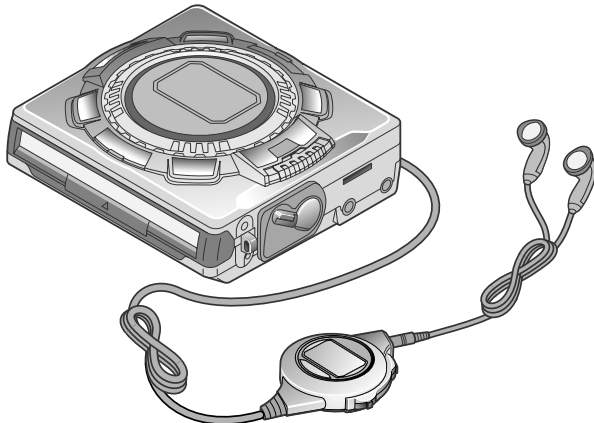


SHARP SERVICE MANUAL

No. SX887MDMS722H



(Illustration: MD-MS722H)



(Illustration: MD-MS721H)



MD-MS722H MD-MS721H(BL) MD-MS721H(S)

• In the interests of user-safety the set should be restored to its original condition and only parts identical to those specified be used.

• **Note for users in UK**

Recording and playback of any material may require consent which SHARP is unable to give. Please refer particularly to the provisions of Copyright Act 1956, the Dramatic and Musical Performers Protection Act 1956, the Performers Protection Acts 1963 and 1972 and to any subsequent statutory enactments and orders.

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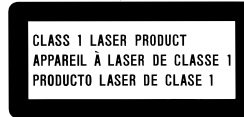
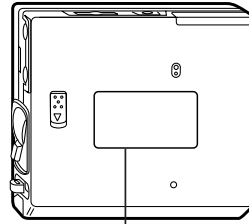
SAFETY PRECAUTION FOR SERVICE MANUAL

Precaution to be taken when replacing and servicing the Laser Pickup.

The AEL (Accessible Emission Level) of Laser Power Output for this model is specified to be lower than Class I Requirements. However, the following precautions must be observed during servicing to protect your eyes against exposure to the laser beam.

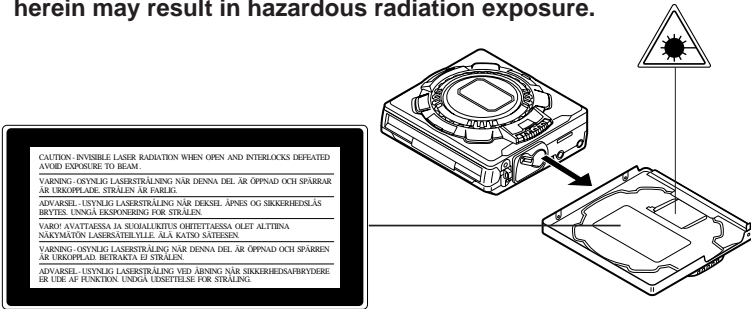
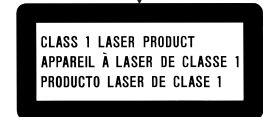
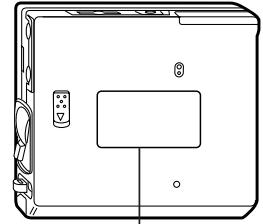
- (1) When the cabinet has been removed, the power is turned on without a compact disc, and the Pickup is on a position outer than the lead-in position, the Laser will light for several seconds to detect a disc. Do not look into the Pickup Lens.
- (2) The Laser Power Output of the Pickup inside the unit and replacement service parts have already been adjusted prior to shipping.
- (3) No adjustment to the Laser Power should be attempted when replacing or servicing the Pickup.
- (4) Under no circumstances look directly into the Pickup Lens at any time.
- (5) CAUTION - Use of controls or adjustments, or performance of procedures other than those specified herein may result in hazardous radiation exposure.

(MS722H Except for UK/MS721H)



LASER KLASSE 1
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT
LASER TRÍDY 1
LASER TRIEDY 1

(MS722H For UK)



Laser Diode Properties

- Material: GaAlAs
- Wavelength: 785 nm
- Pulse time:

Read mode: 0.8 mW Continuous
Write mode: max 10 mW 0.5S
min cycle 1.5S
Repetition

VAROITUS! LAITTEEN KÄYTTÄMINEN MUULLA KUIN TÄSSÄ KÄYTTÖOHJEESSA MAINITULLA TAVALLA SAATTAA ALTISTAA KÄYTTÄJÄN TURVALLISUUSLUOKAN 1 YLITTÄVÄLLE NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE.

WARNING - OM APPARATEN ANVÄNDS PÅ ANNAT SÄTT ÄN I DENNA BRUKSANVISNING SPECIFICERAS. KAN ANVÄNDAREN UTSÄTTAS FÖR OSYNLIG LASERSTRÄLNING, SOM ÖVERSKRIDER GRÄNSEN FÖR LASERKLASS 1.

VARO ! Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen.
WARNING! Osynlig laserstrålning när denna del är öppnad och spärren är urkopplad. Beträkta ej strålen.

Precaution to be taken when replacing and servicing the laser pickup.

The following precautions must be observed during servicing to protect your eyes against exposure to the laser.

Warning of possible eye damage when repairing:

If the AC adaptor or batteries are connected when the top housing (disc cover) of the unit is removed, and the PLAY key is pressed, the laser will light up during disc access (2-3 seconds). (Fig. 2-1) During the operation, the laser will leak from the opening between the magnetic head and the mechanical chassis (Fig. 2-2). In order to protect your eyes, you must not look at the laser during repair. Before repairing be sure to disconnect the AC adaptor and remove the batteries.

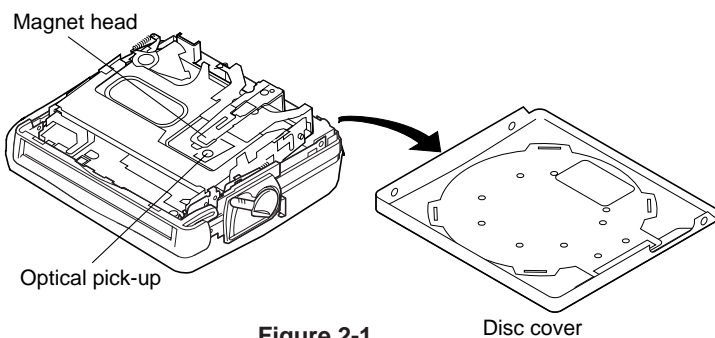


Figure 2-1

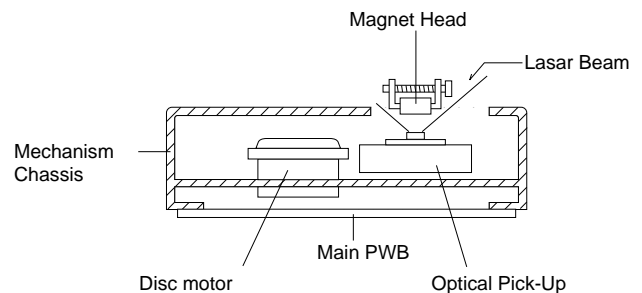


Figure 2-2

FOR A COMPLETE DESCRIPTION OF THE OPERATION OF THIS UNIT, PLEASE REFER TO THE OPERATION MANUAL.

SPECIFICATIONS

● **General**

Power source: DC 3.6 V (rechargeable lithium-ion battery x 1)
(MS722H Except for UK/MS721H) DC 5 V (AC adaptor)
 AC 220 - 230V, 50/60 Hz
 DC 3.4V: Battery case (commercially available, "AA" size, alkaline battery x 1)
 DC 4.5V: Separately available car adaptor, AD-CA20X (for cars with a 12-24V DC negative earth electrical system)

Power source: DC 3.6 V (rechargeable lithium-ion battery x 1)
(MS722H For UK) DC 5 V (AC adaptor)
 AC 230 - 240V, 50/60 Hz
 DC 3.4V: Battery case (commercially available, "AA" size, alkaline battery x 1)
 DC 4.5V: Separately available car adaptor, AD-CA20X (for cars with a 12-24V DC negative earth electrical system)

Power consumption: 7 W (AC adaptor)
Output power: RMS; 20 mW (10 mW + 10mW) (0.2% T.H.D.)

Charging time: Approx. 3 hours
 (When using the AC adaptor included with the unit)

Battery life:

| When using the rechargeable battery (fully charged) included with the unit | When using one, commercially available, high capacity, "AA" size, alkaline batteries (in the battery case) | When using one, commercially available, high capacity, "AA" size batteries with the rechargeable battery (fully charged) |
|--|--|--|
| Continuous recording: Approx. 8 hours | Continuous recording: Approx. 3 hours | Continuous recording: Approx. 11 hours |
| Continuous play: Approx. 10 hours | Continuous play: Approx. 6 hours | Continuous play: Approx. 16 hours |

- The continuous recording time is for analogue input when the volume level is set to "VOL 0".
- The continuous play time shows the value when the volume level is set to "VOL 15".
- The above values are the standard values when the unit is charged and used at an ambient temperature of 20°C.
- The operating time when using alkaline batteries may be different, depending on the type and manufacturer of the batteries, and on the operating temperature.

Input sensitivity:

| Recording level | Reference input level | Input impedance |
|-----------------|-----------------------|-----------------|
| MIC H | 0.25 mV | 10 k ohms |
| MIC L | 2.5 mV | 10 k ohms |
| LINE | 100 mV | 20 k ohms |

Output level:

| | Specified output | Maximum output level | Load impedance |
|------------|------------------|----------------------|----------------|
| Headphones | — | 10 mW + 10 mW | 32 ohms |
| LINE | 300mV (-12dB) | — | 10 kohms |

Dimensions: Width: 87.0 mm (3-7/16")
(MS722H) Height: 26.7 mm (1-1/16")
 Depth: 81.5 mm (3-1/4")

Dimensions: Width: 87.0 mm (3-7/16")
(MS721H) Height: 25.9 mm (1-1/16")
 Depth: 81.5 mm (3-1/4")

Weight: MD-MS722H: 220 g (0.49 lbs.) with rechargeable battery
 MD-MS721H: 216 g (0.48 lbs.) with rechargeable battery

Input socket: Line/optical digital, microphone (powered by the main unit)

Output socket: Earphones (impedance: 32 ohms)/ remote control unit

● **MiniDisc Recorder**

Type: Portable MiniDisc recorder

Signal readout: Non-contact, 3-beam semi-conductor laser pick-up

Audio channels: Stereo 2 channels/monaural (long-play mode) 1 channel

Frequency response: 20 - 20,000 Hz (± 3 dB)

Rotation speed: Approx 400 - 900 rpm

Error correction: ACIRC (Advanced Cross Interleave Reed-Solomon Code)

Coding: ATRAC (Adaptive TRansform Acoustic Coding), 24-bit computed type

Recording method: Magnetic modulation overwrite method

Sampling frequency: 44.1 kHz (32 kHz and 48 kHz signals are converted to 44.1 kHz, and then recorded.)



Wow and flutter: Unmeasurable (less than ±0.001% W.peak)

Specifications for this model are subject to change without prior notice






NAME OF PARTS

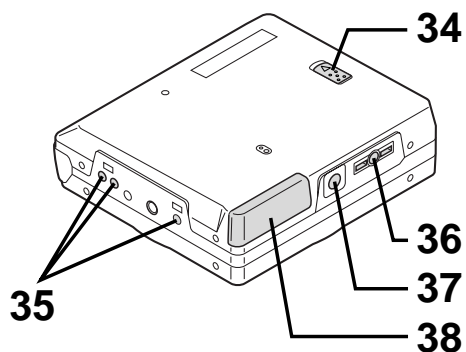
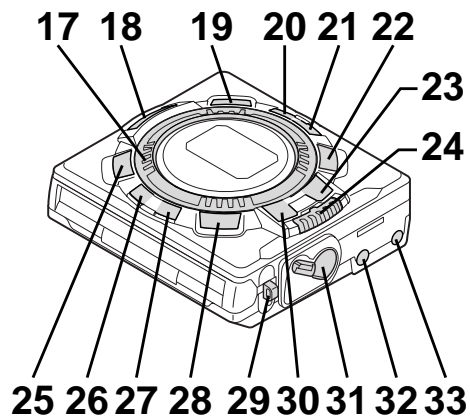
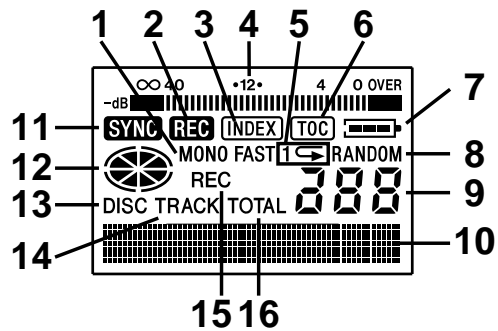
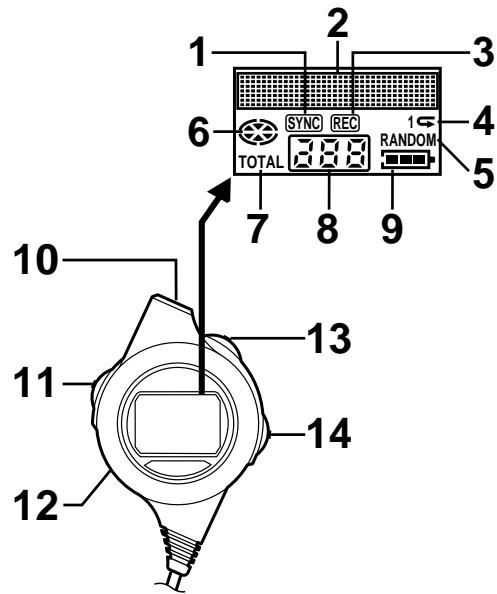
MD-MS722H

■ Remote control unit

- 1. Synchro Recording Indicator
- 2. Character/Time Information Indicator
- 3. Record Indicator
- 4. Repeat Indicator: 
- 5. Random Indicator
- 6. Disc Mode Indicator
- 7. Total Track Number Display
- 8. Track Number Indicator
- 9. Battery Indicator: 
- 10. Earphones Socket
- 11. Display/Volume Shuttle Switch
- 12. Hold Switch
- 13. Play/Pause/Fast Reverse/ Fast Forward Shuttle Switch
- 14. Stop/Power Off/Bass/Play Mode Shuttle Switch



■ Main unit

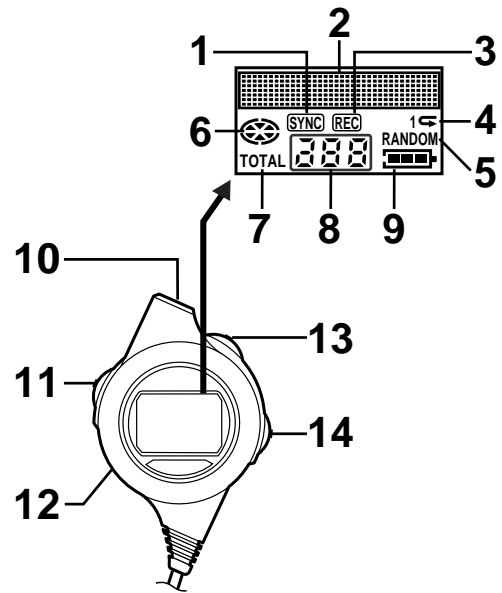
- 1. Monaural Long-Play Mode Indicator
- 2. Record Indicator
- 3. Index Indicator
- 4. Level Meter
- 5. Repeat Indicator: 
- 6. TOC Indicator
- 7. Battery Indicator: 
- 8. Random Indicator
- 9. Track Number Indicator
- 10. Character/Time Information Indicator
- 11. Synchro Recording Indicator
- 12. Disc Mode Indicator
- 13. Disc Name Indicator
- 14. Track Name Indicator
- 15. Remaining Recording Time Indicator
- 16. Total Track Number Display
- 17. Jog Dial
- 18. Record/Track Mark Button
- 19. Volume/Name Select Buttons: --
- 20. Display/Lowercase Characters Button
- 21. Character Button
- 22. Volume/Name Select Buttons: +
- 23. Play/Pause Button: 
- 24. Fast Reverse/Fast Forward/Recording Level Control/ Cursor Shuttle Switch: 
- 25. Edit/Auto Mark/Time Mark Button
- 26. Mode/Insert Button
- 27. Bass/Delete Button
- 28. Enter/Fast Play/Synchro Button
- 29. Handstrap Attachment Eye
- 30. Stop/Power Off Button: :OFF
- 31. Eject Lever
- 32. Optical/Line Input Socket
- 33. Microphone Input Socket
- 34. Hold Switch
- 35. Battery Case Connection Terminals
- 36. Earphones Socket
- 37. 5V DC Input Socket
- 38. Rechargeable Lithium-Ion Battery Compartment









MD-MS721H

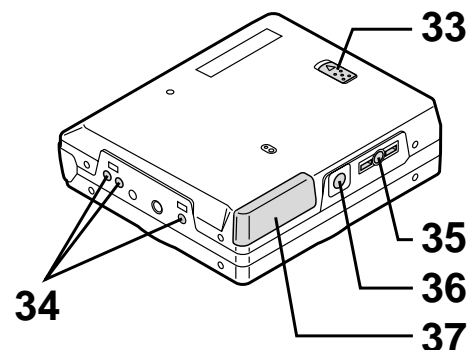
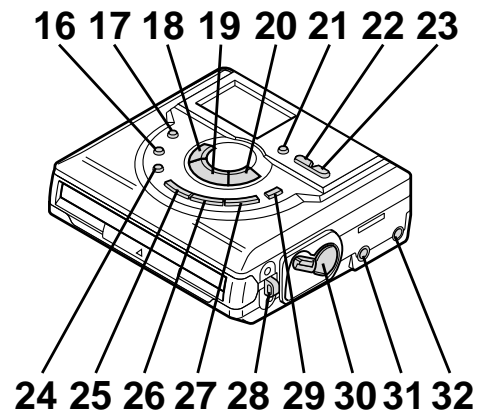
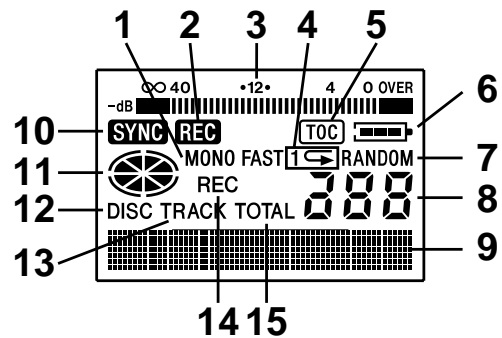
■ Remote control unit

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- 12. Hold Switch
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■ Main unit

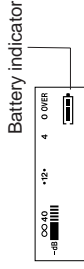
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- 13. Track Name Indicator
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- 15. Total Track Number Display
- 16. Mode/Insert Button
- 17. Record/Track Mark Button
- 18. Fast Reverse/Recording Level Control/ Cursor Button: 
- 19. Play/Pause Button: 
- 20. Fast Forward/Recording Level Control/ Cursor Button: 
- 21. Display/Lowercase Characters Button
- 22. Volume/Name Select Buttons: -
- 23. Volume/Name Select Buttons: +
- 24. Bass/Delete Button
- 25. Character Button
- 26. Enter/Fast Play/Synchro Button
- 27. Edit/Auto Mark/Time Mark Button
- 28. Handstrap Attachment Eye
- 29. Stop/Power Off Button: :OFF
- 30. Eject Lever
- 31. Optical/Line Input Socket
- 32. Microphone Input Socket
- 33. Hold Switch
- 34. Battery Case Connection Terminals
- 35. Earphones Socket
- 36. 5V DC Input Socket
- 37. Rechargeable Lithium-Ion Battery Compartment



CONVENIENT OPERATION OF THE UNIT

Checking the remaining amount of battery charge

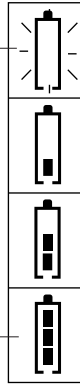
The remaining amount of battery charge is shown by the battery indicator () during operation.



< How to read the battery indicator >

When the battery is completely charged

Charging is needed.



When the battery needs charging, it is impossible to start recording or editing.

- When the battery is completely discharged, the whole battery indicator will flash. Recharge the battery or replace the alkaline battery with a new one.
- When the battery has run completely out, "BATT EMPTY" (main unit) and "LoBATT" (remote control unit) will appear. Then, the power will be disconnected automatically.

- Notes:**
- When you are using the unit with a rechargeable battery and an alkaline battery and you want to check the remaining capacity of the battery, the remaining battery charge display may not be stable for about 20 seconds after the power is first turned on.
 - When the AC adaptor included with this unit or a separately available car adaptor is used, the battery indicator will not be shown.
 - The number of bars shown in the battery indicator may increase or decrease, depending on the operation being performed. This is normal.
 - When the rechargeable battery and the alkaline battery are used at the same time, the rechargeable battery is used first, and then the alkaline battery.
 - Since the battery indicator shows the remaining amount of the particular battery being used, the number of bars will increase when the unit switches to the alkaline battery.

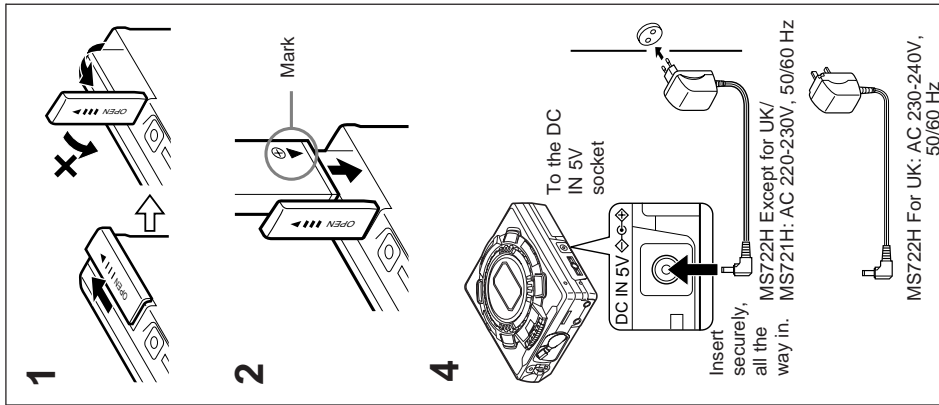
POWER SOURCE

This unit can be used with 4 different power sources: a rechargeable battery, an AC adaptor, a battery case, and a separately available car adaptor (AD-CA20X).

Rechargeable battery power

When the rechargeable battery is used for the first time or when you want to use it after a long period of disuse, be sure to charge it fully.

- Open the rechargeable battery compartment cover.
 - Insert the rechargeable battery.
 - Close the rechargeable battery compartment cover.
 - Plug the AC adaptor into the AC socket, and then insert the plug on the AC adaptor lead into the DC IN 5V socket.
- About 4 seconds later, "" will flash, and the battery will begin charging.
 - Battery charging will be complete in 3.0 hours. When the charging is complete, "" will go out.



- Notes:**
- After charging has been completed, the AC adaptor may be left connected. (For example, when charging at night)
 - If the rechargeable battery is in the unit, it will be charged, even whilst operating the unit. (Float charge)

- Do not force open the rechargeable battery cover too wide.
- When the AC adaptor plug is inserted and a MiniDisc has already been inserted, playback may start automatically. In this case, press the / :OFF button twice to turn the power off.

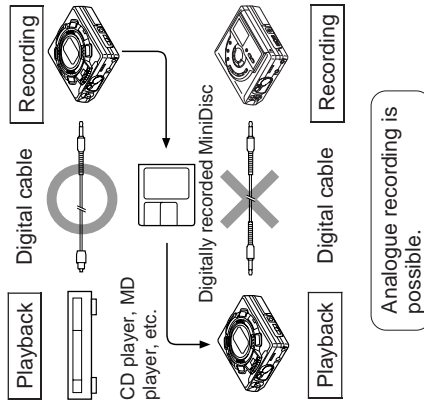
RECORDING USING THE OPTICAL DIGITAL CABLE

There are cases where digital recording may be impossible.

In the following cases digital recording is impossible, even if you are using digital cables.

When you attempt to make a new digital recording from a track that was digitally recorded on a MiniDisc

- MiniDiscs are designed so that only first generation digital copies can be made, further digital copies are prevented by the SCMS (Serial Copy Management System).



TROUBLESHOOTING

■ **Moisture condensation**

In the following cases, condensation may form inside the unit.

- Shortly after turning on a heater.
- When the unit is placed in a room where there is excessive steam or moisture.
- When the unit is moved from a cool place to a warm place.

When the unit has condensation inside, the disc signals cannot be read, and the unit may not function properly.

- If this happens, remove the disc. The condensation should evaporate in approximately 1 hour. The unit will then function properly.

Many potential "problems" can be resolved by the owner without calling a service technician. If something seems to be wrong with this product, check the following before calling your authorised SHARP dealer or service centre.

| PROBLEM | CAUSE |
|--|--|
| The unit does not turn on. | <ul style="list-style-type: none"> ● Is the AC adaptor disconnected? ● Is the battery exhausted? ● Is the unit in the safety mode? ● Has condensation formed inside the unit? ● Is the unit being influenced by mechanical shock or by static electricity? |
| No sound is heard from the earphones. | <ul style="list-style-type: none"> ● Is the volume set too low? ● Is the remote control unit or the earphones plugged in? ● Are you trying to play a MiniDisc with data on it instead of a MiniDisc containing music? |
| When the operation buttons are pressed, the unit does not respond. | <ul style="list-style-type: none"> ● Is the unit in the safety mode? ● Is the battery exhausted? ● Is the remote control unit plug or the earphone plug inserted firmly? |
| Some sounds are skipped. | <ul style="list-style-type: none"> ● Is the battery exhausted? ● Is the unit being subjected to excessive vibration? |
| The MiniDisc cannot be ejected. | <ul style="list-style-type: none"> ● Has the track number or character information been written on the disc yet? ● Is the unit in the recording or editing mode? |
| Recording and editing are impossible. | <ul style="list-style-type: none"> ● Is the MiniDisc protected against accidental erasure? ● Is the unit connected properly to the other equipment? ● Is the AC adaptor unplugged or did a power failure occur whilst recording or editing? ● Is the unit in the safety mode? ● Is an optical signal being output from the external equipment? <p>Read the operation manual for the external equipment.</p> |

■ **If trouble occurs**

When this product is subjected to strong external interference (mechanical shock, excessive static electricity, abnormal supply voltage due to lightning, etc.) or if it is operated incorrectly, it may malfunction. If such a problem occurs, do the following:

1. Unplug the AC adaptor from the AC socket.
2. Remove the battery.
3. Leave the unit completely unpowered for approximately 30 seconds.

4. Plug the AC adaptor back into the AC socket and retry the operation.

If strange sounds, smell or smoke come out of the unit or an object is dropped into the unit, remove the AC adaptor from the AC socket immediately and contact an authorised SHARP service centre.

MINIDISC SYSTEM LIMITATIONS

MiniDiscs are recorded using a different system than is used for cassette tapes or DAT recordings. Therefore, the following conditions may be encountered, depending on how the disc has been recorded or edited. These are due to system limitations, and should be considered normal.

| | |
|---|---|
| Even if the maximum recording time of a MiniDisc has not been reached, "DISC FULL" or "TOC FULL" may be displayed. | When the number of tracks used reaches the limit, regardless of the remaining recording time, further recording will be impossible. (Maximum number of tracks: 254) If a MiniDisc has been recorded or edited repeatedly or if a MiniDisc has scratches on it, it may not be possible to record the maximum number of tracks on it. |
| Even if the number of tracks and the recording time have not reached the limit, "DISC FULL" may be displayed. | If there are scratches on a disc, the unit will automatically avoid recording in those areas. The recording time will be reduced. |
| Even if several short tracks are erased, the remaining recording time may not show an increase. | When the remaining recording time of a disc is displayed, short tracks less than 12 seconds long may not be included in the total. |
| Two tracks may not be combined in editing. | For MiniDiscs on which repeated recording and editing operations were performed, the COMBINE function may not work. |
| The total of the recorded time and time remaining on a disc may not add up to the maximum possible recording time. | A cluster (about 2 seconds) is normally the minimum unit of recording. So, even if a track is less than 2 seconds long, it will use about 2 seconds of space on the disc. Therefore, the time actually available for recording may be less than the remaining time displayed. If there are scratches on discs, those sections will be automatically avoided (no recording will be placed in those sections). Therefore, the recording time will be reduced. |
| When recorded tracks are played back using the cue and review operations, some sounds may be skipped. | For MiniDiscs on which repeated recording and editing were performed, some sounds may be skipped whilst cueing and reviewing. |
| A track number can be created in the middle of a track. | If there are scratches or dust on a MiniDisc, the track numbers following that track will be increased by one. |

ERROR MESSAGES

| Error messages | Meaning | Remedy |
|------------------------------|---|--|
| BATT EMPTY (Lo BATT) | ● The battery run down. | ● Charge the rechargeable battery or replace the alkaline battery (or use the AC adaptor for power). |
| BLANK DISC (BLANK) | ● Nothing is recorded. | ● Replace the disc with a recorded disc. |
| Can't COPY (Not REC) | ● No copy can be made because of the SCMS copyright system. | ● Record using the analogue cable. |
| Can't EDIT | ● A track cannot be edited. | ● Change the stop position of the track and then try editing it. |
| Can't REC (Not REC) | ● Recording cannot be performed correctly due to vibration or shock in the unit. | ● Re-record or replace it with another recordable disc. |
| Can't WRITE | ● Editing is impossible. | ● Check the number of tracks. |
| DEFECT (DEFECT) | ● The disc is scratched. | ● If the sound you hear is not right, try recording again. ● Replace the disc with another recordable disc. |
| Din UNLOCK (UNLOCK) | ● Poor connection of the digital cable. | ● Connect the digital cable securely. |
| DISC ERROR (E-DISC) | ● The disc is damaged. | ● Reload the disc or replace it. |
| DISC FULL | ● The disc is out of recording space. | ● Replace it with another recordable disc. |
| HOLD (HOLD) | ● The unit is in the safety mode. | ● Return the HOLD switch to its original position. |
| LOCKED LOCK ERROR | ● The EJECT lever was moved during recording or editing. | ● Turn off the power and remove the MiniDisc. |
| NO DISC | ● A disc has not been loaded. | ● Load a disc. |
| PB DISC PROTECTED | ● The disc is write protected. ● You tried to record on a play/backup only disc. | ● Move the write protection knob back to its original position. ● Replace it with a recordable disc. |
| POWER ? | ● Improper power is being supplied. | ● Use one of the specified power sources. |
| SORRY (SORRY) | ● Since a track number is currently being located or written to, the unit cannot accept your command. | ● Wait for a while and try the operation again. |
| SYSTEM ERR (E-SYS) | ● You have come to the conclusion that the unit is out of order. | ● To have it repaired, go to the distributor where you purchased the unit. |
| TEMP OVER (E-TEMP) | ● The temperature is too high. | ● Turn off the power, and wait for a while. |
| TOC ERROR (E-TOC) | ● A large portion of the disc has been damaged. | ● Replace it with another recorded disc. |
| TOC FULL | ● There is no space left for recording character information (track names, disc names, etc.). | ● Replace it with another recordable disc. |
| Tr. Protect | ● The track has been protected from being erased. | ● Edit the track with the device on which it was recorded. |
| U TOC ERROR (E-U TOC) | ● A large portion of the disc has been damaged. ● There is an error in the recorded signal. | ● Replace it with another recorded disc. ● Erase all of the signal errors, and then try recording again. |
| ? DISC (?DISC) | ● A disc which contains data other than music was played. ● There is an error in the signal from the disc. | ● A disc which contains non-music data cannot be played. ● Replace it with another recorded disc. |

() : Error messages seen on the remote control.

DISASSEMBLY

Cares before disassembling

When assembling the machine after disassembling or repair, observe the following requirements so as to ensure safety and performance.

1. Remove the batteries from the machine, and take out the mini-disc.
2. When assembling after repair, be sure to restore the initial location of wires.
Since the screws are small, incorrect fixing may result in malfunction.
3. When repairing, pay utmost attention to static electricity of ICs.

| STEP | REMOVAL | PROCEDURE | FIGURE |
|------|----------------|---|------------|
| 1 | Bottom Cabinet | 1. Battery Cover (A1) x1 2. Screw (A2) x6 | 9-1 |
| 2 | Top Cabinet | 1. Screw (B1) x3 2. Flexible PWB (B2) x2 | 9-1 9-2 |
| 3 | Main PWB | 1. Screw (C1) x2 2. Flexible PWB (C2) x2 3. Soldering (C3) x4 | 9-2 |
| 4 | Mechanism Unit | 1. Raise the rear part, and remove in the arrow direction. | 9-3 |

(Illustration: MD-MS722H)

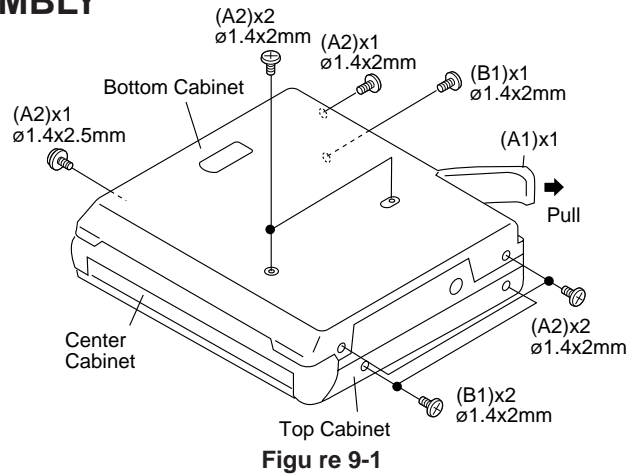


Figure 9-1

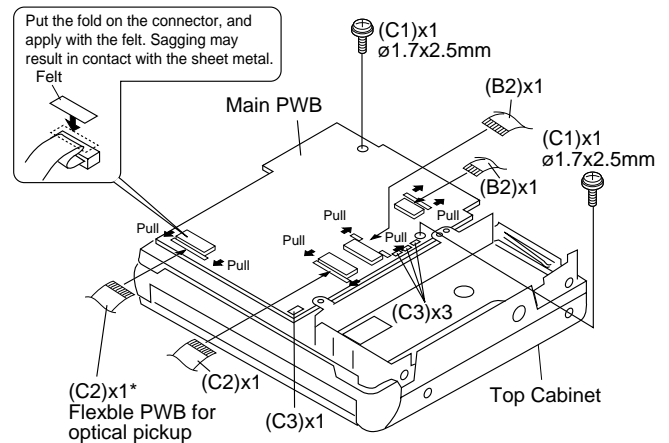


Figure 9-2

Caution:

Carefully handle the main PWB and flexible PWB. After removing the flexible PWB (*1) for the optical pickup from the connector, do not touch directly the front end of flexible PWB with your hand so as to prevent damage of optical pickup by static electricity.

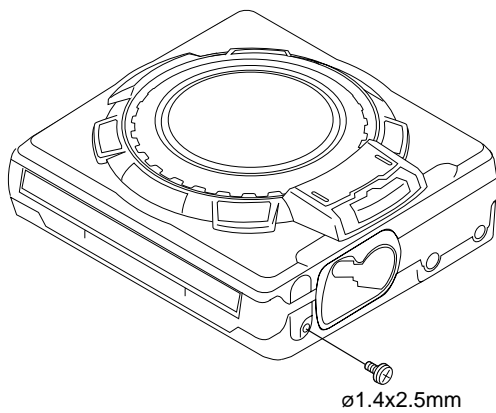


Figure 9-4

Cares when servicing:

Be sure to use the screw with washer (Part code: LX-BZ0822AFFC, Distribution code: 124 970 0187). If a screw of different length is used by mistake, MD ejection may be disabled.

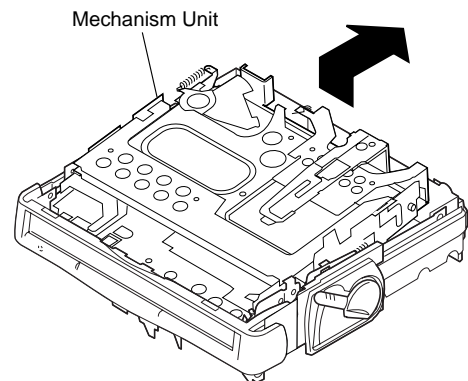


Figure 9-3

INSTALLING THE TOP CABINET

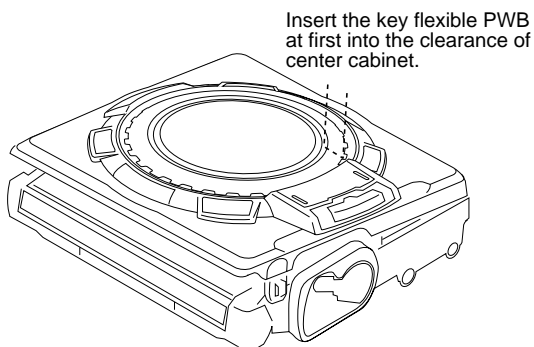


Figure 9-5

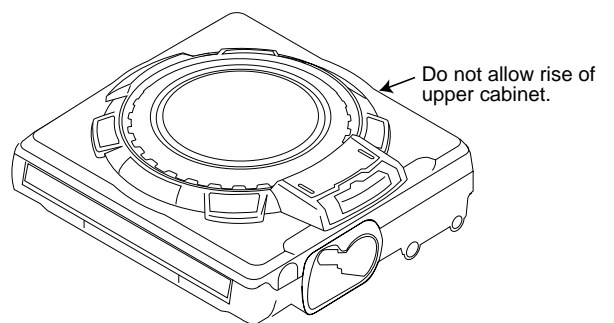


Figure 9-6

REMOVING AND REINSTALLING THE MAIN PARTS

Remove the mechanism according to the disassembling methods 1 to 3. (See Page 9.)

How to remove the spindle motor (See Fig. 10-1.)

1. Remove the solder joint (A1) x 1 of flex PWB.
2. Remove the stop (A2) x 3 pcs. and remove the spindle motor.

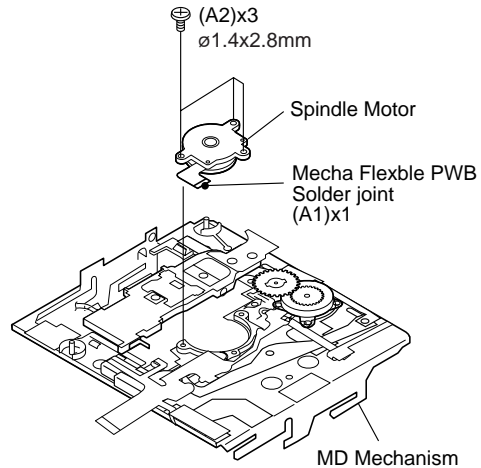


Figure 10-1

How to remove the lift motor (See Fig. 10-2.)

1. Remove the solder joint (B1) x 2 of slide motor lead wire.
2. Remove the screw (B2) x 1 pc., and remove the flexible PWB.
3. Remove the screw (B3) x 1, and remove the lift motor.

Note:

Take care so that the motor gear is not damaged.
(If the gear is damaged, noise is caused.)

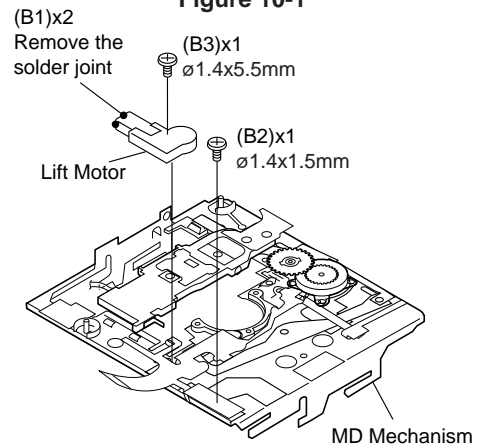


Figure 10-2

How to remove the sled motor (See Fig. 10-3.)

1. Remove the stop washer (C1) x 1 pc., and remove the drive gear (C2) x 1 pc.
2. Remove the screw (C3) x 2 pc.
3. Remove the screw (C4) x 2, and remove the sled motor.

Note:

Take care so that the motor gear is not damaged.
(If the gear is damaged, noise is caused.)

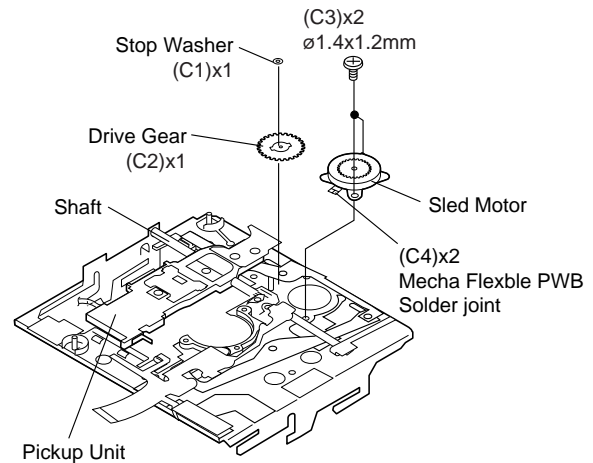


Figure 10-3

How to remove the magnetic head (See Fig. 10-4.)

1. Remove the screw (D1) x 1 which connects the magnetic head to the head relay flex PWB, and remove the soldering joint (D2) x 2 pcs.

Note:

Mount carefully so as not to damage the magnetic head.

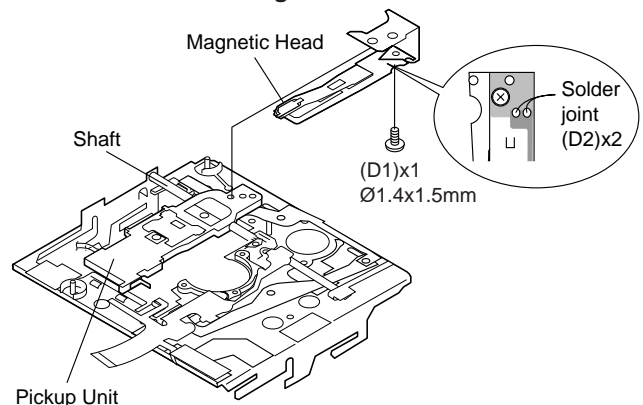


Figure 10-4

How to reinstall the optical pickup unit (See Fig. 10-5.)

1. Remove the screws (E1) x 1 pcs.
2. Slowly raise the optical pickup.

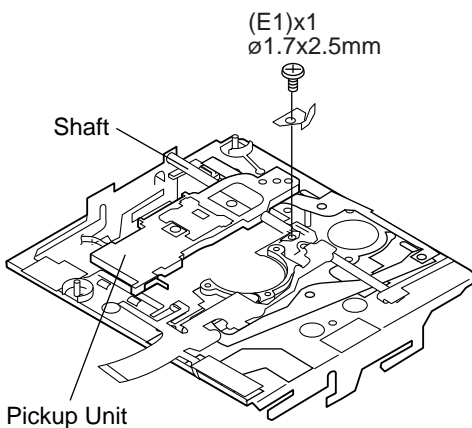


Figure 10-5

ADJUSTMENT

● Test disc

MD adjustment needs two types of disc, namely recording disc (low reflection disc) and playback-only disc (high reflection disc).

| | Type | Test disc | Parts No. |
|---|----------------------|------------------------|---------------|
| 1 | High reflection disc | MMD-110 (TEAC Test MD) | 88GMMD-110 |
| 2 | Lowreflection disc | MMD-212 (TEAC Test MD) | 88GMMD-212 |
| 3 | Low reflection disc | Recording minidisc | UDSKM0001AFZZ |

Note: Use the low reflection disc on which music has been recorded.

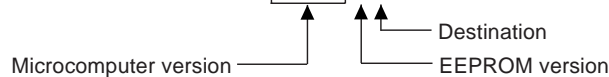
● Entering the TEST mode

1. Setting at port (in standby state, disc-free state or power nonconnected state)

- (1) Set the port as follows.
TEST1 : "Low"
TEST0 : "High"
- (2) Press the PLAY button in the standby state (it is allowed to insert the disc or to connect the power supply).
- (3) Test Mode STOP [_ T E S T _]

2. Setting by special button operation (in standby state)

- (1) Holding down the DISP button and ENTER button, press the PLAY button.
- (2) Normal mode setting initialization (BASS setting, VOL setting, etc.)
- (3) Indication of microcomputer version for one second [7 0 2 A f X] (Serial No. 811XXXXX)
[9 0 8 A f X] (Serial No. 812XXXXX~)



- (4) Whole LCD lighting for 2 seconds
 - (5) Test Mode STOP [_ T E S T _]
- *When the PLAY button is pressed during indication (3) and (4), the process proceeds to (5).

● Leaving the TEST mode

- (1) Press the STOP button in the TEST mode stop state or version indicating state or whole LCD lighting state.
- (2) EEPROM rewrite-enable area updating, adjustment error setting (so as to adjust all the items when the power supply is turned on in the normal mode)
- (3) Change to standby state

● Shipping setting method

Holding down simultaneously the VOLUME-DOWN key and PLAY key of the set unit without disc, supply the power from the DC IN plug. After the indication "INIT" -> "BYE OK" disappears, release the power supply of DC IN.

● Test Mode

| | | | |
|-------------------|---|----------------------------|---|
| 1. AUTO 1 Mode | <ul style="list-style-type: none"> Perform preliminary automatic adjustment. If the combination of mechanism and pickup PWB has been changed, be sure to start from AUTO1. | 8. TEST-REC Mode | <ul style="list-style-type: none"> Continuous record from the specified address is performed. Change of record laser output (servo gain is also changed according to laser output). The temperature correction is performed only when servo start is performed, but the posture correction is not performed during continuous recording. |
| 2. AUTO 2 Mode | <ul style="list-style-type: none"> Perform ATT (attenuator) automatic adjustment. Perform continuous playback (error rate display, jump test) | 9. NORMAL Mode | <ul style="list-style-type: none"> The mode is changed from the TEST mode to the normal mode without adjustment. In the normal mode the internal operation mode, memory capacity, etc. are indicated. In the normal mode both temperature correction and posture correction are performed. |
| 3. MANUAL 1 Mode | <ul style="list-style-type: none"> Temperature is displayed. (Updating in real time) Seeing the displayed adjustment value, perform preliminary manual adjustment. (Error rate indication, jump test) | 10. DIGITAL INPUT Mode | <ul style="list-style-type: none"> Digital input information is displayed. |
| 4. MANUAL 2 Mode | <ul style="list-style-type: none"> Temperature is displayed. (Updating in real time) Seeing the displayed adjustment value perform manually the preliminary adjustment. (Error rate indication, jump test) Continuous playback is performed (error rate display, jump test). | 11. ERROR INFORMATION Mode | <ul style="list-style-type: none"> Error information is displayed. Error information is initialized |
| 5. RESULT 1 Mode | <ul style="list-style-type: none"> The value adjusted in AUTO1 or MANUAL1 is indicated. (Execution in servo "OFF" state). | 12. EE-PROM Mode | <ul style="list-style-type: none"> Factors of digital servo are changed manually. (Each servo is turned on individually.) Cut-off frequency of BASS1, BASS2 and BASS3 is selected manually. Temperature detection terminal voltage is measured, and the reference value is set. Defaults are selected and set. Setting of EEPROM protect area is updated. (In case of protect releasing) |
| 6. RESULT 2 Mode | <ul style="list-style-type: none"> The value adjusted in AUTO 2 or MANUAL 2 is indicated. Adjustment value is changed manually. (error rate display, jump test). | 13. INNER Mode | <ul style="list-style-type: none"> Determine the position where the INNER switch is turned on. (only high reflection disc). The temperature correction is performed only when servo start is performed, but the posture correction is not performed. |
| 7. TEST-PLAY Mode | <ul style="list-style-type: none"> Continuous playback from the specified address is performed. 1 line, 10 lines or 400 lines manual jump is performed. C1 error rate display (pit section), ADIP error rate display (groove section) The temperature correction is performed only when servo start is performed, but the posture correction is not performed during continuous playback. | | |

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● Operation in each TEST mode

1. AUTO1 Mode

- When the STOP button is pressed while the AUTO1 menu appears or during automatic adjustment, the mode changes to the TEST mode stop state. At this time the adjustment value is not output.
- Be sure to adjust, using the specified disc MMD-212.
At this time release the EEPROM (IC402) protection. (Refer to EEPROM write procedure.)
- Adjustment NG; Adjustment item out of range, focus ON failure, and adjustment error
- When the PLAY button is pressed while ADJ. OK is displayed, AUTO2 is executed.

2. AUTO2 Mode

- When the STOP button is pressed while the AUTO2 menu appears or during automatic adjustment, the mode changes to the TEST mode stop state. At this time the adjustment value is not output.
- Adjustment NG; Adjustment item out of range, and adjustment error.

3. MANUAL1 Mode

- Adjustment item to be made in AUTO1 mode is performed manually.
- When the VOL UP button is pressed during adjustment, the setting increases, and the new setting is output.
- If the VOL DOWN button is pressed during adjustment, the setting decreases and the new setting is output.
- If the VOLUP/DOWN button is held down, the setting changes continuously with 100 ms cycle.
- If the setting is within the allowable range, the RANDOM display lights.
- When the STOP button is pressed during MANUAL1 MENU or measurement or adjustment, the state is changed to the TEST mode stop state.

4. MANUAL2 Mode

- Adjustment item to be made in AUTO2 mode is performed manually.
- When the VOL UP button is pressed during adjustment, the setting increases, and the new setting is output.
- If the VOL DOWN button is pressed during adjustment, the setting decreases and the new setting is output.
- If the VOLUP/DOWN button is held down, the setting changes continuously with 100 ms cycle.
- If the setting is within the allowable range, the RANDOM display lights.
- When the STOP button is pressed during MANUAL2 MENU or measurement or adjustment, the state is changed to the TEST mode stop state.
- When the PLAY button is pressed in B-ATT set state, the mode is changed to the continuous playback mode.
- As for operation during continuous playback refer to "TEST-PLAY mode explanation".

5. RESULT1 Mode

- The measurement value and set value of adjustment items for AUTO1 and MANUAL 1 are displayed.
- If the VOL UP button is pressed during setting indication, the setting increases. If the VOL DOWN button is pressed, the setting reduces. And then the new setting is stored in the RAM.
- When the VOL UP/DOWN button is held down, the setting changes continuously, one cycle being 100 ms.
- If the STOP button is pressed during RESULT1 menu or measurement value indication or set value indication, the state is changed to the TEST mode STOOP state.

6. RESULT2 Mode

- The measurement value and set value of adjustment items for AUTO2 and MANUAL 2 are displayed.
- If the VOL UP button is pressed during setting indication, the setting increases. If the VOL DOWN button is pressed, the setting reduces. And then the new setting is stored in the RAM.
- When the VOL UP/DOWN button is held down, the setting changes continuously, one cycle being 100 ms.
- If the STOP button is pressed during RESULT2 menu or measurement value indication or set value indication, the state is changed to the TEST mode STOOP state.

7. TEST-PLAY Mode

- When the STOP button is pressed while the TEST-PLAY menu appears, or in TEST-PLAY or continuous playback mode, the mode changes to the TEST mode stop state.
- When the PLAY button is pressed while the TEST-PLAY menu appears, continuous playback is initiated from the current pickup position.
- Whenever the DISP button is pressed in the TEST-PLAY mode, the address changes as follows.
0050 — 03C0 — 0700 — 08A0 — 0050 —
- Whenever the BASS key is pressed in the TEST-PLAY mode, the digit which is changed by the SKIP UP/DOWN button changes as follows.
0050 — 0050 — 0050 — 0050 — 0050 —
- When the SKIP UP button is pressed in the TEST-PLAY mode, the digit of address specified by the BASS button is set to +1h. (0 to F)
- When the SKIP DOWN button is pressed in the TEST-PLAY mode, the digit of address specified by the BASS button is set to -1h. (0 to F)
* When the SKIP UP/DOWN button is held down, the setting changes continuously, one cycle being 100 ms.
- When the BASS button is pressed in the continuous playback mode, the number of jump lines changes as follows.
1 — 10 — 384 — 1
* After the number of jump lines is indicated for one second, the address indication is restored. [▲▲▲T R _]
- When the SKIP UP button is pressed in the continuous playback mode, the specified number of lines is jumped in the FWD direction.
- When the SKIP DOWN button is pressed in the continuous playback mode, the specified number of lines is jumped in the REV direction.
* When the SKIP UP/DOWN button is held down, jump is repeated every approx. 100 ms.

- Whenever the DISP button is pressed in the continuous playback mode, the indication changes as follows.

| | |
|---|---------------|
| * Pit section | |
| Continuous playback (SUBQ address indication) | [S Q □□□□] |
| | |
| Continuous playback (C1 error indication) | [C E ☆☆☆☆] |
| | |
| Continuous playback (SUBQ address indication) | [S Q □□□□] |
| * Groove section | |
| Continuous playback (ADIP address indication) | [A P □□□□] |
| | |
| Continuous playback (C1 error indication) | [C E ☆☆☆☆] |
| | |
| Continuous playback (ADIP error indication) | [A E ★★★★★] |
| | |
| Continuous playback (ADIP address indication) | [A P □□□□] |

8. TEST-REC Mode

- When the STOP button is pressed while the TEST-REC menu appears, or in the TEST-REC mode or continuous record mode, the mode changes to the TEST mode stop state.
- When the PLAY button is pressed while the TEST-REC menu appears, the continuous record is initiated from the current pickup position.
- Whenever the DISP button is pressed in the TEST-REC mode, the address changes as follows.
0050 — 03C0 — 0700 — 08A0 — 0050 —
- Whenever the BASS button is pressed in the TEST-REC mode, the digit which is changed by the SKIP UP/DOWN button changes as follows.
0050 — 0050 — 0050 — 0050 — 0050 —
- When the SKIP UP button is pressed in the TEST-REC mode, the digit of address specified by the BASS button is set to +1h. (0 to F)
- When the SKIP DOWN button is pressed in the TEST-REC mode, the digit of address specified by the BASS button is set to -1h. (0 to F)
* When the SKIP UP/DOWN button is held down, the setting changes continuously, one cycle being 100 ms.
- When the VOL UP/DOWN button is pressed in the TEST-REC mode or continuous record mode, the laser record power changes. (Servo gain changes also according to record power.)
* After the laser record power is indicated for one second, the address indication is restored. [R P W ▽▽]
- □□□□ : Address
- ▽▽ : Laser power cord
- Operation is disabled if the premastered disc or disc is in miserase-protected state.

9. NORMAL Mode

- When the STOP button is pressed while the NORMAL menu appears, the mode changes to the TEST mode stop state.
- Indication during operation
Indication of memory capacity on main unit LCD [□□ _ * * * * _ * *] + Level meter
□□ : Internal mode
* * * * : Address (Cluster section)
* * : Address (Sector section)
- Selection of sound volume, BASS, etc. is possible (without indication)
- Recording is also possible.

10. Digital input display Mode (Din Mon)

- When the STOP button is pressed while the digital input indication menu appears or during digital input information indication, the mode changes to the TEST mode stop state.
- In case of analog input or digital input unlocking the indication data is _.

11. Error data display Mode

- Reversing when SKIP DOWN button is pressed
- When the STOP button is pressed while the error data indication menu appears or during error data indication, the mode changes to the TEST mode stop state.
- Error data 0 is the latest error.
- Error which occurred in the TEST mode is also stored in the memory.
- When the DISP button is pressed while the error data indication menu appears, the error data is initialized. [C L E A R _]
- ◇◇ : Error Code

● Explanation of error history code

| | |
|---|---|
| 12h : RF side FG, TG, and TCRS adjustment termination failure | 52h : SD write data write disabled |
| 13h : Adjustment servo retraction excessive retrial | 71h : Pickup position initialization time-over |
| 16h : C. IN detection time-over | 72h : EEPROM data read check sum error |
| 17h : A, B, E, F, and TCRSO offset measurement value out of tolerable range | 73h : Record head drive disabled (by EJECT lever) |
| 21h : Focus retraction completion allowable time-over | 82h : Power overvoltage detection |
| 23h : Track search completion allowable time-over | 91h : Ambient temperature is higher than the allowable temperature. |
| 24h : Disc linear speed measurement failure | |
| 32h : P-TOC read failure | |
| 42h : U-TOC read failure | |
| 44h : U-TOC write data write disabled/read check error | |

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13. INNER Mode

- when the STOP button is pressed on the INNER menu (SQ), the state is changed to the TEST mode STOP state.
- : Address

EEPROM (IC402) writing procedure

1. Procedure to replace EE-PROM and write initial value of microcomputer in EEPROM

- (1) Replace EEPROM.
- (2) Deprive EEPROM of protection (connect the pins 8 and 6 of IC402).
- (3) Refer to the latest EEPROM data list.
- (4) Press the Display/Lower-case Character button, Enter/Synchro button and Play/Pause button to start the test mode.
- (5) Version display



- (6) The whole LCD lights.
- (7) Test mode stop state
[T E S T]
- (8) Press the "BASS" button, and press twice the "SKIP DOWN" button.
[E E P R O M]
- (9) Perform the operation to display "EEPROM SETTING MODE CHART", compare the EEPROM DATA LIST with the display, and set according to the EEPROM DATA LIST with the VOL UP or VOL DOWN key.
- (10) Set the temperature reference. (Refer to the Temperature Reference Setting Method.)
- (11) Set according to the EEPROM DATA LIST.
- (12) Press the Stop button.
[T E S T]
- (13) Press the Stop button.
- (14) After data is written in EEPROM, turn off power .
- (15) Restore protection of EEPROM (Disconnect connection made in Step (2) above).

2. Temperature reference setting method

[1] Measurement, calculation and setting procedure

- (1) Set the TEST mode.
 - Set TEST 1, 0 = '01', and turn on power (or set PLAY ON in standby state).
- (2) Start the EEPROM mode 'Temp' menu.
 - Key operation in order of BASS, SKIP-DOWN x 2 times, PLAY, PLAY in the test mode STOP state.
 - 'TM\$\$%%' is displayed. (\$\$= Temperature code, %% = Temperature reference)
- (3) Once press SKIP-UP, and determine the displayed microcomputer TEMP input AD value.
 - 'TPin##' is displayed. (## = TEMP input AD value)
- (4) At the ambient temperature, determine the temperature corrected value from the temperature measurement value correction table.
- (5) Determine the temperature reference, using the following formula.
 - Temperature reference = Microcomputer TEMP input AD value + Temperature corrected value
 - When data is written into EEPROM, the value shown above is recorded at the specified address.

[2] Temperature measurement value correction table

| Ambient temperature | Temperature correction | Center temperature |
|---------------------|------------------------|--------------------|
| + 9°C ~ +11°C | - 05h | + 10.0°C |
| +12°C ~ +14°C | - 04h | + 12.7°C |
| +15°C ~ +16°C | - 03h | + 15.4°C |
| +17°C ~ +19°C | - 02h | + 18.2°C |
| +20°C ~ +22°C | - 01h | + 20.9°C |
| +23°C ~ +24°C | ± 00h | + 23.6°C |
| +25°C ~ +27°C | + 01h | + 26.3°C |
| +28°C ~ +30°C | + 02h | + 29.0°C |
| +31°C ~ +33°C | + 03h | + 31.8°C |

[3] Power IC VREF feed control output

- After automatic adjustment the temperature code is read. If it is within the following range, OK.

| Ambient temperature | Temperature correction | Center temperature |
|---------------------|------------------------|--------------------|
| - 9°C ~ +10°C | 08h | + 0.5°C |
| + 3°C ~ +21°C | 07h | + 12.5°C |
| +15°C ~ +33°C | 06h | + 23.6°C |
| +26°C ~ +43°C | 05h | + 35.0°C |

● EEPROM DATA LIST (EEPROM version f)

TEMP setting

| Item display | Set values |
|-----------------|------------------|
| T M _ _ ○○ | Calculate values |

Fucus setting

| Item display | Set values |
|-----------------|------------|
| F G _ _ ○○ | 63H |
| F F 1 _ ○○ | 70H |
| F F 2 _ ○○ | E8H |
| F Z H _ ○○ | EDH |
| F L n _ ○○ | 09H |
| D J G _ ○○ | 14H |
| F L V _ ○○ | 20H |
| W T f _ ○○ | 20H |
| F S S _ ○○ | AAH |

Tracking setting

| Item display | Set values |
|-----------------|------------|
| T G _ _ ○○ | 26H |
| T F 1 _ ○○ | 70H |
| T F 2 _ ○○ | E0H |
| T F S _ ○○ | 00H |
| T B o _ ○○ | 2BH |
| T B t _ ○○ | 14H |
| T K o _ ○○ | 2BH |
| T K t _ ○○ | 12H |
| T D o _ ○○ | 67H |
| T D t _ ○○ | 34H |
| S C o _ ○○ | 00H |
| S C t _ ○○ | 40H |
| S C m _ ○○ | 53H |
| C L p _ ○○ | 18H |
| C L r _ ○○ | 28H |
| J P I _ ○○ | 00H |
| K 1 0 _ ○○ | 65H |

Spindle setting

| Item display | Set values |
|-----------------|------------|
| S P G _ ○○ | 14H |
| S P i _ ○○ | AAH |
| S P m _ ○○ | 79H |
| S P o _ ○○ | 4FH |
| S P 1 _ ○○ | 10H |
| S P 2 _ ○○ | 60H |
| S P 3 _ ○○ | F2H |
| S P 4 _ ○○ | F2H |
| S P 5 _ ○○ | 10H |
| S P D _ ○○ | 61H |
| S P K _ ○○ | 8BH |

BASS setting

| Item display | Set values |
|-----------------|------------|
| B S 1 _ ○○ | 00H |
| B S 2 _ ○○ | 2DH |
| B S 3 _ ○○ | 4BH |

Sled setting

| Item display | Set values |
|-----------------|------------|
| S L G _ ○○ | 6DH |
| S L 2 _ ○○ | 20H |
| S L M _ ○○ | 4FH |
| S L V _ ○○ | 36H |
| S K k _ ○○ | 43H |
| S K t _ ○○ | 54H |
| S K m _ ○○ | 4DH |
| W T m _ ○○ | 24H |
| M V 1 _ ○○ | 4AH |
| M V 2 _ ○○ | AAH |
| S R V _ ○○ | 00H |

ADJ. SET setting

| Item display | Set values |
|-----------------|------------|
| C O K _ ○○ | A0H |
| F A T _ ○○ | C0H |
| T A T _ ○○ | 3EH |
| C A T _ ○○ | 20H |
| F A B _ ○○ | E0H |

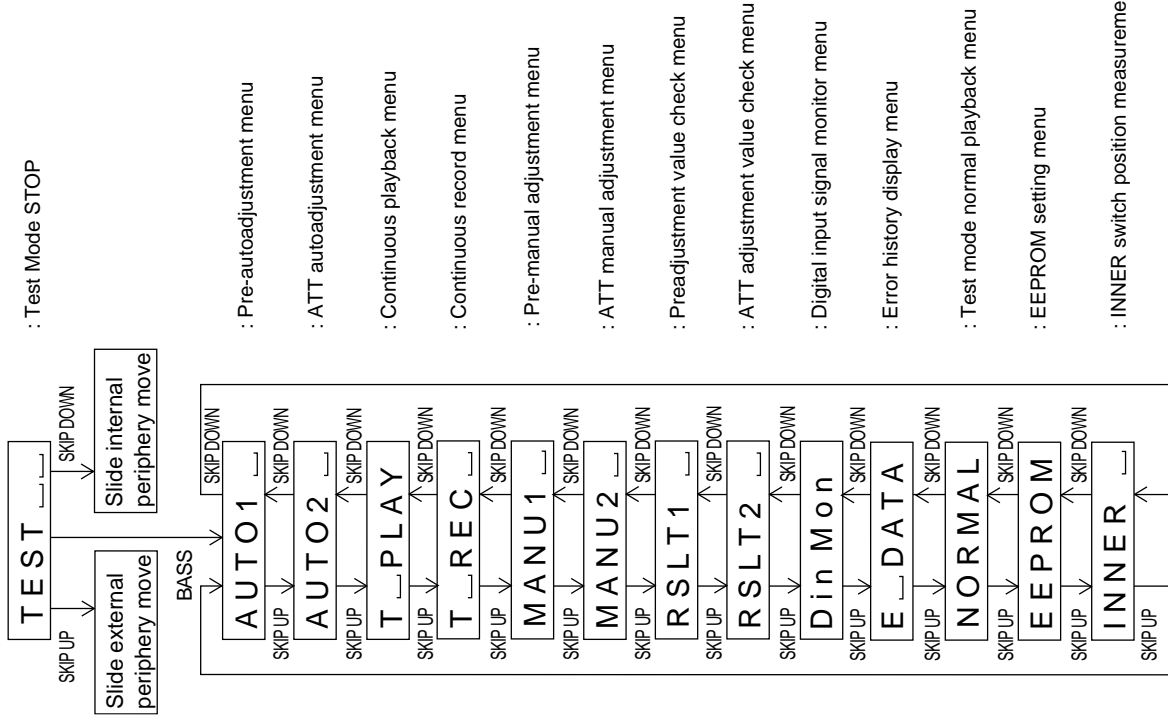
EQ. SET setting

| Item display | Set values |
|-----------------|------------|
| H Q 1 _ ○○ | 90H |
| H Q 2 _ ○○ | 90H |
| H S G _ ○○ | 11H |
| H S O _ ○○ | FDH |
| L Q 1 _ ○○ | 90H |
| L Q 2 _ ○○ | 90H |
| L S G _ ○○ | 11H |
| L S O _ ○○ | 00H |
| G Q 1 _ ○○ | 98H |
| G Q 2 _ ○○ | 84H |
| G S G _ ○○ | 11H |
| G S O _ ○○ | 00H |

Control setting

| Item display | Set values |
|-----------------|------------|
| C T 0 _ ○○ | 05H |
| C T 1 _ ○○ | 95H |
| C T 2 _ ○○ | 40H |
| C T 3 _ ○○ | 30H |
| R C 0 _ ○○ | C0H |
| R C 1 _ ○○ | FEH |
| S Y C _ ○○ | A6H |
| P W C _ ○○ | 12H |
| P W L _ ○○ | 66H |
| D R 1 _ ○○ | 49H |
| D R 2 _ ○○ | 49H |
| I N 1 _ ○○ | D4H |
| I N 2 _ ○○ | 71H |
| I N H _ ○○ | 64H |
| D R H _ ○○ | 74H |
| P L E _ ○○ | 96H |
| R C E _ ○○ | 54H |
| E L T _ ○○ | 72H |
| S L T _ ○○ | 73H |
| S P M _ ○○ | 00H |
| M S L _ ○○ | 00H |
| U S 0 _ ○○ | 00H |
| U S 1 _ ○○ | 00H |
| U S 2 _ ○○ | 00H |

Test Mode Change Chart
Tset Mode Menu



: Test Mode STOP

: Pre-autoadjustment menu

: ATT autoadjustment menu

: Continuous playback menu

: Continuous record menu

: Pre-manual adjustment menu

: ATT manual adjustment menu

: Preadjustment value check menu

: ATT adjustment value check menu

: Digital input signal monitor menu

: Error history display menu

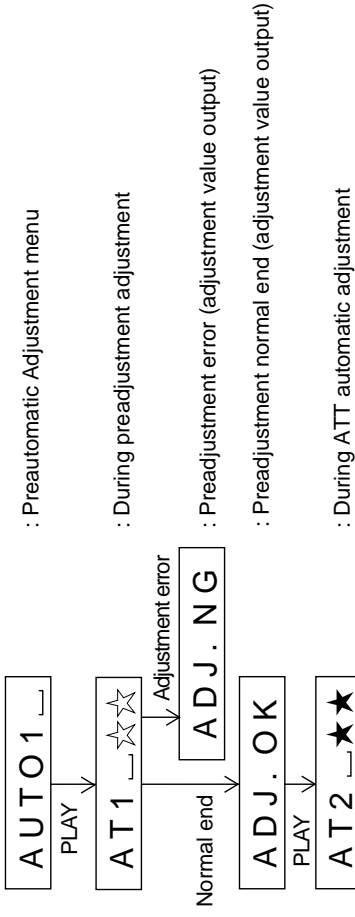
: Test mode normal playback menu

: EEPROM setting menu

: INNER switch position measurement menu

* When the [STOP] key is pressed in specific menu, the "TEST MODE STOP" state is set.
 * When the [PLAY] key operation is performed in the specific menu, the operation of this menu is executed.

Preautomatic Adjustment



: Preliminary Adjustment menu

: During preadjustment adjustment

: Preadjustment error (adjustment value output)

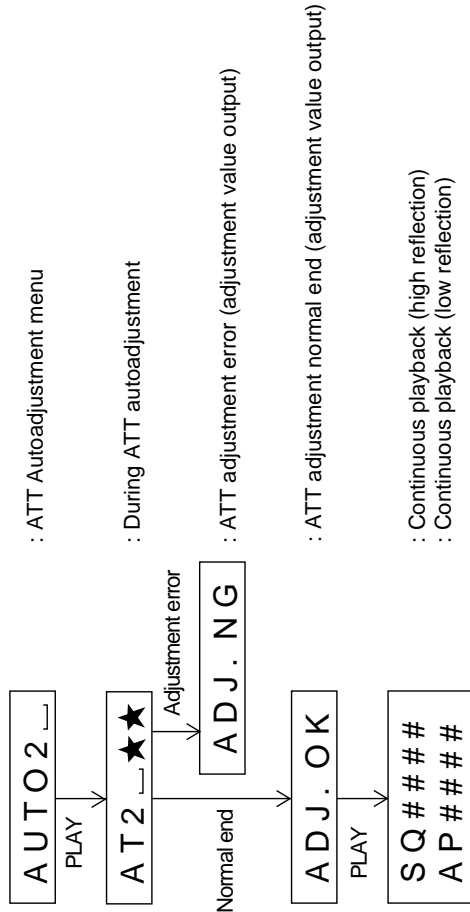
: Preadjustment normal end (adjustment value output)

: During ATT automatic adjustment

* When the [STOP] key is pressed in specific menu, the "TEST MODE STOP" state is set.
 * "☆☆" represent the adjustment number as follows.

- 00 : Innermost periphery move
- 02 : ABEF offset tentative measurement
- 04 : RF side focus gain coarse adjustment
- 05 : Focus ATT tentative setting
- 06 : RF side bit section tracking gain adjustment
- 07 : COUT level setting for pit section adjustment
- 08 : External periphery move
- 09 : RF side groove section tracking gain adjustment
- 10 : COUT level setting for groove section adjustment
- 11 : RF side TCRS gain adjustment
- 12 : Tracking ATT initial setting
- 13 : RF side focus gain minor adjustment
- 14 : Focus ATT initial setting
- 15 : S gain "High" ABEF offset measurement
- 16 : TCRS offset measurement
- 17 : S gain "Low" ABEF offset measurement

ATT Auto Adjustment



: ATT Autoadjustment menu

: During ATT autoadjustment

: ATT adjustment error (adjustment value output)

: ATT adjustment normal end (adjustment value output)

: Continuous playback (high reflection)

: Continuous playback (low reflection)

* When the [STOP] key is pressed in specific menu, the "TEST MODE STOP" state is set.

* "★★" represent the adjustment number as follows.

0 0 : Innermost periphery move

0 3 : Pit section tracking ATT setting

0 4 : Pit section focus ATT setting

0 6 : External periphery move

0 7 : TCRS ATT setting

0 8 : Groove section tracking ATT setting

0 9 : Groove section focus ATT setting

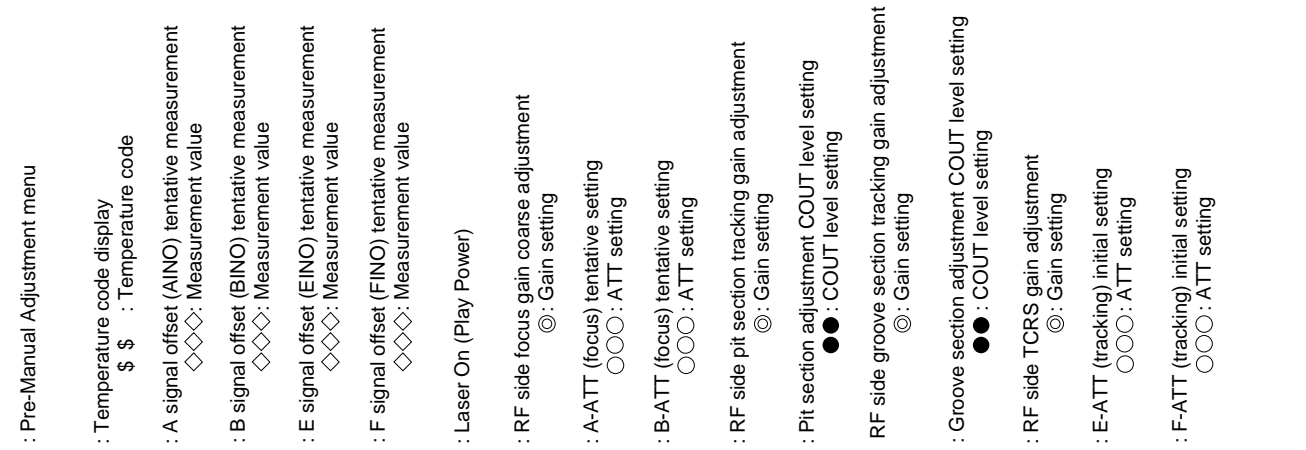
(low reflection only)

(low reflection only)

(low reflection only)

(low reflection only)

Pre-Manual Adjustment



: Pre-Manual Adjustment menu

: Temperature code display
\$ \$: Temperature code

: A signal offset (AINO) tentative measurement
◇◇◇: Measurement value

: B signal offset (BINO) tentative measurement
◇◇◇: Measurement value

: E signal offset (EINO) tentative measurement
◇◇◇: Measurement value

: F signal offset (FINO) tentative measurement
◇◇◇: Measurement value

: Laser On (Play Power)

: RF side focus gain coarse adjustment
◎: Gain setting

: A-ATT (focus) tentative setting
○○○: ATT setting

: B-ATT (focus) tentative setting
○○○: ATT setting

: RF side pit section tracking gain adjustment
◎: Gain setting

: Pit section adjustment COUT level setting
●●: COUT level setting

: RF side groove section tracking gain adjustment
◎: Gain setting

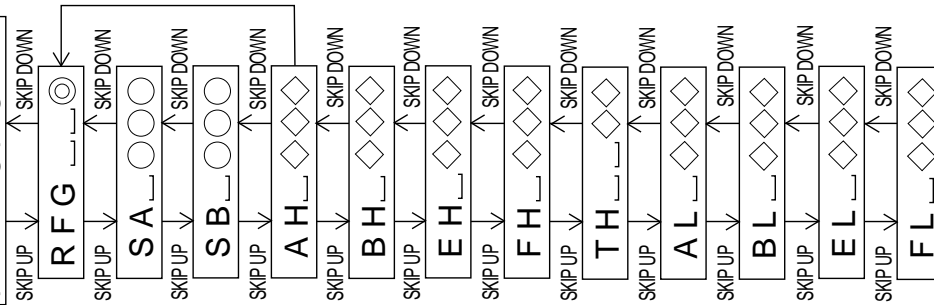
: Groove section adjustment COUT level setting
●●: COUT level setting

: RF side TCRS gain adjustment
◎: Gain setting

: E-ATT (tracking) initial setting
○○○: ATT setting

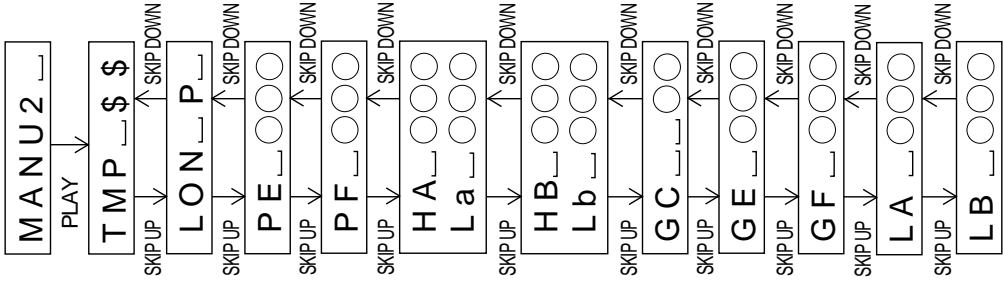
: F-ATT (tracking) initial setting
○○○: ATT setting

Continued from the preceding page



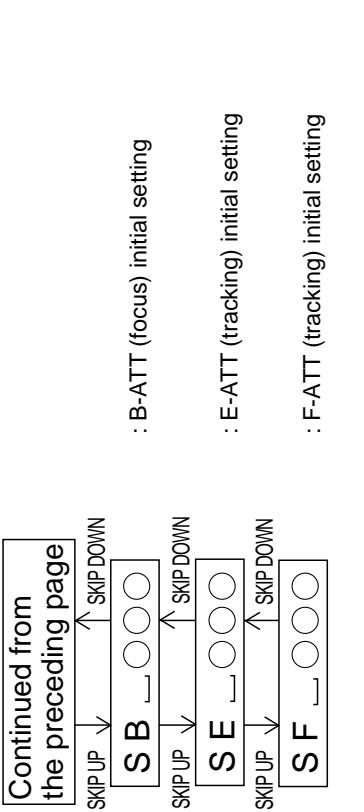
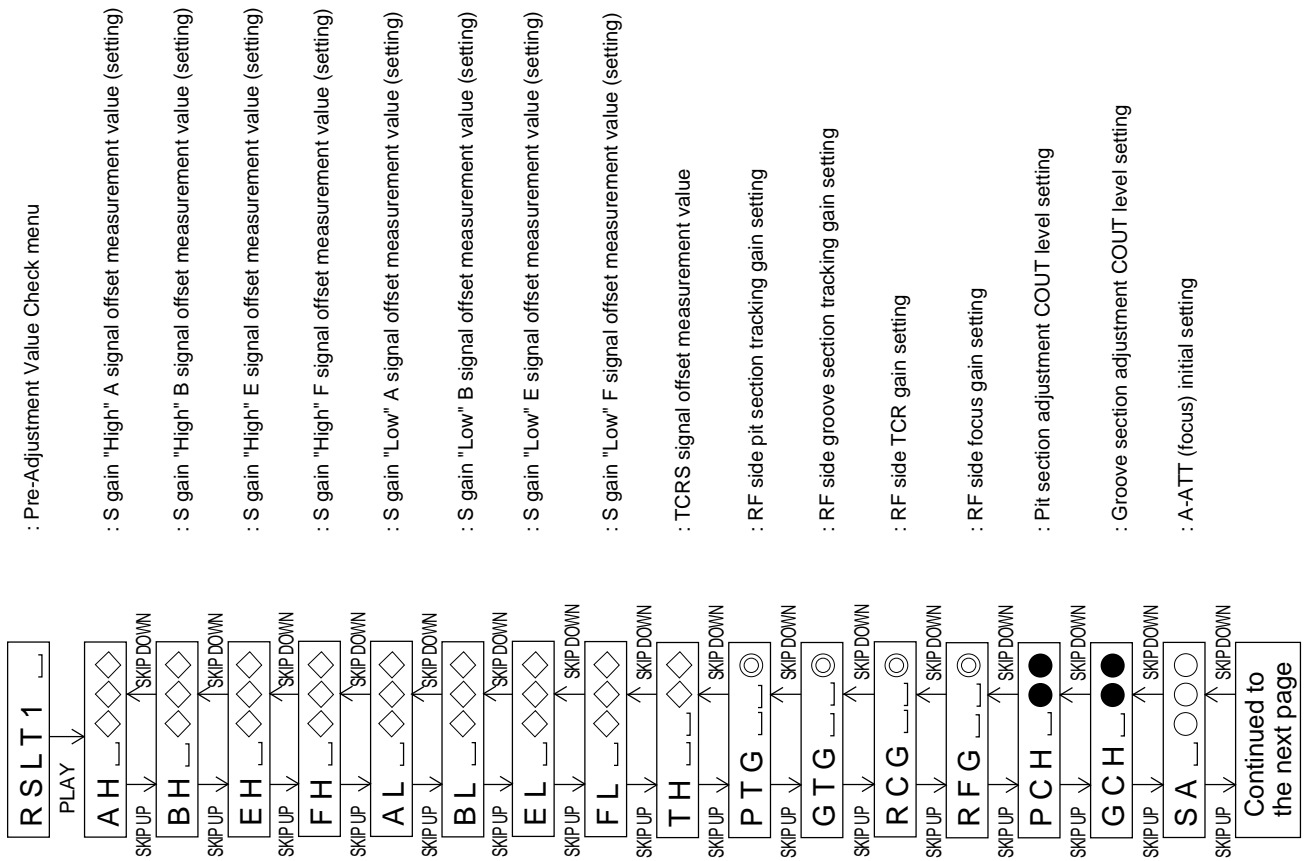
- : RF side focus gain minor adjustment
⊙ : Gain setting
- : A-ATT (focus) initial setting
: ATT setting
- : B-ATT (focus) initial setting
○○○ : ATT setting
- : S gain "High" A signal offset (AINO) measurement
◇◇◇ : Measurement value
- : S gain "High" B signal offset (BINO) measurement
◇◇◇ : Measurement value
- : S gain "High" E signal offset (EINO) measurement
◇◇◇ : Measurement value
- : S gain "High" F signal offset (FINO) measurement
◇◇◇ : Measurement value
- TCRS signal offset (TCRSO) measurement
◇◇ : ATT setting
- : S gain "Low" A signal offset (AINO) measurement
◇◇◇ : Measurement value
- : S gain "Low" B signal offset (BINO) measurement
◇◇◇ : Measurement value
- : S gain "Low" E signal offset (EINO) measurement
◇◇◇ : Measurement value
- : S gain "Low" F signal offset (FINO) measurement
◇◇◇ : Measurement value

ATT Manual Adjustment

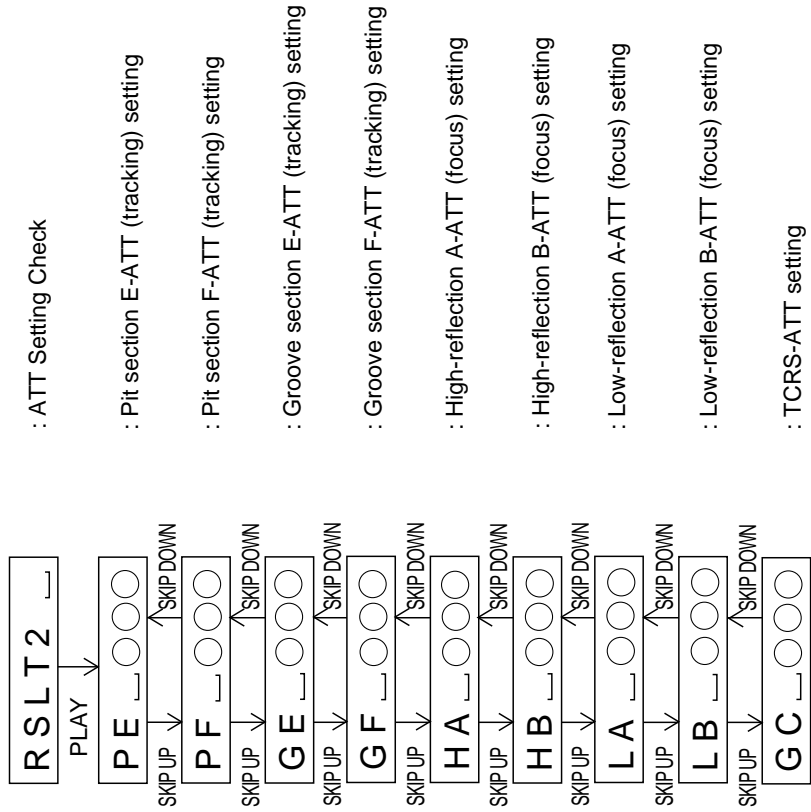


- : Temperature code display ATT manual adjustment menu
- : Temperature code display
\$ \$: Temperature code
- : Laser ON (Play Power)
- : Pit section E-ATT (tracking) setting
○○○ : ATT setting
- : Pit section E-ATT (tracking) setting
○○○ : ATT setting
- : High reflection: A-ATT (focus) setting
: Low reflection: A-ATT (focus) setting
○○○ : ATT setting
- : High reflection: B-ATT (focus) setting
: Low reflection: B-ATT (focus) setting
○○○ : ATT setting
- : TCRS ATT setting
○○ : ATT setting
- : Groove section E-ATT (tracking) setting
○○○ : ATT setting
- : Groove section F-ATT (tracking) setting
○○○ : ATT setting
- : Low reflection: A-ATT (focus) setting
○○○ : ATT setting
- : Low reflection: B-ATT (focus) setting
○○○ : ATT setting

Pre-Adjustment Value Check



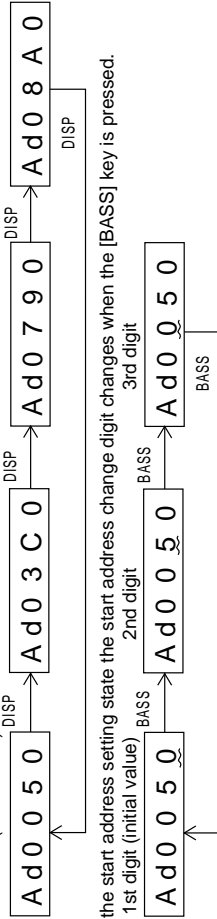
ATT Setting Check



Continuous Playback

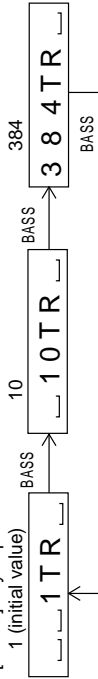
- Continuous playback from current pickup position
 - T PLAY : Continuous playback menu
 - PLAY ↓
 - S Q # # # # : Continuous playback (pit section)
 - A P # # # # : Continuous playback (groove section)
 - # # # # : Address
- Continuous playback from any address
 - T PLAY : Continuous playback menu
 - DISP ↓
 - A d 0 0 5 0 : Start address setting
 - PLAY ↓
 - S Q # # # # : Continuous playback (pit section)
 - A P # # # # : Continuous playback (groove section)
 - # # # # : Address

* When the [STOP] key is pressed in specific menu, the "TEST MODE STOP" state is set.
 * In the start address set state the start address changes as follows when the [DISP] key is pressed.
 0 0 5 0 H (initial value) 0 3 C 0 H 0 7 0 0 H 0 8 A 0 H



* In the start address setting state the start address change digit changes when the [BASS] key is pressed.

* In the start address set state the value of selection digit changes in the range of "0h to Fh" when the [SKIP UP/DOWN] key is pressed
 * In the continuous playback state the number of jump lines changes as follows shown the [BASS] key is pressed.

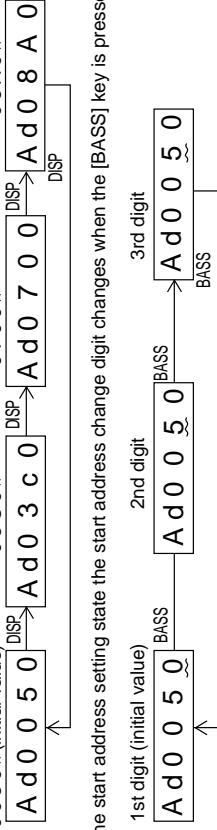


* When the [SKIP UP] key is pressed in the continued playback mode, jump of specified number of lines occurs in the external periphery direction.
 * If the key is held down, jump occurs continuously (100 ms cycle).
 * When the [SKIP DOWN] key is pressed in the continuous playback mode, jump of specified number of lines occurs in the internal periphery direction.
 * If the key is held down, jump occurs continuously (100 ms cycle).

Continuous Rrecord

- Continuous record from the current pickup position
 - T REC : Continuous record menu
 - PLAY ↓
 - A P # # # # : Continuous record
 - # # # # : Address
- Continuous record playback from any address
 - T REC : Continuous record menu
 - PLAY ↓
 - A d 0 0 5 0 : Start address setting
 - PLAY ↓
 - A P # # # # : Continuous record
 - # # # # : Address

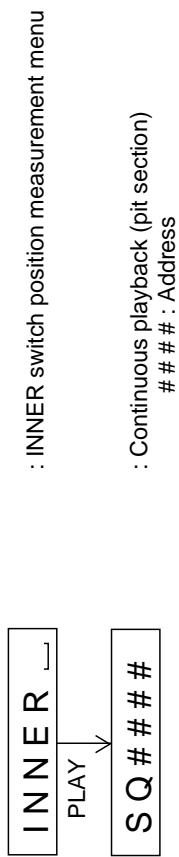
* When the [STOP] key is pressed in specific menu, the "TEST MODE STOP" state is set.
 * In the start address set state the start address changes as follows when the [DISP] key is pressed.
 0 0 5 0 H (initial value) 0 3 C 0 H 0 7 0 0 H 0 8 A 0 H



* In the start address setting state the start address change digit changes when the [BASS] key is pressed.

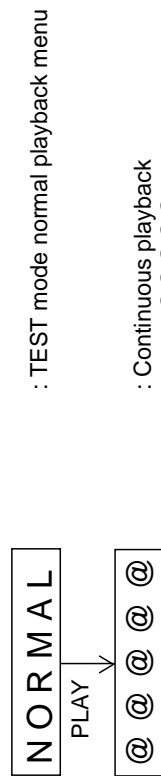
* In the start address set state the value of selection digit changes in the range of 0h to Fh when the [SKIP UP/DOWN] key is pressed.
 * In the continuous record state and start address set state the record laser power changes in the range of "0h to Fh" when the [VOL UP/DOWN] key is pressed.

Inner Switch Position Measurement



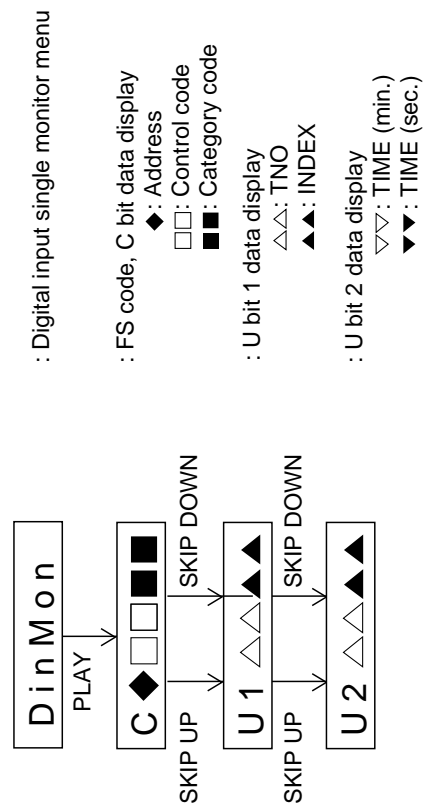
* When the [STOP] key is pressed in specific menu, the "TEST MODE STOP" state is set.

Test Mode Normal Playback



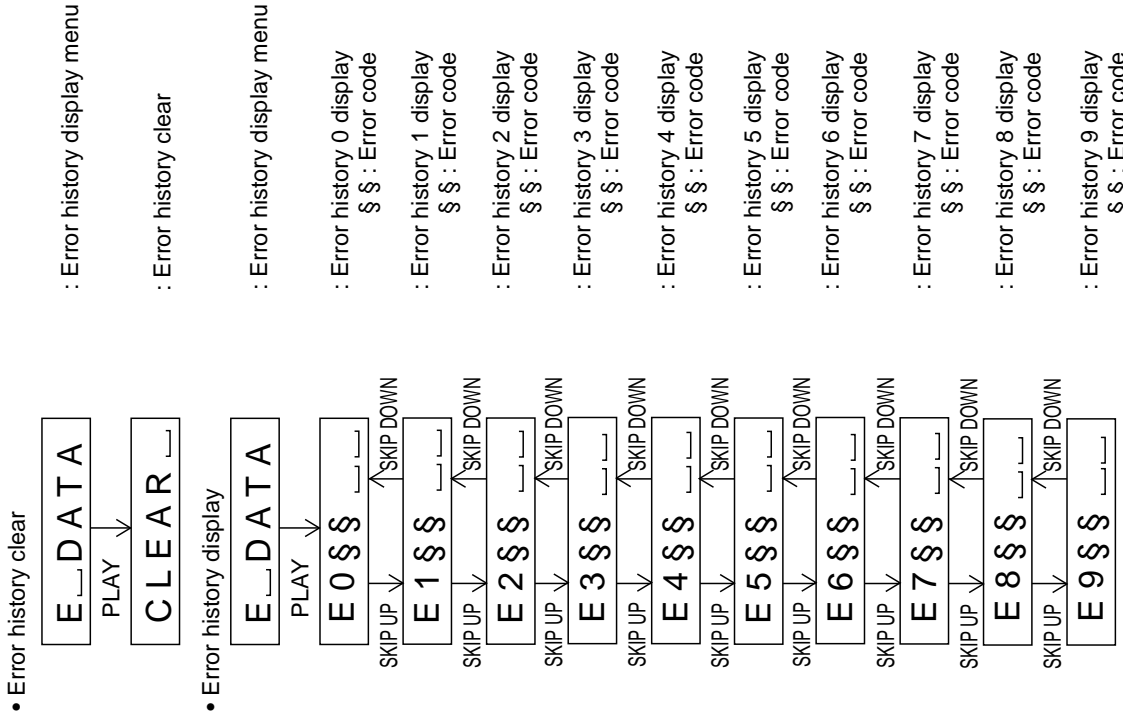
* When the [STOP] key is pressed in specific menu, the "TEST MODE STOP" state is set.

Digital Input Signal Monitor



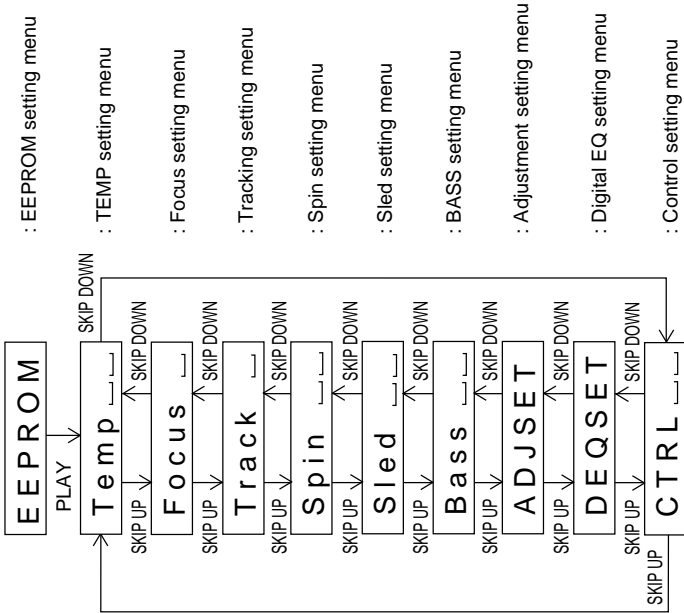
* When the [STOP] key is pressed in specific menu, the "TEST MODE STOP" state is set.

Error History Display



* When the [STOP] key is pressed in specific menu, the "TEST MODE STOP" state is set.

EEPROM Setting



: EEPROM setting menu

: TEMP setting menu

: Focus setting menu

: Tracking setting menu

: Spin setting menu

: Sled setting menu

: BASS setting menu

: Adjustment setting menu

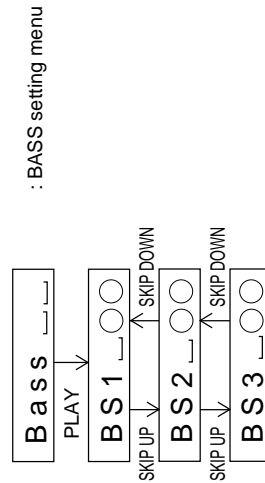
: Digital EQ setting menu

: Control setting menu

* When the [STOP] key is pressed in specific menu, the "TEST MODE STOP" state is set.

* When the [PLAY] key operation is performed in the specific state, the specific setting menu is set.

BASS Setting



: BASS setting menu

* When the [STOP] key is pressed in specific menu, the "TEST MODE STOP" state is set.

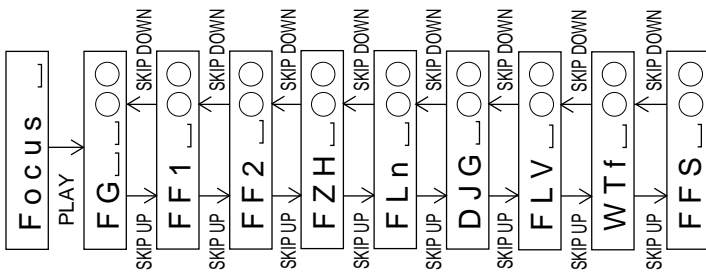
* When the [DISP] key operation is performed in the specific state, the menu changes to "TEMP SETTING menu".

* In the specific state the setting changes in the range of "00h to FFh" when the [VOL UP/DOWN] key is pressed.

(The upper limit varies depending on the items)

Focus Setting

: Focus setting menu



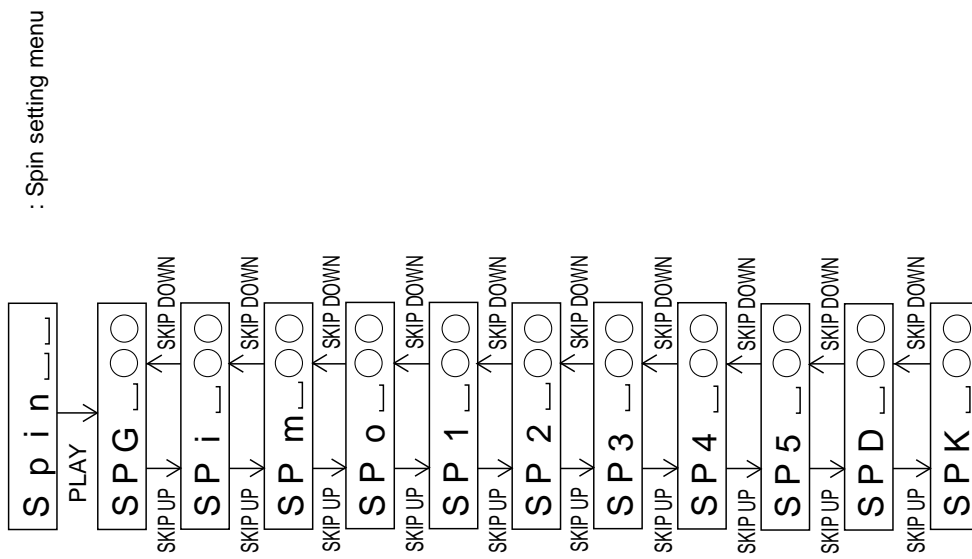
* When the [STOP] key is pressed in specific menu, the "TEST MODE STOP" state is set.

* When the [DISP] key operation is performed in the specific state, the menu changes to "TEMP SETTING menu".

* In specific state the setting changed in the range of "00h to FFh" when the [VOL UP/DOWN] key is pressed.

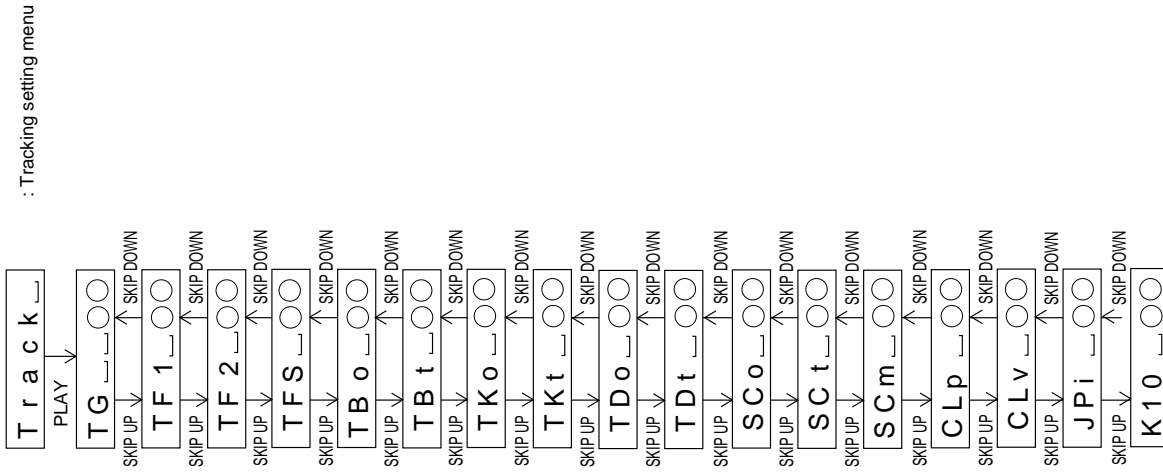
(The upper limit varies depending on the items)

Spin Setting



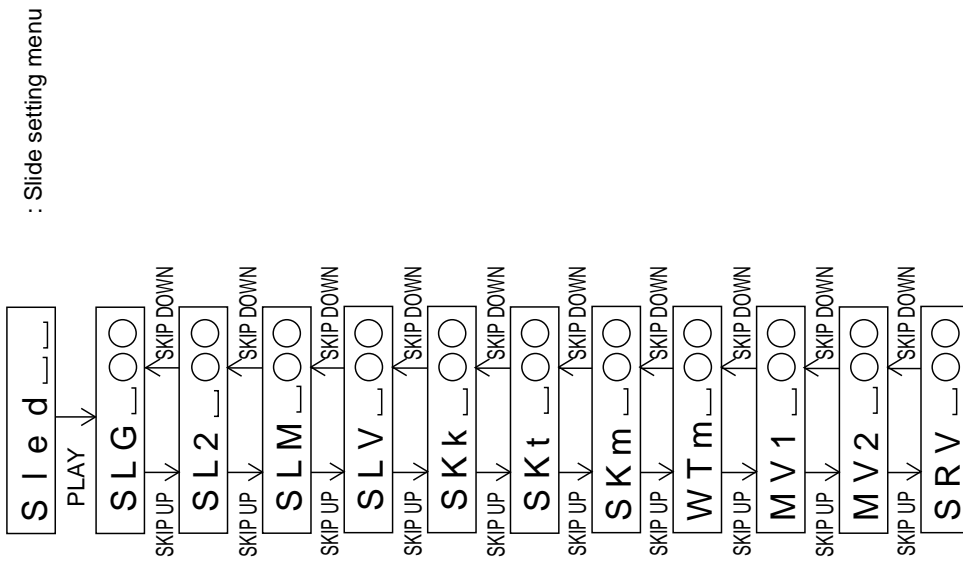
- * When the [STOP] key is pressed in specific menu, the "TEST MODE STOP" state is set.
- * When the [DISP] key operation is performed in the specific state, the menu changes to "TEMP SETTING menu".
- * In specific state the setting changed in the range of "00h to FFh" when the [VOL UP/DOWN] key is pressed. (The upper limit varies depending on the items)

Tracking Setting



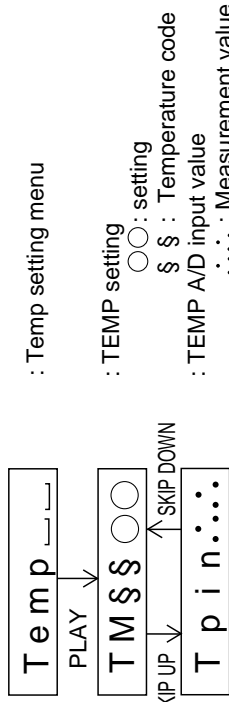
- * When the [STOP] key is pressed in specific menu, the "TEST MODE STOP" state is set.
- * When the [DISP] key operation is performed in the specific state, the menu changes to "TEMP SETTING menu".
- * In the specific state the setting changes in the range of "00h to FFh" when the [VOL UP/DOWN] key is pressed. (The upper limit varies depending on the items)

Slide Setting



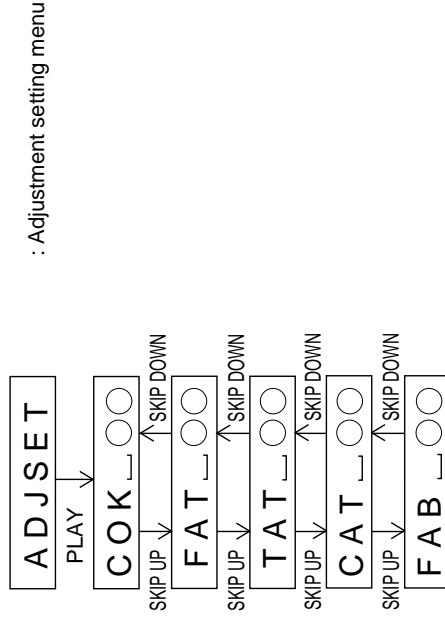
- * When the [STOP] key is pressed in specific menu, the "TEST MODE STOP" state is set.
- * When the [DISP] key operation is performed in the specific state, the menu changes to "TEMP SETTING menu".
- * In the specific state the setting changes in the range of "00h to FFh" when the [VOL UP/DOWN] key is pressed.
(The upper limit varies depending on the items)

TEMP Setting



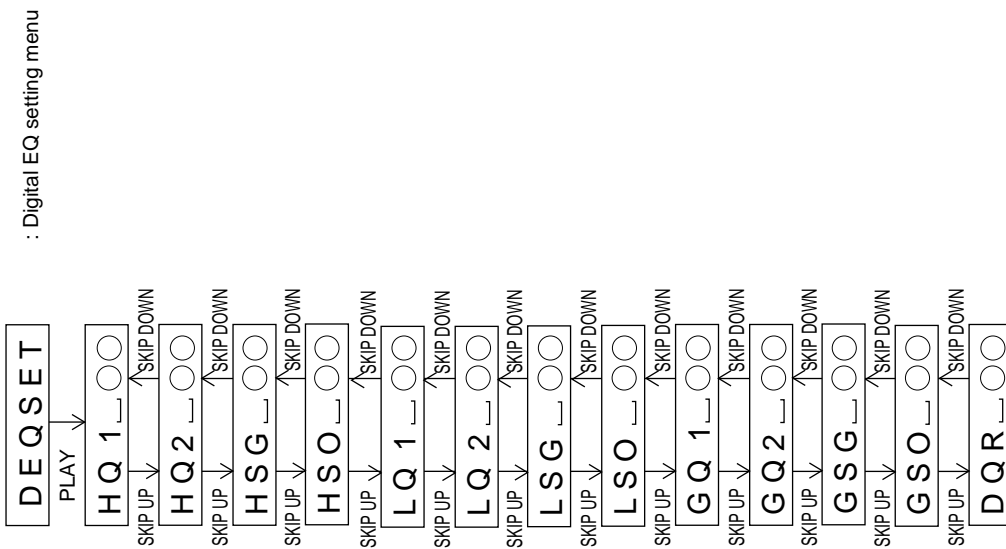
- * When the [STOP] key is pressed in specific menu, the "TEST MODE STOP" state is set.
- * When the [DISP] key operation is performed in the specific state, the menu changes to "TEMP SETTING menu".
- * In the specific state the setting changes in the range of "00h to FFh" when the [VOL UP/DOWN] key is pressed.

Adjustment Setting



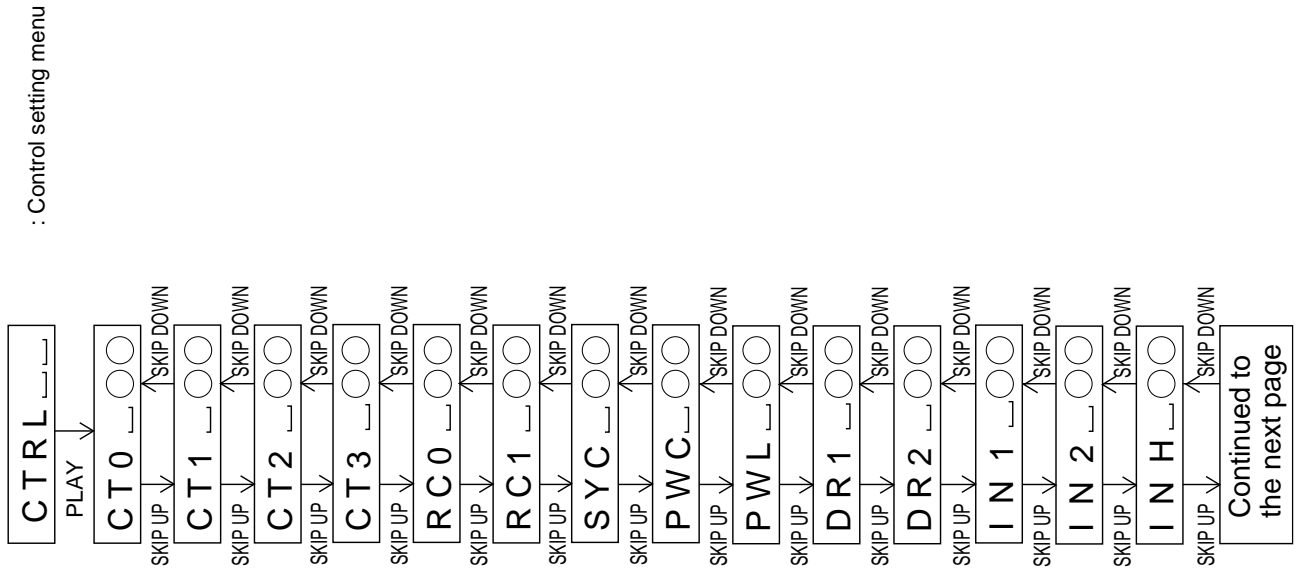
- * When the [STOP] key is pressed in specific menu, the "TEST MODE STOP" state is set.
 - * When the [DISP] key operation is performed in the specific state, the menu changes to "TEMP SETTING menu".
 - * In the specific setting display state the setting change digit changes when the [P-MODE] key is pressed.
-
- * In the specific state the setting changes in the range of "0h to Fh" when the [VOL UP/DOWN] key is pressed.

Digital EQ Setting

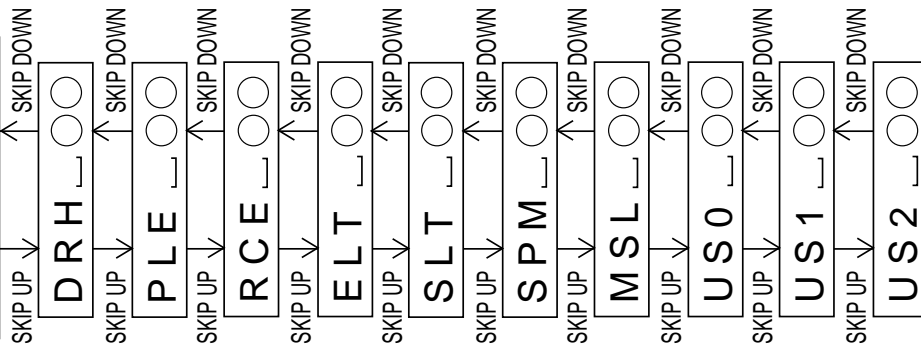


- * When the [STOP] key is pressed in specific menu, the "TEST MODE STOP" state is set.
- * When the [DISP] key operation is performed in the specific state, the menu changes to "TEMP SETTING menu".
- * In the specific setting display state the setting change digit changes when the [P-MODE] key is pressed.
 1st digit (initial value) 2nd digit
 * * * _ _ _ * * * _ _ _
 P-MODE P-MODE
- * In the specific state the setting changes in the range of "0h to Fh" when the [VOL UP/DOWN] key is pressed.

Control Setting

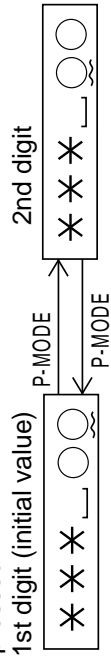


Continued from
the preceding page



- * When the [STOP] key is pressed in specific menu, the "TEST MODE STOP" state is set.
- * When the [DISP] key operation is performed in the specific state, the menu changes to "TEMP SETTING menu".

* In the specific setting display state the setting change digit changes when the [P-MODE] key is pressed.



* In the specific state the setting changes in the range of "0h to Fh" when the [VOL UP/DOWN] key is pressed.

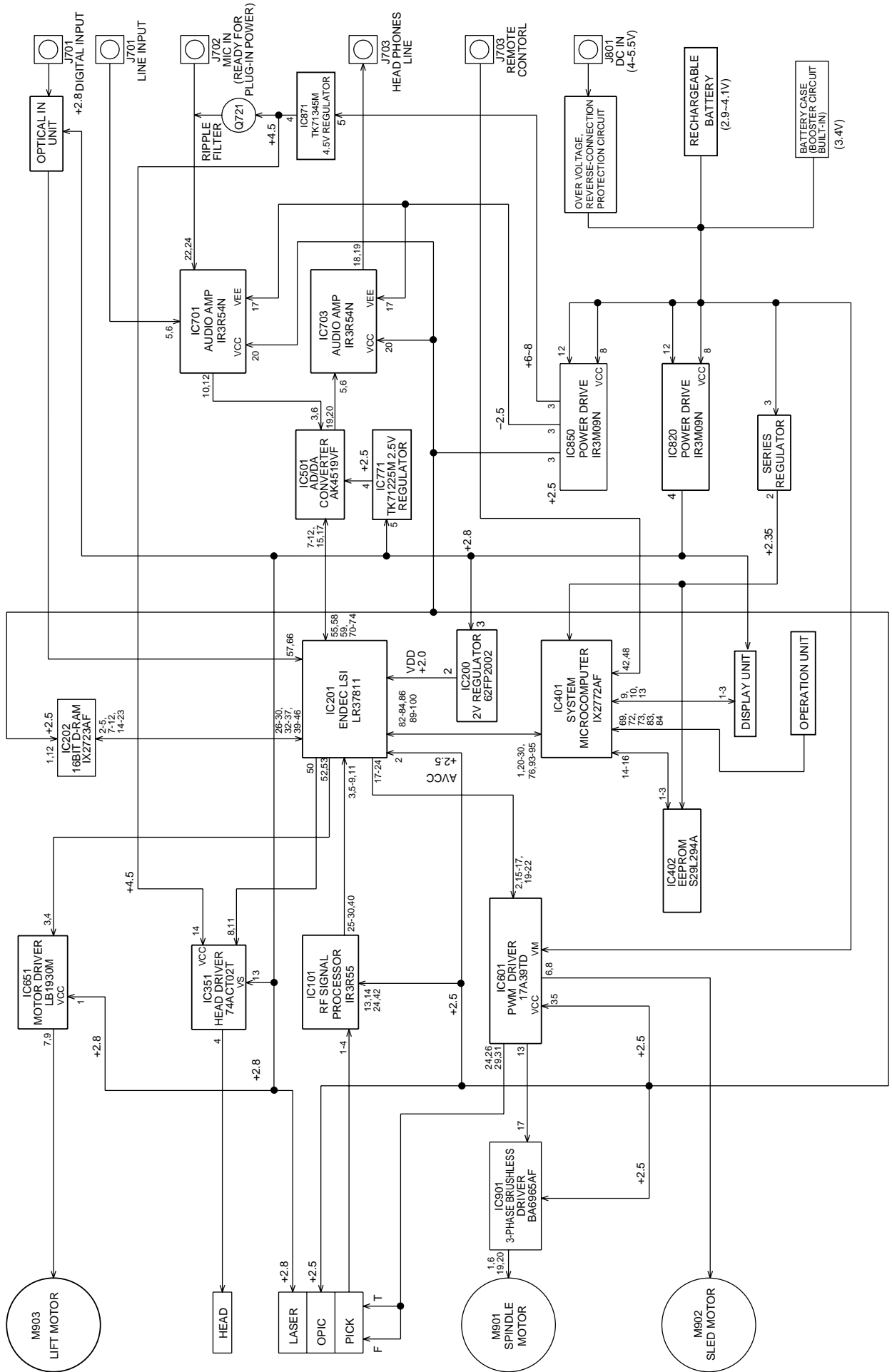


Figure 27 BLOCK DIAGRAM

MD-MS722H/MS721H

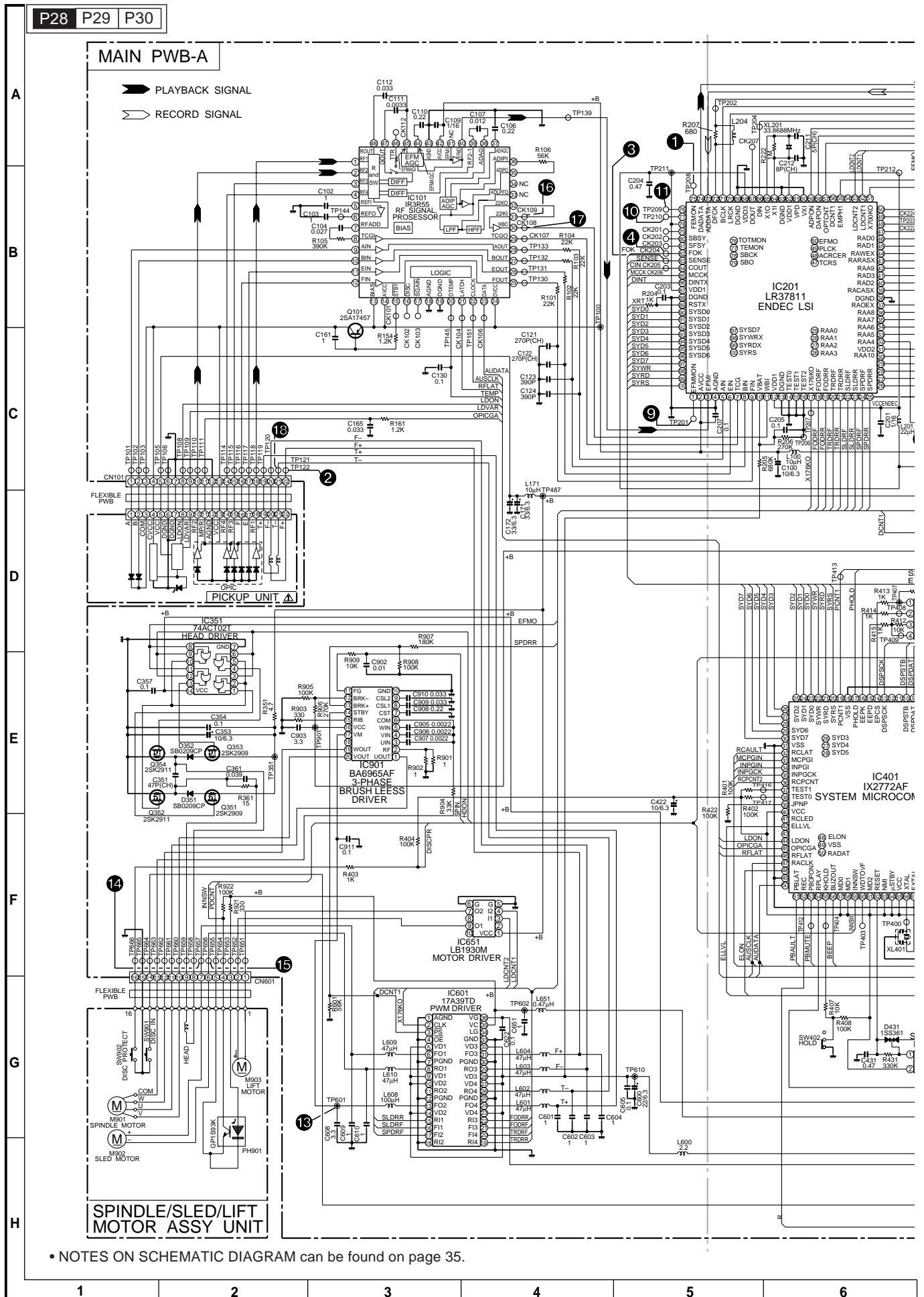
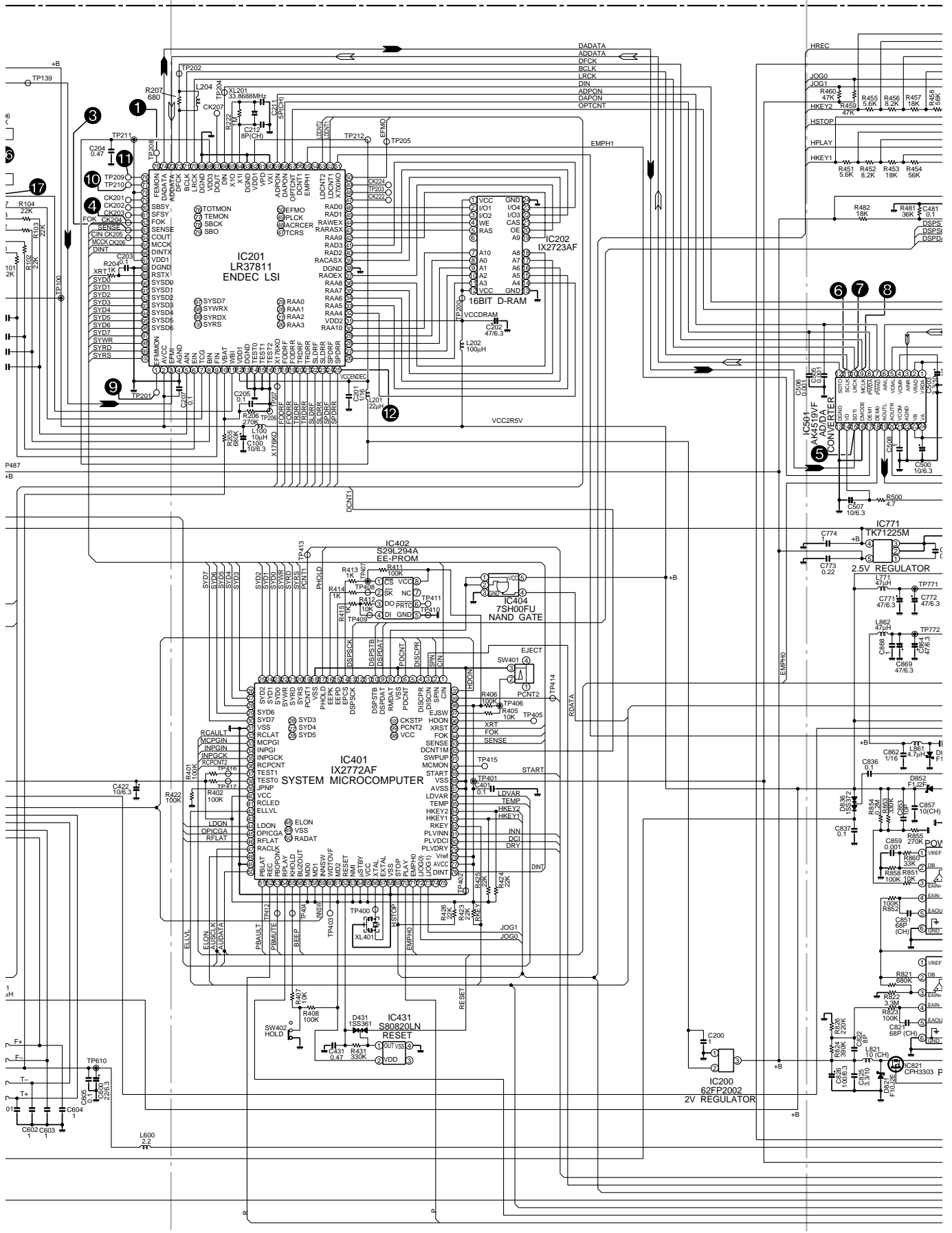


Figure 28 SCHEMATIC DIAGRAM (1/4)

P28 P29 P30



• The numbers 1 to 13 are waveform numbers shown in page 36.

| | | | | | |
|---|---|---|----|----|----|
| 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|----|----|----|

Figure 29 SCHEMATIC DIAGRAM (2/4)

MD-MS722H/MS721H

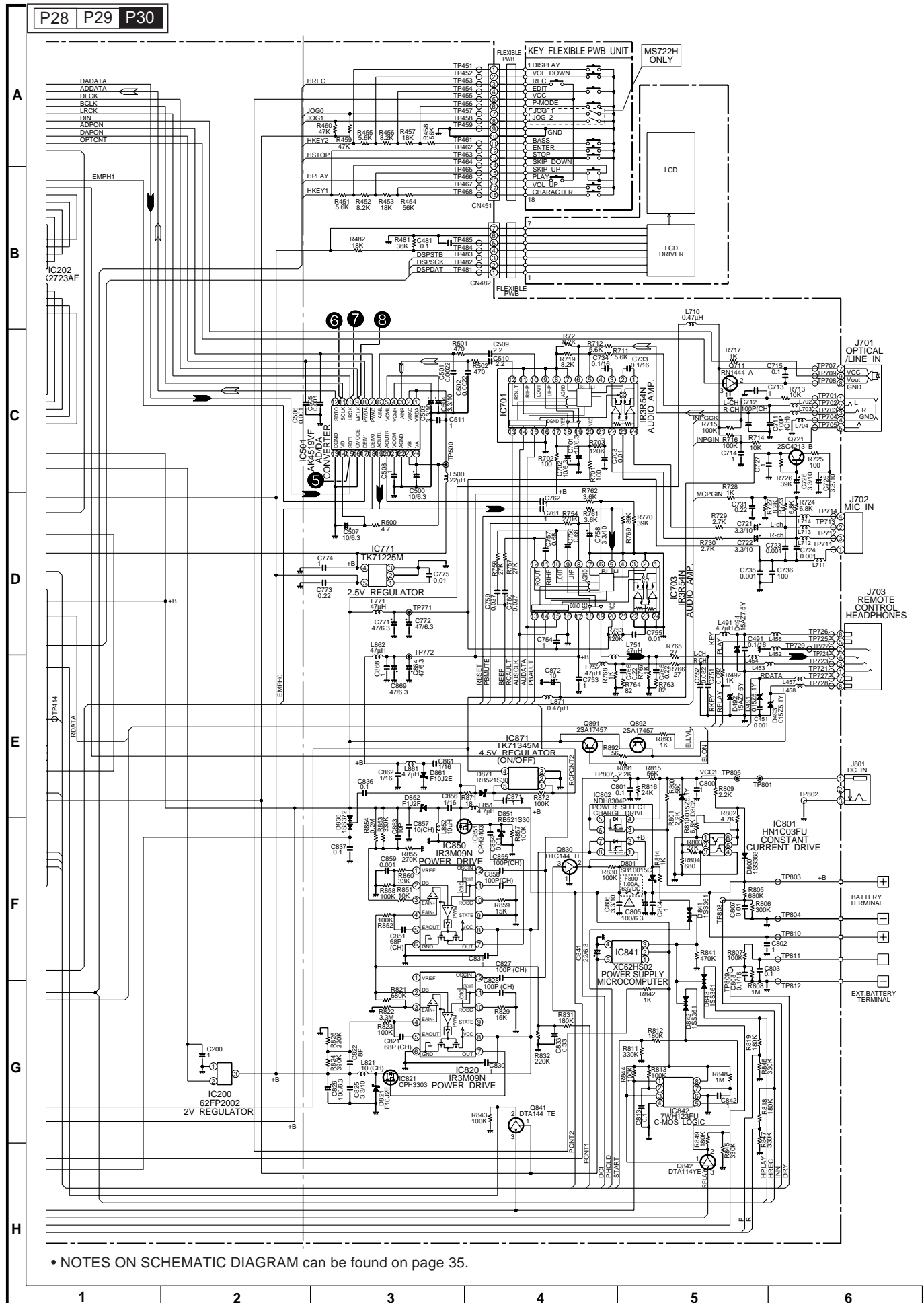


Figure 30 SCHEMATIC DIAGRAM (3/4)

| IC101 | | IC200 | | | | IC401 | | | | IC501 | | IC701 | | IC820 | |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE |
| 1 | 0.7V | 1 | 1V | 51 | 1V | 1 | 0V | 51 | 2.35V | 1 | 2.5V | 1 | 0V | 1 | 1.25V |
| 2 | 0.7V | 2 | 2.5V | 52 | 0V | 2 | 2.48V | 52 | 0V | 2 | 2.5V | 2 | 0V | 2 | 1.2V |
| 3 | 0.7V | 3 | 1.27V | 53 | 0V | 3 | 0V | 53 | 2.35V | 3 | 0V | 3 | 0V | 3 | 0.96V |
| 4 | 0.7V | 4 | 0V | 54 | 0V | 4 | 2.33V | 54 | 0V | 4 | 0V | 4 | 0V | 4 | 1V |
| 5 | 1.29V | 5 | 1.27V | 55 | 0V | 5 | NC | 55 | 2.33V | 5 | 0V | 5 | 0V | 5 | 0.95V |
| 6 | 1.26V | 6 | 1.27V | 56 | 2V | 6 | 0V | 56 | 0V | 6 | 0V | 6 | 0V | 6 | 0V |
| 7 | 0.7V | 7 | 1.27V | 57 | 0V | 7 | 0V | 57 | 2.35V | 7 | 0V | 7 | 0V | 7 | 3.55V |
| 8 | 1.26V | 8 | 1.27V | 58 | 0V | 8 | 0V | 58 | 2.35V | 8 | 0V | 8 | 0V | 8 | 4.8V |
| 9 | 1.26V | 9 | 1.26V | 59 | 0V | 9 | 0V | 59 | 0.3V | 9 | 1V | 9 | 0V | 9 | 2.47V |
| 10 | 1.26V | 10 | 2.2V | 60 | 0V | 10 | 2.35V | 60 | 2.35V | 10 | 1V | 10 | 0V | 10 | 0.4V |
| 11 | 1.26V | 11 | 1.43V | 61 | 0.8V | 11 | 0V | 61 | 2.35V | 11 | 1V | 11 | 0V | 11 | 1V |
| 12 | 1.26V | 12 | 2V | 62 | 2V | 12 | 2.35V | 62 | 2.27V | 12 | 0V | 12 | 0V | 12 | 1V |
| 13 | 2.52V | 13 | 0V | 63 | 0V | 13 | 2.35V | 63 | 2.35V | 13 | 0V | 13 | 0V | | |
| 14 | 2.52V | 14 | 0V | 64 | 0.9V | 14 | 2.35V | 64 | 2.35V | 14 | 2.5V | 14 | 0V | | |
| 15 | 0.18V | 15 | 0V | 65 | 0.79V | 15 | - | 65 | 2.35V | 15 | 0V | 15 | 0V | | |
| 16 | 2.52V | 16 | 0V | 66 | 1.46V | 16 | 0V | 66 | 1.1V | 16 | 0V | 16 | 0V | | |
| 17 | 2.52V | 17 | 1V | 67 | 1V | 17 | 2.35V | 67 | 1.1V | 17 | 0V | 17 | -2.65V | | |
| 18 | 0V | 18 | 0V | 68 | 2V | 18 | 0V | 68 | 0V | 18 | 0V | 18 | 0V | | |
| 19 | 0V | 19 | 0V | 69 | 0V | 19 | 2.35V | 69 | 2.34V | 19 | 0V | 19 | 0V | | |
| 20 | 1.46V | 20 | 0V | 70 | 1V | 20 | 0V | 70 | 0V | 20 | 0V | 20 | 0V | | |
| 21 | 2.34V | 21 | 0V | 71 | 1V | 21 | 2.35V | 71 | 0V | 21 | 0V | 21 | 0V | | |
| 22 | 0V | 22 | 0V | 72 | 0V | 22 | 2.35V | 72 | 2.24V | 22 | 0V | 22 | 0V | | |
| 23 | 0V | 23 | 0V | 73 | 0V | 23 | 0V | 73 | 2.24V | 23 | 2.5V | 23 | 0V | | |
| 24 | 2.51V | 24 | 0V | 74 | 0V | 24 | - | 74 | - | 24 | 2.5V | 24 | 0V | | |
| 25 | 1.26V | 25 | 0V | 75 | 1V | 25 | - | 75 | 2.35V | | | | | | |
| 26 | 1.26V | 26 | 1.58V | 76 | 1V | 26 | - | 76 | 2V | | | | | | |
| 27 | 1.26V | 27 | 0.87V | 77 | 1V | 27 | - | 77 | 2.35V | | | | | | |
| 28 | 1.26V | 28 | 0.87V | 78 | 2V | 28 | - | 78 | 2.35V | | | | | | |
| 29 | 1.26V | 29 | 1.73V | 79 | 0V | 29 | - | 79 | 0V | | | | | | |
| 30 | 1.6V | 30 | 1.1V | 80 | 2V | 30 | - | 80 | 1.55V | | | | | | |
| 31 | 1.26V | 31 | 2.5V | 81 | 1V | 31 | 0V | 81 | 1.48V | | | | | | |
| 32 | 1.26V | 32 | 0.6V | 82 | 2V | 32 | 0V | 82 | 2.12V | | | | | | |
| 33 | 1.26V | 33 | 0.8V | 83 | 0V | 33 | 2.14V | 83 | 2.34V | | | | | | |
| 34 | NC | 34 | 1.9V | 84 | 0V | 34 | 2.5V | 84 | 2.34V | | | | | | |
| 35 | 1.26V | 35 | 0.9V | 85 | 1V | 35 | 2.5V | 85 | 1.47V | | | | | | |
| 36 | 1.26V | 36 | 1.29V | 86 | 2V | 36 | 0V | 86 | 0V | | | | | | |
| 37 | 0V | 37 | 1.8V | 87 | 2V | 37 | 0V | 87 | 0V | | | | | | |
| 38 | 1.26V | 38 | 0V | 88 | 0V | 38 | 2.35V | 88 | 0V | | | | | | |
| 39 | 1.26V | 39 | 1.9V | 89 | 2.33V | 39 | 2.35V | 89 | 0V | | | | | | |
| 40 | 1.26V | 40 | 1.6V | 90 | 1.24V | 40 | 2.35V | 90 | 0V | | | | | | |
| 41 | 1.26V | 41 | 1.64V | 91 | 1.46V | 41 | 0V | 91 | 0V | | | | | | |
| 42 | 2.52V | 42 | 1.1V | 92 | 0V | 42 | 2V | 92 | 2.34V | | | | | | |
| 43 | 0V | 43 | 1.7V | 93 | 0.1V | 43 | 0V | 93 | 0V | | | | | | |
| 44 | 0V | 44 | 2.5V | 94 | 0.35V | 44 | 0V | 94 | 2V | | | | | | |
| 45 | 1.26V | 45 | 1.6V | 95 | 0V | 45 | 0V | 95 | 2.35V | | | | | | |
| 46 | 1.26V | 46 | 0V | 96 | 1.56V | 46 | 2.35V | 96 | 0V | | | | | | |
| 47 | 1.26V | 47 | 0V | 97 | 0.25V | 47 | 0V | 97 | 0V | | | | | | |
| 48 | 0V | 48 | 1.93V | 98 | 2.28V | 48 | 2V | 98 | 2.25V | | | | | | |
| 49 | | 49 | 1V | 99 | 2.34V | 49 | 0V | 99 | 2.35V | | | | | | |
| 50 | | 50 | 0.9V | 100 | 0V | 50 | 0V | 100 | 2.35V | | | | | | |

| IC102 | | IC351 | | IC404 | | IC431 | | IC402 | | IC434 | | IC401 | | IC431 | | IC431 | | IC431 | |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE |
| 1 | 2.5V | 1 | 0V | 1 | 0.22V | 1 | 2.35V | 1 | 2.35V | 1 | 2.8V | 1 | 0V | 1 | 0V | 1 | 0V | 1 | 0V |
| 2 | 1.23V | 2 | 0V | 2 | 0.22V | 2 | 2.35V | 2 | 0V | 2 | 0V | 2 | 0V | 2 | 0V | 2 | 0V | 2 | 0V |
| 3 | 1.35V | 3 | 2.35V | 3 | 0V | 3 | 0V | 3 | - | 3 | 0.24V | 3 | 0V | 3 | 0V | 3 | 0V | 3 | 0V |
| 4 | 2.37V | 4 | 0V | 4 | 2.33V | 4 | 2.33V | 4 | 0V | 4 | 0V | 4 | 0V | 4 | 0V | 4 | 0V | 4 | 0V |
| 5 | 1.71V | 5 | 0V | 5 | 0V | 5 | 2.5V | 5 | 0V | 5 | 0V | 5 | 0V | 5 | 0V | 5 | 0V | 5 | 0V |
| 6 | NC | 6 | 2.35V | 6 | 2.33V | 6 | 0V | 6 | 0V | 6 | 0V | 6 | 0V | 6 | 0V | 6 | 0V | 6 | 0V |
| 7 | 0.9V | 7 | 0V | 7 | 0V | 7 | 0V | 7 | 0V | 7 | 0V | 7 | 0V | 7 | 0V | 7 | 0V | 7 | 0V |
| 8 | 1.76V | 8 | 0.91V | 8 | 2.33V | 8 | 0.91V | 8 | 0.91V | 8 | 0.91V | 8 | 0V | 8 | 0V | 8 | 0V | 8 | 0V |
| 9 | 0.9V | 9 | 2.5V | 9 | 2.5V | 9 | 2.5V | 9 | 2.5V | 9 | 0.73V | 9 | 0V | 9 | 0V | 9 | 0V | 9 | 0V |
| 10 | 0.9V | 10 | 0V | 10 | 0V | 10 | 0V | 10 | 0V | 10 | 0.73V | 10 | 0V | 10 | 0V | 10 | 0V | 10 | 0V |
| 11 | 0.58V | 11 | 0.91V | 11 | 0.91V | 11 | 0.91V | 11 | 0.91V | 11 | 0V | 11 | 0V | 11 | 0V | 11 | 0V | 11 | 0V |
| 12 | 2.5V | 12 | 2.35V | 12 | 2.35V | 12 | 2.35V | 12 | 2.35V | 12 | 0V | 12 | 0V | 12 | 0V | 12 | 0V | 12 | 0V |
| 13 | 0V | 13 | 0V | 13 | 0V | 13 | 0V | 13 | 0V | 13 | 0V | 13 | 0V | 13 | 0V | 13 | 0V | 13 | 0V |
| 14 | 0.5V | 14 | 4.54V | 14 | 4.54V | 14 | 4.54V | 14 | 4.54V | 14 | 0V | 14 | 0V | 14 | 0V | 14 | 0V | 14 | 0V |
| 15 | 0.79V | | | | | | | | | 15 | 0V | 15 | 0V | 15 | 0V | 15 | 0V | 15 | 0V |
| 16 | 1.93V | | | | | | | | | 16 | 0.24V | 16 | 0.24V | 16 | 0.24V | 16 | 0.24V | 16 | 0.24V |
| 17 | 0.93V | | | | | | | | | 17 | 0V | 17 | 0V | 17 | 0V | 17 | 0V | 17 | 0V |
| 18 | 1.26V | | | | | | | | | 18 | 0V | 18 | 0V | 18 | 0V | 18 | 0V | 18 | 0V |
| 19 | 1.1V | | | | | | | | | 19 | 0V | 19 | 0V | 19 | 0V | 19 | 0V | 19 | 0V |
| 20 | 1.78V | | | | | | | | | 20 | 0V | 20 | 0V | 20 | 0V | 20 | 0V | 20 | 0V |
| 21 | 2.05V | | | | | | | | | 21 | 0V | 21 | 0V | 21 | 0V | 21 | 0V | 21 | 0V |
| 22 | 1.63V | | | | | | | | | 22 | 0V | 22 | 0V | 22 | 0V | 22 | 0V | 22 | 0V |
| 23 | 1.65V | | | | | | | | | 23 | 0V | 23 | 0V | 23 | 0V | 23 | 0V | 23 | 0V |
| 24 | 0V | | | | | | | | | 24 | 0V | 24 | 0V | 24 | 0V | 24 | 0V | 24 | 0V |

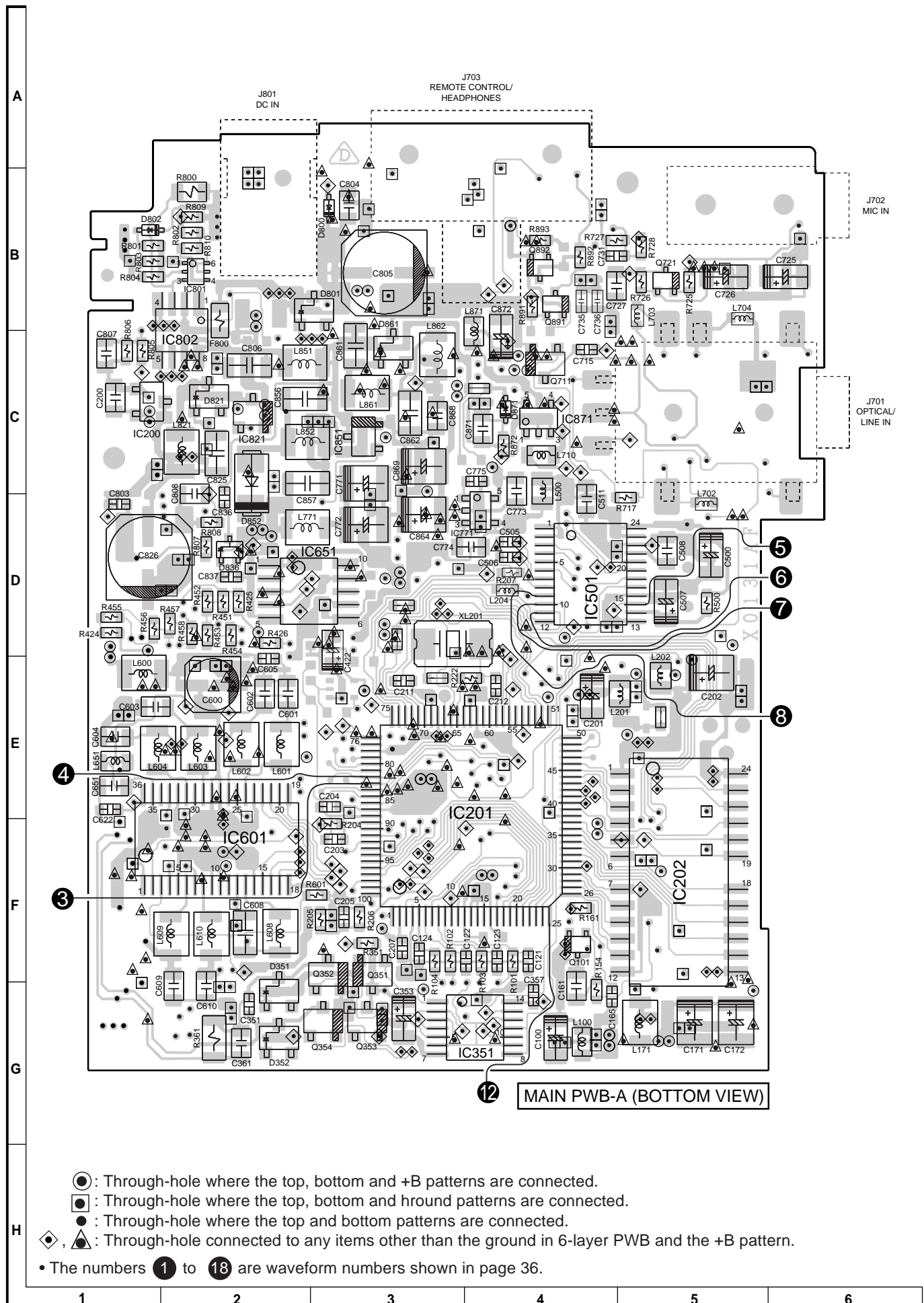
| IC841 | | IC842 | | IC850 | | IC771 | | IC901 | | IC801 | | IC651 | | IC871 | |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE |
| 1 | 0V | 1 | 4.88V | 1 | 1.25V | 1 | 1.26V | 1 | 0V | 1 | 0V | 1 | 2.8V | 1 | 0V |
| 2 | 4.96V | 2 | 4.88V | 2 | 0.9V | 2 | 0V | 2 | 0V | 2 | 0V | 2 | 0V | 2 | 0V |
| 3 | 4.92V | 3 | 4.93V | 3 | 1.22V | 3 | 0V | 3 | 0V | 3 | 0V | 3 | 0V | 3 | 0V |
| 4 | 0V | 4 | 0V | 4 | 1.2V | 4 | 2.5V | 4 | 0V | 4 | 0V | 4 | 0V | 4 | 0V |
| 5 | 2.35V | 5 | 0V | 5 | 1.17V | 5 | 2.8V | 5 | 0V | 5 | 0.73V | 5 | 0V | 5 | 0V |
| | | 6 | 0V | 6 | 0V | 6 | 0V | 6 | 0V | 6 | 0.73V | 6 | 0V | 6 | 0V |
| | | 7 | 4.5V | 7 | 0.64V | 7 | 0V | 7 | 0V | 7 | 0V | 7 | 0V | 7 | 0V |
| | | 8 | 4.93V | 8 | 4.8V | 8 | 0V | 8 | 0V | 8 | 0V | 8 | 0V | 8 | 0V |
| | | | | 9 | 0V | 9 | 0V | 9 | 0V | 9 | 0V | 9 | 0V | 9 | 0V |
| | | | | 10 | 0.4V | 10 | 0V | 10 | 0V | 10 | 0V | 10 | 0V | 10 | 0V |
| | | | | 11 | 1V | 11 | 0V | 11 | 0V | 11 | 0V | 11 | 0V | 11 | 0V |
| | | | | 12 | 1V | 12 | 0V | 12 | 0V | 12 | 0V | 12 | 0V | 12 | 0V |

Preform the measurement on the IC401 pin 37 in the TEST mode with GND short-circuited. (LCD is in "TEST" state.)

• The numbers ① to ⑬ are waveform numbers shown in page 36.

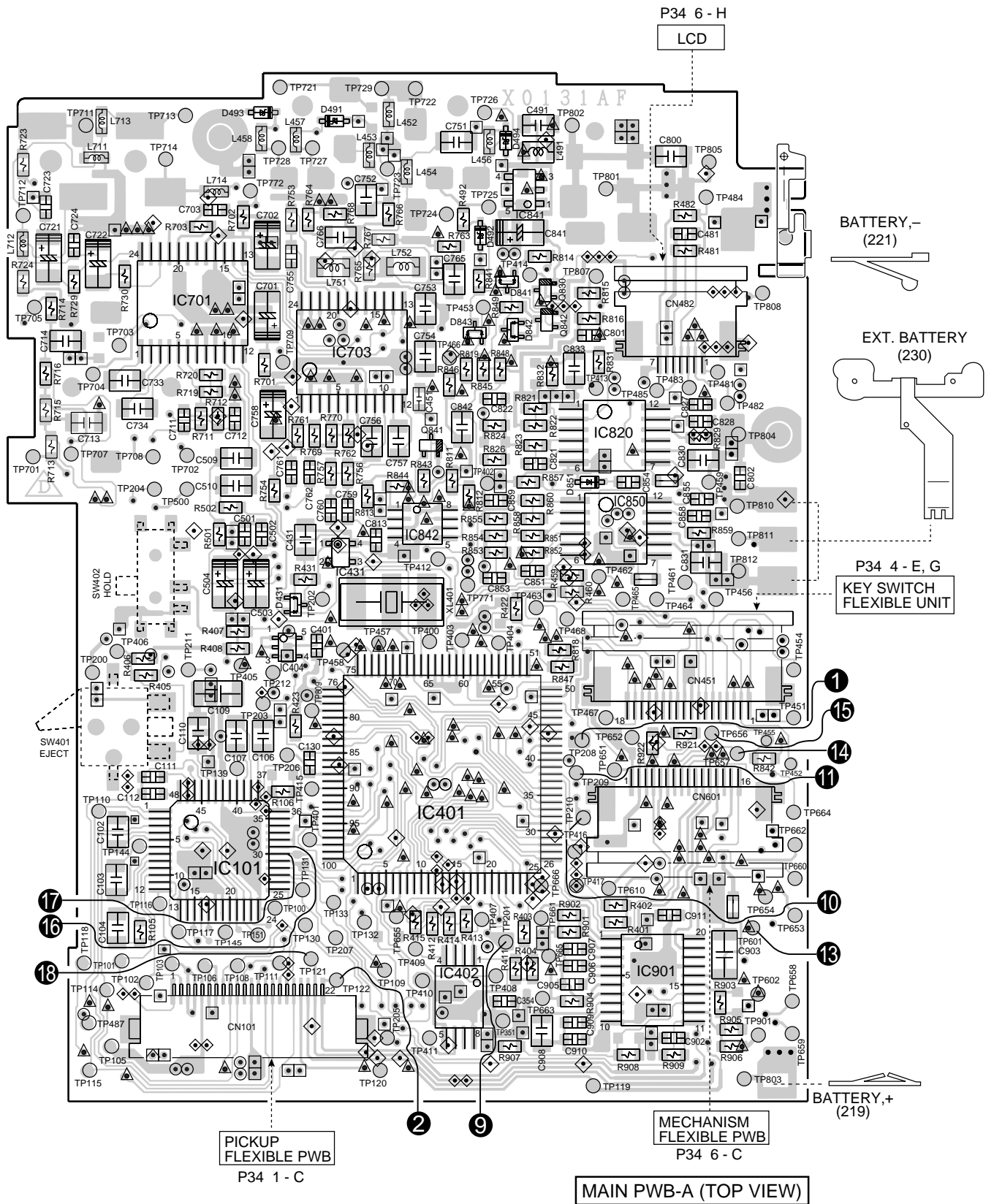
| | | | | | |
|---|---|---|----|----|----|
| 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|----|----|----|

Figure 31 SCHEMATIC DIAGRAM (4/4)



- ⊙ : Through-hole where the top, bottom and +B patterns are connected.
- : Through-hole where the top, bottom and ground patterns are connected.
- : Through-hole where the top and bottom patterns are connected.
- ◇, ▲ : Through-hole connected to any items other than the ground in 6-layer PWB and the +B pattern.
- The numbers ① to ⑱ are waveform numbers shown in page 36.

Figure 32 WIRING OF P.W.BOARD (1/3)



| | | | | | |
|---|---|---|----|----|----|
| 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|----|----|----|

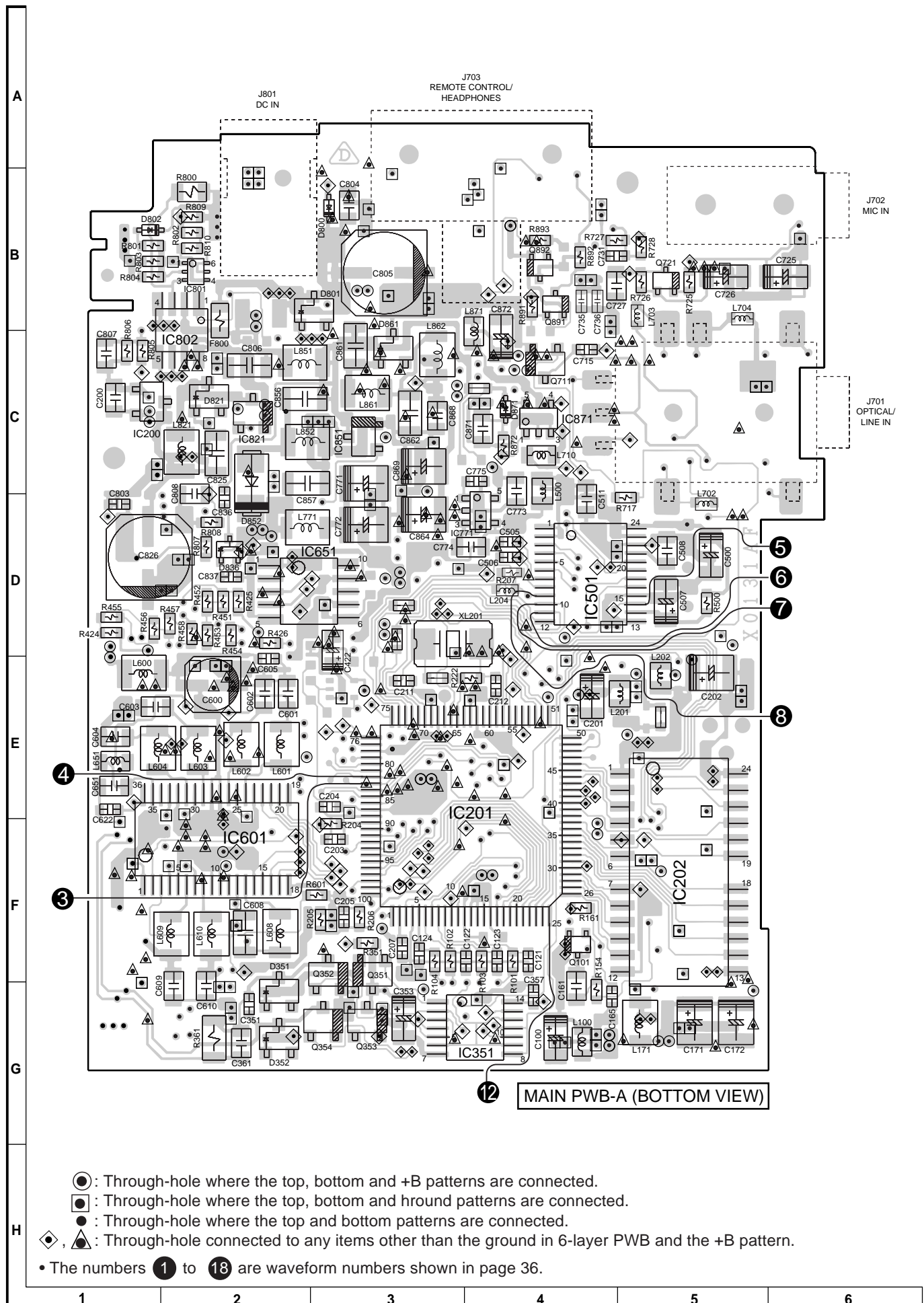
Figure 33 WIRING OF P.W.BOARD (2/3)

| IC101 | | IC200 | | | | IC401 | | | | IC501 | | IC701 | | IC820 | |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE |
| 1 | 0.7V | 1 | 1V | 51 | 1V | 1 | 0V | 51 | 2.35V | 1 | 2.5V | 1 | 0V | 1 | 1.25V |
| 2 | 0.7V | 2 | 2.5V | 52 | 0V | 2 | 2.48V | 52 | 0V | 2 | 2.5V | 2 | 0V | 2 | 1.2V |
| 3 | 0.7V | 3 | 1.27V | 53 | 0V | 3 | 0V | 53 | 2.35V | 3 | 0V | 3 | 0V | 3 | 0.96V |
| 4 | 0.7V | 4 | 0V | 54 | 0V | 4 | 2.33V | 54 | 0V | 4 | 0V | 4 | 0V | 4 | 1V |
| 5 | 1.29V | 5 | 1.27V | 55 | 0V | 5 | NC | 55 | 2.33V | 5 | 0V | 5 | 0V | 5 | 0.95V |
| 6 | 1.26V | 6 | 1.27V | 56 | 2V | 6 | 0V | 56 | 0V | 6 | 0V | 6 | 0V | 6 | 0V |
| 7 | 0.7V | 7 | 1.27V | 57 | 0V | 7 | 0V | 57 | 2.35V | 7 | 0V | 7 | 0V | 7 | 3.55V |
| 8 | 1.26V | 8 | 1.27V | 58 | 0V | 8 | 0V | 58 | 2.35V | 8 | 0V | 8 | 0V | 8 | 4.8V |
| 9 | 1.26V | 9 | 1.26V | 59 | 0V | 9 | 0V | 59 | 0.3V | 9 | 1V | 9 | 0V | 9 | 2.47V |
| 10 | 1.26V | 10 | 2.2V | 60 | 0V | 10 | 2.35V | 60 | 2.35V | 10 | 1V | 10 | 0V | 10 | 0.4V |
| 11 | 1.26V | 11 | 1.43V | 61 | 0.8V | 11 | 0V | 61 | 2.35V | 11 | 1V | 11 | 0V | 11 | 1V |
| 12 | 1.26V | 12 | 2V | 62 | 2V | 12 | 2.35V | 62 | 2.27V | 12 | 0V | 12 | 0V | 12 | 1V |
| 13 | 2.52V | 13 | 0V | 63 | 0V | 13 | 2.35V | 63 | 2.35V | 13 | 0V | 13 | 0V | | |
| 14 | 2.52V | 14 | 0V | 64 | 0.9V | 14 | 2.35V | 64 | 2.35V | 14 | 2.5V | 14 | 0V | | |
| 15 | 0.18V | 15 | 0V | 65 | 0.79V | 15 | - | 65 | 2.35V | 15 | 0V | 15 | 0V | | |
| 16 | 2.52V | 16 | 0V | 66 | 1.46V | 16 | 0V | 66 | 1.1V | 16 | 0V | 16 | 0V | | |
| 17 | 2.52V | 17 | 1V | 67 | 1V | 17 | 2.35V | 67 | 1.1V | 17 | 0V | 17 | -2.65V | | |
| 18 | 0V | 18 | 0V | 68 | 2V | 18 | 0V | 68 | 0V | 18 | 0V | 18 | 0V | | |
| 19 | 0V | 19 | 0V | 69 | 0V | 19 | 2.35V | 69 | 2.34V | 19 | 0V | 19 | 0V | | |
| 20 | 1.46V | 20 | 0V | 70 | 1V | 20 | 0V | 70 | 0V | 20 | 0V | 20 | 0V | | |
| 21 | 2.34V | 21 | 0V | 71 | 1V | 21 | 2.35V | 71 | 0V | 21 | 0V | 21 | 0V | | |
| 22 | 0V | 22 | 0V | 72 | 0V | 22 | 2.35V | 72 | 2.24V | 22 | 0V | 22 | 0V | | |
| 23 | 0V | 23 | 0V | 73 | 0V | 23 | 0V | 73 | 2.24V | 23 | 2.5V | 23 | 0V | | |
| 24 | 2.51V | 24 | 0V | 74 | 0V | 24 | - | 74 | - | 24 | 2.5V | 24 | 0V | | |
| 25 | 1.26V | 25 | 0V | 75 | 1V | 25 | - | 75 | 2.35V | | | | | | |
| 26 | 1.26V | 26 | 1.58V | 76 | 1V | 26 | - | 76 | 2V | | | | | | |
| 27 | 1.26V | 27 | 0.87V | 77 | 1V | 27 | - | 77 | 2.35V | | | | | | |
| 28 | 1.26V | 28 | 0.87V | 78 | 2V | 28 | - | 78 | 2.35V | | | | | | |
| 29 | 1.26V | 29 | 1.73V | 79 | 0V | 29 | - | 79 | 0V | | | | | | |
| 30 | 1.6V | 30 | 1.1V | 80 | 2V | 30 | - | 80 | 1.55V | | | | | | |
| 31 | 1.26V | 31 | 2.5V | 81 | 1V | 31 | 0V | 81 | 1.48V | | | | | | |
| 32 | 1.26V | 32 | 0.6V | 82 | 2V | 32 | 0V | 82 | 2.12V | | | | | | |
| 33 | 1.26V | 33 | 0.8V | 83 | 0V | 33 | 2.14V | 83 | 2.34V | | | | | | |
| 34 | NC | 34 | 1.9V | 84 | 0V | 34 | 2.5V | 84 | 2.34V | | | | | | |
| 35 | 1.26V | 35 | 0.9V | 85 | 1V | 35 | 2.5V | 85 | 1.47V | | | | | | |
| 36 | 1.26V | 36 | 1.29V | 86 | 2V | 36 | 0V | 86 | 0V | | | | | | |
| 37 | 0V | 37 | 1.8V | 87 | 2V | 37 | 0V | 87 | 0V | | | | | | |
| 38 | 1.26V | 38 | 0V | 88 | 0V | 38 | 2.35V | 88 | 0V | | | | | | |
| 39 | 1.26V | 39 | 1.9V | 89 | 2.33V | 39 | 2.35V | 89 | 0V | | | | | | |
| 40 | 1.26V | 40 | 1.6V | 90 | 1.24V | 40 | 2.35V | 90 | 0V | | | | | | |
| 41 | 1.26V | 41 | 1.64V | 91 | 1.46V | 41 | 0V | 91 | 0V | | | | | | |
| 42 | 2.52V | 42 | 1.1V | 92 | 0V | 42 | 2V | 92 | 2.34V | | | | | | |
| 43 | 0V | 43 | 1.7V | 93 | 0.1V | 43 | 0V | 93 | 0V | | | | | | |
| 44 | 0V | 44 | 2.5V | 94 | 0.35V | 44 | 0V | 94 | 2V | | | | | | |
| 45 | 1.26V | 45 | 1.6V | 95 | 0V | 45 | 0V | 95 | 2.35V | | | | | | |
| 46 | 1.26V | 46 | 0V | 96 | 1.56V | 46 | 2.35V | 96 | 0V | | | | | | |
| 47 | 1.26V | 47 | 0V | 97 | 0.25V | 47 | 0V | 97 | 0V | | | | | | |
| 48 | 0V | 48 | 1.93V | 98 | 2.28V | 48 | 2V | 98 | 2.25V | | | | | | |
| 49 | | 49 | 1V | 99 | 2.34V | 49 | 0V | 99 | 2.35V | | | | | | |
| 50 | | 50 | 0.9V | 100 | 0V | 50 | 0V | 100 | 2.35V | | | | | | |

| IC102 | | IC351 | | IC404 | | IC431 | | IC401 | | IC501 | | IC701 | | IC820 | |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE |
| 1 | 2.5V | 1 | 0V | 1 | 0.22V | 1 | 2.35V | 1 | 0V | 1 | 2.5V | 1 | 0V | 1 | 1.25V |
| 2 | 1.23V | 2 | 0V | 2 | 0.22V | 2 | 2.35V | 2 | 0V | 2 | 2.5V | 2 | 0V | 2 | 1.2V |
| 3 | 1.35V | 3 | 2.35V | 3 | 0V | 3 | 0V | 3 | 0V | 3 | 0V | 3 | 0V | 3 | 0.96V |
| 4 | 2.37V | 4 | 0V | 4 | 2.33V | 4 | 2.33V | 4 | 0V | 4 | 0V | 4 | 0V | 4 | 1V |
| 5 | 1.71V | 5 | 0V | 5 | 2.5V | 5 | 2.5V | 5 | 2.5V | 5 | 0V | 5 | 0V | 5 | 0.95V |
| 6 | NC | 6 | 2.35V | 6 | 0V | 6 | 0V | 6 | 0V | 6 | 0V | 6 | 0V | 6 | 0V |
| 7 | 0.9V | 7 | 0V | 7 | 0V | 7 | 0V | 7 | 0V | 7 | 0V | 7 | 0V | 7 | 3.55V |
| 8 | 1.76V | 8 | 0.91V | 8 | 0.91V | 8 | 0.91V | 8 | 0V | 8 | 0V | 8 | 0V | 8 | 4.8V |
| 9 | 0.9V | 9 | 2.5V | 9 | 2.5V | 9 | 2.5V | 9 | 0V | 9 | 1V | 9 | 0V | 9 | 2.47V |
| 10 | 0.9V | 10 | 0V | 10 | 0V | 10 | 0V | 10 | 0V | 10 | 1V | 10 | 0V | 10 | 0.4V |
| 11 | 0.58V | 11 | 0.91V | 11 | 0.91V | 11 | 0.91V | 11 | 0V | 11 | 1V | 11 | 0V | 11 | 1V |
| 12 | 2.5V | 12 | 2.35V | 12 | 2.35V | 12 | 2.35V | 12 | 0V | 12 | 0V | 12 | 0V | 12 | 1V |
| 13 | 0V | 13 | 0V | 13 | 0V | 13 | 0V | 13 | 0V | 13 | 0V | 13 | 0V | | |
| 14 | 0.5V | 14 | 4.54V | 14 | 0V | 14 | 0V | 14 | 0V | 14 | 2.5V | 14 | 0V | | |
| 15 | 0.79V | | | 15 | 0V | 15 | 0V | 15 | 0V | 15 | 0V | 15 | 0V | | |
| 16 | 1.93V | | | 16 | 0V | 16 | 0V | 16 | 0V | 16 | 0V | 16 | 0V | | |
| 17 | 0.93V | | | 17 | 0V | 17 | 0V | 17 | 0V | 17 | 0V | 17 | 0V | | |
| 18 | 1.26V | | | 18 | 0V | 18 | 0V | 18 | 0V | 18 | 0V | 18 | 0V | | |
| 19 | 1.1V | | | 19 | 0V | 19 | 0V | 19 | 0V | 19 | 0V | 19 | 0V | | |
| 20 | 1.78V | | | 20 | 0V | 20 | 0V | 20 | 0V | 20 | 0V | 20 | 0V | | |
| 21 | 2.05V | | | 21 | 0V | 21 | 0V | 21 | 0V | 21 | 0V | 21 | 0V | | |
| 22 | 1.63V | | | 22 | 0V | 22 | 0V | 22 | 0V | 22 | 0V | 22 | 0V | | |
| 23 | 1.65V | | | 23 | 0V | 23 | 0V | 23 | 0V | 23 | 0V | 23 | 0V | | |
| 24 | 0V | | | 24 | 0V | 24 | 0V | 24 | 0V | 24 | 0V | 24 | 0V | | |

| IC202 | | IC351 | | IC402 | | IC404 | | IC431 | | IC401 | | IC501 | | IC701 | | IC820 | |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE | PIN NO. | VOLTAGE |
| 1 | 2.5V | 1 | 0V | 1 | 2.35V | 1 | 0.22V | 1 | 2.35V | 1 | 0V | 1 | 2.5V | 1 | 0V | 1 | 1.25V |
| 2 | 1.23V | 2 | 0V | 2 | 0V | 2 | 0.22V | 2 | 2.35V | 2 | 0V | 2 | 2.5V | 2 | 0V | 2 | 1.2V |
| 3 | 1.35V | 3 | 2.35V | 3 | - | 3 | 0V | 3 | 0V | 3 | 0V | 3 | 0V | 3 | 0V | 3 | 0.96V |
| 4 | 2.37V | 4 | 0V | 4 | - | 4 | 2.33V | 4 | 2.33V | 4 | 0V | 4 | 0V | 4 | 0V | 4 | 1V |
| 5 | 1.71V | 5 | 0V | 5 | - | 5 | 2.5V | 5 | 2.5V | 5 | 2.5V | 5 | 0V | 5 | 0V | 5 | 0.95V |
| 6 | NC | 6 | 2.35V | 6 | - | 6 | 0V | 6 | 0V | 6 | 0V | 6 | 0V | 6 | 0V | 6 | 0V |
| 7 | 0.9V | 7 | 0V | 7 | - | 7 | 0V | 7 | 0V | 7 | 0V | 7 | 0V | 7 | 0V | 7 | 3.55V |
| 8 | 1.76V | 8 | 0.91V | 8 | - | 8 | 0.91V | 8 | 0.91V | 8 | 0V | 8 | 0V | 8 | 0V | 8 | 4.8V |
| 9 | 0.9V | 9 | 2.5V | 9 | - | 9 | 2.5V | 9 | 2.5V | 9 | 0V | 9 | 1V | 9 | 0V | 9 | 2.47V |
| 10 | 0.9V | 10 | 0V | 10 | - | 10 | 0V | 10 | 0V | 10 | 0V | 10 | 1V | 10 | 0V | 10 | 0.4V |
| 11 | 0.58V | 11 | 0.91V | 11 | - | 11 | 0.91V | 11 | 0.91V | 11 | 0V | 11 | 1V | 11 | 0V | 11 | 1V |
| 12 | 2.5V | 12 | 2.35V | 12 | - | 12 | 2.35V | 12 | 2.35V | 12 | 0V | 12 | 0V | 12 | 0V | 12 | 1V |
| 13 | 0V | 13 | 0V | 13 | - | 13 | 0V | 13 | 0V | 13 | 0V | 13 | 0V | 13 | 0V | | |
| 14 | 0.5V | 14 | 4.54V | 14 | - | 14 | 0V | 14 | 0V | 14 | 0V | 14 | 0V | 14 | 0V | | |
| 15 | 0.79V | | | 15 | - | 15 | 0V | 15 | 0V | 15 | 0V | 15 | 0V | 15 | 0V | | |
| 16 | 1.93V | | | 16 | - | 16 | 0V | 16 | 0V | 16 | 0V | 16 | 0V | 16 | 0V | | |
| 17 | 0.93V | | | 17 | - | 17 | 0V | 17 | 0V | 17 | 0V | 17 | 0V | 17 | 0V | | |
| 18 | 1.26V | | | 18 | - | 18 | 0V | 18 | 0V | 18 | 0V | 18 | 0V | 18 | 0V | | |
| 19 | 1.1V | | | 19 | - | 19 | 0V | 19 | 0V | 19 | 0V | 19 | 0V | 19 | 0V | | |
| 20 | 1.78V | | | 20 | - | 20 | 0V | 20 | 0V | 20 | 0V | 20 | 0V | 20 | 0V | | |
| 21 | 2.05V | | | 21 | - | 21 | 0V | 21 | 0V | 21 | 0V | 21 | 0V | 21 | 0V | | |
| 22 | 1.63V | | | 22 | - | 22 | 0V | 22 | 0V | 22 | 0V | 22 | 0V | 22 | 0V | | |
| 23 | 1.65V | | | 23 | - | 23 | 0V | 23 | 0V | 23 | 0V | 23 | 0V | 23 | 0V | | |
| 24 | 0V | | | 24 | - | 24 | 0V | 24 | 0V | 24 | 0V | 24 | 0V | 24 | 0V | | |

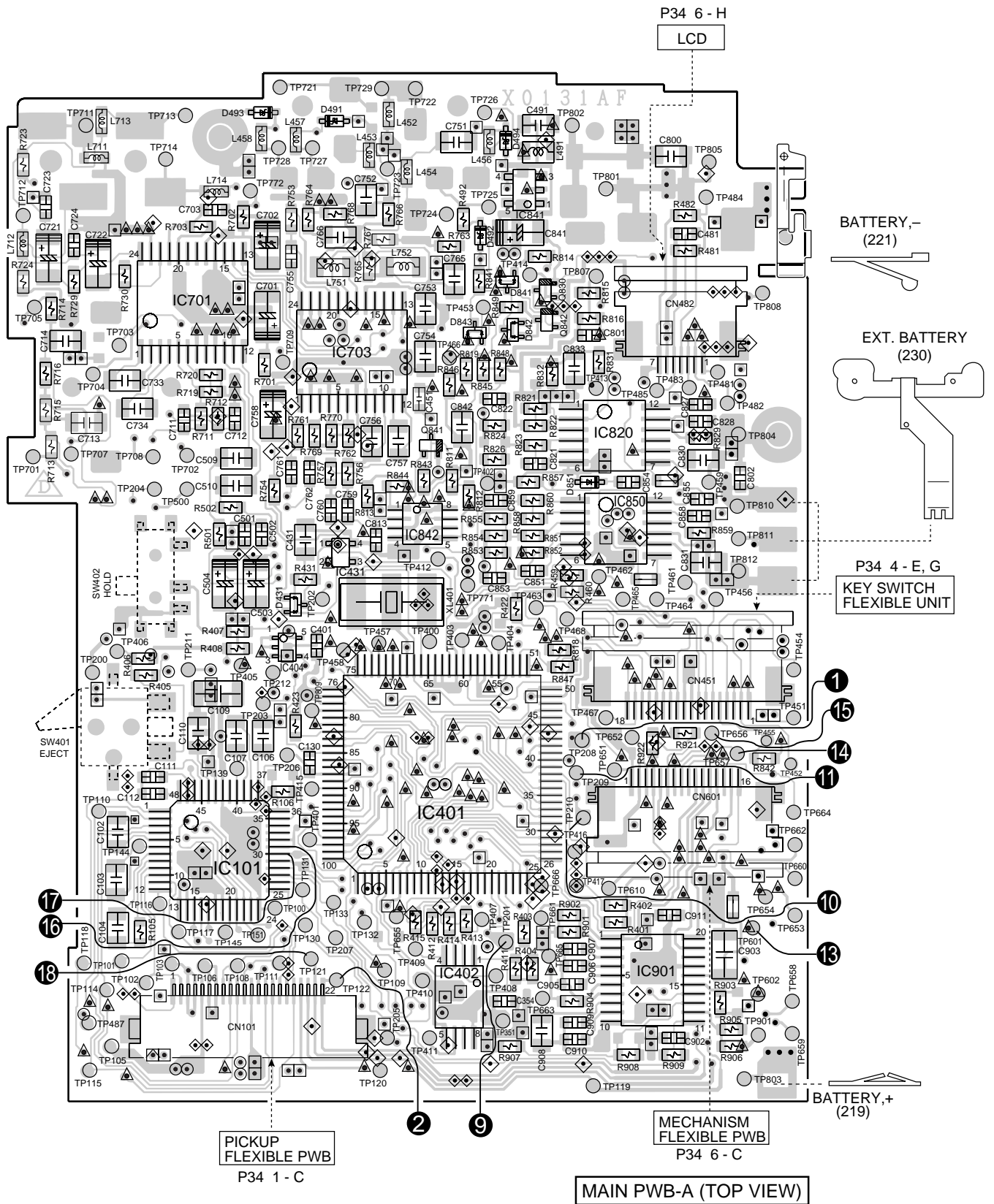
| IC202 | | IC351 | | IC402 | | IC404 | |
|-------|--|-------|--|-------|--|-------|--|
|-------|--|-------|--|-------|--|-------|--|



MAIN PWB-A (BOTTOM VIEW)

- ⊙ : Through-hole where the top, bottom and +B patterns are connected.
- : Through-hole where the top, bottom and ground patterns are connected.
- : Through-hole where the top and bottom patterns are connected.
- ◇, ▲ : Through-hole connected to any items other than the ground in 6-layer PWB and the +B pattern.
- The numbers ① to ⑱ are waveform numbers shown in page 36.

Figure 32 WIRING OF P.W.BOARD (1/3)



| | | | | | |
|---|---|---|----|----|----|
| 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|----|----|----|

Figure 33 WIRING OF P.W.BOARD (2/3)

MD-MS722H/MS721H

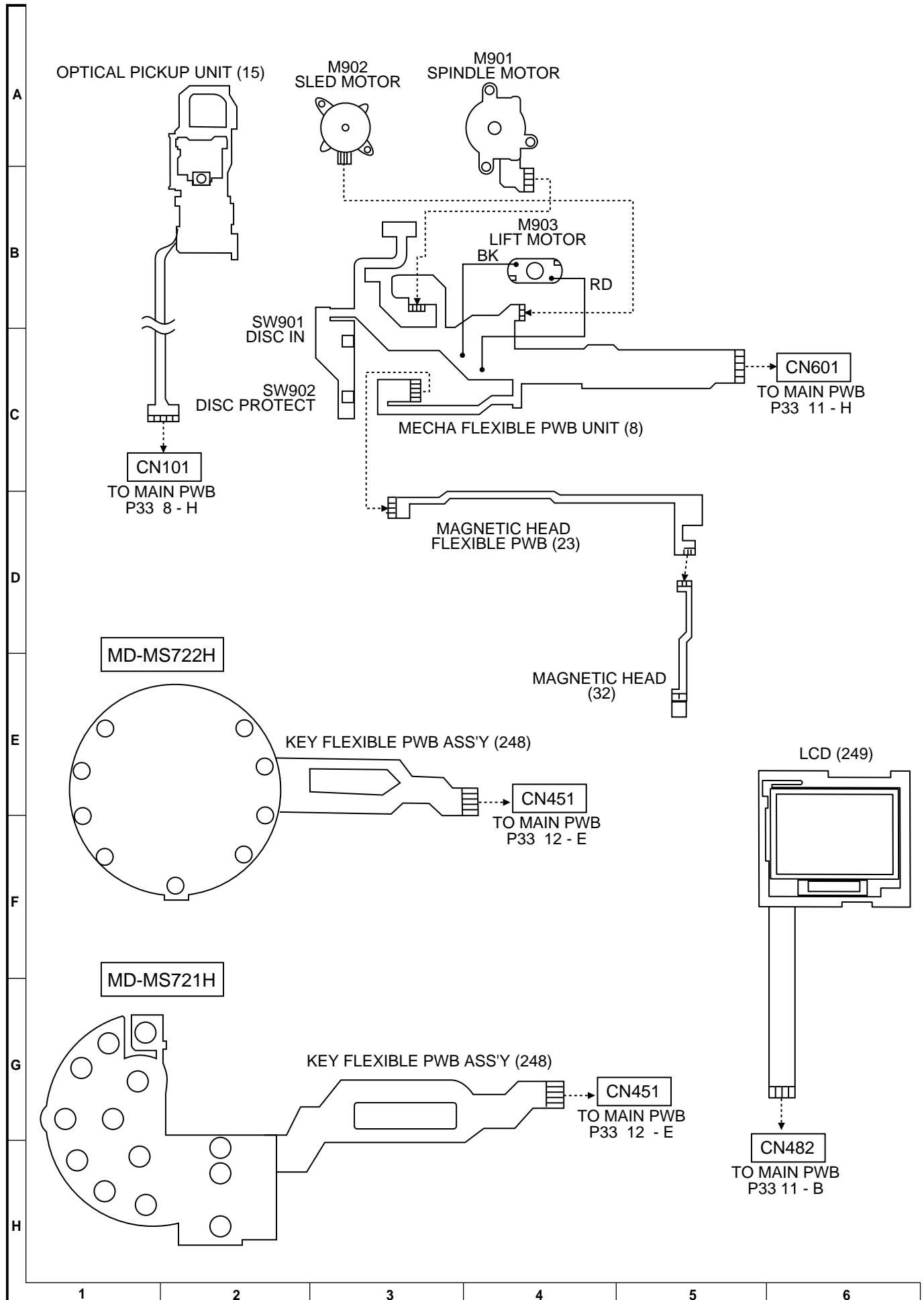


Figure 34 WIRING OF P.W.BOARD (3/3)

NOTES ON SCHEMATIC DIAGRAM

- Resistor:
To differentiate the units of resistors, such symbol as K and M are used: the symbol K means 1000 ohm and the symbol M means 1000 kohm and the resistor without any symbol is ohm-type resistor. Besides, the one with "Fusible" is a fuse type.
- Capacitor:
To indicate the unit of capacitor, a symbol P is used: this symbol P means micro-micro-farad and the unit of the capacitor without such a symbol is microfarad. As to electrolytic capacitor, the expression "capacitance/withstand voltage" is used.
(CH), (TH), (RH), (UJ): Temperature compensation
(ML): Mylar type

- The indicated voltage in each section is the one measured by Digital Multimeter between such a section and the chassis with no signal given.
- Parts marked with "⚠" (⚠) are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

| REF. NO | DESCRIPTION | POSITION |
|---------|--------------|----------|
| SW401 | EJECT | OFF—ON |
| SW402 | HOLD | OFF—ON |
| SW901 | DISC IN | OFF—ON |
| SW902 | DISC PROTECT | OFF—ON |

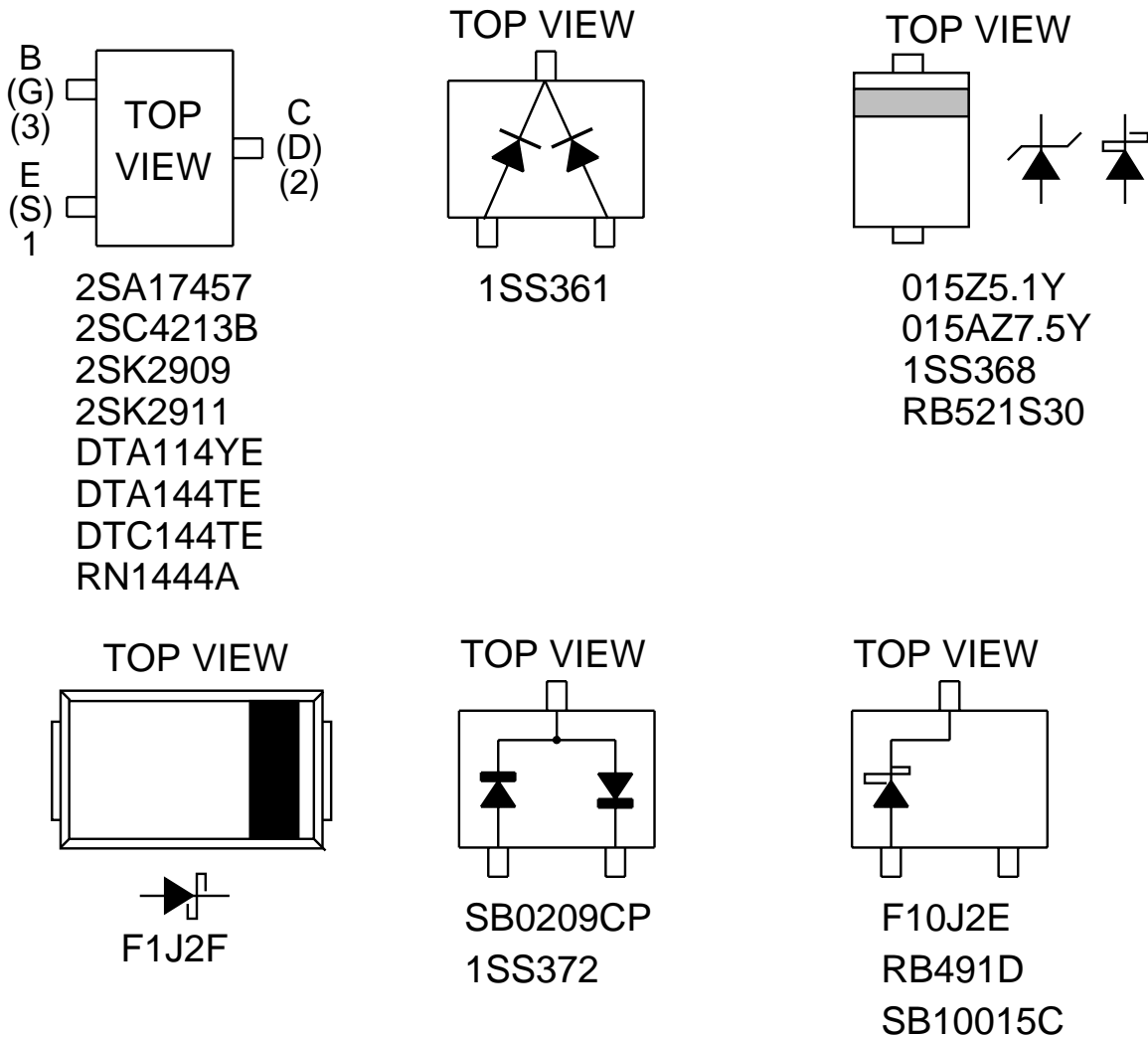
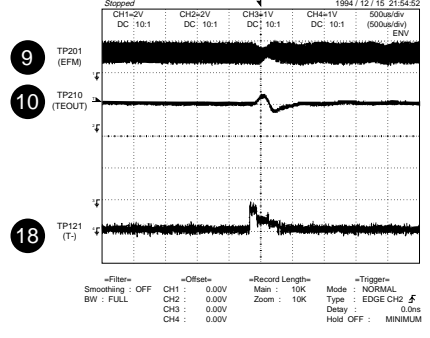
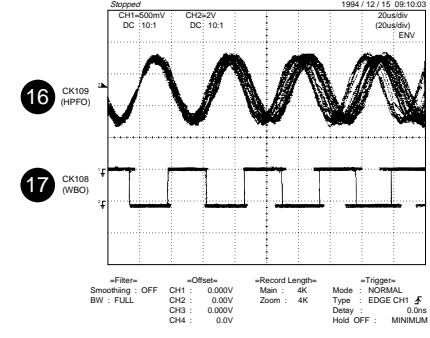
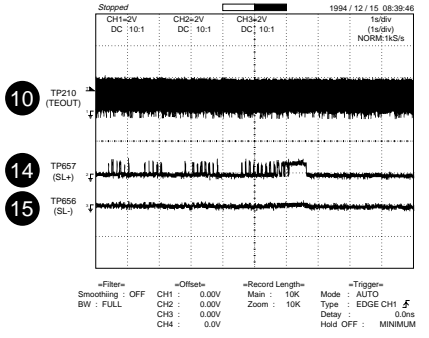
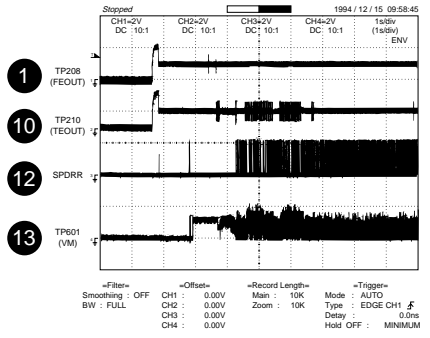
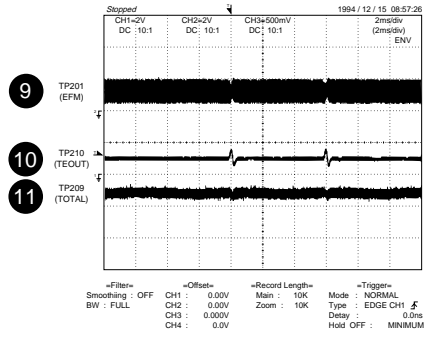
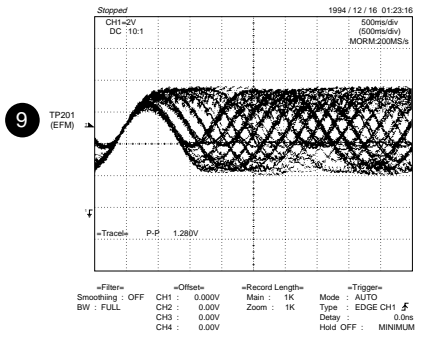
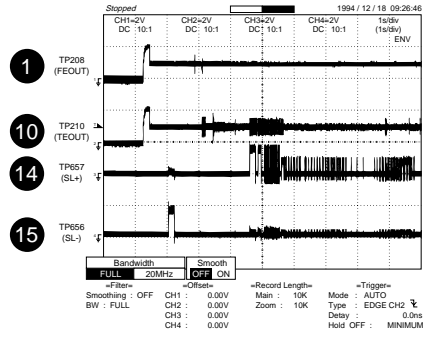
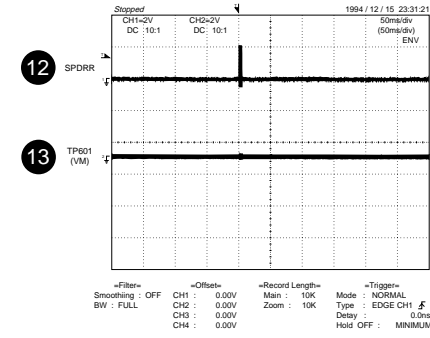
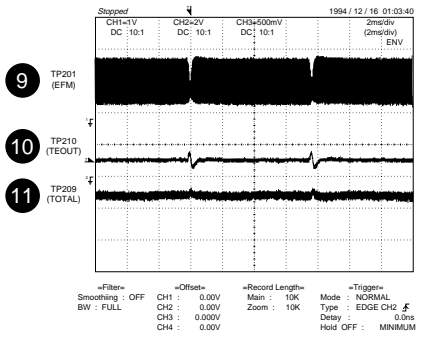
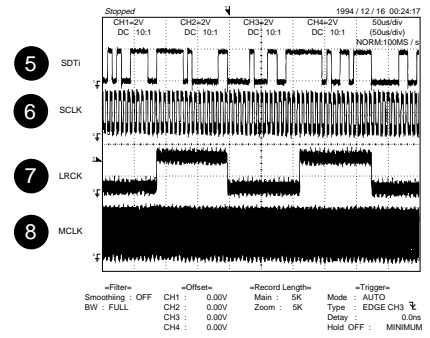
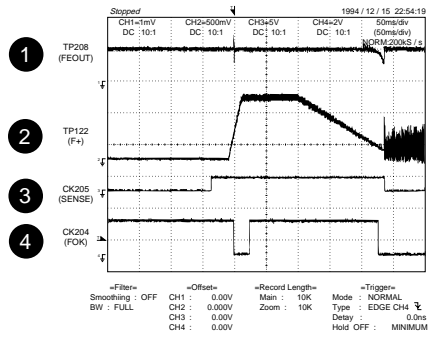


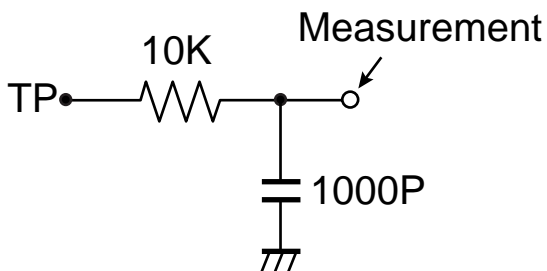
Figure 35 TYPES OF TRANSISTORS AND DIODES

WAVEFORMS OF MD CIRCUIT



For TP208, TP209, and TP210, use the specific LPF, and observe the waveform.

When watching the EEM monitor (TP201) Set MSL from 00H to 80H with EEPROM control setting. After completion restore 00H.



TROUBLESHOOTING

It is advisable to use the TEST mode (refer to Error Data Display Mode, P13) indicating the causes of troubles before starting repair. Causes of operation errors (up to 10 errors) are recorded as error codes. This information is useful for repair.

When does not function

When the CD section does not operate When the objective lens of the optical pickup is dirty, this section may not operate. Clean the objective lens, and check the playback operation. When this section does not operate even after the above step is taken, check the following items.

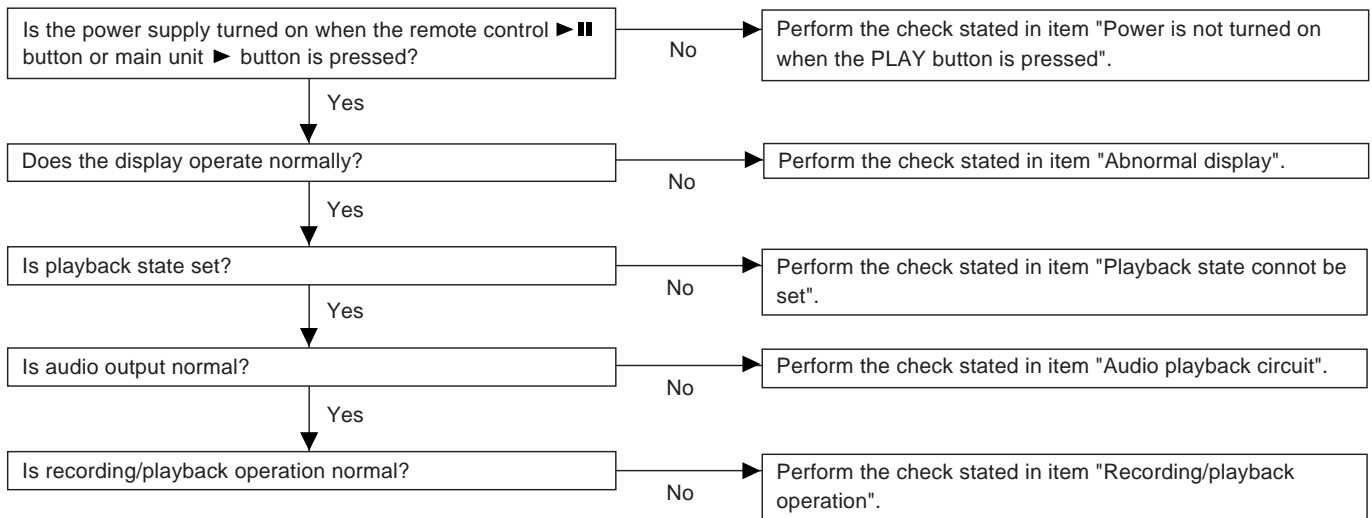
Remove the cabinet and follow the troubleshooting instructions.

"Track skipping and/or no TOC (Table Of Contents) may be caused by build up of dust or other foreign matter on the laser pickup lens. Before attempting any adjustment make certain that the lens is clean. If not, clean it as mentioned below."

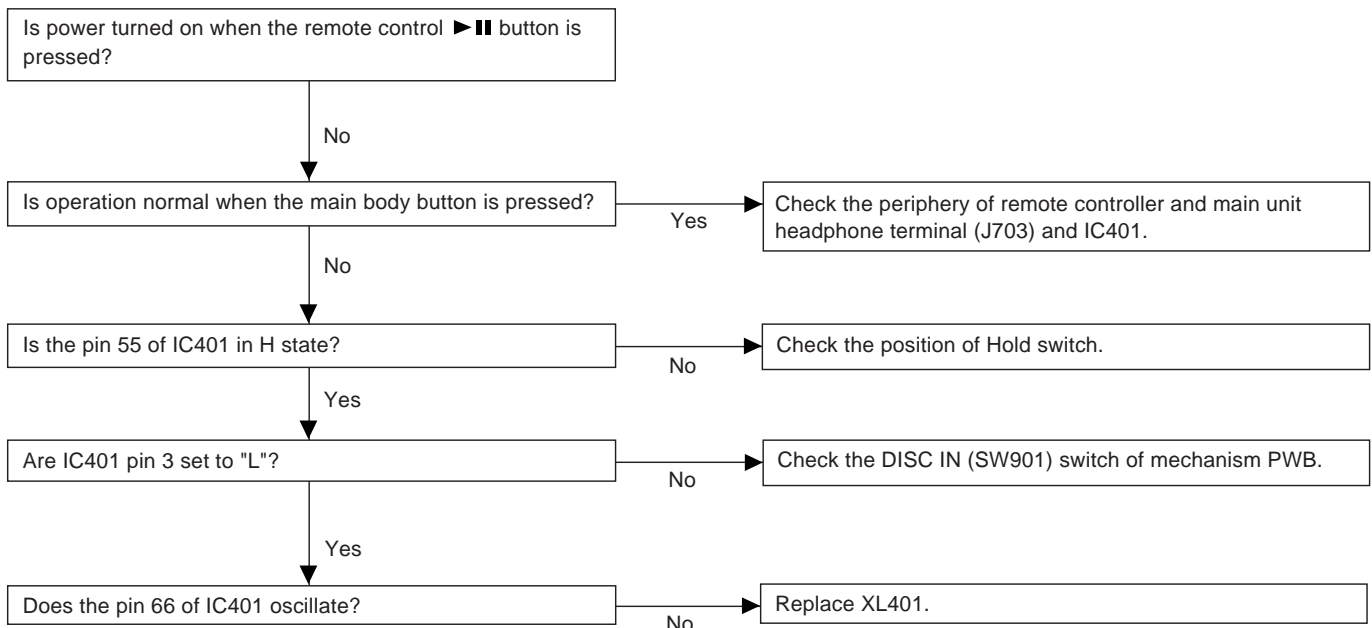
Turn the power off.

Gently clean the lens with a lens cleaning tissue and a small amount of isopropyl alcohol.

Do not touch the lens with the bare hand.

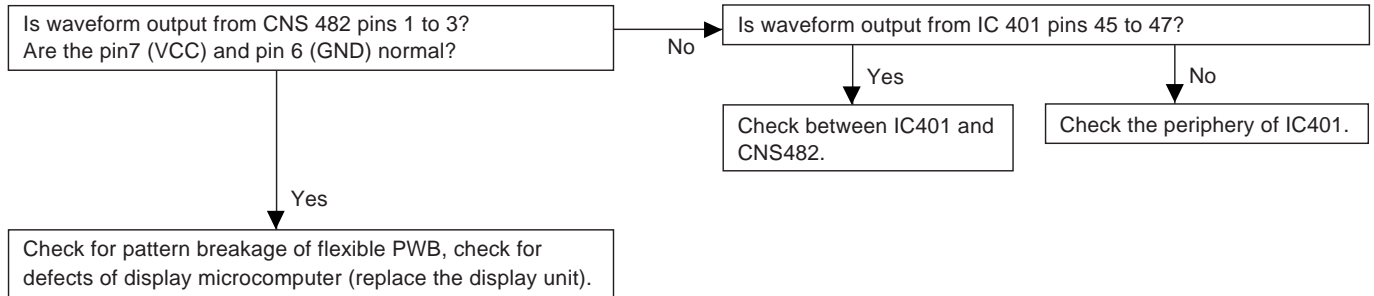


• Power is not turned on when the > / >|| button is pressed.



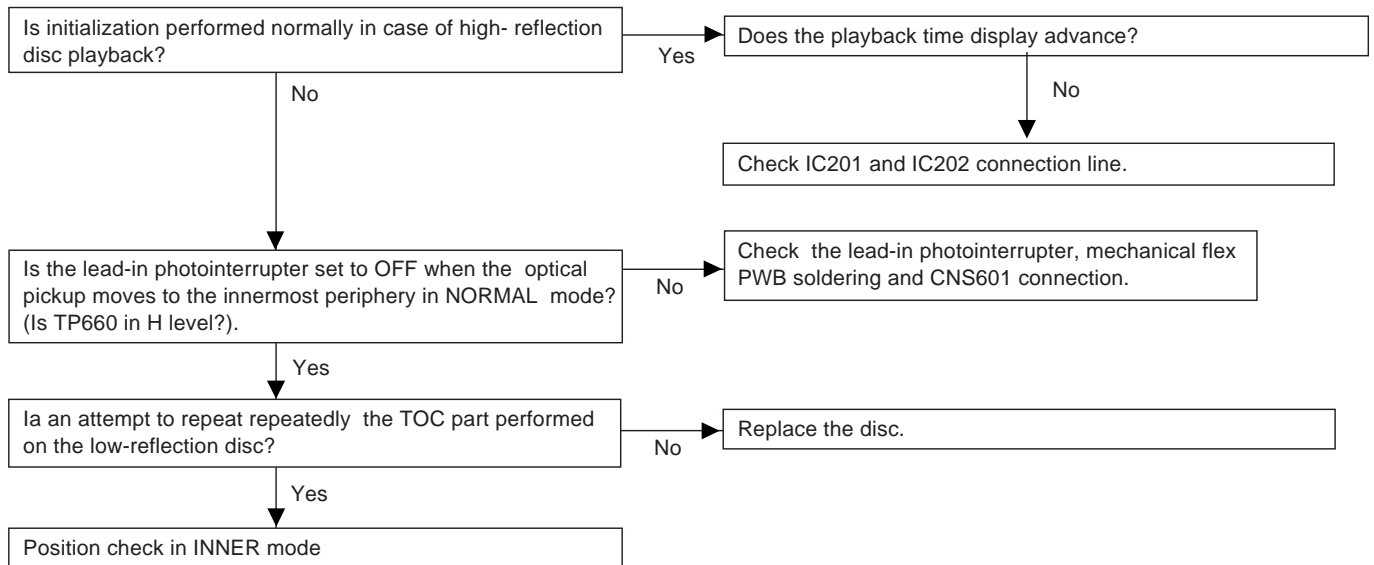
MD-MS722H/MS721H

• Abnormal display



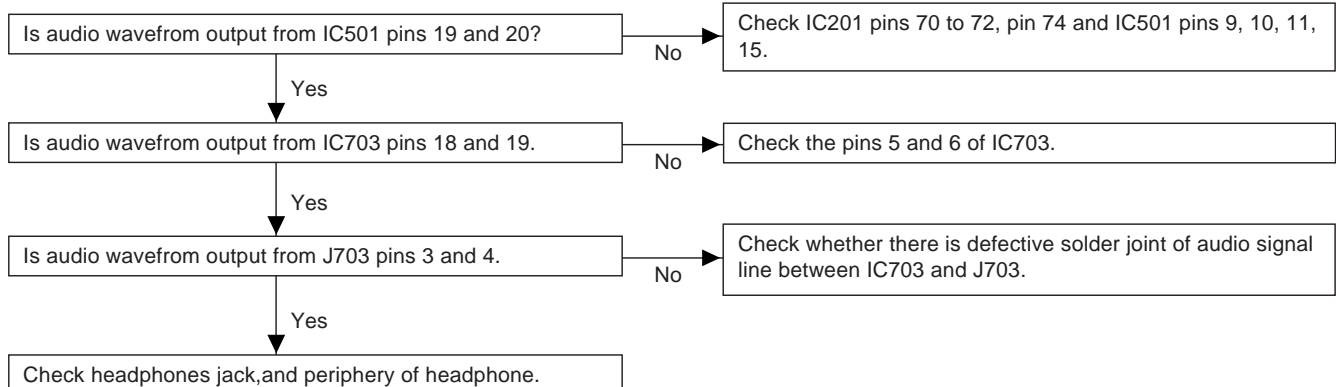
• Playback state cannot be set

When it has been ascertained that the address up to cluster address is normal in the TEST mode.

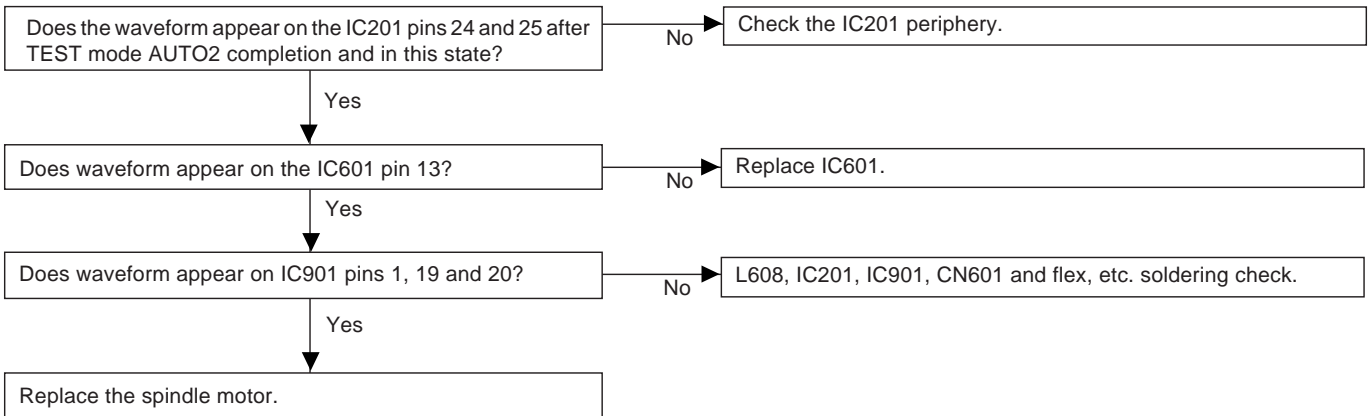


• Audio playback circuit

Although the playback time display is acting., no sound is given during playback in the normal mode.

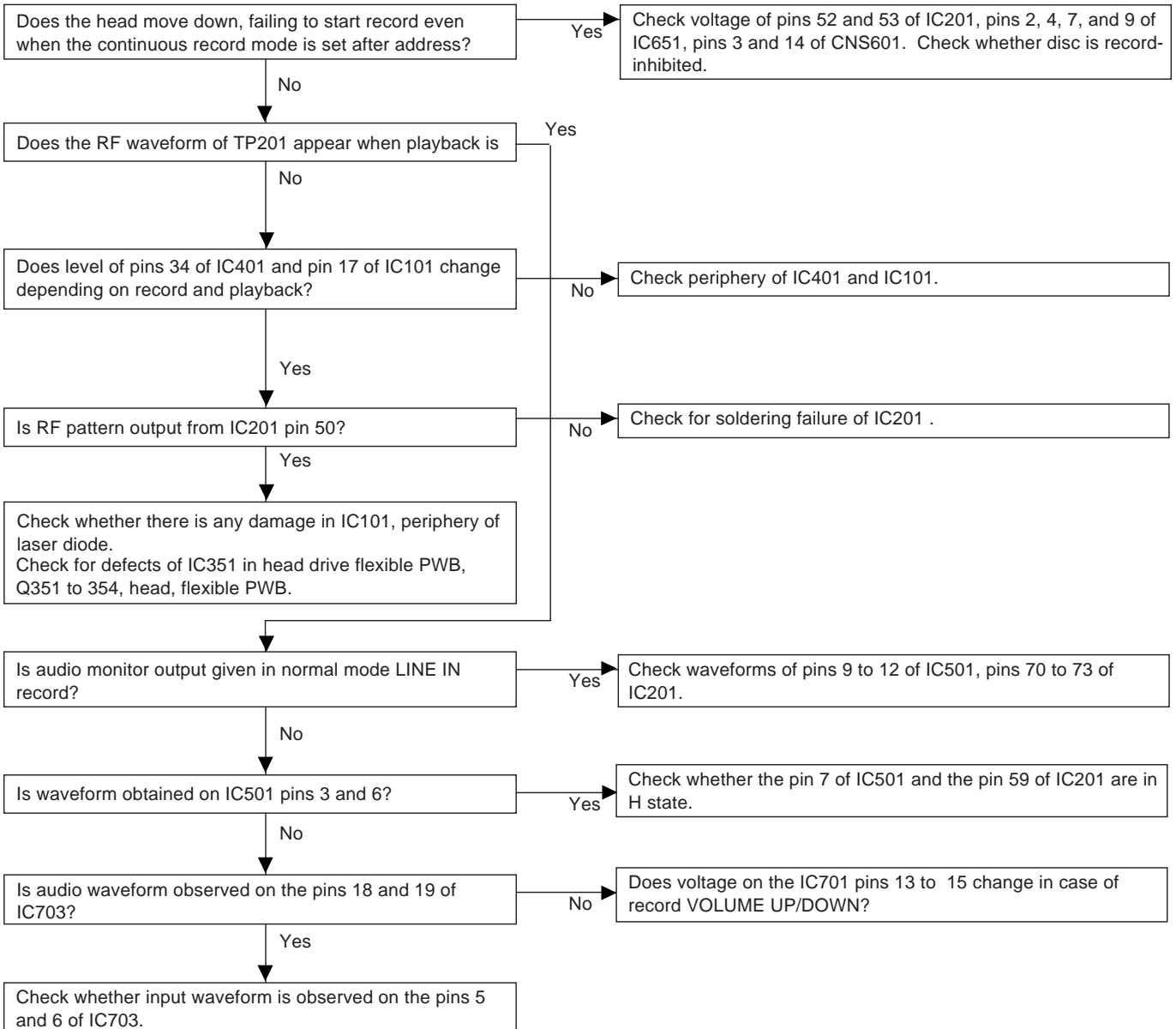


• The spindle motor fails to run. Does the head move



• Recording/playback operation

Insert a low reflection disc, and ascertain audio output by normal playback, and then set TEST REC mode.



FUNCTION TABLE OF IC

IC401 RH-iX2772AF03(IX2772AF):System Microcomputer (1/2)

| Pin No. | Port Name | Terminal Name | Input/Output | Function |
|---------|-----------|---------------|--------------|--|
| 1 | P12/TCLKA | CIN | Input | Track cross signal/focus drive detection |
| 2 | P13 | SPIN | Output | Spindle motor FG pulse detection input |
| 3 | P14 | DISCIN | Input | Disc insertion detection input |
| 4 | P15 | DISCCPR | Input | Disc record inhibition switch input |
| 5* | TIOCA2 | SPWDS | Input | Spindle motor FG pulse width detection |
| 6 | P17 | PDCNT | Output | Inner detection PD current control output |
| 7 | Vss | VSS | — | Ground potential |
| 8 | TxD0 | RMDAT | Output | Remote control indication data output |
| 9 | TxD1 | DSPDAT | Output | Unit indication data output |
| 10 | P32 | DSPSTB | Output | Unit indication strobe output |
| 11* | P33 | P33 | Output | Spare |
| 12* | SCK0 | SCK0 | Output | Serial IO clock output (not used) |
| 13 | SCK1 | DSPSCK | Output | Unit indication data clock output |
| 14 | PE0 | _EPCS | Output | EEPROM chip selection output |
| 15 | PE1 | EEPDP | Input/Output | EEPROM serial data input/output |
| 16 | PE2 | EEPK | Output | EEPROM serial clock output |
| 17 | PE3 | PHOLD | Output | System power ON holding output when battery is used |
| 18 | Vss | VSS | — | Ground potential |
| 19 | PE4 | PCNT1 | Output | Vref supply control output of power IC |
| 20 | PE5 | SYRS | Output | System LSI register selection output |
| 21 | PE6 | _SYRD | Output | System LSI read enable output |
| 22 | PE7 | _SYWR | Output | System LSI write enable output |
| 23-30 | PD0-PD7 | SYD0-SYD7 | Input/Output | System LSI parallel data bus |
| 31 | Vss | VSS | — | Ground potential |
| 32 | PC0 | PCLAT | Output | Record audio IC data latch output |
| 33 | PC1 | _MCPGI | Input | Microphone plug insertion detection input |
| 34 | PC2 | _INPGI | Input | Line/digital plug insertion detection |
| 35 | PC3 | INPGCK | Input | Line/digital plug type detection |
| 36 | PC4 | RPCNT | Output | Record circuit power control output |
| 37 | PC5 | TEST1 | Input | Test mode setting input 1 |
| 38 | PC6 | TEST0 | Input | Test mode setting input 0 |
| 39 | PC7 | JPNP | Input | Kana conversion/Kana input existence/nonexistence discrimination |
| 40 | Vcc | VCC | — | Positive power supply |
| 41* | PB0 | PB0 | Output | Spare |
| 42 | PB1 | _ELONH | Output | Remote control EL'H' lighting control output |
| 43* | PB2 | PB2 | Output | Spare |
| 44 | PB3 | LDON | Output | P.U. laser ON/OFF control output |
| 45 | PB4 | OPICGA | Output | P.U. detection sensitivity selection output |
| 46 | PB5 | RFLAT | Output | RF amplifier IC data latch output |
| 47 | PB6 | RACLK | Output | RF/Audio IC data clock output |
| 48 | PB7 | _ELONL | Input/Output | Remote control EL 'L' lighting control output |
| 49 | Vss | VSS | — | Ground potential |
| 50 | PA0 | RADAT | Output | RF/Audio IC serial data output |
| 51 | PA1 | PBLAT | Output | Audio IC data latch output |
| 52 | PA2 | REC | Input | Unit REC key operation detection input |
| 53 | PA3 | PBOPON | Output | Audio IC output stage control output |
| 54 | P20 | RPLAY | Input | Remote control PLAY key operation detection input |
| 55 | P21 | _KHOLD | Input | Unit key hold switch input |
| 56 | TIOCC3 | BUZOUT | Output | Beep sound pulse output |
| 57 | MD0 | MD0 | Input | Operation mode selection input 0 |

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC401 RH-iX2772AF03(IX2772AF):System Microcomputer (2/2)

| Pin No. | Port Name | Terminal Name | Input/Output | Function |
|---------|-----------|---------------|--------------|---|
| 58 | MD1 | MD1 | Input | Operation mode selection input 1 |
| 59 | P23 | INNSW | Input | Mechanism inner SW position detection input |
| 60* | WDTOVF | WDTOVF | Output | Watch dog timer (not used) |
| 61 | MD2 | MD2 | Input | Operation mode selection input 2 |
| 62 | RES | _RESET | Input | Microcomputer hard reset input |
| 63 | NMI | _NMI | Input | Nonmaskable interruption (not used) |
| 64 | STBY | _STBY | Input | Microcomputer standby input (not used) |
| 65 | Vcc | VCC | — | Positive power supply |
| 66 | XTAL | XTAL | — | Crystal connection terminal |
| 67 | EXTAL | EXTAL | — | Crystal connection terminal |
| 68 | Vss | VSS | — | Ground potential |
| 69 | PF7 | _STOP | Input | Unit STOP key operation detection input |
| 70 | PF6 | PLAY | Input | Unit PLAY key operation detection input |
| 71 | PF5 | EMPHO | Output | Audio emphasis control output 0 |
| 72 | PF4 | JOG0 | Input | Jog encoder input 0 |
| 73 | PF3 | JOG1 | Input | Jog encoder input 1 |
| 74* | PF2 | PF2 | Output | Spare |
| 75* | PF1/IRQ1 | _IRQ1 | Output | Software standby return request |
| 76 | IRQ0 | _DINT | Input | System LSI interruption request input |
| 77 | AVcc | AVCC | — | A/D and D/A converter positive power supply |
| 78 | Vref | VREF | — | A/D and D/A converter reference voltage |
| 79 | AN0 | PLVDRY | Input | Dry battery voltage detection input |
| 80 | AN1 | PLVDCI | Input | DC jack voltage detection input |
| 81 | AN2 | PLVINN | Input | Lithium battery voltage detection input |
| 82 | AN3 | RKEY | Input | Remote control key operation detection input |
| 83 | AN4 | HKEY1 | Input | Unit key operation detection input 1 |
| 84 | AN5 | HKEY2 | Input | Unit key operation detection input 2 |
| 85 | AN6 | TEMP | Input | Ambient temperature detection input |
| 86 | DA1 | LDVAR | Output | P.U. laser power setting output |
| 87 | AVss | AVSS | — | A/D and D/A converter ground potential |
| 88 | Vss | VSS | — | Ground potential |
| 89 | P24 | START | Input | Disc insertion start-up detection input |
| 90* | TIOCB4 | MCMON | Output | Internal operation status monitor output |
| 91* | P26 | P91 | Output | Spare |
| 92 | P27 | DCNT1M | Output | Mechanism driver enable output |
| 93 | PG0 | SENSE | Input | System LSI servo sense input |
| 94 | PG1 | _FOK | Input | Focus OK signal input |
| 95 | PG2 | _XRST | Output | System LSI hard reset output |
| 96 | PG3 | CKSTP | Output | Microcomputer sleeve operation monitor output |
| 97 | PG4 | EJSW | Input | Ejection lever operation detection input |
| 98 | Vcc | VCC | — | Positive power supply |
| 99 | P10 | PCNT2 | Output | Vcc supply control output of power IC |
| 100 | P11 | HDON | Output | Recording head current control output |

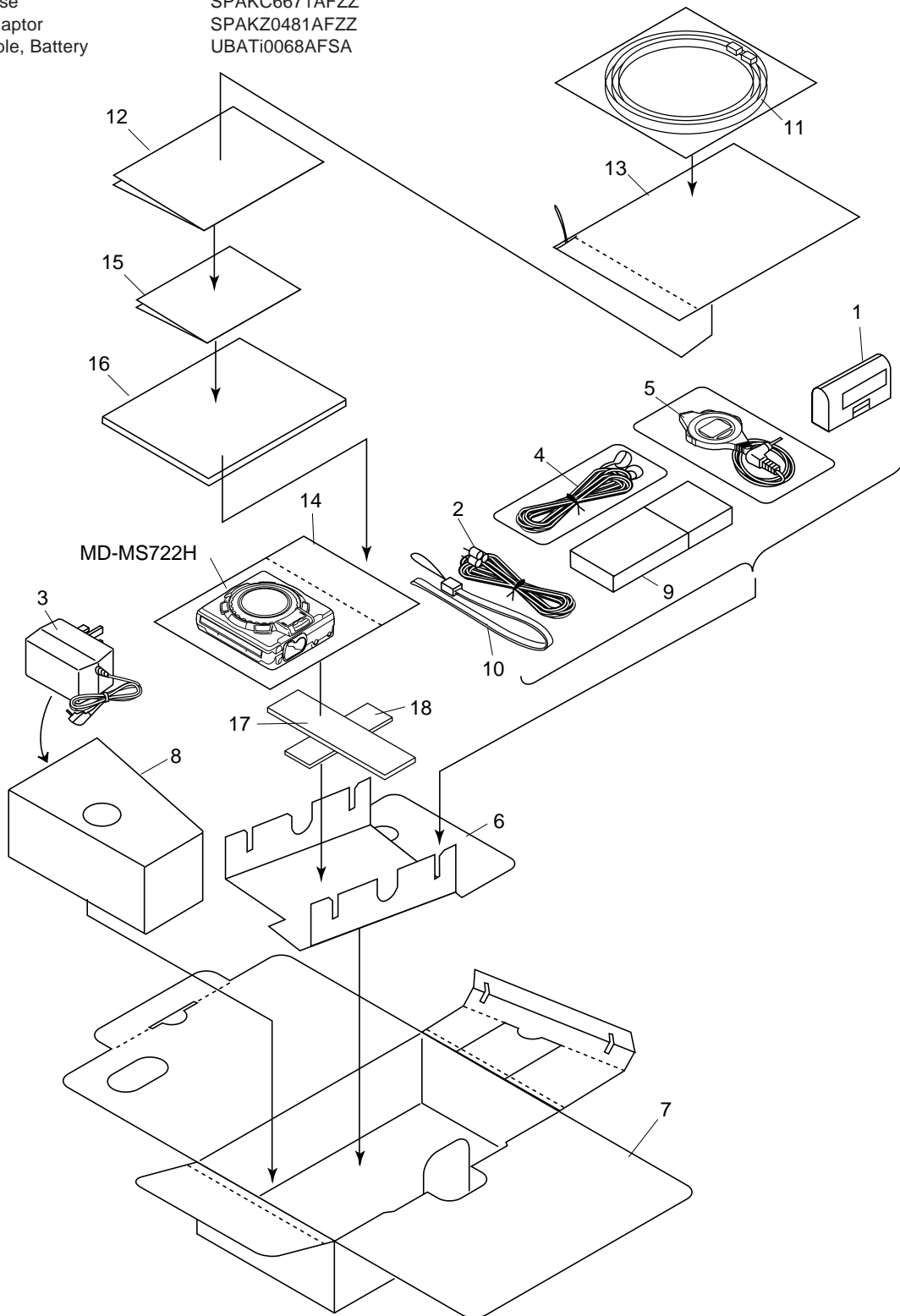
In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

PACKING METHOD (MD-MS722H FOR UK ONLY)

| SETTING POSITION OF SWITCHES AND KNOBS | | |
|--|------|--------|
| UNIT | HOLD | OFF |
| Remote Control | HOLD | CANCEL |

- 1. Battery Case GCASZ0086AFSA
- 2. Connecting Cord, RCA Type QCNWG0382AFZZ
- 3. AC Adaptor RADPA8487AFZZ
- 4. Headphones RPH5H0176AFZZ
- 5. Remote Control RRM CW0038AFSA
- 6. Packing Add. SPAKA2679AFZZ
- 7. Packing Case SPAKC6671AFZZ
- 8. Pad, AC Adaptor SPAKZ0481AFZZ
- 9. Rechargeable, Battery UBATI0068AFSA

- 10. Strap
- 11. Connection Cord, Optical Type
- 12. Operation Manual
- 13. Carrying Case
- 14. Paper Bag, Unit
- 15. Service Card
- 16. Spacer, Operation Manual
- 17. Packing Add., Unit
- 18. Packing Add., Unit
- UBNDT0083AFSA
- QCNWG0422AFZZ
- TINSE1604AFZZ
- UBAGC0076AFSA
- SSAKP0116AFZZ
- TCADS0085AFZZ
- SPAKZ0475AFZZ
- SPAKZ0498AFZZ
- SPAKZ0509AFZZ



SHARP PARTS GUIDE

MODEL MD-MS722H MD-MS721H(BL) MD-MS721H(S)

“HOW TO ORDER REPLACEMENT PARTS”

To have your order filled promptly and correctly, please furnish the following information.

- | | |
|-----------------|----------------|
| 1. MODEL NUMBER | 2. REF. No. |
| 3. PART NO. | 4. DESCRIPTION |

★ MARK: SPARE PARTS-DELIVERY SECTION

For U.S.A. only

Contact your nearest SHARP Parts Distributor to order.

For location of SHARP Parts Distributor,
Please call Toll-Free;
1-800-BE-SHARP

Explanation of capacitors/resistors parts codes

Capacitors

VCC Ceramic type
 VCK Ceramic type
 VCT Semiconductor type
 VC •• MF Cylindrical type (without lead wire)
 VC •• MN Cylindrical type (without lead wire)
 VC •• TV Square type (without lead wire)
 VC •• TQ Square type (without lead wire)
 VC •• CY Square type (without lead wire)
 VC •• CZ Square type (without lead wire)
 VC •••••••• J .. The 13th character represents capacity difference.
 ("J" ±5%, "K" ±10%, "M" ±20%, "N" ±30%,
 "C" ±0.25 pF, "D" ±0.5 pF, "Z" +80-20%.)


If there are no indications for the electrolytic capacitors, error is ±20%.

Resistors

VRD Carbon-film type
 VRS Carbon-film type
 VRN Metal-film type
 VR •• MF Cylindrical type (without lead wire)
 VR •• MN Cylindrical type (without lead wire)
 VR •• TV Square type (without lead wire)
 VR •• TQ Square type (without lead wire)
 VR •• CY Square type (without lead wire)
 VR •• CZ Square type (without lead wire)
 VR •••••••• J .. The 13th character represents error.
 ("J" ±5%, "F" ±1%, "D" ±0.5%.)

If there are no indications for other parts, the resistors are ±5% carbon-film type.

NOTE:

Parts marked with “” are important for maintaining the safety of the set.
 Be sure to replace parts with specified ones for maintaining the safety and performance of the set.

MD-MS722H/MS721H

| NO. | PARTS CODE | ★ PRICE RANK | DESCRIPTION |
|----------------------------|---------------|--------------|--|
| INTEGRATED CIRCUITS | | | |
| IC101 | VHIIR3R55//1 | J AQ | RF Signal,Processor,IR3R55 |
| IC200 | VHI62FP2002-1 | J AE | 2V Regulator,62FP2002 |
| IC201 | VHILR37811//1 | J BB | ENDEC LSI,LR37811 |
| IC202 | RH-IX2723AFZZ | J BC | 16Bit D-RAM,IX2723AF |
| IC351 | VHI74ACT02T-1 | J AE | Head Driver,74ACT02T |
| IC401 | RH-IX2772AF03 | J AW | System Microcomputer, IX2772AF (Serial No.811xxxxx) |
| IC401 | RH-IX2772AF04 | J | System Microcomputer, IX2772AF (Serial No.812xxxxx-) |
| IC402 | VHIS29L294A-1 | J AH | EE-PROM,S29L294A |
| IC404 | VHI7SH00FU/-1 | J AE | NAND Gate,7SH00FU |
| IC431 | VHIS80820LN-1 | J AD | Reset,S80820LN |
| IC501 | VHIAK4519VF-1 | J AQ | AD/DA Converter,AK4519VF |
| IC601 | VHI17A39TD/-1 | J AP | PWM Driver,17A39TD |
| IC651 | VHILB1930M/-1 | J AH | Motor Driver,LB1930M |
| IC701 | VHIIR3R54N/-1 | J AQ | Audio Amp.,IR3R54N |
| IC703 | VHIIR3R54N/-1 | J AQ | Audio Amp.,IR3R54N |
| IC771 | VHITK71225M-1 | J AE | 2.5V Regulator,TK71225M |
| IC801 | VHIHN1C03FU-1 | J AD | Constant Current Drive, HN1C03FU |
| IC802 | VHINDH8304P-1 | J AH | Power Select Charge Drive, NDH8304P |
| IC820 | VHIIR3M09N/-1 | J AL | Power Drive,IR3M09N |
| IC821 | VHICPH3303/-1 | J AE | P-ch MOS FET,CPH3303 |
| IC841 | VHIXC62HS02-1 | J AE | Power Supply Microcomputer, XC62HS02 |
| IC842 | VHI7WH123FU-1 | J AF | C-MOS Logic,7WH123FU |
| IC850 | VHIIR3M09N/-1 | J AL | Power Drive,IR3M09N |
| IC851 | VHICPH3403/-1 | J AE | N-ch MOS FET,CPH3403 |
| IC871 | VHITK71345M-1 | J AE | 4.5V Regulator (ON/OFF),TK71345M |
| IC901 | VHIBA6965AF-1 | J AM | 3-Phase Brush Leess Driver, BA6965AF |
| TRANSISTORS | | | |
| Q101 | VS2SA17457/-1 | J AB | Silicon,PNP,2SA17457 |
| Q351 | VS2SK2909//1 | J AE | FET,2SK2909 |
| Q352 | VS2SK2911//1 | J AE | FET,2SK2911 |
| Q353 | VS2SK2909//1 | J AE | FET,2SK2909 |
| Q354 | VS2SK2911//1 | J AE | FET,2SK2911 |
| Q711 | VSRN1444A//1 | J AC | Digital,NPN,RN1444 A |
| Q721 | VS2SC4213B/-1 | J AC | Silicon,NPN,2SC4213 B |
| Q830 | VSDTC144TE/-1 | J AC | Digital,NPN,DTA144 TE |
| Q841 | VSDTA144TE/-1 | J AB | Digital,PNP,DTA144 TE |
| Q842 | VSDTA114YE/-1 | J AC | Digital,PNP,DTA114 YE |
| Q891,892 | VS2SA17457/-1 | J AB | Silicon,PNP,2SA17457 |
| DIODES | | | |
| D351,352 | VHDSB0209CP-1 | J AC | Silicon,SB0209CP |
| D431 | VHD1SS361//1 | J AB | Silicon,1SS361 |
| D491 | VHE015Z5R1Y-1 | J AD | Zener,5.1V,015Z5.1Y |
| D492 | VHE15AZ7R5Y-1 | J AC | Zener,7.5V,15AZ7.5Y |
| D493 | VHE015Z5R1Y-1 | J AD | Zener,5.1V,015Z5.1Y |
| D494 | VHE15AZ7R5Y-1 | J AC | Zener,7.5V,15AZ7.5Y |
| D800 | VHD1SS368//1 | J AC | Silicon,1SS368 |
| D801 | VHDSB10015C-1 | J AD | Silicon,SB10015C |
| D802 | VHE015Z5R1Y-1 | J AD | Zener,5.1V,015Z5R1Y |
| D821 | VHDF10J2E//1 | J AC | Silicon,F10J2E |
| D836 | VHD1SS372//1 | J AD | Silicon,1SS372 |
| D841~843 | VHD1SS361//1 | J AB | Silicon,1SS361 |
| D851 | VHDRB521S30-1 | J AC | Silicon,RB521S30 |
| D852 | VHDF1J2F//1 | J AE | Silicon,F1J2F |
| D861 | VHDF10J2E//1 | J AC | Silicon,F10J2E |
| D871 | VHDRB521S30-1 | J AC | Silicon,RB521S30 |
| PH901 | VHPGP1S93K/-1 | J AF | Photo Interrupter,GP1S93K |
| COILS | | | |
| L100 | VPBNN100M0000 | J AC | 10 μH |
| L171 | RCILC0356AFZZ | J AC | 10 μH |
| L201 | VPCBM220K0000 | J AC | 22 μH |
| L202 | VPCBM101K0000 | J AC | 100 μH |
| L204 | RCILC0353AFZZ | J AB | Tip Solid Induction,100mA |
| L452 | RCILC0352AFZZ | J AB | Tip Impeder,150mA |
| L453,454 | RCILC0353AFZZ | J AB | Tip Solid Induction,100mA |
| L456~458 | RCILC0353AFZZ | J AB | Tip Solid Induction,100mA |

| NO. | PARTS CODE | ★ PRICE RANK | DESCRIPTION |
|----------|---------------|--------------|---------------------------|
| L491 | VPBNN4R7M0000 | J AC | 4.7 μH |
| L500 | VPCBM220K0000 | J AC | 22 μH |
| L600 | RCILC0331AFZZ | J AC | 2.2 μH,Choke |
| L601~604 | RCILC0358AFZZ | J AC | 4.7 μH,Choke |
| L608 | RCILC0359AFZZ | J AC | 100 μH,Choke |
| L609,610 | RCILC0358AFZZ | J AC | 4.7 μH,Choke |
| L651 | VPBNNR47M0000 | J AC | 0.47 μH |
| L702,703 | RCILC0353AFZZ | J AB | Tip Solid Induction,100mA |
| L704 | RCILC0352AFZZ | J AB | Tip Impeder,150mA |
| L710 | VPBNNR47M0000 | J AC | 0.47 μH |
| L711 | RCILC0352AFZZ | J AB | Tip Impeder,150mA |
| L712~714 | RCILC0353AFZZ | J AB | Tip Solid Induction,100mA |
| L751,752 | RCILC0344AFZZ | J AC | 47 μH,Choke |
| L771 | RCILC0358AFZZ | J AC | 4.7 μH,Choke |
| L821 | RCILC0333AFZZ | J AC | 10 μH,Choke |
| L851 | RCILC0332AFZZ | J AC | 4.7 μH,Choke |
| L852 | RCILC0333AFZZ | J AC | 10 μH,Choke |
| L861 | RCILC0332AFZZ | J AC | 4.7 μH,Choke |
| L862 | RCILC0358AFZZ | J AC | 4.7 μH,Choke |
| L871 | VPBNNR47M0000 | J AC | 0.47 μH |

VIBRATORS

| | | | |
|-------|---------------|------|---------------------|
| XL201 | RCRSC0023AFZZ | J AK | Crystal,33.8688 MHz |
| XL401 | RCRM-0199AFZZ | J AD | Ceramic,4.194 MHz |

CAPACITORS

| | | | |
|----------|---------------|------|------------------------------------|
| C100 | VCSATA0JJ106M | J AD | 10 μF,6.3V,Electrolytic,Tantalum |
| C102,103 | RC-KZ1183AFZZ | J AC | 1 μF,10V,Electrolytic |
| C104 | VCKYTV1EB273K | J AB | 0.027 μF,25V |
| C106 | RC-KZ1204AFZZ | J AB | 0.22 μF,10V,Electrolytic |
| C107 | VCKYTV1EB123K | J AB | 0.012 μF,25V |
| C109 | RC-KZ1184AFZZ | J AC | 1 μF,16V,Electrolytic |
| C110 | RC-KZ1204AFZZ | J AB | 0.22 μF,10V,Electrolytic |
| C111 | VCKYCY1HB332K | J AA | 0.0033 μF,50V |
| C112 | VCKYCY1CB333K | J AA | 0.033 μF,16V |
| C121,122 | VCCCCY1HH271J | J AA | 270 pF (CH),50V |
| C123,124 | VCCSCY1HL391J | J AA | 390 pF,50V |
| C130 | VCKYCY1CB104K | J AB | 0.1 μF,16V |
| C161 | RC-KZ1183AFZZ | J AC | 1 μF,10V,Electrolytic |
| C165 | VCKYCY1CB333K | J AA | 0.033 μF,16V |
| C171,172 | VCSAFB0JJ336M | J AE | 33 μF,6.3V,Electrolytic, Tantalume |
| C200 | RC-KZ1183AFZZ | J AC | 1 μF,10V,Electrolytic |
| C201 | RC-KZ1184AFZZ | J AC | 1 μF,16V,Electrolytic |
| C202 | VCSATE0JJ476M | J AD | 47 μF,6.3V,Electrolytic, Tantalume |
| C203 | VCKYCY1CB104K | J AB | 0.1 μF,16V |
| C204 | VCKYCY1AB474K | J AC | 0.47 μF,10V |
| C205 | VCKYCY1CB104K | J AB | 0.1 μF,16V |
| C207 | VCKYCY1CB104K | J AB | 0.1 μF,16V |
| C211 | VCCCCY1HH5R0C | J AA | 5 pF (CH),50V |
| C212 | VCCCCY1HH8R0D | J AA | 8 pF (CH),50V |
| C351 | VCCCCY1HH470J | J AA | 47 pF (CH),50V |
| C353 | VCSAFA0JJ106M | J AD | 10 μF,6.3V,Electrolytic, Tantalume |
| C354 | VCKYCY1CB104K | J AB | 0.1 μF,16V |
| C357 | VCKYCY1CB104K | J AB | 0.1 μF,16V |
| C361 | VCKYTV1HB393K | J AB | 0.039 μF,50V |
| C401 | VCKYCY1CB104K | J AB | 0.1 μF,16V |
| C422 | VCSATR0JJ106M | J AB | 10 μF,6.3V,Electrolytic, Tantalume |
| C431 | RC-KZ1206AFZZ | J AC | 0.47 μF,10V |
| C451 | VCKYCY1HB102K | J AA | 0.001 μF,50V |
| C481 | VCKYCY1CB104K | J AB | 0.1 μF,16V |
| C491 | RC-KZ1182AFZZ | J AB | 0.1 μF,16V,Electrolytic |
| C500 | VCSATA0JJ106M | J AD | 10 μF,6.3V,Electrolytic, Tantalume |
| C501,502 | VCKYCY1HB222K | J AA | 0.0022 μF,50V |
| C503,504 | VCSATA1AJ335M | J AB | 3.3 μF,10V,Electrolytic, Tantalume |
| C505,506 | VCKYCY1HB102K | J AA | 0.001 μF,50V |
| C507 | VCSATA0JJ106M | J AD | 10 μF,6.3V,Electrolytic,Tantalum |
| C508 | RC-KZ1183AFZZ | J AC | 1 μF,10V,Electrolytic |
| C509,510 | VCKYTV1CF225Z | J AC | 2.2 μF,16V |
| C511 | RC-KZ1183AFZZ | J AC | 1 μF,10V,Electrolytic |
| C600 | VCEAPW0JW226M | J AC | 22 μF,6.3V,Electrolytic |
| C601~604 | RC-KZ1183AFZZ | J AC | 1 μF,10V,Electrolytic |
| C605 | VCKYCY1CB104K | J AB | 0.1 μF,16V |
| C608 | RC-KZ1186AFZZ | J AD | 3.3 μF,10V,Electrolytic |
| C609,610 | RC-KZ1183AFZZ | J AC | 1 μF,10V,Electrolytic |

| NO. | PARTS CODE | ★ PRICE RANK | DESCRIPTION | NO. | PARTS CODE | ★ PRICE RANK | DESCRIPTION |
|------------------|---------------|--------------|---------------------------------------|----------|---------------|--------------|-----------------|
| C622 | VCKYCY1CB104K | J AB | 0.1 μF,16V | R106 | VRS-CY1JB563J | J AA | 56 kohms,1/16W |
| C651 | VCKYTV1CF105Z | J AB | 1 μF,16V | R154 | VRS-CY1JB122J | J AA | 1.2 kohms,1/16W |
| C701,702 | VCSATA0JJ106M | J AD | 10 μF,6.3V,Electrolytic, Tantalume | R161 | VRS-CY1JB122J | J AA | 1.2 kohms,1/16W |
| C703 | VCKYCY1EB103K | J AA | 0.01 μF,25V | R204 | VRS-CY1JB102J | J AA | 1 kohm,1/16W |
| C711,712 | VCCCCY1HH101J | J AA | 100 pF (CH),50V | R205 | VRS-CY1JB684D | J AA | 680 kohms,1/16W |
| C713,714 | RC-KZ1183AFZZ | J AC | 1 μF,10V,Electrolytic | R206 | VRS-CY1JB274D | J AA | 270 kohms,1/16W |
| C715 | VCKYCY1CB104K | J AB | 0.1 μF,16V | R207 | VRS-CY1JB681J | J AA | 680 ohms,1/16W |
| C721,722 | VCSATA1AJ335M | J AB | 3.3 μF,10V,Electrolytic, Tantalume | R222 | VRS-CY1JB105J | J AA | 1 Mohm,1/16W |
| C723,724 | VCKYCY1HB102K | J AA | 0.001 μF,50V | R351 | VRS-CY1JB4R7J | J AA | 4.7 ohms,1/16W |
| C725,726 | VCSATA1AJ335M | J AB | 3.3 μF,10V,Electrolytic, Tantalume | R361 | VRS-TQ2BB150J | J AA | 15 ohms,1/8W |
| C727 | VCKYTV1CF105Z | J AB | 1 μF,16V | R401,402 | VRS-CY1JB104J | J AA | 100 kohm,1/16W |
| C731 | VCKYCY1CF224Z | J AB | 0.22 μF,16V | R403 | VRS-CY1JB102J | J AA | 1 kohm,1/16W |
| C733,734 | RC-KZ1182AFZZ | J AB | 0.1 μF,16V,Electrolytic | R404 | VRS-CY1JB104J | J AA | 100 kohm,1/16W |
| C735 | VCKYCY1HB102K | J AA | 1000 pF,50V | R405 | VRS-CY1JB103J | J AA | 10 kohm,1/16W |
| C736 | VCCCCY1HH101J | J AA | 100 pF (CH),50V | R406 | VRS-CY1JB104J | J AA | 100 kohm,1/16W |
| C751,752 | VCKYTV1CB823K | J AB | 0.082 μF,16V | R407 | VRS-CY1JB103J | J AA | 10 kohm,1/16W |
| C753,754 | VCKYTV1CF105Z | J AB | 1 μF,16V | R408 | VRS-CY1JB104J | J AA | 100 kohm,1/16W |
| C755 | VCKYCY1EB103K | J AA | 0.01 μF,25V | R411 | VRS-CY1JB104J | J AA | 100 kohm,1/16W |
| C756,757 | VCKYTV1AB684K | J AC | 0.68 μF,10V | R412 | VRS-CY1JB103J | J AA | 10 kohm,1/16W |
| C758 | VCSATA1AJ335M | J AB | 3.3 μF,10V,Electrolytic, Tantalume | R413~415 | VRS-CY1JB102J | J AA | 1 kohm,1/16W |
| C759,760 | VCKYCY1CB273K | J AA | 0.027 μF,16V | R422 | VRS-CY1JB104J | J AA | 100 kohm,1/16W |
| C761,762 | VCKYCY0JB105K | J AC | 1 μF,6.3V | R423 | VRS-CY1JB223D | J AA | 22 kohms,1/16W |
| C765,766 | RC-KZ1204AFZZ | J AB | 0.22 μF,10V,Electrolytic | R424,425 | VRS-CY1JB223J | J AA | 22 kohms,1/16W |
| C771,772 | VCSATE0JJ476M | J AD | 47 μF,6.3V,Electrolytic, Tantalume | R426 | VRS-CY1JB223D | J AA | 22 kohms,1/16W |
| C773 | RC-KZ1204AFZZ | J AB | 0.22 μF,10V,Electrolytic | R431 | VRS-CY1JB334J | J AA | 330 kohms,1/16W |
| C774 | VCKYTV1CF105Z | J AB | 1 μF,16V | R431 | VRS-CY1JB562J | J AA | 5.6 kohms,1/16W |
| C775 | VCKYCY1EB103K | J AA | 0.01 μF,25V | R451 | VRS-CY1JB822J | J AA | 8.2 kohms,1/16W |
| C800 | RC-KZ1183AFZZ | J AC | 1 μF,10V,Electrolytic | R452 | VRS-CY1JB822J | J AA | 8.2 kohms,1/16W |
| C801 | VCKYCY1CB104K | J AB | 0.1 μF,16V | R453 | VRS-CY1JB183J | J AA | 18 kohms,1/16W |
| C802 | VCKYCY0JB105K | J AC | 1 μF,6.3V | R454 | VRS-CY1JB563J | J AA | 56 kohms,1/16W |
| C803 | VCKYCY1CB104K | J AB | 0.1 μF,16V | R455 | VRS-CY1JB562J | J AA | 5.6 kohms,1/16W |
| C804 | RC-KZ1183AFZZ | J AC | 1 μF,10V,Electrolytic | R456 | VRS-CY1JB822J | J AA | 8.2 kohms,1/16W |
| C805 | VCEAPW0JW107M | J AD | 100 μF,6.3V,Electrolytic | R457 | VRS-CY1JB183J | J AA | 18 kohms,1/16W |
| C806 | RC-KZ1186AFZZ | J AD | 3.3 μF,10V,Electrolytic | R458 | VRS-CY1JB563J | J AA | 56 kohms,1/16W |
| C807 | VCKYTV1EB103K | J AA | 0.01 μF,25V | R459,460 | VRS-CY1JB473J | J AA | 47 kohms,1/16W |
| C808 | RC-KZ1182AFZZ | J AB | 0.1 μF,16V,Electrolytic | R481 | VRS-CY1JB363D | J AA | 36 kohms,1/16W |
| C813 | VCKYCY1CB104K | J AB | 0.1 μF,16V | R482 | VRS-CY1JB183D | J AA | 18 kohms,1/16W |
| C821 | VCCCCY1HH680J | J AA | 68 pF (CH),50V | R492 | VRS-CY1JB102J | J AA | 1 kohm,1/16W |
| C822 | VCCCCY1HH8R0D | J AA | 8 pF (CH),50V | R500 | VRS-CY1JB4R7J | J AA | 4.7 ohms,1/16W |
| C825 | RC-KZ1186AFZZ | J AD | 3.3 μF,10V,Electrolytic | R501,502 | VRS-CY1JB471J | J AA | 470 ohms,1/16W |
| C826 | VCEAPW0JW107M | J AD | 100 μF,6.3V,Electrolytic | R601 | VRS-CY1JB563J | J AA | 56 kohms,1/16W |
| C827,828 | VCCCCY1HH101J | J AA | 100 pF (CH),50V | R701,702 | VRS-CY1JB101J | J AA | 100 ohm,1/16W |
| C830,831 | RC-KZ1183AFZZ | J AC | 1 μF,10V,Electrolytic | R703 | VRS-CY1JB124J | J AA | 120 kohms,1/16W |
| C833 | RC-KZ1205AFZZ | J AB | 0.33 μF,10V | R711,712 | VRS-CY1JB562J | J AA | 5.6 kohms,1/16W |
| C836,837 | VCKYCY1CB104K | J AB | 0.1 μF,16V | R713,714 | VRS-CY1JB103J | J AA | 10 kohm,1/16W |
| C841 | VCSATA0JJ226M | J | 22 μF,6.3V,Electrolytic, Tantalume | R715,716 | VRS-CY1JB104J | J AA | 100 kohm,1/16W |
| C842 | RC-KZ1183AFZZ | J AC | 1 μF,10V,Electrolytic | R717 | VRS-CY1JB102J | J AA | 1 kohm,1/16W |
| C851 | VCCCCY1HH680J | J AA | 68 pF (CH),50V | R719,720 | VRS-CY1JB822J | J AA | 8.2 kohms,1/16W |
| C853 | VCCCCY1HH100D | J AA | 10 pF (CH),50V | R723,724 | VRS-CY1JB682J | J AA | 6.8 kohms,1/16W |
| C854 | VCKYCY1EB103K | J AA | 0.01 μF,25V | R725 | VRS-CY1JB101J | J AA | 100 ohm,1/16W |
| C855 | VCCCCY1HH101J | J AA | 100 pF (CH),50V | R726 | VRS-CY1JB393J | J AA | 39 kohms,1/16W |
| C856 | RC-KZ1184AFZZ | J AC | 1 μF,16V,Electrolytic | R727 | VRS-CY1JB822J | J AA | 8.2 kohms,1/16W |
| C857 | VCKYTV0JB106K | J AE | 10 μF,6.3V | R728 | VRS-CY1JB102J | J AA | 1 kohm,1/16W |
| C858 | VCCCCY1HH101J | J AA | 100 pF (CH),50V | R729,730 | VRS-CY1JB272J | J AA | 2.7 kohms,1/16W |
| C859 | VCKYCY1HB102K | J AA | 0.001 μF,50V | R753 | VRS-CY1JB124J | J AA | 120 kohms,1/16W |
| C861,862 | RC-KZ1184AFZZ | J AC | 1 μF,16V,Electrolytic | R754 | VRS-CY1JB274J | J AA | 270 kohms,1/16W |
| C864 | VCSATE0JJ476M | J AD | 47 μF,6.3V,Electrolytic, Tantalume | R756,757 | VRS-CY1JB273J | J AA | 27 kohms,1/16W |
| C868 | VCKYTV1CF105Z | J AB | 1 μF,16V | R761,762 | VRS-CY1JB362J | J AA | 3.6 kohms,1/16W |
| C869 | VCSATE0JJ476M | J AD | 47 μF,6.3V,Electrolytic, Tantalume | R763,764 | VRS-CY1JB820J | J AA | 82 ohms,1/16W |
| C871 | RC-KZ1183AFZZ | J AC | 1 μF,10V,Electrolytic | R765,766 | VRS-CY1JB270J | J AA | 27 ohms,1/16W |
| C872 | VCSATA1AJ106M | J AE | 10 μF,10V,Electrolytic,Tantalume | R767,768 | VRS-CY1JB102J | J AA | 1 kohm,1/16W |
| C902 | VCKYCY1EB103K | J AA | 0.01 μF,25V | R769,770 | VRS-CY1JB393J | J AA | 39 kohms,1/16W |
| C903 | RC-KZ1186AFZZ | J AD | 3.3 μF,10V,Electrolytic | R800 | VRS-TV2AB561J | J AA | 560 ohms,1/10W |
| C905~907 | VCKYCY1HB222K | J AA | 0.0022 μF,50V | R801 | VRS-CY1JB222D | J AA | 2.2 kohms,1/16W |
| C908 | RC-KZ1204AFZZ | J AB | 0.22 μF,10V,Electrolytic | R802 | VRS-CY1JB472J | J AA | 4.7 kohms,1/16W |
| C909,910 | VCKYCY1CB333K | J AA | 0.033 μF,16V | R803 | VRS-CY1JB273D | J AA | 27 kohms,1/16W |
| C911 | VCKYCY1CB104K | J AB | 0.1 μF,16V | R804 | VRS-CY1JB681D | J AA | 680 ohms,1/16W |
| RESISTORS | | | | R805 | VRS-CY1JB684D | J AA | 680 kohms,1/16W |
| | VRS-CY1JB000J | J AA | 0 ohm,Jumper,0.8×1.55mm, Green | R806 | VRS-CY1JB304D | J AA | 300 kohms,1/16W |
| R101~104 | VRS-CY1JB223J | J AA | 22 kohms,1/16W | R807 | VRS-CY1JB104D | J AA | 100 kohm,1/16W |
| R105 | VRS-CY1JB394J | J AA | 390 kohms,1/16W | R808 | VRS-CY1JB105D | J AA | 1 Mohm,1/16W |
| | | | | R809 | VRS-CY1JB222J | J AA | 2.2 kohms,1/16W |
| | | | | R810 | VRS-CY1JB682J | J AA | 6.8 kohms,1/16W |
| | | | | R811 | VRS-CY1JB334J | J AA | 330 kohms,1/16W |
| | | | | R812 | VRS-CY1JB184J | J AA | 180 kohms,1/16W |
| | | | | R813 | VRS-CY1JB104J | J AA | 100 kohm,1/16W |
| | | | | R814 | VRS-CY1JB102J | J AA | 1 kohm,1/16W |
| | | | | R815 | VRS-CY1JB563D | J AA | 56 kohms,1/16W |
| | | | | R816 | VRS-CY1JB243F | J AA | 24 kohms,1/16W |
| | | | | R818,819 | VRS-CY1JB184J | J AA | 180 kohms,1/16W |
| | | | | R821 | VRS-CY1JB684J | J AA | 680 kohms,1/16W |
| | | | | R822 | VRS-CY1JB335J | J AA | 3.3 Mohms,1/16W |
| | | | | R823 | VRS-CY1JB104J | J AA | 100 kohm,1/16W |

MD-MS722H/MS721H

| NO. | PARTS CODE | ★ | PRICE RANK | DESCRIPTION |
|----------|---------------|---|------------|-----------------|
| R824 | VRS-CY1JB394D | J | AA | 390 kohms,1/16W |
| R826 | VRS-CY1JB224D | J | AA | 220 kohms,1/16W |
| R829 | VRS-CY1JB153J | J | AA | 15 kohms,1/16W |
| R830 | VRS-CY1JB104J | J | AA | 100 kohm,1/16W |
| R831 | VRS-CY1JB184D | J | AA | 180 kohms,1/16W |
| R832 | VRS-CY1JB224D | J | AA | 220 kohms,1/16W |
| R841 | VRS-CY1JB474J | J | AA | 470 kohms,1/16W |
| R842 | VRS-CY1JB102J | J | AA | 1 kohm,1/16W |
| R843,844 | VRS-CY1JB104J | J | AA | 100 kohm,1/16W |
| R845-847 | VRS-CY1JB334J | J | AA | 330 kohms,1/16W |
| R848 | VRS-CY1JB105J | J | AA | 1 Mohm,1/16W |
| R849 | VRS-CY1JB184J | J | AA | 180 kohms,1/16W |
| R851 | VRS-CY1JB103J | J | AA | 10 kohm,1/16W |
| R852 | VRS-CY1JB104J | J | AA | 100 kohm,1/16W |
| R853 | VRS-CY1JB334D | J | AA | 330 kohms,1/16W |
| R854 | VRS-CY1JB225J | J | AA | 0.2 Mohms,1/16W |
| R855 | VRS-CY1JB274D | J | AA | 270 kohms,1/16W |
| R857,858 | VRS-CY1JB104J | J | AA | 100 kohm,1/16W |
| R859 | VRS-CY1JB153J | J | AA | 15 kohms,1/16W |
| R860 | VRS-CY1JB333J | J | AA | 33 kohms,1/16W |
| R872 | VRS-CY1JB104J | J | AA | 100 kohm,1/16W |
| R891 | VRS-CY1JB222J | J | AA | 2.2 kohms,1/16W |
| R892 | VRS-CY1JB560J | J | AA | 56 ohms,1/16W |
| R893 | VRS-CY1JB102J | J | AA | 1 kohm,1/16W |
| R901,902 | VRS-CY1JB1R0J | J | AA | 1 ohm,1/16W |
| R903 | VRS-CY1JB331J | J | AA | 330 ohms,1/16W |
| R904 | VRS-CY1JB333J | J | AA | 33 kohms,1/16W |
| R905 | VRS-CY1JB104J | J | AA | 100 kohm,1/16W |
| R906 | VRS-CY1JB274J | J | AA | 270 kohms,1/16W |
| R907 | VRS-CY1JB184J | J | AA | 180 kohms,1/16W |
| R908 | VRS-CY1JB104J | J | AA | 100 kohm,1/16W |
| R909 | VRS-CY1JB103J | J | AA | 10 kohm,1/16W |
| R921 | VRS-CY1JB331J | J | AA | 330 ohms,1/16W |
| R922 | VRS-CY1JB104J | J | AA | 100 kohm,1/16W |

OTHER CIRCUITRY PARTS

| | | | | |
|--------|----------------|---|----|---------------------------------|
| CN101 | QCNCW801XAFZZ | J | AH | Socket,22Pin |
| CN451 | QCNCW804TAFZZ | J | AE | Socket,18Pin |
| CN482 | QCNCW804GAFZZ | J | AD | Socket,7Pin |
| CN601 | QCNCW716RAFFZZ | J | AF | Socket,16Pin |
| △ F800 | QFS-L102AAFNO | J | AE | Fuse,100A,63VDC,Tip Type |
| J701 | VHLGP1FB95R-1 | J | AP | Jack,OPTICAL/LINE IN |
| J702 | QJAKM0189AFZZ | J | AE | Jack,MIC IN |
| J703 | QJAKM0201AFZZ | J | AH | Jack,Remote Control/Head-phones |
| J801 | QJAKC0139AFZZ | J | AE | DC Jack |
| M901 | RMOTV0510AFZZ | J | AS | Motor Ass'y [Spindle] |
| M902 | RMOTV0511AFZZ | J | AT | Motor Ass'y [Sled] |
| M903 | RMOTV0512AFM1 | J | AR | Motor Ass'y [Lift] |
| SW401 | QSW-M0001AWZZ | J | AD | Switch,Push Type [EJECT] |
| SW402 | QSW-S0948AFZZ | J | AC | Switch,Slide Type [HOLD] |
| SW901 | QSW-M0169AFZZ | J | AD | Switch,Push Type [Disc In] |
| SW902 | QSW-M0170AFZZ | J | AD | Switch,Push Type [Disc Protect] |

MECHANICAL PARTS

| | | | | |
|-------------|---------------|---|----|---|
| 1 | NGERH0597AFZZ | J | AC | Wheel,Drive |
| 2 | NSFTD0331AFFT | J | AE | Screw,Drive |
| 3 | LHLDX3136AFM2 | J | AK | Cartridge Holder Ass'y |
| 4 | MSPRT1607AFFJ | J | AB | Spring,Cancel Lever |
| 5 | MLEVF2598AFFW | J | AD | Lever,Eject |
| 6 | LCHSM0941AFM1 | J | AT | Main Chassis Ass'y |
| 7 | PCUSG0599AFZZ | J | AB | Cushion |
| 8 | QPWBH0326AFM1 | J | AM | Mechanism Flexible PWB Ass'y |
| 8- 1 | — | — | — | Mechanism Flexible PWB (Not Replacement Item) |
| 8- 2(SW901) | QSW-M0169AFZZ | J | AD | Switch,Push Type [Disc In] |
| 8- 3(SW902) | QSW-M0170AFZZ | J | AD | Switch,Push Type [Disc Protect] |
| 8- 4(PH901) | VHPGP1S93K/-1 | J | AF | Photo Interrupter,GP1S93K |
| 9 | MSPRP0925AFFJ | J | AD | Driver Screw Bracket |
| 11 | MSPRP0923AFFJ | J | AD | Plate Spring |
| 12 | MSPRP0924AFM1 | J | AD | Shutter Spring Ass'y |
| 13 | NGERH0603AFZZ | J | AE | Gear,Drive |
| △ 15 | RCTRH8175AFZZ | J | BM | Optical Pickup Unit |
| 16 | MSPRP0922AFFJ | J | AD | Spring,Drive Grip |
| 18 | NSFTM0292AFFW | J | AC | Shaft,Guide |
| 20 | MSPRT1604AFFJ | J | AB | Spring,Eject Lever |
| 23 | QPWBH0327AFZZ | J | AG | Magnetic Head Flexible PWB |
| 25 | MLEVF2625AFM1 | J | AK | Lift Lever Ass'y |
| 27 | MLEVF2626AFFW | J | AD | Lever,Lift Joint |
| 28 | MLEVF2627AFFW | J | AE | Lever,Lift |

| NO. | PARTS CODE | ★ | PRICE RANK | DESCRIPTION |
|------|---------------|---|------------|--------------------------|
| 29 | MSPRD1360AFFJ | J | AC | Spring,Lift Lever |
| 30 | LANGF1588AFFW | J | AD | Bracket,Pickup |
| 32 | RCILH0110AFZZ | J | AM | Magnetic Head |
| 502 | LX-JZ0154AFZZ | J | AA | Screw,ø1.4x2.8mm |
| 503 | LX-BZ0823AFZZ | J | AA | Screw,ø1.4x1.2mm |
| 504 | LX-WZ9290AFZZ | J | AA | Washer,ø0.8xø2.4x0.25mm |
| 505 | LX-BZ0800AFZZ | J | AA | Screw,ø1.4x2.5mm |
| 506 | XSPSN14P01500 | J | AA | Screw,ø1.7x2.5mm |
| 508 | LX-BZ0960AFZZ | J | AB | Screw,ø1.4x1.5mm |
| 509 | LX-BZ0980AFZZ | J | AB | Screw,ø1.4x2.2mm |
| 511 | LX-BZ0804AFFF | J | AA | Screw,ø1.4x2.2mm |
| 514 | LX-JZ0148AFZZ | J | AA | Screw,ø1.7x3mm |
| 515 | LX-WZ9296AFZZ | J | AA | Washer,ø1.5xø3.5x0.25mm |
| 516 | LX-BZ0974AFZZ | J | AB | Screw,ø1.4x5.5mm |
| 517 | XAPSF14P01600 | J | AA | Screw,ø1.4x1.6mm |
| 518 | XWSSD14-05000 | J | AA | Spring Washer,ø1.4x0.5mm |
| M901 | RMOTV0510AFZZ | J | AS | Motor Ass'y [Spindle] |
| M902 | RMOTV0511AFZZ | J | AT | Motor Ass'y [Sled] |
| M903 | RMOTV0512AFM1 | J | AR | Motor Ass'y [Lift] |

CABINET PARTS

| | | | | |
|--------|---------------|---|----|--|
| 201 | CCABB2882AF01 | J | AT | Front Cabinet Ass'y [MS722H] |
| 201 | CCABB2882AF03 | J | AT | Front Cabinet Ass'y [MS721H] |
| 201- 1 | — | — | — | Front Cabinet (Not Replacement Item) |
| 201- 2 | GFTAC3135AFSA | J | AG | Cover,MD |
| 201- 3 | LANGZ0335AFFW | J | AB | Bracket,Disc Guide |
| 201- 4 | PCUSG0638AFZZ | J | AA | Rubber,Preventive Vibration |
| 201- 5 | PGIDM0256AFSA | J | AB | Guide (Left) |
| 202 | CCABC4370AF01 | J | AX | Top Cabinet Ass'y [MS722H] |
| 202 | CCABC4378AF01 | J | AX | Top Cabinet Ass'y [MS721H (S)] |
| 202 | CCABC4378AF03 | J | AY | Top Cabinet Ass'y [MS721H (BL)] |
| 202- 1 | — | — | — | Top Cabinet (Not Replacement Item) |
| 202- 2 | LHLDL3061AFSA | J | AE | Holder,Strap |
| 203 | GCABA2882AFSA | J | AE | Center Cabinet [MS722H] |
| 203 | GCABA2882AFSB | J | AE | Center Cabinet [MS721H] |
| 204 | CCABD4384AF01 | J | AT | Bottom Cabinet Ass'y [MS722H] |
| 204 | CCABD4388AF01 | J | J | Bottom Cabinet Ass'y [MS721H (S)] |
| 204 | CCABD4388AF03 | J | AT | Bottom Cabinet Ass'y [MS721H (BL)] |
| 204- 1 | — | — | — | Bottom Cabinet |
| 204- 2 | GCOVA2292AFSA | J | AB | Cover,DC Jack |
| 204- 3 | JKNBZ2113AFSA | J | AE | Knob,Hold |
| 204- 4 | PSHET0401AFZZ | J | AC | Sheet,Insulator,Bottom Cabinet |
| 205 | GCOVA2284AFSA | J | AD | Cover,Eject [MS722H] |
| 205 | GCOVA2284AFSB | J | AD | Cover,Eject [MS721H] |
| 206 | JKNBK0526AFSA | J | AE | Knob,Eject |
| 207 | LANGT1953AFFW | J | AC | Bracket,Eject Knob |
| 208 | LANGZ0348AFM1 | J | AM | Eject Bracket Ass'y |
| 209 | PSHET0373AFZZ | J | AC | Sheet |
| 210 | PSHEZ0851AFZZ | J | AC | Bracket,Eject Knob |
| 211 | LANGK0956AFM1 | J | AM | Main Frame Ass'y |
| 212 | PCUSG0649AFZZ | J | AB | Cushion Mechanism |
| 213 | PCUSG0671AFZZ | J | AB | Cushion |
| 214 | PSHEZ0966AFZZ | J | AC | Sheet,Insulator Extension Battery Terminal |
| 215 | PCUSG0675AFZZ | J | AB | Cushion B |
| 216 | PGUMS0729AFZZ | J | AB | Cushion Mechanism A |
| 217 | PSHEZ0989AFZZ | J | AB | Sheet,Extension Battery Terminal |
| 218 | PCUSG0534AFZZ | J | AC | Rubber,Preventive Vibration |
| 219 | QTANZ9162AFFQ | J | AC | Terminal,+Rechargeable Battery |
| 220 | PCUSG0635AFZZ | J | AA | Rubber,Preventive Vibration B |
| 221 | QTANZ9163AFFQ | J | AC | Terminal,-Rechargeable Battery |
| 222 | PCUSG0674AFZZ | J | AB | Cushion A [MS722H Only] |
| 223 | PCUSG0676AFZZ | J | AB | Cushion C [MS722H Only] |
| 225 | PSHEZ0990AFZZ | J | AB | Sheet,Ring [MS722H Only] |
| 226 | PSPAZ0565AFZZ | J | AB | Spacer,Rubber,Preventive Vibration [MS721H Only] |
| 228 | PFLT-1127AFZZ | J | AA | PU Felt |
| 229 | GFTAB1359AFSA | J | AE | Lid,Battery [MS722H/MS721H (S)] |
| 229 | GFTAB1359AFSB | J | AE | Lid,Battery [MS721H (BL)] |
| 230 | QTANZ9164AFFQ | J | AH | Extension Battery Terminal |
| 231 | GCOVA1301AFSA | J | AY | Guide,Disc [MS722H Only] |
| 232 | PSHEZ0965AFZZ | J | AC | Sheet,Disc Guide [MS722H Only] |

| NO. | PARTS CODE | ★ PRICE RANK | DESCRIPTION | NO. | PARTS CODE | ★ PRICE RANK | DESCRIPTION |
|-----|---------------|--------------|--------------------------------------|-----|---------------|--------------|--|
| 233 | GCOVH1302AFZZ | J AD | Cover,LCD [MS722H Only] | 12 | TINSZ1385AFZZ | J AP | Operation Manual [MS721H] |
| 234 | HDECQ0580AFSA | J AK | Decoration Plate [MS722H] | 13 | UBAGC0076AFSA | J AH | Carrying Case |
| 234 | HDECQ0583AFSA | J AH | Decoration Plate [MS721H] | 14 | SSAKP0116AFZZ | J AD | Paper Bag,Unit |
| 235 | HDECQ0578AFSA | J AK | Decoration Ring A [MS722H Only] | 15 | TCADS0085AFZZ | J AD | Service Card [MS722H for UK Only] |
| 236 | HDECQ0579AFSA | J AF | Decoration Ring B [MS722H Only] | 16 | SPAKZ0475AFZZ | J AD | Spacer,Operation Manual [MS722H for UK Only] |
| 237 | JKNBZ2130AFSA | J AF | Knob,Function A [MS722H] | 17 | SPAKZ0498AFZZ | J | Packing Add.,Unit |
| 237 | JKNBZ2144AFSA | J AK | Knob,Function A [MS721H] | 18 | SPAKZ0509AFZZ | J | Packing Add.,Unit |
| 238 | JKNBZ2131AFSA | J AF | Knob,Function B [MS722H] | | | | |
| 238 | JKNBZ2145AFSA | J AF | Knob,Function B [MS721H] | | | | |
| 239 | JKNBZ2132AFSA | J AE | Knob,Function C [MS722H] | | | | |
| 239 | JKNBZ2146AFSA | J AF | Knob,Function C [MS721H] | | | | |
| 240 | JKNBZ2133AFSA | J AE | Knob,Function D [MS722H Only] | | | | |
| 241 | JKNBZ2134AFSA | J AE | Knob,Rec [MS722H] | | | | |
| 241 | JKNBZ2147AFSA | J AC | Knob,Rec [MS721H] | | | | |
| 242 | JKNBZ2135AFSA | J AK | Knob,Jog [MS722H Only] | | | | |
| 243 | JKNBZ2136AFSA | J AE | Knob,FF/FR [MS722H Only] | | | | |
| 244 | JKNBZ2137AFSA | J AE | Knob,Play [MS722H Only] | | | | |
| 246 | PSHEZ0967AFZZ | J AC | Sheet,Transparent Plate [MS722H] | | | | |
| 246 | PSHEZ0973AFZZ | J AC | Sheet,Transparent Plate [MS721H] | | | | |
| 248 | RUNTK0489AFZZ | J AU | Key Flexible PWB Ass'y [MS722H] | | | | |
| 248 | RUNTK0493AFZZ | J AQ | Key Flexible PWB Ass'y [MS721H] | | | | |
| 249 | RUNTZ0704AFZZ | J AY | LCD [MS722H] | | | | |
| 249 | RUNTZ0705AFZZ | J AY | LCD [MS721H] | | | | |
| 250 | PSPA0564AFZZ | J AB | Spacer [MS721H Only] | | | | |
| 251 | PSHEZ0994AFZZ | J AB | Sheet,Switch,B [MS722H Only] | | | | |
| 252 | PGUMS0730AFZZ | J AB | Cushion,Mechanism B [MS722H Only] | | | | |
| 253 | HDECQ0584AFSA | J AQ | Alumi Decoration Plate [MS721H (S)] | | | | |
| 253 | HDECQ0584AFSB | J AR | Alumi Decoration Plate [MS721H (BL)] | | | | |
| 254 | LHLDZ1747AFZZ | J AC | Holder,LCD [MS721H Only] | | | | |
| 255 | PSHEZ0974AFZZ | J AD | Sheet,Knob [MS721H Only] | | | | |
| 256 | PSHEZ0998AFZZ | J AC | Sheet,Eject Bracket | | | | |
| 259 | PCUSG0679AFZZ | J AB | Cushion A [MS721H Only] | | | | |
| 260 | PCUSG0680AFZZ | J AB | Cushion B [MS721H Only] | | | | |
| 261 | PCUSG0681AFZZ | J AB | Cushion C [MS721H Only] | | | | |
| 262 | PFLT-1143AFZZ | J AB | Felt [MS721H Only] | | | | |
| 263 | PSHEZ0999AFZZ | J AB | Sheet,LCD Flexible [MS722H Only] | | | | |
| 264 | PSHEZ1004AFZZ | J AB | Sheet,Volume Knob [MS721H Only] | | | | |
| 265 | TLABS0497AFZZ | J AD | Caution,Laser | | | | |
| 266 | TLABS0503AFZZ | J AC | Label,Laser | | | | |
| 601 | LX-BZ0877AFF3 | J AA | Screw,ø1.4×1.5mm | | | | |
| 602 | LX-CZ0107AFF3 | J AA | Screw,ø1.2×2.5mm [MS721H Only] | | | | |
| 603 | LX-CZ0126AFF3 | J AA | Screw,ø1.4×2mm | | | | |
| 604 | LX-BZ0805AFFN | J AB | Screw,ø1.7×2.5mm | | | | |
| 605 | LX-BZ0822AFFC | J AC | Screw,ø1.4×2.5mm | | | | |
| 606 | LX-BZ0967AFFC | J AB | Screw,ø1.4×2mm | | | | |
| 607 | LX-BZ0908AFF3 | J AA | Screw,ø1.4×2.0mm | | | | |

ACCESSORIES/PACKING PARTS

| | | | |
|-----|---------------|------|--|
| 1 | GCASZ0086AFSA | J AX | Battery Case |
| 2 | QCNWG0382AFZZ | J AK | Connecting Cord,RCA Type |
| △ 3 | RADPA7486AFZZ | J AY | AC Adaptor [MS722H Except for UK/MS721H] |
| △ 3 | RADPA8487AFZZ | J BC | AC Adaptor [MS722H for UK] |
| △ 4 | RPHOH0176AFZZ | J AR | Headphones |
| 4-1 | PCAPH8107AFZZ | J AD | Cushion,Headphones |
| 5 | RRMCW0038AFSA | J BC | Remote Control |
| 6 | SPAKA2679AFZZ | J AD | Packing Add. |
| 7 | SPAKC6671AFZZ | J AL | Packing Case [MS722H] |
| 7 | SPAKC6683AFZZ | J AL | Packing Case [MS721H (S)] |
| 7 | SPAKC6684AFZZ | J AL | Packing Case [MS721H (BL)] |
| 8 | SPAKZ0481AFZZ | J AD | Pad,AC Adaptor |
| 9 | UBATI0068AFSA | J BG | Rechargeable,Battery |
| 10 | UBNDT0083AFSA | J AG | Strap |
| 11 | QCNWG0422AFZZ | J AQ | Connecting Cord,Optical Type |
| 12 | TINSE1604AFZZ | J AG | Operation Manual [MS722H for UK] |
| 12 | TINSZ1380AFZZ | J AR | Operation Manual [MS722H Except for UK] |

P.W.B. ASSEMBLY (Not Replacement Item)

PWB-A DCYO-3077AF93 J — Main

OTHER SERVICE PARTS

| | | |
|---------------|------|---|
| UDSKM0001AFZZ | J AZ | Recording Mini Disc |
| 88GMMD-110 | J BV | High Reflection Disc MMD-110 (TEAC Test MD) |
| 88GMMD-212 | J BU | Low Reflection Disc MMD-212 (TEAC Test MD) |

MD-MS722H/MS721H

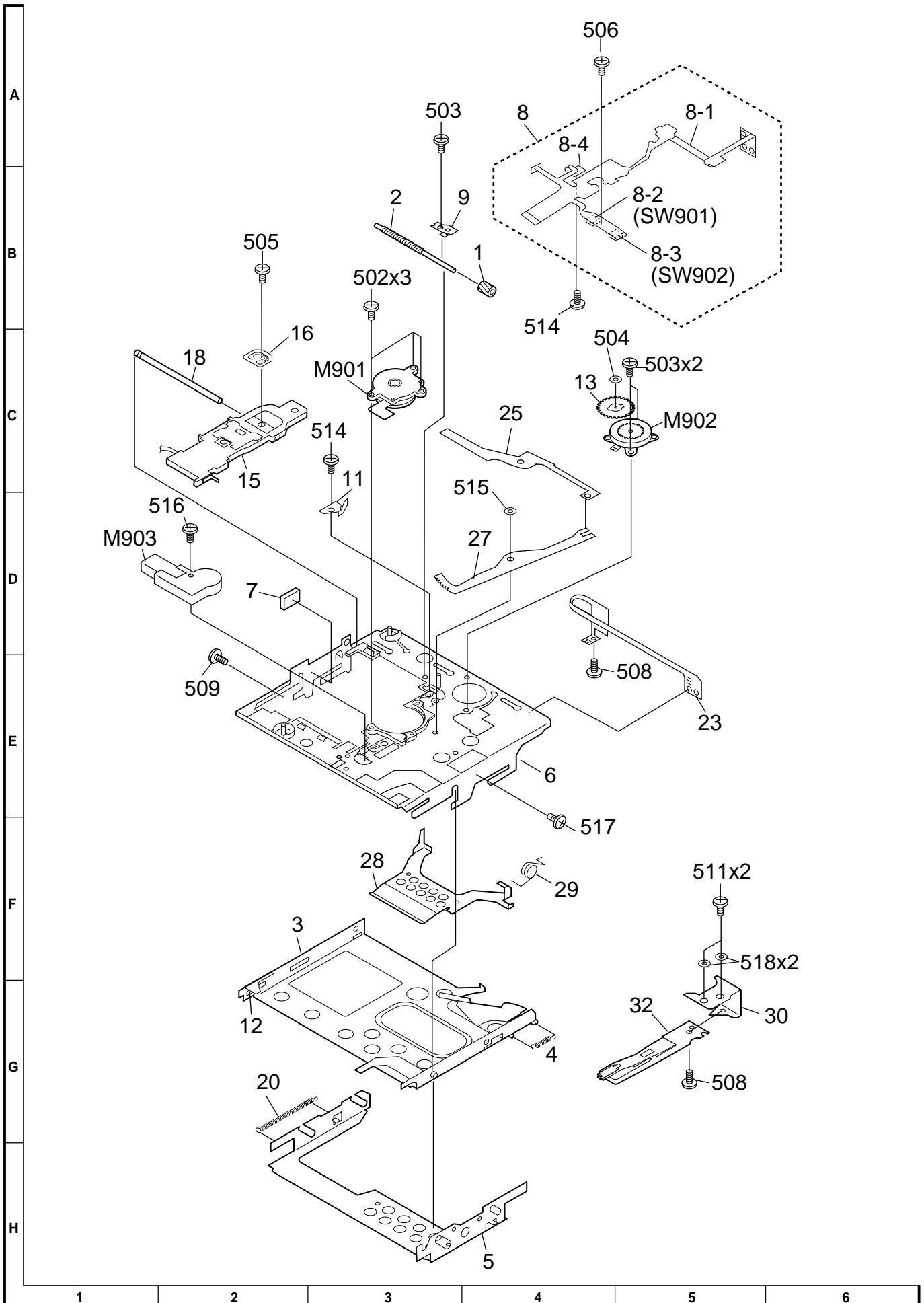


Figure 5 MD MECHANISM EXPLODED VIEW

PACKING METHOD (MD-MS722H FOR UK ONLY)

| SETTING POSITION OF SWITCHES AND KNOBS | | |
|--|------|--------|
| UNIT | HOLD | OFF |
| Remote Control | HOLD | CANCEL |

- 1. Battery Case GCASZ0086AFSA
- 2. Connecting Cord, RCA Type QCNWG0382AFZZ
- 3. AC Adaptor RADPA8487AFZZ
- 4. Headphones RPH5H0176AFZZ
- 5. Remote Control RRM CW0038AFSA
- 6. Packing Add. SPAKA2679AFZZ
- 7. Packing Case SPAKC6671AFZZ
- 8. Pad, AC Adaptor SPAKZ0481AFZZ
- 9. Rechargeable, Battery UBATI0068AFSA

- 10. Strap
- 11. Connection Cord, Optical Type
- 12. Operation Manual
- 13. Carrying Case
- 14. Paper Bag, Unit
- 15. Service Card
- 16. Spacer, Operation Manual
- 17. Packing Add., Unit
- 18. Packing Add., Unit
- UBNDT0083AFSA
- QCNWG0422AFZZ
- TINSE1604AFZZ
- UBAGC0076AFSA
- SSAKP0116AFZZ
- TCADS0085AFZZ
- SPAKZ0475AFZZ
- SPAKZ0498AFZZ
- SPAKZ0509AFZZ

