TCD-D3

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model

DAT
Digital Audio Tape

SPECIFICATIONS

Tape	Digital audio tape
Recording head	Rotary head
Recording time	Standard: 120 minutes Long-play mode: 240 minutes (with DT-120)
Tape speed	Standard: 8.15 mm/s Long-play mode: 4.075 mm/s
Drum rotation	Standard: 2,000 rpm Long-play mode: 1,000 rpm (record) 2,000 rpm (playback)
Error correction	Double Read Solomon code

Tape

Track pitch	13.6 µm (20.4 µm)
Sampling frequency	48 kHz, 44.1 kHz, 32 kHz
Modulation system	8-10 Modulation
Transfer rate	2.46 Mbit/sec
Number of channel	2 channels, stereo
Quantization	Standard: 16-bit linear Long-play mode: 12-bit Non linear
Frequency response	Standard: Fs 48 kHz 20 - 22,000 Hz (±1.0 dB) Fs 44.1 kHz 20 - 20,000 Hz (±1.0 dB) Fs 32 kHz 20 - 14,500 Hz (±1.0 dB) Long-play mode: Fs 32 kHz 20 - 14,500 Hz (±1.0 dB)
Signal to noise ratio	Standard: more than 90 dB Long-play mode: more than 80 dB (1 kHz IHF-A, 22 kHz LPF, LINE IN)
Dynamic range	Standard: more than 90 dB Long-play mode: more than 90 dB (1 kHz IHF-A, 22 kHz LPF, LINE IN)
Total harmonic distortion	Standard: less than 0.008% (1 kHz, 22 kHz LPF, LINE IN) Long-play mode: less than 0.09% (1 kHz, 22 kHz LPF, LINE IN)
Wow and flutter	Below measurable limit (less than ± 0.001% W PEAK)

Input

	Jack type	Impedance	Rated input level	Minimum input level
MIC / LINE IN	stereo mini jack	MIC IN: 10 kohms LINE IN: 47 kohms	LINE IN: 500 mV	MIC IN: 0.25 mV LINE IN: 80 mV

Output

	Jack type	Impedance	Rated output	Maximum output level	Load impedance
LINE OUT	stereo mini jack	2k ohms	300 mV	—	More than 10 kohms
PHONES	stereo mini jack	47 ohms	—	15 mW + 15 mW	32 ohms

Input/Output

REMOTE (SIG.TAPE I/O) jack (special jack)

Digital input/output, remote control operation and timer activated operation is possible by connection with an adaptor kit to this jack.

Other jack

M/C DC OUT (special mini jack)

General

Power requirements: DC 9 V: When mounting battery
DC IN 9 V jack
When using AC power adaptor
(supplied): AC 120 V, 60 Hz (U.S. Canadian model)
AC 220 V, 50 Hz (AEP model)
AC 240 V, 50 Hz (UK model)
AC 100-240 V, 50/60 Hz (E model)
For battery pack (CPM-D3) for 12 V car

Printed in Japan 91.08NT 2000

DIGITAL AUDIO TAPE-CORDER

SONY

MICROFILM

Battery life	Approx. 2 hours (Consecutive recording or playback with full-charged BP-D3 when turning off the illumination for display window)
Power consumption	3.6 W
Dimensions	Approx. 85.2 × 40 × 120.1 mm (3⅜ × 1⅝ × 4¾ in.) (w/h/d) not incl. the battery pack incl. projecting parts and controls
	Approx. 85.2 × 40 × 145.9 mm (3⅜ × 1⅝ × 5¾ in.) (w/h/d) incl. the battery pack and projecting parts and controls
Weight	Approx. 420 g (15 oz) not incl. battery pack
	Approx. 630 g (1 lb 6.3 oz) incl. battery pack

Supplied accessories

AC power adaptor/battery charger ACP-D3U (1) (US. Canadian Model)
AC power adaptor/battery charger ACP-D30 (1) (AEP. UK model)
AC power adaptor/battery charger ACP D33 (1) (E model)
Adaptor conversion 2P (1) (E model)
Rechargeable battery BP-D3 (1)
Carrying case (1)
Digital cable (special plug—2 optical plugs) POC-DA12 (1)
Audio connecting cords (2) (stereo-mini plug—2 phono plugs, stereo for line inputs and outputs)
DAT tape DT-60 (1)

Design and specifications subject to change without notice.

NOTE ON THE AC POWER ADAPTOR

Use only the supplied AC power adaptor.
Never use any other adaptors manufactured by Sony because the polarity of the supplied adaptor is opposite of conventional adaptors.

Polarity of the plug

FEATURES

Application of the serial copy management system
This unit utilizes a serial copy management system which permits digital-to-digital recording for one generation. You can record CD sound or other digital formats through a digital-to-digital connection.

Three sampling frequencies
Recording/playback can be done with three sampling frequencies 48 kHz, 44.1 kHz and 32 kHz.
48 kHz: For analog input signals in a standard mode and 48 kHz, digital audio signals.
44.1 kHz: For digital input of compact disc and pre-recorded DAT tape.
32 kHz: For analog input signals in a long-play mode and 32 kHz digital audio signals.

Capability for recording an analog signal source
MIC/LINE IN jack on the unit in addition to digital input/output allows recording of an analog signal source from a microphone or line output signal from stereo speaker.

Excellent sound quality
Excellent sound quality through a built-in over sampling digital filter.

Miniaturized digital audio tape recorder
The newly-developed miniaturized mechanism and ICs make possible this very small digital audio tape recorder.

Long play mode
This unit can operate in a long play mode. Analog input signals or 32 kHz digital signals can be recorded or played back for up to four consecutive hours when the DT-120 DAT cassette tape is used. The sampling frequency will be 32 kHz in the long play mode.

Post edit recording of start ID and program numbers
You can record or rewrite the start ID and program numbers after the audio signal recording has been completed.

Locating the beginning of the selection at high speed.

Liquid crystal display with a back-light system.

Approximately two-hour continuous recording and playing is possible with the supplied rechargeable battery.

AC power adaptor which can be used during charging is supplied.

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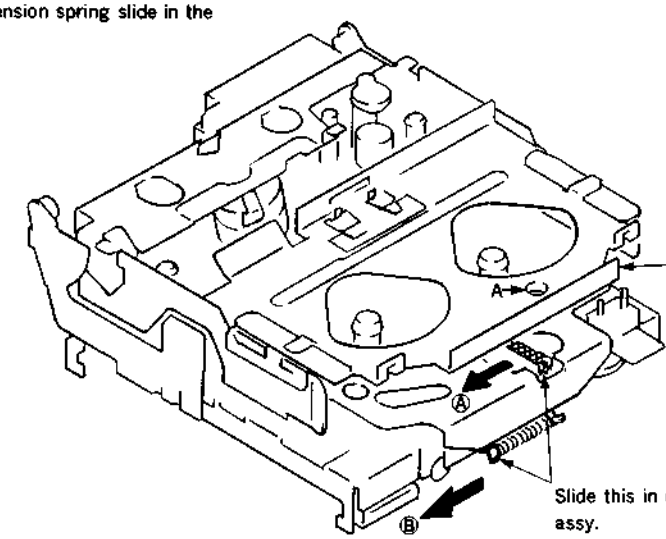
SECTION 1
SERVICE NOTES

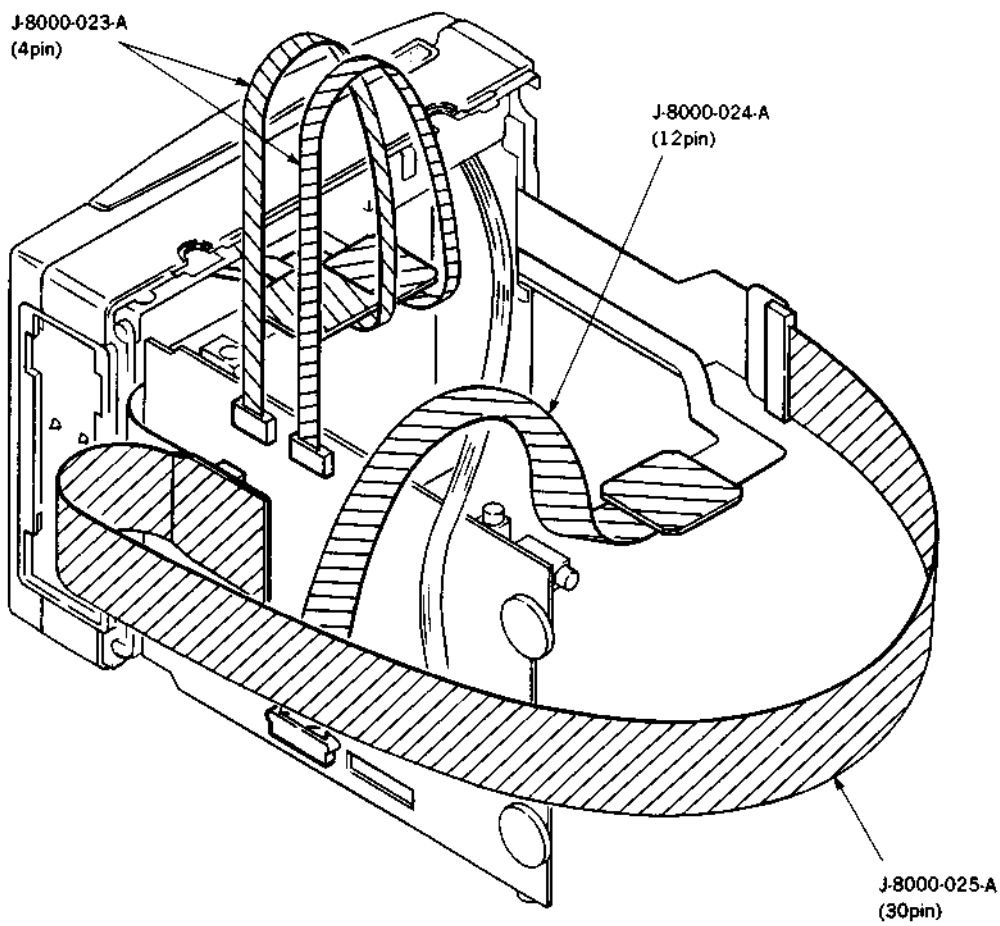
1-1. HOW TO OPEN THE HOLDER (UPPER) ASSY

1. In case of setting state
   At the beginning remove the LCD assy, and slide in the direction of arrow Ⓐ to lever of an oblique line by slender screw driver , etc. from hole A of holder (upper) assy.
2. In case of MD block
   Slide was be hooked claw for tension spring slide in the direction of arrow Ⓑ.



1-2. HOW TO CONNECTION OF TRANSLATION FLEXIBLE BOARDS

Note : On adjustment, connect the translation flexible board as shown below.

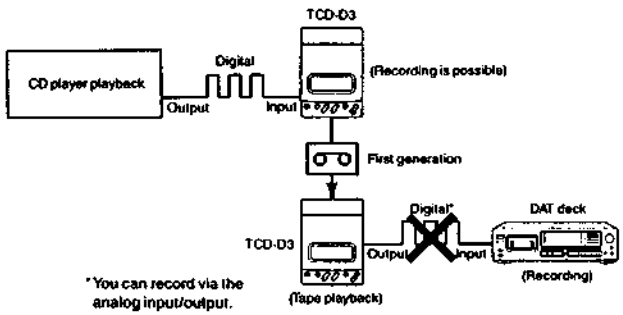


Guide to the Serial Copy Management System

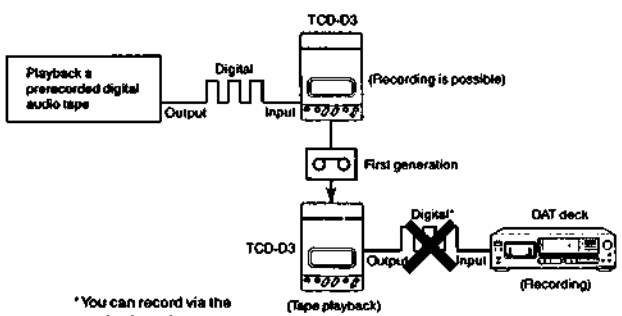
Note
The Serial Copy Management System may not apply to some digital audio tape decks.

What Is the Serial Copy Management System
This system permits one generation of digital recording of prerecorded software via the digital input/output.
A summary of the rules which this system encompasses is as follows:

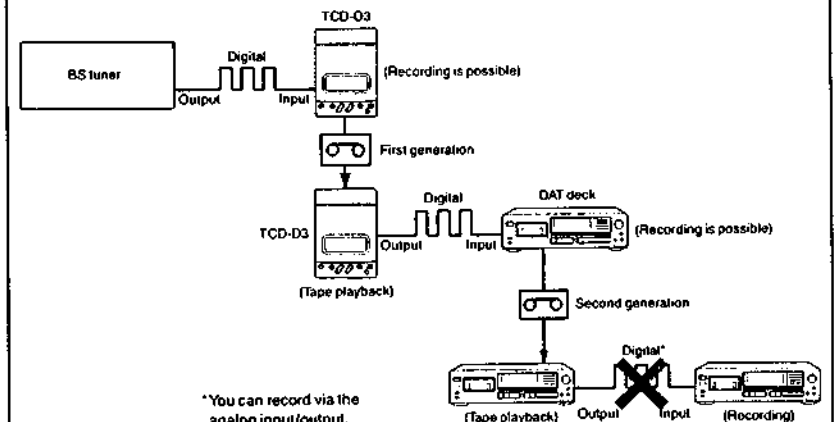
1 **You can record a compact disc onto a digital audio tape via digital input/output to make a first generation type. But you cannot record the recorded tape onto another via the digital input/output.**



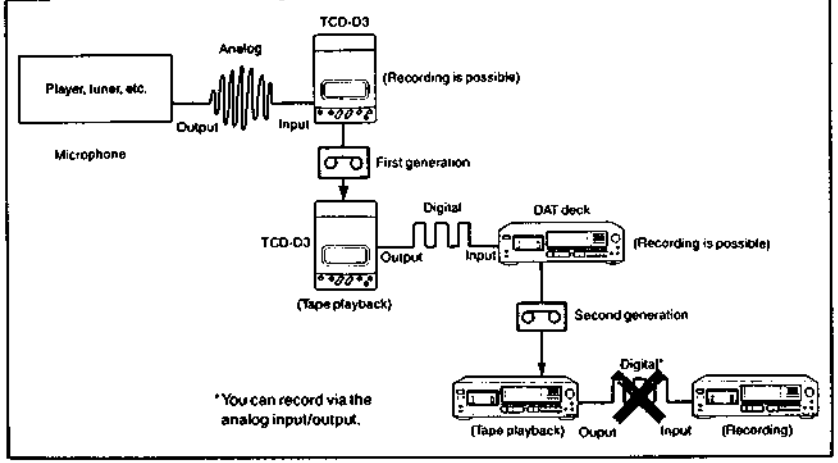
2 **You can record a prerecorded digital audio tape onto a digital audio tape as one generation via the digital input/output. But you cannot record the recorded tape onto another via the digital input/output.**



3 **You can record a digital signal from a BS tuner to a digital audio tape to make a second generation via digital input/output. Some BS tuner may not be applicable to the above principle.**



4 **You can record a digital audio tape which has been recorded from analog input onto another digital audio tape to make a second generation via the digital input/output. But you cannot record the second generation tape to another via the digital input/output.**



Notes
There are no restrictions for generation when DAT decks are connected via the analog input/output. Therefore, you can record any audio source onto a digital audio tape via the analog input/output even when you cannot record them via digital input/output.

Location and Function of Controls

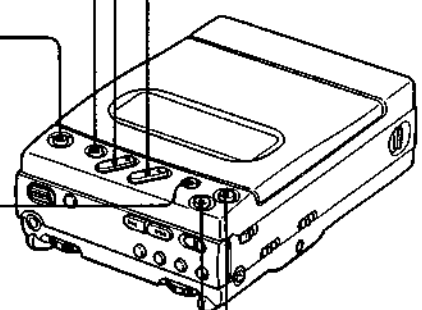
▶ PLAY button
Press to play back the tape or to check the sampling frequency in the display window during playback or recording.

■ STOP button
Press to stop recording or playback.

◀◀ REW/REVIEW button
In the stop mode, press to rewind the tape. During playback, press to rewind the tape while listening to the sound.

⏏ EJECT button
Press when inserting or removing the cassette. This functions as long as when a power soruce—AC power adaptor, battery pack—is connected even if the power switch is set to off.

▶▶ FF/CUE button
In the stop mode, press to fast-forward the tape. During playback or recording, press to fast-forward the tape while listening to the sound.



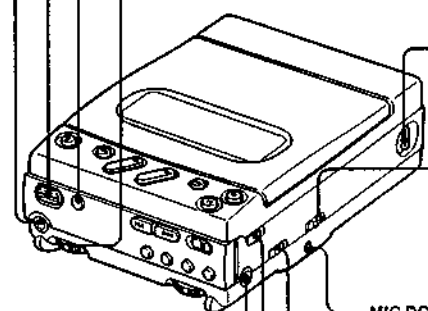
II PAUSE button
Press to stop for a moment during recording or playback. To restart recording or playback, press this button again or press ▶.
If the unit is left in the pause mode for about 5 mintues, it will be automatically released and the deck will enter the stop mode. To restart recording or playback from the stop mode, press REC and ▶ PLAY at the same time when recording or press ▶ PLAY when playing back.

● REC (recording) button
Press to start recording or to monitor the input signal.

PHONES (headphones) jack
Connect headphones to this jack.

POWER switch
Press in the direction of ▬ to turn on the power. Press again to turn off the power. The power will turn off automatically if the stop mode continues for ten minutes when using a battery pack. This helps save the battery power. This function does not work when the power is supplied from the AC power adaptor or car battery cord.

LIGHT (illumination for display window) button
Press this button to illuminate the display window when using the unit in a dark place. Press again to turn off.



VOLUME control
Adjust the volume level of the connected headphones with this control.

BATT RELEASE ◖ (battery release) knob
Press this knob in the ◖ direction when you remove the battery pack.

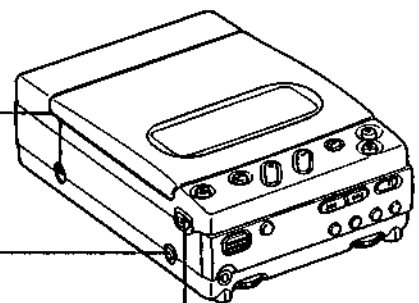
MIC ATT (attenuator for microphone) selector
Select to change the sensitivity of an input level from a microphone. Normally, set it to the 0 dB position. If you set it to 20 dB, the sensitivity will be attenuated by 20 dB and the setting can prevent sound distortion caused by high input signals. The selector is effective when recording with microphones.

MIC DC OUT (DC output for microphone) jack
Supplies the power to the ECM-S220 microphone with an auto-power supply system.

LINE IN/MIC (line input/microphone) selector
Select the appropriate position, line input or microphone, according to the connected analog source.

SP/LP (standard play mode/long play mode) selector
Select the mode, standard play or long play, before recording. The unit selects the appropriate mode automatically during playback.

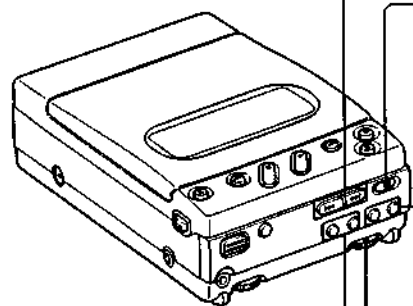
MIC/LINE IN (microphone/line input) jack
You can record an analog signal source if you connect a microphone or line output signal from a stereo system or radio cassette corder.



DC IN 9 V (DC 9 V input) jack
Connect the supplied AC power adaptor or car battery cord to this jack.

LINE OUT (line output) jack
Connect equipment which has a line input jack to this jack. VOLUME control does not affect the signal from this jack.

REMOTE, DIGITAL I/O (remote, digital input/output) jack
Connect equipment which has digital input/output with a POC-DA12 cable (supplied) or RK-DA10 cable (not supplied) or an RM-D3K adaptor kit (not supplied) to this jack.



AMS |◀◀ ▶▶| button
Press to locate the beginning of a selection during playback or in the stop mode.

HOLD switch
Set to the right position where you can see the ○ mark to keep the current setting and to avoid accidentally activating the POWER switch, EJECT button and any other operating buttons, COUNTER MODE/RESET and LIGHT buttons work regardless of the position of this switch.

START ID buttons
MODE: The indication on the display window changes to AUTO → (no indication: AUTO off) → ERASE → RENUM each time you press this button. Select the appropriate indication when writing a start ID manually or automatically, eliminating it, or renumbering program numbers.

ENTER: Press to execute when writing a start ID manually, eliminating it, or renumbering program numbers.

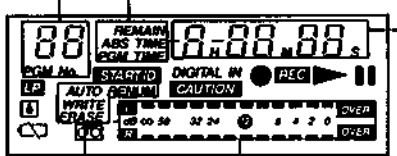
REC LEVEL (recording level) control
Adjust the recording level for the analog input signals from MIC/LINE IN jack.
You can control both L (left) and R (right) channel level with this control. When recording digital signals, adjustment of the level is not necessary because it is done automatically.

COUNTER buttons
MODE: Press to select the time display—tape running time, absolute time, elapsed time of the selection, or remaining time.

RESET: Press to reset the counter to 0h00m00s while the tape running time of the selection appears.

Display window

PGM No. indicator
Shows the number of the selection being played.



REMAIN (remaining time) indicator
Lights when the counter shows the remaining time of the tape.

ABS TIME (absolute time) indicator
Lights when the counter shows the tape running time from the beginning.

PGM TIME (program time) indicator
Lights when the counter shows the elapsed time of the current selection.
During the normal tape counter mode, the above three indicators all go off.

Counter/indicator for sampling frequency
Displays the linear counter, absolute time, elapsed time of the selection being played, and the total remaining time of the tape. Each time COUNTER MODE is pressed, the display mode changes in turn.
Displays sampling frequency when the ▶ PLAY button is pressed during playback and recording.

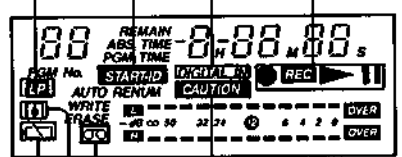
Peak level meters
Indicate peak level of recording or playback signals. In a fast-forward or rewind, ■ mark on the left side meter indicates the direction of the tape running. ■ mark on the right side meter indicates how much tape remains.

AUTO indicator
Lights when you set to the AUTO mode to write the start ID automatically.

WRITE indicator
Lights when writing the start ID automatically or manually.

ERASE indicator
Lights when erasing the start ID is possible.

RENUM indicator
Lights when renumbering the program numbers is possible.
AUTO, ERASE and RENUM appear in order each time you press START ID MODE. Set the indicator to off to write the start ID manually.



LP (long-play mode) indicator
Lights when recording or playback is being performed in the long play mode.

START ID indicator
Blinks when writing the start ID and lights during playback when the tape comes to the position where the start ID is recorded.

DIGITAL IN (digital signal input) indicator
Lights when recording digital signals.

● REC indicator
Lights during recording or monitoring of input signals. Blinks when recording is prohibited or when the signal stops during recording of digital signals.

▶ indicator
Lights during playback or recording and blinks during AMS operation and auto-play operation.

II indicator
Lights during recording-pause or play-pause mode.

CAUTION indicator*
Blinks when some trouble occurs inside the unit and the operation will stop.

Tape inside indicator
Lights when cassette tape is inside of the unit.

Moisture condensation indicator
Lights when moisture has condensed inside the unit and the operation stops. All operation buttons other than EJECT button and POWER switch will not function.

Exhaution of battery indicator
Blinks when the battery becomes weak. Recharge the battery pack in this case.

* On the CAUTION indicator
Press the POWER switch again when the CAUTION flickers. If the indicator flickers again or flickers frequently during you use the unit, consult your local Sony's dealer or service station after turning off the power.

Power Sources

Using with a rechargeable battery pack

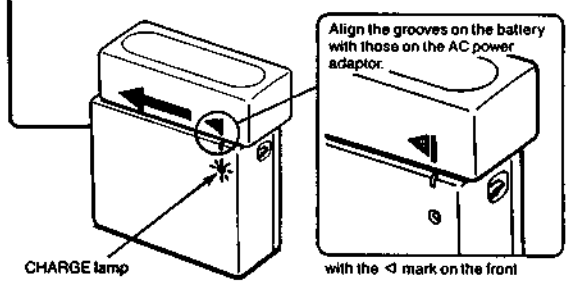
Be sure to charge the supplied rechargeable battery pack.

1 First, charge the battery pack.

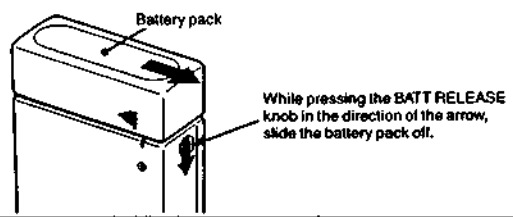
The charging time is about 1 hour.

① **Connect the supplied AC power adaptor to a wall outlet.**

② **Attach the battery pack to the AC power adaptor.**
Red CHARGE lamp lights up.
Charging is completed when the lamp goes off.



③ **Remove the battery pack.**



Operating time of the battery pack
A fully-charged battery pack provides approximately 2 hours of continuous use. We recommend that you should prepare more than two battery packs when using DAT-120 or recording in the long-recording mode.
If you use the battery pack in a cold place, its operating time is shortened.

When the battery becomes weak
The ⏍ indication blinks in the display window. Replace the battery pack with a fully charged one after turning off the power. If you leave the unit with the ⏍ indication blinking, the unit will be turned off automatically in 5 minutes.

The battery pack heats up
During charging or recording, the battery pack on the AC power adaptor heats up. This is not dangerous.

Life of the battery pack
When the operating time of the fully-charged battery pack becomes short, purchase a new one and use it. Repeated charging while some capacity remains causes a lowering of battery capacity. Recharge the battery only when it is exhausted. (When the ⏍ indication begins to blink in the display window, it indicates that the battery pack is exhausted.)

If you plug in the AC power adaptor to the unit while operating the unit with the battery pack
The unit stops operating automatically.

Note

On treatment
- Keep the metal terminals on the battery pack away from metal objects, otherwise it may short circuit.

On charging
- Recharge the battery pack only when it is exhausted.
  Do not repeat charging, as it will cause the battery capacity to become smaller.
- The battery pack cannot be charged easily in a cold place.
- The original battery capacity can be recovered if you fully discharge and charge the battery several times.

How to care for the battery pack
- Remove the battery pack after it is exhausted and charge it before using it again.
- Remove the battery pack from the unit after using it, and keep it in a cool and dry place. When the battery pack is attached to the unit, a small amount of current flows to the unit even if the power is turned off. This may overdischarging and shorten battery life.

Note on the AC power adaptor

Use only the supplied AC power adaptor.
Never use any other adaptors manufactured by Sony because the polarity of the supplied adaptor is opposite of conventional adaptors.

Polarity of the plug

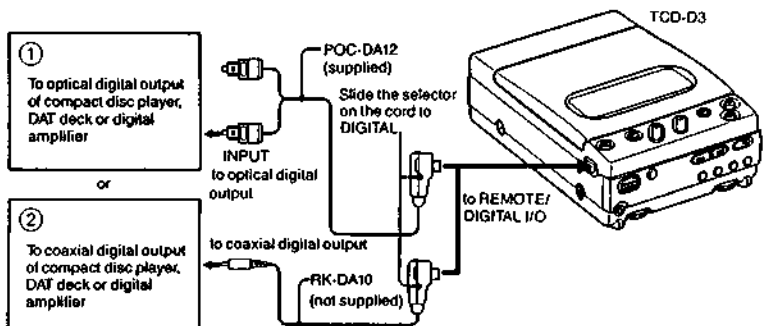
To Record

Connection with other equipment

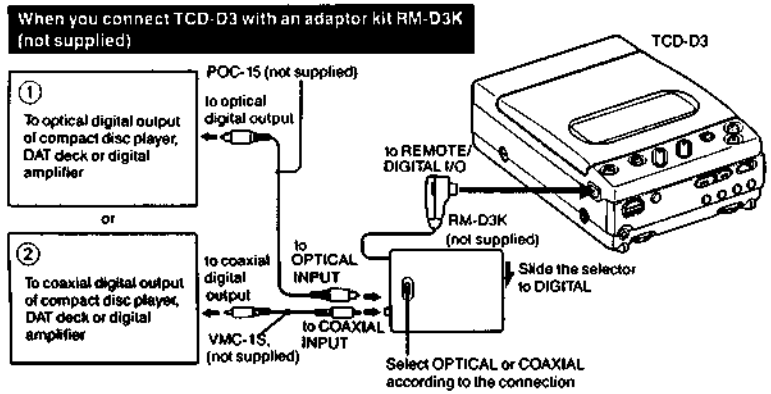
Recording via digital output
Adjustment of the recording level is unnecessary because it is done automatically.

When you connect TCD-D3 with other equipment directly

There are 2 ways as follow.
① If your equipment has an optical digital output
② If your equipment has a coaxial digital output



When you connect TCD-D3 with an adaptor kit RM-D3K (not supplied)

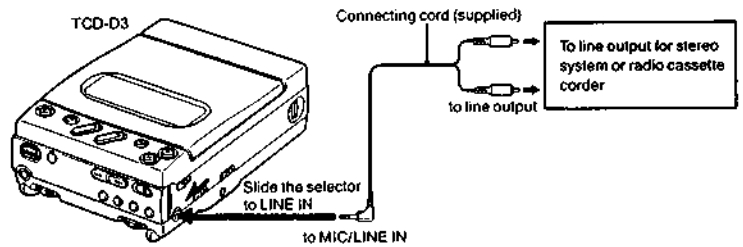


If you connect an RM-D3K (not supplied)
The unit enables recording and playback via digital input/output (optical, coaxial), operation with a wireless remote commander and timer-activated recording or playback with your audio-timer.

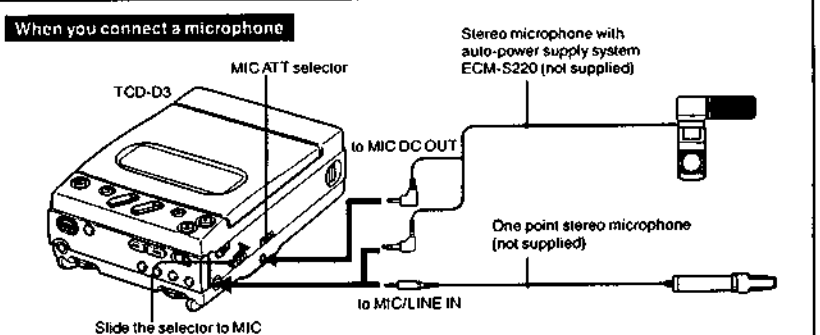
If you cannot record via the digital input/output
● REC blinks in the window display if a digital signal which cannot be recorded is input to the unit or if the digital signal cannot be input to the unit. Record via the analog input/output in this case.

Recording via analog output
- Slide the selector on the cable or adaptor kit to ANALOG if the connection on page ⓲ has been done.
- Adjustment of recording level is necessary (See page ⓳).

When you connect to a stereo system or radio cassette corder through a line output



When you connect a microphone



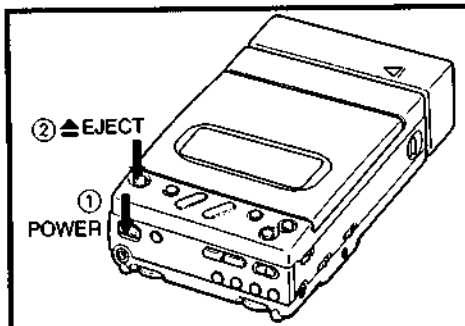
How to use the MIC ATT switch
Set to 0 dB normaly. Slide to 20 dB if the level of the input signal is too high causing distortion of the sound.

Note

You cannot use a plug-in power microphone with this unit.

Monitoring the recorded sound
Connection for playback (See page ⓲ of "To Play Back") is also necessary.

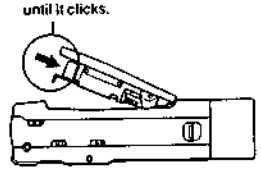
Tape insertion



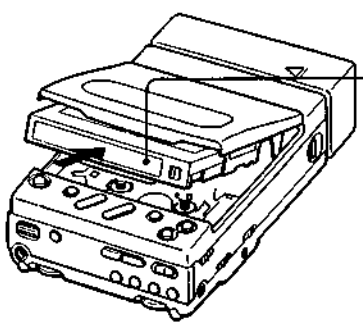
Note
Check if the tape can be recorded with the hole covered before inserting the tape (See page ⓲).

- Window side up
- Tab facing towards you
- Insert the tape correctly

Insert the tape firmly until it clicks.



If you close the holder with the tape inserted incorrectly, it may cause the malfunction.

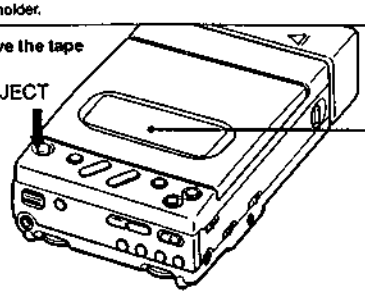


When detaching the battery pack or the AC power adaptor from the unit, be sure to do it after closing the holder

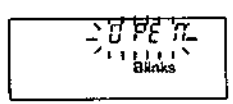
You may not be able to close the holder if you detach the above power sources just after opening it. In this case, press the POWER switch after attaching the power sources and close the holder.

Press the holder closed. Inside the unit, the tape will be loaded around the head automatically. At this time, you can see LOAd blinking in the display window.

To remove the tape



Display window



To locate the section to be recorded

Desired location to be recorded	Condition of your tape	Operation
From the beginning	New tape	You can begin to record just after setting the tape. You cannot operate any buttons for several seconds while bb 1oF blinks in the display window.
	Wound part way because you had recorded before.	Begin to record after rewinding the tape to the beginning with the REW button.
From part way through the tape (from the end of the section you had recorded before).	New tape, but it has been recorded part way and wound completely.	Forward the tape to the end of the section you have recorded before by pressing the FF button. The tape will stop automatically.
	Recorded tape but it has been rerecorded part way.	Locate the boundary between the first section and the second by listening to the sound. Determine the exact boundary by watching the linear counter in the display window.
	If you have no idea where you had recorded before.	1 Rewind the tape completely. 2 Press the FF button. The point where the tape stops automatically is the end of the section which you have recorded before. If the tape goes forward to the end of the tape, it indicates that the tape has been fully recorded.

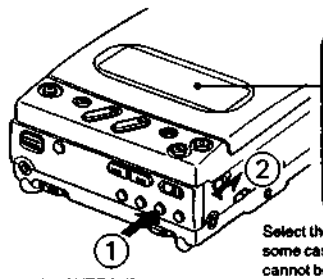
The above is necessary to avoid making a blank section on your tapes. See "Note on recording" (page ⓲) for details.

When you use a new tape for the first time

bb 1oF appears in the display window. This shows that BB letters are being recorded on the program number in the read-in section. The read-in section enables you to start recording from the beginning of the tape exactly as well as to write and erase the start ID correctly.

Recording

1 Set the unit before recording.

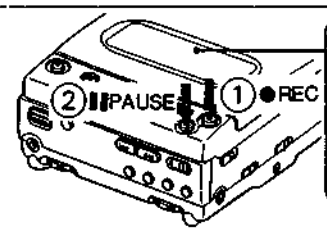


Display AUTO in the window by pressing the START ID MODE button.

Select the recording mode: There are some cases that the long-play mode cannot be used. See page ● for details.
SP . . . . . for standard-play mode
LP . . . . . for long-play mode

③ If you record via the digital input by connecting the recommended cord or an adaptor kit RM-D3K, slide the switch on the cord or the adaptor kit to DIGITAL. (See page ● when you record via the analog input.)

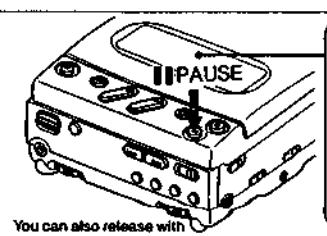
2 Set to the record-pause mode.



You can do ② first and then ①.

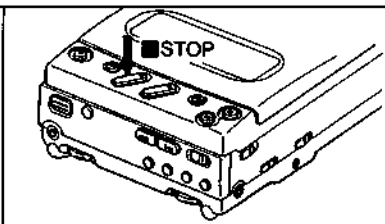
3 Play your recording source.

4 Release the record-pause mode to start recording.

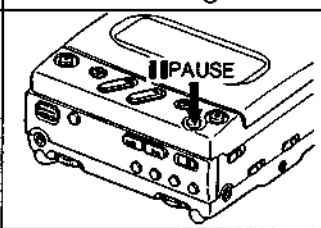


You can also release with the ▶ PLAY button.

To stop recording



To stop recording for a moment



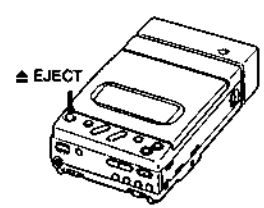
Press the ❚❚ PAUSE or ▶ PLAY button to release pause and restart recording.

If you leave the unit in the record-pause mode for more than 5 minutes
The record-pause mode will be released automatically and the unit will enter the stop mode. This is because of the protection system for the tape and head. Set to the record-pause mode again if desired.

On operation for recording
You can record by pressing the PLAY button while you press the ● REC button.

When the tape is recorded to the end (Auto rewind function)
The tape is rewound to the beginning and stops automatically.

To remove the tape
Stopping the tape with the STOP button first.



When the input signal is analog
The following operations are necessary when you record with a microphone or connect a stereo system which does not have digital outputs.

1 Select the appropriate position with the LINE IN/MIC selector.
MIC . . . When you connect a microphone
LINE . . . When you connect to the LINE OUT jacks of the stereo system

2 Adjust the recording level.
How do you adjust to the appropriate level?
Adjust the peak level meter to light the indication of the segment around ❶ (– 12 dB) with the REC LEVEL control. The indication does not have to go over 0 dB at the highest level.
If the OVER indication lights continuously This shows that the level is too high and will cause sound distortion. Re-adjust to the appropriate level.

3 Start recording.

Recording level when the input signal is digital
It is unnecessary to adjust the recording level. The digital signal is recorded at the same level as the recording source.

Note on recording

Be sure that no blank section is left on the tape when recording.
Blank section: a portion on which a recording has not been made.
Sound-muted section: a portion on which a recording has been made but with the sound muted.

The following is necessary to avoid leaving a blank section on your tape

Do not advance the tape with the PLAY or FF button. Sound-muted recording can be done to insert silence between selections. Sound-muted recording is done, for example, by recording with the REC LEVEL control at 0 when you record via the analog input or with the REC MUTE button pressed on the adaptor kit RM-D3K (not supplied).
To start recording from the part way through the tape, locate the beginning of the blank section and start recording. This will avoid leaving a blank section.

The reason why you must not leave any blank sections

An absolute time code must be written on the tape correctly. If blank sections are left on the tape, the absolute time code is not recorded there and the tape will stop automatically at each blank section needlessly when you forward the tape or try to locate the beginning of the selection.

What is the absolute time code?

The absolute time indicates the position of the tape, giving the time elapsed from the beginning. The absolute time is recorded automatically at the same time the audio signal is recorded. It cannot be re-recorded. The absolute time allows you to confirm the elapsed time from the start of the tape.

Note

In some cases, the absolute time may not be recorded if you re-record on the tape which the absolute time has not been written.

What is a start ID?

- This signal indicates the start of a music selection. This signal should be written at the beginning of the selection, so that you can locate the position of the start ID precisely.
- If you record with the indication of AUTO in the window, the start ID will be recorded automatically on a tape together with the program number*. We recommend that you record with AUTO in the window.
  * A program number will not be recorded in some cases. See page ● for details.

Note

- If you record without the indication of AUTO in the window when recording via analog input, the start ID will not be recorded. But you can record it during playback after recording. (See page ●).
- If you record the sound from an other DAT deck via the digital input without AUTO indicated in the window, the start IDs on the master tape can be recorded. However, when recording the sound from other sources via the digital input, they cannot be recorded.

What is a program number

This signal gives a number to a selection. You can record it where the start ID is written.

On the start ID in the AUTO mode

If there is a no sound section or the signal level stays very low for more than about 3 seconds
A start ID may be written as it is regarded as an interval between two sections.
An unwanted start ID can be erased later. (See page ●)

If the auto space function is available with your CD player, activate this function to ensure that the start IDs are written correctly.

The longest recording period in each time

Mode / Cassette	The longest recording period	
	standard	long
DT-120	2h	4h
DT-90	1h30m	3h
DT-60	1h	2h
DT-46	46m	1h32m

(h: hour, m: minute)

You can select the appropriate mode—Standard mode (SP) or Long-play mode (LP)—with the mode selector on the unit.

When is the long-recording/playback unavailable?

The digital input signal on 44.1 kHz or 48 kHz cannot be recorded/played back in the long play mode, even if the mode selector is set to LP. Press the ▶ PLAY button longer than usual during recording to display and check the sampling frequency of the source program in the display window.

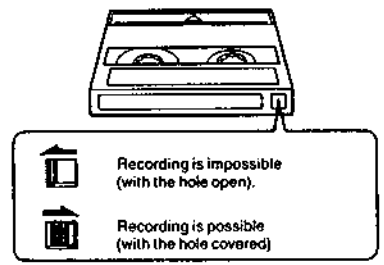
The time counter in the long-play mode

Absolute time and total remaining tape appears, based on those in the standard mode. To obtain the actual long play time, double each value.

For the customers who have other DAT decks which do not have the long-play mode
If you playback the tape—which you changed the mode from the standard to the long-play during recording—on other DAT decks which do not have the long-play mode, loud noise may occur at the boundary between the standard mode recorded section and the long-play mode one. Turn down the volume in this case. Same thing occurs when you playback the tape which you made the standard mode recording on which the long-play mode one had been made.

To prevent accidental erasure

When a recording is made, any previously recorded signal will be erased automatically. To prevent accidental erasure, set the safety tab to the position shown in the illustration.



If recording cannot be made

Check the following:
- The safety tab of the cassette is set to the record-inhibit position.
- No tape is loaded.
- The input selector on the unit or the recommended connecting cord, etc., is set to the incorrect position.
- Tape is fully rewound to the end.
- The output level of the playback equipment is too low.
- You are trying to record a signal which cannot be recoreded via the digital input. (The ● REC indication blinks in the display window.)

If you repeat recording from the beginning of the tape

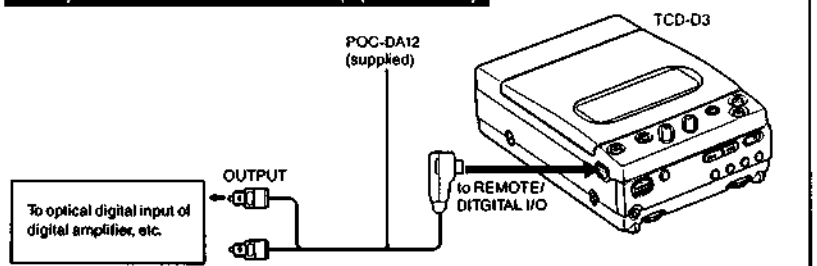
The sound which was recorded previously may be heard. This is not a trouble.

To Playback

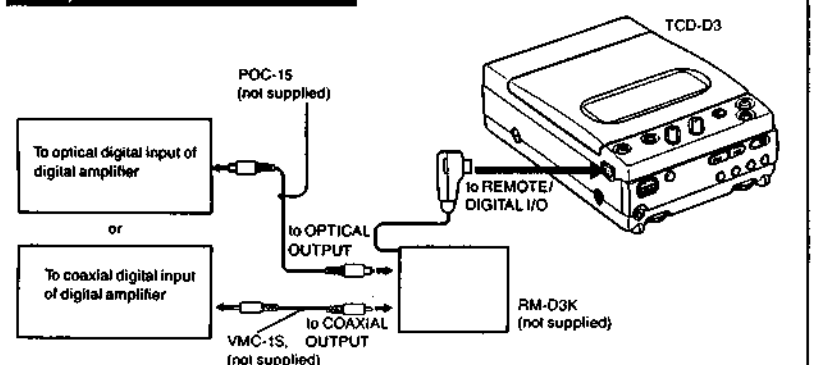
Connection with other equipment

Connection with other equipment which has a digital input

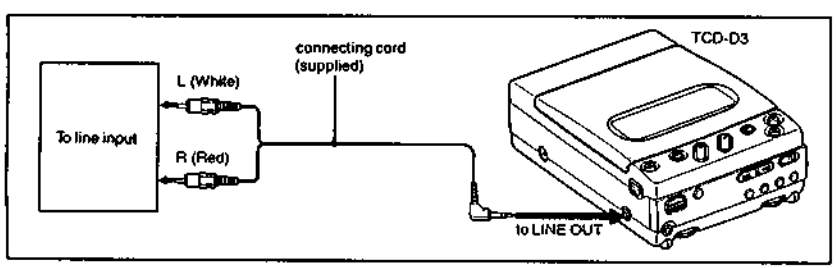
When you connect TCD-D3 with other equipment directly



When you connect TCD-D3 with RM-D3K

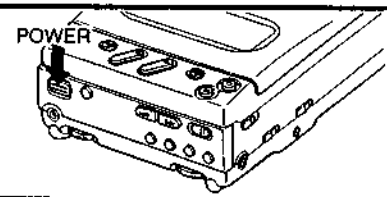


Connection to a stereo system or radio cassette corder through a line input



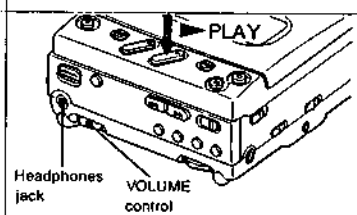
Playback

1 Turn the power on.



2 Insert a tape.

3 Start playback.



When you use stereo-headphones (stereo-mini plug)
Connect it to the headphones jack and adjust the volume with the VOLUME control.

To stop playback	■ STOP
To stop playbak for a moment	II PAUSE — Press the PAUSE or PLAY button to release the pause mode.
To fast-forward or rewind the tape First, stop the tape.	◀◀ REW (rewind) ▶▶ FF (fast-forward)

When the tape is played back to its end
The tape will be rewound to the beginning and stop automatically (Auto rewind function)

When you want to rewind the tape and listen to the tape from the beginning
Press the ▶ PLAY button while you press the REW button. ▶ indication in the display window blinks while the tape is rewound. The tape will stop at the beginning of the tape and start playback automatically. (Auto play function)

To fast-forward or rewind the tape while listening to the sound (cue/review)

During playback

◀◀ REVIEW (Listening to the tape while reviewing) ▶▶ CUE (Listening to the tape while advancing)

You can hear the sound while you press the button. Release the button at the desired point. Playback resumes.

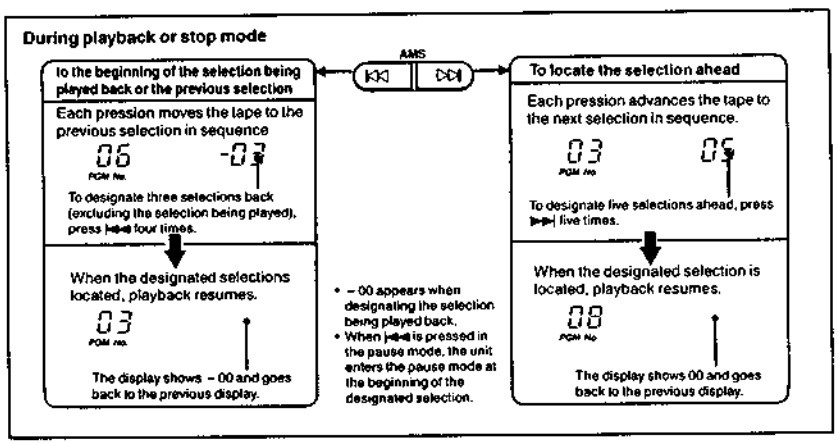
A quicker way to fast-forward or rewind
In the cue or review mode, press the ▶ PLAY button while you press the ◀◀ REVIEW or ▶▶ CUE button. You can hear the sound at higher speed than the above.

Note

If there is a more than 9-second blank section on your tape, the tape stops automatically at the beginning of the blank section during playback or fast-forward. Press the operation button again to restart the tape. PGM No. blinks on the program number position in the display window when the tape comes to a blank section.

Locating the beginning of the selection—AMS system

For the following operation, start ID codes must be written on the tape. (For how to write the start ID, see page ⓭.)

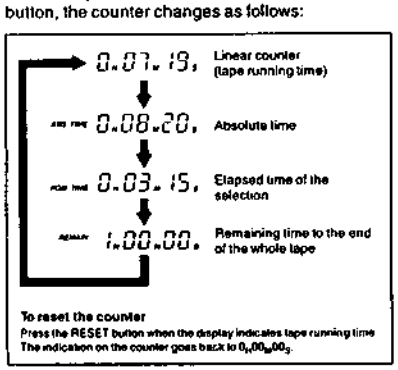


Note

This may not function when you play back the tape which was recorded with other DAT decks.

Using the display window

Each time you press the COUNTER MODE button, the counter changes as follows:



Accuracy of the indicator for the remaining time

Depending on the kind of tape, the indicated time may differ slightly from the actual remaining time.

On the indicator for the elapsed time of the selection

The indicator does not appear in the following cases.

- The selection is played back from the middle.
- The tape is being fast-forwarded or rewound.

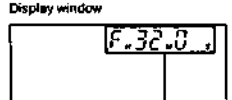
On the indicator for the remaining time

- The indicator does not appear immediately after the deck is set to the playback mode. It will appear about 16 seconds later.
- Depending on the kind of tape, the indicator may differ slightly from the actual remaining time.

To check the recorded sampling frequency

Press the ▶ PLAY button longer than usual during playback. The sampling frequency will appear in the display window as long as you press the button.

Display window



(example: 32 kHz sampling frequency is recorded.)

Nice to Know

On start ID

You can write the start ID manually

Usually, the start ID is automatically recorded in the AUTO mode. You can also write it manually by yourself.

For example, write it manually in the following cases:

- If you forgot to set the AUTO mode when recording so you get a tape on which the start ID is not recorded.
- If you want to record the start ID in middle of a selection to locate a particular portion.

Start ID is a convenience for you to locate the beginning of the selection and to edit the tape.

Note

Be sure to check that the safety tab on the tape covers the hole before operating.

Writing start ID manually during recording

	Operation	Result
1	Press START ID MODE for a few times.	AUTO or no indication appears in the window.
2	Press START ID ENTER at the desired position during recording.	WRITE lights and START ID blinks in the display window. (9 seconds for standard mode, 18 seconds for long play mode.) Writing is completed.

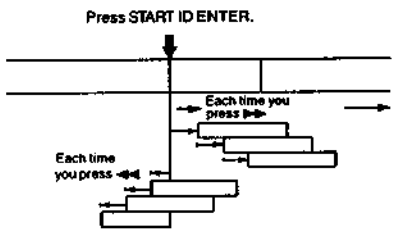
Writing start ID manually during playback

	Operation	Result
1	Press START ID MODE for a few times.	AUTO or no indication appears in the window.
2	Press START ID ENTER at the desired position during playback.	WRITE and START ID blink in the display window, and a 3-second portion from the point where you press START ID ENTER, is played back repeatedly (rehearsal function). The beginning of the repeated portion will be beginning of the start ID.
3	Press START ID ENTER again if the position is the desired one.	WRITE lights and START ID blinks while the start ID is written. You cannot hear the sound at this time.

Adjust the position if there is a gap between the position where the start ID is written and the desired one. (See page ⓮.)

How to adjust the start ID position

You can shift the start ID position about 0.3 seconds backward or forward with REW/REVIEW or FF/CUE during rehearsal play. Press ENTER after shifting it to the desired position. The start ID cannot be shifted except in the rehearsal mode.



After the repeated portion is played back 16 times, the tape stops.

Note

- You must adjust the position within ten seconds.
- You cannot activate any operation buttons other than ■ STOP while the start ID is being written.
- When WRITE and START ID blink quickly during rehearsal play, the start ID cannot be written.
- The program number cannot be written when the start ID is written during playback.

Erasing start ID

Locate the tape at beginning of the desired start ID to be erased. You can erase it during playback or stop mode.

	Operation	Result
1	Locate the tape at the beginning of the desired start ID to be erased.	
2	Press START ID MODE a few times.	ERASE appears in the display window.
3	Press ENTER during playback or stop mode.	The tape is rewound and the start ID is searched for. ERASE blinks during this time. ↓ The start ID is erased after being detected. ERASE lights and START ID blinks at this time. You cannot hear the sound.

Note

The program number is erased at the same time you erase the start ID.

On program number

If AUTO appears in the display window when recording from the beginning of the tape, the program number is automatically written together with start ID. Renumber it in the following cases because it may not be written or it may overlap.

- The succeeding program numbers are not written because you started recording from the middle of the tape.
- The same program number may be written twice on the tape because you have recorded from the beginning to the middle of a tape on which another recording was made.
- When you write a start ID during playback.
- If you erase the start ID, the program number will be automatically erased. This means that there may be some missing numbers on the tape.

Unless you renumber the program numbers, it may be inconvenient for you because the same program number may appear twice or you cannot select the desired selection with the numeric button on the adaptor kit RM-D3K (not supplied).

Note

This may not function when you write or renumber the program numbers on the tape which was recorded with other DAT decks.

Renumbering program numbers

Be sure to check that the safety tab on the tape covers the hole before operating.

	Operation	Result
1	Press START ID MODE a few times.	RENUM appears in the display window.
2	Press ENTER during playback or stop mode.	• The tape will automatically be rewound to the beginning, and the program numbers are renumbered from "1" in order at each start ID position. • At that time, you can hear the beginning of the section for 3 seconds. The tape will be rewound to the beginning again and the number will be written without sound. The unit will repeat at each section. • START ID blinks while the program numbers are renumbered. RENUM blinks while the tape is fast-forwarded to the next start ID. • If the pre-recorded program number is correct, the unit searchs for the next start ID.

When renumbering is completed

The tape is automatically rewound to the beginning, and the function of the unit stops.

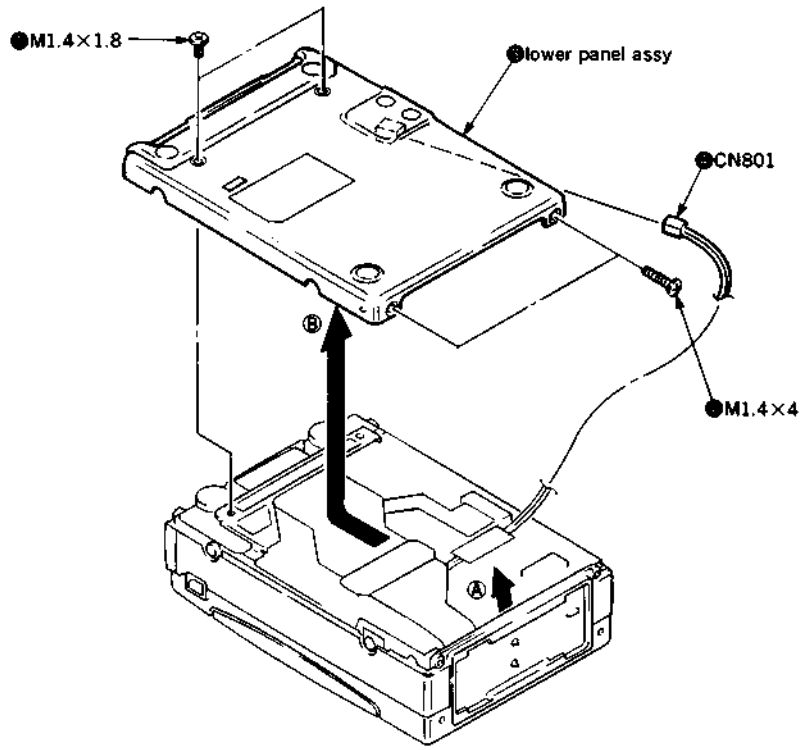
Erasing program number

Refer to "Erasing start ID". The program number will be erased together with the start ID.

SECTION 3
DISASSEMBLY

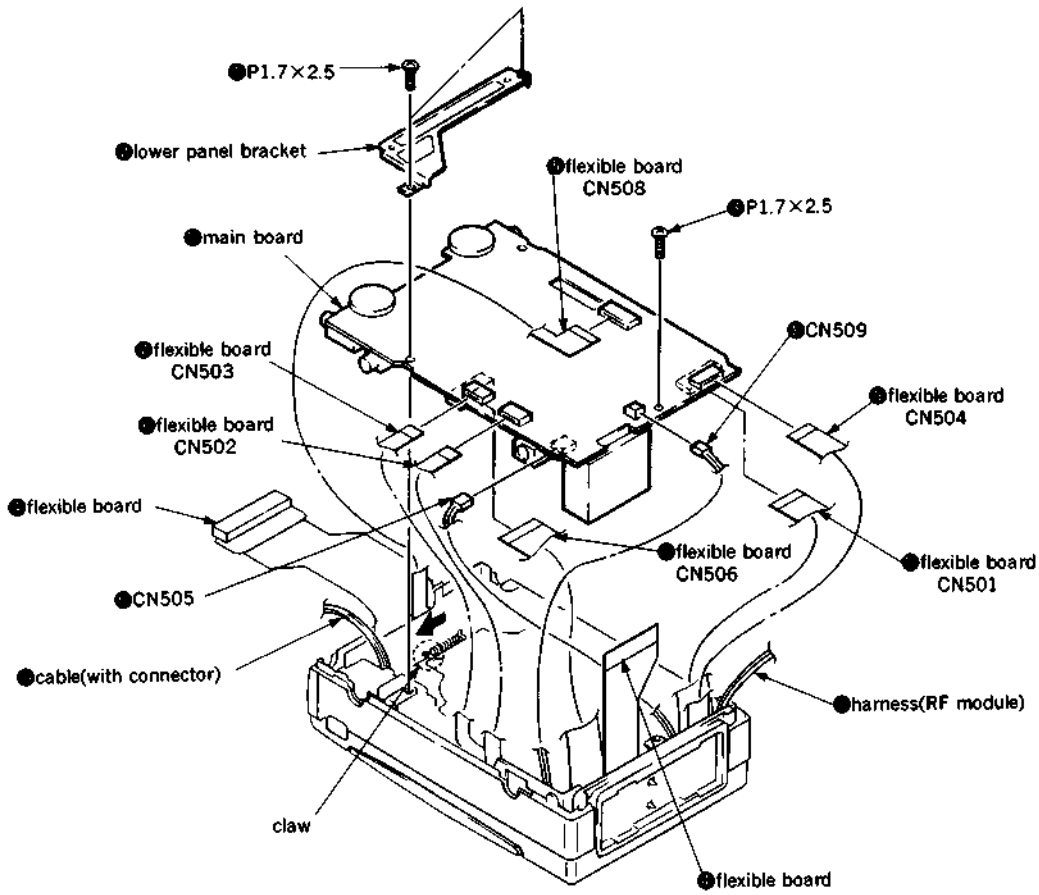
Note: Follow the disassembly procedure in the numerical order given.

3-1. LOWER PANEL ASSY



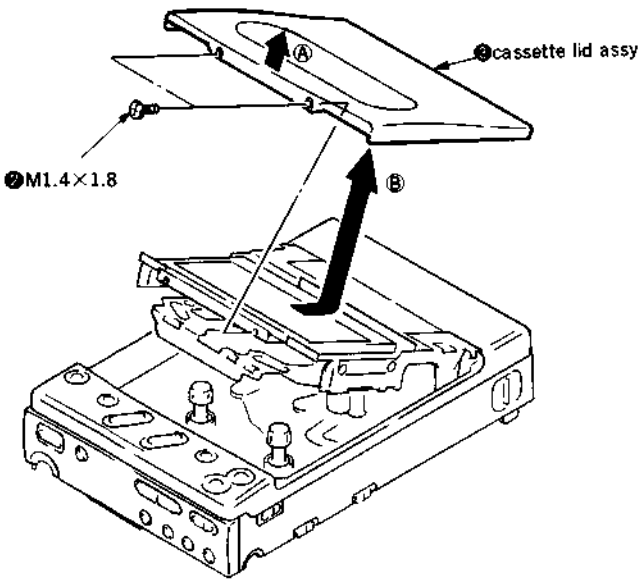
3-2. MAIN BOARD

Note: On assembly board, take notice of put each switches and knobs position.

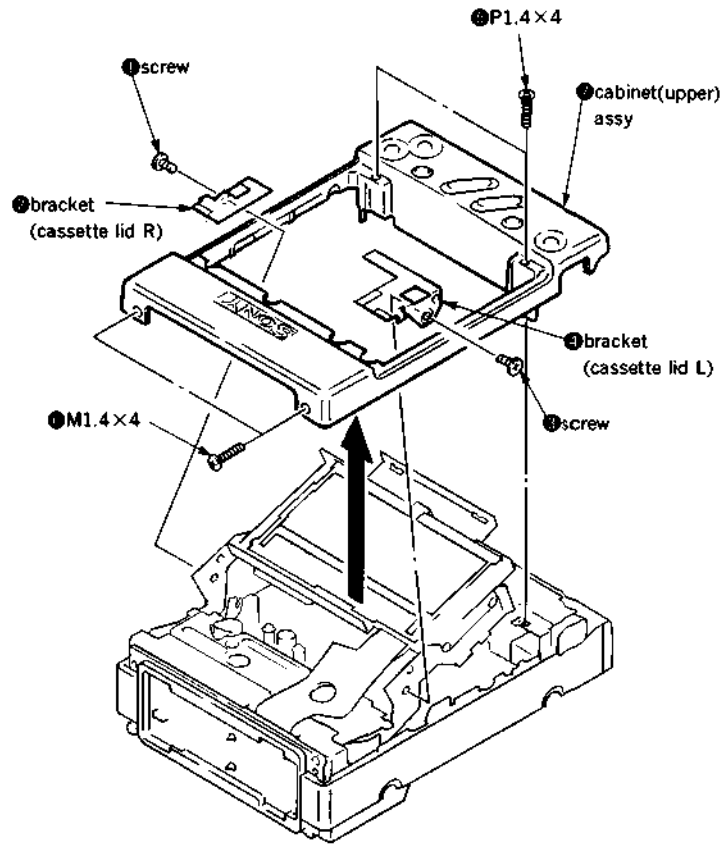


3-3. CASSETTE LID ASSY

❶Turn on the POWER switch, open the cassette lid by press the EJECT button.
Or to do disassembly ❽ to ❾ of "3-2. MAIN BOARD", slide the claw of MD block while raise the main board and open the cassette lid.

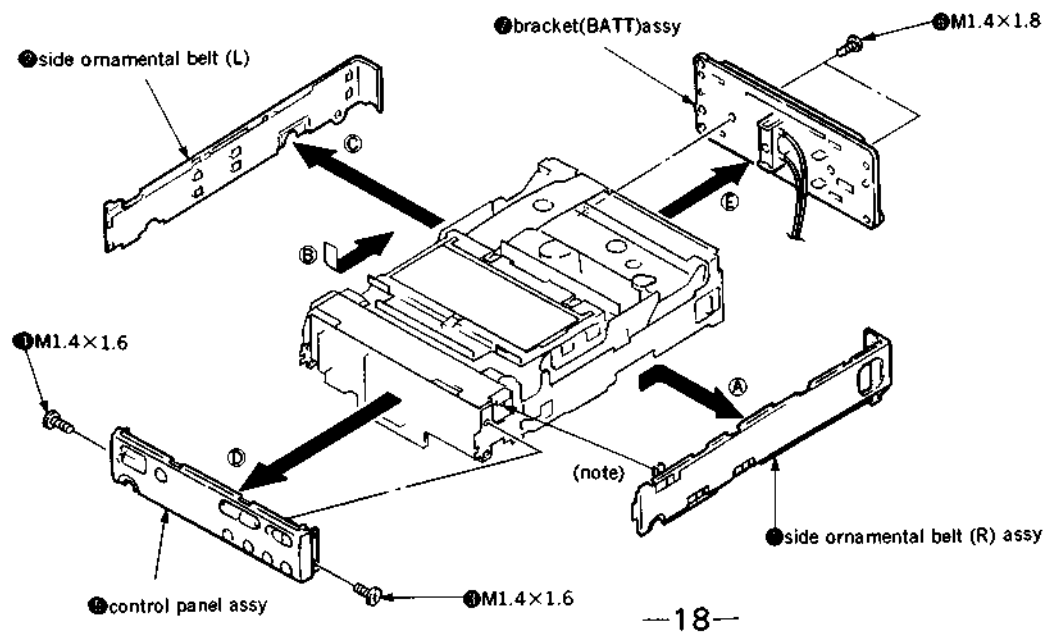


3-4. CABINET(UPPER)ASSY

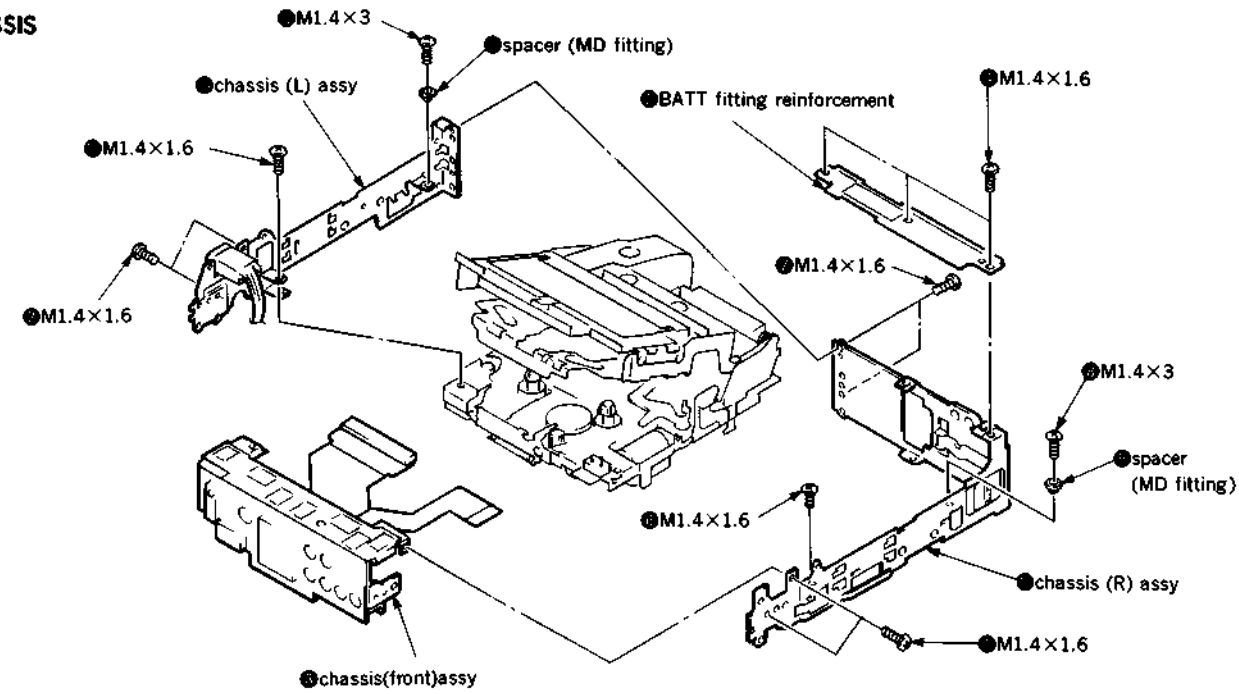


3-5. CONTROL PANEL ASSY

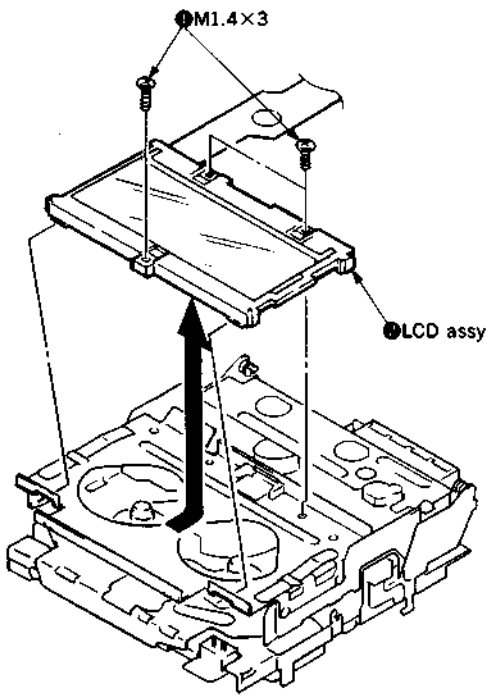
Note: On assembly side ornamental belt (R) assy, take notice of put each switches and knobs position.



3-6. CHASSIS

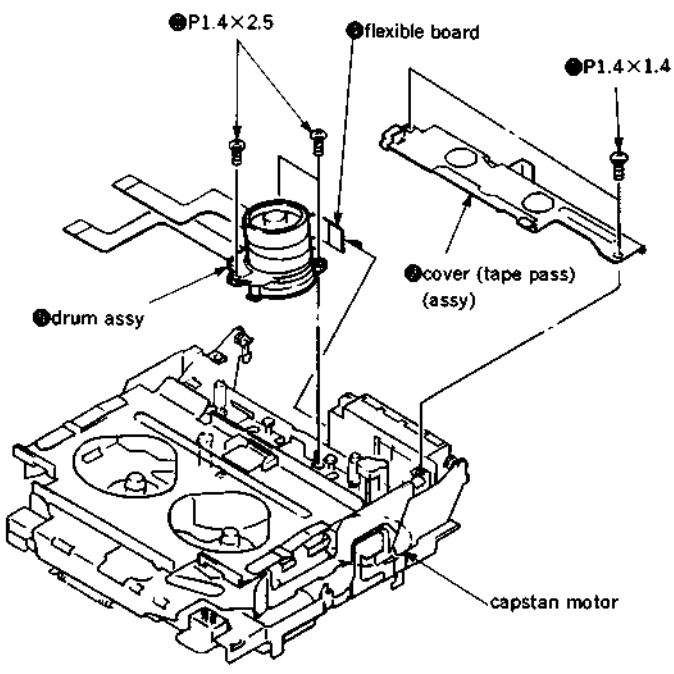


3-7. LCD ASSY



3-8. DRUM ASSY

On load state at MD, turn the capstan motor by finger and unload state.



SECTION 4-1
ADJUSTMENTS

4-1-1. NOTE FOR THE ADJUSTMENTS

1. Perform the adjustment following the procedures.

2. Use the following test tapes.
   TY-7111 (8-909-812-00) : Level
   TY-7915 (8-913-932-00) : Tape pass, SWP
   TY-30B (8-892-358-00) : Blank
   TY-7551 (8-909-814-00) : Music
   Use the following torque meter.
   TW-7131 (8-909-708-71) : FWD, back tension

3. Position of the switch and the control
   LP/SP (S601)·····SP
   HOLD (S617)·····Release side (the opposite side of →)

4. Supply DC 6.0V from the DC IN jack for the power source.

5. When cleaning the drum, supply a little alcohol to the chamois (2-034-697-00) or the four or more piled knit, put it on the drum, and rotate the drum counterclockwise. (twice or three times)

6. When measuring with the main board stand use the translation flexible boards.
   30P translation flexible board (J-8000-025-A)
   12P translation flexible board (J-8000-024-A)
   4P translation flexible board (J-8000-023-A) 2pcs.
   Refer to the "SECTION1 SERVICE NOTES" for the connecting of the translation flexible boards.

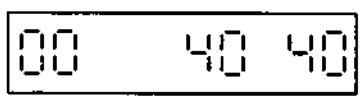
4-1-2. TEST MODE

1. Set the test mode before the adjustments.
   Be sure to release the test mode after the adjustments.

2. Solder the TEST MODE tap on the main board.

3. Turn ON the POWER button.
   The back light of the LCD lights and the initial display appears as follows.
   The mechanism section is loaded and the segment in the command part of the LCD display flashes. (It keeps on flashing.)

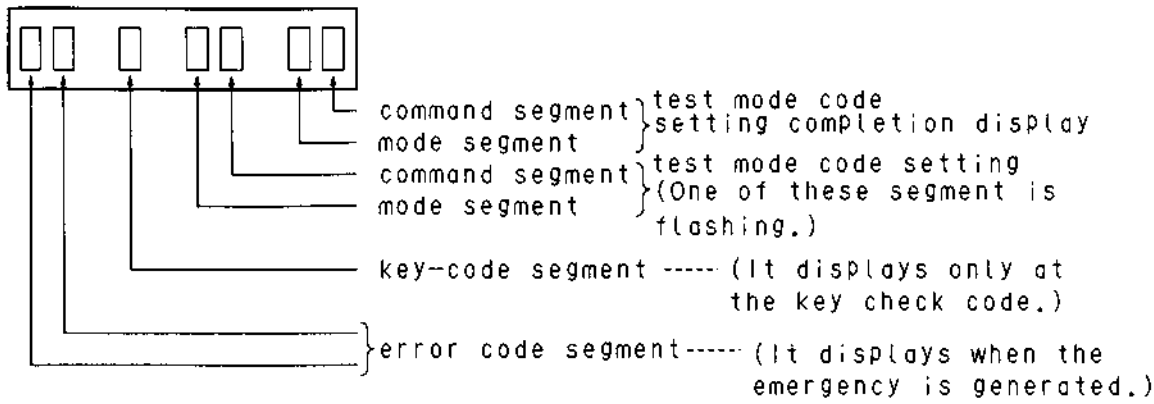
   Initial display of the LCD (When the POWER button is turned ON, the following display is always appeared.)



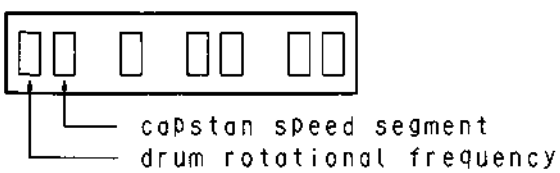
4. LCD display and display selecting

Every time the LIGHT button is pressed, the test mode display and the counter mode display is alternately selected.

● Test mode display



● Counter mode display



capstan speed

0: x0.5
1: x1
2: x1.5
3: x3
4: x25
5: x16

drum rotational frequency

1:1000rpm
2:2000rpm

5. Setting of the test mode code

a. Every time the COUNTER MODE button is pressed, the flashing of the segment position of the mode and the command is selected.

b. Every time the COUNTER RESET button is pressed, the value of the segment is changed.

at the mode segment → 0 → 1 → 2 → 3 → 4

at the command segment → 0 → 1 → 2

c. The test mode code is set with pressing the ENTER button. (The segment is flashing during the setting even after the setting is completed.)

6. Mechanism section operation method on setting of the test mode code

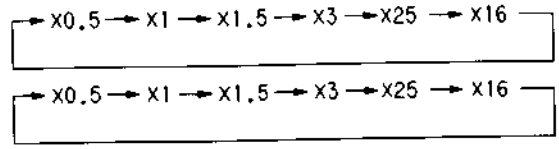
• 40mode····· Mechanism only check mode (Regardless of the attachment of the tape)

a. Press the START ID MODE button·····It is unloaded.

b. Press the COUNTER RESET button·····It is loaded.

c. Press the AMS ▶▶| button ------ (FWD mode)

d. Press the AMS |◀◀ button ------ (REV mode)

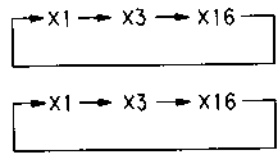


(Note) Perform the procedures of a and b when the counter is displayed.
Perform the procedures of c and d when the test mode or counter mode is displayed.

• 42mode····· Mechanism adjustment mode (When the tape is attached)

a. Press the AMS ▶▶| button ---- (FWD mode)

b. Press the AMS |◀◀ button ---- (REV mode)



7. Explanation of test mode code

00·····Normal mode

The condition in this mode is the same as the one when the TEST MODE tap is not soldered. When setting the test mode again from this mode, turn OFF the and then turn ON POWER again.

10·····LCD and KEY test mode (automatic)

When the code is input and the ENTER button is pressed, the automatic walking mode is set. When the sequence is completed, the test mode is displayed. Lighting time of each segment is half second.

11·····LCD and KEY test mode (manual)

When the code is input and the ENTER button is pressed, the manual walking mode is set, And every time the COUNTER MODE button is pressed, the display of the segment is changed. When the sequence is completed, the test mode is displayed.

12·····KEY check mode

When the code is input and the ENTER button is pressed, the KEY check mode is set. When each buttons is pressed, the code according to the each buttons is displayed in the key code segment.

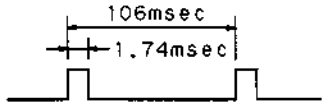
Button Name	Code No.
REW/REVIEW ◀◀	1
STOP ■	2
PLAY ▶	3
FF/CUE ▶▶	4
REC ●	5
PAUSE ❚❚	6
AMS(REW search) |◀◀	7

Button Name	Code No.
AMS(FF search) ▶▶|	8
COUNTER MODE	9
COUNTER RESET	A
START ID MODE	b
ENTER	C
LIGHT	d

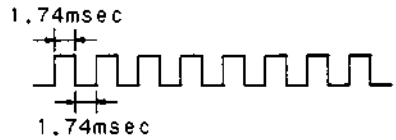
When finishing this mode, set the other mode and press the ENTER button.

30·····End sensor check mode (FWD mode)
This mode is not attached the test tape.

31·····End sensor check mode (FF/REW mode)
This mode is not attached the test tape.
When the START ID button is pressed after the code is input and the ENTER button is pressed, the driving of the end sensor LED (D1001) starts.



—The LED driving waveform at FWD—



—The LED driving waveform at FF/REW—

40·····Mechanism only check mode
This mode can be regardless of the attachment of the tape.
When the tape is not attached at FF/REW and at ×25FWD/×25REW, the regulated voltage drive is operated, while the servo is operated when the tape is attached.

41·····Regulated voltage drive mode
In this mode, the drum and the capstan is operated with the regulated voltage with pressing the PLAY button.

42·····Mechanism adjustment mode
This mode is effective only when the tape is attached. The speed of the drum and the capstan is displayed when the counter mode is displayed.

8. Error code list

Code No.	Block	Contents
00		No error (No emergency)
01—09	Control motor (Encoder)	The position can not be detected. *
10	Mechanism deck	The loading is not completed.
11		The unloading is not completed.
12		Not ejected.
13		End sensor is no good. (T reel side)
14		End sensor is no good. (S reel side)
15		DEW detection.
20	Drum	The drum motor is not rotated.
21		The drum servo is not locked.
30	Capstan	The capstan motor is not rotated.
31		The speed is not detected.
40	Reel	T reel FG is not detected.
41		S reel FG is not detected.
42		The measurement is not completed.

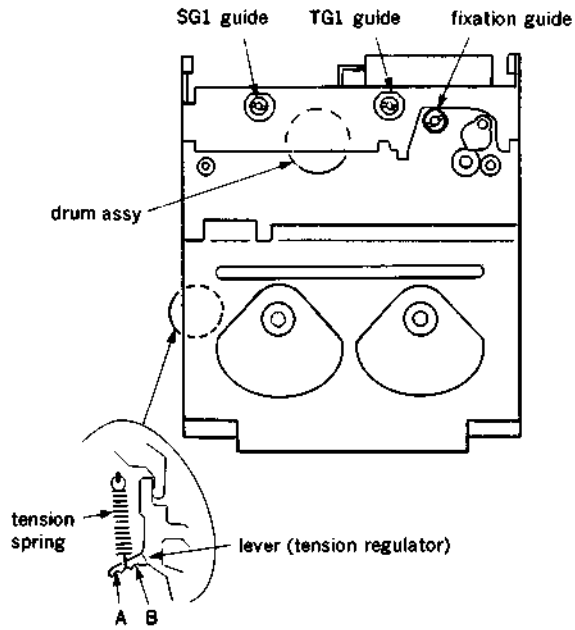
* When the position of the rotary encoder is not detected, the number with "0" before the position number corresponded with the position is displayed as the error code. (Refer to appears as follows)

EJECT	:01	Load	:04	FF	:07
Unload	:02	FWD	:05	STOP	:08
CASIN	:03	REV	:06	REW	:09

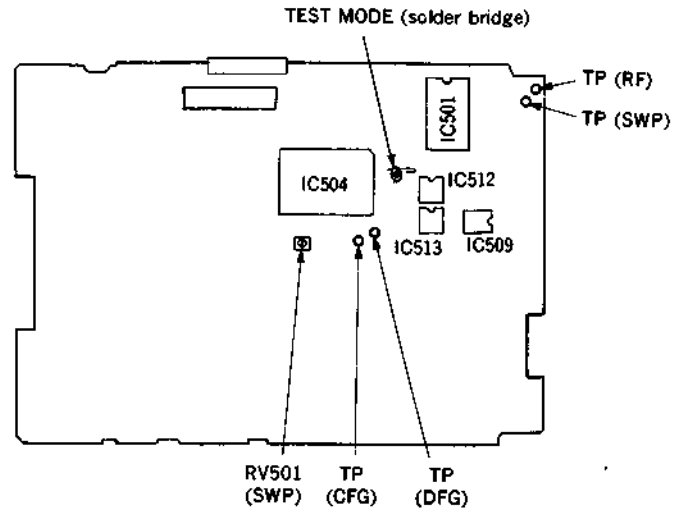
When the emergency is generated in the each test mode, the error code is displayed.

4-1-3. ADJUSTMENT PARTS POSITION

—mechanism section—



—main board—



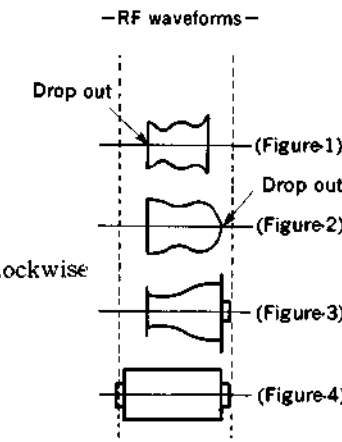
SECTION 4-2
MECHANICAL ADJUSTMENTS

Note) Be sure to perform the adjustment when the drum is replaced.
In case of tape pass check only, confirm the 6 to 13 items.

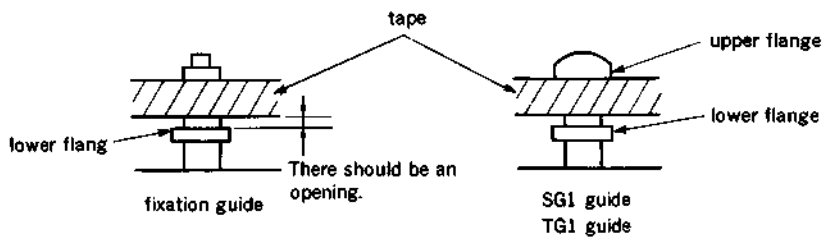
4-2-1. TAPE PASS ADJUSTMENT

1. Set the test mode and attach the test tape TY-7915 and rotate the test tape to center.
2. Set the test mode code 42, and press the AMS ▶▶| button. (×1 FWD)
3. Lower the SG1 guide (clockwise), and drop out the test tape. (Figure-1)
4. Lower the TG1 guide (clockwise) and drop out the test tape (figure-2), and then turn counterclockwise so that the right edge of the RF waveform is a right angle as shown in the figure-3.
5. Turn the SG1 guide counterclockwise so that the left edge of the RF waveform is a right angle as shown in the figure-4.

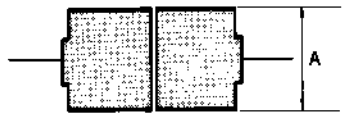
—RF waveforms—



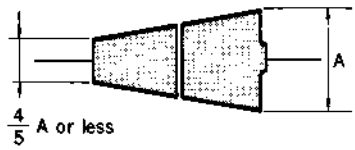
At this time, the lower flange of fixation guide should not contact with the test tape. And the test tape is rotate along the upper flange of SG1 and TG1 guides.



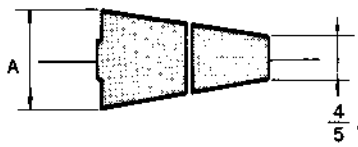
6. Check the RF waveforms.



(Figure-5)



NG (Figure-6) ⇨ Fine adjust the SG1 guide so that waveform of figure-5.



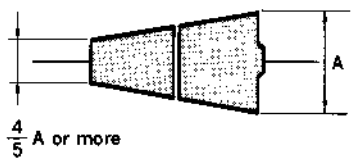
NG (Figure-7) ⇨ Fine adjust the TG1 guide so that waveform of figure-5.

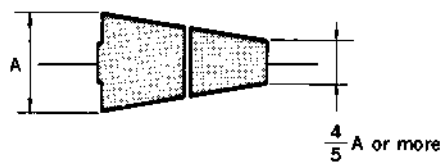
Note) SG1 and TG1 guides is not adiust mutually. Adjustment of one side is completed and later, adjust another guide of one side.

7. Press the LIGHT button, and set the counter mode display.

8. Press the COUNTER RESET button or the START ID MODE button, and offset the tracking. (Until the waveform becomes 1/2A)
   COUNTER RESET button·····positive direction
   START ID MODE button·····negative direction

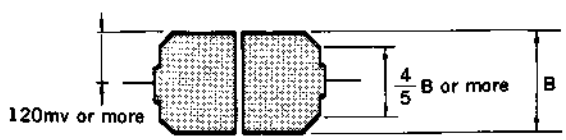
9. Check that the waveform when the tracking is offset. (Positive direction and negative direction)





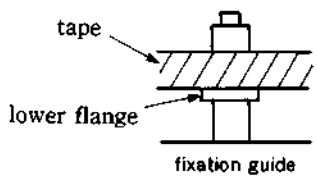
10. Press the COUNTER RESET button or the START ID MODE button, return the tracking offset to 00.

11. a. Press the STOP button and later, press the EJECT button and remove the test tape.
    b. Set the test tape again, and press the AMS ▶▶I button. (×1 forward)
    c. Check the peak value and the width of the change of the RF waveform.



    d. In case of RF waveform is not satisfied to check value, repeat the 6 to 11 iters.

12. Press the AMS ▶▶I button or the I◀◀ button, and set the ×1 forward or the ×1 reverse.
    Adjust the fixation guide so that the lower flange of fixation guide is along the test tape. (No tape curl)



13. Press the FF, REW, CUE and REVIEW each buttons, check the stable the RF waveform.

4-2-2. END SENSOR CHECK

1. Set the test mode.
2. Set the test mode code 31.
3. Check that the display of the error code segment is 00.

4-2-3. TORQUE CHECK

Preparation

Remove the LCD block from the holder (upper).

(×1FWD)

1. Set the test mode.
2. Set the test mode code 40.
3. Attach the torque meter TW-7131.
4. Press the AMS ▶▶I button and set ×1FWD.
5. Check the torque meter.

Take up torque	4.0—7.5g•cm (0.056—0.104oz•inch)
Back tension	3.0—5.5g•cm (0.042—0.076oz•inch)

6. In case of back tension is not satisfied to check value, change the position Aor B for tension spring hung on the lever (tension regulator) and check again.

(×3REV)

1. Perform the same procedures as in the above items from 1 to 3.
2. Press the AMS I◀◀ button and set ×3REV.
3. Check the torque meter.

Take up torque	6.0—11.0g•cm (0.083—0.153oz•inch)
Back tension	6.0—12.0g•cm (0.083—0.167oz•inch)

4-2-4. SPEED CHECK

(Capstan FG)

1. Connect the frequecy counter with the TP CFG.
2. Set the test mode.
3. Set the test mode code 40.
4. Attach the test tape TY-30B.
5. Press the AMS ▶▶I button, and read the frequency at ×0.5 FWD, ×1FWD, ×1.5FWD, ×3FWD, and ×16FWD.

Mode	Frequency
×0.5FWD	296Hz±5Hz
×1FWD	592Hz±5Hz
×1.5FWD	888Hz±3Hz
×3FWD	1776Hz±3Hz
×16FWD	9471Hz±7Hz

(Drum FG)

1. Connect the frequency counter with the TP DFG.
2. Perform the same procedures as in the above items from 2 to 4.
3. Press the AMS ▶▶I button, and read the frequency at ×0.5FWD and ×1FWD.

Mode	Frequency
×0.5FWD	400Hz±1Hz
×1FWD	800Hz±1Hz

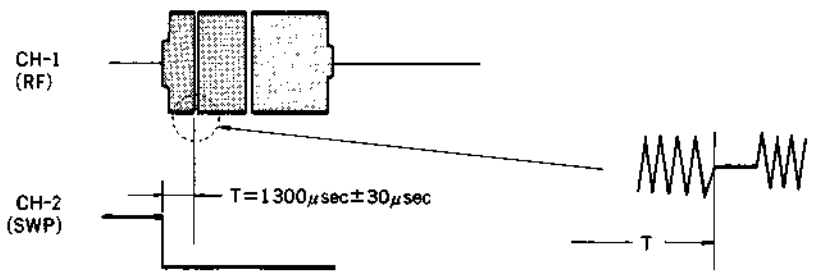
SECTION 4-3
ELECTRICAL ADJUSTMENTS

Note) Be sure to perform the adjustment when the drum is replaced.

4-3-1. SWP (Switching Pulse) ADJUSTMENT

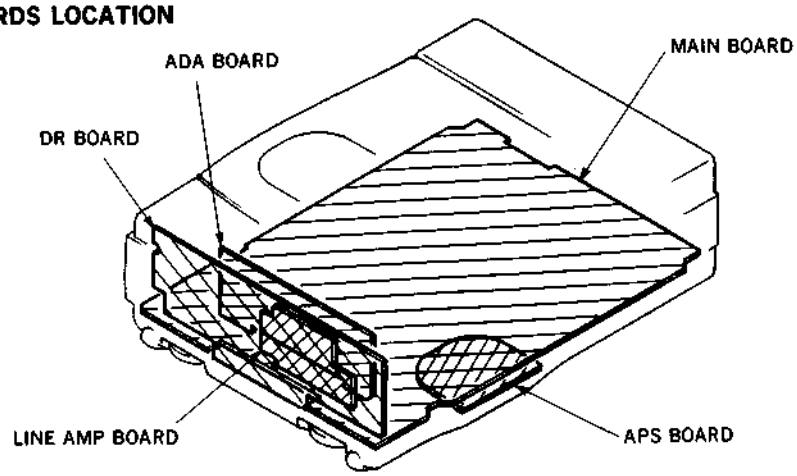
Preparation) Oscilloscope CH-1 : AC 100mV/DIV
CH-2 : DC 2V/DIV
TRIG : CH-2

1. Connect the CH-1 of the oscilloscope with the TP RF and connect the CH-2 with the TP SWP.
2. Set the test mode.
3. Set the test mode code 42.
4. Attach the test tape TY-7915.
5. Press the AMS ▶▶I button and set ×1 FWD.
6. Adjust the period (T) between the SWP waveform and the RF waveform with the RV501.



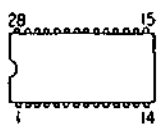
SECTION 5
DIAGRAMS

5-1. CIRCUIT BOARDS LOCATION



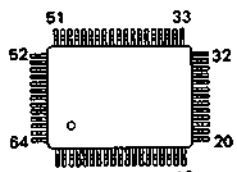
5-2. SEMICONDUCTOR LEAD LAYOUTS

CS5326-KP



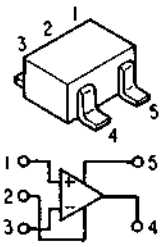
(TOP VIEW)

CXP5024H-114Q

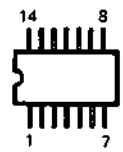


(TOPVIEW)

NJM2107F

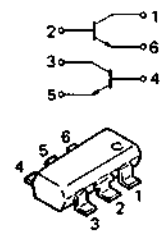


SN74LS624NS

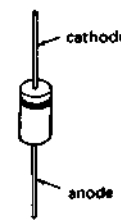


(TOP VIEW)

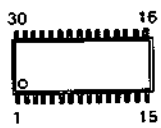
XN6501



1SS106

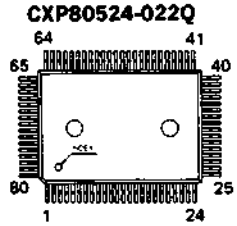


CXA1127AM
CXA8006M



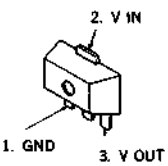
(TOP VIEW)

CXP80524-022Q

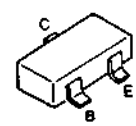


marking side view

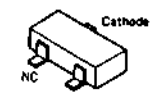
RH5RA51AA



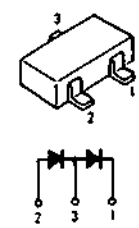
DTA114YK
DTC114EK
DTC144EK
2SB624-BV345
2SC2712
2SD596



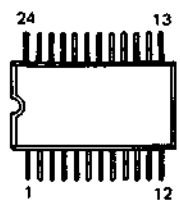
DSD010



1SS226

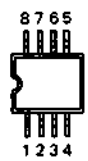


CXA1418N



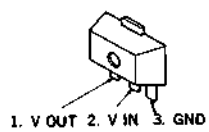
(TOP VIEW)

LM2903M
LM2904M
MB3854
RC3414M
RC4560M
TL431CPS

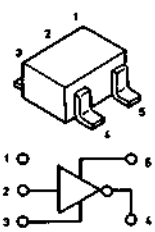


(TOP VIEW)

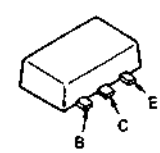
S-8054HN-CB



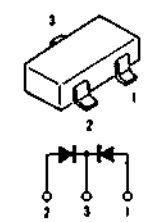
SC7SU04FER



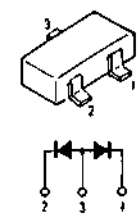
2SD999-CLCK



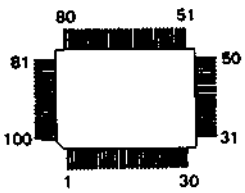
MA152WK



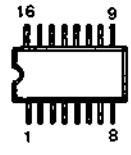
1S2836



CXD2601AQ

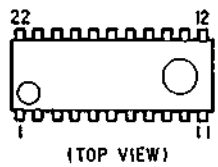


MSM6338MS-K



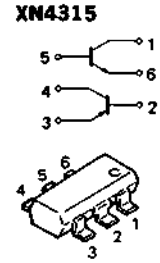
(TOP VIEW)

SM5840BS

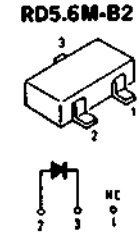


(TOP VIEW)

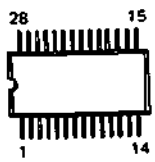
XN4315



RD5.6M-B2

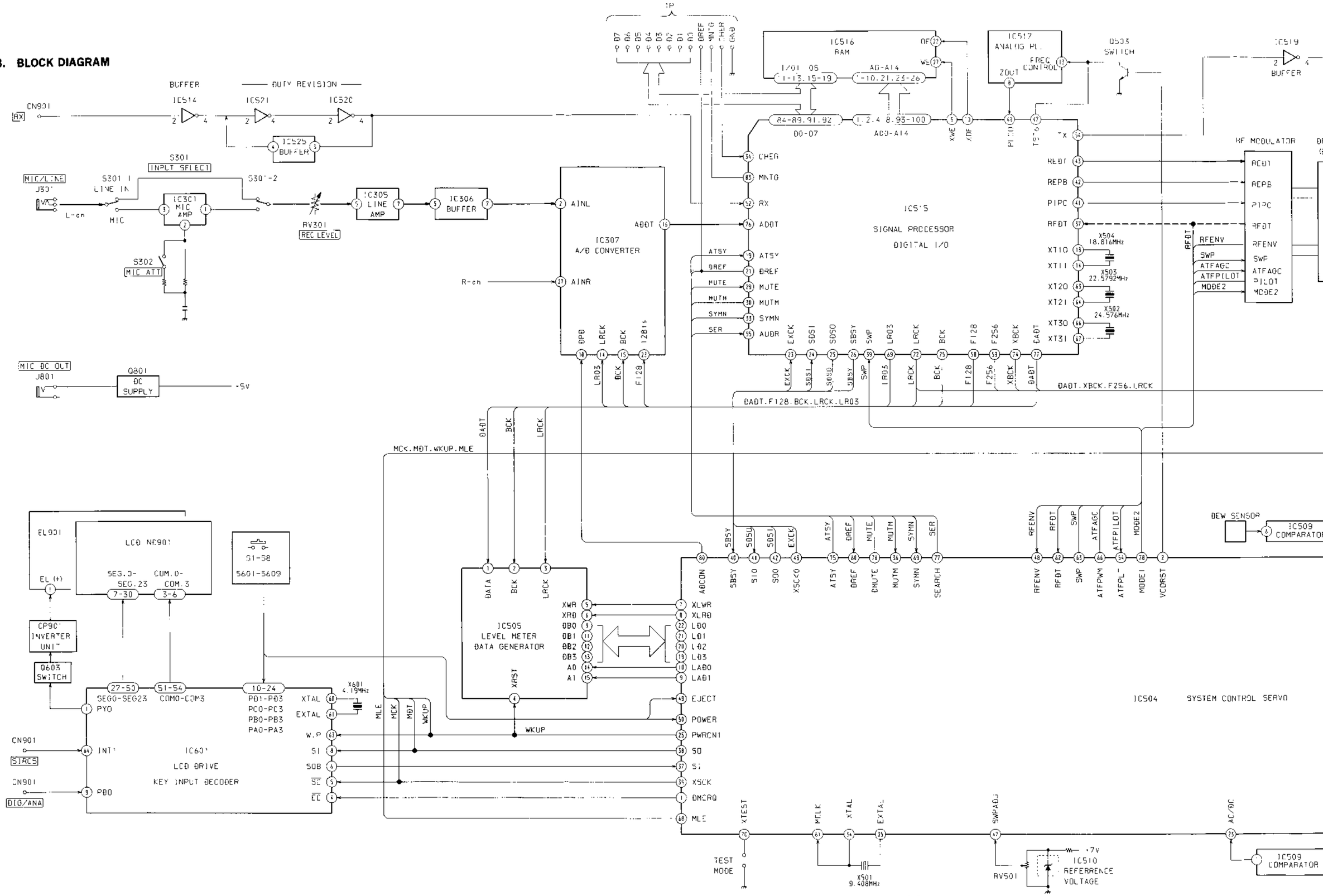


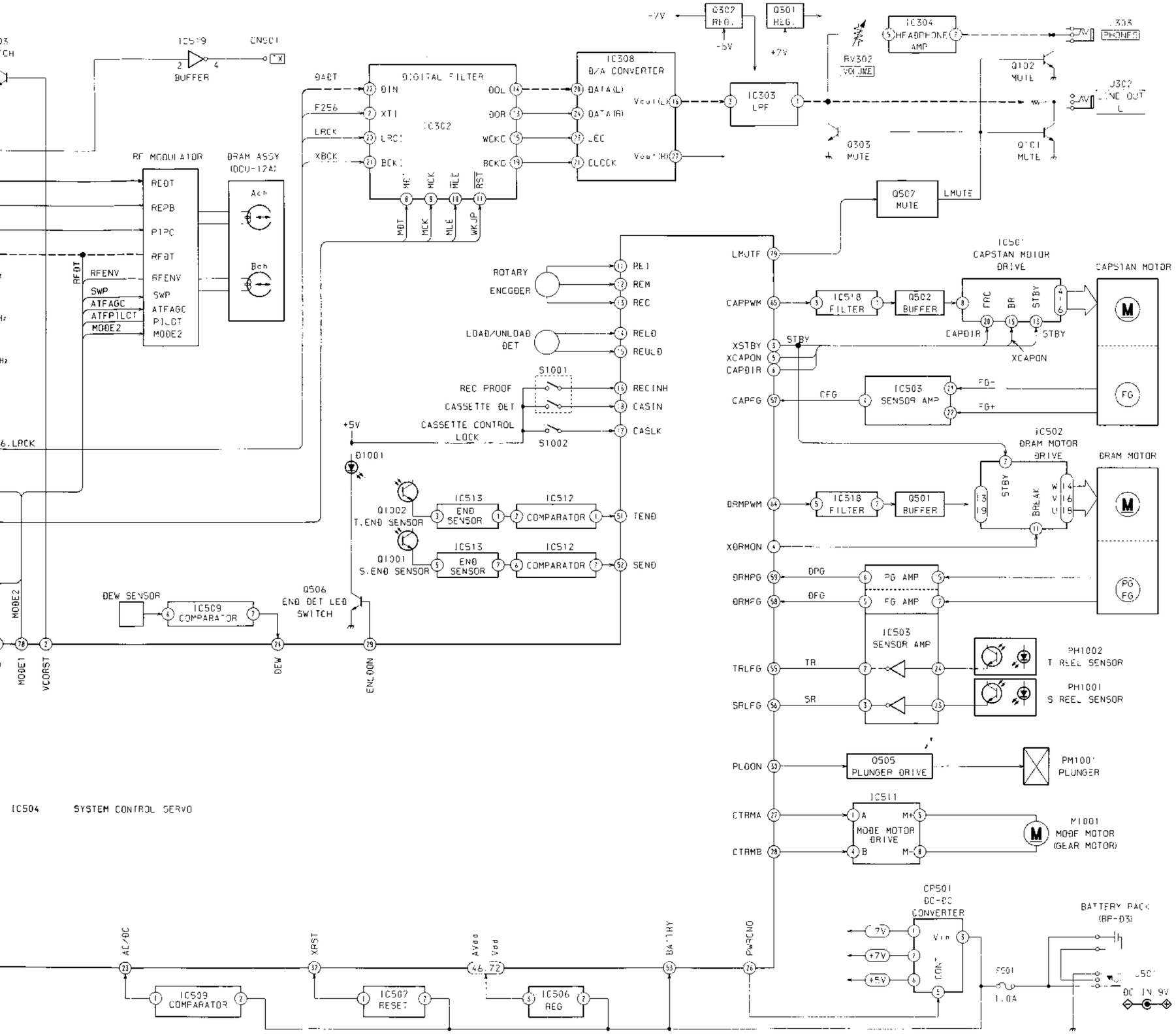
CXK58257M-12L
PCM1700U-J



(TOP VIEW)

5-3. BLOCK DIAGRAM



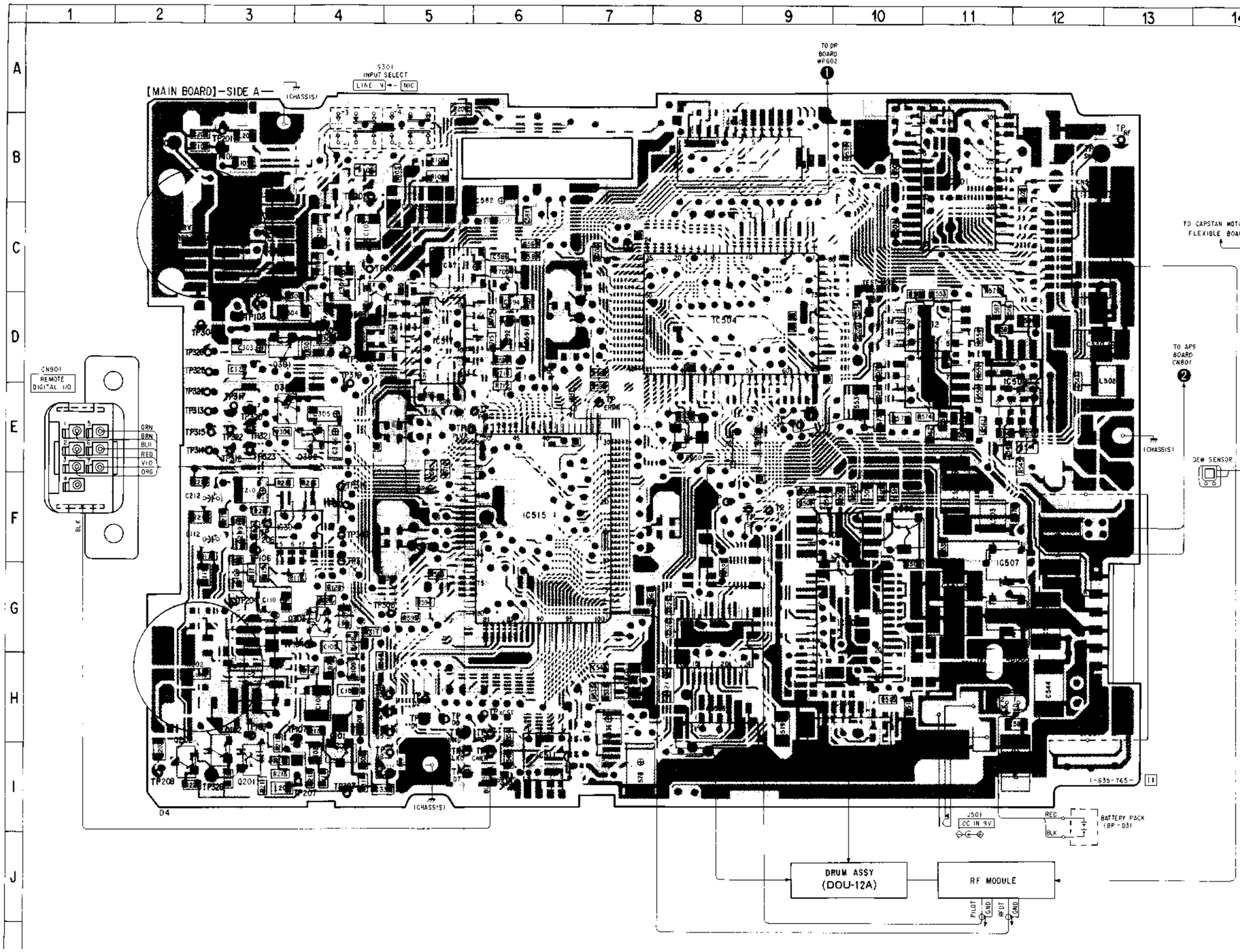

IC519
BUFFER
ENSCI
RF MODULATOR
DRAM ASSY (DCU-17A)
REOT
REPB
PIPC
RFOT
RFENV
SWP
ATFAGC
ATFPILOT
MODE2
RFOT
Acn
Bch
MODE2
MODE1
VCORST
DIGITAL FILTER
IC302
DIN
XTI
LRCI
BCKI
DOL
DOR
WCKO
BCKO
MDT
MCK
MLE
RST
IC308
D/A CONVERTER
DATA(L)
DATA(R)
LRC
CLOCK
DABT
F256
LRCK
XBCK
MDT
MCK
MLE
WKUP
-7V
-5V
+7V
Q302 REG.
Q501 REG.
IC303 LPF
RV302 VOLUME
IC304 HEADPHONE AMP
J303 PHONES
Q102 MUTE
Q303 MUTE
Q101 MUTE
J302 LINE OUT L
Q507 MUTE
LMUTE
LMUTF
ROTARY ENCODER
REI
REM
REC
LOAD/UNLOAD DET
RELD
REULD
S1001
REC PROOF
CASSETTE DET
CASSETTE CONTROL LOCK
S1002
RECINH
CASIN
CASLK
+5V
D1001
Q1002 T.END SENSOR
Q1001 S.END SENSOR
IC513 END SENSOR
IC512 COMPARATOR
TEND
SEND
DEW SENSOR
IC509 COMPARATOR
Q506 END DET LED SWITCH
DEW
ENDON
IC504 SYSTEM CONTROL SERVO
IC501 CAPSTAN MOTOR DRIVE
CAPPWM
IC518 FILTER
Q502 BUFFER
FRC
BR
STBY
CAPDIR
XCAPON
CAPSTAN MOTOR
M
FG
XSTBY
XCAPON
CAPDIR
CAPFG
CFG
IC503 SENSOR AMP
FG-
FG+
IC502 DRAM MOTOR DRIVE
DRAM MOTOR
DRMPWM
Q501 BUFFER
BREAK
XDRMON
DRMPG
DRMFG
DPG
DFG
PG AMP
FG AMP
IC503 SENSOR AMP
TRLFG
SRLFG
TR
SR
PH1002 T REEL SENSOR
PH1001 S REEL SENSOR
PLGON
Q505 PLUNGER DRIVE
PM1001 PLUNGER
IC511 MODE MOTOR DRIVE
CTRMA
CTRMB
M1001 MODE MOTOR (GEAR MOTOR)
CP501 DC-DC CONVERTER
BATTERY PACK (BP-D3)
F501 1.0A
J501 DC IN 9V
AC/DC
XRST
AVdd
Vdd
BATTRY
PWRCNO
IC509 COMPARATOR
IC507 RESET
IC506 REG

5-4. PRINTED WIRING BOARDS —SYSTEM CONTROL/SERVO SECTION

• Refer to page 28 for Semiconductor Lead Layouts.

• Semiconductor Location —System control/servo section—

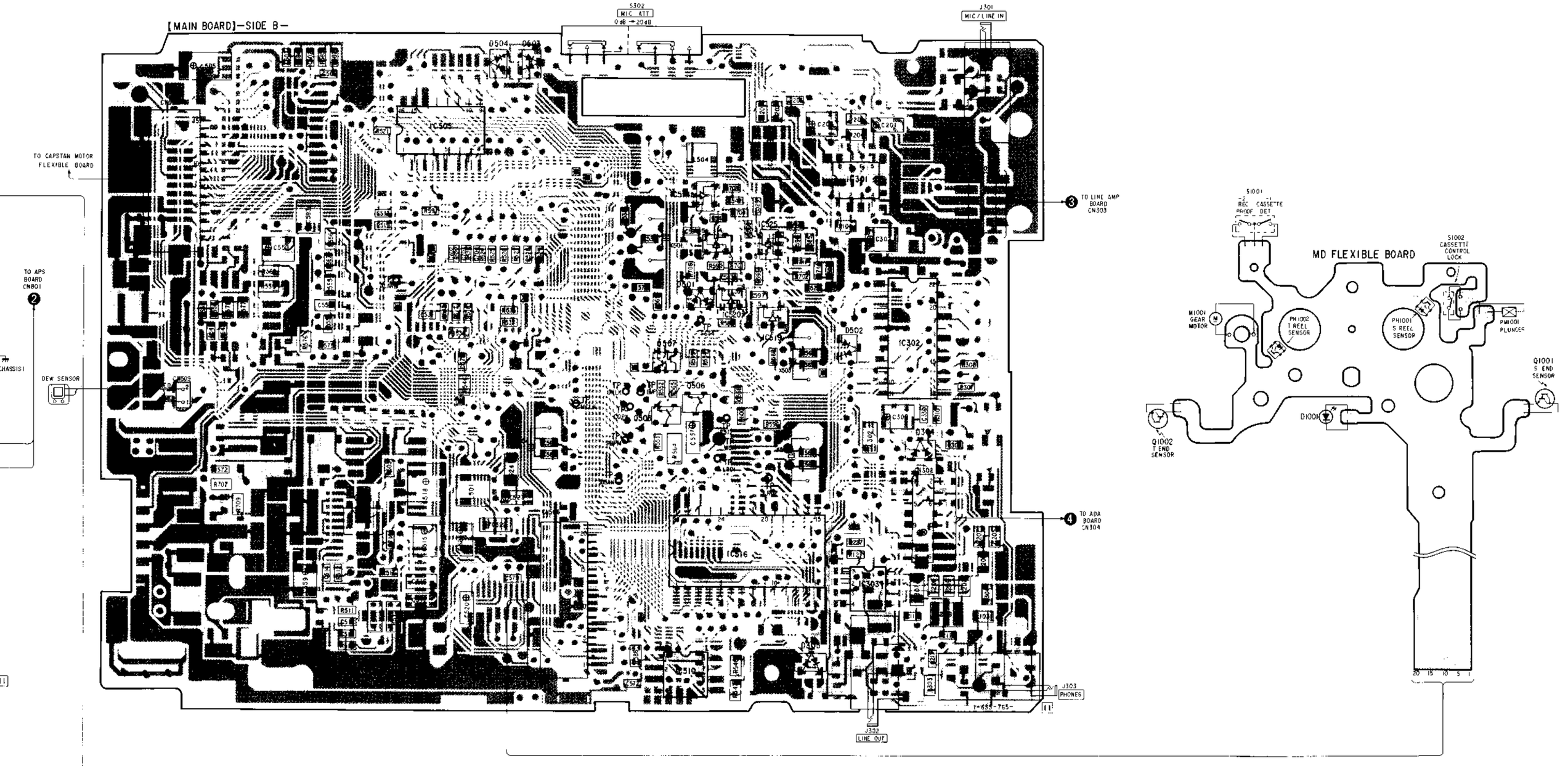
Ref. No.	Location
D301	E-3
D304	F-24
D305	I-23
D501	D-21
D502	E-23
D503	B-19
D504	B-19
D505	G-12
IC301	C-23
IC302	E-24
IC303	H-23
IC304	F-3
IC501	B-11
IC502	G-10
IC503	G-8
IC504	D-8
IC505	B-18
IC506	G-11
IC507	G-11
IC509	D-11
IC510	I-21
IC511	I-6
IC512	D-11
IC513	D-11
IC514	C-21
IC515	F-6
IC516	G-22
IC517	D-5
IC518	F-10
IC519	E-22
IC520	D-21
IC521	D-21
IC525	D-22
Q101	I-4
Q102	I-3
Q201	I-3
Q202	I-2
Q301	D-3
Q302	E-4
Q303	G-4
Q501	G-17
Q502	F-10
Q503	D-4
Q505	F-21
Q506	F-21
Q507	E-21
Q1001	E-31
Q1002	F-27



Note:

- ○—— : parts extracted from the component side.
- —— : parts extracted from the conductor side.
- ■ : parts mounted on the conductor side.
- ● : Through hole.
- ▒ : Pattern on the side which is seen.
- : Pattern of the rear side.
- ⊗ : Through hole with 2layer.
- ⊠ : Through hole with 3layer.

13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31



5-5. SCHEMATIC DIAGRAM —SYSTEM CONTROL/SERVO SECTION

- Refer to page 48 for IC Block Diagrams.
- Refer to page 49 for Waveforms.

【MAIN BOARD(1/2)】

DRUM ASSY (DDU-12A)

RF MODULE

CN504

CN501

CN502

CN503

TO CAPSTAN MOTOR FLEXIBLE BOARD

TO DRUM MOTOR FLEXIBLE BOARD

TO DRUM MOTOR FLEXIBLE BOARD

IC501 CAPSTAN MOTOR DRIVE

IC501 CXA1127AM

IC502 DRUM MOTOR DRIVE

IC502 CXA8006MP

IC503 PG/FG SENSOR AMP

IC503 CXA1418N

IC518 LM2904M FILTER

IC518 LM2904M FILTER

IC507 S80541HN-DB RESET

IC506 RH5RA51AA REG.

Q502 2SD999-DL BUFFER

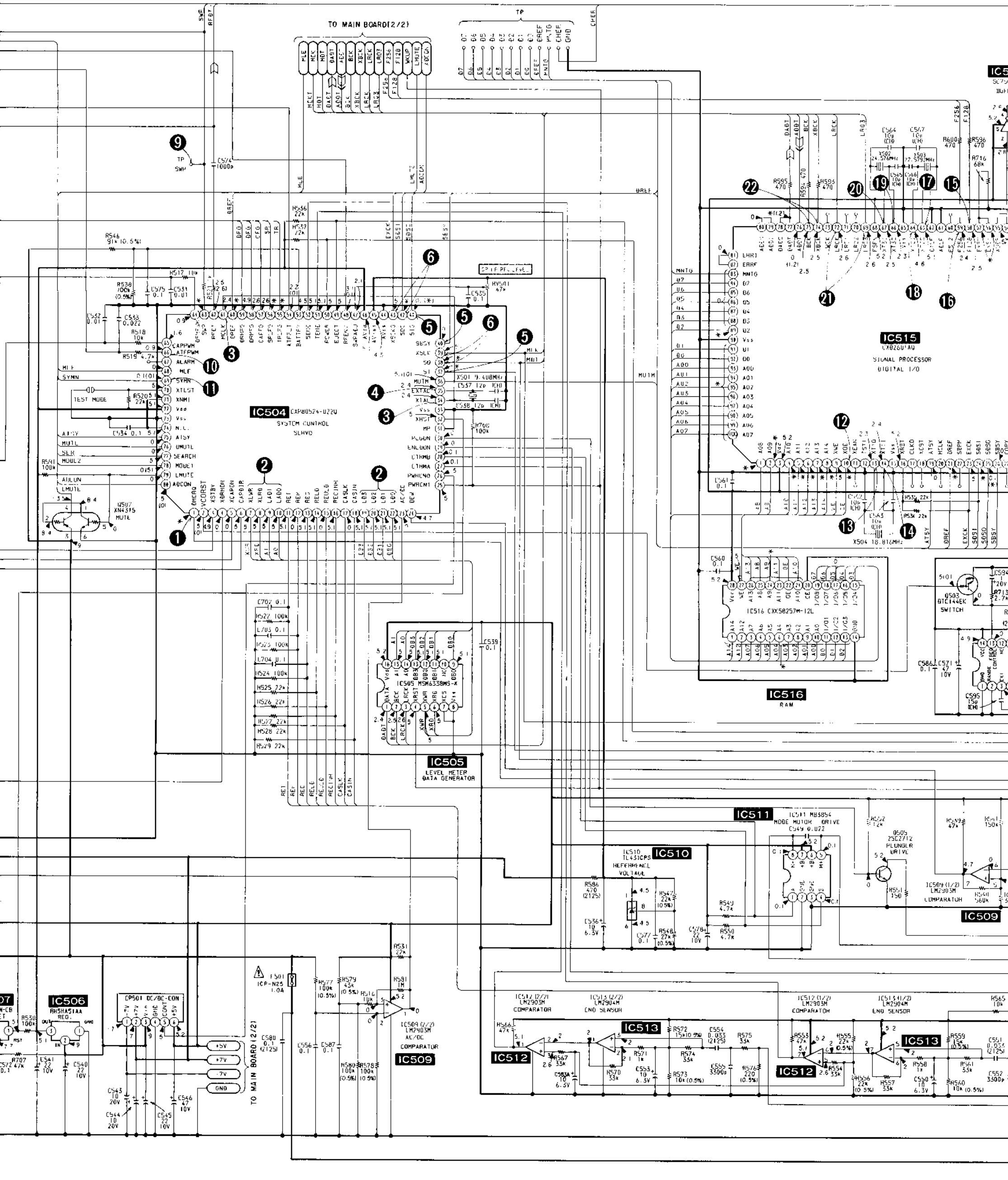
Q501 2SD999-DL BUFFER

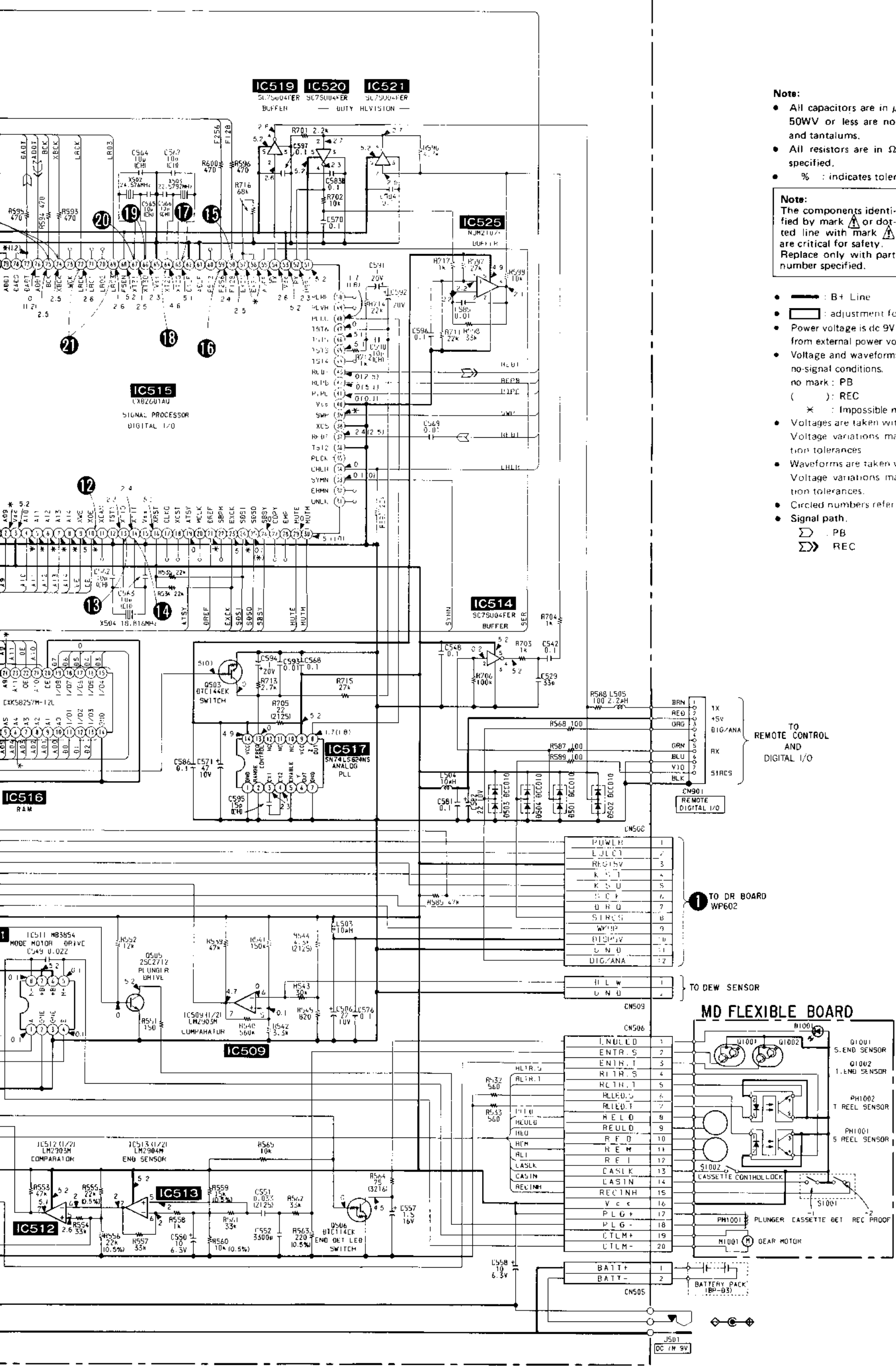
Q507 XN4315 MUTE

Q505 1SS106

TEST MODE

MUTE


TO MAIN BOARD(2/2)
IC504 CXP80524-022Q
SYSTEM CONTROL
SLHVQ
IC515 CXD2601AQ
SIGNAL PROCESSOR
DIGITAL I/O
IC516 CXK58257M-12L
RAM
IC505 MSM6338MS-X
LEVEL METER
DATA GENERATOR
IC506 RH5HA51AA
REG.
IC509 (1/2) LM2903M
COMPARATOR
IC509 (2/2) LM2903M
A/C/DC
COMPARATOR
IC510 TL431CPS
REFERENCE
VOLTAGE
IC511 MB3854
MODE MOTOR DRIVE
IC512 (1/2) LM2903M
COMPARATOR
IC513 (1/2) LM2904M
END SENSOR
IC513 (2/2) LM2904M
END SENSOR
Q501 XN4515
MUTE
Q503 DTC144EK
SWITCH
Q505 2SC2712
PLUNGER
DRIVE
CP501 DC/DC-CON
F501 ICP-N25 1.0A
X501 9.408MHz
X502 24.576MHz
X503 22.5792MHz
X504 18.816MHz
TO MAIN BOARD(1/2)
TP
SWP
TEST MODE
MUTM
SBSY
SBCK
SBDT
SBLT
SBSO
SBSI
SCOR
SFSY
SBCL
SBDO
SBDI
SBSY
SBSO
SBSI
SBCK
SBLT
SCOR
SFSY
SBCL
SBDO
SBDI



Note:

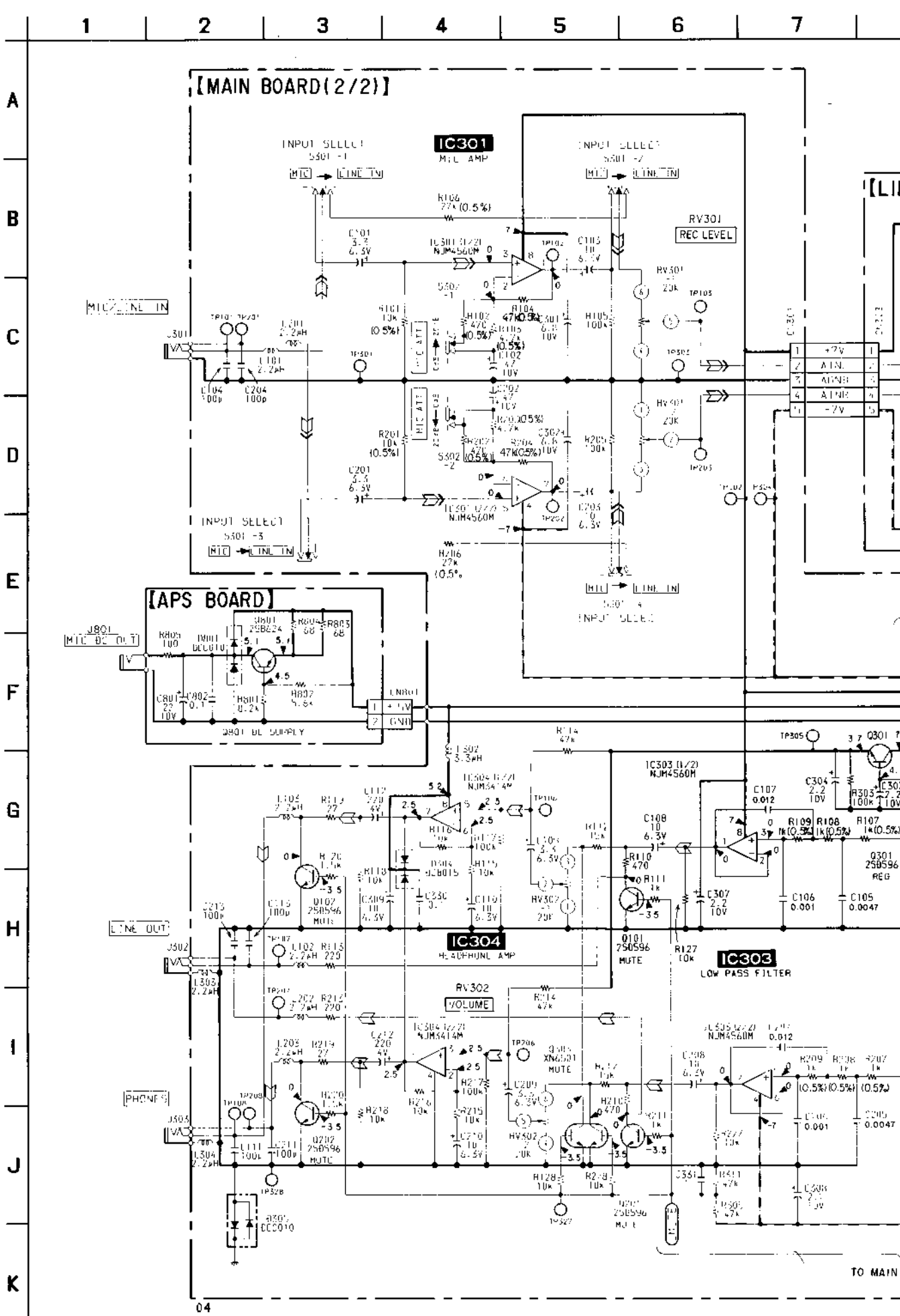
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- % : indicates tolerance.

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

- ▬▬ : B+ Line
- ▭ : adjustment for repair.
- Power voltage is dc 9V and fed with regulated dc power supply from external power voltage jack.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : PB
  ( ) : REC
  ✳ : Impossible measure point
- Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- **Signal path.**
  ▷ : PB
  ▷▷ : REC

5-6. SCHEMATIC DIAGRAM —AUDIO/DISPLAY SECTION

- Refer to page 48 for IC Block Diagrams.
- Refer to page 49 for Waveforms.

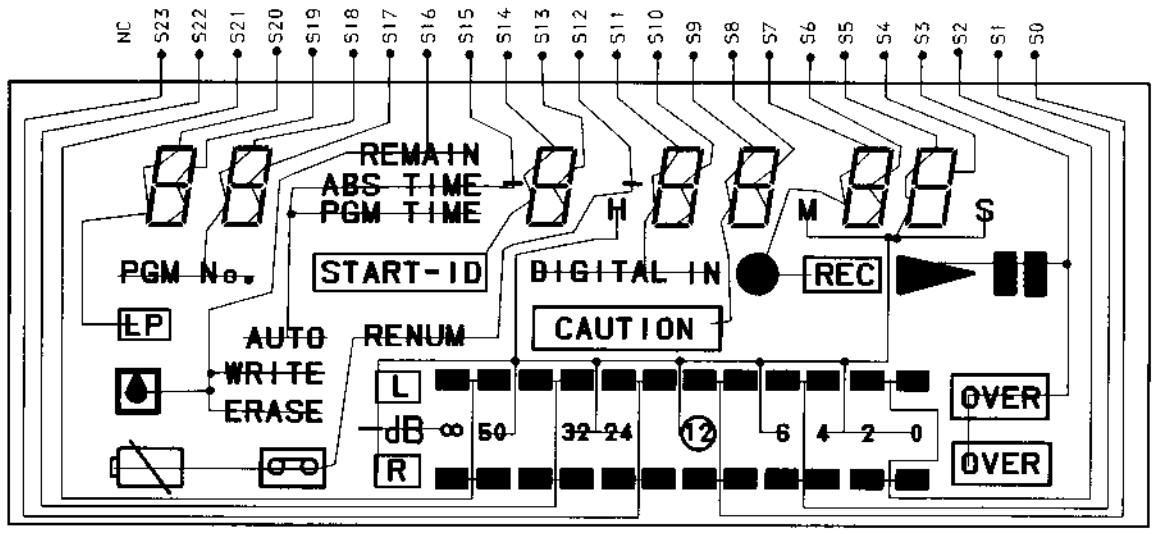


Note:

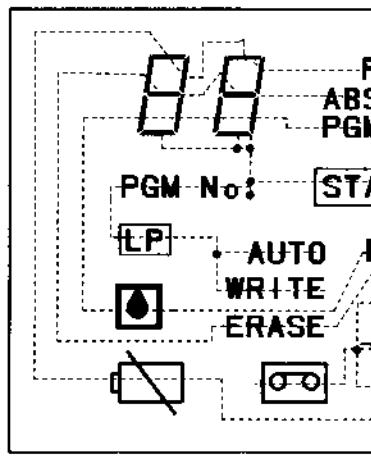
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- ▬▬ : B+ Line
- Power voltage is dc 9V and fed with regulated dc power supply from external power voltage jack.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : PB
  ( ) : REC
  * : Impossible measure point
- Voltages are taken with a VOM (Input Impedance 10MΩ) Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances
- Circled numbers refer to waveforms.
- Signal path.
  ∑ PB
  ∑» REC

• **ND901 Liquid Crystal Display Panel**

(Segment)

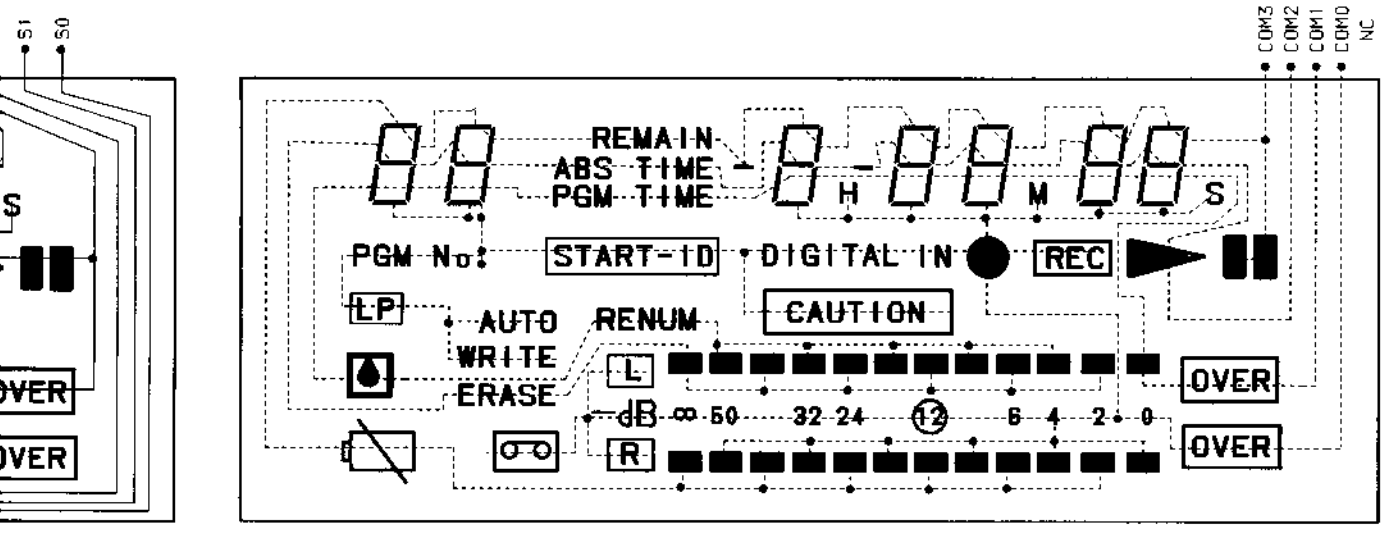


(Common)



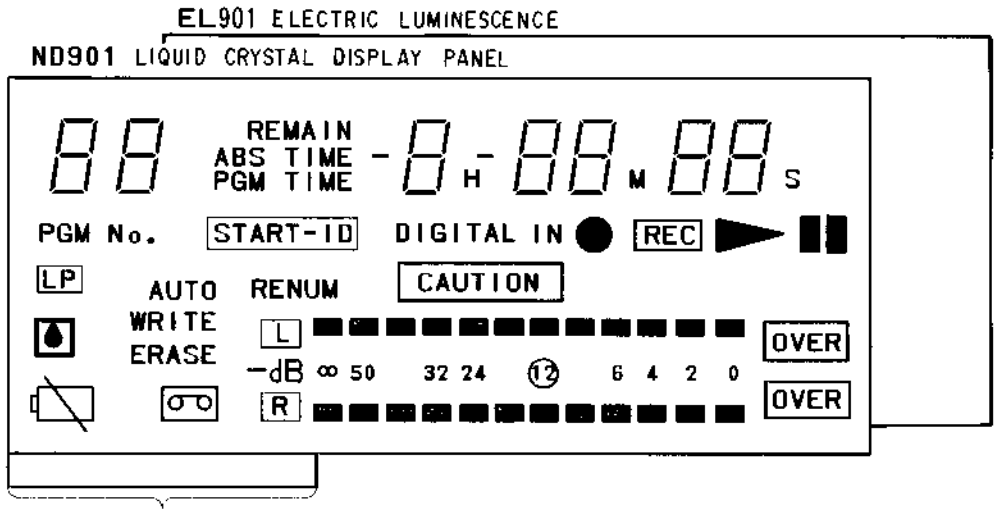
Refer to page 48 for IC Block Diagrams.
Refer to page 49 for Waveforms.

(Common)



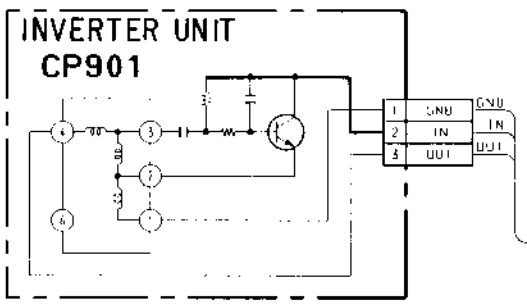
EL901 ELECTRIC LUMINESCENCE

ND901 LIQUID CRYSTAL DISPLAY PANEL

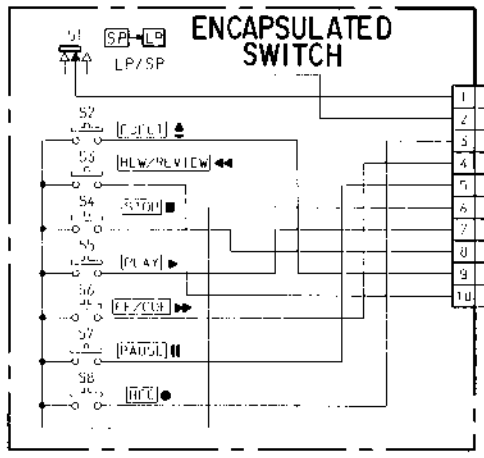


INVERTER UNIT

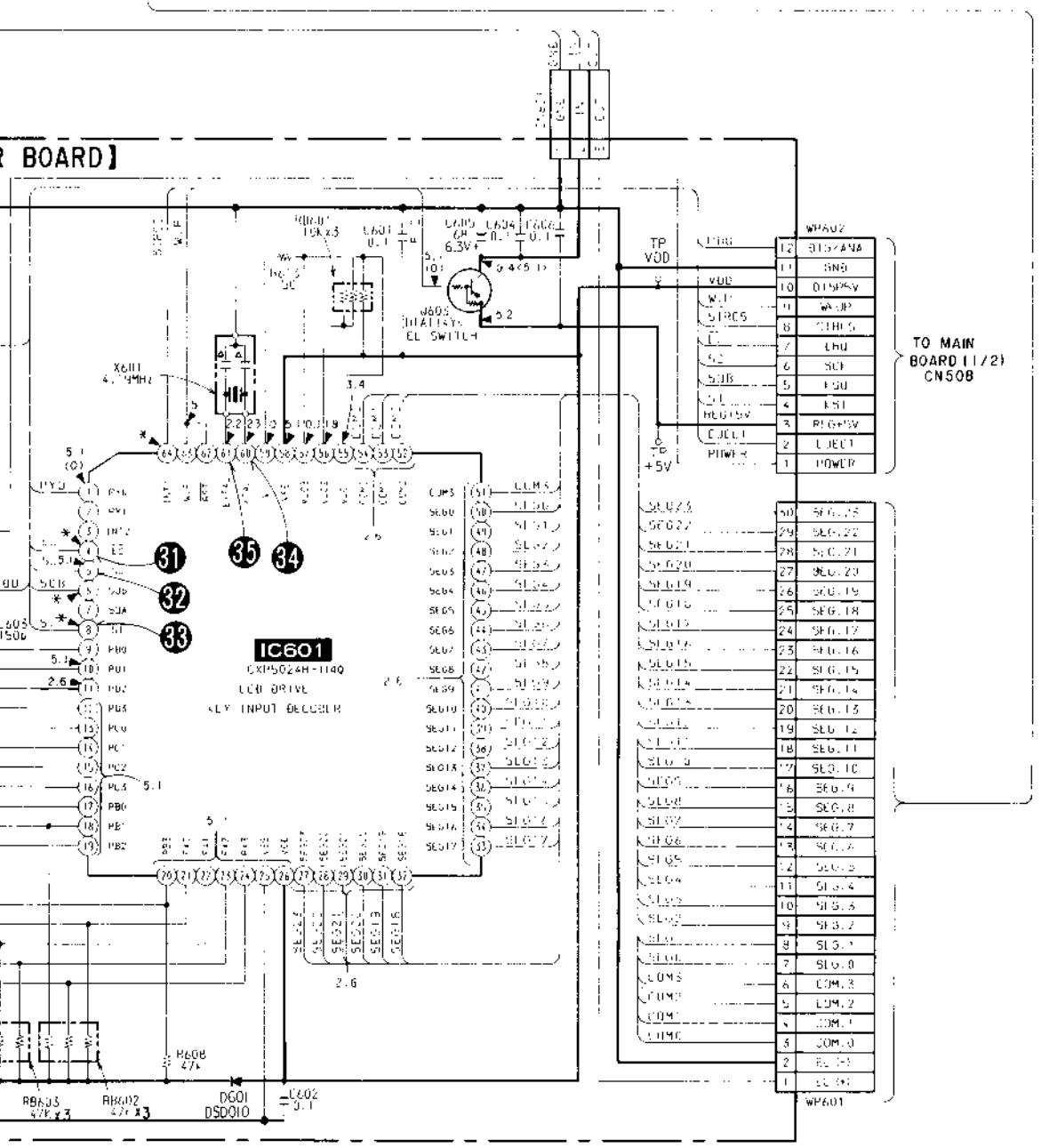
CP901



ENCAPSULATED SWITCH



【DR BOARD】



[LINE AMP BOARD]

TO MAIN BOARD CN301 ❸

[APS BOARD]—SIDE A—

[APS BOARD]—SIDE B—

TO MAIN BOARD ❷

CNB01 WHT BLK

J801 MIC DC OUT

[ADA BOARD]—SIDE A—

TO MAIN BOARD CN302 ❹

[ADA BOARD]—SIDE B—

EL901 ELECTRIC LUMINESCENCE

ND901 LIQUID CRYSTAL DISPLAY PANEL

S1 LP/SP

S8 REC

S7 PAUSE

S6 FF/CUE

S5 PLAY

S4 STOP

S3 REW/REVIEW

S2 EJECT

ENCAPSULATED SWITCH

[DR BOARD]—SIDE A—

TO MAIN BOARD CN508 ❶

S609 HOLD ON OFF

S604

S603

[DR BOARD]—SIDE B—

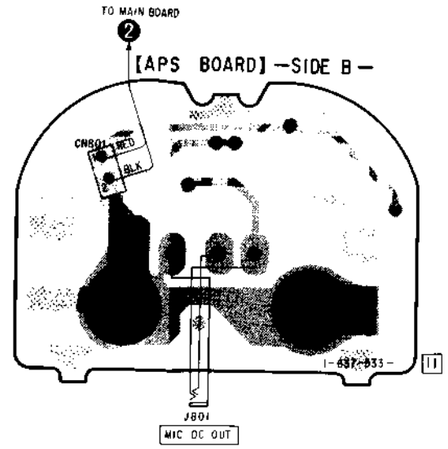
S602 LIGHT

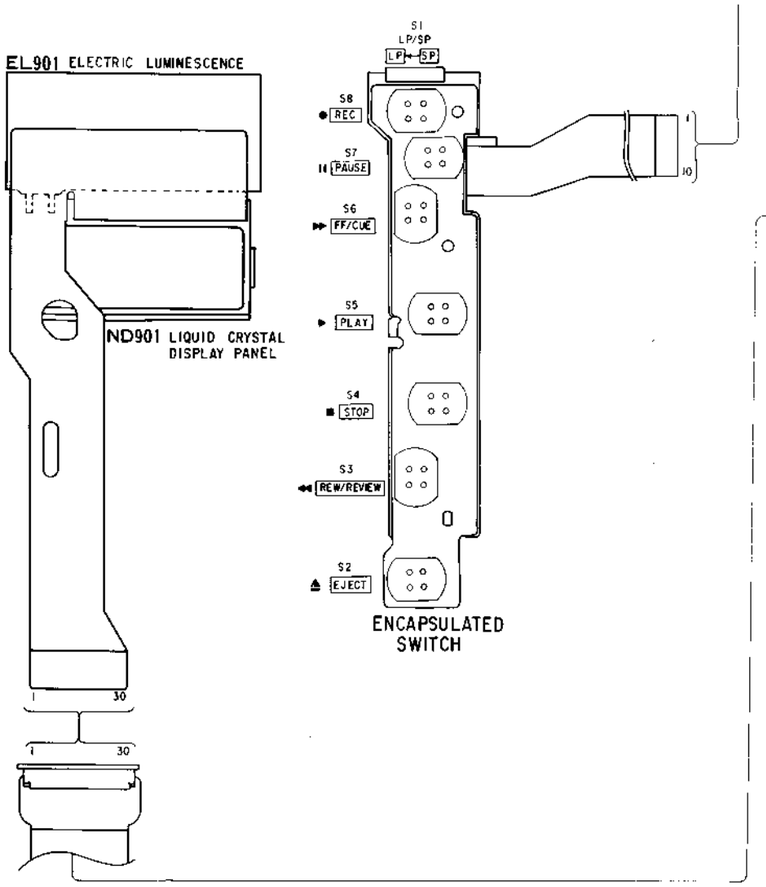
S601 POWER

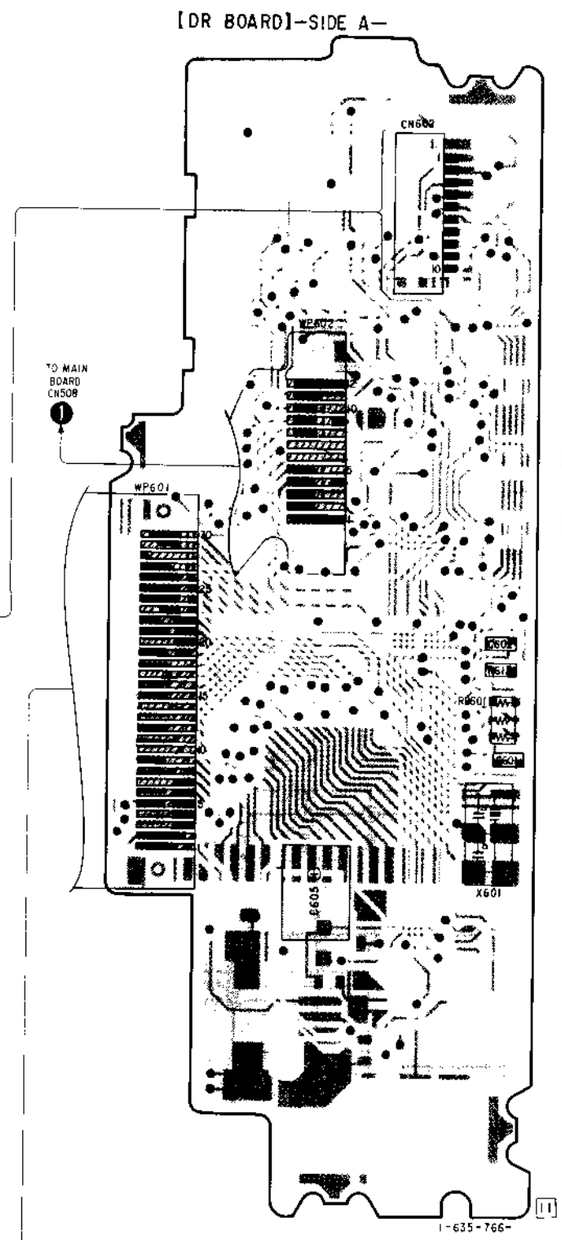
OFF→ON

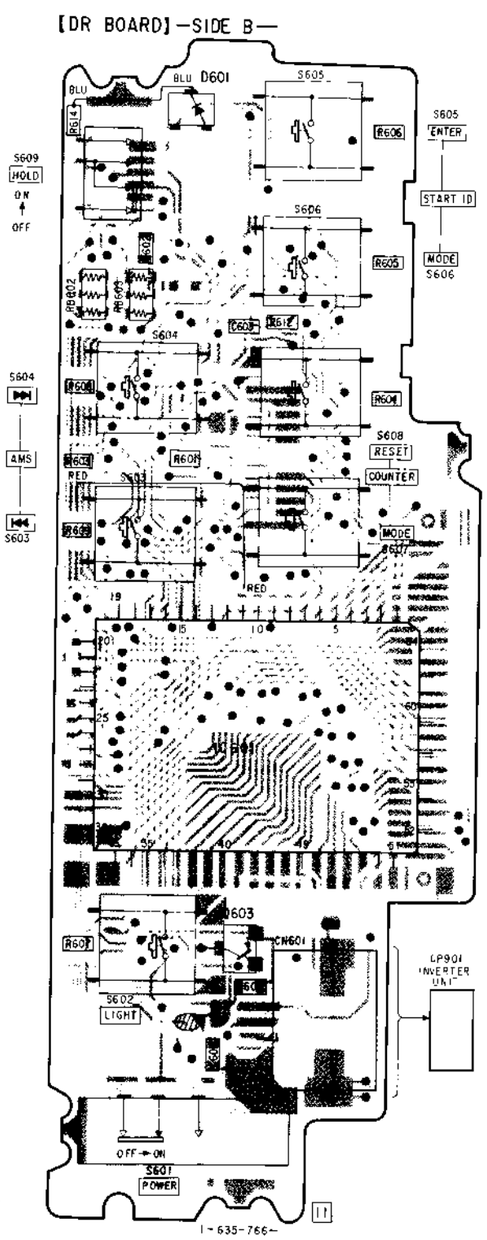
tor Lead Layouts.

7	8	9	10	11	12	13	14	15	16	17	18	19









• Semiconductor Location
—Audio/display section—

Ref. No.	Location
D302	F-5
D303	F-5
D601	B-17
D801	B-5
IC305	B-2
IC306	C-2
IC307	G-5
IC308	I-5
IC601	F-17
Q603	G-17
Q801	B-5

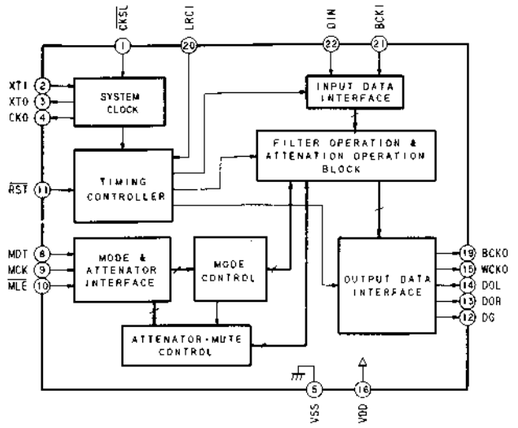
Note:

- ○—— : parts extracted from the component side.
- —— : parts extracted from the conductor side.
- ● : Through hole.
- : Pattern on the side which is seen.
- Pattern of the rear side

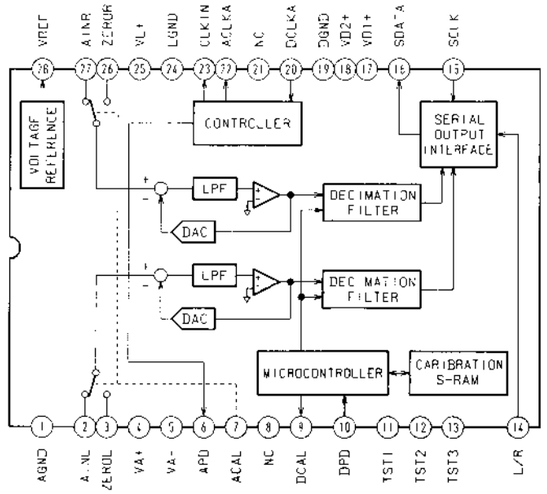
TCD-D3 TCD-D3

• IC Block Diagrams

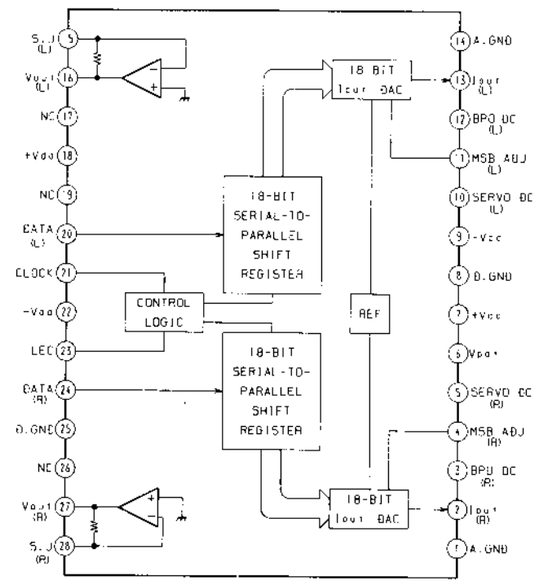
IC302 SM5840BS



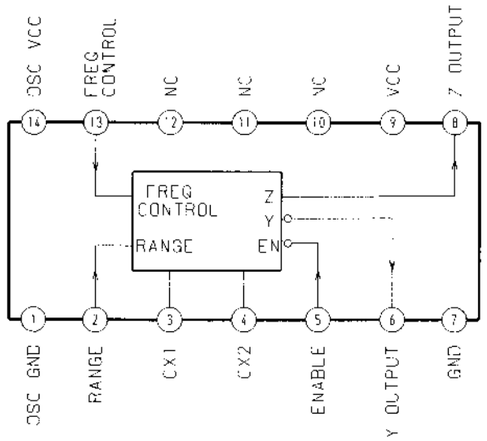
IC307 CS5326-KP



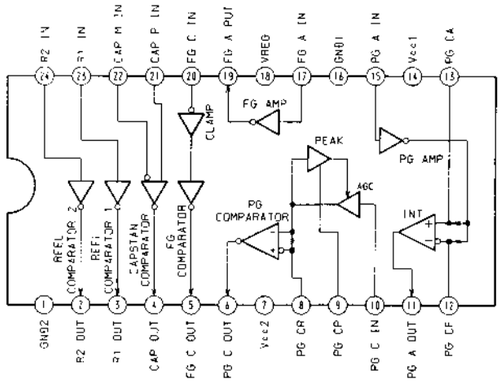
IC308 PCM1700U-J



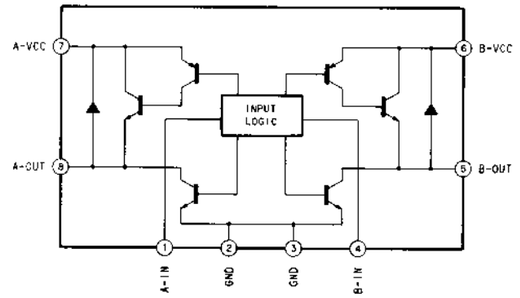
IC517 SN74LS624NS



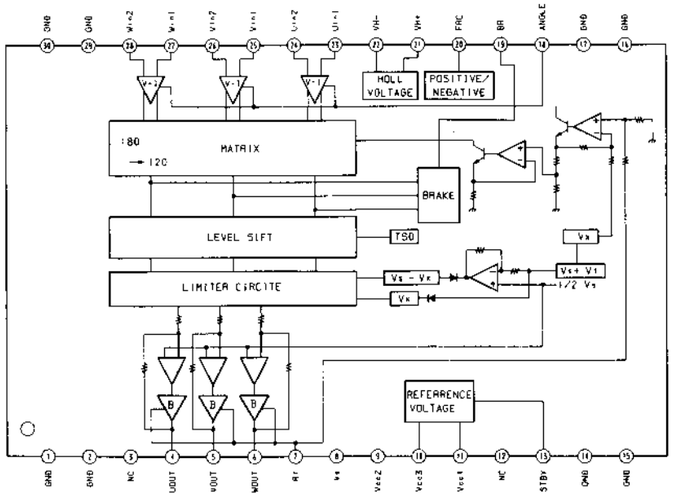
IC503 CXA1418N



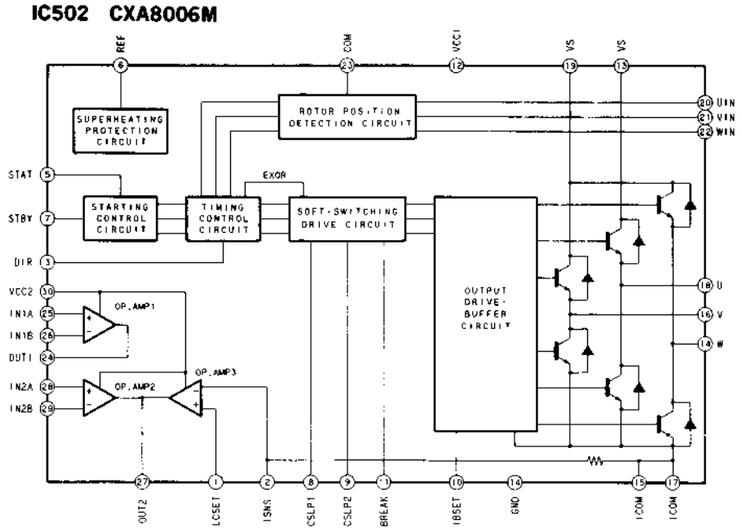
IC511 MB3854



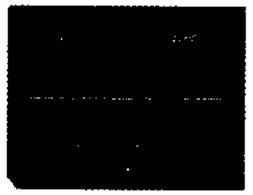
IC501 CXA1127AM



IC502 CXA8006M

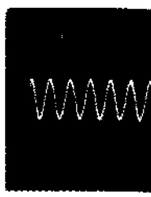


• Waveforms



● IC504 ①

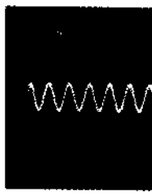
❼ IC503 ⑤, IC504 ⑤⑧ (TP DFG)
PLAY MODE



● IC515 ⑬
PLAY MODE

❷ IC504 ⑦—⑩, ⑲—㉒

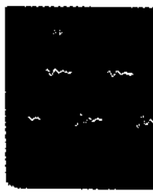
❽ IC503 ④, IC504 ⑤⑦ (TP CFG)
PLAY MODE



● IC515 ⑭

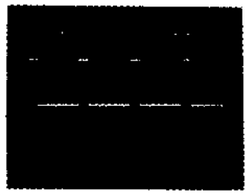
● IC504 ㉞, ㊸

❿ IC504 ⑥⓪ (TP DREF),
IC515 ㉙ (TP SWP)
PLAY MODE

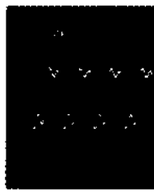


● IC515 ⑤⑧

❶ IC504 ㉟

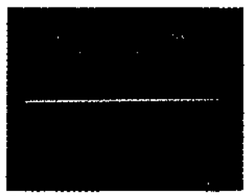


● IC504 ⑥⑥



● IC515 ⑤⑨

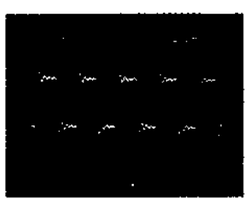
❹ IC504 ㊲, ㊵, ㊶



● IC504 ⑥⑨
PLAY MODE

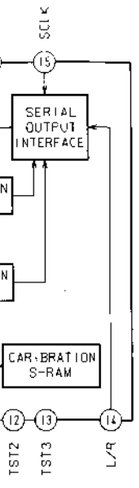
● IC515 ⑥ (used

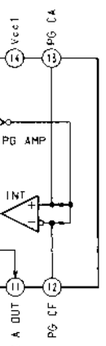
❺ IC504 ㊳, ㊴, ㊷, ㊸
IC503 ⑥,
IC504 ⑤⑨ (TP DPG)
PLAY MODE



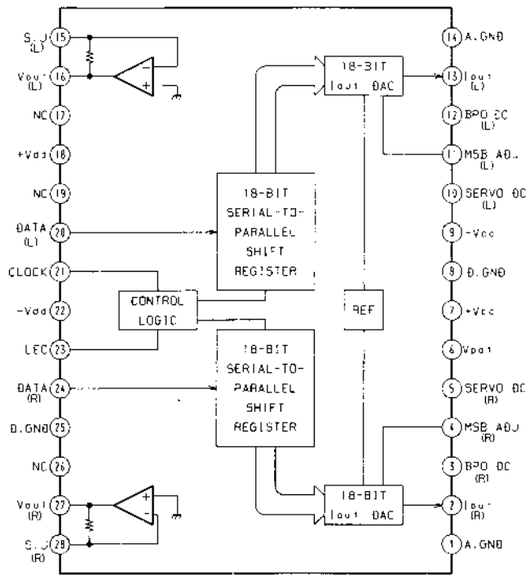
● IC515 ⑩

⓫ IC515 ⑥④ (used

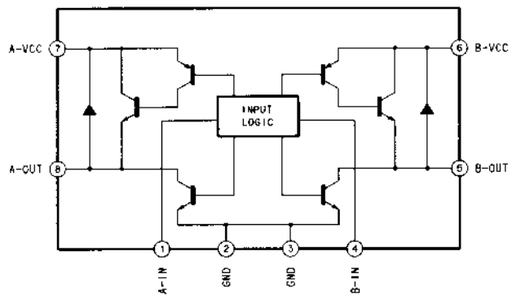




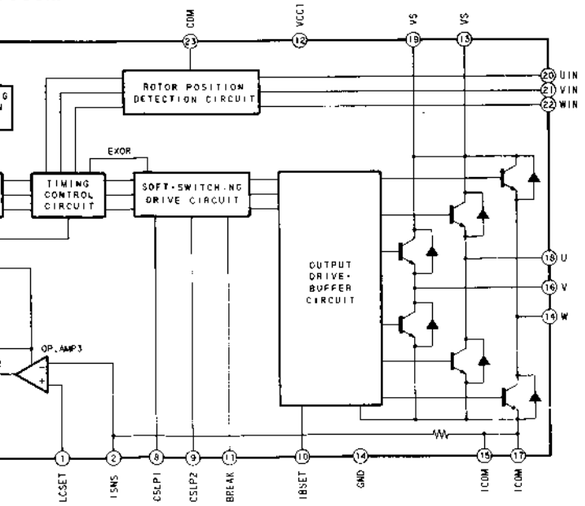
IC308 PCM1700U-J



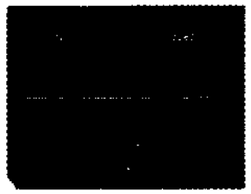
IC511 MB3854



3006M

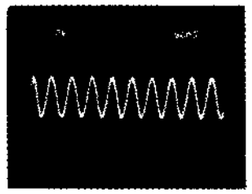


• **Waveforms**



❶ *IC504 ①*

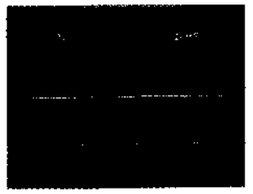
❼ *IC503 ⑤, IC504 ⑱ (TP DFG) PLAY MODE*



● *IC515 ⑬ PLAY MODE*

● *IC515 ⑯*

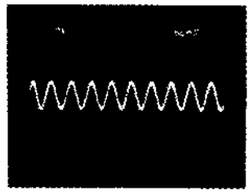
● *IC307 ⑭ (TP307)*



● *IC601 ④*

❷ *IC504 ⑦—⑩, ⑲—㉒*

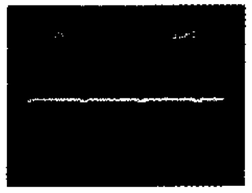
❽ *IC503 ④, IC504 ⑰ (TP CFG) PLAY MODE*



● *IC515 ⑭*

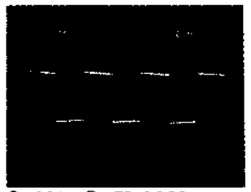
● *IC515 ⑰*

● *IC307 ⑮ (TP308)*

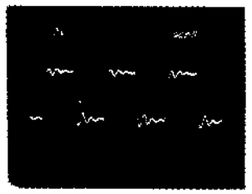


● *IC601 ⑤*

❸ *IC504 ㉔, ㉛*



❾ *IC504 ⑳ (TP DREF), IC515 ㊴ (TP SWP) PLAY MODE*



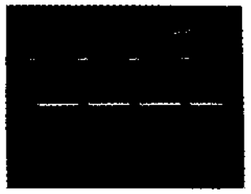
● *IC515 ⑱*

● *IC515 ⑲, ㉒*

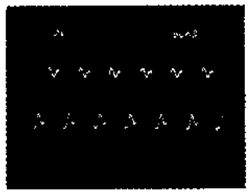
● *IC307 ㉓ (TP310)*

● *IC601 ⑧*

❹ *IC504 ㉕*



● *IC504 ㊻*



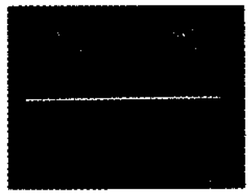
● *IC515 ⑲*

● *IC515 ㉔, ㉕*

● *IC302 ② (TP319)*

● *IC601 ⑩*

❺ *IC504 ㉗, ㉚, ㉛*



● *IC504 ㉙ PLAY MODE*

❿ *IC515 ⑬ (used on TY-7551)*

● *IC302 ⑳ (TP324)*

● *IC302 ⑧ (TP320)*

● *IC601 ⑪*

❻ *IC504 ㉘, ㉙, ㉜, ㉝ IC503 ⑥, IC504 ㉙ (TP DPG) PLAY MODE*

● *IC515 ⑩*

● *IC515 ⑭ (used on TY-7551)*

● *IC302 ㉑ (TP325)*

● *IC302 ⑨ (TP321)*

5-8. PIN DESCRIPTION

• IC504 CXP80524-022Q

Pin No.	Symbol	I/O	Pin Description
1	DMCRQ	O	Serial communication demand signal to CXP5024 ("L"→ through communication)
2	VCORST	O	RX VCO enable signal ("H"→ enable)
3	XSTBY	O	CXA8006/CXA1127 standby signal ("L"→ standby state)
4	XDRMON	O	Drum motor ON/OFF signal ("H"→ motor stop)
5	XCAPON	O	Capstan motor ON/OFF signal ("H"→ motor stop)
6	CAPDIR	O	Capstan motor ratation direction control signal ("H"→ forward drive rotation)
7	XLWR	O	Data-bus (MSM6338) write demand signal ("L"→ LD0 to 3output pin)
8	XLRD	O	Date-bus (MSM6338) read demand signal ("L"→ LD0 to 3input pin)
9	LAD1	O	Address-bus (MSM6338)
10	LAD0	O	Address-bus (MSM6338)
11	REI	I	Rotary encoder input
12	REM	I	Rotary encoder input
13	REO	I	Rotary encoder input
14	RELD	I	Load detection signal ("H"→ load completion)
15	REULD	I	Un-load detection ("H"→ un-load completion)
16	XRECINH	I	Record prohibition detection ("L"→ record prohibition state)
17	XCSALK	I	Cassette compartment lock detection ("L"→ cassette compartment lock state)
18	CASIN	I	Cassette insert detection ("H"→ cassette insert state)
19	LD3	I/O	Data-bus (MSM6338)
20	LD2	I/O	Data-bus (MSM6338)
21	LD1	I/O	Data-bus (MSM6338)
22	LD0	I/O	Data-bus (MSM6338)
23	AC/DC	I	AC/DC power source detection ("L"→ AC power source)
24	XDEW	I	DEW detection ("L"→ dew state)
25	WAKEUP	O	CXP5024 stop mode set up ("L"→ stop mode)
26	DDCONT	O	DC/DC converter ON/OFF signal ("H"→ DC/DC converter ON)
27	CTRMA	O	Control motor control signal
28	CTRMB	O	Control motor control signal
29	ENLDON	O	LED ON/OFF signal for tape-top/end detection ("H"→ LED ON)
30	PLGON	O	Plunger ON/OFF signal ("H"→ plunger ON)
31	MP	I	Connect to the GND.
32	XRST	I	CXP80524 reset signal ("L"→ reset)
33	Vss	—	Connect to the GND.
34	XTAL	O	Crystal vibration (9.408MHz) output
35	EXTAL	I	Crystal vibration (9.408MHz) input
36	MUTM	I	Mute output detection ("H"→ mute ON)
37	SI	I	Key/Display I/O serial data input
38	SO	O	Key/Display I/O serial data output
39	XSCK	O	Key/Display I/O clock
40	SBSY	I	Sub-code I/O communication demand signal (Communication start on down edge.)
41	SBSI	I	Sub-code I/O serial data input
42	SBSO	O	Sub-code I/O serial data output
43	EXCK	O	Sub-code I/O clock
44	AV_{SS}	—	Connect to the GND.
45	AV_{REF}	—	Standard voltage power source
46	AV_{DD}	—	

Pin No.	Symbol	I/O	Pin Description
47	SWPADJ	AIN	Voltage input for switching pulse delay adjustment
48	RFENV	AIN	Envelope detection input of head playback signal
49	XEJECT	I	EJECT key input ("L"→ EJECT key ON)
50	XPOWER	I	POWER key input ("L"→ POWER key ON)
51	XTTOP	I	Take-up side (on forward) sensor detection input ("L"→ tape top)
52	XTEND	I	Supply side (on forward) sensor detection input ("L"→ tape end)
53	BATTERY	AIN	Battery voltage input
54	ATFPLT	AIN	ATF pilot detection signal
55	TRLFG	I	Reel FG input of take-up side (24tooth output per 1 rotary)
56	SRLFG	I	Reel FG input of supply side (24tooth output per 1 rotary)
57	CAPFG	I	Capstan FG input (360tooth output per 1 rotary)
58	DRMFG	I	Drum FG input (24tooth output per 1 rotary)
59	DRMPG	I	Drum PG input
60	DREF	I	Drum standard signal (LP mode → 16.7Hz SP mode → 33.3Hz)
61	MCLK	I	Channel clock (9.408MHz)
62	RFDT	I	Head playback data
63	SWP	O	Switching pulse ("L"→ A channel head select)
64	DRMPWM	O	PWM output for drum motor control (Carrier frequency = 36.75kHz)
65	CAPPWM	O	PWM output for capstan motor control (Carrier frequency = 36.75kHz)
66	ATFPWM	O	PWM output for ATF gain control amplifier control (Carrier frequency = 36.75kHz)
67	ALARM	O	Not used on this set.
68	MLE	O	Serial data take-in signal (Take-in on up edge.)
69	SYMN	I	C1 syndrome pulse input
70	XTEST	I	Test/Standard mode set up ("L"→ test mode on POWER ON.)
71	XNMI	—	Connect to the +B.
72	V_{DD}	—	Connect to the +B.
73	V_{SS}	—	Connect to the GND.
74	N.C.	—	Connect to the +B.
75	ATSY	O	After record timing signal
76	DMUTE	O	A/D and D/A data mute signal ("H"→ mute)
77	SEARCH	O	Search and after record mode set up ("H"→ search and after record)
78	MODE	O	CXA1364 mode set up
79	XLMUTE	O	Line out mute signal ("H"→ mute)
80	ADCON	O	A/D converter ON/OFF signal ("L" → action)

● **IC515 CXD2601AQ**

Pin No.	Symbol	I/O	Pin Description
1	A08	I/O	RAM address
2	A09	I/O	RAM address
3	V_{DD}	—	Connect to the +5V.
4	A10	I/O	RAM address
5	A11	I/O	RAM address
6	A12	I/O	RAM address
7	A13	I/O	RAM address
8	A14	I/O	RAM address
9	XWE	O	RAM write enable signal
10	XOE	O	RAM output enable signal
11	XEAN	O	Bus wedge enable signal for external addressing. Not used on this set.
12	TST1	I	Test pin (Normally, "L")
13	XT10	O	Crystal vibrator connect pin (18.816MHz)
14	XT11	I	Crystal vibrator connect pin (18.816MHz)
15	V_{SS}	—	Connect to the GND.
16	XRST	I	Reset pin (Normally, "H")
17	CLKO	I/O	Clock output pin (18.816MHz). Not used on this set.
18	XCST	I/O	CLKO divided timing signal for SYCK (Internal system CLK) creation. Not used on this set.
19	ATSY	I	ATF sync signal input pin
20	MCLK	O	Clock output pin (9.408MHz). Not used on this set.
21	DREF	O	Drum servo standard signal (Normal : 50/3 to 200/3Hz Search : 16kHz)
22	SBPM	O	Discrimination signal for receive or reject to clock for sub-code I/O. ("L" : receive "H" : reject). Not used on this set.
23	EXCK	I	Data transmission clock for sub-code I/O
24	SDSI	I	Sub-code serial data input
25	SDSO	O	Sub-code serial data output
26	SBSY	O	Sync signal for sub-code I/O
27	COPY	O	Copy information output. Not used on this set.
28	EMP	O	Emphasis information output. Not used on this set.
29	MUTE	I	Mute pin
30	MUTM	O	Mute descrimination signal ("H" : mute)
31	UNLK	O	RX PLL lock descrimination signal ("H" : PLL lock)
32	ERMN	O	RF existence detection ("H" : RF exist On record : "L")
33	SYMN	O	RF correspondence C1 check result ("H" : OK)
34	CHER	I	Descrimination signal of once or twice for C2. (C2 → C1 → C2 or C1 → C2) ("H" : once "L" : twice)
35	PLCK	I/O	RF PLL clock output
36	TST2	I	Test pin (Normally, "L")
37	RFDT	I	RF signal input pin
38	XCS	I	Sub-code I/O chip select ("L" : select)
39	SWP	I	RF switching pulse ("L" : A channel "H" : B channel)
40	V_{SS}	—	Connect to the GND.
41	PIPC	O	Record data PILOT/PCM descrimination signal ("H" : PILOT On playback "L")
42	REPB	O	Record/Playback select signal ("H" : record)
43	REDT	O	Record signal output ("L" : playback)
44	TST4	I	Test pin (Normally, "L")
45	TST3	O	PD output of RX • APLL (Comparator output pin)

Pin No.	Symbol	I/O	Pin Description
46	TST5	I	Oscillation cell amplifier input pin of RX • APLL
47	TST6	O	Oscillation cell amplifier reverse output pin of RX • APLL
48	PLCO	I	Outside addition VCO clock input pin of RX • APLL
49	PLVR	O	On comparator outside addition comparison signal output of RX • APLL (Vin). Not used on this set.
50	PLRF	O	On comparator outside addition comparison signal output of RX • APLL (Rin). Not used on this set.
51	MSSL	I	Master/Sleave set up ("H" : master "L" : sleave)
52	RX	I	Digital input
53	V_{DD}	—	Connect to the +5V.
54	TX	O	Digital output
55	AUDR	I	Audio mode/Data recorder mode set up ("H" : audio "L" : data)
56	EXSY	I/O	Synchro signal for perfect copy 25/3 to 100/3Hz
57	EXSN	I/O	Synchro signal for perfect copy 25/3 to 100/3Hz (Normally, connect to the EXSY)
58	F128	I/O	$128\times f_s$CK(Normal)/$256\times f_s$CK(×2)
59	F256	O	$256\times f_s$CK(Normal)/$256\times f_s$CK(×2)
60	F512	O	$512\times f_s$CK(Normal)/$512\times f_s$CK(×2). Not used on this set.
61	ADLF	I	Descrimination signal of first LSB or first MSB for ADDT serial data. ("H" : first LSB)
62	DALF	I	Descrimination signal of first LSB or first MSB for DADT serial data. ("H" : first LSB)
63	XT2O	O	Crystal vibrator connect pin (22.5792MHz)
64	XT2I	I	Crystal vibrator connect pin (22.5792MHz)
65	V_{SS}	—	Connect to the GND.
66	XT3O	O	Crystal vibrator connect pin (B mode : 24.576MHz)
67	XT3I	I	Crystal vibrator connect pin (B mode : 24.576MHz)
68	FSEN	I	I/O select of F128, BCK and LRCK ("H" : output)
69	LR03	O	Reverse of LR02
70	LR02	O	16BCK delayed signal of LRCK. Not used on this set.
71	LR01	O	15BCK delayed signal of LRCK. Not used on this set.
72	LRCK	I/O	f_s(Normal)/$2\times f_s$(×2) ("L" : L channel "H" : R channel)
73	WCK	I/O	$2\times f_s$(Normal)/$4\times f_s$(×2)
74	XBCK	O	Reverse of BCK. Not used on this set.
75	BCK	I/O	$64\times f_s$(Normal)/$128\times f_s$(×2)
76	ADDT	I	Serial AD data
77	DADT	O	Serial DA data
78	DADO	I	(DA) data input pin for digital output (Normally, connect to the DADT)
79	ADDI	O	(AD) data output pin for digital input (Normally, connect to the ADDN)
80	ADDN	I	(DA) data input pin for digital input
81	ERRI	I	V-FLAG information input for digital output (Normally, connect to the ERRF)
82	ERRF	O	Descripition signal of interpolation or not for DADT data. ("H" : interpolation data)
83	MNTG	O	Error correction situation monitor trigger
84	D7	I/O	RAM data-bus
85	D6	I/O	RAM data-bus
86	D5	I/O	RAM data-bus
87	D4	I/O	RAM data-bus
88	D3	I/O	RAM data-bus
89	D2	I/O	RAM data-bus
90	V_{SS}	—	Connect to the GND.
91	D1	I/O	RAM data-bus

Pin No.	Symbol	I/O	Pin Description
92	D0	I/O	RAM data-bus
93	A00	I/O	RAM address
94	A01	I/O	RAM address
95	A02	I/O	RAM address
96	A03	I/O	RAM address
97	A04	I/O	RAM address
98	A05	I/O	RAM address
99	A06	I/O	RAM address
100	A07	I/O	RAM address

• IC307 CS5326-KP

Pin No.	Symbol	I/O	Pin Description
1	AGND	—	Analog ground pin
2	AINL	I	L channel analog input pin. Full-scale of input is ±3.6V.
3	ZEROL	I	L channel zero level input pin. Normally, input voltage sets to zero level and carribration the L channel offset.Normally, connect the analog ground pin.
4	VA+	—	Analog plus power source, +5V.
5	VA−	—	Analog minus power source, −5V.
6	APD	I	Analog power down pin. In case of "H", set the power down mode. Normally, connect the DPD pin. And this pin could be used synchronized plural AK5326 sampling together DPD pin.
7	ACAL	I	Analog carribration pin. Normally, connect the DCAL pin. In case of "H", L/R̄ input channel is connect the internal each zero level input pin (ZEROL, ZEROR). In case of "L", connect the analog input pin (AINL, AINR).
8	NC	—	No connect pin
9	DCAL	O	Analog carribration pin. Normally, use on as input signal of ACAL pin. If and when one input the power down signal to breaking DPD pin, at once up and later 4096L/R̄ cycle (In case of 6.144MHz, about 85msec) was changed "L" and display finish of offset carribration. And, in case of system carribration use on external MUX channel select signal.
10	DPD	I	Digital power down pin. In case of "H", set the power down mode.
11	TST1	I	Test pin Connect to the DGND pin.
12	TST2	I	
13	TST3	I	
14	L/R̄	I	Input channel select pin. To select the channel of output data from SDATA pin.To output the L channel data in case of "H"and R channel data in case of "L".
15	SCLK	I	Serial data output clock pin. On clock up change 1 bit for output data. Normally, to input the 4 divided for master clock.
16	SDATA	O	Serial data output pin. Data is 2' complement and output in order from MSB. To output the 1bit data for rise SCLK. While output "L" for SCLK input of more than 17.
17	VD1+	—	Digital plus power source, +5V.
18	VD2+	—	
19	DGND	—	Digital ground pin
20	DCLKA	I	Digital system clock pin. Connect the ACLKA pin.
21	NC	—	No connect pin. This pin is use on open.
22	ACLKA	O	Analog system clock pin. Connect the DCLKA pin. To output the 2 divided clock for master clock.
23	CLKIN	I	Master clock pin. Sampling rate of Δ・Σ modulator is 2 divided for this clock. Output word rate per cannel is 48kHz in case of 6.144MHz clock.
24	LGND	—	Digital ground pin
25	VL++	—	Digital power source, +5V.
26	ZEROR	I	R channel zero level input pin. Normally, input voltage sets to zero level and carribration the R channel offset. Normally, connect the analog ground pin.
27	AINR	I	R channel analog input pin. Full-scale of input is ±3.6V.
28	VREF	O	Standard power source, −3.6V

• IC601 CXP5024H-114Q

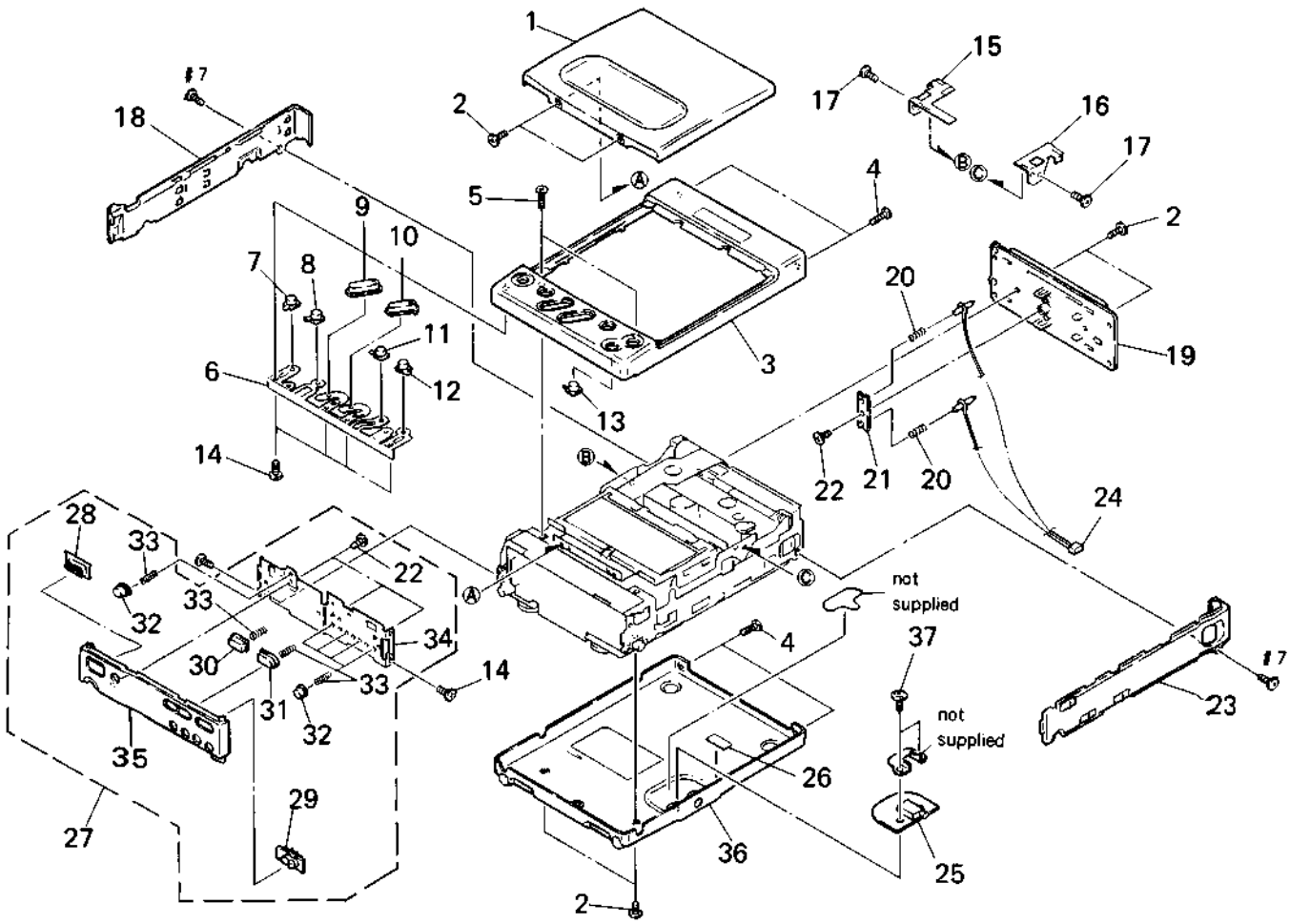
Pin No.	Symbol	I/O	Pin Description
1	PY0	O	EL pin
2	PY1	O	
3	INT2/PY2	I	
4	EC/PY3	I	Serial I/O request pin
5	SC/PX0	I/O	Serial • Clock
6	SOB/PX1	I/O	Serial • out
7	SOA/PX2	I/O	Not used on this set.
8	SI/PX3	I	Serial • in
9	PD0	I/O	Digital/Analog select switch
10	PD1	I/O	LP/SP select switch
11	PD2	I/O	
12	PD3	I/O	Counter • mode • key
13	PC0	I/O	Counter • reset • key
14	PC1	I/O	Start ID • mode • key
15	PC2	I/O	Start ID • set • key
16	PC3	I/O	Back • light • key
17	PB0	I/O	REC key
18	PB1	I/O	PAUSE key
19	PB2	I/O	AMS (−) key
20	PB3	I/O	AMS (+) key
21	PA0	I/O	REW key
22	PA1	I/O	STOP key
23	PA2	I/O	PLAY key
24	PA3	I/O	FF key
25	V_{SS}	−	Connect to the GND.
26	(V_{DD})	O	Connect to the +5V.
27	PE3/SEG23	O	Segment 23
28	PE2/SEG22	O	Segment 22
29	PE1/SEG21	O	Segment 21
30	PE0/SEG20	O	Segment 20
31	PF3/SEG19	O	Segment 19
32	PF2/SEG18	O	Segment 18
33	PF1/SEG17	O	Segment 17
34	PF0/SEG16	O	Segment 16
35	SEG15	O	Segment 15
36	SEG14	O	Segment 14
37	SEG13	O	Segment 13
38	SEG12	O	Segment 12
39	SEG11	O	Segment 11
40	SEG10	O	Segment 10
41	SEG9	O	Segment 9
42	SEG8	O	Segment 8
43	SEG7	O	Segment 7
44	SEG6	O	Segment 6
45	SEG5	O	Segment 5
46	SEG4	O	Segment 4
47	SEG3	O	Segment 3
48	SEG2	O	Segment 2
49	SEG1	O	Segment 1
50	SEG0	O	Segment 0
51	COM3	O	Common 3
52	COM2	O	Common 2
53	COM1	O	Common 1
54	COM0	O	Common 0
55	VLC1	−	LCD power source
56	VLC2	−	LCD power source
57	VLC3	−	LCD power source
58	V_{DD}	−	Power source voltage
59	VL	O	Cut off
60	XTAL	O	Clock output
61	EXTAL	I	Clock input
62	RST	I/O	Reset pin
63	WP	I	Wake up pin
64	INT1	I	Outside wedge (for remote commander)

SECTION 6
EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) ... (RED)
  ↑ Parts' Color ↑ Cabinet's Color
- Screw (#mark) list is given in the last of this parts list.

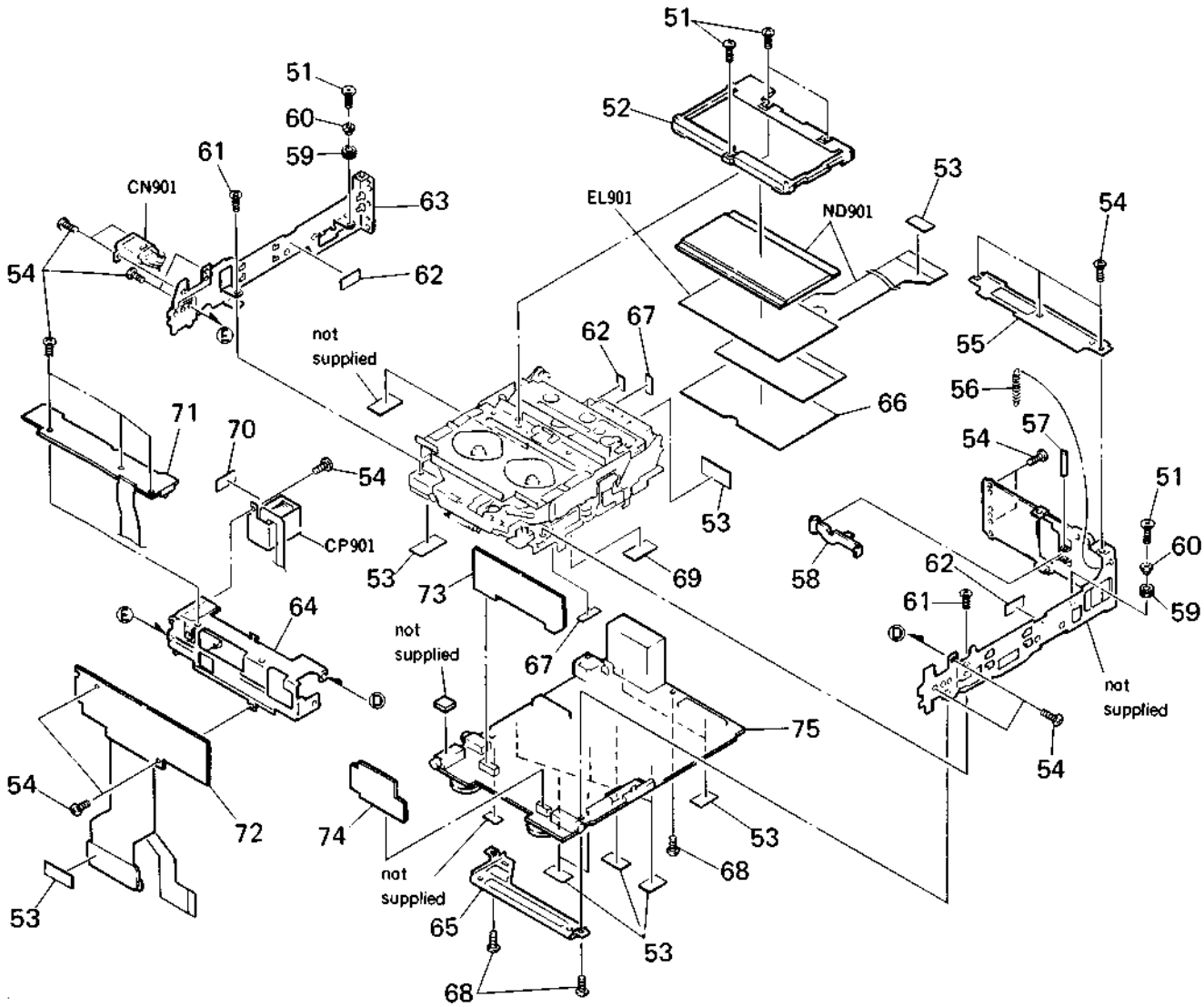
6-1. CABINET ASSEMBLY



Ref.No	Part No.	Description	Remarks
1	X-3344-975-1	LID ASSY, CASSETTE	
2	3-363-220-21	SCREW (M1.4X1.8)	
3	3-361-178-01	CABINET (UPPER)	
4	3-704-197-62	SCREW (M1.4X4.0), LOCKING	
5	3-704-246-62	SCREW (P1.4X4.0)	
6	X-3362-066-1	SPRING (MAIN.BUTTON) ASSY	
7	3-361-179-01	BUTTON (EJECT)	
8	3-361-180-01	BUTTON (REW/REVIEW)	
9	3-361-181-01	BUTTON (STOP)	
10	3-361-182-01	BUTTON (PLAY)	
11	3-361-183-01	BUTTON (FF/CUE)	
12	3-361-184-01	BUTTON (REC)	
13	3-361-127-01	BUTTON (PAUSE)	
14	3-704-197-01	SCREW (M1.4X1.6), LOCKING	
15	3-364-738-01	BRACKET (CASSETTE LID L)	
16	3-364-737-01	BRACKET (CASSETTE LID R)	
17	3-349-825-51	SCREW	
18	3-361-150-01	BELT (L), ORNAMENTAL, SIDE	
19	3-361-155-01	BRACKET (BATT)	

Ref.No	Part No.	Description	Remarks
20	3-361-160-01	SPRING, COMPRESSION	
21	3-363-615-01	CHASSIS, BATTERY TERMINAL RETAINER	
22	3-318-382-61	SCREW (1.7X2.5), TAPPING	
23	X-3362-152-1	BELT (R) ASSY, ORNAMENTAL, SIDE	
24	1-590-202-11	WIRE (WITH TERMINAL)	
25	*1-637-533-11	APS BOARD	
26	3-831-441-11	CUSHION (B)	
27	X-3344-977-1	PANEL ASSY, CONTROL	2, 28-35
28	3-361-146-01	KNOB (POWER)	
29	3-361-147-01	KNOB (HOLD)	
30	3-361-144-01	BUTTON (AMS-REW)	
31	3-361-143-01	BUTTON (AMS-FF)	
32	3-361-145-01	BUTTON (SUB FUNCTION)	
33	3-361-148-01	SPRING (OPE), COMPRESSION	
34	3-361-149-01	BRACKET (POWER, LIGHT)	
35	3-361-142-01	PANEL, CONTROL	
36	X-3344-976-1	PANEL ASSY, LOWER	
37	3-703-502-21	SCREW	

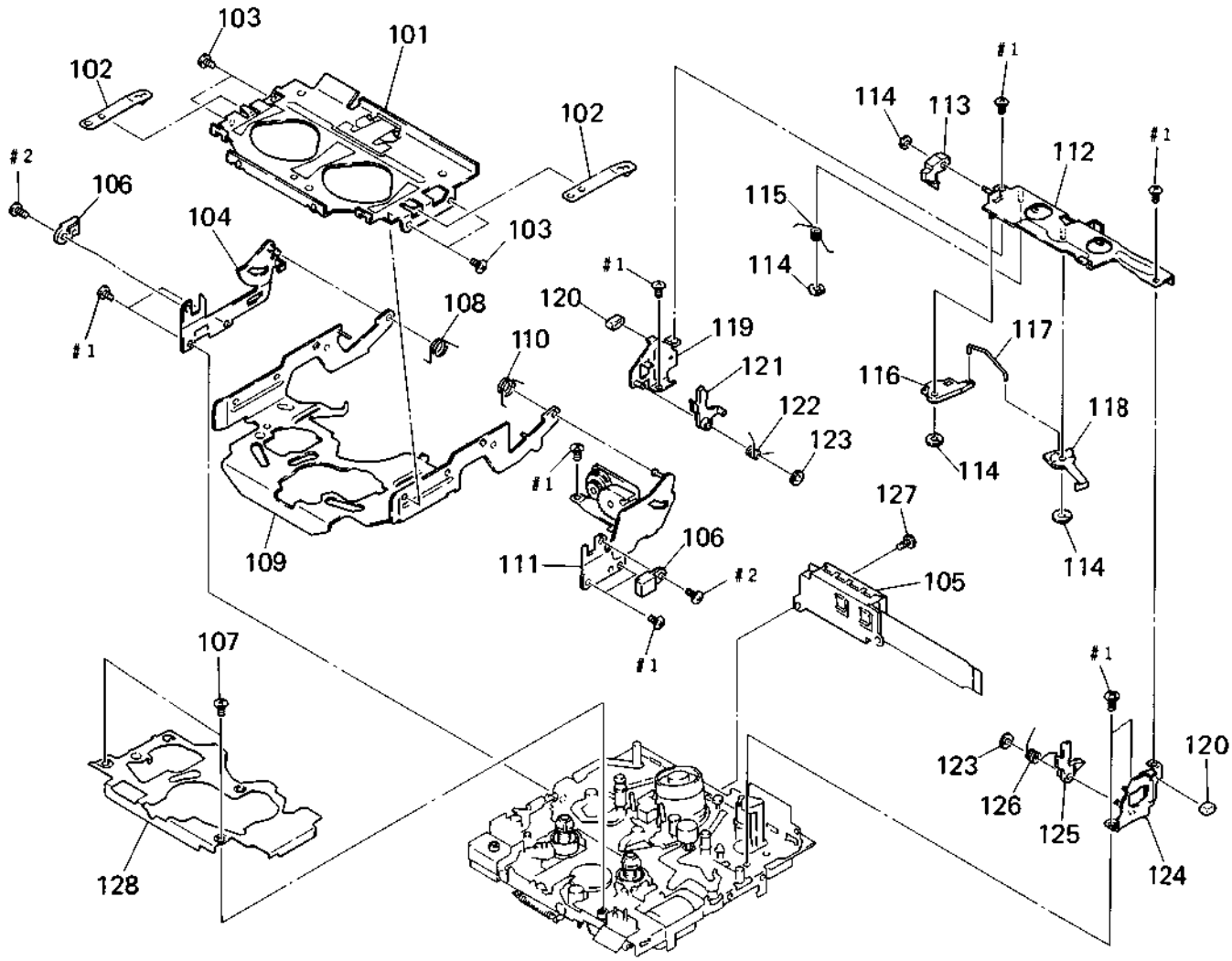
6-2. CHASSIS ASSEMBLY



Ref.No	Part No.	Description	Remarks
51	3-704-197-31	SCREW (M1.4X3.0), LOCKING	
52	3-361-133-01	BRACKET, LCD	
53	3-831-441-11	CUSHION (B)	
54	3-704-197-01	SCREW (M1.4X1.6), LOCKING	
55	*3-361-140-01	REINFORCEMENT, BATT FITTING	
56	3-308-704-00	SPRING, TENSION (REC LEVER RETURN)	
57	3-703-575-11	PIN (DIA. 1.2X8), PARALLEL	
58	3-361-156-01	CLAW, BATT LOCK	
59	3-362-469-01	CUSHION, MD FITTING	
60	3-362-468-01	SPACER (MD FITTING)	
61	3-363-716-01	SCREW (M1.4X1.6)	
62	*3-310-165-00	SPACER	
63	*3-361-137-01	CHASSIS (L)	
64	*3-361-139-01	CHASSIS (FRONT)	
65	*3-361-141-01	BRACKET, LOWER PANEL	

Ref.No	Part No.	Description	Remarks
66	3-363-576-01	CUSHION (EL)	
67	3-570-611-00	SHEET, PROTECTION, LID	
68	3-704-244-31	SCREW (P1.7X2.5)	
69	*3-334-575-01	SPACER	
70	9-911-838-XX	PACKING, KNOB	
71	1-572-408-11	SWITCH, ENCAPSULATED	
72	A-3015-915-A	DR BOARD, COMPLETE	
73	*1-635-763-11	ADA BOARD	
74	*1-635-764-11	LINE AMP BOARD	
75	A-3015-913-A	MAIN BOARD, COMPLETE	
CN901	1-575-917-11	CABLE (WITH CONNECTOR) (REMOTE DIGITAL I/O)	
CP901	1-466-378-11	INVERTER UNIT	
EL901	1-519-621-11	ELECTRIC LUMINESCENCE	
ND901	1-550-598-11	DISPLAY PANEL, LIQUID CRYSTAL	

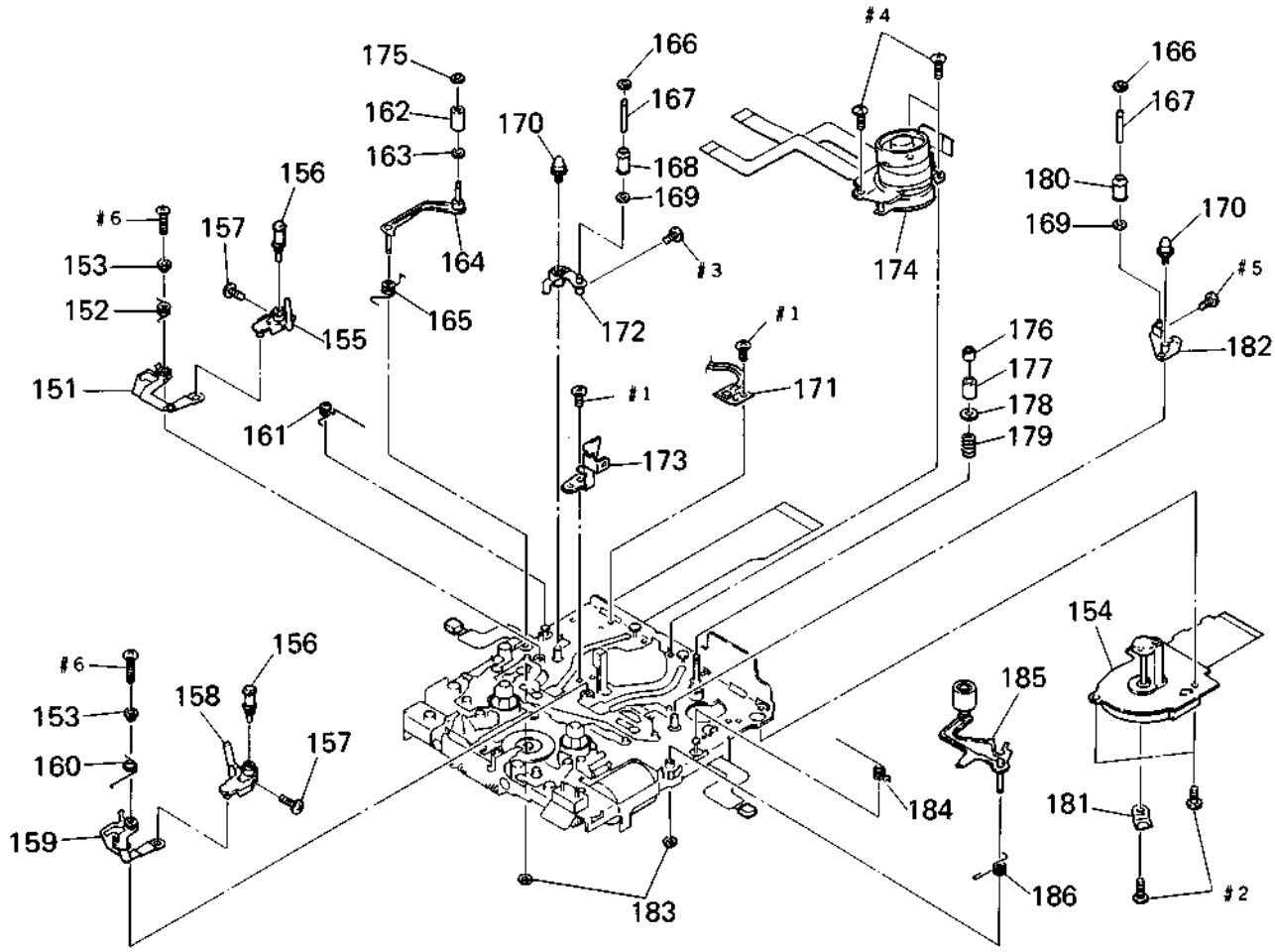
6-3. CASSETTE HOLDER ASSEMBLY (MT-D3-47)



Ref.No	Part No.	Description	Remarks
101	X-3362-185-1	HOLDER (UPPER) ASSY	
102	X-3344-982-1	SPRING (HOLDER B) ASSY, LEAF	
103	3-349-825-21	SCREW	
104	X-3344-980-1	BRACKET (CLA) ASSY	
105	1-466-369-11	RF MODULE	
106	3-363-454-01	HOLDER (ES)	
107	3-363-220-21	SCREW (M1.4X1.8)	
108	3-363-270-01	SPRING, TORSION	
109	X-3344-983-1	HOLDER (CASSETTE) ASSY	
110	3-363-269-01	SPRING, TORSION	
111	X-3362-186-1	DAMPER (CRA) ASSY	
112	X-3362-184-1	COVER (TAPE PASS) ASSY	
113	*3-363-260-01	LEVER (A)	
114	3-315-384-11	WASHER, STOPPER (1.2-2.5) T=0.25	

Ref.No	Part No.	Description	Remarks
115	3-363-266-01	SPRING, TORSION	
116	*3-363-261-01	LEVER (B)	
117	3-363-443-01	LINK	
118	X-3362-183-1	WIPER ASSY	
119	X-3344-978-1	BRACKET (CLB) ASSY	
120	3-363-279-01	CUSHION (HOLDER)	
121	3-361-174-01	LEVER (LID L)	
122	3-363-267-01	SPRING, TORSION	
123	3-321-813-01	WASHER, COTTER POLYETHYLENE (1.5-4.0) T=0.25	
124	X-3344-979-1	BRACKET (CRB) ASSY	
125	3-361-173-01	LEVER (LID R)	
126	3-363-268-01	SPRING, TORSION	
127	3-349-825-01	SCREW	
128	3-363-286-01	COVER (MD)	

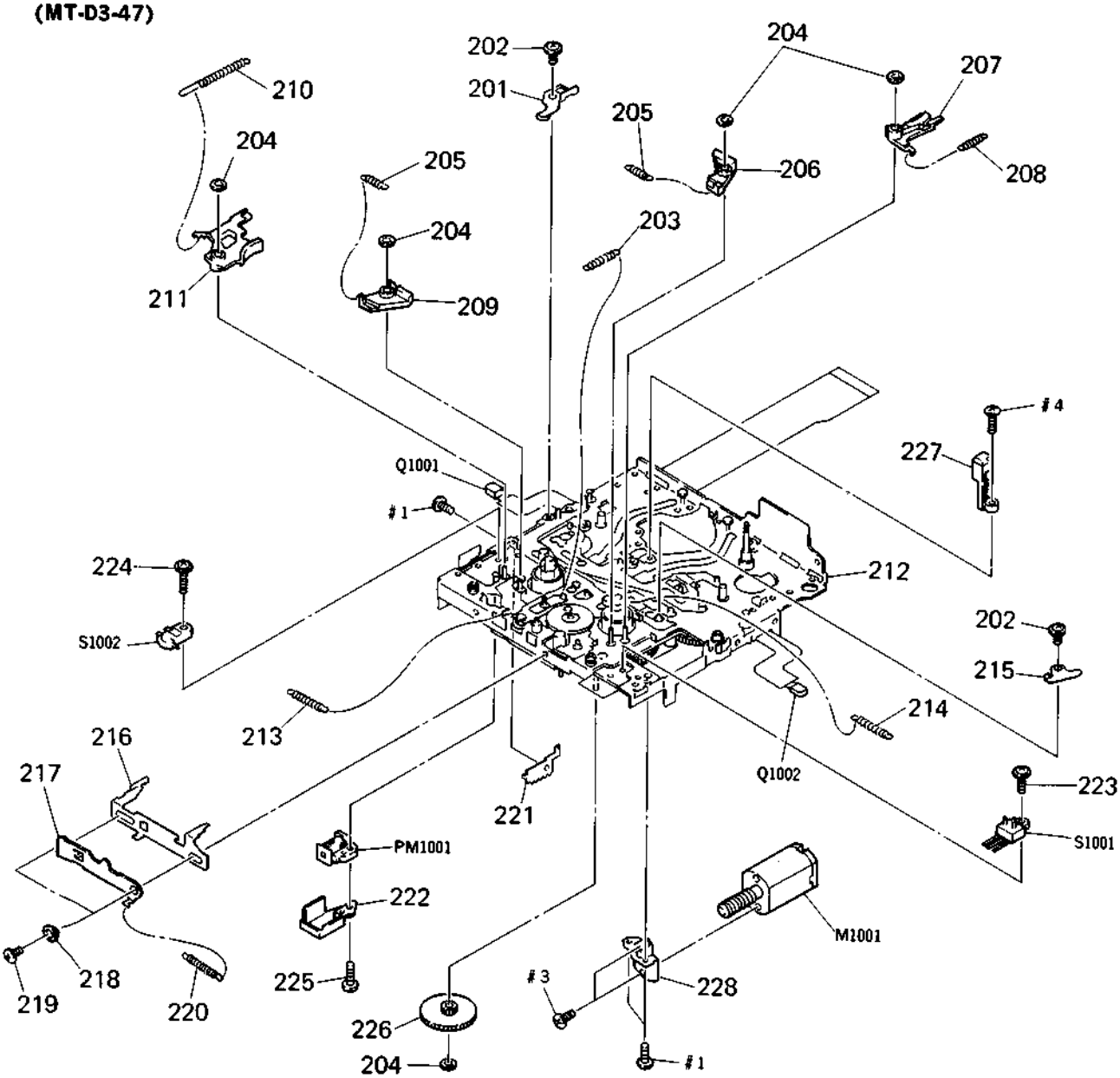
6-4. MD ASSEMBLY 1 (MT-D3-47)



Ref.No	Part No.	Description	Remarks
151	X-3344-945-1	LEVER (LOADING SA) ASSY	
152	3-360-897-01	SPRING, TORSION	
153	3-354-247-01	SHAFT (LOADING B)	
154	8-835-412-01	MOTOR, DC SCR-0101A	
155	X-3344-968-1	GUIDE BLOCK (S) ASSY, SLANT	
156	X-3344-963-1	GUIDE (DIA. 4) ASSY, ROLLER	
157	3-728-290-01	SCREW (M1.2)	
158	X-3344-969-1	GUIDE BLOCK (T) ASSY, SLANT	
159	X-3344-943-1	LEVER (LOADING TA) ASSY	
160	3-360-895-01	SPRING, TORSION	
161	3-361-106-01	SPRING, TORSION	
162	3-360-866-01	ROLLER (TENSION REGULATOR)	
163	3-361-163-31	WASHER (1.3-3.2) T=0.13	
164	X-3344-950-1	LEVER(TENSION REGULATOR A) ASSY	
165	3-361-118-01	SPRING, TORSION	
166	3-361-162-01	WASHER (0.8-2.2) T=0.25	
167	3-354-289-01	SHAFT (TAPE GUIDE)	
168	3-360-864-01	ROLLER (B), GUIDE	

Ref.No	Part No.	Description	Remarks
169	3-361-163-41	WASHER (1.3-3.2) T=0.19	
170	3-360-817-01	SHAFT (CASSETTE)	
171	1-808-281-41	SENSOR (DEW)	
172	X-3344-953-1	LEVER (SF) ASSY	
173	3-360-862-01	REINFORCEMENT (LED)	
174	8-848-536-11	DRUM ASSY (DOU-12A)	
175	3-321-393-11	STOP RING	
176	3-337-605-01	NUT, ADJUSTMENT	
177	3-366-697-21	GUIDE (GA), FIXED	
178	3-337-677-01	FLANGE	
179	3-573-470-00	SPRING, COMPRESSION	
180	3-360-863-01	ROLLER (A), GUIDE	
181	3-363-224-01	REINFORCEMENT (CAPSTAN MOTOR)	
182	X-3344-952-1	LEVER (TF) ASSY	
183	3-315-384-11	WASHER, STOPPER (1.2-2.5) T=0.25	
184	3-361-105-01	SPRING, TORSION	
185	X-3362-201-1	ARM ASSY, PINCH ROLLER	
186	3-361-115-01	SPRING, TORSION	

6-5. MD ASSEMBLY 2 (MT-D3-47)



Ref.No	Part No.	Description	Remarks
201	X-3344-940-1	LEVER (TENSION REGULATOR B1) ASSY	
	X-3362-179-1	LEVER (TENSION REGULATOR B2) ASSY	
	*X-3362-180-1	LEVER (TENSION REGULATOR B3) ASSY	
	*X-3362-181-1	LEVER (TENSION REGULATOR B4) ASSY	
202	3-703-502-91	SCREW (1.4X1.4)	
203	3-361-101-01	SPRING, TENSION	
204	3-315-384-11	WASHER, STOPPER (1.2-2.5) T=0.25	
205	3-361-113-01	SPRING, TENSION	
206	X-3344-947-1	LEVER (BRAKE T) ASSY	
207	X-3344-946-1	LEVER (BRAKE RBT) ASSY	
208	3-361-111-01	SPRING, TENSION	
209	X-3344-948-1	LEVER (BRAKE S) ASSY	
210	3-361-112-01	SPRING, TENSION	
211	X-3344-949-1	LEVER (TENSION REGULATOR) ASSY	
212	X-3362-753-1	MECHANISM BLOCK ASSY	
213	3-361-107-01	SPRING, TENSION	
214	3-361-110-01	SPRING, TENSION	
215	X-3344-951-1	LEVER (R.BT RETURN A) ASSY	
	*X-3362-182-1	LEVER (R.BT RETERN B) ASSY	
216	3-360-879-01	LEVER (CASSETTE COMPARTMENT ROCK)	

Ref.No	Part No.	Description	Remarks
217	3-360-859-01	LEVER (CASSETTE COMPARTMENT TRIGGER)	
218	3-354-271-01	SHAFT (LEVER CASSETTE COMPARTMENT ROCK)	
219	3-704-246-01	SCREW (P1.4X1.6)	
220	3-361-108-01	SPRING, TENSION	
221	3-360-869-01	BRACKET (BT, SPRING)	
222	3-360-882-01	COVER (SOLENOID)	
223	3-703-502-21	SCREW (1.4X2.5)	
224	3-703-502-61	SCREW (1.4X4.5)	
225	3-703-502-31	SCREW (1.4X4)	
226	3-360-829-01	GEAR (MODE B)	
227	3-360-872-01	BRACKET (LED)	
228	3-361-161-01	BRACKET (MODE. MOTOR)	
M1001	1-541-777-11	MOTOR (WITH GEAR)	
PM1001	1-454-326-00	SOLENOID, PLUNGER	
Q1001	8-729-925-30	SENSOR (END) (PT4810F)	
Q1002	8-729-925-30	SENSOR (END) (PT4810F)	
S1001	1-571-878-11	SWITCH, PUSH (2 KEY) (CASSETTE DET/REC PROOF)	
S1002	1-571-175-11	SWITCH, PUSH (AC POWER)(1 KEY) (CASSETTE CONTROL LOCK)	

ADA APS DR

SECTION 7
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA...,
UPC...: μPC, UPD...: μPD...

- Screw (#mark) list is given in the last of this parts list.

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

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

Ref.No	Part No.	Description			Remark
	*1-635-763-11	ADA BOARD			
		********			
		CAPACITOR			
C117	1-164-480-11	CERAMIC CHIP	0.01MF	5% 50V	
C217	1-164-480-11	CERAMIC CHIP	0.01MF	5% 50V	
C312	1-135-157-21	TANTAL. CHIP	10MF	10% 6.3V	
C313	1-164-004-11	CERAMIC CHIP	0.1MF	10% 25V	
C314	1-164-004-11	CERAMIC CHIP	0.1MF	10% 25V	
C315	1-164-004-11	CERAMIC CHIP	0.1MF	10% 25V	
C316	1-164-004-11	CERAMIC CHIP	0.1MF	10% 25V	
C317	1-135-157-21	TANTAL. CHIP	10MF	10% 6.3V	
C318	1-135-157-21	TANTAL. CHIP	10MF	10% 6.3V	
C319	1-135-157-21	TANTAL. CHIP	10MF	10% 6.3V	
C320	1-164-004-11	CERAMIC CHIP	0.1MF	10% 25V	
C321	1-135-180-21	TANTAL. CHIP	3.3MF	10% 6.3V	
C322	1-135-180-21	TANTAL. CHIP	3.3MF	10% 6.3V	
C323	1-135-157-21	TANTAL. CHIP	10MF	10% 6.3V	
C324	1-135-157-21	TANTAL. CHIP	10MF	10% 6.3V	
C325	1-135-180-21	TANTAL. CHIP	3.3MF	10% 6.3V	
C326	1-135-180-21	TANTAL. CHIP	3.3MF	10% 6.3V	
C327	1-164-234-11	CERAMIC CHIP	1MF	10V	
C328	1-164-234-11	CERAMIC CHIP	1MF	10V	
		CONNECTOR			
CN304	1-568-366-41	CONNECTOR, BOARD TO BOARD 16P			
		DIODE			
D302	8-719-400-18	DIODE MA152WK			
D303	8-719-104-34	DIODE 1S2836			
		IC			
IC307	8-759-999-09	IC CS5326-KP			
IC308	8-759-999-56	IC PCM1700U-J			
		COIL			
L301	1-412-137-11	INDUCTOR	10UH		
		RESISTOR			
R125	1-216-612-11	METAL CHIP	24	0.50% 1/10W	
R126	1-216-613-11	METAL CHIP	27	0.50% 1/10W	
R225	1-216-612-11	METAL CHIP	24	0.50% 1/10W	
R226	1-216-613-11	METAL CHIP	27	0.50% 1/10W	
R306	1-216-150-00	METAL GLAZE	10	5% 1/8W	

****

Ref.No	Part No.	Description			Remark
	*1-637-533-11	APS BOARD			
		********			
		CAPACITOR			
C801	1-135-161-21	TANTAL. CHIP	22MF	10% 10V	
C802	1-164-004-11	CERAMIC CHIP	0.1MF	10% 25V	
		CONNECTOR			
CN801	*1-566-181-11	PIN, CONNECTOR (PC BOARD) 2P			
		DIODE			
D801	8-719-800-76	DIODE 1SS226			
		JACK			
J801	1-507-933-11	JACK (MIC DC OUT)			
		TRANSISTOR			
Q801	8-729-141-48	TRANSISTOR 2SB624-BV345			
		RESISTOR			
R801	1-216-832-11	METAL GLAZE	8.2K	5% 1/16W	
R802	1-216-830-11	METAL GLAZE	5.6K	5% 1/16W	
R803	1-216-021-00	METAL GLAZE	68	5% 1/10W	
R804	1-216-021-00	METAL GLAZE	68	5% 1/10W	
R805	1-216-025-00	METAL GLAZE	100	5% 1/10W	

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	A-3015-915-A	DR BOARD, COMPLETE			
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	3-831-441-11	CUSHION (B)			
		CAPACITOR			
C601	1-164-156-11	CERAMIC CHIP	0.1MF	25V	
C602	1-164-156-11	CERAMIC CHIP	0.1MF	25V	
C603	1-162-955-11	CERAMIC CHIP	150PF	5% 50V	
C604	1-164-156-11	CERAMIC CHIP	0.1MF	25V	
C605	1-135-167-21	TANTAL. CHIP	68MF	20% 6.3V	
C606	1-164-156-11	CERAMIC CHIP	0.1MF	25V	
		CONNECTOR			
CN601	*1-566-935-11	HOUSING, CONNECTOR 3P			
CN602	*1-569-352-11	HOUSING, CONNECTOR 10P			
		DIODE			
D601	8-719-940-28	DIODE DSD010			
		IC			
IC601	8-752-814-60	IC CXP5024H-114Q			

DR | LINE AMP | MAIN

Ref.No	Part No.	Description			Remark
		TRANSISTOR			
Q603	8-729-901-46	TRANSISTOR DTA114YK			
		RESISTOR			
R601	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W
R602	1-216-841-11	METAL GLAZE	47K	5%	1/16W
R603	1-216-841-11	METAL GLAZE	47K	5%	1/16W
R604	1-216-841-11	METAL GLAZE	47K	5%	1/16W
R605	1-216-841-11	METAL GLAZE	47K	5%	1/16W
R606	1-216-841-11	METAL GLAZE	47K	5%	1/16W
R607	1-216-841-11	METAL GLAZE	47K	5%	1/16W
R608	1-216-841-11	METAL GLAZE	47K	5%	1/16W
R609	1-216-841-11	METAL GLAZE	47K	5%	1/16W
R612	1-216-811-11	METAL GLAZE	150	5%	1/16W
R613	1-216-811-11	METAL GLAZE	150	5%	1/16W
R614	1-216-841-11	METAL GLAZE	47K	5%	1/16W
		NETWORK RESISTOR			
RB601	1-236-500-11	RES, NETWORK (10KX3)			
RB602	1-236-501-21	RES, NETWORK (47KX3)			
RB603	1-236-501-21	RES, NETWORK (47KX3)			
		SWITCH			
S601	1-572-409-11	SWITCH, SLIDE (POWER)			
S602	1-571-533-31	SWITCH, KEY BOARD (LIGHT)			
S603	1-571-533-31	SWITCH, KEY BOARD(AMS⏮)			
S604	1-571-533-31	SWITCH, KEY BOARD(AMS⏭)			
S605	1-571-533-31	SWITCH, KEY BOARD (START ID ENTER)			
S606	1-571-533-31	SWITCH, KEY BOARD (START ID MODE)			
S607	1-571-533-31	SWITCH, KEY BOARD (COUNTER MODE)			
S608	1-571-533-31	SWITCH, KEY BOARD (COUNTER RESET)			
S609	1-571-275-11	SWITCH, SLIDE (HOLD)			
		CRYSTAL			
X601	1-579-063-21	VIBRATOR, CERAMIC (4.19MHz)			

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*1-635-764-11 LINE AMP BOARD

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		CAPACITOR			
C114	1-135-149-21	TANTAL. CHIP	2.2MF	10%	10V
C115	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C116	1-135-161-21	TANTAL. CHIP	22MF	10%	10V
C214	1-135-149-21	TANTAL. CHIP	2.2MF	10%	10V
C215	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C216	1-135-161-21	TANTAL. CHIP	22MF	10%	10V
C310	1-135-149-21	TANTAL. CHIP	2.2MF	10%	10V
C311	1-135-149-21	TANTAL. CHIP	2.2MF	10%	10V
		CONNECTOR			
CN303	1-568-347-41	CONNECTOR, BOARD TO BOARD 5P			
		IC			
IC305	8-759-981-99	IC RC4560M			
IC306	8-759-981-99	IC RC4560M			
		RESISTOR			
R121	1-216-699-11	METAL CHIP	100K	0.50%	1/10W
R122	1-216-653-11	METAL CHIP	1.2K	0.50%	1/10W
R123	1-216-687-11	METAL CHIP	33K	0.50%	1/10W
R124	1-216-675-11	METAL CHIP	10K	0.50%	1/10W
R221	1-216-699-11	METAL CHIP	100K	0.50%	1/10W
R222	1-216-653-11	METAL CHIP	1.2K	0.50%	1/10W
R223	1-216-687-11	METAL CHIP	33K	0.50%	1/10W
R224	1-216-675-11	METAL CHIP	10K	0.50%	1/10W

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A-3015-913-A MAIN BOARD, COMPLETE

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*3-572-862-00 SPACER
3-831-441-11 CUSHION (B)

		CAPACITOR			
C101	1-135-180-21	TANTAL. CHIP	3.3MF	10%	6.3V
C102	1-135-166-21	TANTAL. CHIP	47MF	10%	10V
C103	1-135-157-21	TANTAL. CHIP	10MF	10%	6.3V
C104	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C105	1-163-017-00	CERAMIC CHIP	0.0047MF	5%	50V
C106	1-163-009-11	CERAMIC CHIP	0.001MF	5%	50V
C107	1-163-022-00	CERAMIC CHIP	0.012MF	5%	50V
C108	1-135-157-21	TANTAL. CHIP	10MF	10%	6.3V
C109	1-135-180-21	TANTAL. CHIP	3.3MF	10%	6.3V
C110	1-135-157-21	TANTAL. CHIP	10MF	10%	6.3V
C111	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C112	1-124-576-11	ELECT	220MF	20%	4V
C113	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C201	1-135-180-21	TANTAL. CHIP	3.3MF	10%	6.3V
C202	1-135-166-21	TANTAL. CHIP	47MF	10%	10V
C203	1-135-157-21	TANTAL. CHIP	10MF	10%	6.3V
C204	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C205	1-163-017-00	CERAMIC CHIP	0.0047MF	5%	50V
C206	1-163-009-11	CERAMIC CHIP	0.001MF	5%	50V
C207	1-163-022-00	CERAMIC CHIP	0.012MF	5%	50V
C208	1-135-157-21	TANTAL. CHIP	10MF	10%	6.3V
C209	1-135-180-21	TANTAL. CHIP	3.3MF	10%	6.3V
C210	1-135-157-21	TANTAL. CHIP	10MF	10%	6.3V
C211	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C212	1-124-576-11	ELECT	220MF	20%	4V
C213	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C301	1-135-156-21	TANTAL. CHIP	6.8MF	10%	10V
C302	1-135-156-21	TANTAL. CHIP	6.8MF	10%	10V
C303	1-135-149-21	TANTAL. CHIP	2.2MF	10%	10V
C304	1-135-149-21	TANTAL. CHIP	2.2MF	10%	10V
C305	1-135-149-21	TANTAL. CHIP	2.2MF	10%	10V
C306	1-135-180-21	TANTAL. CHIP	3.3MF	10%	6.3V
C307	1-135-149-21	TANTAL. CHIP	2.2MF	10%	10V
C308	1-135-149-21	TANTAL. CHIP	2.2MF	10%	10V
C309	1-135-157-21	TANTAL. CHIP	10MF	10%	6.3V
C329	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C330	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C331	1-164-234-11	CERAMIC CHIP	1MF		10V
C501	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C502	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C503	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C504	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C505	1-135-159-21	TANTAL. CHIP	10MF	10%	25V
C506	1-135-161-21	TANTAL. CHIP	22MF	10%	10V
C507	1-163-986-00	CERAMIC CHIP	0.027MF	10%	25V
C508	1-162-965-11	CERAMIC CHIP	0.0015MF	10%	50V
C509	1-163-986-00	CERAMIC CHIP	0.027MF	10%	25V
C510	1-162-965-11	CERAMIC CHIP	0.0015MF	10%	50V
C511	1-162-970-11	CERAMIC CHIP	0.01MF	5%	25V
C512	1-162-967-11	CERAMIC CHIP	0.0033MF	5%	50V
C513	1-162-967-11	CERAMIC CHIP	0.0033MF	5%	50V
C514	1-162-967-11	CERAMIC CHIP	0.0033MF	5%	50V
C515	1-135-154-21	TANTAL. CHIP	3.3MF	10%	20V

MAIN

Ref.No	Part No.	Description			Remark
C516	1-164-157-11	CERAMIC CHIP	0.068MF	10%	25V
C517	1-164-157-11	CERAMIC CHIP	0.068MF	10%	25V
C518	1-135-166-21	TANTAL. CHIP	47MF	10%	10V
C519	1-135-177-21	TANTAL. CHIP	1MF	10%	20V
C520	1-135-177-21	TANTAL. CHIP	1MF	10%	20V
C521	1-135-177-21	TANTAL. CHIP	1MF	10%	20V
C522	1-135-177-21	TANTAL. CHIP	1MF	10%	20V
C523	1-135-177-21	TANTAL. CHIP	1MF	10%	20V
C524	1-135-177-21	TANTAL. CHIP	1MF	10%	20V
C525	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C526	1-162-968-11	CERAMIC CHIP	0.0047MF	10%	50V
C527	1-162-970-11	CERAMIC CHIP	0.01MF	5%	25V
C528	1-135-157-21	TANTAL. CHIP	10MF	10%	6.3V
C529	1-162-947-11	CERAMIC CHIP	33PF	5%	50V
C530	1-135-161-21	TANTAL. CHIP	22MF	10%	10V
C531	1-162-970-11	CERAMIC CHIP	0.01MF	5%	25V
C532	1-162-970-11	CERAMIC CHIP	0.01MF	5%	25V
C533	1-164-227-11	CERAMIC CHIP	0.022MF	10%	25V
C534	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C535	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C536	1-135-157-21	TANTAL. CHIP	10MF	10%	6.3V
C537	1-162-916-11	CERAMIC CHIP	12PF	5%	50V
C538	1-162-916-11	CERAMIC CHIP	12PF	5%	50V
C539	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C540	1-135-161-21	TANTAL. CHIP	22MF	10%	10V
C541	1-135-161-21	TANTAL. CHIP	22MF	10%	10V
C542	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C543	1-135-159-21	TANTAL. CHIP	10MF	10%	20V
C544	1-135-159-21	TANTAL. CHIP	10MF	10%	20V
C545	1-135-161-21	TANTAL. CHIP	22MF	10%	10V
C546	1-135-166-21	TANTAL. CHIP	47MF	10%	10V
C547	1-162-970-11	CERAMIC CHIP	0.01MF	5%	25V
C548	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C549	1-164-227-11	CERAMIC CHIP	0.022MF	10%	25V
C550	1-135-157-21	TANTAL. CHIP	10MF	10%	6.3V
C551	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V
C552	1-162-967-11	CERAMIC CHIP	0.0033MF	5%	50V
C553	1-135-157-21	TANTAL. CHIP	10MF	10%	6.3V
C554	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V
C555	1-162-967-11	CERAMIC CHIP	0.0033MF	5%	50V
C556	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C557	1-135-148-21	TANTAL. CHIP	1.5MF	10%	16V
C558	1-135-157-21	TANTAL. CHIP	10MF	10%	6.3V
C559	1-135-157-21	TANTAL. CHIP	10MF	10%	6.3V
C560	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C561	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C562	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C563	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C564	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C565	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C566	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C567	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C568	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C569	1-162-970-11	CERAMIC CHIP	0.01MF	5%	25V
C570	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C571	1-135-166-21	TANTAL. CHIP	47MF	10%	10V
C572	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C574	1-162-964-11	CERAMIC CHIP	0.001MF	10%	50V
C575	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C576	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C577	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C578	1-135-161-21	TANTAL. CHIP	22MF	10%	10V
C579	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C580	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C581	1-164-156-11	CERAMIC CHIP	0.1MF		25V

Ref.No	Part No.	Description			Remark
C582	1-135-161-21	TANTAL. CHIP	22MF	10%	10V
C583A	1-135-157-21	TANTAL. CHIP	10MF	10%	6.3V
C583B	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C584	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C585	1-162-970-11	CERAMIC CHIP	0.01MF	5%	25V
C586	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C587	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C590	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C591	1-135-177-21	TANTAL. CHIP	1MF	10%	20V
C592	1-135-177-21	TANTAL. CHIP	1MF	10%	20V
C593	1-162-970-11	CERAMIC CHIP	0.01MF	5%	25V
C594	1-135-177-21	TANTAL. CHIP	1MF	10%	20V
C595	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C596	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C597	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C701	1-101-888-11	CERAMIC	68PF	5%	50V
C702	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C703	1-164-156-11	CERAMIC CHIP	0.1MF		25V
C704	1-164-156-11	CERAMIC CHIP	0.1MF		25V

CONNECTOR

CN301	1-568-324-31	CONNECTOR, BOARD TO BOARD 5P
CN302	1-568-334-11	CONNECTOR, BOARD TO BOARD 16P
CN501	1-566-531-11	CONNECTOR, FPC (ZIF) 15P
CN502	1-580-438-21	CONNECTOR, FPC 4P
CN503	1-580-438-21	CONNECTOR, FPC 4P
CN504	1-566-526-11	CONNECTOR, FPC (ZIF) 10P
CN505 *	1-565-582-21	PIN, CONNECTOR (PC BOARD) 2P
CN506	1-569-531-11	HOUSING, CONNECTOR 20P
CN508	1-566-528-21	CONNECTOR, FPC (ZIF) 12P
CN509 *	1-565-582-11	PIN, CONNECTOR (PC BOARD) 2P

COMBINATION PARTS

CP501	1-466-376-11	CONVERTER UNIT, DC-DC
CP901	1-466-378-11	INVERTER UNIT

DIODE

D301	8-719-105-91	DIODE RD5.6M-B2
D304	8-719-400-18	DIODE MA152WK
D305	8-719-800-76	DIODE 1SS226
D501	8-719-800-76	DIODE 1SS226
D502	8-719-800-76	DIODE 1SS226
D503	8-719-800-76	DIODE 1SS226
D504	8-719-800-76	DIODE 1SS226
D505	8-719-911-06	DIODE 1SS106

FUSE

F501	⚠1-532-637-00	LINK, IC ICP-N25 1.0A

IC

IC301	8-759-981-99	IC RC4560M
IC302	8-759-501-41	IC SM5840BS
IC303	8-759-981-99	IC RC4560M
IC304	8-759-981-82	IC RC3414M
IC501	8-752-038-71	IC CXA1127AM
IC502	8-759-990-55	IC CXA8006M
IC503	8-752-039-31	IC CXA1418N
IC504	8-752-818-81	IC CXP80524-022Q
IC505	8-759-500-05	IC MSM6338MS-K
IC506	8-759-507-26	IC RH5RA51AA
IC507	8-759-940-45	IC S-8054HN-CB
IC509	8-759-981-65	IC LM2903M
IC510	8-759-929-26	IC TL431CPS
IC511	8-759-998-10	IC MB3854
IC512	8-759-981-65	IC LM2903M

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

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

Ref.No	Part No.	Description	Remark
IC513	8-759-981-69	IC LM2904M	
IC514	8-759-031-60	IC SC7SU04FER	
IC515	8-752-339-43	IC CXD2601AQ	
IC516	8-752-326-24	IC CXK58257M-12L	
IC517	8-759-931-43	IC SN74LS624NS	
IC518	8-759-981-69	IC LM2904M	
IC519	8-759-031-60	IC SC7SU04FER	
IC520	8-759-031-60	IC SC7SU04FER	
IC521	8-759-031-60	IC SC7SU04FER	
IC525	8-759-710-79	IC NJM2107F	
		JACK	
J301	*1-562-974-51	JACK (MIC/LINE IN)	
J302	*1-562-974-61	JACK (LINE OUT)	
J303	*1-562-974-41	JACK (PHONES)	
J501	1-569-966-11	JACK, DC (DC IN 9V)	
		COIL	
L101	1-410-997-31	INDUCTOR CHIP 2.2UH	
L102	1-410-997-31	INDUCTOR CHIP 2.2UH	
L103	1-410-997-31	INDUCTOR CHIP 2.2UH	
L201	1-410-997-31	INDUCTOR CHIP 2.2UH	
L202	1-410-997-31	INDUCTOR CHIP 2.2UH	
L203	1-410-997-31	INDUCTOR CHIP 2.2UH	
L302	1-410-198-51	INDUCTOR CHIP 3.3UH	
L303	1-410-997-31	INDUCTOR CHIP 2.2UH	
L304	1-410-997-31	INDUCTOR CHIP 2.2UH	
L501	1-412-137-11	INDUCTOR 10UH	
L502	1-412-137-11	INDUCTOR 10UH	
L503	1-412-137-11	INDUCTOR 10UH	
L504	1-412-137-11	INDUCTOR 10UH	
L505	1-410-997-31	INDUCTOR CHIP 2.2UH	
		TRANSISTOR	
Q101	8-729-159-64	TRANSISTOR 2SD596	
Q102	8-729-159-64	TRANSISTOR 2SD596	
Q201	8-729-159-64	TRANSISTOR 2SD596	
Q202	8-729-159-64	TRANSISTOR 2SD596	
Q301	8-729-159-64	TRANSISTOR 2SD596	
Q302	8-729-141-48	TRANSISTOR 2SB624-BV345	
Q303	8-729-402-19	TRANSISTOR XN6501	
Q501	8-729-140-75	TRANSISTOR 2SD999-CLCK	
Q502	8-729-140-75	TRANSISTOR 2SD999-CLCK	
Q503	8-729-901-01	TRANSISTOR DTC144EK	
Q505	8-729-271-23	TRANSISTOR 2SC2712	
Q506	8-729-900-53	TRANSISTOR DTC114EK	
Q507	8-729-422-18	TRANSISTOR XN4315	
		RESISTOR	
R101	1-216-675-11	METAL CHIP 10K 0.50% 1/10W	
R102	1-216-643-11	METAL CHIP 470 0.50% 1/10W	
R103	1-216-667-11	METAL CHIP 4.7K 0.50% 1/10W	
R104	1-216-691-11	METAL CHIP 47K 0.50% 1/10W	
R105	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R106	1-216-685-11	METAL CHIP 27K 0.50% 1/10W	
R107	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R108	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R109	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R110	1-216-817-11	METAL GLAZE 470 5% 1/16W	
R111	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R112	1-216-835-11	METAL GLAZE 15K 5% 1/16W	
R113	1-216-813-11	METAL GLAZE 220 5% 1/16W	
R114	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R115	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R116	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R117	1-216-845-11	METAL GLAZE 100K 5% 1/16W	

Ref.No	Part No.	Description	Remark
R118	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R119	1-216-011-00	METAL GLAZE 27 5% 1/10W	
R120	1-216-823-11	METAL GLAZE 1.5K 5% 1/16W	
R127	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R128	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R201	1-216-675-11	METAL CHIP 10K 0.50% 1/10W	
R202	1-216-643-11	METAL CHIP 470 0.50% 1/10W	
R203	1-216-667-11	METAL CHIP 4.7K 0.50% 1/10W	
R204	1-216-691-11	METAL CHIP 47K 0.50% 1/10W	
R205	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R206	1-216-685-11	METAL CHIP 27K 0.50% 1/10W	
R207	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R208	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R209	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R210	1-216-817-11	METAL GLAZE 470 5% 1/16W	
R211	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R212	1-216-835-11	METAL GLAZE 15K 5% 1/16W	
R213	1-216-813-11	METAL GLAZE 220 5% 1/16W	
R214	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R215	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R216	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R217	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R218	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R219	1-216-011-00	METAL GLAZE 27 5% 1/10W	
R220	1-216-823-11	METAL GLAZE 1.5K 5% 1/16W	
R227	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R228	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R301	1-216-848-11	METAL GLAZE 180K 5% 1/16W	
R302	1-216-850-11	METAL GLAZE 270K 5% 1/16W	
R303	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R304	1-216-814-11	METAL GLAZE 270 5% 1/16W	
R305	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R307	1-216-809-11	METAL GLAZE 100 5% 1/16W	
R308	1-216-809-11	METAL GLAZE 100 5% 1/16W	
R309	1-216-809-11	METAL GLAZE 100 5% 1/16W	
R310	1-216-809-11	METAL GLAZE 100 5% 1/16W	
R311	1-216-841-11	METAL GLAZE 47K 5% 1/16W	
R501	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R502	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R503	1-216-813-11	METAL GLAZE 220 5% 1/16W	
R504	1-216-813-11	METAL GLAZE 220 5% 1/16W	
R505	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R506	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R507	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R508	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R509	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R510	1-216-838-11	METAL GLAZE 27K 5% 1/16W	
R511	1-216-838-11	METAL GLAZE 27K 5% 1/16W	
R512	1-216-838-11	METAL GLAZE 27K 5% 1/16W	
R513	1-216-819-11	METAL GLAZE 680 5% 1/16W	
R514	1-217-806-11	METAL GLAZE 1 5% 1/8W	
R515	1-217-806-11	METAL GLAZE 1 5% 1/8W	
R516	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R517	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R518	1-216-833-11	METAL GLAZE 10K 5% 1/16W	
R519	1-216-829-11	METAL GLAZE 4.7K 5% 1/16W	
R520	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R521	1-216-821-11	METAL GLAZE 1K 5% 1/16W	
R522	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R523	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R524	1-216-845-11	METAL GLAZE 100K 5% 1/16W	
R525	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R526	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R527	1-216-837-11	METAL GLAZE 22K 5% 1/16W	
R528	1-216-837-11	METAL GLAZE 22K 5% 1/16W	

MAIN

Ref.No	Part No.	Description				Remark
R529	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R530	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R531	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R532	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R533	1-216-818-11	METAL GLAZE	560	5%	1/16W	
R534	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R535	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R536	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R537	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R538	1-216-699-11	METAL CHIP	100K	0.50%	1/10W	
R539	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R540	1-216-854-11	METAL GLAZE	560K	5%	1/16W	
R541	1-216-847-11	METAL GLAZE	150K	5%	1/16W	
R542	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W	
R543	1-218-294-11	METAL GLAZE	30K	5%	1/16W	
R544	1-216-064-00	METAL GLAZE	4.3K	5%	1/10W	
R545	1-216-820-11	METAL GLAZE	820	5%	1/16W	
R546	1-216-698-11	METAL CHIP	91K	0.50%	1/10W	
R547	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R548	1-216-685-11	METAL CHIP	27K	0.50%	1/10W	
R549	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R550	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R551	1-216-811-11	METAL GLAZE	150	5%	1/16W	
R552	1-216-834-11	METAL GLAZE	12K	5%	1/16W	
R553	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R554	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R555	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R556	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R557	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R558	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R559	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R560	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R561	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R562	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R563	1-216-635-11	METAL CHIP	220	0.50%	1/10W	
R564	1-216-171-00	METAL GLAZE	75	5%	1/8W	
R565	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R566	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R567	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R568	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R570	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R571	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R572	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R573	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R574	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R575	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R576	1-216-635-11	METAL CHIP	220	0.50%	1/10W	
R577	1-216-699-11	METAL CHIP	100K	0.50%	1/10W	
R578	1-216-699-11	METAL CHIP	100K	0.50%	1/10W	
R579	1-216-690-11	METAL CHIP	43K	0.50%	1/10W	
R580	1-216-699-11	METAL CHIP	100K	0.50%	1/10W	
R581	1-216-857-11	METAL GLAZE	1M	5%	1/16W	
R582	1-216-794-11	METAL GLAZE	5.6	5%	1/16W	
R583	1-216-794-11	METAL GLAZE	5.6	5%	1/16W	
R584	1-216-794-11	METAL GLAZE	5.6	5%	1/16W	
R585	1-216-841-11	METAL GLAZE	47K	5%	1/16W	
R586	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R587	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R588	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R589	1-216-809-11	METAL GLAZE	100	5%	1/16W	
R590	1-216-829-11	METAL GLAZE	4.7K	5%	1/16W	
R591	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R592	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R593	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R594	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R595	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R596	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R597	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R598	1-216-839-11	METAL GLAZE	33K	5%	1/16W	
R599	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R600	1-216-817-11	METAL GLAZE	470	5%	1/16W	
R701	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W	
R702	1-216-833-11	METAL GLAZE	10K	5%	1/16W	
R703	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R704	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R705	1-216-009-00	METAL GLAZE	22	5%	1/10W	
R706	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R707	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R708	1-216-845-11	METAL GLAZE	100K	5%	1/16W	
R709	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R710	1-216-849-11	METAL GLAZE	220K	5%	1/16W	
R711	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R712	1-216-821-11	METAL GLAZE	1K	5%	1/16W	
R713	1-216-826-11	METAL GLAZE	2.7K	5%	1/16W	
R714	1-216-837-11	METAL GLAZE	22K	5%	1/16W	
R715	1-216-838-11	METAL GLAZE	27K	5%	1/16W	
R716	1-216-843-11	METAL GLAZE	68K	5%	1/16W	
R717	1-216-821-11	METAL GLAZE	1K	5%	1/16W	

VARIABLE RESISTOR

RV301	1-241-159-11	RES, VAR, CARBON 20K/20K (REC LEVEL)
RV302	1-241-159-11	RES, VAR, CARBON 20K/20K (VOLUME)
RV501	1-238-666-11	RES, ADJ, CERMET 47K

SWITCH

S301	1-570-182-11	SWITCH, SLIDE (INPUT SELECT)
S302	1-570-087-11	SWITCH, SLIDE (MIC ATT)

CRYSTAL

X501	1-579-064-11	VIBRATOR, CRYSTAL (9.408MHz)
X502	1-567-814-11	VIBRATOR, CRYSTAL (24.576MHz)
X503	1-567-815-11	VIBRATOR, CRYSTAL (22.5792MHz)
X504	1-567-816-11	VIBRATOR, CRYSTAL (18.816MHz)

Ref.No	Part No.	Description	Remark
		MISCELLANEOUS	
		*********	
	1-466-369-11	RF MODULE	
	1-572-408-11	SWITCH, ENCAPSULATED	
	1-590-202-11	WIRE (WITH TERMINAL)	
	1-808-281-41	SENSOR (DEW)	
CN901	1-575-917-11	CABLE (WITH CONNECTOR) (REMOTE DIGITAL I/O)	
CP901	1-466-378-11	INVERTER UNIT	
EL901	1-519-621-11	ELECTRIC LUMINESCENCE	
M1001	1-541-777-11	MOTOR (WITH GEAR)	
ND901	1-550-598-11	DISPLAY PANEL, LIQUID CRYSTAL	
PM1001	1-454-326-00	SOLENOID, PLUNGER	
Q1001	8-729-925-30	SENSOR (END) (PT4810F)	
Q1002	8-729-925-30	SENSOR (END) (PT4810F)	
S1001	1-571-878-11	SWITCH, PUSH (2 KEY) (CASSETTE DET/REC PROOF)	
S1002	1-571-175-11	SWITCH, PUSH (AC POWER) (1 KEY) (CASSETTE CONTROL LOCK)	

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		HARDWARE LIST	
		**********	
#1	7-627-850-37	SCREW,PRECISION +P 1.4X1.4	
#2	7-627-850-47	SCREW,PRECISION +P 1.4X1.6	
#3	7-627-551-47	SCREW,PRECISION +P 1.4X1.4	
#4	7-627-850-17	SCREW,PRECISION +P 1.4X2.5	
#5	7-627-551-17	SCREW,PRECISION +P 1.4X2	
#6	7-627-551-77	SCREW,PRECISION +P 1.4X4 TYPE1	
#7	7-627-451-07	SCREW,PRECISION +K 1.4X1.6	

Ref.No	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	
		**********	
⚠	1-465-522-11	AC ADAPTOR / CHARGE (ACP-D33) (TOURIST, E)	
⚠	1-465-524-11	AC ADAPTOR / CHARGE (ACP-D30) (AEP)	
⚠	1-465-525-11	AC ADAPTOR / CHARGE (ACP-D3U) (US)	
⚠	1-465-527-11	AC ADAPTOR / CHARGE (ACP-D3U) (CND)	
⚠	1-465-528-11	AC ADAPTOR / CHARGE (ACP-D30) (UK)	
⚠	1-528-333-11	BATTERY PACK (BP-D3) (US, CND, UK, E)	
⚠	1-528-334-11	BATTERY PACK (BP-D3) (AEP)	
⚠	1-569-007-11	ADAPTER, CONVERSION 2P (E)	
	1-590-161-11	CORD, CONNECTION	
	1-590-264-11	CABLE, OPTICAL BIGITAL (POC-DA12)	
*	3-361-185-01	CUSHION (UPPER)	
*	3-361-186-01	CUSHION (LOWER)	
*	3-361-187-01	INDIVIDUAL CARTON (UK)	
*	3-366-519-01	INDIVIDUAL CARTON (US, CND, AEP, E)	
	3-361-189-01	CASE, CARRYING	
	3-701-630-00	BAG, POLYETHYLENE	
	3-752-456-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE)(AEP)	
	3-752-456-21	MANUAL, INSTRUCTION (ENGLISH)(US)	
	3-752-456-41	MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN) (AEP)	
	3-752-456-51	MANUAL, INSTRUCTION (KOREAN) (TOURIST)	
	3-752-456-61	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE)(TOURIST, E)	
	3-752-456-81	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE)(CND, UK)	

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

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