

# MZ-R70

## SERVICE MANUAL

Ver 1.3 2001. 01  
With SUPPLEMENT-1  
(9-927-631-81)



(Photo: Silver)

*US Model  
Canadian Model  
AEP Model  
UK Model  
E Model  
Australian Model  
Chinese Model  
Tourist Model*

US and foreign patents licensed from Dolby Laboratories Licensing Corporation.

Model Name Using Similar Mechanism	MZ-R90/R91
Mechanism Type	MT-MZR70-165
Optical Pick-up Name	LCX-2R

### SPECIFICATIONS

#### System

Audio playing system  
MiniDisc digital audio system  
Laser diode properties  
Material: GaAlAs  
Wavelength:  $\lambda = 790 \text{ nm}$   
Emission duration: continuous  
Laser output: less than  $44.6 \mu\text{W}$   
(This output is the value measured at a distance of 200 mm from the lens surface on the optical pick-up block with 7 mm aperture.)  
Recording and playback time  
Maximum 80 minutes (MDW-80, stereo recording)  
Maximum 160 minutes (MDW-80, monaural recording)  
Maximum 74 minutes (MDW-74, stereo recording)  
Maximum 148 minutes (MDW-74, monaural recording)  
Revolutions  
400 rpm to 1,800 rpm (CLV)  
Error correction  
Advanced Cross Interleave Reed Solomon Code (ACIRC)  
Sampling frequency  
44.1 kHz  
Sampling rate converter  
Input: 32 kHz/44.1 kHz/48 kHz  
Coding  
Adaptive Transform Acoustic Coding (ATRAC)  
Modulation system  
EFM (Eight to Fourteen Modulation)  
Number of channels  
2 stereo channels  
1 monaural channel

Frequency response  
20 to 20,000 Hz  $\pm 3 \text{ dB}$   
Wow and Flutter  
Below measurable limit  
Inputs  
Microphone: stereo mini-jack, 0.35–1.38 mV  
Line in: stereo mini-jack, 69–194 mV  
Optical (Digital) in: optical (digital) mini-jack  
Outputs  
①: stereo mini-jack, maximum output level 5 mW + 5 mW, load impedance 16 ohm  
②: stereo mini-jack, maximum output level 5 mW + 5 mW, load impedance 16 ohm

#### General

Power requirements  
Sony AC Power Adaptor (supplied) connected at the DC IN 3 V jack:  
120 V AC, 60 Hz (US model)  
230-240 V AC, 50/60 Hz (UK and Hong Kong model)  
240 V AC, 50/60 Hz (Australia and New Zealand model)  
220-230 V AC, 50/60 Hz (European model)  
220 V AC, 50 Hz (China model)  
220 V AC, 50 Hz (Argentina model)  
100-240 V AC, 50/60 Hz (Other models)

Nickel cadmium rechargeable battery  
NC-WMAA (supplied)  
LR6 (size AA) alkaline battery (not supplied)  
Battery operation time  
Battery life<sup>1)</sup>

Batteries	Recording <sup>2)</sup>	Playback
NC-WMAA	Approx.	Approx.
nickel cadmium rechargeable battery	3 hours	6.5 hours
LR6 (size AA)	Approx.	Approx.
Sony alkaline dry battery	3 hours <sup>3)</sup>	17 hours

- <sup>1)</sup> The battery life may be shorter due to operating conditions and the temperature of the location.
- <sup>2)</sup> When you record, use a fully charged rechargeable battery.
- <sup>3)</sup> Recording time may differ according to the alkaline batteries.

– Continued on next page –

## PORTABLE MINIDISC RECORDER

# SONY®

#### Dimensions

Approx. 81 × 74 × 26.2 mm (w/h/d)  
(3 1/4 × 3 × 1 1/16 in.) without projections.

#### Mass

Approx. 115 g (4 oz) the recorder only  
Approx. 155 g (5.4 oz) incl. a recordable  
MD, and NC-WMAA nickel cadmium  
rechargeable battery

#### Supplied accessories

AC power adaptor (1)  
Headphones with a remote control (1)  
Optical cable (1)  
NC-WMAA nickel cadmium rechargeable  
battery (1)  
Rechargeable battery carrying case (1)  
Carrying pouch (1)

Design and specifications are subject to change  
without notice.

#### Flexible Circuit Board Repairing

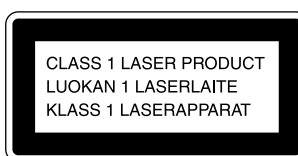
- Keep the temperature of the soldering iron around 270°C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

#### Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

#### CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.



This MiniDisc player is classified as a CLASS 1 LASER product.

The CLASS 1 LASER PRODUCT label is located on the bottom exterior.

IN NO EVENT SHALL SELLER BE  
LIABLE FOR ANY DIRECT,  
INCIDENTAL OR CONSEQUENTIAL  
DAMAGES OF ANY NATURE, OR  
LOSSES OR EXPENSES RESULTING  
FROM ANY DEFECTIVE PRODUCT  
OR THE USE OF ANY PRODUCT.

“MD WALKMAN” is a trademark of Sony Corporation.

#### SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  $\triangle$  OR DOTTED LINE WITH MARK  $\triangle$  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

#### ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE  $\triangle$  SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

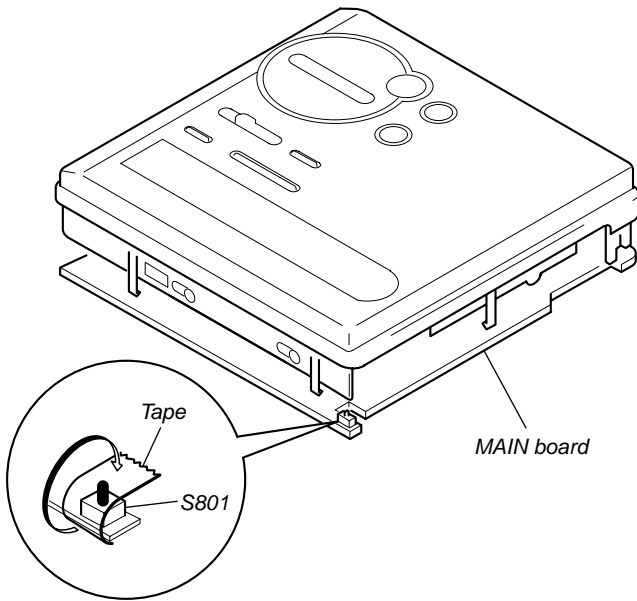
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## SECTION 1 SERVICING NOTE

- When repairing this device with the power on, if you remove the MAIN board or open the upper panel assy, this device stops working.

In this case, you can work without the device stopping by fastening the hook of the open/close detect switch (S801) with tape.



- This set is designed to perform automatic adjustment for each adjustment and write its value to EEPROM. Therefore, when EEPROM (IC802) has been replaced in service, be sure to perform automatic adjustment and write resultant values to the new EEPROM. (Refer to page 20.)
- Replacement of CXD2660R (IC502) and CXR701081 (IC801) used in this set requires a special tool. Therefore, they cannot be replaced.

### NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.

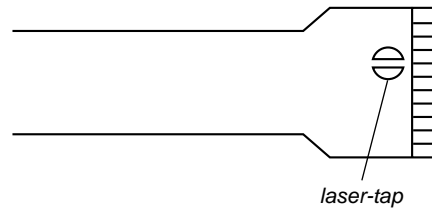
The flexible board is easily damaged and should be handled with care.

### NOTES ON LASER DIODE EMISSION CHECK

Never look into the laser diode emission from right above when checking it for adjustment. It is feared that you will lose your sight.

### NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK (LCX-2R)

The laser diode in the optical pick-up block may suffer electrostatic break-down easily. When handling it, perform soldering bridge to the laser-tap on the flexible board. Also perform measures against electrostatic break-down sufficiently before the operation. The flexible board is easily damaged and should be handled with care.



**OPTICAL PICK-UP FLEXIBLE BOARD**

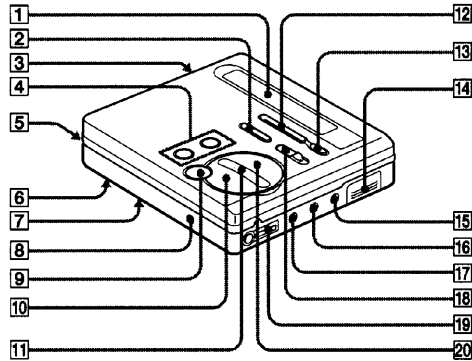
## SECTION 2 GENERAL

This section is extracted from instruction manual.

### Looking at the controls

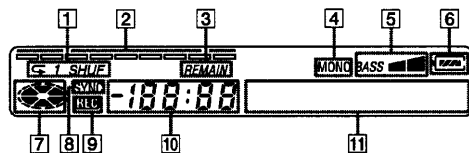
See pages in ( ) for more details.

#### The recorder



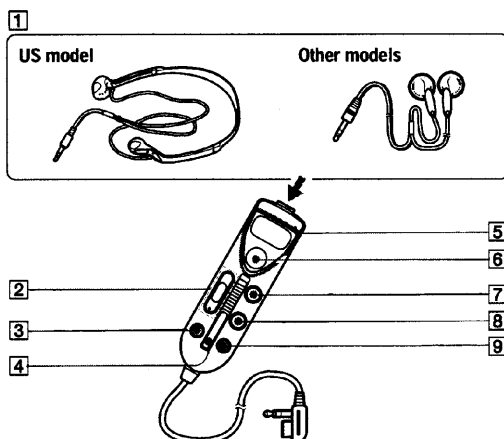
- 1 Display window (19)(31)
- 2 END SEARCH button (10)(49)
- 3 OPEN button (9)(13)
- 4 VOL +/- button (13)(49)
- 5 T MARK button (41)
- 6 HOLD switch (37)
- 7 SYNCHRO REC (synchro-recording) switch (19)
- 8 DC IN 3V jack (8)(12)(53)
- 9 || (pause) button (10)(14)(22)(49)
- 10 ■ (stop) button (9)(14)(41)(54)
- 11 ◀▶ (search /AMS) button (10)(14)(45)(49)
- 12 ◀MENU▶ button (22)(30)(41)
- 13 ENTER button (22)(30)(40)
- 14 Battery compartment (54)
- 15 MIC (PLUG IN POWER) jack (21)
- 16 LINE IN (OPTICAL) jack (8)(18)
- 17 ◯ (headphones)2 jack (12)(38)
- 18 REC (record) switch (9)
- 19 ◯ (headphones)1 jack (12)(38)
- 20 ▶ (play) button (10)(13)

#### The display window



- 1 Play mode indication (31)  
Shows the play mode of the MD.
- 2 Level meter (24)  
Shows the volume of the MD being played or recorded.
- 3 REMAIN (remaining time/tracks) indication (25)(35)  
Lights up along with the remaining time of the track, the remaining time of the MD, or the remaining number of tracks.
- 4 MONO (monaural) indication
- 5 Mega bass indication (32).
- 6 Battery indication (54)  
Shows approximate battery condition.
- 7 Disc indication  
Shows that the disc is rotating for recording, playing or editing an MD
- 8 SYNC (synchro-recording) indication
- 9 REC indication (9)  
Lights up while recording. When flashing, the recorder is in record standby mode.
- 10 Time display
- 11 Character information display (26)(31)  
Displays the disc and track names, error messages, track numbers, etc.

#### The headphones with a remote control

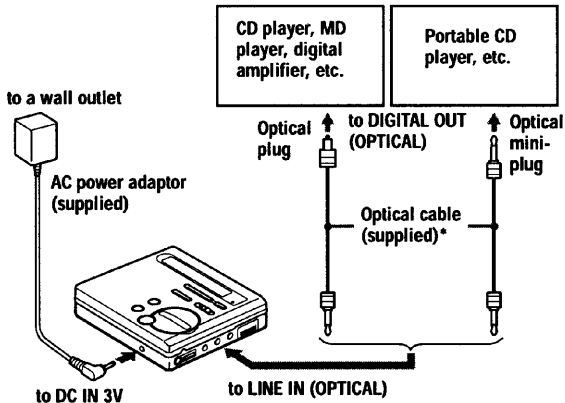


- 1 Headphones  
Can be replaced with optional headphones.
- 2 VOL +/--buttons (13)(51)
- 3 DELETE button (51)
- 4 HOLD switch (37)  
Slide to lock the controls of the remote control.
- 5 ◀▶ (search) button (13)(28)(31)(41)(51)
- 6 ■ (stop) • ENTER button (14)(47)(50)
- 7 || (pause) • CAPS button (14)(51)
- 8 T MARK button (41)(45)(51)
- 9 EDIT button (28)(33)(41)

## Recording an MD right away!

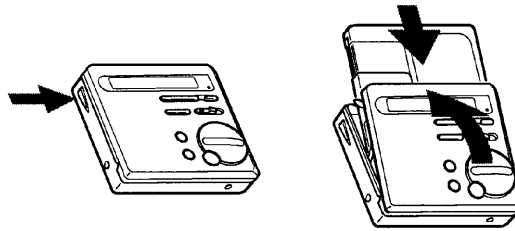
Connect to a digital source using an optical cable (supplied) to make digital recordings. Digital recording is possible even from digital equipment with different sampling rates, such as a DAT deck or a BS tuner, using the built-in sampling rate converter. To record from an analog source, see "Recording with analog input (line cable required)" (page 18). To record from an MD, see "Note on digital recording" (page 59).

### 1 Make connections. (Insert the cables firmly and completely into the appropriate jacks.)



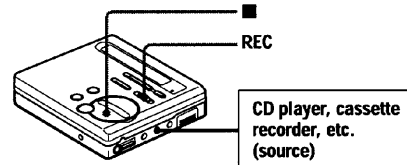
\* The supplied cable consists of one or the other of these cables. The shape of the plugs on the supplied cable may differ, depending on where the recorder was purchased.

### 2 Insert a recordable MD.



- 1 Press OPEN to open the lid.
- 2 Insert a recordable MD with the label side facing front, and press the lid down to close.

### 3 Record an MD.



- 1 Slide REC to the right. REC indication lights up in the display and recording starts.
- 2 Play the source you want to record.

#### To stop recording, press ■.

After you press ■, the recorder will automatically turn off after:  
 — about 5 minutes when using AC power adaptor.  
 — about 10 seconds when using batteries.

8

9

#### Notes

- "Data Save" or "TOC Edit" flashes while data of the recording (the track's start and end points, etc.) is being recorded. Do not move or jog the recorder or disconnect the power source while the indication is flashing in the display.
- The lid does not open until "TOC Edit" disappears in the display.

To	Press
Record from the end of the previous recording	END SEARCH and slide REC.
Record partway through the previous recording	▶, ▶▶ or ◀◀ to find the start point of recording and press ■ to stop. Then slide REC.
Pause	<sup>1)</sup> Press    again to resume recording.
Remove the MD	■ and open the lid. <sup>2)</sup> (The lid does not open while "TOC Edit" flashing in the display.)

<sup>1)</sup> A track mark is added at the point where you press || again to resume recording while pausing; thus the remainder of the track will be counted as a new track.

<sup>2)</sup> Once you open the lid, the point to start recording will change to the beginning of the first track. Check the point to start recording on the display.

#### If the recording does not start

- Make sure the recorder is not locked (page 37).
- Make sure the MD is not record-protected (page 58).
- Premastered MDs cannot be recorded over.

#### For models supplied with the AC plug adaptor

If the AC power adaptor does not fit the wall outlet, use the AC plug adaptor.

#### Notes

- If the power supply is disrupted (i.e. the battery is removed or becomes exhausted or the AC power adaptor is disconnected) during a recording or editing operation, or while "TOC Edit" appears in the display, then it will not be possible to open the lid until power is restored.
- You can make a digital recording only from an optical type output.
- When recording from a portable CD player, play it on AC power and disable the anti-skip function (such as ESP\*).

- Digital output may be disabled on some portable CD players when the player is not run on AC power.
- Electronic Shock Protection



- The level of the recorded sound is adjusted automatically.
- You can monitor the sound during recording. Connect the supplied headphones with remote control to Ⓜ1 and adjust the volume by pressing VOL +/- . This does not affect the recording level.

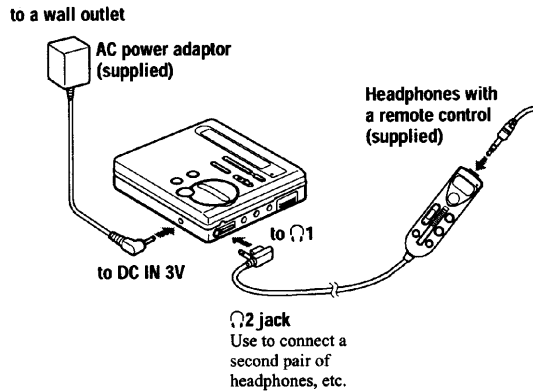
10

11

## Playing an MD right away!

To use the recorder on a rechargeable battery or dry battery, see "Power sources" (page 53).

### 1 Make connections. (Insert the cables firmly and completely into the appropriate jacks.)



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#### To stop play, press ■.

A long beep sounds in the headphones when you operate on the remote control.

Playback starts from the point you last stopped playing.

After you press ■, the recorder will automatically turn off after:

- about 5 minutes when using AC power adaptor.
- about 10 seconds when using batteries.

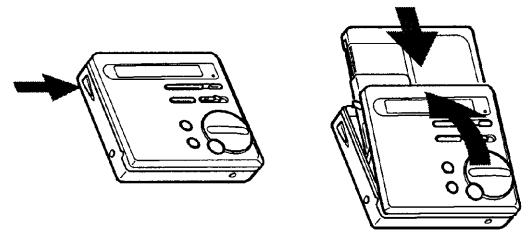
To	Press (Beeps in the headphones)
Find the beginning of the current track	◀◀ once (◀◀ on the remote control). (Three short beeps)
Find the beginning of the next track	▶▶ once (▶▶ on the remote control). (Two short beeps)
Pause	⏸ (Continuous short beeps) Press ⏸ again to resume play.
Go backwards while playing <sup>1)</sup>	keep pressing ◀◀ (◀◀ on the remote control)
Go forward while playing <sup>1)</sup>	keep pressing ▶▶ (▶▶ on the remote control)
Remove the MD	■ and open the lid. <sup>2)</sup>

<sup>1)</sup> To go backward or forward quickly without listening, press ⏸ and keep pressing ◀◀ or ▶▶ (◀◀ or ▶▶ on the remote control).

<sup>2)</sup> Once you open the lid, the point to start play will change to the beginning of the first track.

14

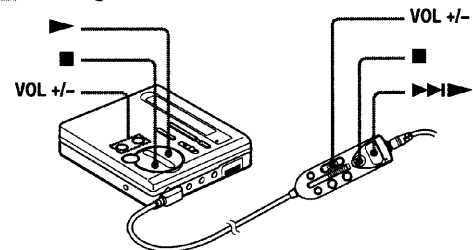
### 2 Insert an MD.



① Press OPEN to open the lid.

② Insert an MD with the label side facing front, and press the lid to close.

### 3 Play an MD.



① Press ▶▶▶ (▶▶▶ on the remote control).  
A short beep sounds in the headphones when you operate on the remote control.

② Press VOL +/- to adjust the volume.  
The volume will be shown in the display.

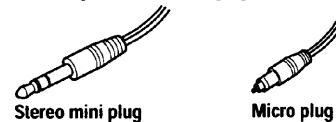
13

#### If the play does not start

Make sure the recorder is not locked (page 37).

#### When using optional headphones

- Use only headphones with stereo mini plugs.  
You cannot use headphones with micro plugs.



- In addition to the Ω1 jack, you can connect headphones to the Ω2 jack as well.



Playback will switch automatically between stereo and monaural according to the sound source.

#### Notes

- To prevent recorder malfunction, do not use a remote control that was supplied with another Sony portable MD model.
- The sound may skip during playback when the recorder is exposed to continuous vibration, such as while jogging.

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## SECTION 3 DISASSEMBLY

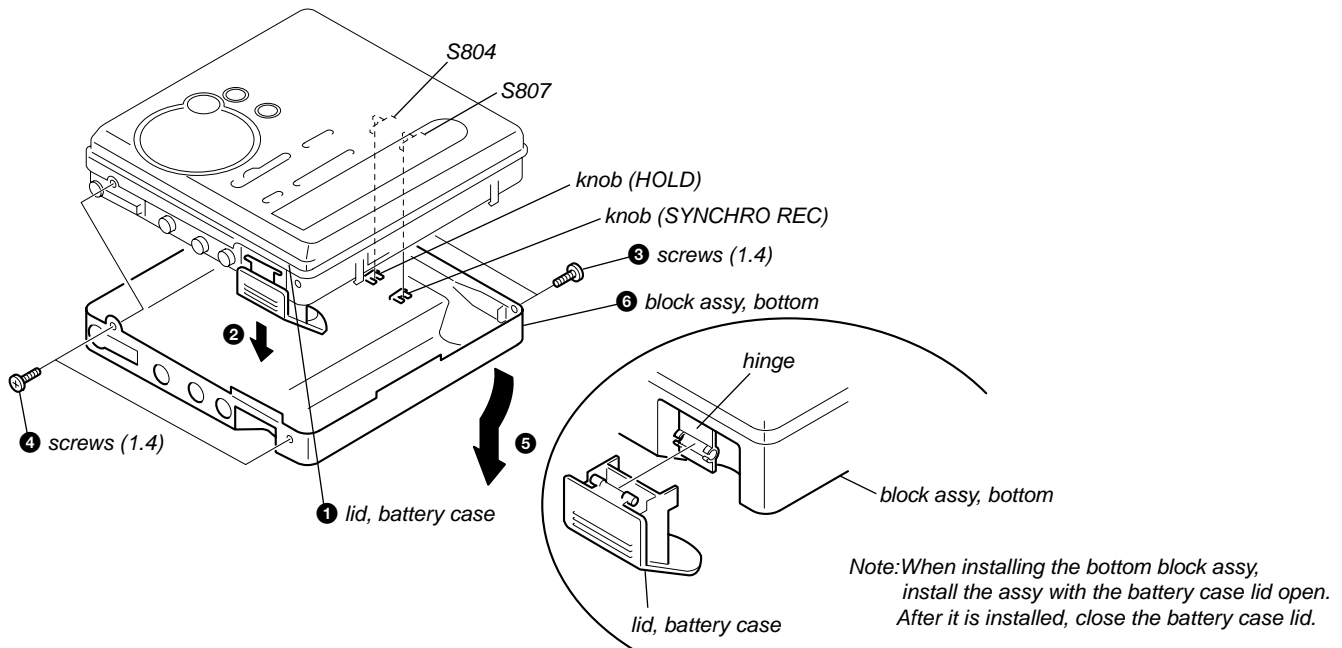
**Note :** This set can be disassemble according to the following sequence.



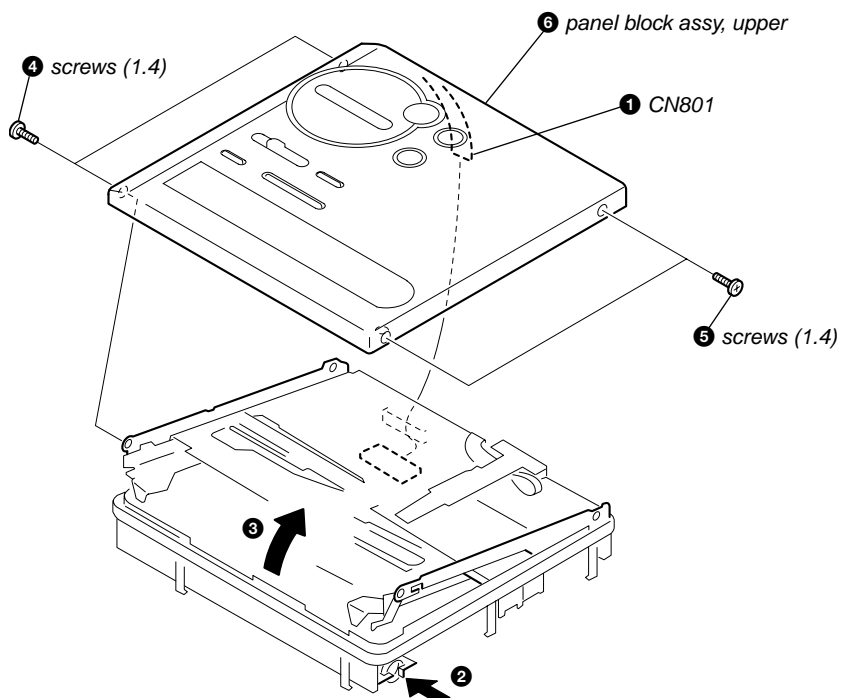
**Note :** Follow the disassembly procedure in the numerical order given.

### 3-1. BLOCK ASSY, BOTTOM

**Note :** When installing, fit the knobs (HOLD, SYNCHRO REC) and switches (S804, S807)

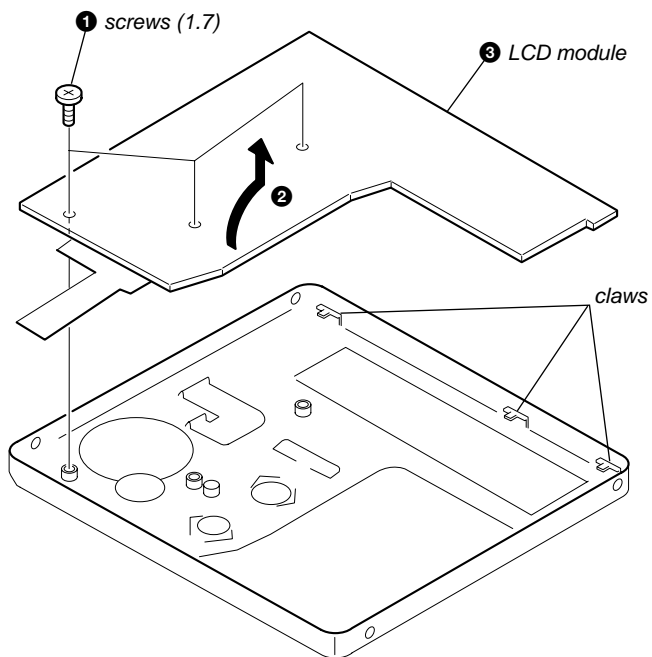


### 3-2. PANEL BLOCK ASSY, UPPER

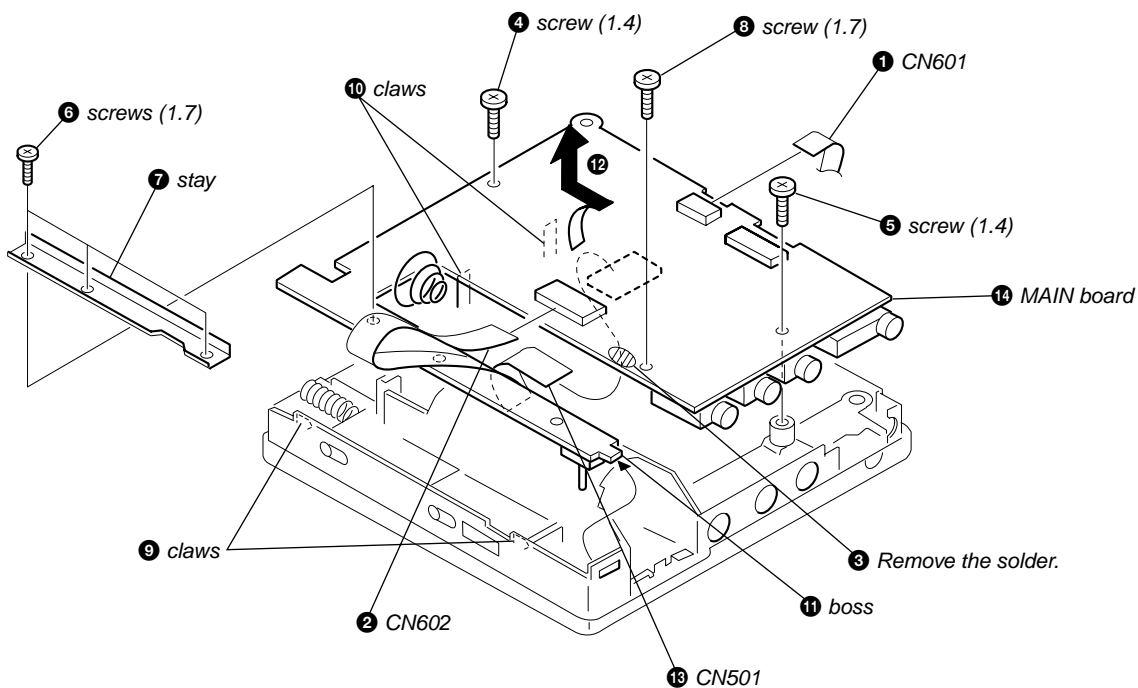




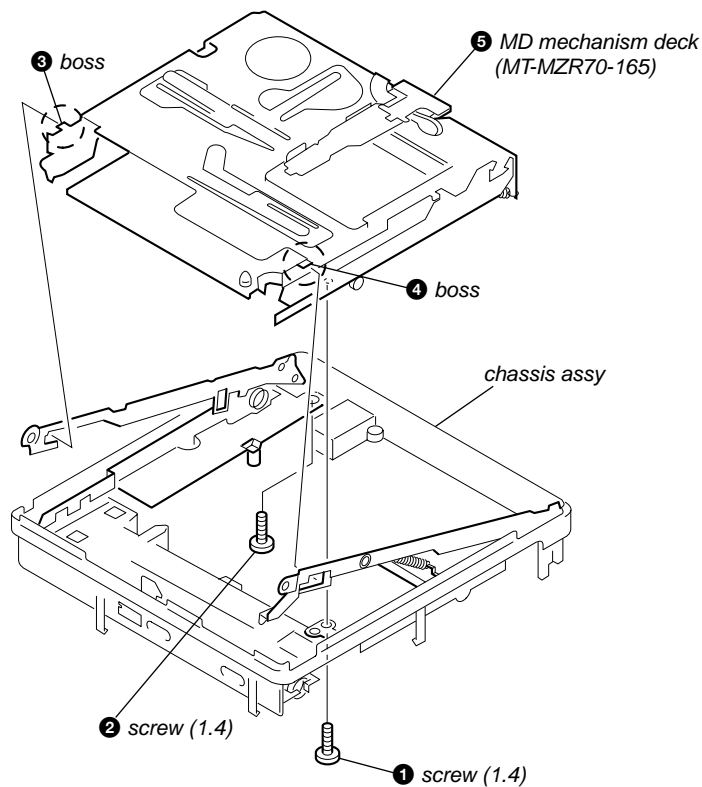
### 3-3. LCD MODULE



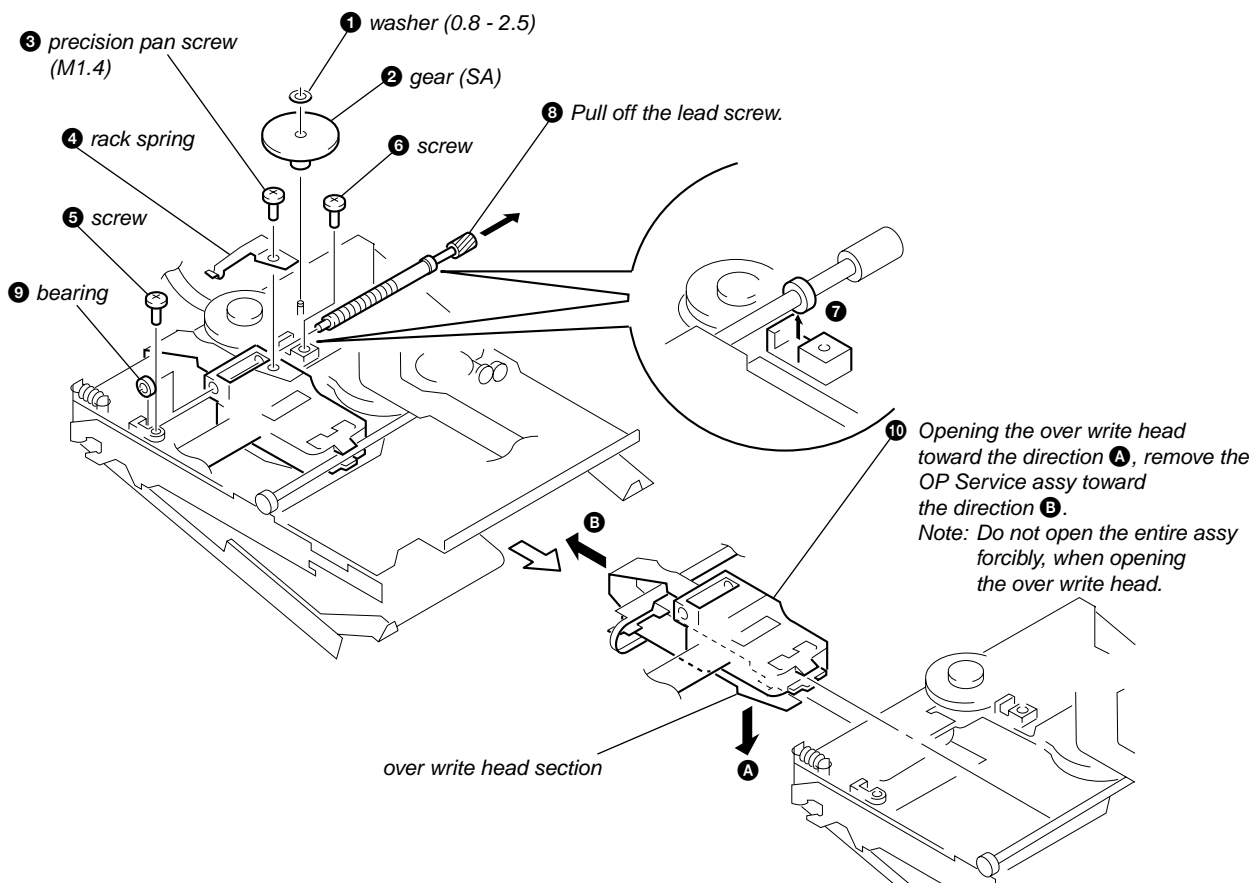
### 3-4. MAIN BOARD



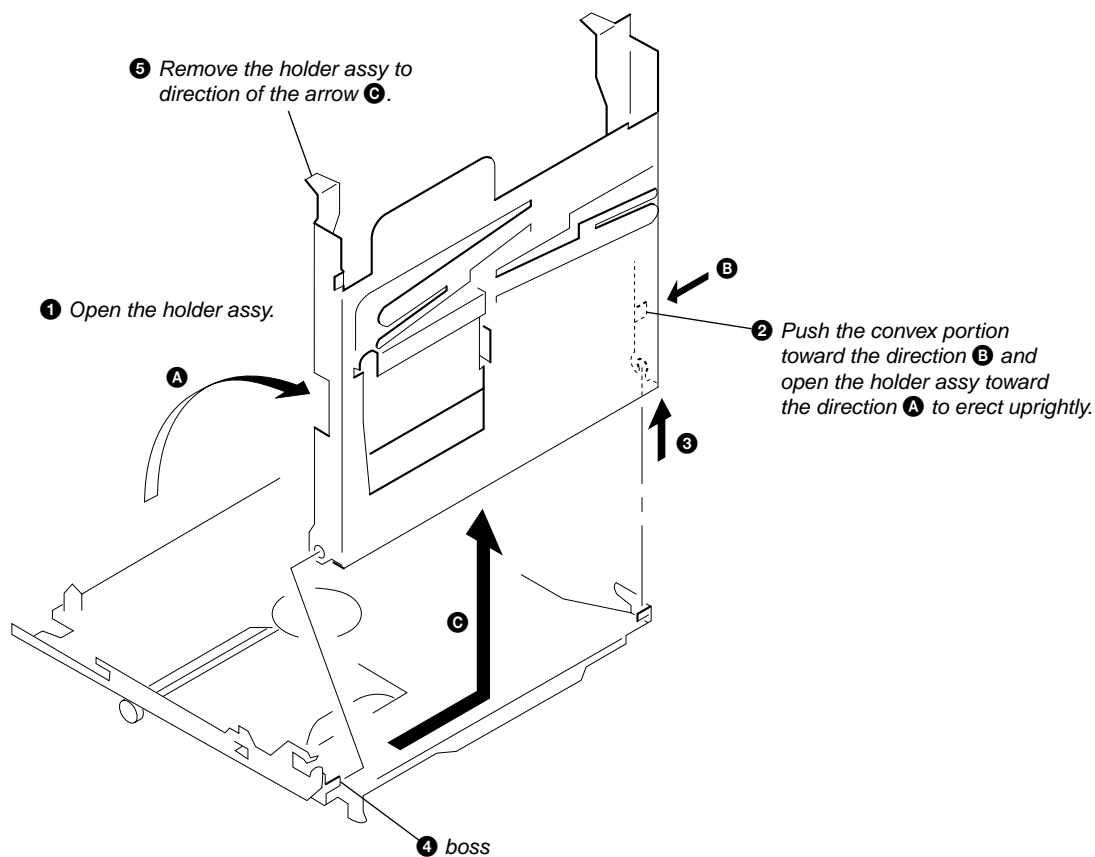
### 3-5. MD MECHANISM DECK (MT-MZR70-165)



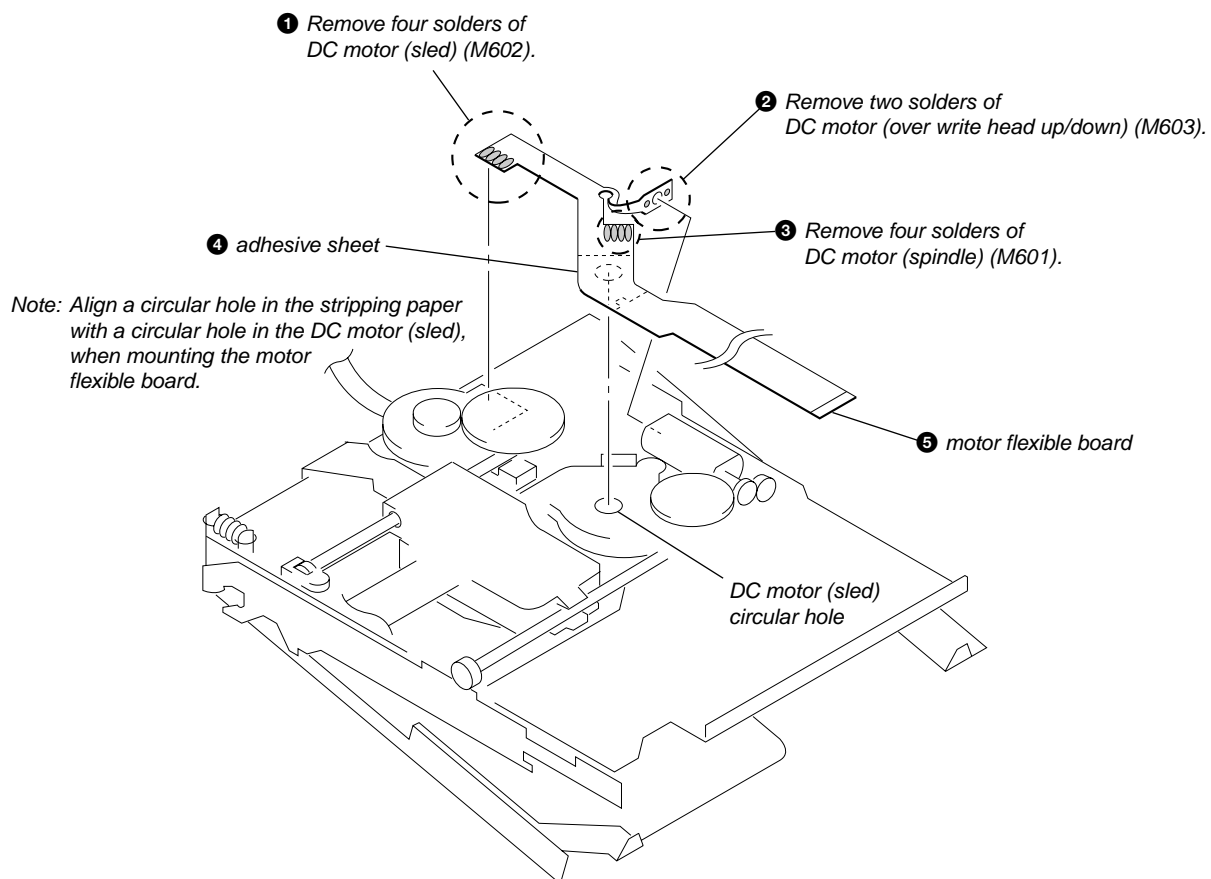
### 3-6. SERVICE ASSY, OP



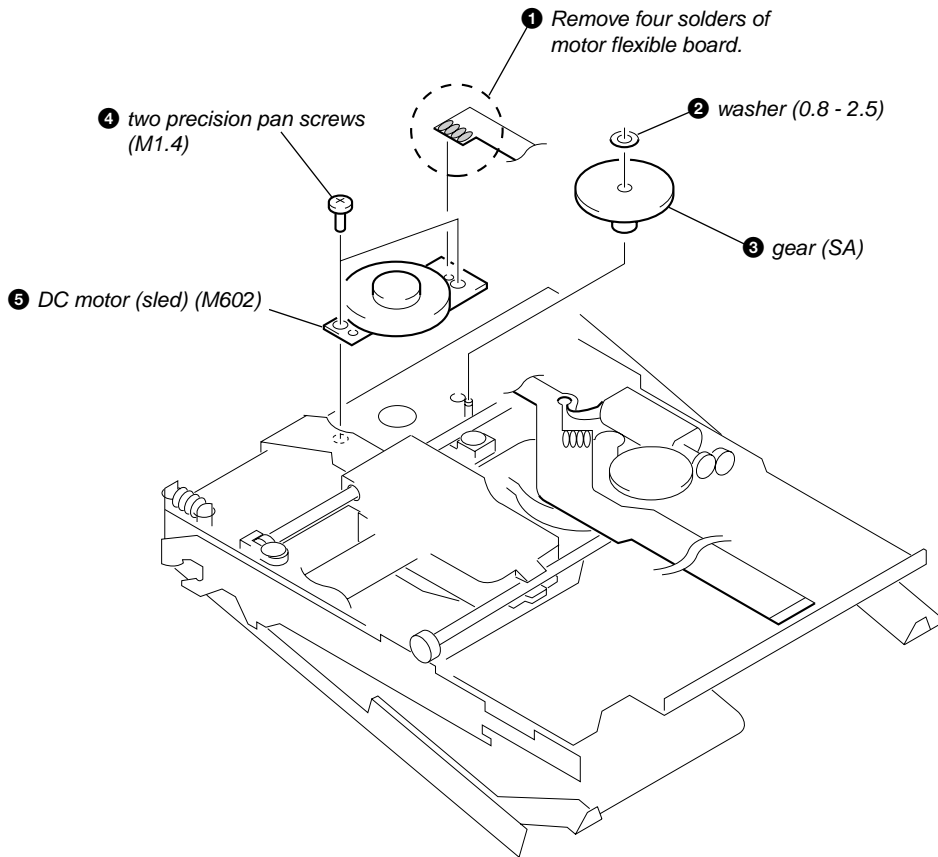
### 3-7. HOLDER ASSY



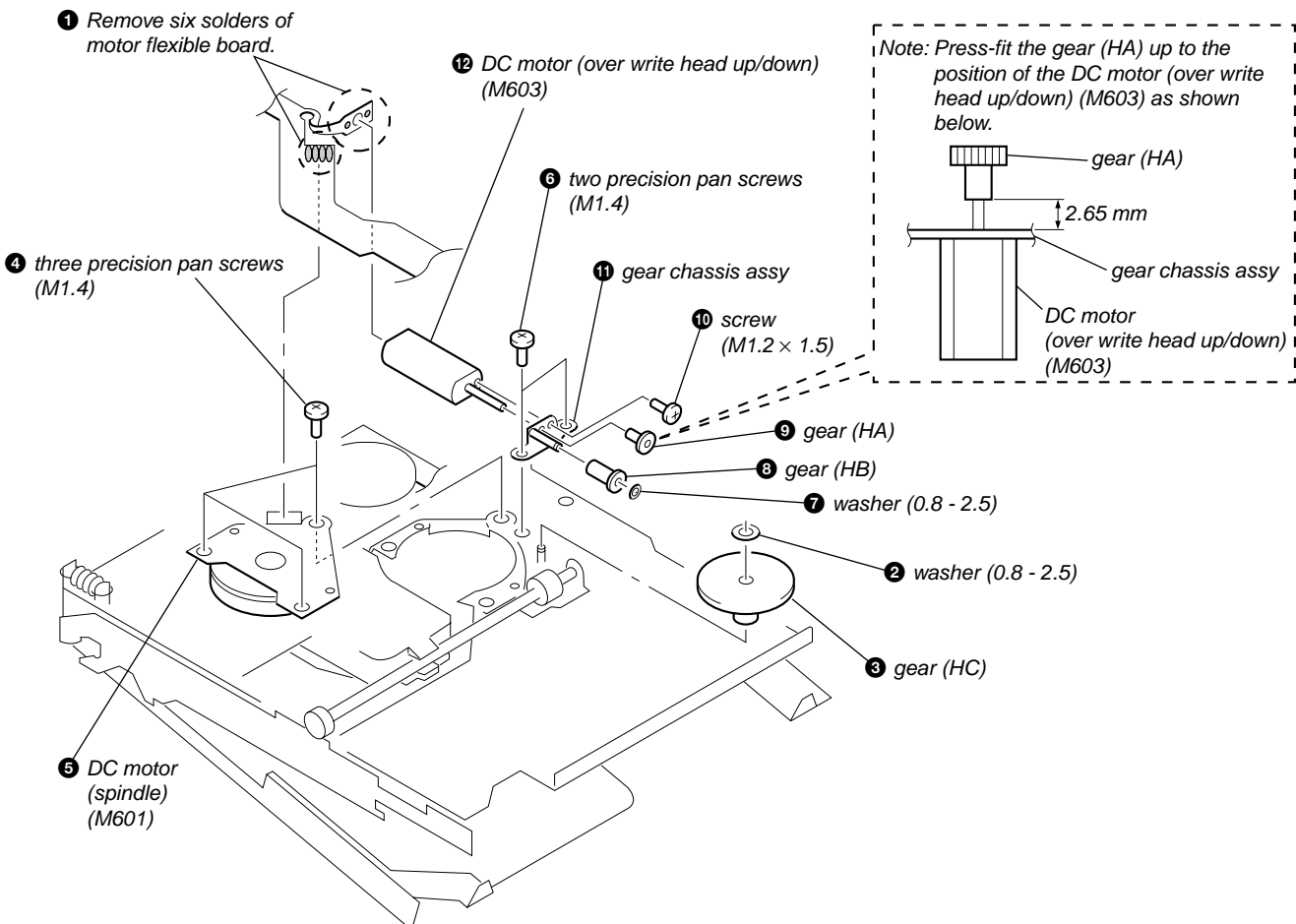
### 3-8. MOTOR FLEXIBLE BOARD



### 3-9. MOTOR, DC (M602)



### 3-10. "MOTOR, DC (M601)", "MOTOR, DC (M603)"



# SECTION 4 TEST MODE

## 4-1. OUTLINE

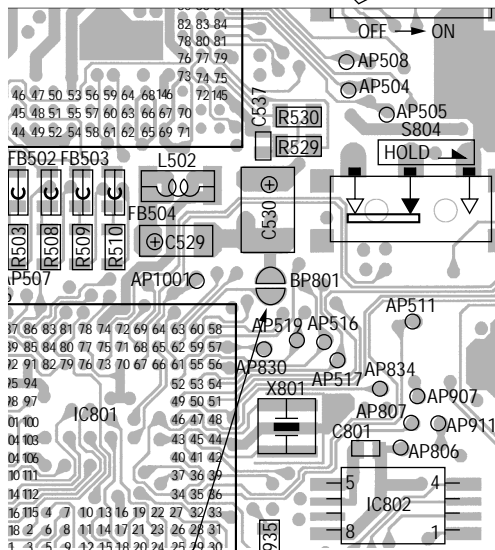
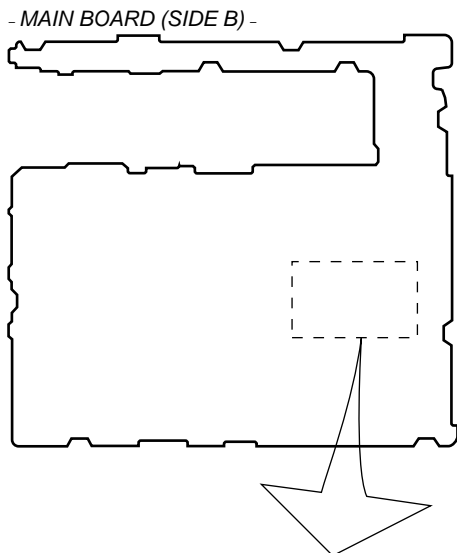
- This set provides the Overall adjustment mode (Assy mode) that allows CD and MO disc to be automatically adjusted when in the test mode. In this overall adjustment mode, the protect switch is detected to judge the disc, CD or MO, and each adjustment is automatically executed in order. If a fault is found, the system displays its location. Also, the manual mode allows each individual adjustment to be automatically adjusted.
- The keys in the description refer to the keys on both set and remote commander unless otherwise specified. Though LCD display shows the LCD of the remote commander, same contents are also displayed on the LCD of the set.

## 4-2. TEST MODE

### 4-2-1. Setting Method of Test Mode

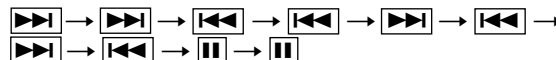
There are two different methods to set the test mode:

- ① Short BP801 (TEST) on the MAIN board with a solder bridge (connect pin ⑥ of IC801 to the ground). Then, turn on the power.



BP801

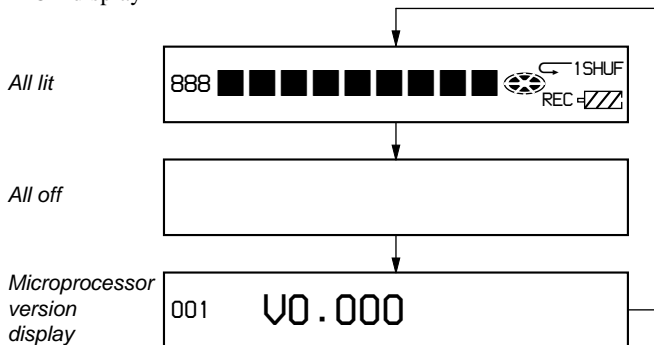
- ② In the normal mode, turn on the HOLD switch on the set. While pressing the key on the set, press the following remote control keys in the following order:



### 4-2-2. Operation in Setting the Test Mode

- When the test mode becomes active, first the display check mode is selected. (Press key once, when the display check mode is not active.)
- Other mode can be selected from the display check mode.
- When the test mode is set, the LCD repeats the following display.

LCD display



- When the key is pressed and held down, the display at that time is held so that display can be checked.

### 4-2-3. Releasing the Test Mode

For test mode set with the method ①:

Turn off the power and open the solder bridge on BP801 (TEST) on the MAIN board.

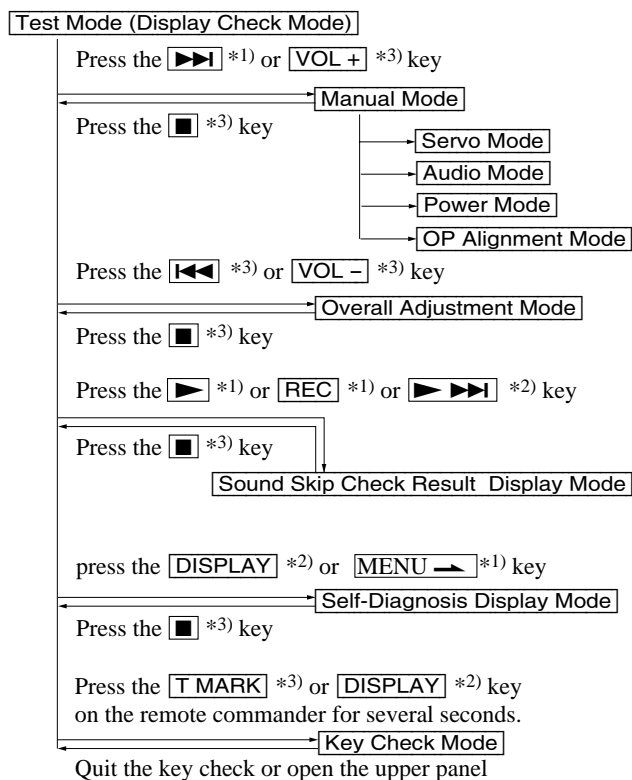
Note: Remove the solders completely. Remaining could be shorted with the chassis, etc.

For test mode set with the method ②:

Turn off the power.

Note: If electrical adjustment (see page 20) has not been finished completely, always start in the test mode. (The set cannot start in normal mode.)

#### 4-2-4. Configuration of Test Mode



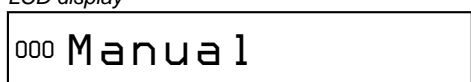
**Note:** \*1) on the set  
 \*2) on the remote commander  
 \*3) on the set or remote commander

#### 4-3. MANUAL MODE

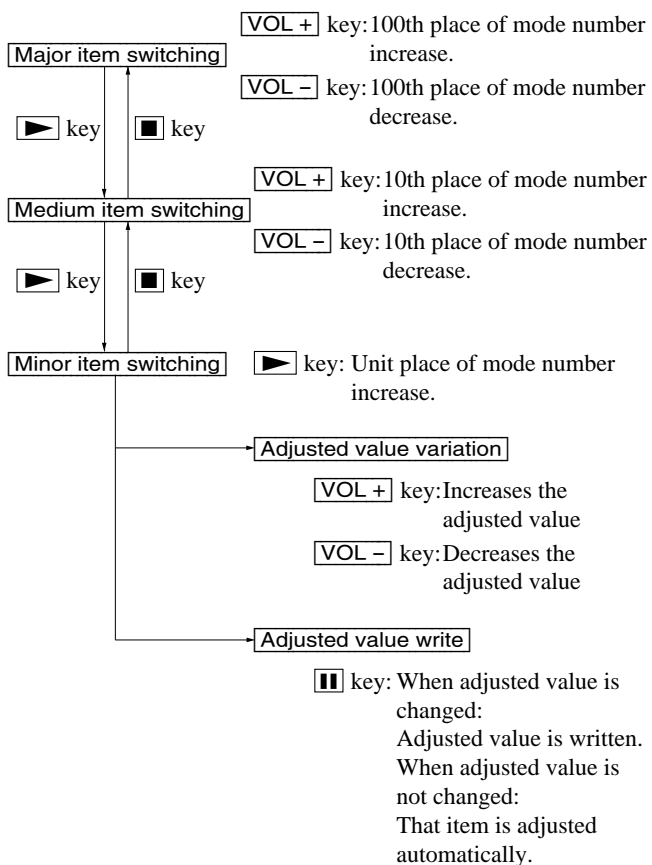
Mode to adjust or check the operation of the set by function. Normally, the adjustment in this mode is not executed.

- Transition method in Manual Mode
  1. Setting the test mode. (See page 13)
  2. Press the [▶▶] or [VOL +] key activates the manual mode where the LCD display as shown below.

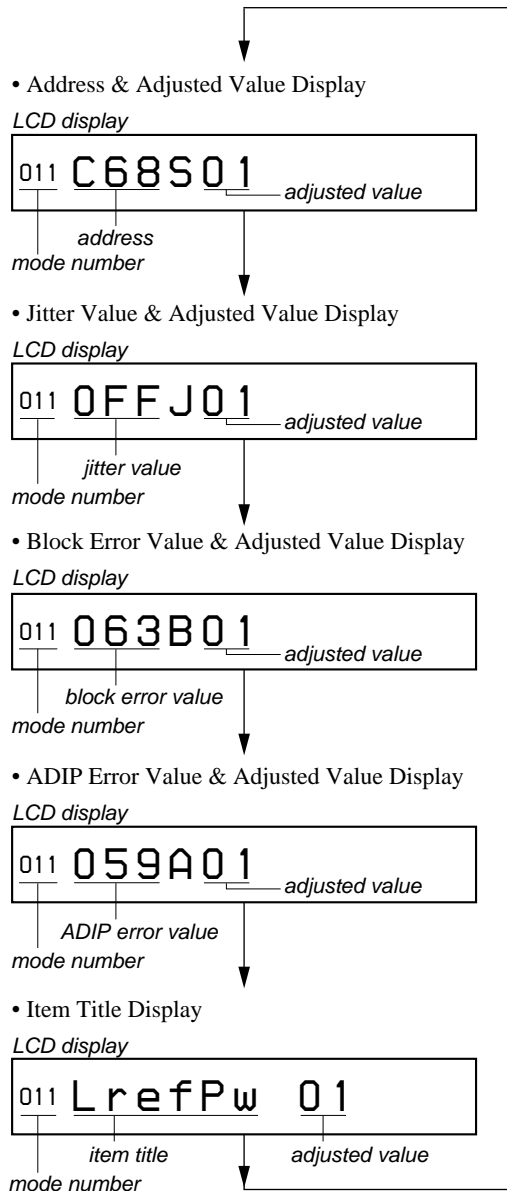
LCD display



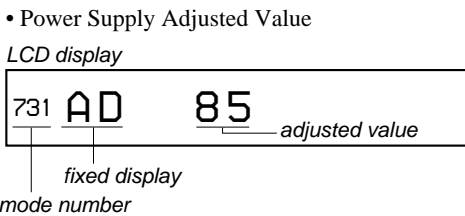
3. The optical pick-up moves outward or inward while the [▶▶] or [◀◀] key is pressed for several seconds respectively.
4. Each test item is assigned with a 3-digit mode number; 100th place is a major item, 10th place is a medium item, and unit place is a minor item.



- The display changes as shown below each time the jog key on the set is turned up or **DISPLAY** key on the remote commander is pressed.



However in the power mode (mode number 700's), only the power adjustment value is displayed.



- Quit the manual mode, and press **■** key to return to the test mode (display check mode).

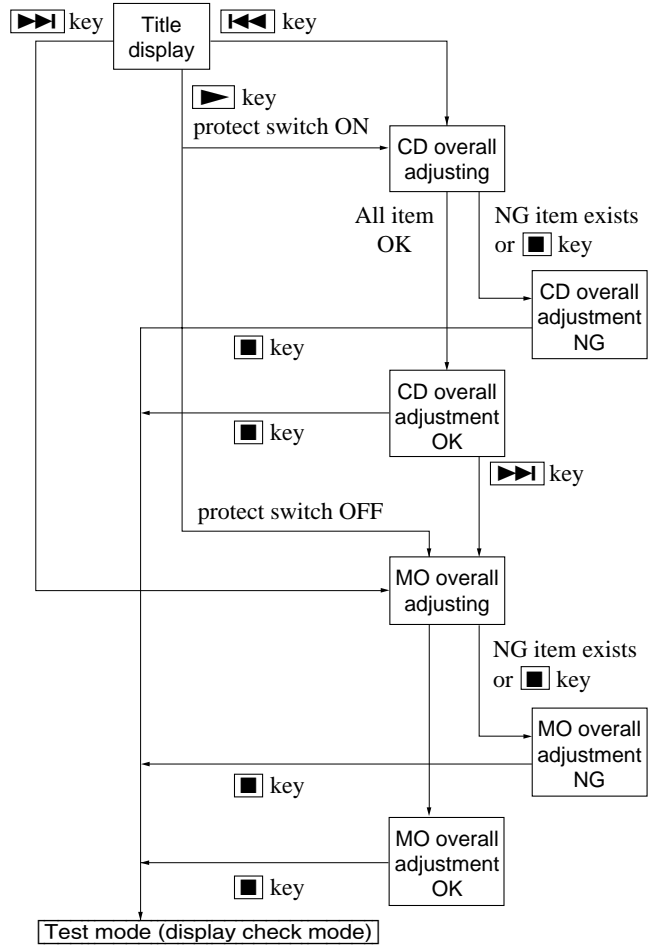
#### 4-4. OVERALL ADJUSTMENT MODE

Mode to adjust the servo automatically in all items.

Normally, automatic adjustment is executed in this mode at the repair.

Adjust the CD first, when performing adjustment.

- Configuration of overall adjustment



For further information, refer to the Section 5 Electrical Adjustment. (See page 20)

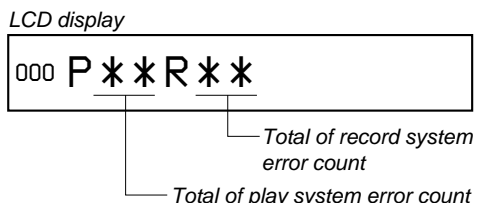
#### 4-5. SOUND SKIP CHECK RESULT DISPLAY MODE

This set can display and check the error count occurring during record and play.

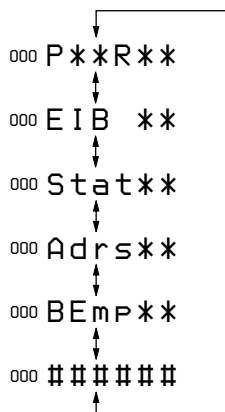
##### • Setting method of Sound Skip Check Result Display Mode

1. Setting the test mode. (See page 13)
2. Press the **▶** or **REC** key on the set activates the sound skip check result display mode where the LCD displays as shown below.

When **▶** or **REC** key on the set is pressed:

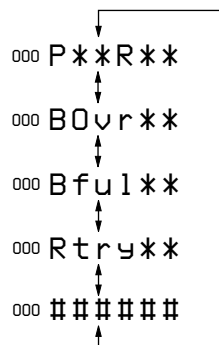


3. When **▶** key or **▶▶** key on the remote commander is pressed, the total of error count is displayed on the LCD, and each time the **▶▶** key is pressed, the error count descends one by one as shown below. Also, when **◀◀** key is pressed, the error count ascends by one. If **REC** key on the set is pressed, the error count during record is displayed.



\*\* : Sound skip check items counter (hexadecimal)  
 ##### : 6-digit address (hexadecimal) where a sound skipped last

4. When **REC** key on the set is pressed, the total of error count is displayed on the LCD, and each time the **▶▶** key is pressed, the error count descends one by one as shown below. Also, when **◀◀** key is pressed, the error count ascends by one. If **▶** key is pressed, the error count during play is displayed.



\*\* : Sound skip check items counter (hexadecimal)  
 ##### : 6-digit address (hexadecimal) where a sound skipped last

##### Error code

	Cause of error	Description of error
Playback	EIB	Sound error correction error
	Stat	Decoder status error
	Adrs	Cannot access the address
	BEmp	Buffer becomes empty
Recording	BOvr	Buffer becomes full and sounds are dumped
	Bful	Buffer capacity lowers and data are forcibly written
	Rtry	Retry count over

5. Quit the sound skip check result display mode, and press the **■** key to return to the test mode (display check mode).



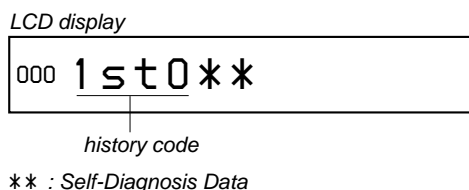
#### 4-6. SELF-DIAGNOSIS DISPLAY MODE

- This set uses the self-diagnosis system in which if an error occurs in recording/playback mode, the error is detected by the model control and power control blocks of the microprocessor and information on the cause is stored as history in EEPROM. By viewing this history in test mode, it helps you to analyze a fault and determine its location.

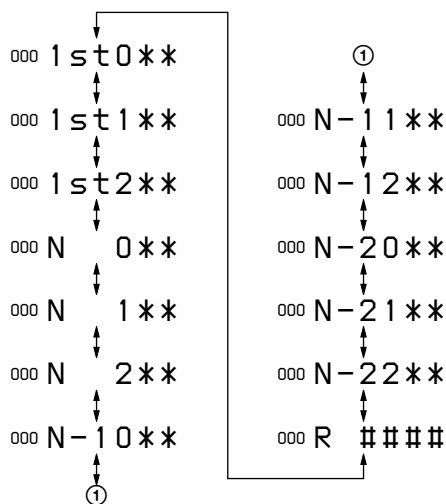
Total recording time has been recorded as optical pick-up using time, and it is compared with the total recording time in the self-diagnosis display mode to find when an error occurred.

Clear both total recording time and the time in self-diagnosis display mode, when the optical pick-up was replaced.

- Setting the test mode. (See page 13)
- Press the **[MENU →]** key on the set or press the **[DISPLAY]** key on the remote commander activates the self-diagnosis display mode where the LCD display as shown below.



- Then, each time **[▶▶]** key is pressed, LCD display descends by one as shown below. Also, the LCD display ascends by one when **[◀◀]** key is pressed.



- Quit the self-diagnosis display mode, and press the **[■]** key to return to the test mode (display check mode).

• **Description of Indication History**

History code number	Description
1st0	The first error
1st1	Total recording time when 1st0 was generated (Higher rank byte)
1st2	Total recording time when 1st0 was generated (Lower rank byte)
N 0	The last error
N 1	Total recording time when N 0 was generated (Higher rank byte)
N 2	Total recording time when N 0 was generated (Lower rank byte)
N-10	One error before the last.
N-11	Total recording time when N-10 was generated (Higher rank byte)
N-12	Total recording time when N-10 was generated (Lower rank byte)
N-20	Two errors before the last.
N-21	Total recording time when N-20 was generated (Higher rank byte)
N-22	Total recording time when N-20 was generated (Lower rank byte)
REC	Total recording time *

\* Total recording time  
Total recording time is recorded in minutes. It is recorded in hexadecimal format and up to 65,535 min. can be counted. It returns to "0000h" when recorder goes beyond this limit.

• **Description of Error Indication Codes**

Problem	Indication code	Meaning of code	Description
No error	00	No error	
Servo error	01	Illegal access target address was specified	Attempt to access an abnormal address
	02	High temperture	High temperture
	03	Focus error	Forcus could not be applied
	04	Spindle error	Abnormal lotation of disc
Power error	22	Low battery	Momentary interruption detected

**4-6-1. Clearing Self-Diagnosis Data and Total Recording Time**

1. Setting the test mode. (See page 13.)
2. Move up the jog key on the set or press the [DISPLAY] key on the remote commander activates the self-diagnosis display mode.
3. Press the [II] key or [REC] key on the set during display of self-diagnosis data when clearing the self-diagnosis data, or during display of total recording time when clearing the total recording time. Thus, "ClrOK?" will be displayed on the LCD, and press the same key again, and when self-diagnosis data is cleared "ErrCLR" is displayed and the data is cleared. Also when total recording time is cleared, "RecT O" is displayed and it is cleared.

#### 4-7. KEY CHECK MODE








This set can check if the set and remote commander function normally.

- Setting Method of Key Check Mode





1. Setting the test mode. (See page 13)
2. Press the **T MARK** or **DISPLAY** key on the remote commander for several seconds activates the key check mode where all segments of LCD turn OFF. (At the last two digits of DOT section, AD value of remote commander key line is displayed in hexadecimal)
3. When each key is pressed, it is displayed on the LCD, implying that it was successfully checked as shown below. However, for the slide switch on the set, it is not checked unless it is reciprocated.

\* The key pressed to enter the key check mode was already checked at that time.

##### Set key

Key	Indication
	PLAY
	FF
	FR
	PAUSE
VOL +	VOL +
VOL -	VOL -
	STOP
REC	REC
END SEARCH	END S
MENU 	JOG+
MENU 	JOG-
ENTER	PUSH
T MARK	T MARK
HOLD (hold)	HLDOn
HOLD (off)	HLDoff
SYNCHRO REC (on)	SYCon
SYNCHRO REC (off)	SYCoff

##### Remote commander key

Key	Indication
	rPLAY
	rFR
	rPAUSE
VOL +	rVOL +
VOL -	rVOL -
	rSTOP
PLAYMODE	rPMODE
DISPLAY	rDISP
HOLD (hold)	—
HOLD (off)	—

4. The test mode (display check mode) is automatically activated when all keys on the set and remote commander were checked (see above). Also, the test mode (display check mode) gets back if opening the upper panel during a key check.



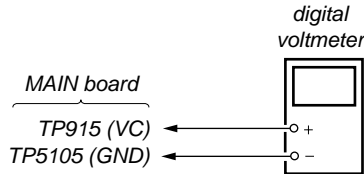
• **Adjustment method of VC PWM Duty (L)**  
(mode number: 762)

1. Select the manual mode of the test mode, and set the mode number 762. (See page 14)

LCD display



2. Connect a digital voltmeter to the TP915 (VC) on the MAIN board, and adjust [VOL +] key (voltage up) or [VOL -] key (voltage down) so that the voltage becomes  $2.5 \pm 0.02$  V. Proceed to the next step, if voltage is already adjusted.

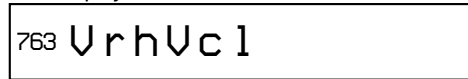


3. Press the [HOLD] key to write the adjusted value.

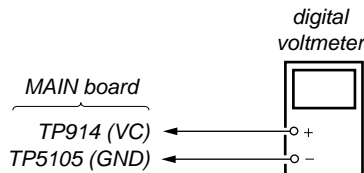
• **Adjustment method of VREM PWM Duty (H)**  
(mode number: 763)

1. Select the manual mode of the test mode, and set the mode number 763. (See page 14)

LCD display



2. Connect a digital voltmeter to the TP914 (VR) on the MAIN board, and adjust [VOL +] key (voltage up) or [VOL -] key (voltage down) so that the voltage becomes  $2.75 \pm 0.02$  V. Proceed to the next step, if voltage is already adjusted.

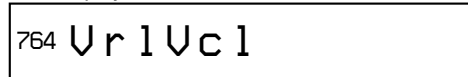


3. Press the [HOLD] key to write the adjusted value.

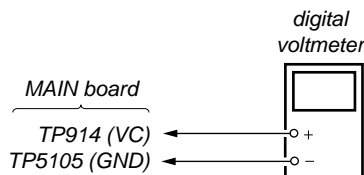
• **Adjustment method of VREM PWM Duty (L)**  
(mode number: 764)

1. Select the manual mode of the test mode, and set the mode number 764. (See page 14)

LCD display



2. Connect a digital voltmeter to the TP914 (VR) on the MAIN board, and adjust [VOL +] key (voltage up) or [VOL -] key (voltage down) so that the voltage becomes  $2.5 \pm 0.02$  V. Proceed to the next step, if voltage is already adjusted.



3. Press the [HOLD] key to write the adjusted value.

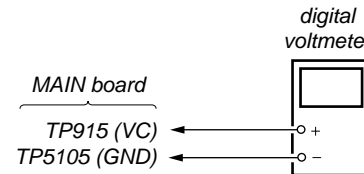
• **Adjustment method of VC PWM Duty (H)**  
(mode number: 765)

1. Select the manual mode of the test mode, and set the mode number 765. (See page 14)

LCD display



2. Connect a digital voltmeter to the TP915 (VC) on the MAIN board, and adjust [VOL +] key (voltage up) or [VOL -] key (voltage down) so that the voltage becomes  $2.5 \pm 0.02$  V. Proceed to the next step, if voltage is already adjusted.

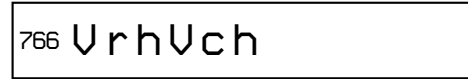


3. Press the [HOLD] key to write the adjusted value.

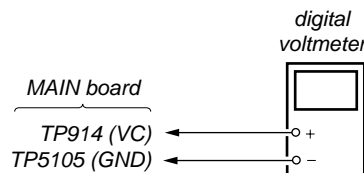
• **Adjustment method of VREM PWM Duty (H)**  
(mode number: 766)

1. Select the manual mode of the test mode, and set the mode number 766. (See page 14)

LCD display



2. Connect a digital voltmeter to the TP914 (VR) on the MAIN board, and adjust [VOL +] key (voltage up) or [VOL -] key (voltage down) so that the voltage becomes  $2.75 \pm 0.02$  V. Proceed to the next step, if voltage is already adjusted.

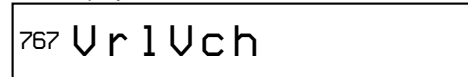


3. Press the [HOLD] key to write the adjusted value.

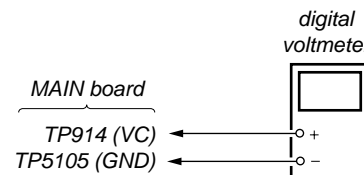
• **Adjustment method of VREM PWM Duty (L)**  
(mode number: 767)

1. Select the manual mode of the test mode, and set the mode number 767. (See page 14)

LCD display



2. Connect a digital voltmeter to the TP914 (VR) on the MAIN board, and adjust [VOL +] key (voltage up) or [VOL -] key (voltage down) so that the voltage becomes  $2.5 \pm 0.02$  V. Proceed to the next step, if voltage is already adjusted.



3. Press the [HOLD] key to write the adjusted value.

## 5-6. TEMPERATURE CORRECTION

### • Adjustment Method of temperature correction

1. Select the manual mode of test mode, and set the mode number 014. (See page 14)

LCD display

014 SetTmp

2. Measure the ambient temperature.
3. Adjust with [VOL +], [VOL -] key so that the adjusted value (hexadecimal value) becomes the ambient temperature. (Initial value: 14h = 20 °C, Adjusting range: 80h to 7fh (-128 °C to +127 °C))
4. Press the [ ] key to write the adjusted value.

## 5-7. OVERALL ADJUSTMENT MODE

### • Adjustment Method of Overall Adjustment Mode

1. Setting the test mode. (See page 13)
2. Press the [ ] or [VOL -] key activates the overall adjustment mode where the LCD display as shown below.

LCD display

000 ASY\*\* (DISC MARK)

(DISC MARK) : (DISC MARK) When power adjustment "H" finished;  
Outward ON  
When power adjustment "L" finished;  
Inward ON

Power supply is not yet adjusted unless both outward and inward disc marks are ON.

Note: Disc mark is displayed on the remote commander LCD only.

\*\*  
↑  
CD auto adjustment information  
F : CD auto adjustment finished  
1 : Manual adjustment remains (not auto adjustment)  
0 : Not adjusted yet  
MO auto adjustment information  
F : Auto adjustment finished  
1 : Manual adjustment remains  
0 : Not adjusted yet

3. Insert the CD test disc TDYS-1 (Parts No.4-963-646-01) or an available SONY CD disc.
4. Press [ ] key. The system discriminates between CD and MO and performs automatic adjustment for CD. Also, if [ ] key is pressed, CD is adjusted automatically.

LCD display

%%: CD RUN

%%: Manual mode number being executed

5. If the result of automatic adjustment is OK, the following display appears in the LCD:

LCD display

341 CD OK

6. If the result of automatic adjustment is NG, the following display appears in the LCD:

LCD display

### NG

### : Overall adjustment. NG mode number

7. If NG, set the manual mode. Perform automatic adjustment for the items not accepted. (See page 14)

### • Overall CD adjustment items

Item No.	Contents
312	
313	CD electrical offset adjustment
314	
328	CD TWPP gain adjustment
321	CD TE gain adjustment
323	
332	CD TE offset adjustment
336	CD ABCD level adjustment
344	CD focus gain adjustment
345	CD tracking gain adjustment
521	
522	CD two-axis sensitivity adjustment
341	CD focus bias adjustment

8. If CD adjustment is OK, insert an available SONY MO disc (recorded). At this time, be sure to turn OFF the disc protect switch.
9. Press [ ] key. The system discriminates between CD and MO and performs automatic adjustment for the MO disc. Also, if [ ] key is pressed, MO is adjusted automatically. However, when CD adjustment is not finished, "SetCD!" is blinking on the LCD and MO adjustment is not executed.

LCD display

%%: MO RUN

%%: Manual mode number being executed

10. If the result of automatic adjustment is OK, the following display appears in the LCD:

LCD display

141 MO OK

11. If the result of automatic adjustment is NG, the following display appears in the LCD:

LCD display

### NG

### : Overall adjustment. NG mode number

12. If NG, set the manual mode. Perform automatic adjustment for the items not accepted. (See page 14)

• Overall MO adjustment items


Item No.	Contents
112	MO electrical offset adjustment
113	
114	
118	
221	Low reflective CD TE gain adjustment
223	Low reflective CD TE offset adjustment
232	
236	Low reflective CD ABCD level adjustment
244	Low reflective CD focus gain adjustment
245	Low reflective CD tracking gain adjustment
121	MO TE gain adjustment
122	MO TE offset adjustment
134	MO TWPP gain adjustment
131	MO x2 speed read TWPP offset adjustment
132	
136	MO ABCD level adjustment
144	MO focus gain adjustment
145	MO tracking gain adjustment
434	MO write TWPP gain adjustment
431	MO write TWPP offset adjustment
432	
436	MO write ABCD level adjustment
445	MO write tracking gain adjustment
411	MO x1 speed read TWPP offset adjustment
412	
448	32 cluster full recording
141	MO focus bias adjustment

13. To clear the data in overall adjustment mode, set the manual mode and change the mode number 021 (Res NV) to reset the NV. (See page 14)
14. When both CD and MO overall adjustments are OK, set the manual mode and clear the clock data.  
For the microprocessor version 1.20 or later, set the mode number 043 (Resume).  
Note: In the mode number 043 (Resume), "Res\*\*\*" display cannot be seen because of too fast processing.

If microprocessor version 1.20 or later

LCD display

043 Resume

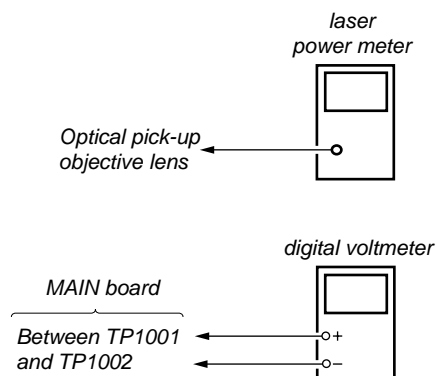
↓ Press the  key, historical data clear

043 ResClr






Note: In step 10, set the clock data to 99Y11M11D11H11M00S, and in step 14, do not set the clock.

## 5-8. LASER POWER CHECK

Connection :

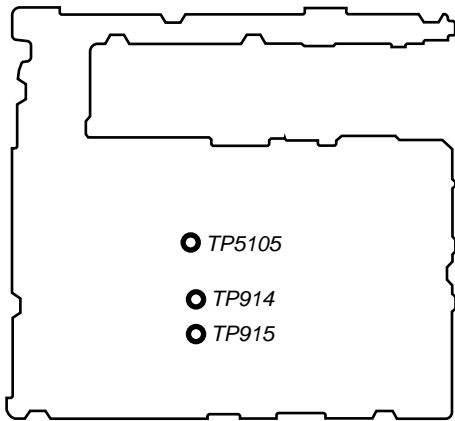


Check Method :

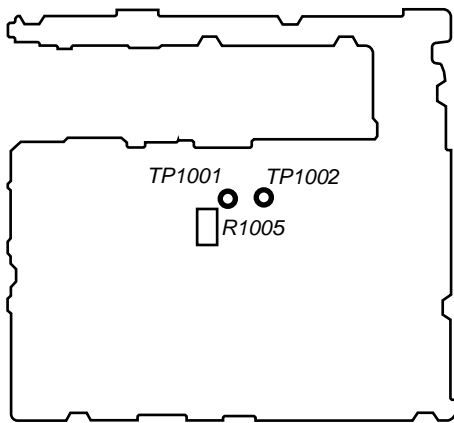
1. Select the manual mode of test mode, and set the laser power adjusting mode. (mode number 010)
2. Press the  key continuously until the optical pick-up moves to the most inward track.
3. Open the cover and set the laser power meter on the objective lens of the optical pick-up.
4. Press the  key, and set the laser MO read adjustment mode. (mode number 011)
5. Check that the laser power meter reading is  $0.81 \pm 0.08$  mW.
6. Check that the voltage between TP1001 and TP1002 at this time is below 44 mV.
7. Press the  key, and set the laser CD read adjustment mode. (mode number 012)
8. Check that the laser power meter reading is  $0.97 \pm 0.10$  mW.
9. Check that the voltage between TP1001 and TP1002 at this time is below 44 mV.
10. Press the  key, and set the laser MO write adjustment mode. (mode number 013)
11. Check that the laser power meter reading is  $4.95 \pm 0.50$  mW.
12. Check that the voltage between TP1001 and TP1002 at this time is below 80 mV.
13. Press the  key.
14. Release the test mode.

**Connecting Location:**

– MAIN BOARD (SIDE A) –



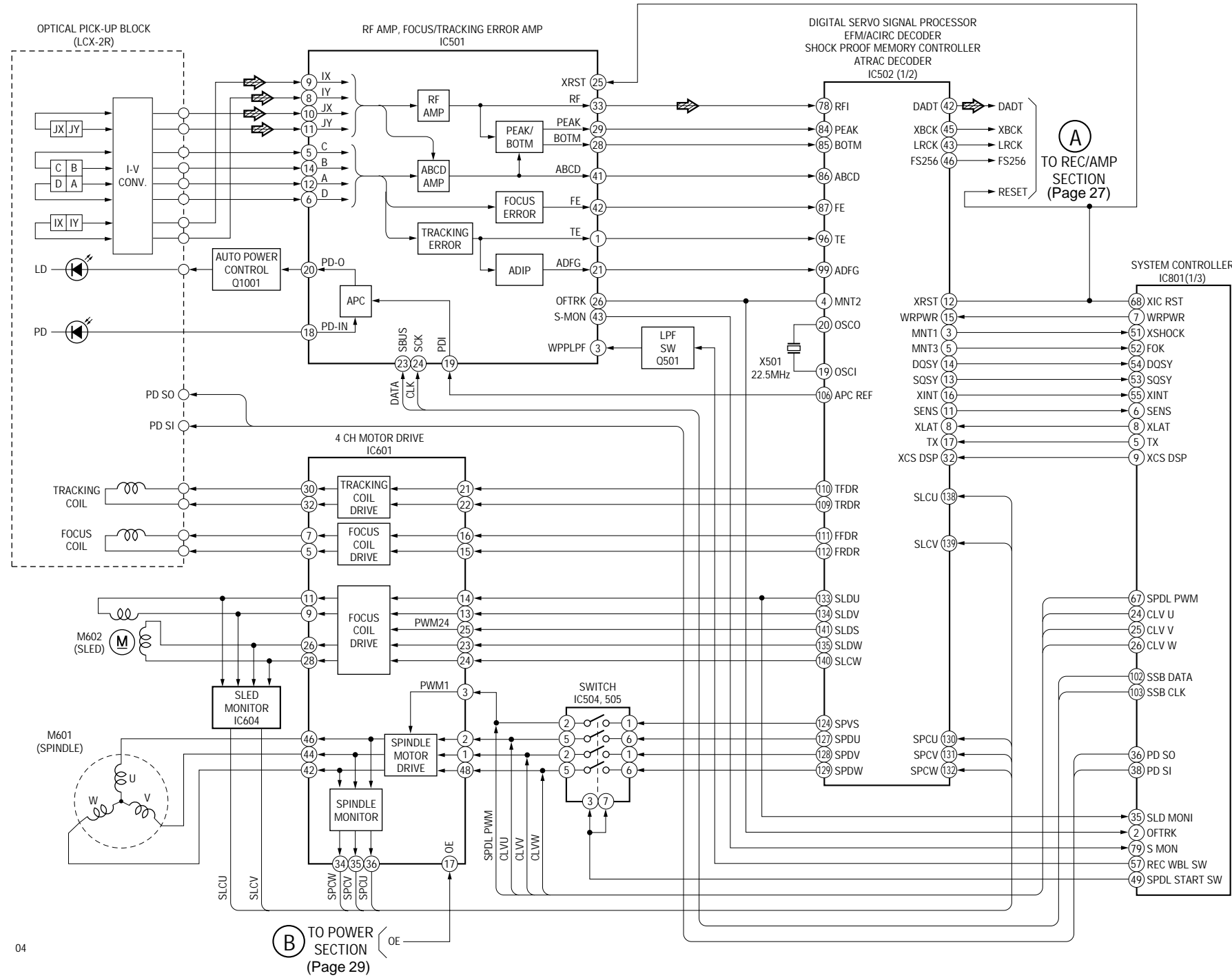
– MAIN BOARD (SIDE B) –





# SECTION 6 DIAGRAMS

## 6-1. BLOCK DIAGRAM — MD SECTION —

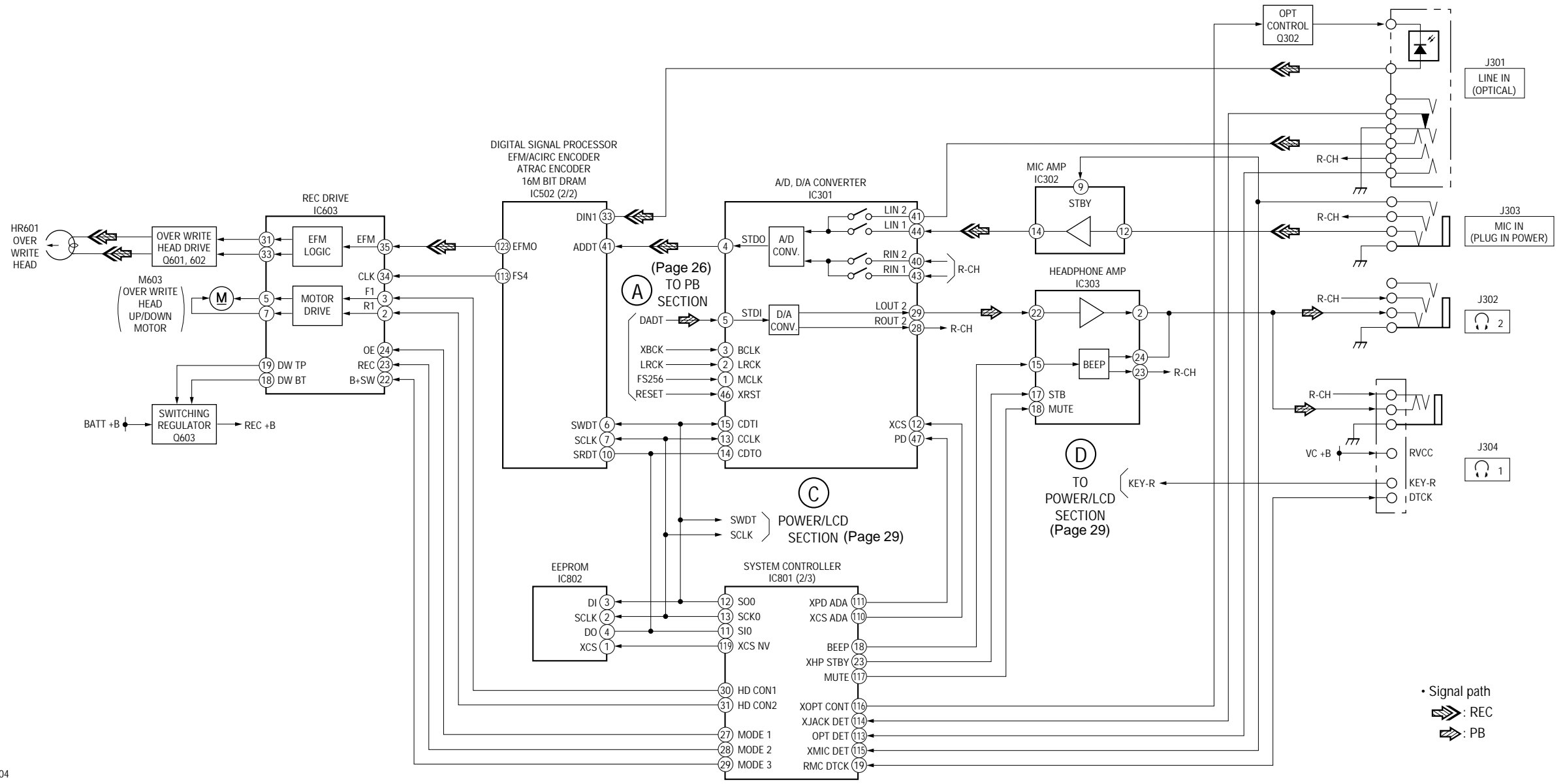


04

**(B)** TO POWER SECTION (Page 29)

• Signal path  
⇒ : PB

6-2. BLOCK DIAGRAM — AUDIO SECTION —



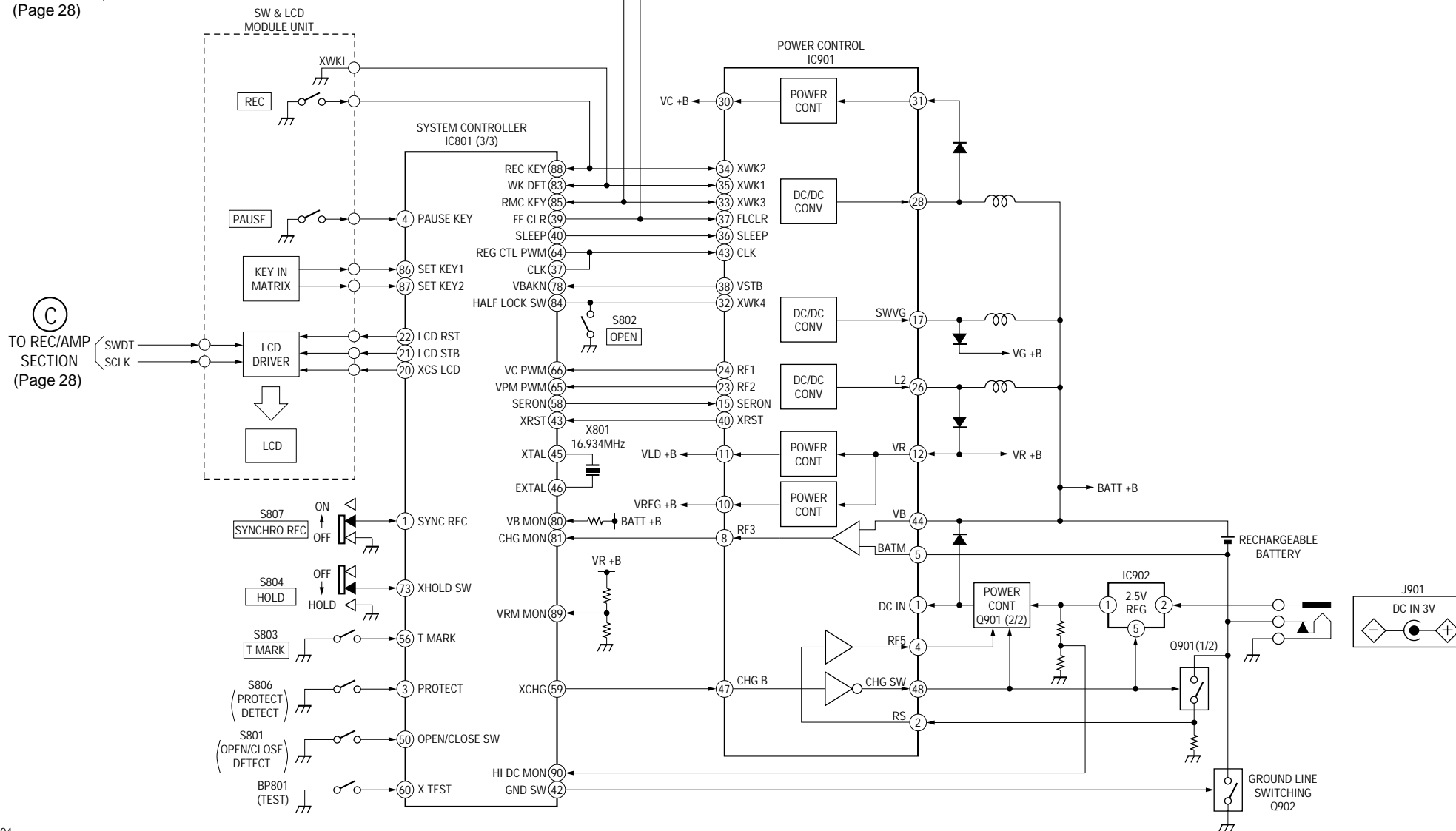
6-3. BLOCK DIAGRAM — POWER SUPPLY SECTION —

(Page 25)

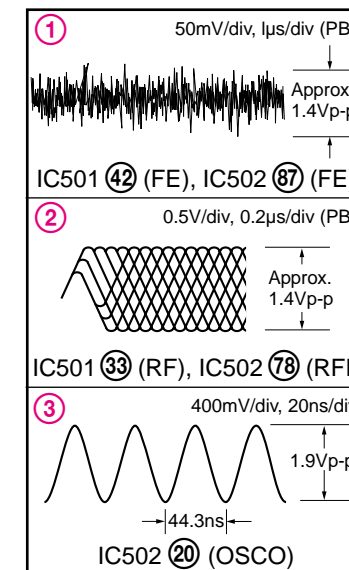
(B) TO PB SECTION  
OE

(D) TO REC/AMP SECTION  
RMC KEY

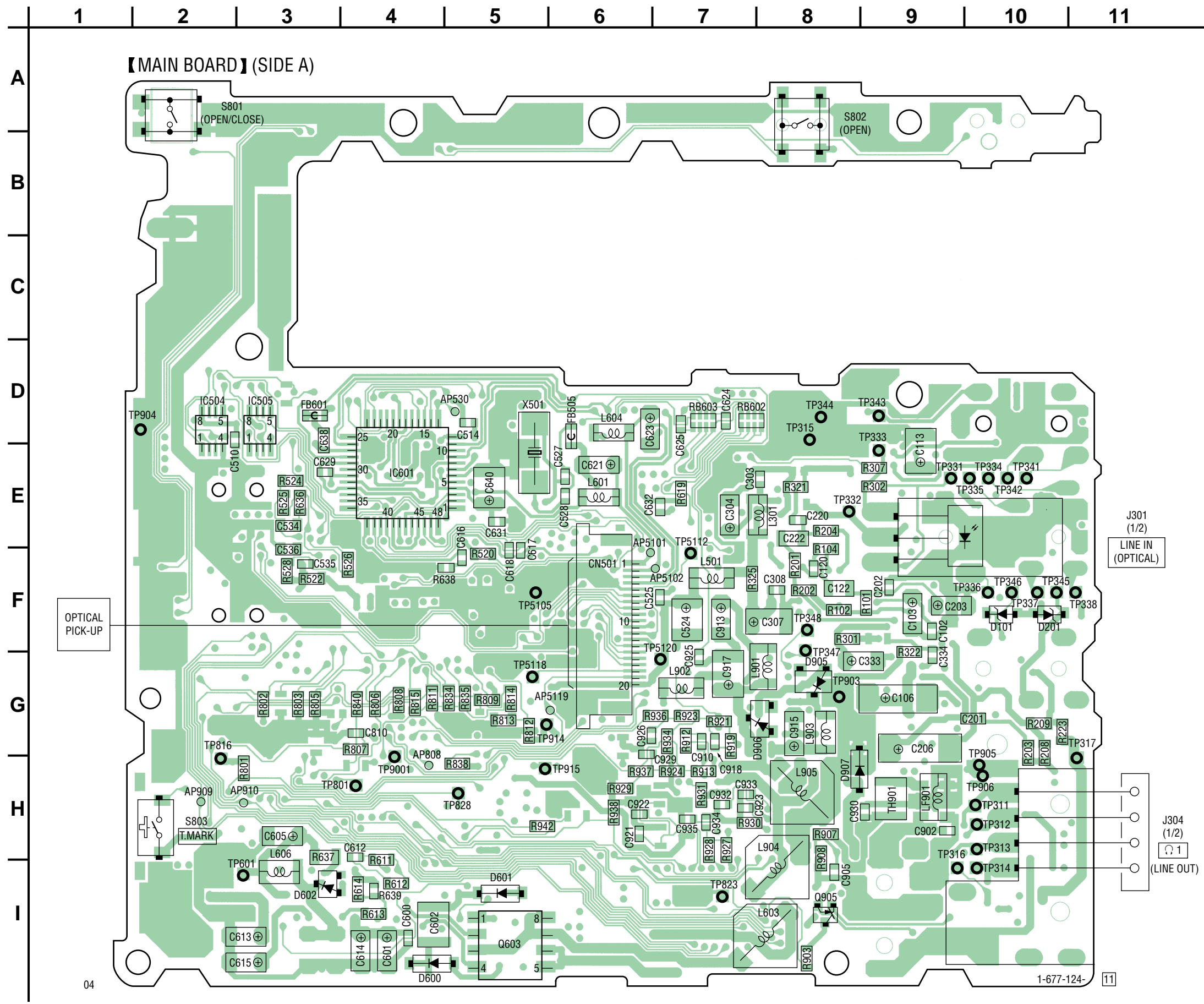
(C) TO REC/AMP SECTION  
SWDT  
SCLK



• Waveforms



6-4. PRINTED WIRING BOARD — MAIN BOARD —



**Common note on Schematic Diagram:**

- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ :  $\mu\text{F}$  50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $1/4\text{W}$  or less unless otherwise specified.
- % : indicates tolerance.
- $\Delta$  : internal component.
- $\square$  : panel designation.

**Note:**  
The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

**Note:**  
Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- $\text{---}$  : B+ Line.
- Power voltage is dc 3V and fed with regulated dc power supply from external power voltage jack.
- Voltages and waveforms are dc with respect to ground in playback mode.  
no mark : REC  
( ) : PB  
\* : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 M $\Omega$ ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.  
 $\Rightarrow$  : CD

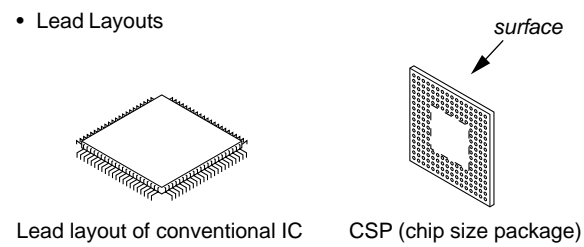
**Common note on Printed Wiring Boards:**

- $\text{---}$  : parts extracted from the conductor side.
- $\Delta$  : internal component.
- $\text{---}$  : Pattern from the side which enables seeing.

**Caution:**  
Pattern face side: Parts on the pattern face side seen from the (Side B) pattern face are indicated.  
Parts face side: Parts on the parts face side seen from the (Side A) parts face are indicated.

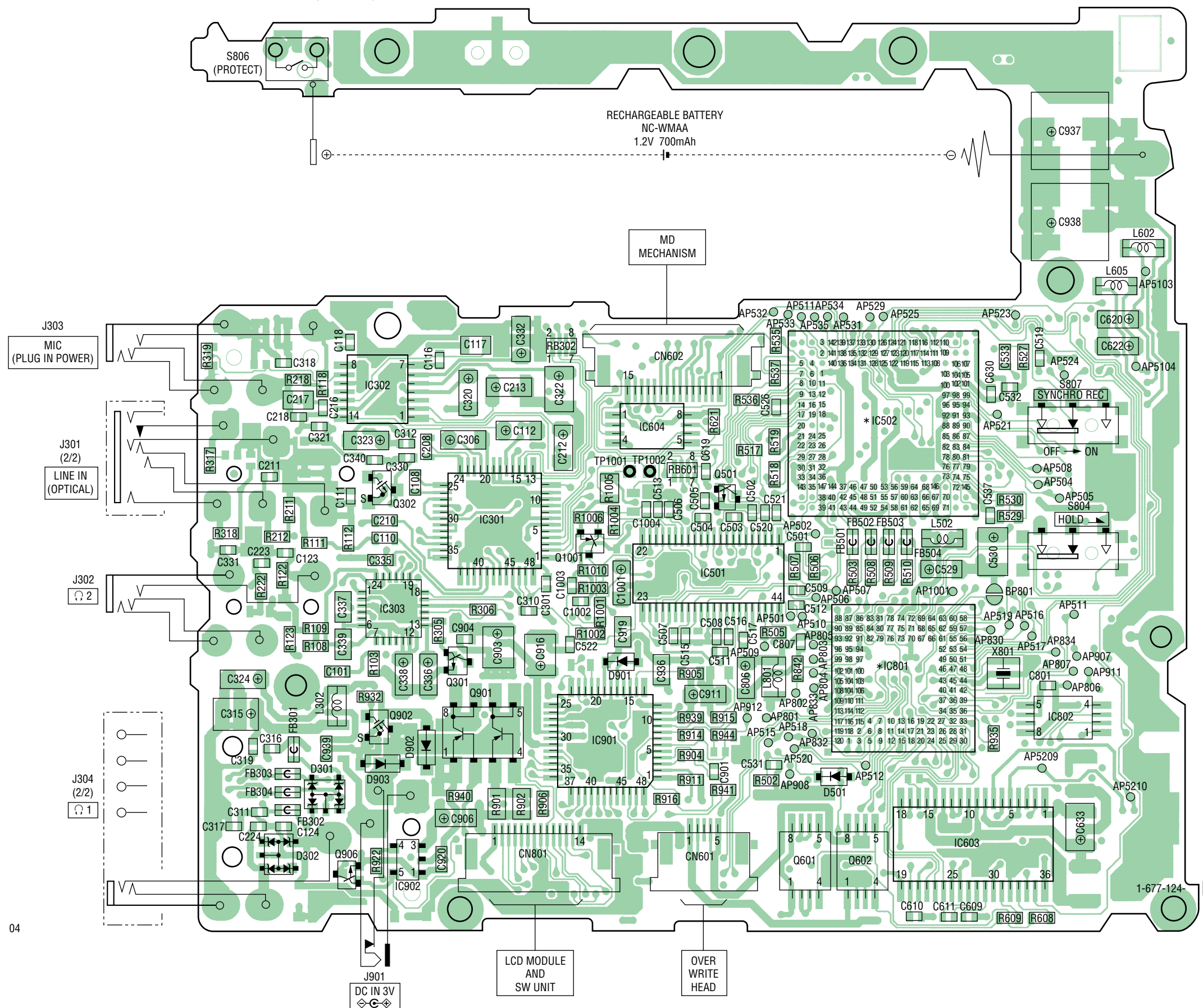
• Main board is four-layer printed board. However, the patterns of layers 2 and 3 have not been included in this diagrams.

\* IC502, IC801 is not replaceable



13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1

【MAIN BOARD】(SIDE B)



• Semiconductor Location

Ref. No.	Location
D101	F-10
D201	F-10
(D301)	H-10
(D302)	I-10
(D501)	H-5
D600	I-4
D601	I-5
D602	I-3
(D901)	G-7
(D902)	H-9
(D903)	H-9
D905	G-8
D906	G-7
D907	G-8
(IC301)	F-8
(IC302)	D-9
(IC303)	F-9
(IC501)	F-6
(IC502)	E-4
IC504	D-2
IC505	D-3
IC601	E-4
(IC603)	I-3
(IC604)	E-7
(IC801)	G-4
(IC802)	H-3
(IC901)	H-7
(IC902)	I-9
(Q301)	G-9
(Q302)	E-9
(Q501)	E-6
(Q601)	I-5
(Q602)	I-5
Q603	I-3
(Q901)	H-8
(Q902)	H-9
Q905	I-8
(Q906)	I-10
(Q1001)	F-7

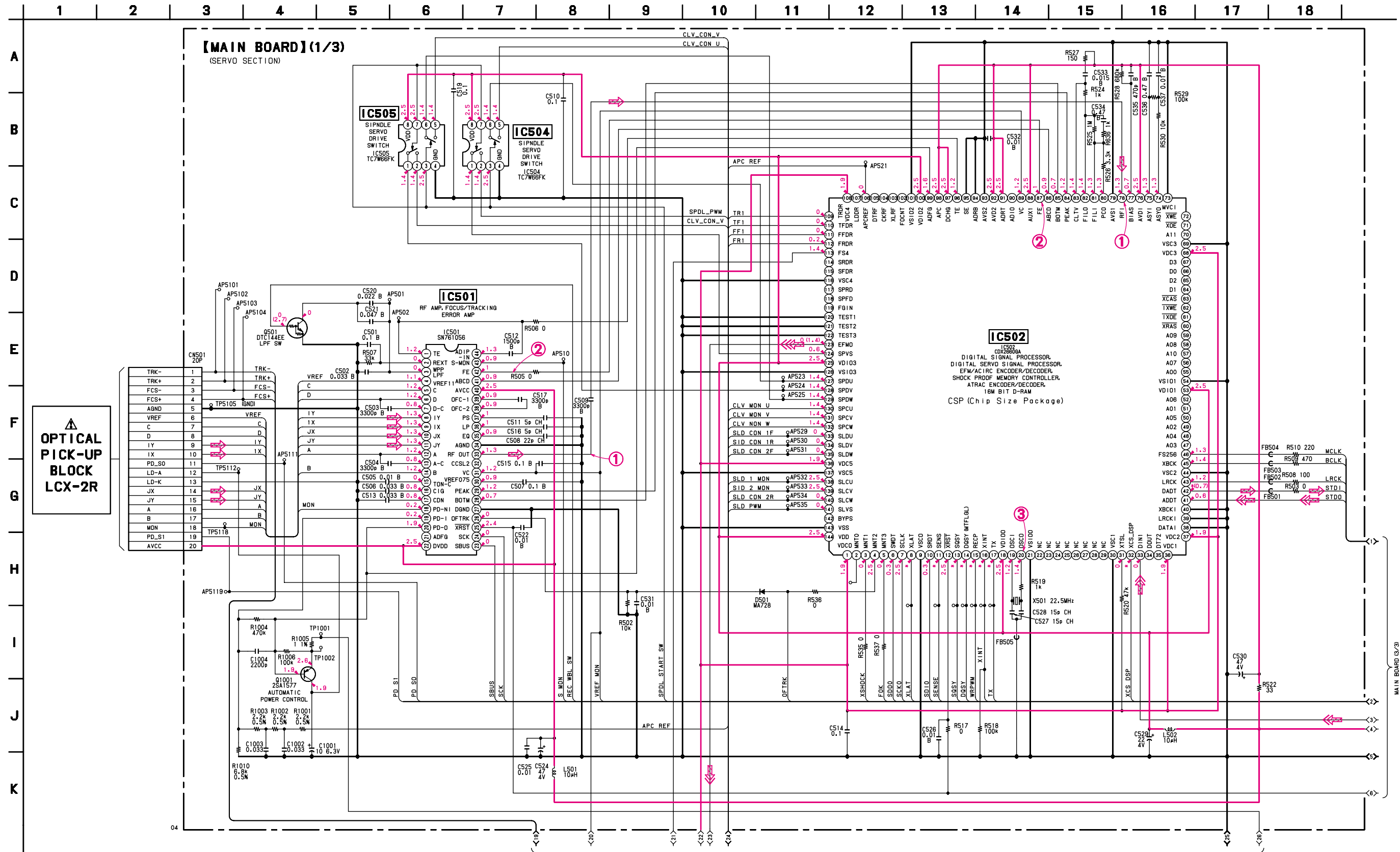
( ) : SIDE B

A  
B  
C  
D  
E  
F  
G  
H  
I  
J

04

6-5. SCHEMATIC DIAGRAM — MAIN BOARD (1/3) — • Refer to page 30 for Waveforms.

• Refer to page 41 for IC Block Diagrams.

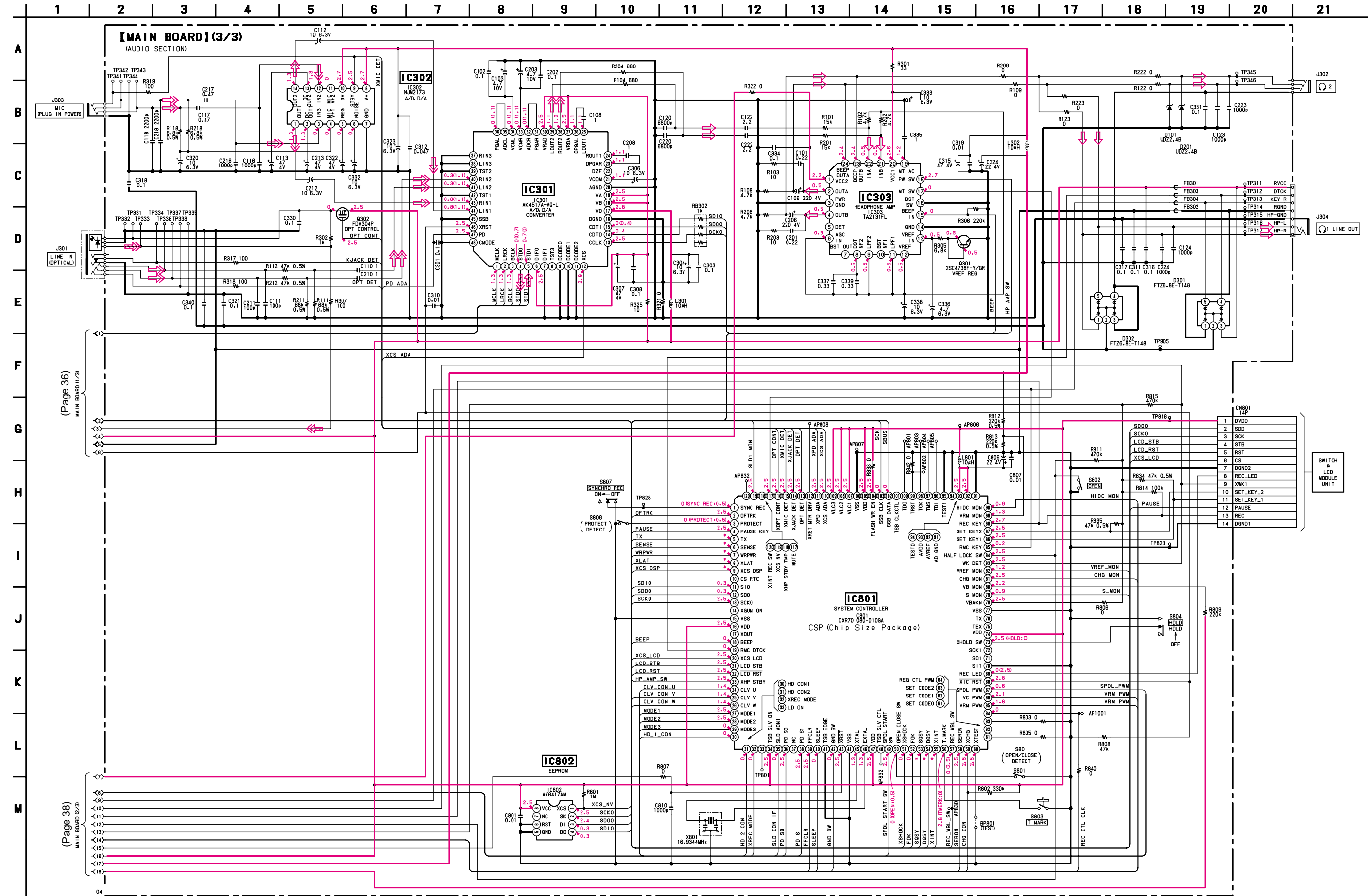


MAIN BOARD (2/3) (Page 38)

MAIN BOARD (3/3) (Page 39)



6-7. SCHEMATIC DIAGRAM — MAIN BOARD (3/3) — • Refer to page 41, 43 for IC Block Diagrams.



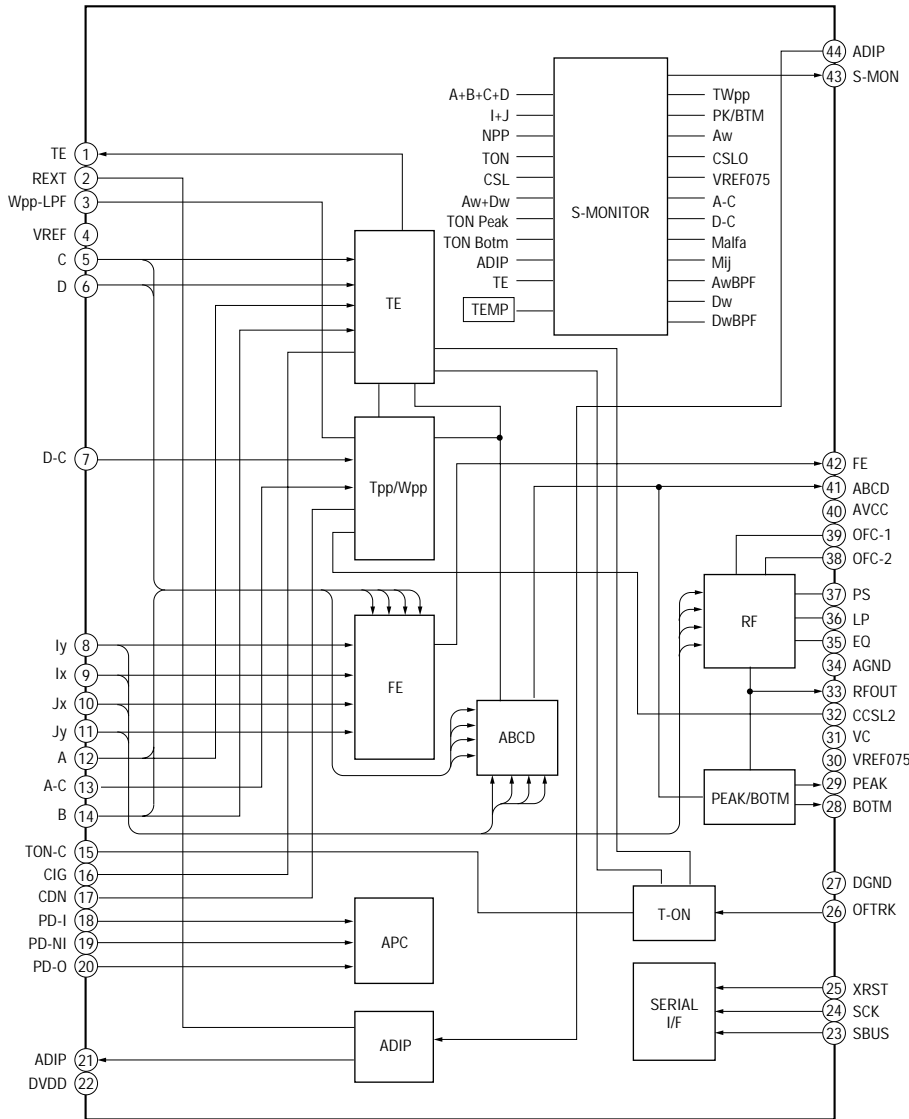
(Page 36)

(Page 38)

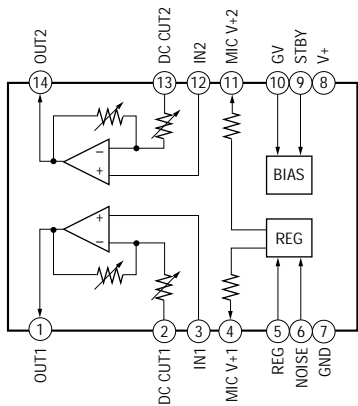


### 6-8. IC BLOCK DIAGRAM

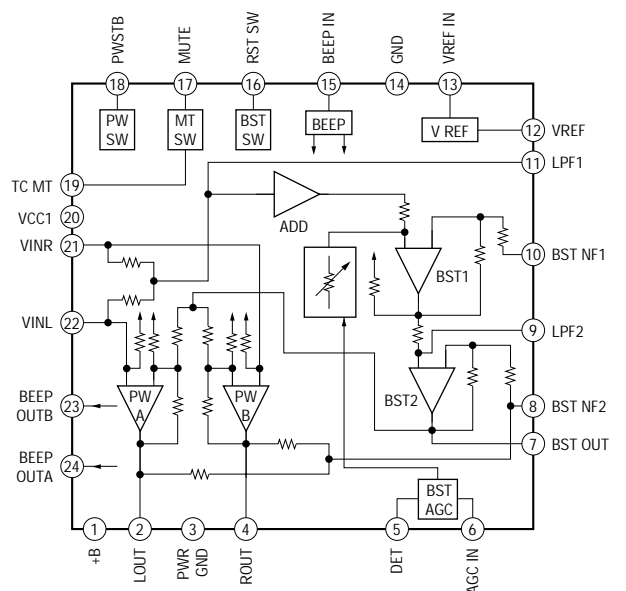
**IC501 SN761056**



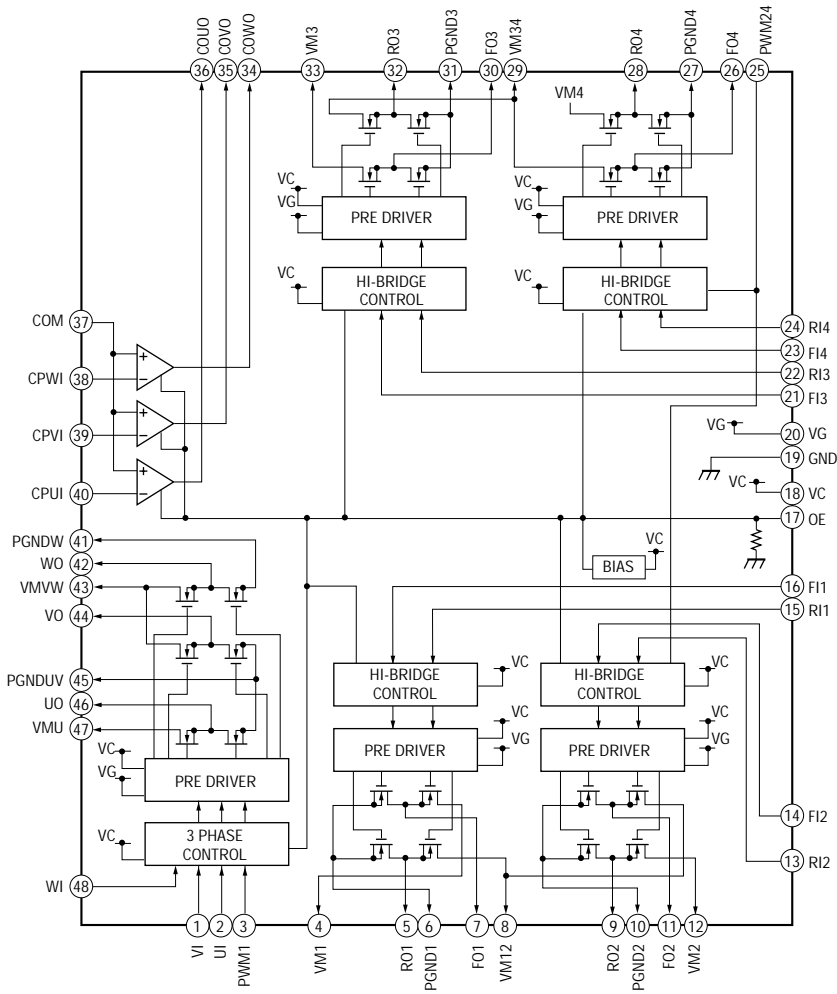
**IC302 NJM2173**



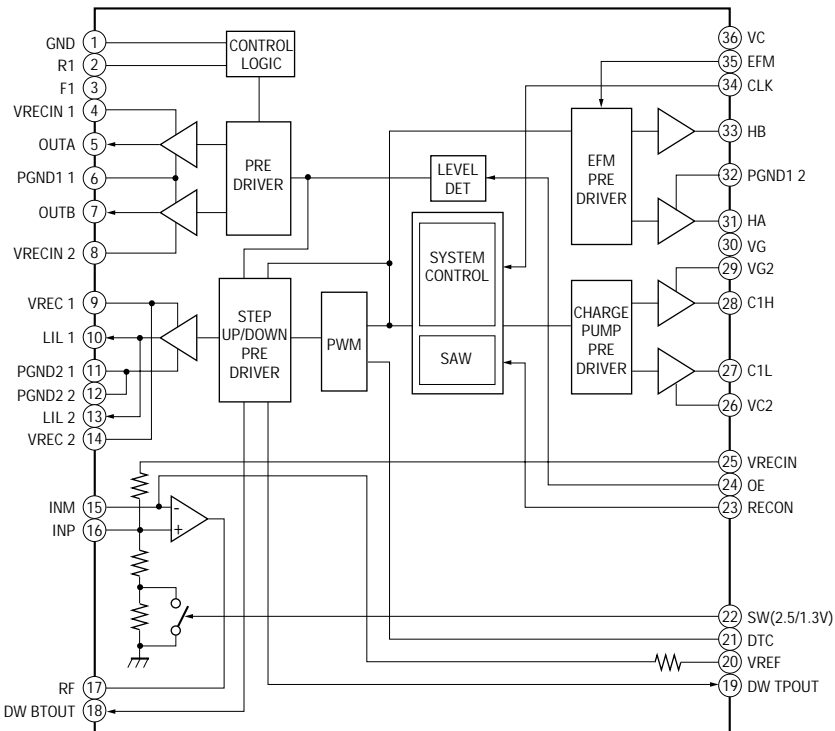
**IC303 TA2131FL**



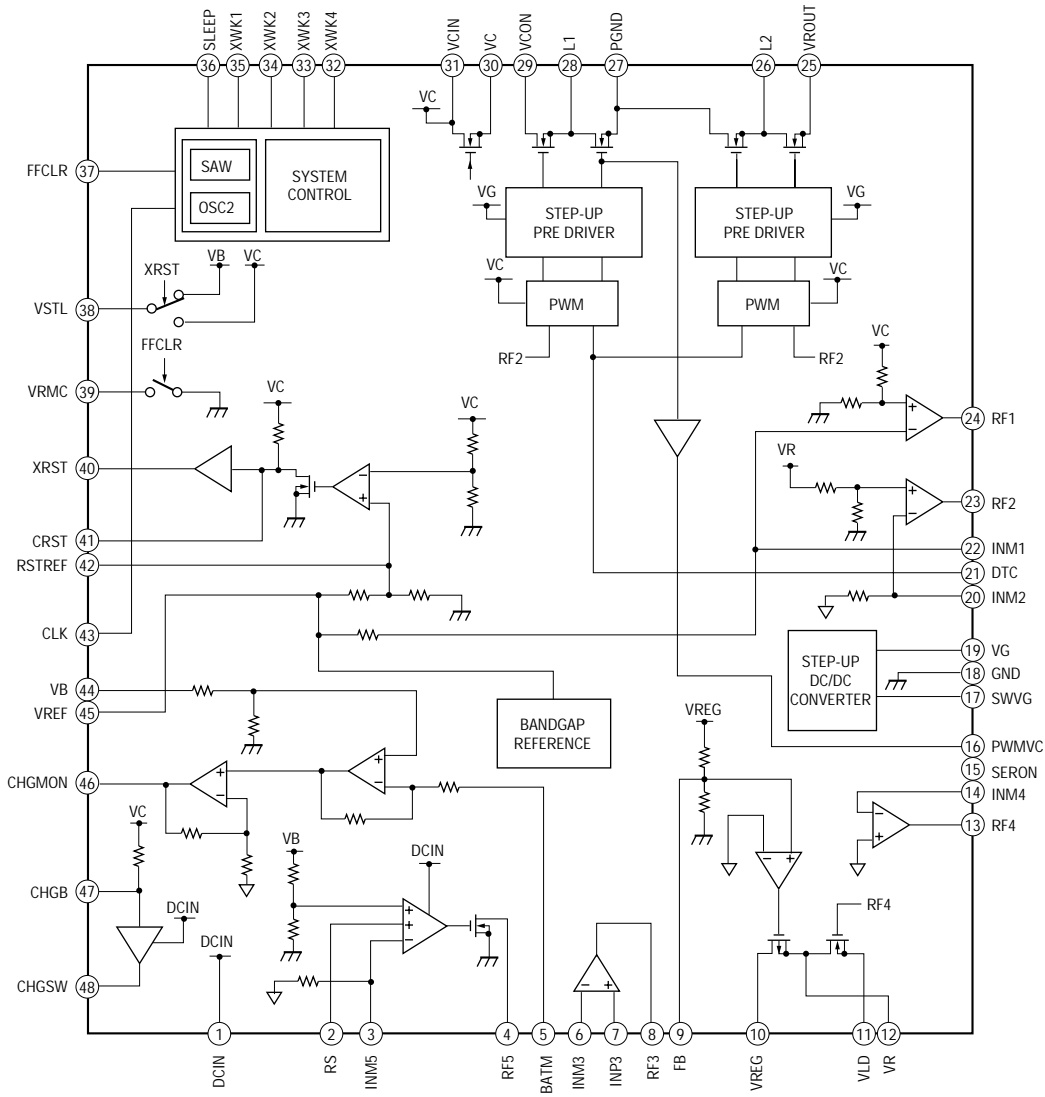
**IC601 MPC17A56FTA**



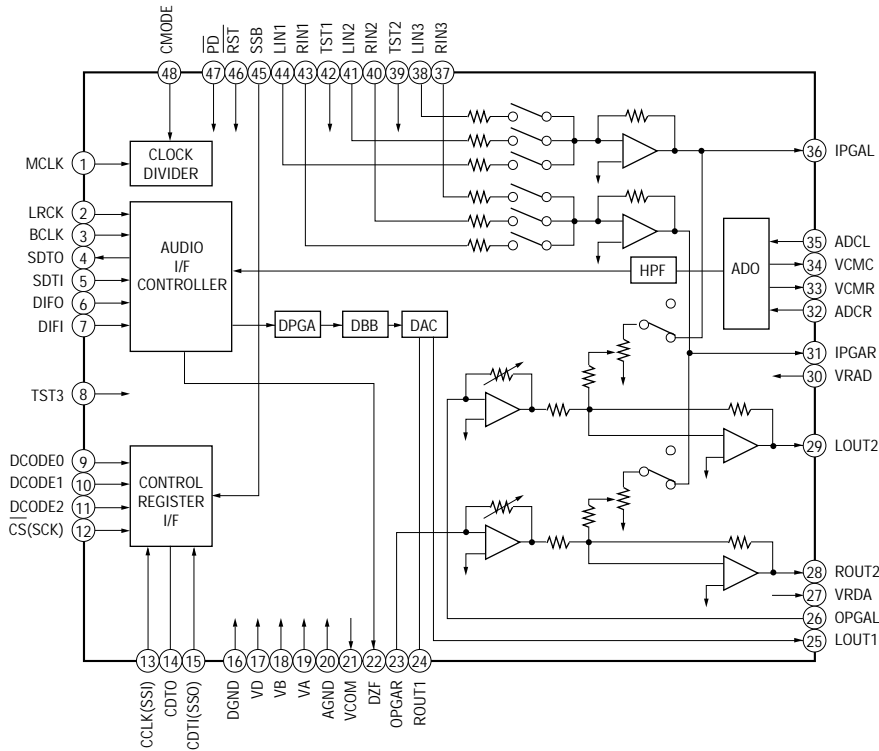
**IC603 MPC18A21MTB**



**IC901 MPC18A31FTA**



**IC301 AK4517-VQ-L**



## 6-9. IC PIN DESCRIPTIONS

### • MAIN BOARD IC501 SN761056ADBT (RF AMP, FOCUS/TRACKING ERROR AMP)

Pin No.	Pin Name	I/O	Pin Description
1	TE	O	Tracking error signal output to the CXD2660GA (IC502)
2	REXT	—	Connected to the external resistor for the ADIP amplifier control
3	WPPLPF	—	Connected to the external capacitor for low-pass filter of the TPP/WPP
4	VREF11	O	Reference voltage output terminal (+1.1 V)
5	C	I	Signal input from the optical pick-up detector (C)
6	D	I	Signal input from the optical pick-up detector (D)
7	D-C	I	Signal input from the optical pick-up detector (D) (AC input)
8	IY	I	I-V converted RF signal IY input from the optical pick-up block detector
9	IX	I	I-V converted RF signal IX input from the optical pick-up block detector
10	JX	I	I-V converted RF signal JX input from the optical pick-up block detector
11	JY	I	I-V converted RF signal JY input from the optical pick-up block detector
12	A	I	Signal input from the optical pick-up detector (A)
13	A-C	I	Signal input from the optical pick-up detector (A) (AC input)
14	B	I	Signal input from the optical pick-up detector (B)
15	TON-C	—	Connected to the external capacitor for the TON hold
16	CIG	—	Connected to the external capacitor for low-pass filter of the NPP divider denominator
17	CDN	—	Connected to the external capacitor for low-pass filter of the CSL divider denominator
18	PD-NI	I	Light amount monitor input terminal (non-invert input)
19	PD-I	I	Light amount monitor input terminal (invert input)
20	PD-O	O	Light amount monitor output terminal
21	ADFG	O	ADIP duplex FM signal (22.05 kHz $\pm$ 1 kHz) output to the CXD2660GA (IC502)
22	DVDD	—	Power supply terminal (+2.4 V) (digital system)
23	SBUS	I/O	Two-way SSB serial data bus with the system controller (IC801)
24	SCK	I	SSB serial clock signal input from the system controller (IC801)
25	$\overline{\text{XRST}}$	I	Reset signal input from the system controller (IC801) "L": reset
26	OFTRK	I	Off track signal input from the CXD2660GA (IC502)
27	DGND	—	Ground terminal (digital system)
28	BOTM	O	Light amount signal (RF/ABCD) bottom hold output to the CXD2660GA (IC502)
29	PEAK	O	Light amount signal (RF/ABCD) peak hold output to the CXD2660GA (IC502)
30	VREF075	—	Connected to the external capacitor for the internal reference voltage
31	VC	O	Middle point voltage (+1.2 V) generation output terminal
32	CCSL2	—	Connected to the external capacitor for low-pass filter of the TPP/WPP
33	RF OUT	O	Playback EFM RF signal output to the CXD2660GA (IC502)
34	AGND	—	Ground terminal (analog system)
35	EQ	—	Connected to the external capacitor for the RF equalizer
36	LP	—	Connected to the external capacitor for the RF equalizer
37	PS	—	Connected to the external capacitor for the RF equalizer
38	OFC-2	—	Connected to the external capacitor for the RF AC coupling
39	OFC-1	—	Connected to the external capacitor for the RF AC coupling
40	AVCC	—	Power supply terminal (+2.4 V) (analog system)
41	ABCD	O	Light amount signal (ABCD) output to the CXD2660GA (IC502)
42	FE	O	Focus error signal output to the CXD2660GA (IC502)
43	S-MON	O	Servo signal monitor output to the system controller (IC801)
44	ADIP-IN	I	ADIP duplex FM signal (22.05 kHz $\pm$ 1 kHz) input terminal Not used

• MAIN BOARD IC502 CXD2660GA

(DIGITAL SIGNAL PROCESSOR, DIGITAL SERVO SIGNAL PROCESSOR, EFM/ACIRC ENCODER/DECODER, SHOCK PROOF MEMORY CONTROLLER, ATRAC ENCODER/DECODER, 16M BIT D-RAM)

Pin No.	Pin Name	I/O	Pin Description
1	VDC0	—	Power supply terminal (+1.8 V) (for internal logic)
2	MNT0	I/O	Not used (open)
3	MNT1	O	Recording shock detect signal output to the system controller (IC801)
4	MNT2	O	Off track signal output to the SN761056ADBT (IC501) and system controller (IC801)
5	MNT3	O	Focus OK signal output to the system controller (IC801) “H”: is output when focus is on (“L”: NG)
6	SWDT	I	Serial data input from the system controller (IC801)
7	SCLK	I (S)	Serial clock signal input from the system controller (IC801)
8	XLAT	I (S)	Serial data latch pulse input from the system controller (IC801)
9	VSC0	—	Ground terminal (for internal logic)
10	SRDT	O (3)	Serial data output to the system controller (IC801)
11	SENS	O (3)	Internal status (SENSE) output to the system controller (IC801)
12	$\overline{\text{XRST}}$	I (S)	Reset signal input from the system controller (IC801) “L”: reset
13	SQSY	O	Subcode Q sync (SCOR) output the system controller (IC801) “L” is output every 13.3 msec Almost all, “H” is output
14	DQSY (MTFLGL)	O	Digital In U-bit CD format subcode Q sync (SCOR) output to the system controller (IC801) “L” is output every 13.3 msec Almost all, “H” is output
15	WRPWR	I	Laser power selection signal input from the system controller (IC801) “L”: playback mode, “H”: recording mode
16	XINT	O	Interrupt status output to the system controller (IC801)
17	TX	I	Recording data output enable signal input from the system controller (IC801) Writing data transmission timing input
18	VDIO0	—	Power supply terminal (+2.4 V) (for I/O)
19	OSCI	I	System clock (512Fs=22.5792 MHz) input terminal
20	OSCO	O	System clock (512Fs=22.5792 MHz) output terminal
21	VSIO0	—	Ground terminal (for I/O)
22 to 29	NC	—	Not used (open)
30	VSC1	—	Ground terminal (for internal logic)
31	XTSL	I	Input terminal for the system clock frequency setting “L”: 45.1584 MHz, “H”: 22.5792 MHz (fixed at “H” in this set)
32	XCS_DSP	I	Chip select signal input from the system controller (IC801)
33	DIN1	I	Digital audio signal input terminal when recording mode
34	DOUT	O	Digital audio signal output terminal when playback mode Not used (open)
35	DT72	O	Not used (open)
36, 37	VDC1, VDC2	—	Power supply terminal (+1.8 V) (for internal logic)
38	DATAI	I	Serial data input terminal Not used (fixed at “L”)
39	LRCKI	I	L/R sampling clock signal (44.1 kHz) input terminal “L”: Rch, “H”: Lch Not used (fixed at “L”)
40	XBCKI	I	Serial input/output data bit clock signal (2.8224 MHz) input terminal Not used (fixed at “L”)
41	ADDT	I	Recording data signal input from the A/D, D/A converter (IC301)
42	DADT	O	Playback data signal output to the A/D, D/A converter (IC301)
43	LRCK	O	L/R sampling clock signal (44.1 kHz) output to the A/D, D/A converter (IC301)
44	VSC2	—	Ground terminal (for internal logic)
45	XBCK	O	Serial input/output data bit clock signal (2.8224 MHz) output to the A/D, D/A converter (IC301)
46	FS256	O	Clock signal (11.2896 MHz) output to the A/D, D/A converter (IC301) (X' tal system)
47 to 52	A03, A04, A02, A05, A01, A06	O	Address signal output to the external D-RAM Not used (open)

\* I (S) stands for schmitt input, I (A) for analog input, O (3) for 3-state output, and O (A) for analog output in the column I/O

Pin No.	Pin Name	I/O	Pin Description
53	VDIO1	—	Power supply terminal (+2.4 V) (for I/O)
54	VSIO1	—	Ground terminal (for I/O)
55 to 59	A00, A07, A10, A08, A09	O	Address signal output to the external D-RAM Not used (open)
60	$\overline{\text{X}}\text{RAS}$	O	Row address strobe signal output to the external D-RAM “L” active Not used (open)
61	$\overline{\text{I}}\text{XOE}$	O	Output enable signal output terminal for internal D-RAM “L” active Not used (open)
62	$\overline{\text{I}}\text{XWE}$	O	Data write enable signal output terminal for internal D-RAM “L” active Not used (open)
63	$\overline{\text{X}}\text{CAS}$	O	Column address strobe signal output to the external D-RAM “L” active Not used (open)
64 to 67	D1, D2, D0, D3	I/O	Two-way data bus with the external D-RAM Not used (open)
68	VDC3	—	Power supply terminal (+1.8 V) (for internal logic)
69	VSC3	—	Ground terminal (for internal logic)
70	A11	O	Address signal output to the external D-RAM Not used (open)
71	$\overline{\text{X}}\text{OE}$	O	Output enable signal output to the external D-RAM “L” active Not used (open)
72	$\overline{\text{X}}\text{WE}$	O	Data write enable signal output to the external D-RAM “L” active Not used (open)
73	MVCI	I (S)	Digital in PLL oscillation input from the external VCO Not used (fixed at “L”)
74	ASYO	O (A)	Playback EFM full-swing output terminal
75	ASYI	I (A)	Playback EFM asymmetry comparator voltage input terminal
76	AVD1	—	Power supply terminal (+2.4 V) (analog system)
77	BIAS	I (A)	Playback EFM asymmetry circuit constant current input terminal
78	RFI	I (A)	Playback EFM RF signal input from the SN761056ADBT (IC501)
79	AVS1	—	Ground terminal (analog system)
80	PCO	O (3)	Phase comparison output for master clock of the recording/playback EFM master PLL
81	FILI	I (A)	Filter input for master clock of the recording/playback EFM master PLL
82	FILO	O (A)	Filter output for master clock of the recording/playback EFM master PLL
83	CLTV	I (A)	Internal VCO control voltage input of the recording/playback EFM master PLL
84	PEAK	I (A)	Light amount signal (RF/ABCD) peak hold input from the SN761056ADBT (IC501)
85	BOTM	I (A)	Light amount signal (RF/ABCD) bottom hold input from the SN761056ADBT (IC501)
86	ABCD	I (A)	Light amount signal (ABCD) input from the SN761056ADBT (IC501)
87	FE	I (A)	Focus error signal input from the SN761056ADBT (IC501)
88	AUX1	I (A)	Auxiliary signal (I <sub>3</sub> signal/temperature signal) input terminal Not used (fixed at “H”)
89	VC	I (A)	Middle point voltage (+1.2 V) input terminal
90	ADIO	O (A)	Monitor output of the A/D converter input signal Not used (open)
91	ADRT	I (A)	A/D converter operational range upper limit voltage input terminal (fixed at “H” in this set)
92	AVD2	—	Power supply terminal (+2.4 V) (analog system)
93	AVS2	—	Ground terminal (analog system)
94	ADRB	I (A)	A/D converter operational range lower limit voltage input terminal (fixed at “L” in this set)
95	SE	I (A)	Sled error signal input terminal Not used (fixed at “L”)
96	TE	I (A)	Tracking error signal input from the SN761056ADBT (IC501)
97	DCHG	I (A)	Connected to the +2.4 V power supply
98	APC	I (A)	Error signal input for the laser automatic power control Not used (fixed at “H”)
99	ADFG	I (A)	ADIP duplex FM signal (22.05 kHz ± 1 kHz) input from the SN761056ADBT (IC501)
100	VDIO2	—	Power supply terminal (+2.4 V) (for I/O)
101	VSIO2	—	Ground terminal (for I/O)
102	F0CNT	O	Filter f0 control signal output terminal Not used (open)
103	XLRF	O	Serial latch signal output terminal Not used (open)
104	CKRF	O	Serial clock signal output terminal Not used (open)
105	DTRF	O	Writing data output terminal Not used (open)
106	APCREF	O	Control signal output to the reference voltage generator circuit for the laser automatic power control
107	LDDR	O	PWM signal output for the laser automatic power control Not used (open)

\* I (S) stands for schmitt input, I (A) for analog input, O (3) for 3-state output, and O (A) for analog output in the column I/O

Pin No.	Pin Name	I/O	Pin Description
108	VDC4	—	Power supply terminal (+1.8 V) (for internal logic)
109	TRDR	O	Tracking servo drive PWM signal (–) output to the MPC17A56FTA (IC601)
110	TFDR	O	Tracking servo drive PWM signal (+) output to the MPC17A56FTA (IC601)
111	FFDR	O	Focus servo drive PWM signal (+) output to the MPC17A56FTA (IC601)
112	FRDR	O	Focus servo drive PWM signal (–) output to the MPC17A56FTA (IC601)
113	FS4	O	Clock signal (176.4 kHz) output to the MPC18A21MTB (IC603) (X' tal system)
114	SRDR	O	Sled servo drive PWM signal (–) output terminal Not used (open)
115	SFDR	O	Sled servo drive PWM signal (+) output terminal Not used (open)
116	VSC4	—	Ground terminal (for internal logic)
117	SPRD	O	Spindle servo drive PWM signal (–) output terminal Not used (open)
118	SPFD	O	Spindle servo drive PWM signal (+) output terminal Not used (open)
119	FGIN	I	FG signal input terminal for spindle servo Not used (open)
120 to 122	TEST1 to TEST3	I	Input terminal for the test (normally : fixed at “L”)
123	EFMO	O	EFM signal output when recording mode to the MPC18A21MTB (IC603)
124	SPVS	O	Spindle servo drive voltage control signal output to the MPC17A56FTA (IC601)
125	VDIO3	—	Power supply terminal (+2.4 V) (for I/O)
126	VSIO3	—	Ground terminal (for I/O)
127	SPDU	O	Spindle servo (U) drive signal output to the MPC17A56FTA (IC601)
128	SPDV	O	Spindle servo (V) drive signal output to the MPC17A56FTA (IC601)
129	SPDW	O	Spindle servo (W) drive signal output to the MPC17A56FTA (IC601)
130	SPCU	I	Spindle servo (U) timing signal input from the MPC17A56FTA (IC601)
131	SPCV	I	Spindle servo (V) timing signal input from the MPC17A56FTA (IC601)
132	SPCW	I	Spindle servo (W) timing signal input from the MPC17A56FTA (IC601)
133	SLDU	O	Sled servo (U) drive signal output to the MPC17A56FTA (IC601)
134	SLDV	O	Sled servo (V) drive signal output to the MPC17A56FTA (IC601)
135	SLDW	O	Sled servo (W) drive signal output to the MPC17A56FTA (IC601)
136	VDC5	—	Power supply terminal (+1.8 V) (for internal logic)
137	VSC5	—	Ground terminal (for internal logic)
138	SLCU	I	Sled servo (U) timing signal input from the MPC17A56FTA (IC601)
139	SLCV	I	Sled servo (V) timing signal input from the MPC17A56FTA (IC601)
140	SLCW	I	Sled servo (W) timing signal input from the MPC17A56FTA (IC601)
141	SLVS	O	Sled servo voltage control signal output to the MPC17A56FTA (IC601)
142	BYPS	O	By-pass transistor control signal output to the MPC17A56FTA (IC601) Not used (open)
143	VSSDRAM	—	Ground terminal (for internal 16M bit D-RAM)
144	VDDDRAM	—	Power supply terminal (+2.4 V) (for internal 16M bit D-RAM)

• MAIN BOARD IC801 CXR701080-010GA (SYSTEM CONTROLLER)

Pin No.	Pin Name	I/O	Pin Description
1	SYNC REC	I	SYNCHRO REC switch (S801) input terminal "L": off, "H": on
2	OFTRK	I	Off track signal input from the CXD2660GA (IC502)
3	PROTECT	I	Rec-proof claw detect input from the protect detect switch (S806) "L": recording possible, "H": protect
4	PAUSE KEY	I	Set pause key input terminal
5	TX	O	Recording data output enable signal output to the CXD2660GA (IC502) Writing data transmission timing output
6	SENSE	I	Internal status (SENSE) input from the CXD2660GA (IC502)
7	WRPWR	O	Laser power select signal output to the CXD2660GA (IC502) "L": playback mode, "H": recording mode
8	XLAT	O	Serial data latch pulse output to the CXD2660GA (IC502)
9	XCS DSP	O	Chip select signal output to the CXD2660GA (IC502)
10	CS RTC	O	Not used (open)
11	SI0	I	Serial data input from the A/D, D/A converter (IC301), CXD2660GA (IC502), EEPROM (IC802) and switch & liquid crystal display module unit
12	SO0	O	Serial data output to the A/D, D/A converter (IC301), CXD2660GA (IC502), EEPROM (IC802) and switch & liquid crystal display module unit
13	SCK0	O	Serial clock signal output to the A/D, D/A converter (IC301), CXD2660GA (IC502), EEPROM (IC802) and switch & liquid crystal display module unit
14	XGUM ON	I	Not used (open)
15	VSS	—	Ground terminal
16	VDD	—	Power supply terminal (+2.4 V)
17	XOUT	O	Not used (open)
18	BEEP	O	Beep sound control signal input terminal
19	RMC DTCK	I/O	TSB serial communication data input/output terminal for remote commander with headphone
20	XCS LCD	O	Chip select signal output to the liquid crystal display
21	LCD STB	O	Strobe signal output to the liquid crystal display
22	LCD RST	O	Reset control signal output to the liquid crystal display
23	XHP STBY	O	Standby on/off control signal output to the line/headphone amplifier (IC303) "L": standby mode, "H": amplifier on
24	CLV U	O	Spindle servo (U) drive signal input from the MPC17A56FTA (IC601)
25	CLV V	O	Spindle servo (V) drive signal input from the MPC17A56FTA (IC601)
26	CLV W	O	Spindle servo (W) drive signal input from the MPC17A56FTA (IC601)
27	MODE1	O	Power supply control signal output for over write head drive to the MPC18A21MTB (IC603)
28	MODE2	O	Power supply control signal output for over write head drive to the MPC18A21MTB (IC603)
29	MODE3	O	Power supply control signal output for over write head drive to the MPC18A21MTB (IC603)
30	HD CON 1	O	Over write head control signal output to the MPC18A21MTB (IC603)
31	HD CON 2	O	Over write head control signal output to the MPC18A21MTB (IC603)
32	XREC MODE	O	Not used (open)
33	LD ON	O	Laser diode on/off control signal output terminal "L": laser off, "H": laser on Not used (open)
34	TSB SLV ON	I	TSB slave detect signal input terminal
35	SLD MON 1	I	Sled servo timing signal input from the MPC17A56FT (IC601)
36	PD S0	O	PD IC mode switching signal output to the optical pick-up block
37	REG CTL CLK	O	Synchronizing external clock signal output terminal Not used (open)
38	PD S1	O	PD IC mode switching signal output to the optical pick-up block
39	FFCLR	O	Input latch output for starting signal to the MPC18A31FTA (IC901)
40	SLEEP	O	System sleep control signal output to the MPC18A31FTA (IC901) "H": sleep on
41	TSB EDGE	I	TSB slave edge detect signal input terminal
42	GND SW	O	Ground line switching signal output terminal

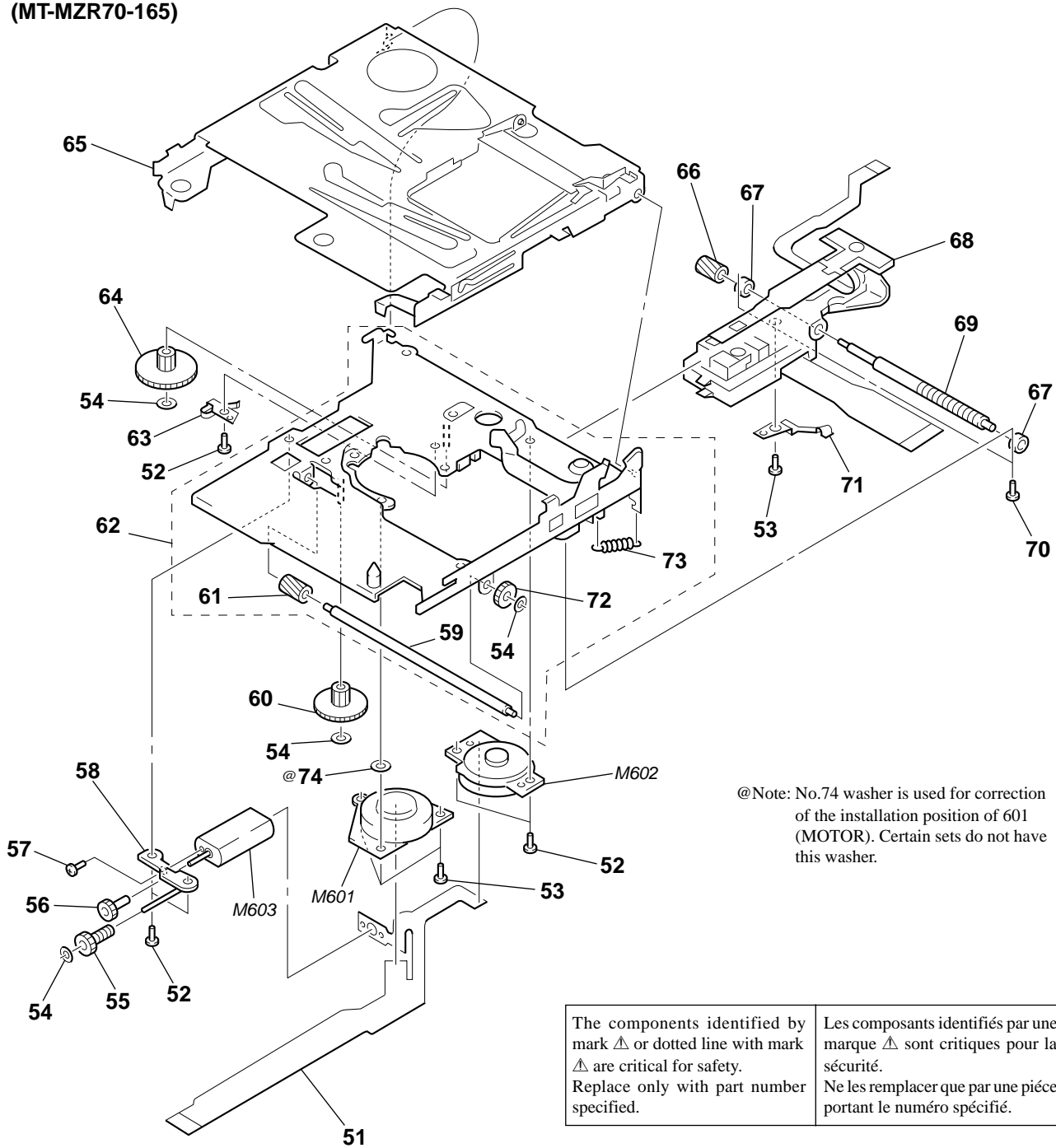


Pin No.	Pin Name	I/O	Pin Description
43	$\overline{\text{XRST}}$	I	System reset signal input from the MPC18A31FTA (IC901) “L”: reset For several hundreds msec. after the power supply rises, “L” is input, then it changes to “H”
44	VSS	—	Ground terminal
45	XTAL	O	Main system clock output terminal (16.9344 MHz)
46	EXTAL	I	Main system clock input terminal (16.9344 MHz)
47	VDD	—	Power supply terminal (+2.4 V)
48	TSB SLV CTL	I/O	Two-way control signal bus with TSB slave circuit Not used (open)
49	SPDL START SW	O	Spindle servo start switching signal output to the analog switch (IC504, 505)
50	OPEN CLOSE SW	I	Upper panel open/close detect switch (S801) input terminal (A/D input) “L”: upper panel close, “H”: upper panel open
51	XSHOCK	I	Recording shock detect signal input from the CXD2660GA (IC502)
52	FOK	I	Focus OK signal input from the CXD2660GA (IC502) “H”: is input when focus is on (“L”: NG)
53	SQSY	I	Subcode Q sync (SCOR) input from the CXD2660GA (IC502) “L” is input every 13.3 msec Almost all, “H” is input
54	DQSY	I	Digital In U-bit CD format subcode Q sync (SCOR) input from the CXD2660GA (IC502) “L” is input every 13.3 msec Almost all, “H” is input
55	XINT	I	Interrupt status input from the CXD2660GA (IC502)
56	T.MARK	I	T MARK switch (S803) input terminal
57	REC WBL SW	O	Stable control signal is output when recording
58	SERON	O	Series power supply control signal output to the MPC18A31FTA (IC901)
59	XCHG	O	Charge control signal output to the MPC18A31FTA (IC901)
60	XTEST	I	Setting terminal for the test mode “L”: test mode, normally: fixed at “H”
61	SET CODE0	I	Destination setting terminal for the test mode
62	SET CODE1	I	Destination setting terminal for the test mode Not used (open)
63	SET CODE2	I	Destination setting terminal for the test mode
64	REG CTL PWM	O	Synchronizing external clock signal output to the MPC18A31FTA (IC901)
65	VRM PWM	O	VREM power supply voltage control PWM signal output to the MPC18A31FTA (IC901)
66	VC PWM	O	System power supply voltage control PWM signal output to the MPC18A31FTA (IC901)
67	SPDL PWM	O	Spindle servo drive voltage control PWM signal output to the MPC17A56FTA (IC901)
68	$\overline{\text{XIC RST}}$	O	Reset signal output to the A/D, D/A converter (IC301), SN761056ADBT (IC501) and CXD2660GA (IC502) “L”: reset
69	REC LED	O	REC LED drive signal output terminal Not used (open)
70	SI1	I	Joint text data input from the remote commander with headphone
71	SO1	O	Joint text data output to the remote commander with headphone Not used (open)
72	SCK1	O	Joint data communication clock output to the remote commander with headphone Not used (open)
73	XHOLD SW	I	HOLD switch (S804) input terminal “L”: hold on, “H”: hold off
74	VDD	—	Power supply terminal (+2.4 V)
75	TEX	I	Sub system clock input terminal Not used (open)
76	TX	O	Sub system clock output terminal Not used (open)
77	VSS	—	Ground terminal
78	VBKAN	I	Sub power supply input terminal
79	S MON	I	Servo signal monitor input from the SN761056ADBT (IC501) (A/D input)
80	VB MON	I	Un-regulator power supply voltage monitor input terminal (A/D input)
81	CHG MON	I	Rechargeable battery voltage monitor input from the MPC18A31FTA (IC901) (A/D input)
82	VREF MON	I	Reference voltage monitor input from the SN761056ADBT (IC501) (A/D input)
83	WK DET	I	Set key starting detect signal input terminal (A/D input)
84	HALF LOCK SW	I	Open knob detect switch (S802) input terminal “L”: normal position, “H”: open knob slid
85	RMC KEY	I	Remote commander with headphone key input terminal (A/D input)
86	SET KEY 1	I	Set key input terminal (A/D input) (■, ►►, ◀◀, VOL +/- keys input)

Pin No.	Pin Name	I/O	Pin Description
87	SET KEY 2	I	Set key input terminal (A/D input) (▶, jog, END SEARCH keys input)
88	REC KEY	I	REC key input terminal
89	VRM MON	I	VREM voltage monitor input terminal (A/D input)
90	HIDC MON	I	HI-DC voltage monitor input terminal (A/D input)
91	AVSS	—	Ground terminal (for A/D converter)
92	AVREF	I	Input terminal for power supply voltage adjustment reference voltage (+2.4 V) (for A/D converter)
93	AVDD	—	Power supply terminal (+2.4 V) (for A/D converter)
94	TEST0	I	Input terminal for the test (normally: fixed at “L”)
95	TEST1	I	Input terminal for the test (normally: fixed at “L”)
96	TDI	I	Input terminal for JTAG Not used (open)
97	TMS	I	Input terminal for JTAG Not used (open)
98	TCX	I	Input terminal for JTAG Not used (open)
99	XTRST	I	Input terminal for JTAG Not used (open)
100	TDO	I	Input terminal for JTAG Not used (open)
101	TSB CLKCTL	O	TSB clock control signal output terminal
102	SSB DATA	I/O	Two-way SSB serial data bus with the SN761056ADBT (IC501)
103	SBSB CLK	I	SSB serial clock signal output to the SN761056ADBT (IC501)
104	FLASH WR EN	—	Not used (fixed at “H”)
105	VDD	—	Power supply terminal (+2.4 V)
106	VSS	—	Ground terminal
107 to 109	VLC1 to VLC3	—	Power supply terminal for the liquid crystal display (+2.4 V)
110	XCS ADA	O	Chip select signal output to the A/D, D/A converter (IC301)
111	XPDADA	O	Power supply control signal output to the A/D, D/A converter (IC301)
112	$\overline{\text{XRST MTR DRV}}$	O	Reset signal output terminal “L”: reset Not used (open)
113	OPT DET	I	DIN plug detect signal input terminal
114	XJACK DET	I	LINE IN plug detect signal input terminal
115	XMIC DET	I	MIC plug detect signal input terminal
116	XOPT CONT	O	Power supply control signal output to the DIN plug laser diode
117	MUTE	O	Analog muting on/off control signal output terminal “L”: muting off, “H”: muting on
118	XHP STBY TMP	O	Power supply control signal output to the headphone amplifier Not used (open)
119	XCS NV	O	Chip select signal output to the EEPROM (IC802)
120	XINT REC SW	O	Not used (open)



**7-2. MECHANISM DECK SECTION  
(MT-MZR70-165)**



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	1-677-513-11	MOTOR FLEXIBLE BOARD		65	X-4951-919-1	HOLDER ASSY	
52	4-963-883-42	SCREW (M1.4), PRECISION PAN		66	4-222-208-01	GEAR (SB)	
53	4-963-883-31	SCREW (M1.4), PRECISION PAN		67	4-222-204-01	BEARING	
54	3-338-645-31	WASHER (0.8-2.5)		$\triangle$ 68	X-3378-726-1	SERVICE ASSY, OP (LCX-2R)	
55	4-222-214-01	GEAR (HB)		69	4-222-203-01	SCREW, LEAD	
56	4-222-217-01	GEAR (HA)		70	3-349-825-21	SCREW	
57	4-224-885-01	SCREW (M1.2X1.5)		71	4-222-205-01	SPRING, RACK	
58	X-4951-918-1	CHASSIS ASSY, GEAR		72	4-222-222-01	GEAR (RACK)	
59	4-222-223-01	SHAFT, SUB		73	4-222-226-01	SPRING (EJECT), TENSION	
60	4-222-215-01	GEAR (HC)		74	4-997-677-11	WASHER	
61	4-222-218-01	GEAR (HD)		M601	8-835-666-01	MOTOR, DC SSM-01C14A/C-NP (SPINDLE) (with TURN TABLE)	
62	X-4951-920-1	CHASSIS ASSY		M602	1-763-399-11	MOTOR, DC (SLED) (with GEAR)	
63	4-222-206-01	SPRING, THRUST		M603	1-763-400-11	MOTOR, DC (OVER WRITE HEAD UP/DOWN)	
64	4-222-216-01	GEAR (SA)					

# SECTION 8 ELECTRICAL PARTS LIST

MAIN

**NOTE:**

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS  
All resistors are in ohms.  
METAL: Metal-film resistor.  
METAL OXIDE: Metal oxide-film resistor.  
F: nonflammable
- CAPACITORS  
uF :  $\mu$ F
- COILS  
uH :  $\mu$ H

- Items marked “\*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS  
In each case, u :  $\mu$ , for example:  
uA.. :  $\mu$ A.. uPA.. :  $\mu$ PA..  
uPB.. :  $\mu$ PB.. uPC.. :  $\mu$ PC.. uPD.. :  $\mu$ PD..
- Abbreviation  
AR : Argentine model  
AUS : Australian model  
CH : Chinese model  
CND : Canadian model  
EE : East European model  
FR : French model  
HK : Hong Kong model  
JE : Tourist model  
KR : Korea model

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
	A-3323-423-A	MAIN BOARD, COMPLETE *****		C312	1-164-949-11	CERAMIC CHIP 0.047uF	16V
		< CAPACITOR >		C315	1-110-569-11	TANTAL. CHIP 47uF	20% 4V
C101	1-115-467-11	CERAMIC CHIP 0.22uF	10% 10V	C316	1-125-777-11	CERAMIC CHIP 0.1uF	10% 10V
C102	1-107-820-11	CERAMIC CHIP 0.1uF	16V	C317	1-125-777-11	CERAMIC CHIP 0.1uF	10% 10V
C103	1-135-210-11	TANTALUM CHIP 4.7uF	20% 10V	C318	1-125-777-11	CERAMIC CHIP 0.1uF	10% 10V
C106	1-125-899-11	TANTAL. CHIP 220uF	20% 4V	C319	1-164-943-11	CERAMIC CHIP 0.01uF	10% 16V
C108	1-125-837-11	CERAMIC CHIP 1uF	10% 6.3V	C320	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V
C110	1-125-837-11	CERAMIC CHIP 1uF	10% 6.3V	C321	1-125-777-11	CERAMIC CHIP 0.1uF	10% 10V
C111	1-164-874-11	CERAMIC CHIP 100PF	5% 16V	C322	1-110-569-11	TANTAL. CHIP 47uF	20% 4V
C112	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V	C323	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V
C113	1-110-569-11	TANTAL. CHIP 47uF	20% 4V	C324	1-104-847-11	TANTAL. CHIP 22uF	20% 4V
C116	1-164-937-11	CERAMIC CHIP 0.001uF	10% 16V	C330	1-107-820-11	CERAMIC CHIP 0.1uF	16V
C117	1-125-985-11	CERAMIC CHIP 0.47uF	10% 25V	C331	1-125-777-11	CERAMIC CHIP 0.1uF	10% 10V
C118	1-164-939-11	CERAMIC CHIP 0.0022uF	10% 16V	C332	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V
C120	1-164-942-11	CERAMIC CHIP 0.0068uF	10% 16V	C333	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V
C122	1-125-838-11	CERAMIC CHIP 2.2uF	10% 6.3V	C334	1-125-777-11	CERAMIC CHIP 0.1uF	10% 10V
C123	1-164-937-11	CERAMIC CHIP 0.001uF	10% 16V	C335	1-125-837-11	CERAMIC CHIP 1uF	10% 6.3V
C124	1-164-937-11	CERAMIC CHIP 0.001uF	10% 16V	C336	1-135-181-21	TANTALUM CHIP 4.7uF	20% 6.3V
C201	1-115-467-11	CERAMIC CHIP 0.22uF	10% 10V	C337	1-110-501-11	CERAMIC CHIP 0.33uF	10% 16V
C202	1-107-820-11	CERAMIC CHIP 0.1uF	16V	C338	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V
C203	1-135-210-11	TANTALUM CHIP 4.7uF	20% 10V	C339	1-110-501-11	CERAMIC CHIP 0.33uF	10% 16V
C206	1-125-899-11	TANTAL. CHIP 220uF	20% 4V	C340	1-125-777-11	CERAMIC CHIP 0.1uF	10% 10V
C208	1-125-837-11	CERAMIC CHIP 1uF	10% 6.3V	C501	1-125-777-11	CERAMIC CHIP 0.1uF	10% 10V
C210	1-125-837-11	CERAMIC CHIP 1uF	10% 6.3V	C502	1-127-772-81	CERAMIC CHIP 0.033uF	10% 10V
C211	1-164-874-11	CERAMIC CHIP 100PF	5% 16V	C503	1-164-940-11	CERAMIC CHIP 0.0033uF	10% 16V
C212	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V	C504	1-164-940-11	CERAMIC CHIP 0.0033uF	10% 16V
C213	1-110-569-11	TANTAL. CHIP 47uF	20% 4V	C505	1-164-943-11	CERAMIC CHIP 0.01uF	10% 16V
C216	1-164-937-11	CERAMIC CHIP 0.001uF	10% 16V	C506	1-127-772-81	CERAMIC CHIP 0.033uF	10% 10V
C217	1-125-985-11	CERAMIC CHIP 0.47uF	10% 25V	C507	1-125-777-11	CERAMIC CHIP 0.1uF	10% 10V
C218	1-164-939-11	CERAMIC CHIP 0.0022uF	10% 16V	C508	1-164-858-11	CERAMIC CHIP 22PF	5% 16V
C220	1-164-942-11	CERAMIC CHIP 0.0068uF	10% 16V	C509	1-164-940-11	CERAMIC CHIP 0.0033uF	10% 16V
C222	1-125-838-11	CERAMIC CHIP 2.2uF	10% 6.3V	C510	1-125-777-11	CERAMIC CHIP 0.1uF	10% 10V
C223	1-164-937-11	CERAMIC CHIP 0.001uF	10% 16V	C511	1-164-845-11	CERAMIC CHIP 5PF	0.25PF 16V
C224	1-164-937-11	CERAMIC CHIP 0.001uF	10% 16V	C512	1-164-938-11	CERAMIC CHIP 0.0015uF	10% 16V
C301	1-107-820-11	CERAMIC CHIP 0.1uF	16V	C513	1-127-772-81	CERAMIC CHIP 0.033uF	10% 10V
C303	1-107-820-11	CERAMIC CHIP 0.1uF	16V	C514	1-125-777-11	CERAMIC CHIP 0.1uF	10% 10V
C304	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V	C515	1-125-777-11	CERAMIC CHIP 0.1uF	10% 10V
C306	1-135-259-11	TANTAL. CHIP 10uF	20% 6.3V	C516	1-164-845-11	CERAMIC CHIP 5PF	0.25PF 16V
C307	1-110-569-11	TANTAL. CHIP 47uF	20% 4V	C517	1-164-940-11	CERAMIC CHIP 0.0033uF	10% 16V
C308	1-107-820-11	CERAMIC CHIP 0.1uF	16V	C519	1-125-777-11	CERAMIC CHIP 0.1uF	10% 10V
C310	1-164-943-11	CERAMIC CHIP 0.01uF	10% 16V	C520	1-107-819-11	CERAMIC CHIP 0.022uF	10% 16V
C311	1-125-777-11	CERAMIC CHIP 0.1uF	10% 10V	C521	1-119-923-81	CERAMIC CHIP 0.047uF	10% 10V
				C522	1-164-943-11	CERAMIC CHIP 0.01uF	10% 16V
				C524	1-110-569-11	TANTAL. CHIP 47uF	20% 4V
				C525	1-164-943-11	CERAMIC CHIP 0.01uF	10% 16V

**MAIN**

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark
C526	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C915	1-115-169-11	TANTALUM	10uF	20%	6.3V
C527	1-164-854-11	CERAMIC CHIP	15PF	5%	16V	C916	1-110-569-11	TANTAL. CHIP	47uF	20%	4V
C528	1-164-854-11	CERAMIC CHIP	15PF	5%	16V	C917	1-128-964-11	TANTAL. CHIP	100uF	20%	6.3V
C529	1-104-847-11	TANTAL. CHIP	22uF	20%	4V	C918	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C530	1-110-569-11	TANTAL. CHIP	47uF	20%	4V	C919	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C531	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C920	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C532	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C921	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C533	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V	C922	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C534	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V	C923	1-164-933-11	CERAMIC CHIP	220PF	10%	16V
C535	1-164-935-11	CERAMIC CHIP	470PF	10%	16V	C925	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C536	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V	C926	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C537	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	C929	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C600	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	C930	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C601	1-131-862-91	TANTAL. CHIP	47uF	20%	4V	C932	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C602	1-109-813-11	CAP-CHIP	100PF	5%	100V	C933	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C605	1-131-862-91	TANTAL. CHIP	47uF	20%	4V	C934	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C609	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	C935	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C610	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	C936	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C611	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	C937	1-126-246-11	ELECT CHIP	220uF	20%	4V
C612	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V	C938	1-126-246-11	ELECT CHIP	220uF	20%	4V
C613	1-104-851-11	TANTAL. CHIP	10uF	20%	10V	C939	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C614	1-131-862-91	TANTAL. CHIP	47uF	20%	4V	C1001	1-115-169-11	TANTALUM	10uF	20%	6.3V
C615	1-135-210-11	TANTAL. CHIP	4.7uF	20%	10V	C1002	1-127-772-81	CERAMIC CHIP	0.033uF	10%	10V
C616	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	C1003	1-127-772-81	CERAMIC CHIP	0.033uF	10%	10V
C617	1-127-772-81	CERAMIC CHIP	0.033uF	10%	10V	C1004	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C618	1-127-772-81	CERAMIC CHIP	0.033uF	10%	10V	< CONNECTOR >					
C619	1-127-772-81	CERAMIC CHIP	0.033uF	10%	10V	CN501	1-573-360-21	CONNECTOR, FFC/FPC 20P			
C620	1-135-211-11	TANTAL. CHIP	6.8uF	20%	6.3V	CN601	1-785-355-21	CONNECTOR, FFC/FPC (ZIF) 5P			
C621	1-104-912-11	TANTAL. CHIP	3.3uF	20%	6.3V	CN602	1-573-355-11	CONNECTOR, FFC/FPC 15P			
C622	1-135-211-11	TANTAL. CHIP	6.8uF	20%	6.3V	CN801	1-573-354-11	CONNECTOR, FFC/FPC 14P			
C623	1-104-912-11	TANTAL. CHIP	3.3uF	20%	6.3V	< DIODE >					
C624	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	D101	8-719-056-72	DIODE UDZ-TE-17-2.4B			
C625	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	D201	8-719-056-72	DIODE UDZ-TE-17-2.4B			
C629	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	D301	8-719-066-17	DIODE FTZ6.8E-T148			
C630	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	D302	8-719-066-17	DIODE FTZ6.8E-T148			
C631	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	D501	8-719-421-27	DIODE MA728			
C632	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V	D600	8-719-072-10	DIODE FS05J10-TP			
C633	1-128-964-11	TANTAL. CHIP	100uF	20%	6.3V	D601	8-719-072-10	DIODE FS05J10-TP			
C638	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V	D602	8-719-066-34	DIODE RB461F-T106			
C640	1-131-726-11	TANTAL. CHIP	33uF	20%	6.3V	D901	8-719-420-51	DIODE MA729			
C801	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	D902	8-719-072-26	DIODE FS1J3-TP			
C806	1-104-847-11	TANTAL. CHIP	22uF	20%	4V	D903	8-719-072-26	DIODE FS1J3-TP			
C807	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	D905	8-719-074-74	DIODE MA3XD15001S0			
C810	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V	D906	8-719-074-74	DIODE MA3XD15001S0			
C901	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V	D907	8-719-072-26	DIODE FS1J3-TP			
C902	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	< FERRITE BEAD >					
C903	1-128-964-11	TANTAL. CHIP	100uF	20%	6.3V	FB301	1-414-228-11	FERRITE BEAD INDUCTOR			
C904	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V	FB302	1-414-228-11	FERRITE BEAD INDUCTOR			
C905	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V	FB303	1-414-228-11	FERRITE BEAD INDUCTOR			
C906	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	FB304	1-414-228-11	FERRITE BEAD INDUCTOR			
C910	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V	FB501	1-414-228-11	FERRITE BEAD INDUCTOR			
C911	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V						
C913	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V						

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
FB502	1-414-228-11	FERRITE BEAD INDUCTOR		Q302	8-729-046-49	FET FDV304P	
FB503	1-414-228-11	FERRITE BEAD INDUCTOR		Q501	8-729-928-81	TRANSISTOR DTC144EE	
FB504	1-414-228-11	FERRITE BEAD INDUCTOR		Q601	8-729-046-43	FET HAT2051T-EL	
FB505	1-414-228-11	FERRITE BEAD INDUCTOR		Q602	8-729-046-42	FET HAT2050T-EL	
FB601	1-500-329-21	FERRITE BEAD INDUCTOR		Q603	8-729-051-73	FET RDS035L03	
		< IC >		Q901	8-729-046-44	FET ZDT6718TA	
IC301	8-759-584-59	IC AK4517A-VQ-L		Q902	8-729-046-45	FET SI2302DS-T1	
IC302	8-759-656-15	IC NJM2173		Q905	8-729-928-27	TRANSISTOR DTA144EE	
IC303	8-759-598-15	IC TA2131FL-EL		Q906	8-729-928-81	TRANSISTOR DTC144EE	
IC501	8-759-661-14	IC SN761056ADB		Q1001	8-729-922-10	TRANSISTOR 2SA1577-QR	
@ IC502	8-752-397-66	IC CXD2660GA				< RESISTOR >	
IC504	8-759-647-75	IC TC7W66FK(TE85R)		R101	1-216-835-11	METAL CHIP 15K	5% 1/16W
IC505	8-759-647-75	IC TC7W66FK(TE85R)		R102	1-216-829-11	METAL CHIP 4.7K	5% 1/16W
IC601	8-759-642-14	IC MPC17A56FTA		R103	1-216-797-11	METAL CHIP 10	5% 1/16W
IC603	8-759-656-16	IC MPC18A21MTB		R104	1-216-819-11	METAL CHIP 680	5% 1/16W
IC604	8-759-358-40	IC TLC372CPW-E20		R108	1-216-829-11	METAL CHIP 4.7K	5% 1/16W
@ IC801	8-752-914-08	IC CXR701080-010GA		R109	1-216-864-11	METAL CHIP 0	5% 1/16W
IC802	8-759-445-94	IC AK6480AM-E2		R111	1-218-891-11	METAL CHIP 68K	0.5% 1/16W
IC901	8-759-642-13	IC MPC18A31FTA		R112	1-218-887-11	METAL CHIP 47K	0.5% 1/16W
IC902	8-759-652-23	IC RN5RG25AA-TR		R118	1-218-867-11	METAL CHIP 6.8K	0.5% 1/16W
J301	8-749-015-24	IC JFJ7001 (LINE IN (OPTICAL))		R122	1-216-864-11	METAL CHIP 0	5% 1/16W
		< JACK >		R123	1-216-864-11	METAL CHIP 0	5% 1/16W
J302	1-779-881-11	JACK (⌀2)		R201	1-216-835-11	METAL CHIP 15K	5% 1/16W
J303	1-779-881-21	JACK (MIC (PLUG IN POWER))		R202	1-216-829-11	METAL CHIP 4.7K	5% 1/16W
J304	1-793-288-41	JACK (⌀1)		R203	1-216-797-11	METAL CHIP 10	5% 1/16W
J901	1-785-383-11	JACK, DC (POLARITY UNIFIED TYPE)	(DC IN 3V)	R204	1-216-819-11	METAL CHIP 680	5% 1/16W
		< COIL >		R208	1-216-829-11	METAL CHIP 4.7K	5% 1/16W
L301	1-469-535-21	INDUCTOR 10uH		R209	1-216-864-11	METAL CHIP 0	5% 1/16W
L302	1-469-535-21	INDUCTOR 10uH		R211	1-218-891-11	METAL CHIP 68K	0.5% 1/16W
L501	1-469-535-21	INDUCTOR 10uH		R212	1-218-887-11	METAL CHIP 47K	0.5% 1/16W
L502	1-469-535-21	INDUCTOR 10uH		R218	1-218-867-11	METAL CHIP 6.8K	0.5% 1/16W
L601	1-410-389-31	INDUCTOR CHIP 47uH		R222	1-216-864-11	METAL CHIP 0	5% 1/16W
L602	1-414-400-41	INDUCTOR 22uH		R223	1-216-864-11	METAL CHIP 0	5% 1/16W
L603	1-419-441-21	INDUCTOR 4.7uH		R301	1-216-803-11	METAL CHIP 33	5% 1/16W
L604	1-410-389-31	INDUCTOR CHIP 47uH		R302	1-216-821-11	METAL CHIP 1K	5% 1/16W
L605	1-414-400-41	INDUCTOR 22uH		R305	1-216-831-11	METAL CHIP 6.8K	5% 1/16W
L606	1-469-535-21	INDUCTOR 10uH		R306	1-216-849-11	METAL CHIP 220K	5% 1/16W
L801	1-469-535-21	INDUCTOR 10uH		R307	1-216-809-11	METAL CHIP 100	5% 1/16W
L901	1-414-398-11	INDUCTOR 10uH		R317	1-216-809-11	METAL CHIP 100	5% 1/16W
L902	1-469-426-21	INDUCTOR 100uH		R318	1-216-809-11	METAL CHIP 100	5% 1/16W
L903	1-469-367-21	INDUCTOR 10uH		R319	1-216-809-11	METAL CHIP 100	5% 1/16W
L904	1-419-257-21	INDUCTOR 22uH		R321	1-216-864-11	METAL CHIP 0	5% 1/16W
L905	1-419-407-21	INDUCTOR 33uH		R322	1-216-864-11	METAL CHIP 0	5% 1/16W
		< FILTER >		R325	1-216-797-11	METAL CHIP 10	5% 1/16W
LF901	1-416-405-21	FILTER, CHIP EMI (COMMON MODE)		R502	1-216-833-11	RES-CHIP 10K	5% 1/16W
		< TRANSISTOR >		R503	1-216-864-11	METAL CHIP 0	5% 1/16W
Q301	8-729-037-52	TRANSISTOR 2SD2216J-QR(TX).S0		R505	1-216-864-11	METAL CHIP 0	5% 1/16W
				R506	1-216-864-11	METAL CHIP 0	5% 1/16W
				R507	1-216-839-11	METAL CHIP 33K	5% 1/16W
				R508	1-216-809-11	METAL CHIP 100	5% 1/16W
				R509	1-216-817-11	METAL CHIP 470	5% 1/16W
				R510	1-216-813-11	METAL CHIP 220	5% 1/16W

@ Replacement of CXD2660GA (IC502), CXR701080 (IC801) used in this set requires a special tool. Therefore, it cannot be replaced.

# MAIN

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark
R517	1-216-864-11	METAL CHIP	0	5%	1/16W	R908	1-216-844-11	METAL CHIP	82K	5%	1/16W
R518	1-216-845-11	METAL CHIP	100K	5%	1/16W	R911	1-216-864-11	METAL CHIP	0	5%	1/16W
R519	1-216-821-11	METAL CHIP	1K	5%	1/16W	R912	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R520	1-216-841-11	METAL CHIP	47K	5%	1/16W	R913	1-216-853-11	METAL CHIP	470K	5%	1/16W
R522	1-216-803-11	METAL CHIP	33	5%	1/16W	R914	1-216-843-11	METAL CHIP	68K	5%	1/16W
R524	1-216-821-11	METAL CHIP	1K	5%	1/16W	R915	1-216-841-11	METAL CHIP	47K	5%	1/16W
R525	1-216-857-11	METAL CHIP	1M	5%	1/16W	R916	1-216-841-11	METAL CHIP	47K	5%	1/16W
R526	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	R919	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R527	1-216-811-11	METAL CHIP	150	5%	1/16W	R921	1-216-853-11	METAL CHIP	470K	5%	1/16W
R528	1-216-855-11	METAL CHIP	680K	5%	1/16W	R922	1-216-797-11	METAL CHIP	10	5%	1/16W
R529	1-216-845-11	METAL CHIP	100K	5%	1/16W	R923	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R530	1-216-833-11	RES-CHIP	10K	5%	1/16W	R924	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R535	1-216-864-11	METAL CHIP	0	5%	1/16W	R927	1-216-847-11	METAL CHIP	150K	5%	1/16W
R536	1-216-864-11	METAL CHIP	0	5%	1/16W	R928	1-216-871-11	METAL CHIP	10K	0.5%	1/16W
R537	1-216-864-11	METAL CHIP	0	5%	1/16W	R929	1-216-835-11	METAL CHIP	15K	5%	1/16W
R608	1-216-864-11	METAL CHIP	0	5%	1/16W	R930	1-216-857-11	METAL CHIP	1M	5%	1/16W
R609	1-216-864-11	METAL CHIP	0	5%	1/16W	R931	1-216-833-11	RES-CHIP	10K	5%	1/16W
R611	1-218-903-11	METAL CHIP	220K	0.5%	1/16W	R932	1-216-857-11	METAL CHIP	1M	5%	1/16W
R612	1-216-864-11	METAL CHIP	0	5%	1/16W	R934	1-216-835-11	METAL CHIP	15K	5%	1/16W
R613	1-216-821-11	METAL CHIP	1K	5%	1/16W	R935	1-216-864-11	METAL CHIP	0	5%	1/16W
R614	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R936	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R619	1-216-833-11	RES-CHIP	10K	5%	1/16W	R937	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R621	1-216-833-11	RES-CHIP	10K	5%	1/16W	R938	1-216-853-11	METAL CHIP	470K	5%	1/16W
R636	1-216-821-11	METAL CHIP	1K	5%	1/16W	R939	1-216-847-11	METAL CHIP	150K	5%	1/16W
R637	1-219-724-11	METAL CHIP	1	1%	1/4W	R940	1-216-833-11	RES-CHIP	10K	5%	1/16W
R638	1-218-929-11	RES-CHIP	10	0.5%	1/16W	R941	1-216-841-11	METAL CHIP	47K	5%	1/16W
R639	1-218-963-11	RES-CHIP	6.8K	0.5%	1/16W	R942	1-216-864-11	METAL CHIP	0	5%	1/16W
R801	1-216-857-11	METAL CHIP	1M	5%	1/16W	R944	1-216-837-11	METAL CHIP	22K	5%	1/16W
R802	1-216-851-11	METAL CHIP	330K	5%	1/16W	R1001	1-218-855-11	METAL CHIP	2.2K	0.5%	1/16W
R803	1-216-864-11	METAL CHIP	0	5%	1/16W	R1002	1-218-855-11	METAL CHIP	2.2K	0.5%	1/16W
R805	1-216-864-11	METAL CHIP	0	5%	1/16W	R1003	1-218-855-11	METAL CHIP	2.2K	0.5%	1/16W
R806	1-216-864-11	METAL CHIP	0	5%	1/16W	R1004	1-216-853-11	METAL CHIP	470K	5%	1/16W
R807	1-216-864-11	METAL CHIP	0	5%	1/16W	R1005	1-219-724-11	METAL CHIP	1	1%	1/4W
R808	1-216-841-11	METAL CHIP	47K	5%	1/16W	R1006	1-216-845-11	METAL CHIP	100K	5%	1/16W
R809	1-216-849-11	METAL CHIP	220K	5%	1/16W	R1010	1-218-867-11	METAL CHIP	6.8K	0.5%	1/16W
R811	1-216-853-11	METAL CHIP	470K	5%	1/16W			< NETWORK RESISTOR >			
R812	1-218-903-11	METAL CHIP	220K	0.5%	1/16W	RB302	1-233-961-11	RES, NETWORK (CHIP TYPE) 1K			
R813	1-218-903-11	METAL CHIP	220K	0.5%	1/16W	RB601	1-233-965-11	RES, NETWORK (CHIP TYPE) 4.7K			
R814	1-216-845-11	METAL CHIP	100K	5%	1/16W	RB602	1-233-979-11	RES, NETWORK (CHIP TYPE) 1M			
R815	1-216-853-11	METAL CHIP	470K	5%	1/16W	RB603	1-233-965-11	RES, NETWORK (CHIP TYPE) 4.7K			
R834	1-218-887-11	METAL CHIP	47K	0.5%	1/16W			< SWITCH >			
R835	1-218-887-11	METAL CHIP	47K	0.5%	1/16W	S801	1-762-498-21	SWITCH, PUSH (1 KEY) (OPEN/CLOSE DETECT)			
R838	1-216-864-11	METAL CHIP	0	5%	1/16W	S802	1-771-868-11	SWITCH, PUSH (OPEN)			
R840	1-216-864-11	METAL CHIP	0	5%	1/16W	S803	1-771-248-11	SWITCH, TACTILE (T MARK)			
R842	1-216-864-11	METAL CHIP	0	5%	1/16W	S804	1-762-078-11	SWITCH, SLIDE (HOLD)			
R901	1-219-724-11	METAL CHIP	1	1%	1/4W	S806	1-771-867-11	SWITCH, PUSH (PROTECT DETECT)			
R902	1-242-996-11	METAL CHIP	0.68	1%	1/4W						
R903	1-216-813-11	METAL CHIP	220	5%	1/16W	S807	1-762-078-11	SWITCH, SLIDE (SYNCHRO REC)			
R904	1-216-833-11	RES-CHIP	10K	5%	1/16W			< THERMISTOR (POSITIVE) >			
R905	1-216-864-11	METAL CHIP	0	5%	1/16W	TH901	1-803-795-21	THERMISTOR, POSITIVE			
R906	1-216-817-11	METAL CHIP	470	5%	1/16W						
R907	1-216-849-11	METAL CHIP	220K	5%	1/16W						



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
		< VIBRATOR >				ACCESSORIES & PACKING MATERIALS	
						*****	
X501	1-781-725-21	VIBRATOR, CRYSTAL (22.5MHz)		△	1-418-028-11	ADAPTOR, AC (AC-MZR55) (E,JE)	
X801	1-781-575-21	VIBRATOR, CERAMIC (16.9344MHz)		△	1-418-049-11	ADAPTOR, AC (AC-MZR55) (UK,HK)	
*****				△	1-418-275-11	ADAPTOR, AC (AC-MZR55) (US,CND)	
		MISCELLANEOUS		△	1-418-276-11	ADAPTOR, AC (AC-MZR55) (AEP,FR,EE)	
		*****		△	1-418-277-11	ADAPTOR, AC (AC-MZR55) (AUS)	
18	1-803-885-11	LCD MODULE		△	1-418-784-11	ADAPTOR, AC (AC-MZR70) (CH)	
51	1-677-513-11	MOTOR FLEXIBLE BOARD		△	1-418-785-11	ADAPTOR, AC (AC-MZR70) (AR)	
△ 68	X-3378-726-1	SERVICE ASSY, OP (LCX-2R)			1-418-831-11	REMOTE CONTROL UNIT (RM-MZ3R)	
M601	8-835-666-01	MOTOR, DC SSM-01C14A/C-NP (SPINDLE) (with TURN TABLE)		△	1-569-007-11	ADAPTOR, CONVERSION 2P (E,JE)	
M602	1-763-399-11	MOTOR, DC (SLED) (with GEAR)			1-756-034-61	BATTERY, NC-WMAA Ni-Cd (EXCEPT US,CND)	
M603	1-763-400-11	MOTOR, DC (OVER WRITE HEAD UP/DOWN)			1-756-034-71	BATTERY, NC-WMAA Ni-Cd (US,CND)	
*****					1-794-451-11	CONNECTOR, LIGHT (EXCEPT HK,JE)	
					1-794-451-51	CONNECTOR, LIGHT (HK,JE)	
					3-029-488-01	POUCH,CARRYING (E,HK,AR,KR,AUS,CH,JE)	
					3-043-516-11	MANUAL, INSTRUCTION (ENGLISH) (US,CND,AEP,UK,FR,EE,E,AR,KR,AUS,CH)	
					3-043-516-21	MANUAL, INSTRUCTION (ENGLISH,FRENCH) (CND,AEP,FR,JE)	
					3-043-516-31	MANUAL, INSTRUCTION (GERMAN,DUTCH) (AEP)	
					3-043-516-41	MANUAL, INSTRUCTION (ITALIAN) (AEP)	
					3-043-516-51	MANUAL, INSTRUCTION (PORTUGUESE, SPANISH) (AEP,AR,JE)	
					3-043-516-61	MANUAL, INSTRUCTION (SWEDISH,FINNISH) (AEP)	
					3-043-516-71	MANUAL, INSTRUCTION (RUSSIAN,POLISH, CZECH,HUNGALIAN) (EE)	
					3-043-516-81	MANUAL, INSTRUCTION (SPANISH,TRADITIONAL CHINESE,KOREAN) (E,HK,KR,JE)	
					3-043-516-91	MANUAL, INSTRUCTION (SIMPLIFIED,CHINESE) (CH)	
					3-045-575-01	CASE, CARRYING (US,CND,AEP,UK,FR,EE)	
					4-226-129-01	CASE, BATTERY CARRYING	
					8-953-304-90	RECEIVER MDR-E805SP (EXCEPT US)	
					8-953-733-91	EAR RECEIVER MDR-W034SP/01 (US)	

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
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# MZ-R70

SONY®

## SERVICE MANUAL

Ver 1.2 2000.09

*US Model  
Canadian Model  
AEP Model  
UK Model  
E Model  
Australian Model  
Chinese Model  
Tourist Model*

## SUPPLEMENT-1

File this supplement with the service manual.

**Subject :** Taiwan model Addition

Taiwan model is added to the MZ-R70.  
This supplement-1 describes only differences from the MZ-R70 E model.  
Refer to the service manual for MZ-R70 (9-927-631-00) for other information.

### • ACCESSORIES & PACKING MATERIALS

Page	E model				Taiwan model		
	Ref. No.	Part No.	Description	Remark	Part No.	Description	Remark
57	△	1-418-028-11	ADAPTOR, AC (AC-MZR55)		1-418-275-11	ADAPTOR, AC (AC-MZR55)	
	△	1-569-007-11	ADAPTOR, CONVERSION 2P				

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.