		FILTER (S)		CN502	RJS1A6606	SOCKET (6P)	
				CN601	RJS12Q11ZA	SOCKET (12P)	
CF201	RLFFETNGA01L	CERAMIC FILTER		CN602	RJS22Q11ZA	SOCKET (22P)	
CF202	RLFFETNGA02L	CERAMIC FILTER		CN901, 902	RJS1A6604	SOCKET (4P)	
		OSCILLATOR (S)		CP790	RJP6G17ZA	CONNECTOR (6P)	
						CONNECTOR (S)	
X101	SVQ49U722-S	OSCILLATOR				(SERVO SCHEMATIC DIAGRAM)	
X451	SVQAT169T-S	OSCILLATOR		CP701	RJP2G17ZA	CONNECTOR (2P)	
X601	EF0GC4234T4	OSCILLATOR		CP702	RJP2G17ZA	CONNECTOR (2P)	
		DISPLAY TUBE		CP703	RJP4G17ZA	CONNECTOR (4P)	
				CS701	RJU035T016-1	SOCKET (16P)	
FL601	RSL0111-F	DISPLAY TUBE	△	CS702	RJS1A6723-1Q	SOCKET (23P)	
		SWITCH(ES)				JACK (S)	
S601	EVQ21405R	S. W, RANDOM		JK101	RJH4202M	ANTENNA TERMINAL	(E, EG)
S602	EVQ21405R	S. W, SIDE A/B		JK101	RJH4405-1M	ANTENNA TERMINAL	(GC, GN)
S603	EVQ21405R	S. W, FADE		JK301	RJS12Q11ZA	SOCKET (12P)	

Notes : * Capacity values are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF) F-Farads (F)
 * Resistance values are in ohms, unless specified otherwise, 1K=1,000(OHM) , 1M=1,000k(OHM)

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
		RESISTORS	R228	ERDS2TJ102	1/4W 1K	R433	ERDS2TJ102	1/4W 1K
			R231	ERDS2TJ331	1/4W 330	R434	ERDS2TJ470	1/4W 47
			R232	ERDS2TJ103	1/4W 10K	R435	ERDS2TJ223	1/4W 22K
R11	ERDS2TJ331	1/4W 330	R240	ERDS2TJ184T	1/4W 180K	R436, 437	ERDS2TJ393	1/4W 39K
R13, 14	ERDS2TJ471	1/4W 470 Δ	R241	ERDS2TJ102	1/4W 1K	R438	ERDS2TJ470	1/4W 47
R15	ERDS2TJ1R2	1/4W 1.2 Δ	R242	ERDS2TJ563	1/4W 56K	R439	ERDS2TJ223	1/4W 22K
R21	ERDS1FVJ221T	1/2W 220 Δ	R250	ERDS2TJ183T	1/4W 18K	R440, 441	ERDS2TJ393	1/4W 39K
R22, 23	ERDS2TJ1R0	1/4W 1.0	R251	ERDS2TJ103	1/4W 10K	R442	ERDS2TJ470	1/4W 47
R31	ERDS1FVJ181T	1/2W 180 Δ	R252	ERDS2TJ222	1/4W 2.2K	R443, 444	ERDS2TJ393	1/4W 39K
R32, 33	ERDS2TJ1R0	1/4W 1.0	R253	ERDS2TJ182	1/4W 1.8K	R451	ERDS2TJ151	1/4W 150
R34	ERDS2TJ102	1/4W 1K	R254	ERDS2TJ223	1/4W 22K	R452, 453	ERDS2TJ473	1/4W 47K
R41	ERDS1FVJ680T	1/2W 68 Δ	R256	ERDS2TJ102	1/4W 1K	R461, 462	ERDS2TJ102	1/4W 1K
R42	ERDS2TJ102	1/4W 1K	R258	ERDS2TJ122	1/4W 1.2K	R463	ERDS2TJ103	1/4W 10K
R43	ERDS2TJ821	1/4W 820	R259	ERDS2TJ183T	1/4W 18K	R501	ERDS2TJ822	1/4W 8.2K
R44	ERDS2TJ181T	1/4W 180	R260	ERDS2TJ104	1/4W 100K	R504, 505	ERDS2TJ102	1/4W 1K
R61	ERDS2TJ102	1/4W 1K	R261	ERDS2TJ152	1/4W 1.5K	R607-614	ERDS2TJ332	1/4W 3.3K
R62	ERDS2TJ472	1/4W 4.7K	R301, 302	ERDS2TJ562	1/4W 5.6K	R615-620	ERDS2TJ473	1/4W 47K
R63, 64	ERDS2TJ473	1/4W 47K	R303	ERDS2TJ821	1/4W 820	R621	ERDS2TJ393	1/4W 39K
R104	ERDS2TJ102	1/4W 1K	R304	ERDS2TJ102	1/4W 1K	R622	ERDS2TJ562	1/4W 5.6K
R105	ERDS2TJ103	1/4W 10K	R305	ERDS2TJ912T	1/4W 9.1K	R623	ERDS2TJ102	1/4W 1K
R106	ERDS2TJ561	1/4W 560	R306	ERDS2TJ331	1/4W 330	R624	ERDS2TJ472	1/4W 4.7K
R107	ERDS2TJ102	1/4W 1K	R307	ERDS2TJ102	1/4W 1K	R625	ERDS2TJ103	1/4W 10K
R117	ERDS2TJ181T	1/4W 180	R310-312	ERDS2TJ103	1/4W 10K	R631, 632	ERDS2TJ103	1/4W 10K
R118-120	ERDS2TJ222	1/4W 2.2K	R316	ERDS2TJ223	1/4W 22K	R701	ERDS1FVJ2R2T	1/2W 2.2 Δ
R122	ERDS2TJ151	1/4W 150	R323-328	ERDS2TJ103	1/4W 10K	R702	ERDS2TJ152	1/4W 1.5K
R125	ERDS2TJ103	1/4W 10K	R329	ERDS2TJ332	1/4W 3.3K (E, GC, GN)	R703	ERDS2TJ331	1/4W 330
R201	ERDS2TJ472	1/4W 4.7K	R329	ERDS2TJ472T	1/4W 4.7K (EG)	R708	ERDS2TJ152	1/4W 1.5K
R202	ERDS2TJ331	1/4W 330	R330	ERDS2TJ332	1/4W 3.3K (E, GC, GN)	R801, 802	ERDS2TJ102	1/4W 1K
R203	ERDS2TJ474	1/4W 470K	R330	ERDS2TJ472T	1/4W 4.7K (EG)			RESISTORS
R204	ERDS2TJ331	1/4W 330	R331	ERDS2TJ562	1/4W 5.6K			SERVO SCHEMATIC DIAGRAM
R205	ERDS2TJ474	1/4W 470K	R332	ERDS2TJ472	1/4W 4.7K			
R206	ERDS2TJ331	1/4W 330	R333-336	ERDS2TJ104	1/4W 100K	R701	ERJ6GEYJ100	1/10W 10
R207	ERDS2TJ102	1/4W 1K	R337	ERDS2TJ102	1/4W 1K	R702	ERJ6GEYJ471V	1/10W 470
R208	ERDS2TJ104	1/4W 100K	R338	ERDS2TJ473	1/4W 47K	R703	ERJ6GEYJ102A	1/10W 1K
R209	ERDS2TJ102	1/4W 1K	R351	ERDS2TJ105T	1/4W 1M	R704	ERJ6GEYJ103V	1/10W 10K
R210	ERDS2TJ122	1/4W 1.2K	R355, 356	ERDS2TJ391	1/4W 390	R706	ERJ6GEYJ473V	1/10W 47K
R211	ERDS2TJ102	1/4W 1K	R357, 358	ERDS2TJ272T	1/4W 2.7K	R707	ERJ6GEYJ222V	1/10W 2.2K
R213	ERDS2TJ473	1/4W 47K	R359	ERDS2TJ151	1/4W 150	R708	ERJ6GEYJ683V	1/10W 68K
R214	ERDS2TJ122	1/4W 1.2K	R361, 362	ERDS2TJ684	1/4W 680K	R709	ERJ6GEYJ122V	1/10W 1.2K
R217	ERDS2TJ332	1/4W 3.3K	R401-408	ERDS2TJ473	1/4W 47K	R710	ERJ6GEYJ182V	1/10W 1.8K
R218	ERDS2TJ103	1/4W 10K	R411	ERDS2TJ472	1/4W 4.7K	R711	ERJ6GEYJ473V	1/10W 47K
R219	ERDS2TJ561	1/4W 560	R412	ERDS2TJ103	1/4W 10K	R712	ERJ6GEYJ471V	1/10W 470
R220	ERDS2TJ822	1/4W 8.2K	R413	ERDS2TJ105T	1/4W 1M	R714	ERJ6GEYJ473V	1/10W 47K
R221	ERDS2TJ271	1/4W 270	R414	ERDS2TJ472	1/4W 4.7K	R715	ERJ6GEYJ223V	1/10W 22K
R222	ERDS2TJ391	1/4W 390	R415	ERDS2TJ102	1/4W 1K	R716	ERJ6GEYJ104V	1/10W 100K
R223	ERDS2TJ682T	1/4W 6.8K	R416	ERDS2TJ472	1/4W 4.7K	R717	ERJ6GEYJ682V	1/10W 6.8K
R224	ERDS2TJ183T	1/4W 18K	R421	ERDS2TJ472	1/4W 4.7K	R718	ERJ6GEYJ223V	1/10W 22K
R225	ERDS2TJ103	1/4W 10K	R431	ERDS2TJ102	1/4W 1K	R719	ERJ6GEYJ123V	1/10W 12K
R226	ERDS2TJ223	1/4W 22K	R432	ERDS2TJ470	1/4W 47			

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
R720	ERJ6GEYJ273V	1/10W 27K	C41	ECBT1H102KB5	50V 1000P	C330	ECBT1H471KB5	50V 470P
R721	ERJ6GEYJ823	1/10W 82K	C42	ECEAOJKA470B	6.3V 47U	C350	ECEA1CKA101B	16V 100U
R722	ERJ6GEYJ561V	1/10W 560	C101	ECEA1EKA4R7B	25V 4.7U	C351, 352	ECEA1CKA100B	16V 10U
R723	ERJ6GEYJ104V	1/10W 100K	C102	ECBT1H102KB5	50V 1000P	C401	ECBT1H104ZF5	50V 0.1U
R724	ERJ6GEYJ104V	1/10W 100K	C103	ECBT1C103NS5	16V 0.01U	C421	ECEA1HKA2R2B	50V 2.2U
R725	ERJ6GEYJ471V	1/10W 470	C104	ECEA1CKA100B	16V 10U	C422	ECBT1E103ZF	25V 0.01U
R732	ERJ6GEYJ562V	1/10W 5.6K	C105, 106	ECBT1H150JC5	50V 15P	C423	ECEA1HKA2R2B	50V 2.2U
R733	ERJ6GEYJ332V	1/10W 3.3K	C107	ECBT1H102KB5	50V 1000P	C451, 452	ECBT1H560J5	50V 56P
R734	ERJ6GEYJ562V	1/10W 5.6K	C108	ECEAOJKA101B	6.3V 100U	C453	ECBT1H120J5	50V 12P
R735	ERJ6GEYJ222V	1/10W 2.2K	C110	ECBT1H102KB5	50V 1000P	C454	ECBT1C103NS5	16V 0.01U
R736	ERJ6GEYJ682V	1/10W 6.8K	C112	ECBT1H102KB5	50V 1000P	C461, 462	ECKR1H103ZF5	50V 0.01U Δ
R737	ERJ6GEYJ562V	1/10W 5.6K	C113	ECBT1C103NS5	16V 0.01U	C501	ECBT1E103ZF	25V 0.01U
R738	ERJ6GEYJ562V	1/10W 5.6K	C114	ECBT1H102KB5	50V 1000P	C503	ECBT1H102KB5	50V 1000P
R739	ERJ6GEYJ562V	1/10W 5.6K	C116	ECBT1H104ZF5	50V 0.1U	C601	ECBT1H104ZF5	50V 0.1U
R741	ERJ6GEYJ102A	1/10W 1K	C117	ECBT1H331KB5	50V 330P	C602	ECEAOJU102	6.3V 1000U
R742	ERJ6GEYJ102A	1/10W 1K	C120	ECBT1H3R3KC5	50V 3.3P	C603	ECBT1H102KB5	50V 1000P Δ
R743	ERJ6GEYJ102A	1/10W 1K	C123	ECBT1H104ZF5	50V 0.1U	C604	ECBT1H104ZF5	50V 0.1U Δ
R744	ERJ6GEYJ393V	1/10W 39K	C201	ECBT1H102KB5	50V 1000P	C605	ECBT1H104ZF5	50V 0.1U
R747	ERJ6GEYJ473V	1/10W 47K	C202	ECBT1C103NS5	16V 0.01U	C607	ECBT1H102KB5	50V 1000P
R760	ERJ6GEYJ561V	1/10W 560	C203	ECBT1H102KB5	50V 1000P	C702	ECA1VM471B	35V 470U
R761	ERJ6GEYJ561V	1/10W 560	C204	ECBT1H473ZF5	50V 0.047U	C703	ECBT1C103NS5	16V 0.01U
R762	ERJ6GEYJ561V	1/10W 560	C205	ECBT1HBR2KC5	50V 8.2P	C704	ECA1CM221B	16V 220U
			C206	ECBT1H101KB5	50V 100P	C709	ECEA1HKA3R3B	50V 3.3U
		CHIP JUMPERS	C208	ECBT1H150JC5	50V 15P	C710	ECBT1C103NS5	16V 0.01U
		SERVO SCHEMATIC DIAGRAM	C209	ECEAOJKA101B	6.3V 100U	C712	ECEA1CU331	16V 330U Δ
			C210	ECEA1HKA3R3B	50V 3.3U	C714, 715	ECKR1H103ZF5	50V 0.01U Δ
J702	ERJ6GEYOR00A	1/10W 0	C211	ECFR1E103KR	25V 0.01U	C790	ECA1AKF820E	10V 82U
J704	ERJ6GEYOR00A	1/10W 0	C212	ECBT1C103NS5	16V 0.01U	C801, 802	ECBT1H101KB5	50V 100P
J705	ERJ6GEYOR00A	1/10W 0	C213	ECBT1E223ZF	25V 0.022U	C803	ECBT1E103ZF	25V 0.01U
J706	ERJ6GEYOR00A	1/10W 0	C214	ECBT1H102KB5	50V 1000P			CAPACITORS
J707	ERJ6GEYOR00A	1/10W 0	C215	ECBT1H101KB5	50V 100P			SERVO SCHEMATIC DIAGRAM
J708	ERJ6GEYOR00A	1/10W 0	C216	ECEA1HKA010B	50V 1U			
J709	ERJ6GEYOR00A	1/10W 0	C217	ECEA1CKA100B	16V 10U			
J710	ERJ6GEYOR00A	1/10W 0	C218	ECBT1C103NS5	16V 0.01U	C701	ECEAOJKA220	6.3V 22U
			C219	ECFR1E473KR	25V 0.047U	C702	ECEAOJKA470	6.3V 47U
		CAPACITORS	C220	ECBT1C103NS5	16V 0.01U	C703	ECEAOJKA1011	6.3V 100U
			C230	ECFR1E153KR	25V 0.015U	C709	ECUZ1C224KBM	16V 0.22U
C1, 2	ECBT1E103ZF	25V 0.01U Δ	C251	ECBT1H104ZF5	50V 0.1U	C710	ECUZ1C104MBM	16V 0.1U
C3, 4	ECKR1H103ZF5	50V 0.01U Δ	C301	ECEA1CKA101B	16V 100U	C711	ECLW1E103MBN	25V 0.01U
C5	ECA1CM222B	16V 2200U	C302	ECEA1CKA100B	16V 10U	C713	ECEA1CSN4R7I	16V 4.7U Δ
C6	ECBT1E103ZF	25V 0.01U	C303	ECFR1E103KR	25V 0.01U	C714	ECEA1HKS010	50V 1U
C11	ECA1EM101B	25V 100U Δ	C304	ECQG1H102KZT	50V 1000P	C715	ECUE1H472KBN	50V 4700P
C12	ECEA1HU101	50V 100U	C305	ECEA1HKA47B	50V 0.47U	C716	ECUE1C473KBN	16V 0.047U
C13, 14	ECBT1E103ZF	25V 0.01U Δ	C306	ECEA1HKA3R3B	50V 0.33U	C717	ECUE1H681KBN	50V 680P
C15	ECEA1EN4R7S	25V 4.7U Δ	C307	ECEA1HKA010B	50V 1U	C718	ECEA1AKS1011	10V 100U
C16	ECEA1EKA4R7B	25V 4.7U	C309, 310	ECFR1E153KR	25V 0.015U	C719	ECLW1E103MBN	25V 0.01U
C21	ECEA1AKA101B	10V 100U	C311, 312	ECEA1HKA3R3B	50V 3.3U	C720	ECUE1E153MBN	25V 0.015U
C22	ECBT1H102KB5	50V 1000P	C314	ECBT1H104ZF5	50V 0.1U	C721	ECLW1E103MBN	25V 0.01U
C23	ECEA1AKA221Q	10V 220U	C315	ECBT1E223ZF	25V 0.022U	C722	ECEAOJKA470	6.3V 47U
C31	ECEA1AKA101B	10V 100U	C321, 322	ECFR1E682KR	25V 6800P	C723	ECUZ1C104MBM	16V 0.1U
C32	ECBT1H102KB5	50V 1000P	C323-326	ECEA1HKA3R3B	50V 3.3U	C724	ECUV1E333MBN	25V 0.033U
C33	ECEAOJKA221B	6.3V 220U	C327	ECEA1AKA330B	10V 33U	C725	ECLW1E103MBN	25V 0.01U

