

PCM-R300

SERVICE MANUAL

Ver 1.1 2001.06

US Model
Canadian Model
AEP Model
UK Model



Model Name Using Similar Mechanism	DTC-A6
Tape Transport Mechanism Type	DATM-110A

SPECIFICATIONS

Recording section	
Tape	Digital audio tape
Recording head	Rotary head
Recording time	Standard: 120 minutes Long-play: 240 minutes (DT-120)
Tape speed	Standard: 8.15 mm/s Long-play: 4.075 mm/s
Drum rotation	Standard: 2,000 rpm Long-play: 1,000 rpm
Error correction	Double-encoded Reed Solomon code
Tape section	
Track pitch	13.6 μ m (20.4 μ m)
Sampling frequency	48 kHz, 44.1 kHz, 32 kHz
Modulation system	8-10 modulation
Transfer rate	2.46 Mbit/sec
Number of channels	2 channels, stereo
D / A conversion (quantization)	Standard: 16-bit linear Long-play: 12-bit non-linear

General section	
Power requirements	
Where purchased	Power requirements
U.S.A./Canada	120 V AC, 60 Hz
Europe/U.K.	230 V AC, 50/60 Hz
Power consumption	30 W
Dimensions	Approx 432 x 122 x 325 mm (w/h/d) (17 x 4 7/8 x 12 7/8 inches) (not including rack mount adaptor)
Weight	Approx 5.0 kg (11 lb)
Remote commander RM-D757 (supplied)	
Remote control system	Infrared control
Power requirements	3V DC, with two size-AA (R6) batteries
Dimensions	Approx 45 x 210 x 26 mm (w/h/d) (1 7/8 x 8 1/4 x 1 1/8 inches)
Weight	Approx 100g (3.5 oz) incl. batteries

Input jacks				
Analog input				
Jack	Type	Input impedance	Rated input level ¹⁾	
ANALOG (LINE)	Phono-plug jack	47 kilohms	-12 dBs	
Digital input				
Jack	Type	Input impedance	Rated input level	
COAXIAL	Phono-plug jack	75 ohms	0.5 Vp-p	
OPTICAL	Optical jack	—	—	
Output jacks				
Analog Output				
Jack	Type	Output impedance	Rated output level ¹⁾	Load impedance
ANALOG (LINE)	Phono-plug jack	470 ohms	-12 dBs	47 kilohms
PHONES	Stereo phono-plug jack	100 ohms	0.36 mW	32 ohms

— Continued on next page —

DIGITAL AUDIO RECORDER

9-922-708-12
2001F0200-1
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Home Audio Company
Shinagawa Tec Service Manual Production Group

SONY®

Digital Output

Jack	Type	Output impedance	Rated output level	Load impedance
COAXIAL	Phono-plug jack	75 ohms	0.5 Vp-p	75 ohms
OPTICAL	Optical jack	—	Wavelength: 660 nm	—

Audio characteristics

Frequency response^{b)} Standard: 20-20,000 Hz (± 0.5 dB)
Long-play: 20-14,500 Hz (± 0.5 dB)

Signal-to-noise ratio^{b)} 90 dB or more (20 kHz LPF, A-Weight filter ON)

Total harmonic distortion^{b)} Standard: 0.05% or less
Long-play: 0.3% or less
(1 kHz, Reference level^{a)} 20 kHz LPF ON)

Wow and flutter Below measurable limit ($\pm 0.001\%$ W.PEAK)

a) The reference level corresponds to -20 dB on the peak level meters.

b) During analog input with the SBM function off

Supplied accessories

- AC power cord (1)
- Remote commander (remote) RM-D757 (1)
- Size-AA (R6) batteries (2)
- Rack mount adaptors (2)
- Screws (M5 $\times$ 12) (4)
- Decorative washers (4)
- Decorative panel (1)
- Tapping screws (3 $\times$ 8) (2)
- Operating instructions (1)

Design and specifications are subject to change without notice.

Notes on chip component replacement

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

MODEL IDENTIFICATION

— Back Panel —



3-018-941-0 π : US, Canadian model
3-018-941-1 π : AEP, UK model

SAFETY-RELATED COMPONENT WARNING !!

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

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

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

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

Check the antenna terminals, metal trim, “metallized” knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE

The AC leakage from any exposed metal part to earth Ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers’ instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The “limit” indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

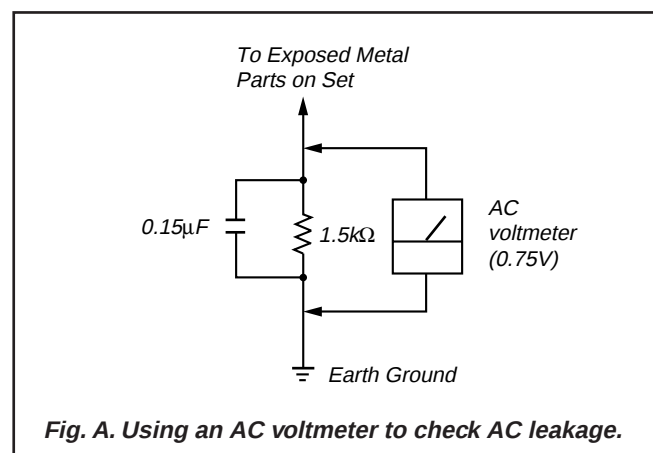


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SECTION 1

SERVICING NOTE

Fluorescent indicator tube lit, key check mode

The Fluorescent indicator tubes and keys can be checked in this test mode.

Settings: INPUT switch : Center click
ID MODE switch : Center click
REC MODE switch : Center click

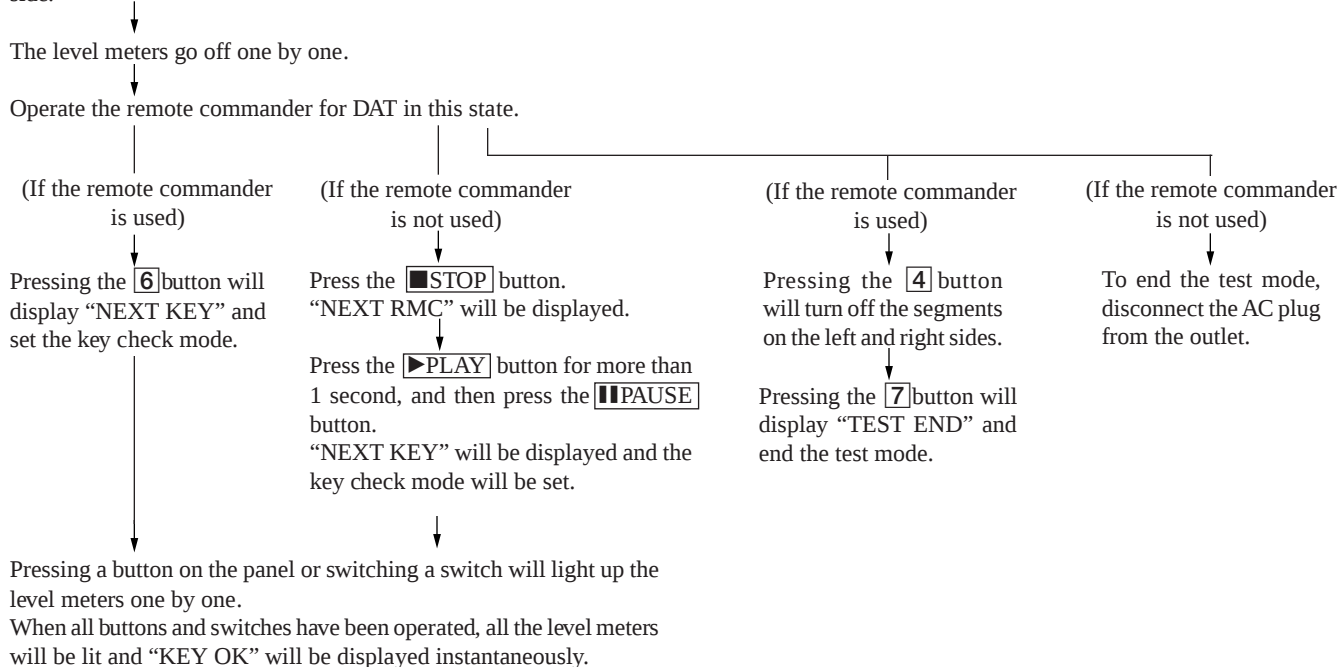
NOTE: The method differs for when the remote commander provided is used or not.

Method:

1. Disconnect the AC plug from the outlet, and short-circuit the TP (TEST) of the display board and ground.
2. Connect the AC plug to the outlet, and turn on the power to start the check.

Flow:

The left and right segments of the Fluorescent indicator tubes and level meters light up, and the grids light up in order from the right side.

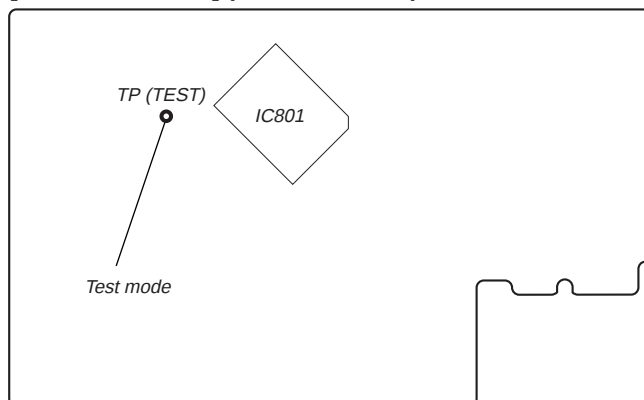


"TEST END" is displayed and the test mode is ended.

- To reset the test mode, turn the power off and disconnect the wire shorting TP (TEST) and ground.

• Part Location

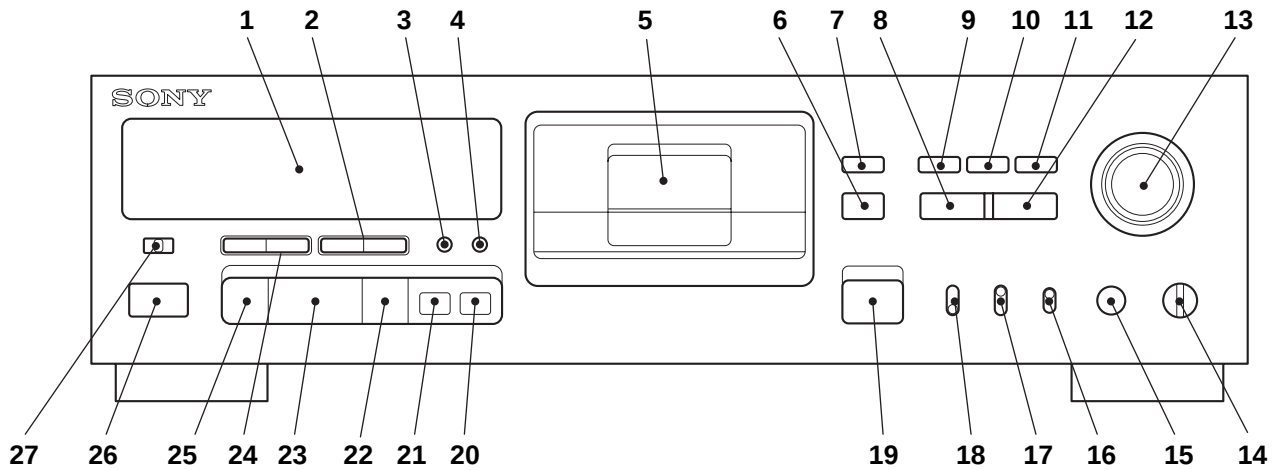
[DISPLAY BOARD] (Conductor side)



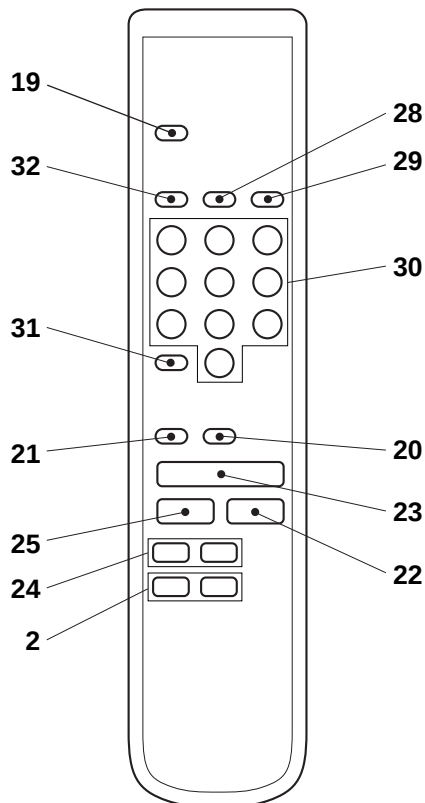
SECTION 2 GENERAL

Location of Parts and Controls

Front panel



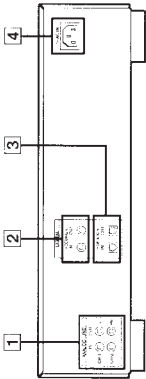
Remote commander (RM-D757)



- 1 Display window
- 2 ◀◀/▶▶ (REW/FF), DATA buttons
- 3 MODE, MENU button
- 4 RESET, ENTER button
- 5 Cassette holder
- 6 Remote sensor
- 7 MARGIN RESET button
- 8 WRITE button
- 9 START ID AUTO button
- 10 START ID RENUMBER button
- 11 START ID REHEARSAL button
- 12 ERASE button
- 13 REC LEVEL control
- 14 PHONE LEVEL control
- 15 PHONES jack
- 16 SBM switch
- 17 REC MODE switch
- 18 ID MODE switch
- 19 ▲ OPEN / CLOSE button
- 20 ● REC button
- 21 ○ REC MUTE button
- 22 ■ PAUSE button
- 23 ▶ PLAY button
- 24 ◀◀/▶▶ AMS, SELECT buttons
- 25 ■ STOP button
- 26 POWER button
- 27 INPUT switch
- 28 COUNTER MODE button
- 29 COUNTER RESET button
- 30 Numeric buttons
- 31 CLEAR button
- 32 REPEAT button

Hooking Up the System

This section describes how to hook up your deck to an amplifier, CD player, MD deck, or other audio components. Be sure to turn off the power to each component before making the connections.



- 1 ANALOG (LINE) IN/OUT jacks
- 2 DIGITAL COAXIAL IN/OUT jacks
- 3 DIGITAL OPTICAL IN/OUT jacks
- 4 AC IN socket

Analog connections

Use phone-plug audio connecting cables (not supplied).

Digital connections

For connections through the DIGITAL COAXIAL IN/OUT jacks

Use coaxial digital connecting cables (not supplied).

For connections through the DIGITAL OPTICAL IN/OUT jacks

Use optical digital connecting cables (not supplied).

Connecting the AC power cord

Connect the AC power cord (supplied) to the AC IN socket on the rear panel and connect the plug on the other end to a wall outlet.

Automatic writing of start IDs during recording

- When the AUTO indicator lights up in the display during recording, the automatic writing of start IDs takes place according to the input jack used and the signal format, as shown in the table below.
- You can select the trigger for the automatic writing of start IDs such as an audio input signal level, a DAT start ID code, or a Q-code from a CD track by menu settings (see pages 19 and 20).

○ automatic writing possible
× automatic writing prohibited

Input jack	Signal format (Category code)	Automatic writing according to audio input level ^{a)}	DAT start input ID ^{b)}	Q-code from a CD track
DIGITAL COAXIAL	IEC-958 for broadcasting studio use	○	○ ^{c)}	×
	IEC-958 for consumer use	○	○	×
DIGITAL COAXIAL/ OPTICAL	IEC-958 for consumer (CD) use	○	×	○ ^{d)}
	(Other)	○	×	×
ANALOG (LINE)		○	×	×

- a) If the input level remains under the level set in the "L-SY TH" menu longer than the time set in the "L-SY BK" menu (see page 19), the deck writes a start ID when the input level rises above that level.
- b) DAT skip IDs are automatically written in the same way.
- c) Only when connected to the PCM-2300, PCM-2700, or PCM-2700A.
- d) Some CD players do not output track information (Q-code) in the digital signal.

Digital signal lock range

- The lock range of a digital signal (signal reception range) is about ±0.1% for a sampling frequency of 48 kHz, 44.1 kHz, or 32 kHz. Variable pitch signals are not receivable.
- When the digital input sampling frequency information does not match the actual sampling frequency, it is possible to record that signal if you change the REC MODE switch on the front panel to the actual sampling frequency of the signal.



You can check the signal format input from the DIGITAL COAXIAL or OPTICAL IN jack

See "Menu Operations" ("DIF") on page 20.

Digital Interface

Digital input and output jacks

- The following table shows signal formats that correspond to the input and output jacks on the deck.
- The DIGITAL COAXIAL IN jack accepts not only the consumer version of the IEC-958 international digital audio interface standard, but also the broadcasting studio version of the IEC-958 standard used by such DAT decks as the PCM-2300, PCM-2700 or PCM-2700A.

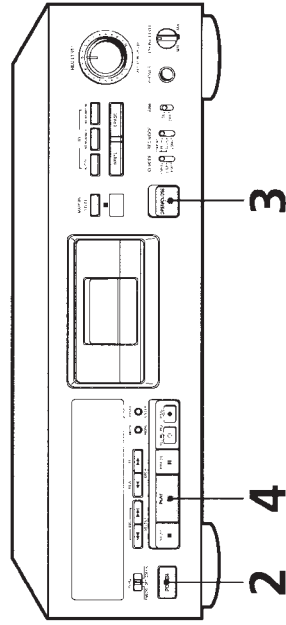
Type	Input signal format	Output signal format
DIGITAL COAXIAL/ OPTICAL	IEC-958 for consumer use	IEC-958 for consumer use
	IEC-958 for broadcasting studio use	
DIGITAL COAXIAL	IEC-958 for broadcasting studio use	

Copy information during recording

- Copy information that is recorded on tape during recording varies according to the input jack used and the signal format, as shown in the table below.
- In the case of the IEC-958 for broadcasting studio use, the digital signal carries no copy information.
- As for the IEC-958 for consumer use, three types of copy information exists: copying possible, first-generation copy permitted, and copying prohibited (Serial Copy Management System).

Input jack	Signal format	Copy information carried by digital signal deck	Recording capability on this tape
DIGITAL COAXIAL	IEC-958 for broadcasting studio use	None	Possible by menu setting (page 19)
	IEC-958 for consumer use	Permitted	Possible
DIGITAL COAXIAL/ OPTICAL	IEC-958 for consumer use	First-generation only	Possible (ID 6:10)
		Prohibited	Possible (ID 6:10)
ANALOG (LINE)		—	Possible by menu setting (page 19)
			Possible (ID 6:10)

Playing a Tape

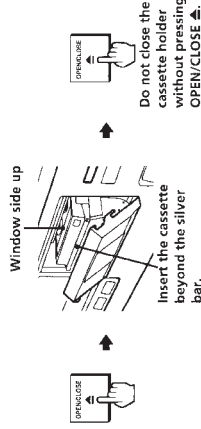


See page 5 for hookup information.

1 Turn on the amplifier and set the source selector to the position for DAT.

2 Press POWER.

3 Press OPEN/CLOSE and insert a cassette.

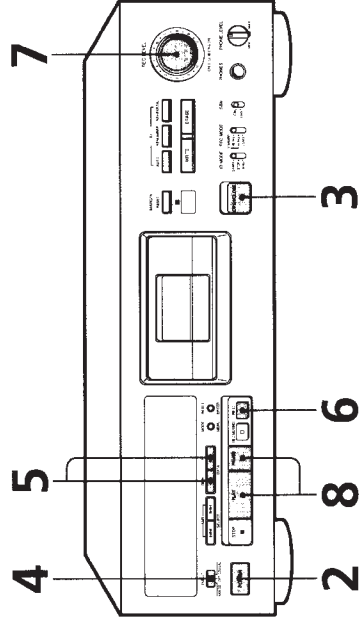


4 Press PLAY. The deck starts playing. Adjust the volume on the amplifier.

To use headphones
Connect them to the PHONES jack. Use PHONE LEVEL to adjust the volume.

To	Press
Stop playing	STOP ■
Pause playing	PAUSE ■. Press the button again or press PLAY ▶ to resume play.
Go to the next track or the preceding track	▶▶ (AMS) or ◀◀ (AMS)
Fast-forward or rewind	▶▶ (FF) or ◀◀ (RLW) when the deck is stopped
Fast-forward or rewind while monitoring the sound	▶▶ (FF) or ◀◀ (REW) during playback. Release the button to resume normal playback.
Take out the cassette	OPEN/CLOSE ▲ after stopping playing

Recording on a Tape

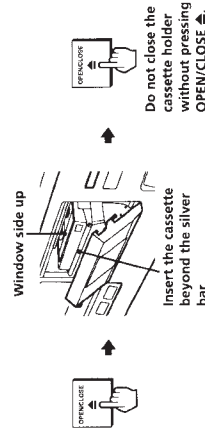


See page 5 for hookup information.

1 Turn on the amplifier and play the program source you want to record.

2 Press POWER.

3 Press OPEN/CLOSE and insert a cassette.



4 Set INPUT to the corresponding input connector.

To record through	Set INPUT to
ANALOG (LINE) IN	ANALOG
DIGITAL OPTICAL IN	OPT
DIGITAL COAXIAL IN	COAXIAL

5 Locate the position where you want to start recording.

To record from the beginning of the tape

Press **◀◀** (REW) to rewind the tape to its beginning.

To record from the end of the recorded portion

1 Press **◀◀** (REW) to rewind the tape to its beginning.

2 Press **▶▶** (FF).

The deck locates the end of the recorded portion on the tape and stops automatically.

6 Press REC ●

The deck changes to recording pause.

Recording does not start yet.

7 When recording the analog input signal, adjust the recording level with REC LEVEL CH-1 (L)/2 (R).

The recommended recording level is 3.

8 Press PAUSE ■ or PLAY ▶.

Recording starts.

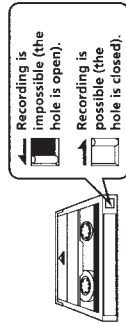
9 Start playing the program source.

When the tape reaches the end, the deck rewinds it automatically to its beginning and stops (Auto Rewind).

To	Press
Stop recording	STOP ■
Pause recording	PAUSE ■. Press the button again to resume recording.
Take out the cassette	OPEN/CLOSE ▲ after stopping recording

To prevent accidental erasure

Slide the record-protect tab to the left as shown in the illustration below.



If you insert the cassette whose hole is open and press the REC ● button, "PROTECT" appears in the display and the recording cannot be done.

If "UNLOCK" appears in the display
The program source is not connected to the deck properly or is not turned on. Make sure that the program source is properly connected or turned on.

To adjust the recording level more accurately
While monitoring the sound, turn REC LEVEL CH-1 (L)/2 (R) so that the recording level on the peak level meters is at maximum level without entering the OVER range.



The segments of the peak level meters corresponding to the maximum signal strength remain lit longer than normal.

The MARGIN indication shows the margin between maximum signal strength and 0 dB, changing each time a stronger signal is input.

If the level exceeds 0 dB

The segments under the OVER indicator light up, and "0.0dB" flashes in the display.

If these segments light steadily, sound distortion may occur. To avoid this, keep the recording level between -12 dB and 0 dB.

To reset the margin indication

Press MARGIN RESET. The margin indication changes to "...dB".

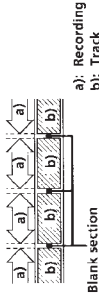
Things You Should Know Before Recording

The difference between a blank section and a sound-muted section

The deck distinguishes between two kinds of silent sections, which are respectively called a "blank section" or "sound-muted section".

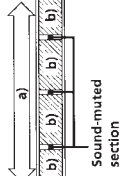
Blank section

This is a section on which no signal has ever been recorded.



Sound-muted section

This is a section on which a signal has been recorded but at a level that is not audible.



Important

Make sure no blank sections are created while you are recording. The existence of blank sections within recorded material will make search operations using the ◀◀/▶▶ (AMS) buttons impossible or destroy the continuity of the absolute time codes.

Absolute time codes

Absolute time codes indicate the elapsed time from the beginning of the tape. These codes are automatically recorded. Note that once recorded, absolute time codes cannot be re-written.

For accurate recording of absolute time codes

- If the tape is blank, make sure to start recording from the beginning of the tape.
- Use Record Muting (see page 12) to insert spaces between tracks. Do not advance the tape with the PLAY ▶ or ▶▶ (FF) button.
- To start recording from the middle of a tape, use End Search (see this page) to locate the end of the recorded portion. This will prevent the creation of blank sections.

If the EMPHASIS indicator lights up in the display

The deck is recording a digital signal with emphasis (in the higher frequencies). The recording will also contain the same emphasis.

If the deck is left in recording pause for more than 10 minutes

Recording pause will be released automatically; the deck will stop for the sake of tape protection and "SOURCE" will appear in the display.

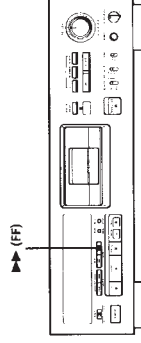
To resume recording, press the REC ● button. The deck will change to recording pause.

When using a new tape

Before you record on a new tape, we recommend that you fast forward the whole tape and then rewind to the beginning to make the tape run smoothly.

Locating the End of the Recorded Portion (End Search)

When recording from the middle of a tape, use End Search to locate the end of the recorded portion. This will prevent the creation of a blank section on the tape.



Press ▶▶ (FF) with the deck stopped.

The deck locates the end of the recorded portion (the beginning of the blank portion or the position of the end ID), then stops.

The deck stops at the beginning of any blank section that is 9 seconds or longer, or fast-forwards to the end of the tape if the tape is blank.

When you press the REC ● button while in a blank section

The deck rewinds the tape to the beginning of the blank section and changes to recording pause. "BLANK" and "WAIT" appear in the display while the deck is searching for the beginning of the blank section.

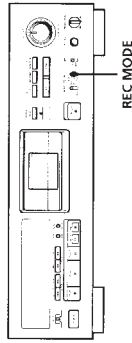
Note

End Search does not operate if you press the ▶▶ (FF) button while in a blank section.

Setting the Recording Mode

You can select either of two recording modes—standard or long—in the following cases.

- When recording an analog input signal with the INPUT switch set to ANALOG.
- When recording a digital input signal with a sampling frequency of 32 kHz with the INPUT switch set to OPT or COAXIAL.



Set REC MODE to select the recording mode.

The following table shows the selectable recording modes and corresponding REC MODE position and sampling frequency for various input signals.

Input signal	REC MODE position	Recording mode
Analog	STANDARD (48 kHz)	Standard play (48 kHz)
	STANDARD (44.1 kHz)	Standard play (44.1 kHz)
	LONG	Long play (32 kHz)
Digital (32 kHz)	STANDARD (48 kHz)	Standard play (48 kHz)
	STANDARD (44.1 kHz)	Standard play (44.1 kHz)
	LONG	Long play (32 kHz)
Digital (44.1 kHz)	STANDARD (48 kHz)	Standard play (44.1 kHz) (Standard play only)
	STANDARD (44.1 kHz)	Standard play (44.1 kHz) (Standard play only)
	LONG	Long play (32 kHz)
Digital (48 kHz)	STANDARD (48 kHz)	Standard play (48 kHz)
	STANDARD (44.1 kHz)	Standard play (44.1 kHz) (Standard play only)
	LONG	Long play (32 kHz)

The recording time in long play mode (the REC MODE switch set to LONG) is twice as long as standard-play mode.

The LONG indicator lights up in the display while playing or recording in long play mode.

The counter in long-play mode

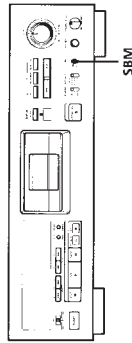
The displayed tape running time, absolute time and remaining time on the tape are for standard-play mode. Double the time to obtain the corresponding times for long-play mode.

Note

Do not change the INPUT or REC MODE setting while recording. This may cause an error in the "PCM TIME" (playing time of the track) display.

Using the SBM (Super Bit Mapping) Function

The SBM function uses the principles of human hearing and noise-shaping technology to reduce quantizing noise within the frequency band. You can use the SBM function to record analog input signal only when the INPUT switch is set to ANALOG, and the REC MODE switch to STANDARD (either 48 kHz or 44.1 kHz).



Set SBM to ON.

The SBM indicator lights up in the display during recording using the SBM function.

To turn the SBM function off

Set SBM to OFF.

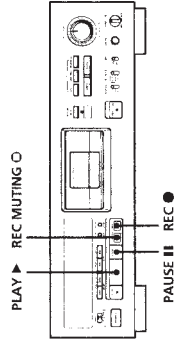
Note

The SBM function operates only during recording. The improved sound produced by the SBM function, however, can be enjoyed during playback, regardless of the SBM switch position or the DAI deck being used.

Inserting a Sound-Muted Section While Recording (Record Muting)

Use Record Muting to insert a space of about 0.5 to 9.5 seconds between tracks.

For details on setting the duration of the blank space, see "Menu Operations" ("REC MUTE") on page 19.



Press REC MUTING where you want to insert a space while the deck is recording or in recording pause.

The REC indicator in the display starts flashing and tape transport continues, but no signal is recorded. After inserting a space, the REC and III indicators in the display stay on and the deck changes to recording pause.

To insert a blank space of a duration different from that preset by menu setting

Hold down the REC MUTING button as long as you want.

When you release the REC MUTING button, the REC and the III indicators stay on and the deck changes to recording pause.

When the preset duration has passed, the REC indicator begins to flash faster and the MARGIN indication shows how long the REC MUTING button has been pressed.

To insert a blank space of a duration shorter than the preset value

Press REC while the REC indicator is flashing. The deck starts recording again.

To resume recording

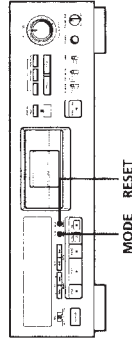
Press PAUSE or PLAY .

Note

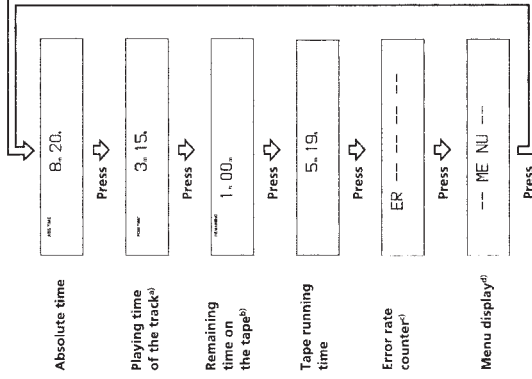
If you do not create a sound-muted section at the beginning of a tape, you may not be able to move or erase a start ID (see page 15) that is recorded within 2 seconds from the beginning of the tape.

About the Display

You can use the display to show the tape running time, absolute time, playing time of the track, remaining time on the tape, error rate, and menu display.



Press MODE (or COUNTER MODE on the remote). Each time you press the button, the display changes as follows.



- The playing time of the track will not be displayed when the "1-TMDISP" is set to "..." (see page 20).
- In the case of a premastered tape, the remaining time is to the end of the recorded portion.
- Numeric characters appear only during playback. During recording or pause, the counter shows "ER ---". For details on the error rate counter, see "Notes on the error rate counter" on page 13.
- Menu display appears only when the deck is empty, stopped, or paused. For details on how to access various menu settings, see "Menu Operations" on page 19.

To reset the tape running time

Press RESET (or COUNTER RESET on the remote).

If "THINTAPE" appears in the display
A cassette over 130 minutes long is inserted.

- Notes**
- When playing certain types of premastered tapes, "B8" may appear momentarily in the display at the beginning of the tape.
 - The playing time of the track does not appear in the following cases:
 - When you start playing from the middle of the track
 - During rewinding
 - In standard-play mode, the remaining time on the tape appears about 16 seconds after you start playing.
 - The displayed remaining time may vary somewhat from the actual remaining time, depending on the tape.

Notes on the error rate counter

The counter shows the error rate of the audio signal being played back for both playback heads A and B. The four digits on the right and the left show the error rate detected on the playback heads A and B, respectively. When no error is detected, "0000" appears for the respective playback head. Since the recording of single audio channel takes both heads, the error detected for the playback head A or B does not necessarily correspond to the error on the L or R channel.

Notes

- The counter may temporarily show high rate in the following cases:
 - when you play a portion recorded with INPUT or REC mode setting has been changed during recording.
 - when you monitor the sound at high speed.
 - the transition from one recording to another or beginning or the end of the tape is being played.
- The display returns to the absolute time indication when you press:
 - the OPEN/CLOSE button
 - the ID REKNUMBER, ID RFFH/ARSAL, WRITE, or FRASE button

If the ERR indicator flashes in the display or the error rate counter remains in positive value for 5 seconds or more

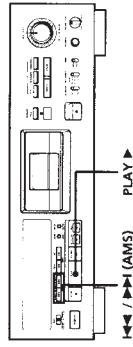
- The playback head is dirty. Clean the head with the DAT cleaning cassette (see page 21).
- The tape is defective or damaged.

If the EMPHASIS indicator lights up in the display

The deck is playing an audio signal recorded with emphasis (in the higher frequencies). The deck, however, plays the signal while automatically deemphasizing it (with attenuation proportional to the degree of emphasis).

Locating a Track (AMS*/Direct Access)

You can locate the tracks in a number of ways, but only after you have recorded start IDs on the tape (see pages 15 to 17). To use Direct Access, program numbers must be recorded on the tape (see pages 15, 16 and 18).



To locate	Do the following:
The beginning of the next or succeeding tracks (AMS)	Press ▶▶▶ (AMS) as many times as you want while playing. For example, to locate the second track ahead, press twice.
The beginning of the current track (AMS)	Press ◀◀◀ (AMS) once while playing.
The beginning of preceding tracks (AMS)	Press ◀◀◀ (AMS) as many times as you want while playing. For example, to locate the second track behind, press three times.
By specifying the program number of a track (Direct Access)	1 Enter the program number of the track with the number buttons. 2 Press ▶ (or ▶▶▶ on the main unit).

* AMS = Automatic Music Sensor.

If you enter the wrong program number during Direct Access

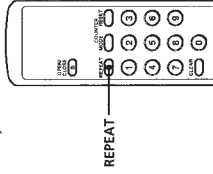
If you haven't pressed the **▶** button, press the CLEAR button on the remote, then enter the correct number. If you have already pressed the **▶** button, pressing the CLEAR button will not erase the wrong program number. Stop the deck and reenter the program number.

If the deck detects a blank section of 9 seconds or more, end ID, or the end of the tape (Auto Rewind)
The deck rewinds the tape automatically to its beginning and stops.

You can make the deck start playing automatically from the beginning of the tape after rewinding (Auto Play)
Press **▶▶▶** while holding down **◀◀◀** (REW).

Playing Tracks Repeatedly (Repeat Play)

You can play a specific track or all the tracks on the tape repeatedly.



Playing all tracks repeatedly

Press REPEAT repeatedly while playing a track until the REPEAT indicator lights up in the display. The deck will play all tracks 5 times, then stops. If the deck detects either of the following during Repeat Play, it will rewind the tape to its beginning and start playing again.

- A blank section of 9 seconds or more
- The end of the tape or the end ID

To stop playing all tracks repeatedly

Press REPEAT repeatedly until the REPEAT indicator goes off.

Note
Repeat Play of all tracks is canceled when you take out the cassette.

Playing a track repeatedly

Press REPEAT repeatedly while playing the track you want to repeat until the REPEAT indicator lights up in the display.

The deck plays the current track 5 times and then stops.

If the deck detects any of the following during Repeat Play, it will rewind the tape to the start ID of the current track and starts playing again from that position.

- The next start ID
- A blank section of 9 seconds or more
- The end of the tape or end ID
- A skip ID with Skip Play activated

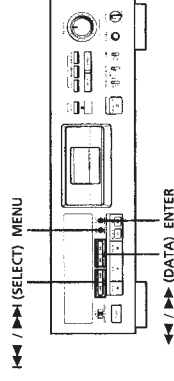
To stop playing a track repeatedly

Press REPEAT repeatedly until the REPEAT indicator goes off.

Note
Repeat Play of a single track is canceled when you take out the cassette.

Playing Tracks Skipping Specific Portions During Playback (Skip Play)

Please note that skip IDs (see page 15) must be written on the tape before you can use Skip Play.



- 1 While the deck is stopped or paused, press MENU repeatedly until "MENU--" appears in the display.
- 2 Press **◀◀◀** / **▶▶▶** (SELECT) repeatedly to select "SKIPPLAY."
- 3 Press **◀◀◀** / **▶▶▶** (DATA) to select "on." "on" indication flashes in the display.
- 4 Press ENTER.

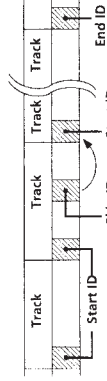
The SKIP PLAY indicator lights up in the display. When the deck detects a skip ID, it fast-forwards the tape to next start ID, then resumes playing.

To cancel Skip Play

Do steps 1 to 4 above to set "SKIPPLAY" to "off." The SKIP PLAY indicator goes off.

About Sub Codes

In the DAT format, control codes, or sub codes, such as start IDs, skip IDs, and end ID can be recorded on the tape with the audio signal. Since sub codes are written on the tape separately from the audio signal, they have no effect on the audio signal.



Start IDs

Start IDs indicate the start of a track, and therefore allow you to locate the position of a track precisely. The start IDs are 9 seconds in length (18 seconds in long-play mode) to enable easy detection during fast-forwarding or rewinding.

Program numbers

Program numbers serve as track numbers. Occupying the same position as start IDs, a program number allows you to locate specific tracks or play tracks in a specific order.

Skip IDs

Skip IDs indicate tracks or recorded portions that are to be skipped while playing. Skip IDs are 1 second in length (2 seconds in long-play mode).

End ID

An end ID indicates the end of a recording. An end ID is 9 seconds in length (18 seconds in long-play mode). When an end ID is detected during playback, playback stops and the deck rewinds the tape to its beginning. If an end ID is detected during fast-forwarding, the tape stops at that point and deck becomes ready for recording from that point.

Notes

- All tape operation buttons do not work during the writing or erasing of sub codes.
- Writing and erasing of sub codes and renumbering of program numbers are impossible if the record-protect hole on the DAT cassette is open (see page 9).

When no program number is displayed ("...") appears instead)

Program numbers are not written even when start IDs are written. To write program numbers, rewind the tape to the nearest start ID to display the program number, and then locate the position where you want to start recording.



When you record from the beginning of the tape

The program number will start with 1. However, you can change the program number assigned to the first track by setting the "FIRST(PCM NO.)" menu (see page 20).

Specifying the program number to be assigned

- 1 Pause recording.
- 2 Press the number button(s) to input the program number you want to assign. The number appears in the display. To cancel the number, press the CLEAR button on the supplied remote.
- 3 Start recording.

A start ID and the assigned program number are written simultaneously.

Note

During automatic start ID writing the positioning of some start IDs may be inaccurately or inappropriately positioned away from the beginning of the track. If this happens, you can reposition or erase the start IDs later (see "Accurate positioning of sub codes" on this page and page 17, and "Erasing Sub Codes" on page 18).

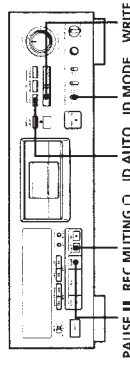
Writing skip IDs manually during recording

- 1 Set ID MODE to SKIP.
- 2 Press WRITE. The skip ID is written on the tape. The SKIP ID indicator flashes in the display during this time.

Writing an end ID during recording

- 1 When the recording of the program source comes to an end, press PAUSE II or REC MUTING O. Recording is paused.
- 2 Set ID MODE to END.

Writing Sub Codes During Recording



Writing start IDs manually during recording

- 1 Set ID MODE to START.
- 2 Press WRITE. "ID WRITE" appears in the display for a few seconds and the start ID is written on the tape. The START ID indicator flashes in the display during this time.



Note

The interval between start IDs must be more than 18 seconds (36 seconds in long-play mode). If the interval is less than 18 seconds (or 36 seconds), the deck may fail to detect the second start ID while playing a tape.

Writing start IDs automatically during recording

- 1 Set ID MODE to START.
- 2 Press ID AUTO repeatedly until the AUTO indicator lights up in the display.

For details on the condition for the automatic writing of start IDs, see "Automatic writing of start IDs during recording" on page 6, and "Menu Operations" on pages 19 and 20.

Writing program numbers during recording

Program numbers occupy the same positions as the start IDs, and are determined by depending on the following conditions:

When a program number is displayed

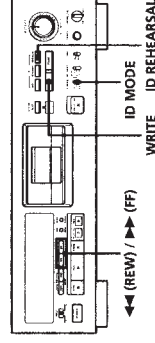
The next program number rises by one above when the next start ID is written.

(Continued)

- 3 Press WRITE. "ID WRITE" or "EE" appears in the display while the end ID is being written. When writing has finished, the record pause mode is canceled and the deck rewinds the tape to the beginning of the end ID.

Writing Sub Codes During Playback

You can write start IDs, skip IDs, or an end ID during playback.



- 1 Set ID MODE to the position for the type of ID you want to write.
- 2 Press WRITE. "WRITE" appears in the display while the deck rewinds to the point where you pressed the button, and then "ID WRITE" appears in the display for a few seconds and the specified ID is written on the tape.

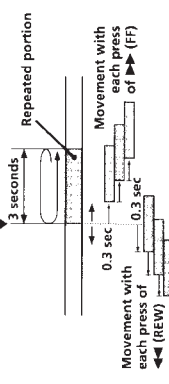
Accurate positioning of sub codes (Rehearsal function)

- 1 Set ID MODE to the position for the type of ID you want to write.
- 2 During playback, press ID REHEARSAL when you arrive at the proper position. "REHSL" appears, the corresponding ID indication flashes in the display and the Rehearsal function repeats a 3-second portion containing the selected position. The repeated portion plays back 8 times, with the remaining number of times appearing to the right of the "REHSL." After 8 times, the deck stops. In the case of a start ID, the 3-second repeated portion starts from the point where you pressed the ID REHEARSAL button. In the case of a skip ID or an end ID, the 3-second repeated portion ends at the point where you pressed the ID REHEARSAL button.

- 3** Press ◀◀ (REW) or ▶▶ (FF) to move the beginning of the repeated portion.
Each time you press the ◀◀ (REW) or ▶▶ (FF) button, the beginning of the repeated portion shifts backwards or forwards in 0.3-second increments, up to a maximum extent of about 2 seconds (4 seconds in long-play mode) in either direction.

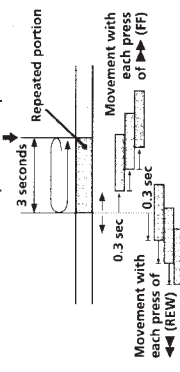
When writing a start ID

Position where the ID REHEARSAL button is pressed in step 2.



When writing a skip ID or an end ID

Position where the ID REHEARSAL button is pressed in step 2.



The time in the display shows the shift in position from the time the ID REHEARSAL button was pressed.

Example: Positioning Start ID

After pressing ▶▶ (FF) twice

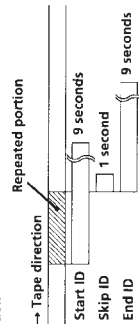


After pressing ◀◀ (REW) twice



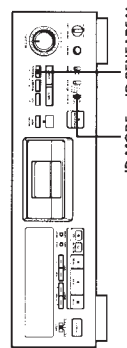
- 4** Press WRITE to write the ID.
“WRITE” appears in the display while the deck rewinds to the point where you pressed the button, and then “ID WRITE” appears for a few seconds and the ID is written on the tape at the selected position.
- Start IDs are 9 seconds long starting from the beginning of the repeated portion.
 - Skip IDs are 1 second long starting from the end of the repeated portion.
 - An end ID is 9 seconds long starting from the end of the repeated portion.

Newly written IDs positioned by the Rehearsal function



Adjusting the Position of an Existing Start ID

You can adjust the position of previously recorded start IDs.



- Set ID MODE to START.
- During playback, press ID REHEARSAL when the existing start ID you want to reposition is displayed.
The deck rewinds to the beginning of start ID and Rehearsal repeats a 3-second portion.
- Do steps 3 and 4 of “Accurate positioning of sub codes (Rehearsal function)” on this page.
You can move the start ID to a maximum extent of about 2 seconds (4 seconds in long-play mode) in either direction from its original position.

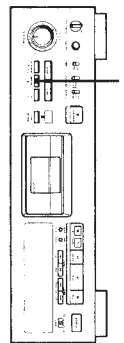
Notes

- Start IDs written within 10 seconds from the end of the tape may be difficult or impossible to move.
- Existing skip IDs or an end ID cannot be moved.

Renumbering the Program Numbers Automatically (Renumbering)

Renumbering searches for each start ID from the beginning of the tape and assigns a new program number to each one starting with 1. Use Renumbering function in the following cases:

- When you've added a start ID while playing the tape and a program number is missing due to an erased start ID
- When you began recording from the middle of the tape and wrote a program number that already exists, or when one of the start IDs has no program number.



ID RENUMBER

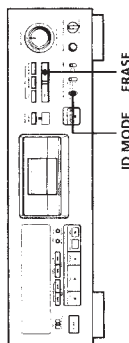
Press ID RENUMBER while the deck is stopped or playing.
The RENUMBER indicator flashes in the display and the tape is automatically rewound to its beginning.
The deck then starts searching for each successive start ID writing a new program number for each one starting with 1. The RENUMBER indicator stops flashing and “ID WRITE” appears in the display for a few seconds as the deck begins rewriting the program numbers.
After renumbering is finished, the deck rewinds the tape automatically to its beginning, then stops.

You can specify the first program number to be assigned to the first track
For details, see “Menu Operations” (“FIRST(PCMC NO)”) on page 20.

Note

- Renumbering function may not function correctly when:
- A blank section exists on the tape.
 - The interval between two start IDs is less than 18 seconds (36 seconds in long-play mode).
 - A start ID exists within 10 seconds from the end of the tape.

Erasing Sub Codes



ID MODE ERASE

- Set ID MODE to the position for the type of ID you want to erase.
- To erase a start ID or skip ID**
Press ERASE when the ID you want to erase appears in the display.
“ERASE” appears in the display as the deck rewinds to the beginning of the ID, then “ID ERASE” appears as the deck erases the ID.
In the case of a skip ID, if the SKIP ID indicator has been turned off by the time you press ERASE, the deck will still erase the skip ID.

To erase an end ID

Press ERASE.

“ERASE” appears in the display while the deck fast-forwards to the beginning of the end ID, then “ID ERASE” appears while the deck erases the end ID.

- It takes 9 seconds to erase a start ID.
- It takes 1 second to erase a skip ID.
- It takes 9 seconds to erase an end ID.
- Program numbers are erased together with start IDs.

You can erase an ID even when it is not displayed
Just press the ERASE button. The tape is rewound, and the first ID detected is erased.

You can use the End Search function to locate the end ID
See page 10.

Note

A skip ID written at the same position of a start ID is erased when the start ID is erased.

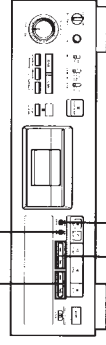
Menu Operations

You can make various settings and examine internal conditions of the deck through menu operations. Settings made through menu are memorized even when the deck is turned off.

Note

You can do menu operations only when the deck is empty, stopped or paused.

◀◀ / ▶▶ (SELECT) MENU



◀◀ / ▶▶ (DATA) ENTER

Making menu settings

- 1 Press MENU repeatedly until "MENU--" appears in the display.
- 2 Press ◀◀ / ▶▶ (SELECT) repeatedly to select the menu.
- 3 Press ◀◀ / ▶▶ (DATA) repeatedly to select the parameter.
The selected parameter flashes.
- 4 Press ENTER.
The selected setting lights up.
- 5 Press MENU again.
The deck becomes ready for operation.

Menu descriptions

A brief explanation is given below for each menu, including their settings or setting range, factory setting, and reference pages.

SET ID6

Selects the copy information to be written on the tape when recording the analog signal or the IEC-958 digital signal for broadcasting studio use input from the DIGITAL COAXIAL IN jack.

Settings: 00 (copying permitted), 10 (copying prohibited), 11 (one generation copy only)

Factory setting: 00

Reference page: 5

SKIPPLAY (SKIP PLAY)

Selects if the deck detects skip IDs and fast-forwards the tape to the next start ID during playback.

Settings: on (the deck detects skip IDs),
-- (the deck does not detect skip IDs)

Factory setting: --

Reference page: 14

Automatic writing of start IDs and menu settings during digital recording

The automatic detection and writing of start IDs are carried out according to the jack to which the program source is connected, the signal format, and the category code of the signal, as shown in the table below.

A: Start IDs are detected and written automatically.

B: Q codes are detected and written as start IDs automatically.

C: The writing of start IDs is determined by the settings of the L-SY TH and L-SY BK menus.

Menu settings

Jack	COAXIAL	COAXIAL/OPTICAL
Signal format	Broadcast studio use	Consumer use
Category		DAT CD Others
IEC S-ID on	A*	A -- C
IEC S-ID --	C	C -- C
IEC CD-Q on	--	-- B C
IEC CD-Q --	--	-- C C

* Only when connected to the PCM-2300, PCM-2700, or PCM-2700A

P-TMDISP (Program Time Display)

Specifies if the track playing time is displayed when the MODE button is pressed.

Settings: on (the track playing time is displayed),
-- (the track playing time is not displayed)

Factory setting: on

Reference page: 12

FIRST(PGM NO.) (FIRST Program NO.)

Specifies the first program number to be assigned to the first track when recording from the beginning of the tape or using the Renumbering function.

Setting range: 1 to 99

Factory setting: 1

Reference pages: 16, 18

REC MUTE (RECORD MUTING duration)

Sets the duration of the sound-muted section created between tracks by the Record Muting function.

Setting range: 0.5 to 9.5 seconds (in units of 0.5 second)

Factory setting: 4 seconds

Reference page: 12

L-SY TH (Level-Sync Threshold)

Sets the reference input level for automatic writing of start IDs.

Setting range: -12 to -60 dB (in units of 1 dB)

Factory setting: -45 dB

Reference pages: 6, 15, 20

L-SY BK (Level-Sync Blank time)

Sets the length of time that the input signal must remain below the reference level before automatic writing of start IDs begin.

Setting range: 1 to 10 seconds (in units of 1 second)

Factory setting: 3 seconds

Reference pages: 6, 15, 20

IEC S-ID (IEC Start-ID)

Specifies if start IDs (or skip IDs) are automatically detected and written on the tape when recording from a DAT deck connected to the DIGITAL COAXIAL or OPTICAL IN jack.

Settings: on (start IDs (or skip IDs) are automatically detected and written),
-- (writing of the start IDs (or skip IDs) is determined by the settings of the L-SY TH and L-SY BK menus)

Factory setting: on

Reference pages: 6, 15, 20

IEC CD-Q (IEC CD-Q code)

Specifies if start IDs are written automatically whenever a Q code defined by the user's bits on the CD is detected while recording from a CD player connected to the DIGITAL COAXIAL or OPTICAL IN jack.

Settings: on (a Q code is detected and written as a start ID automatically),
-- (writing of the start IDs is determined by the settings of the L-SY TH and L-SY BK menus)

Factory setting: on

Reference pages: 6, 15, 20

(Continued)

SECTION 3 DISASSEMBLY

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

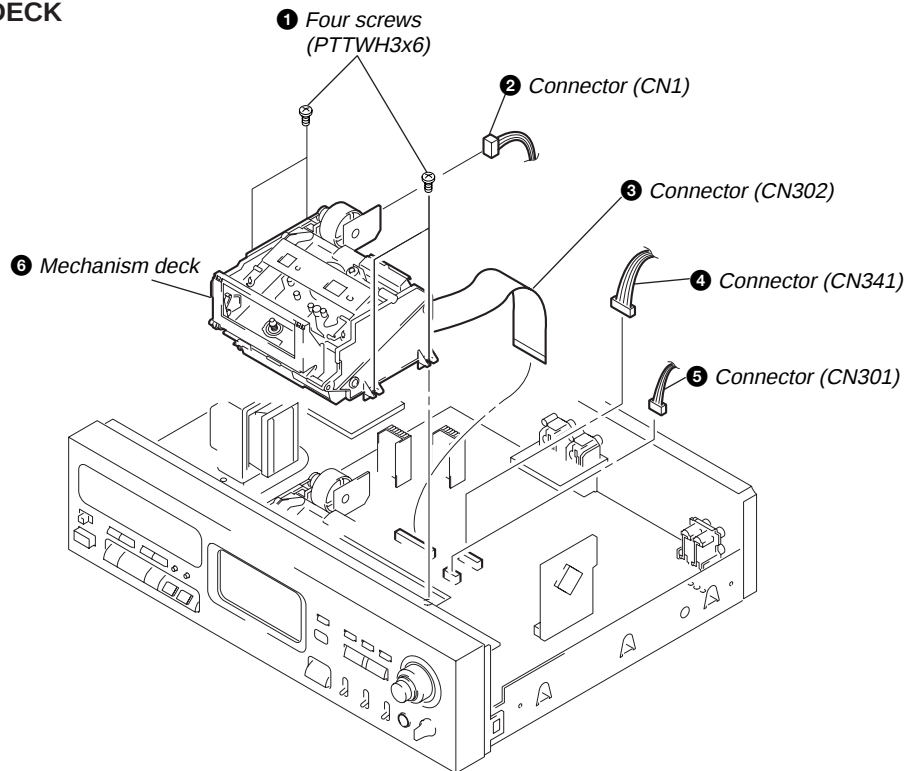
3-1. CASE

Unscrew the four case attachment screws and remove the case.

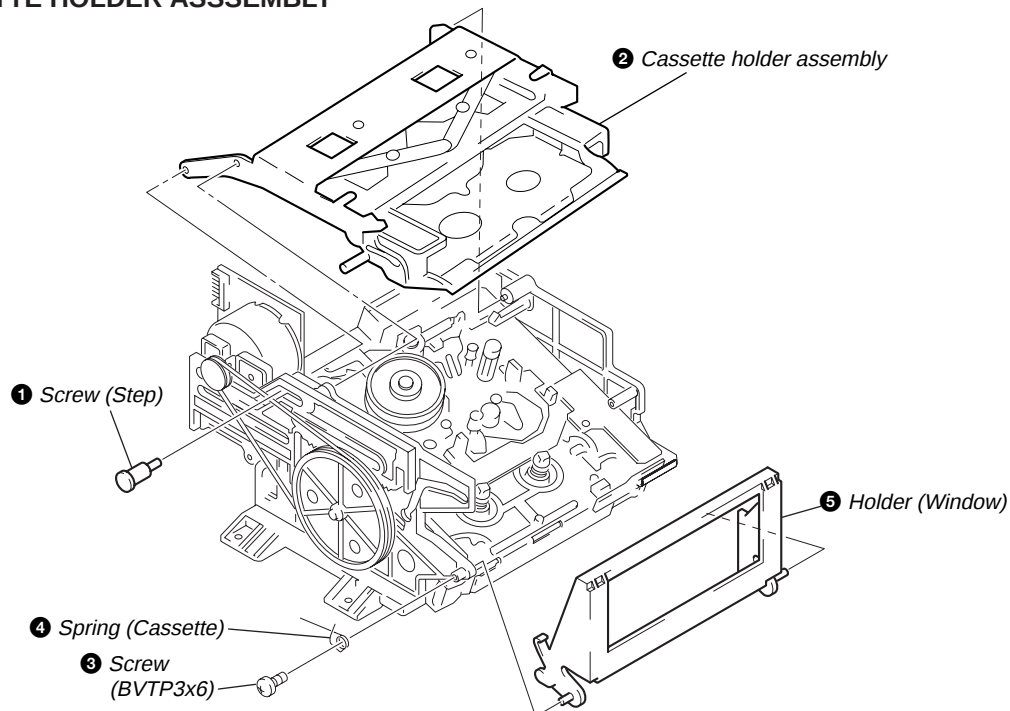
3-2. CASSETTE WINDOW

- 1 Press the OPEN/CLOSE switch to effect LOADING OUT STATE (if power is not supplied) rotate the pulley in the left side of the Mechanism Deck counterclockwise.)
- 2 Remove the cassette by lifting the window up.

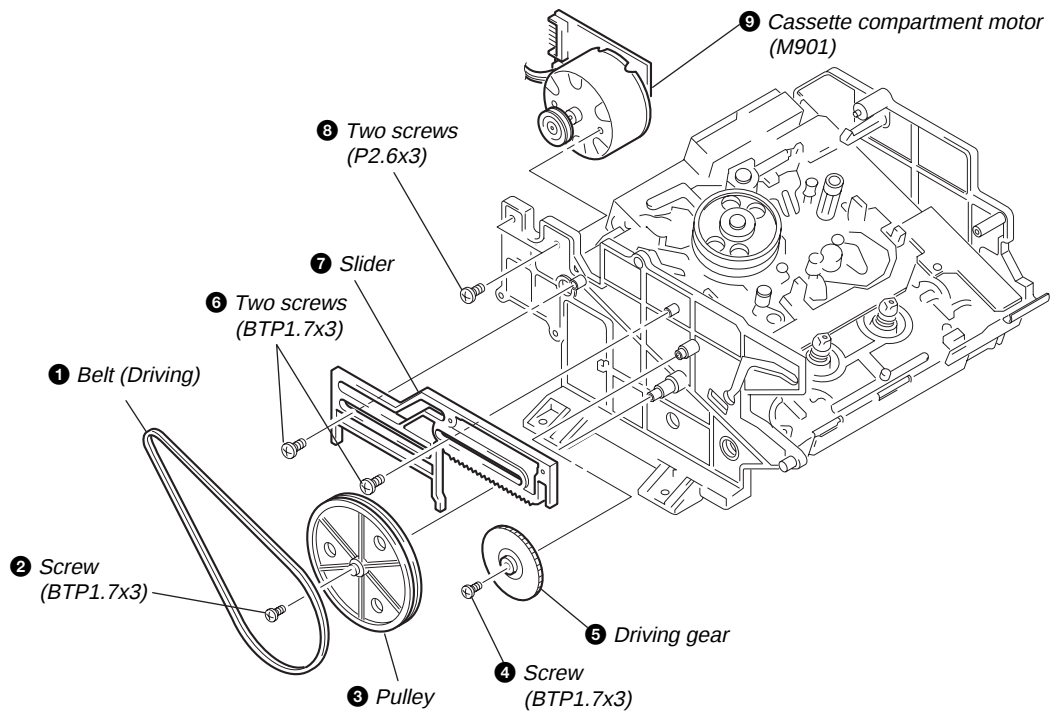
3-3. MECHANISM DECK



3-4. CASSETTE HOLDER ASSEMBLY

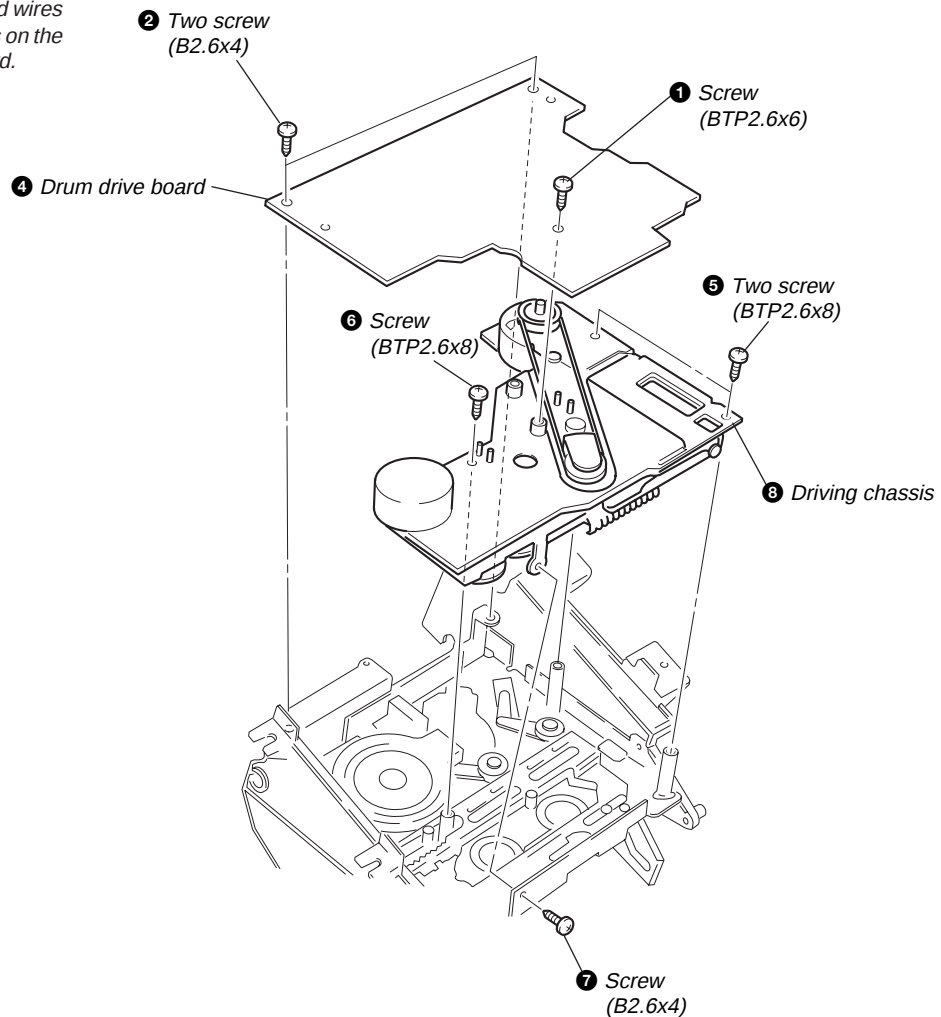


3-5. CASSETTE COMPARTMENT MOTOR (M901), PULLEY, DRIVING GEAR AND SLIDER



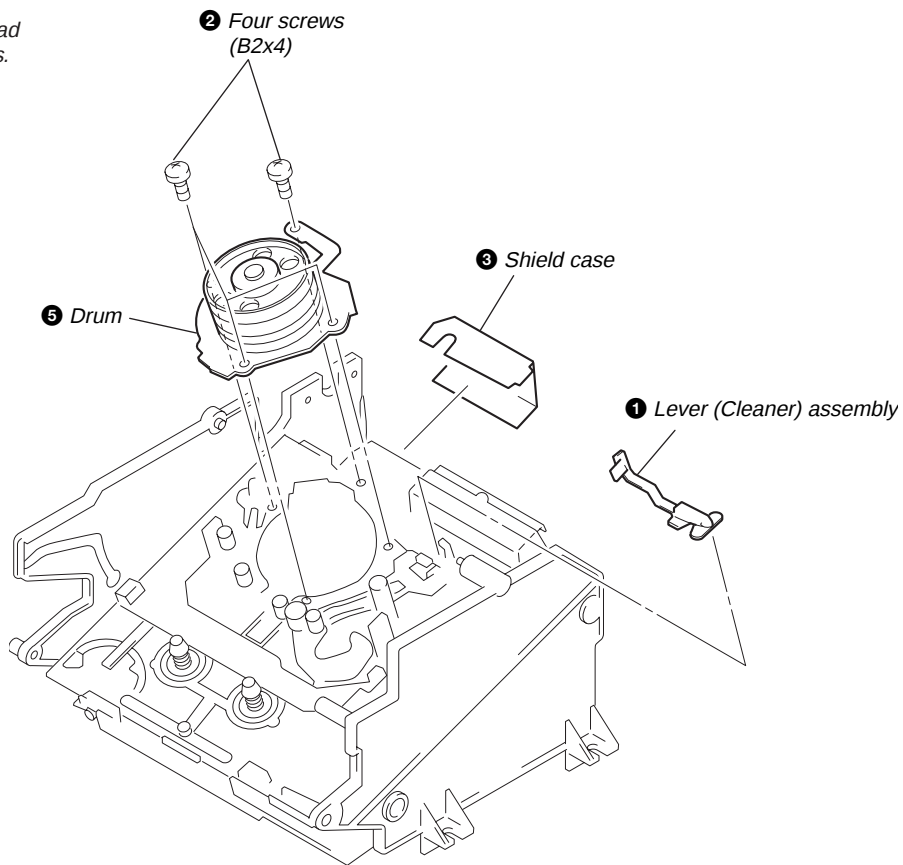
3-6. DRUM DRIVE BOARD AND DRIVING CHASSIS

3 Remove the lead wires from connectors on the drum drive board.

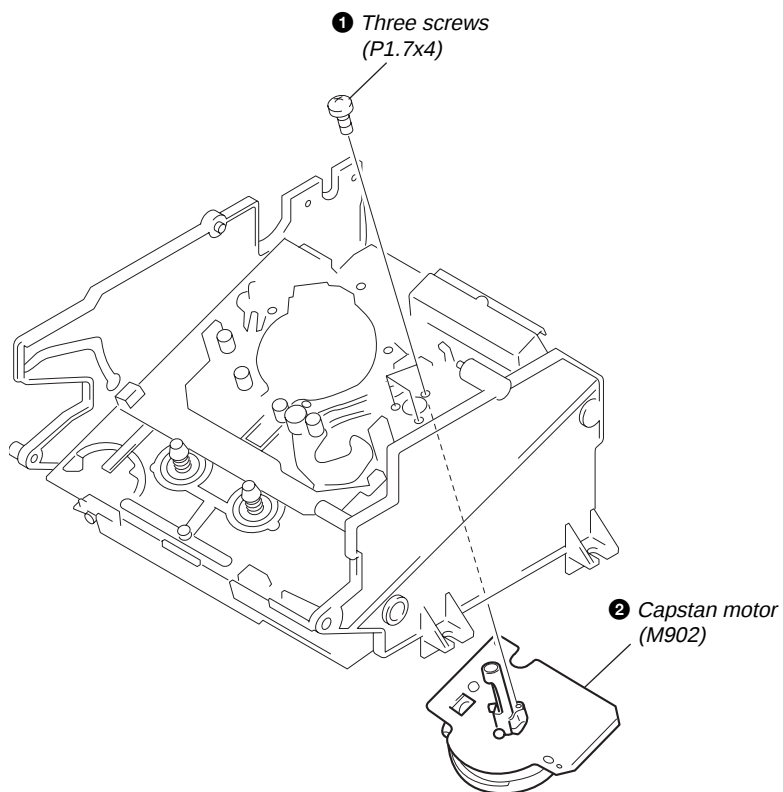


3-7. DRUM

- ④ Remove the drum lead wires from connectors.



3-8. CAPSTAN MOTOR (M902)



SECTION 4 ADJUSTMENTS

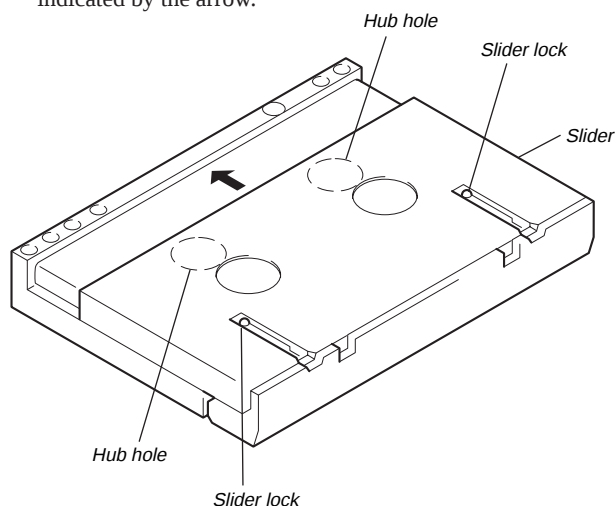
4-1. Notes When Making Adjustments

- Adjustments should be performed in the order listed.
- Use the following test tapes:

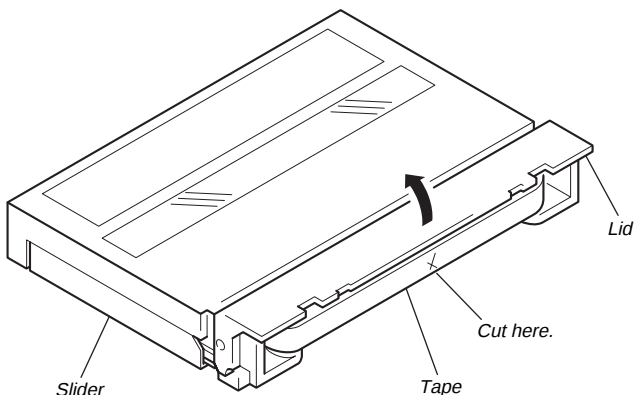
TY-7111X (8-909-823-00)	Level
TY-7252 (8-909-822-00)	Tracking
TY-7551 (8-909-814-00)	Functions
TY-30B (8-892-358-00)	Blank

Use the following torque meter:
 TW-7131 (8-909-708-71) FWD
- Switches and controls should be set as follows unless otherwise specified.

ID MODE switch	: START
REC MODE switch	: LONG
INPUT switch	: OPT
SBM switch	: OFF
REC LEVEL control	: Min.
PHONE LEVEL control	: Min.
- Creating an end sensor cassette
 - Press the tape slider lock and move the slider in the direction indicated by the arrow.



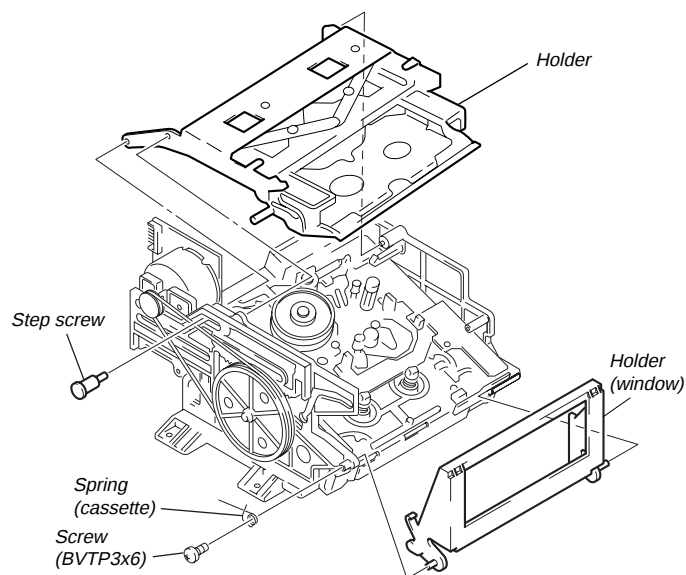
- Open the lid and cut the tape.



- Turn the hubs until the tape is completely inside the cassette (both T and S sides).
 The end sensor cassette for end sensor adjustments is now ready for use.

- Cleaning of the Revolving Drum
 - Fold a cleaning piece (2-034-697-00) or a knit cloth into 4 or more files, slightly impregnate it with a head cleaning fluid (9-919-573-00), and softly touch the drum with it and manually rotate the drum slowly counterclockwise by 2 to 3 turns for cleaning.
 - At that time, be careful not to move the cleaning piece vertically to the head tip. Otherwise, the head tip may probably be damaged.
- Be careful not to move RV1 to RV2 on the RF AMP board in the mechanism assembly
- To adjust the tape path and guides, remove the holder assembly as shown in the diagram and use the DAT cassette holder jig (J-8000-002-A). This will make it easier to perform the adjustments.

- First turning the pulley counterclockwise to put it in loading out status will make removal and reattachment of the holder assembly easier.
- To perform adjustments, turn the pulley clockwise to put it in loading in status, load the cassette tape and set the IN switch to the ON position.



- Test mode
 To set the test mode, short-circuit JW091 (X TEST) and ground of the main board. (At this time, the dB display of the fluorescent display level meter will blink.)

Perform the following adjustments in the test mode.

- FWD torque adjustment
- FWD back tension check
- Tape path fine adjustments
- DPG adjustment
- AGC voltage check
- End sensor check
- To reset the test mode (main), disconnect the wire shorting JW091 (X TEST) and ground. After completion of adjusting, be sure to reset the test mode (main).

9. Check the following items for correct tape speed, after completion of adjusting.

- (1) Set the REC MODE switch to 48k and check for normal recording and playback. (x1)
- (2) Set the REC MODE switch to LONG and check for normal recording and playback. (x0.5)
- (3) With QUE (▶+▶▶) or REVIEW (▶+◀◀), check that qurr, qurr sound is heard. (x3, x8)
- (4) Check that correct time is displayed after FF (▶▶) or REV (◀◀). (x16)
- (5) Check that AMS (▶▶I, I◀◀) is normal.

4-2. ELECTRICAL ADJUSTMENTS

FWD Torque Adjustment

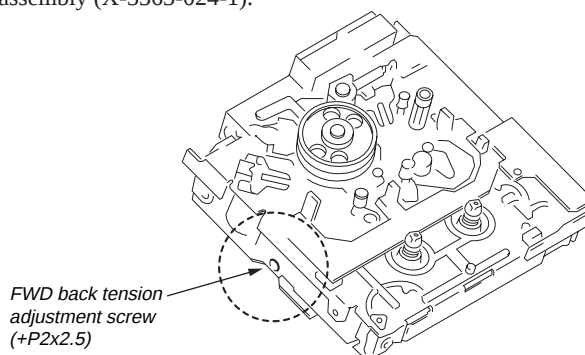
Procedure:

1. Set the test mode (main) and load the FWD torque meter TW-7131 (8-909-708-71).
2. Set the PLAY (▶) mode. "TORQUE" will be displayed on the fluorescent indicator tube.
3. Adjust RV451 so that the minimum value of FWD take up torque (take-up side rewinding torque) is between 9-10g • cm (0.13-0.14 oz • inch).
Also, make sure that the maximum reading does not exceed 15g • cm (does not exceed 0.21 oz • inch).
4. Confirm that the value indicated by the torque meter is maintained for one full cycle.

FWD Back Tension Check and Adjustment

Check procedure:

1. Put the set into the test mode (main • servo) and load the FWD torque meter TW-7131 (8-909-708-71).
2. Put the set into the PLAY (▶) mode.
3. Turn the FWD back tension adjustment screw locked on the mechanical deck side so that the minimum value of FWD back tension torque (supply side) is between 4.5 to 7.5g • cm- (0.06-0.1 oz • inch).
Also, make sure that the maximum reading does not exceed 8g • cm (does not exceed 0.11 oz • inch).
After completion of adjusting, be sure to apply screw lock.
4. Confirm that value indicated by the torque meter is maintained for one full cycle.
5. If the specified values are not satisfied, replace the lever (BT) assembly (X-3363-024-1).



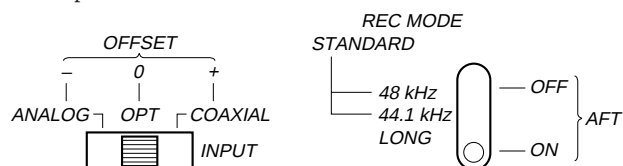
To tighten (clockwise) - back tension becomes larger.
to loosen (counterclockwise)-back tension becomes smaller.

Tape Path Fine Adjustment (x1.5 FWD Mode)

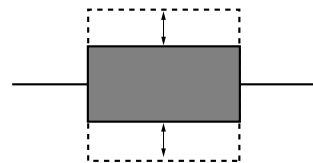
Perform the following adjustment when the drum has been replaced.

Procedure:

1. Connect an oscilloscope CH-1 to JW183 (PBRF) and CH-2 to JW092 (SWP) on the main board.
2. Set the test mode (main) and load test tape TY-7252 (8-909-822-00).
3. Press the AMS (▶▶I) key. "DPG" will be displayed on the fluorescent indicator tube.
Each part of switches on Test Mode.

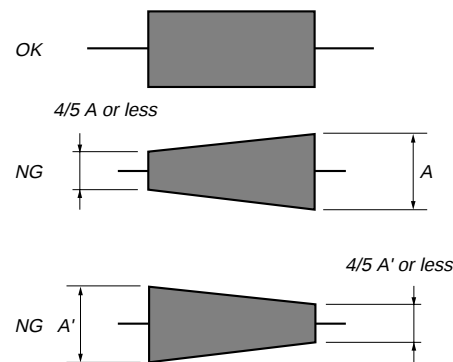


- With the REC MODE switch set to 48kHz (ATF: OFF) and the INPUT switch set to COAXIAL or ANALOG (OFFSET: + or –), fine adjust the S1 and T1 guides so that the oscilloscope RF signal waveform remains the same when high-low is repeated.



* Finish the adjustment by screwing in.

- Check the RF signal waveform with the REC MODE switch set to LONG (ATF: ON) and the INPUT switch set to COAXIAL or ANALOG (OFFSET: + or –).



- Check the RF signal waveform with the REC MODE switch set to LONG (ATF: ON) and the INPUT switch set to OPT (OFFSET: 0).
 - Confirm that the RF signal waveform peak value (B) is 60mV or more.
 - Confirm that the undershoot level of the RF signal waveform's flat portion is within 10%.



- When the measured values are not within the above tolerance repeat items 3 to 6 above.

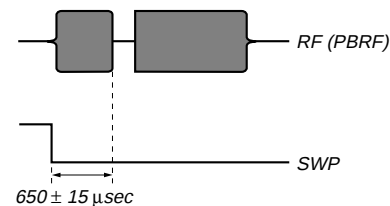
Adjustment Point: Mechanism assembly

DPG Adjustment

Perform the following adjustment without fail when the drum has been replaced.

Procedure:

- Connect oscilloscope CH-1 to JW183 (PBRF) and CH-2 to JW092 (SWP) on the main board. (Use CH-2 as the trigger. When the CH-2 signal is inverted, the trailing edge can be used for synchronization.)
- Set the test mode (main) and load test tape TY-7252 (8-909-822-00).
- Set the REC MODE switch to LONG (ATF: ON) and the INPUT switch to OPT (OFFSET: 0).
- Press the AMS (▶▶) key. "DPG" will be displayed on the fluorescent indicator tube.
- Press the ◀◀ and ▶▶ keys as appropriate so that the gap between the oscilloscope SWP and RF signals become $650 \pm 15 \mu\text{sec}$. (Hold the ◀◀ and ▶▶ keys down for more than 1 second to perform rough adjustment. Hold them down for approximately 0.2 seconds for fine adjustment, and the auto adjustment can be performed pressing PLAY (▶) key).

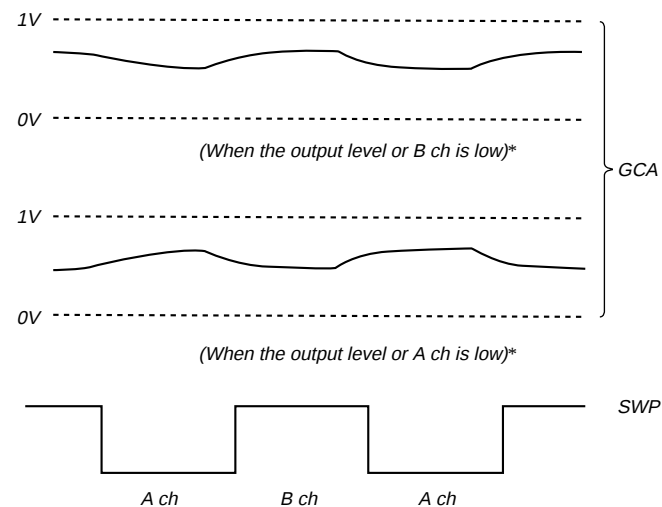


AGC Voltage Check

Perform this adjustment after cleaning the heads with a cleaning cassette.

Procedure:

- Connect oscilloscope CH-1 to JW247 (GCA: Gain Control Amp.) and CH-2 to JW092 (SWP) on the main board. (When the CH-2 signal is inverted, the trailing edge can be used for synchronization.)
- Set the test mode (main) and load test tape TY-7111X (8-909-823-00).
- Set the PLAY (▶) mode and check that the GCA waveform on the oscilloscope is as follows



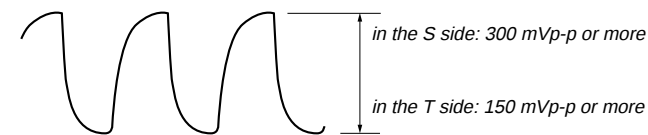
* Slightly changes depending on the state of the head. NG if the GCA waveform is 1V or more or equal to the ground level.

End Sensor Check

Perform the following adjustment when the holder has been removed or part of the mechanism deck section replaced.

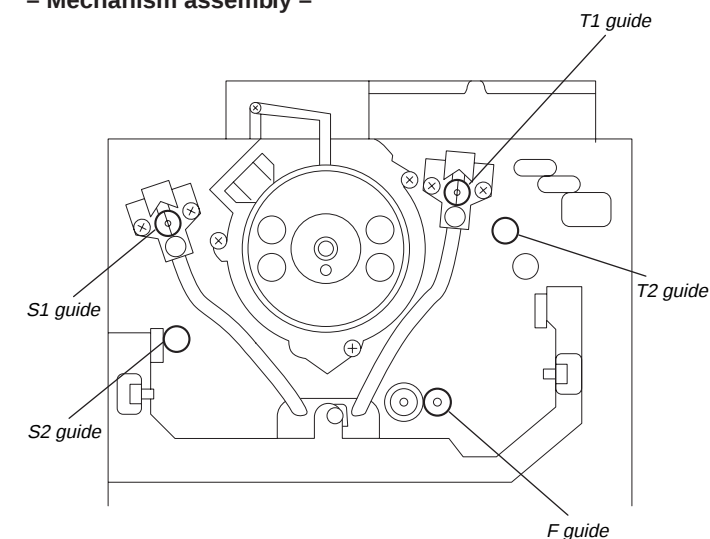
Procedure:

- Connect an oscilloscope to the JW158 (SEND: in the S side) and JW143 (TEND: in the T side) of the main board.
- Set the test mode (main), mount an end sensor cassette and effect the STOP (■) mode.
- Check that p-p values of waveform of the oscilloscope satisfy the following.

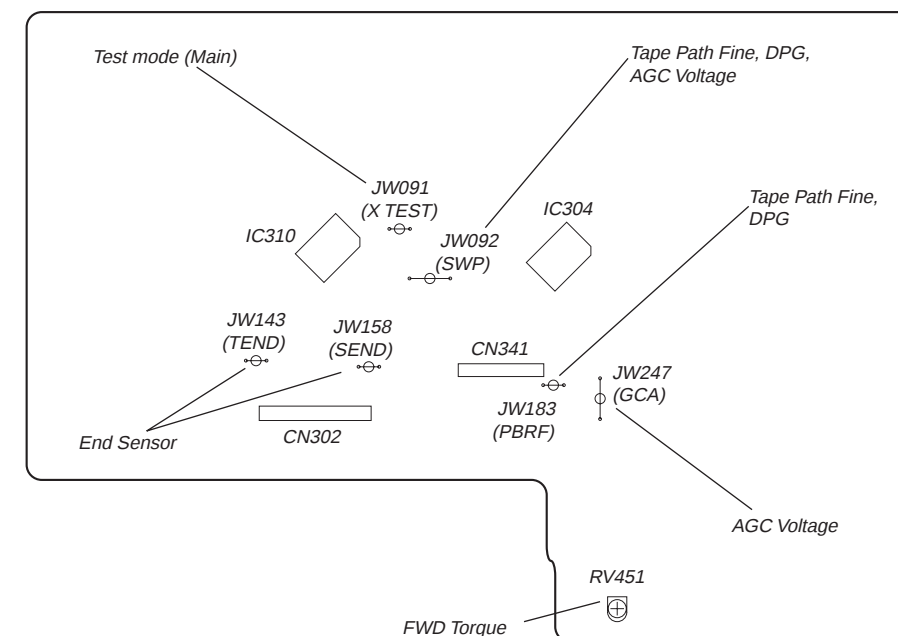


Adjustment Location:

– Mechanism assembly –

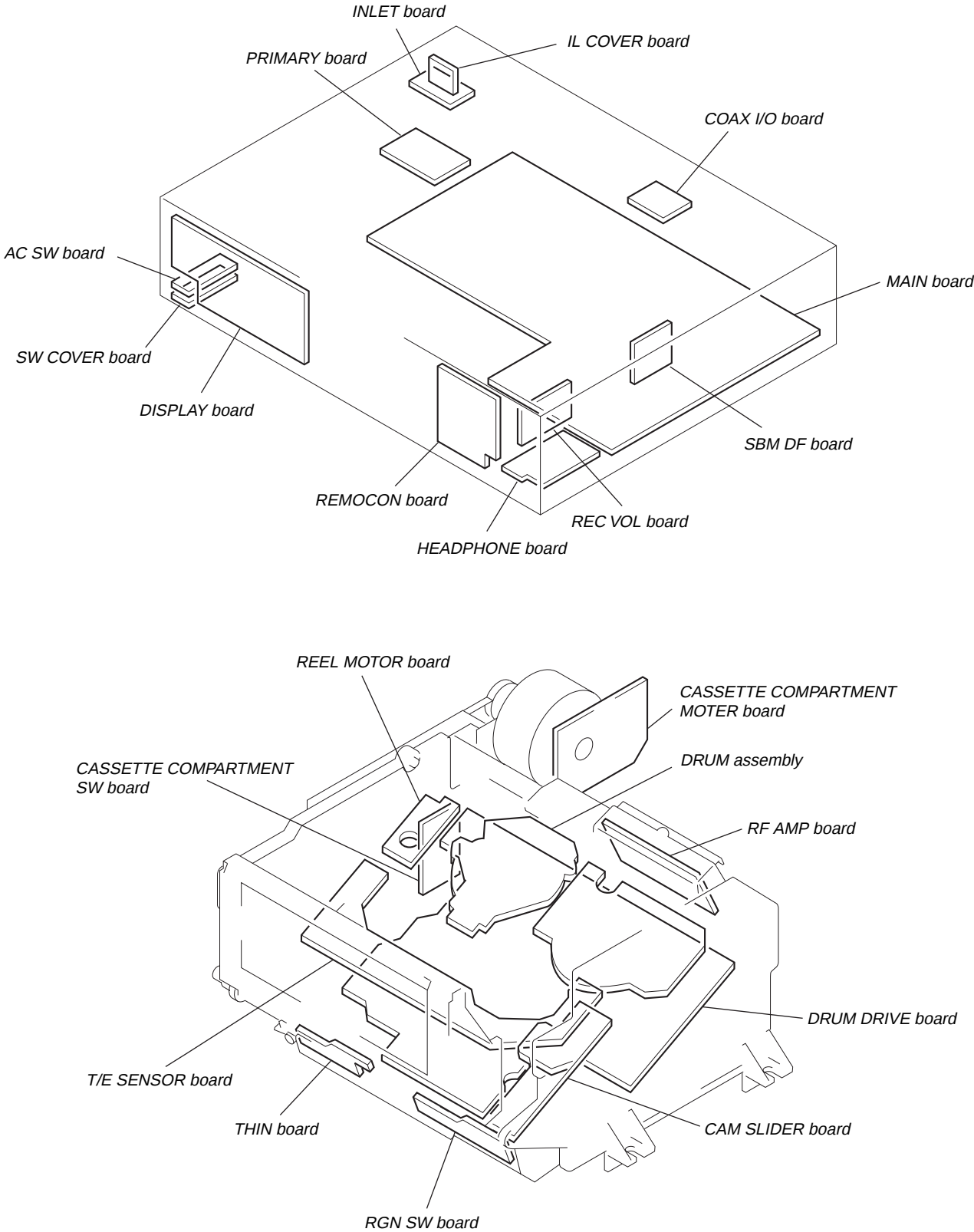


[MAIN BOARD] (Component side)

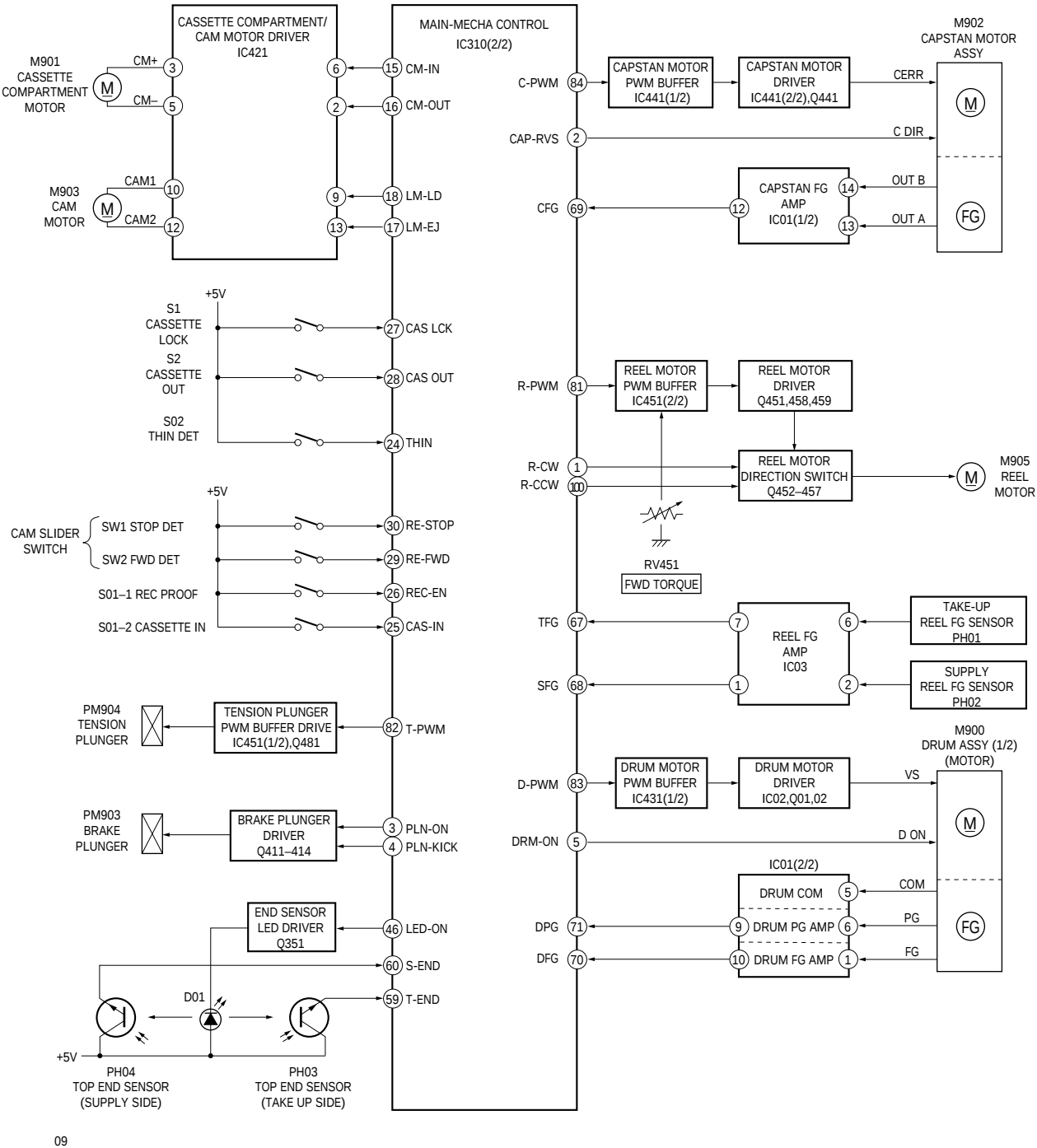


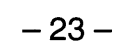
SECTION 5
DIAGRAMS

5-1. CIRCUIT BOARDS LOCATION



5-2. BLOCK DIAGRAMS
— MD SECTION —





①

1.25msec

5Vp-p

IC01 ⑩ (DFGO) PB mode

②

2V

4.4Vp-p

IC01 ⑨ (DPGO) PB mode

③

2V

0.9Vp-p

IC1 ① (LIM OUT) PB mode

④

4V

5.4Vp-p

IC1 ⑳,㉓ (B RA OUT, A RA OUT) REC mode

⑤

2V

4.5Vp-p

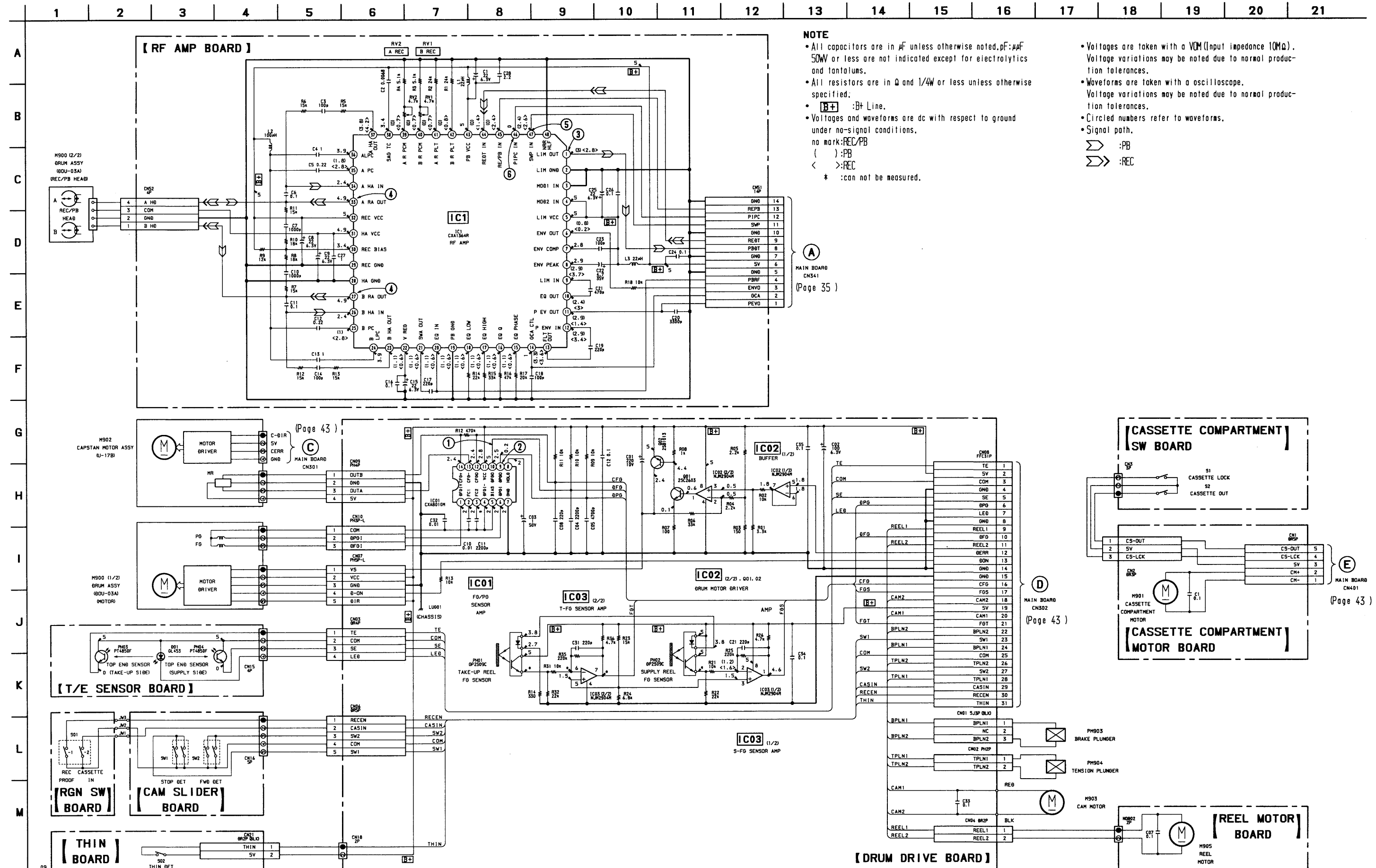
IC1 ㉗ (SWP IN) PB mode

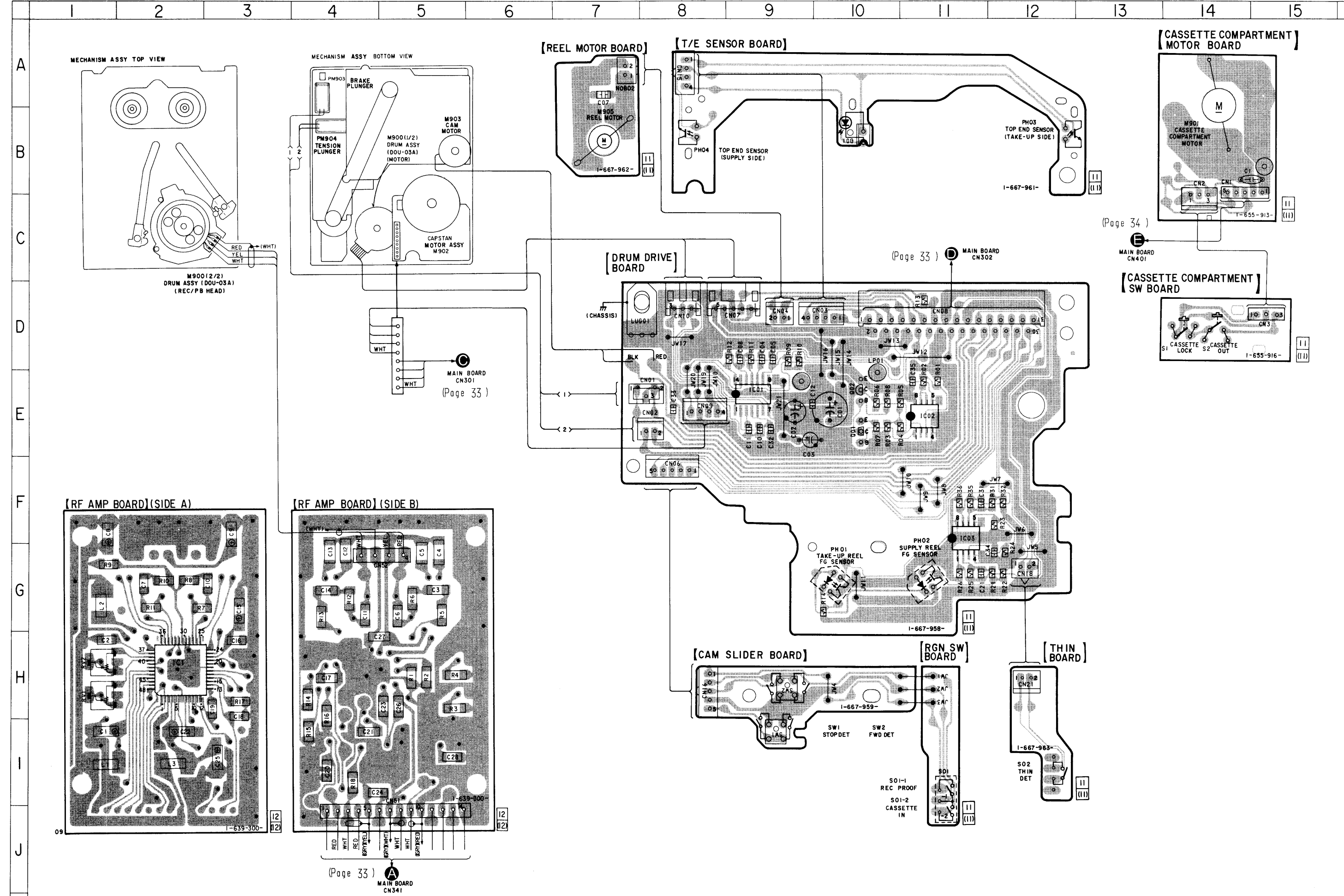
⑥

2V

4.4Vp-p

IC1 ㉖ (PIPC IN) REC mode





• Semiconductor Location

Ref. No.	Location
D01	B-10
IC1	H-2
IC01	E-9
IC02	E-11
IC03	F-11
PH01	G-10
PH02	G-11
PH03	B-12
PH04	B-8
Q01	E-10
Q02	E-10

Note:
• : parts extracted from the component side.
• : Through hole.
• : Pattern from the side which enables seeing.
(The other layers' patterns are not indicated.)

5-5. PRINTED WIRING BOARD — MAIN SECTION —

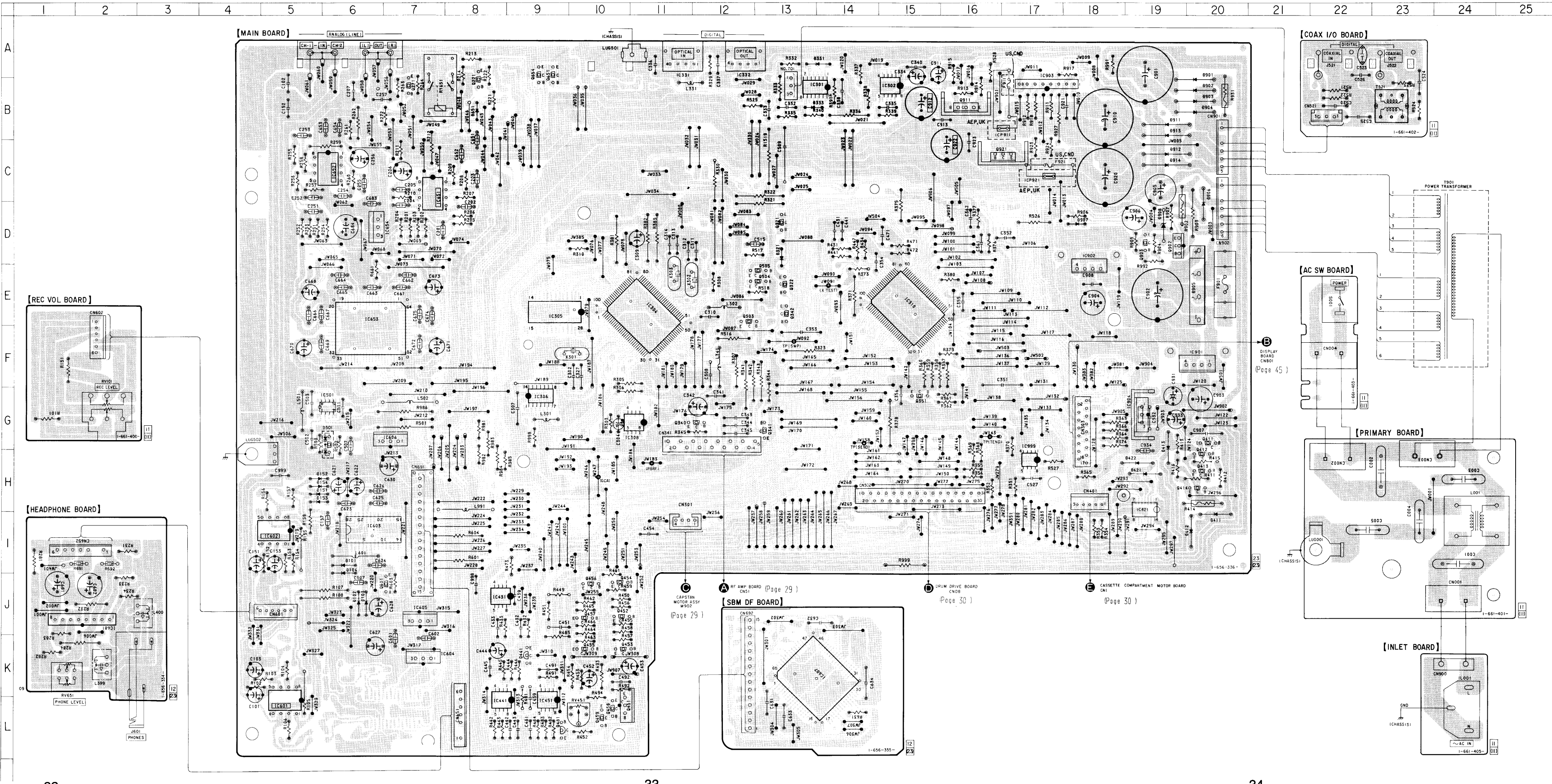
- See page 21 for Circuit Boards Location.
- See page 38, 41 Schematic Diagrams.

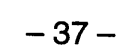
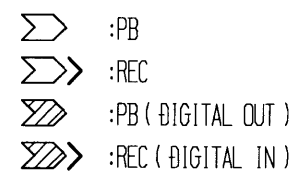
• Semiconductor Location

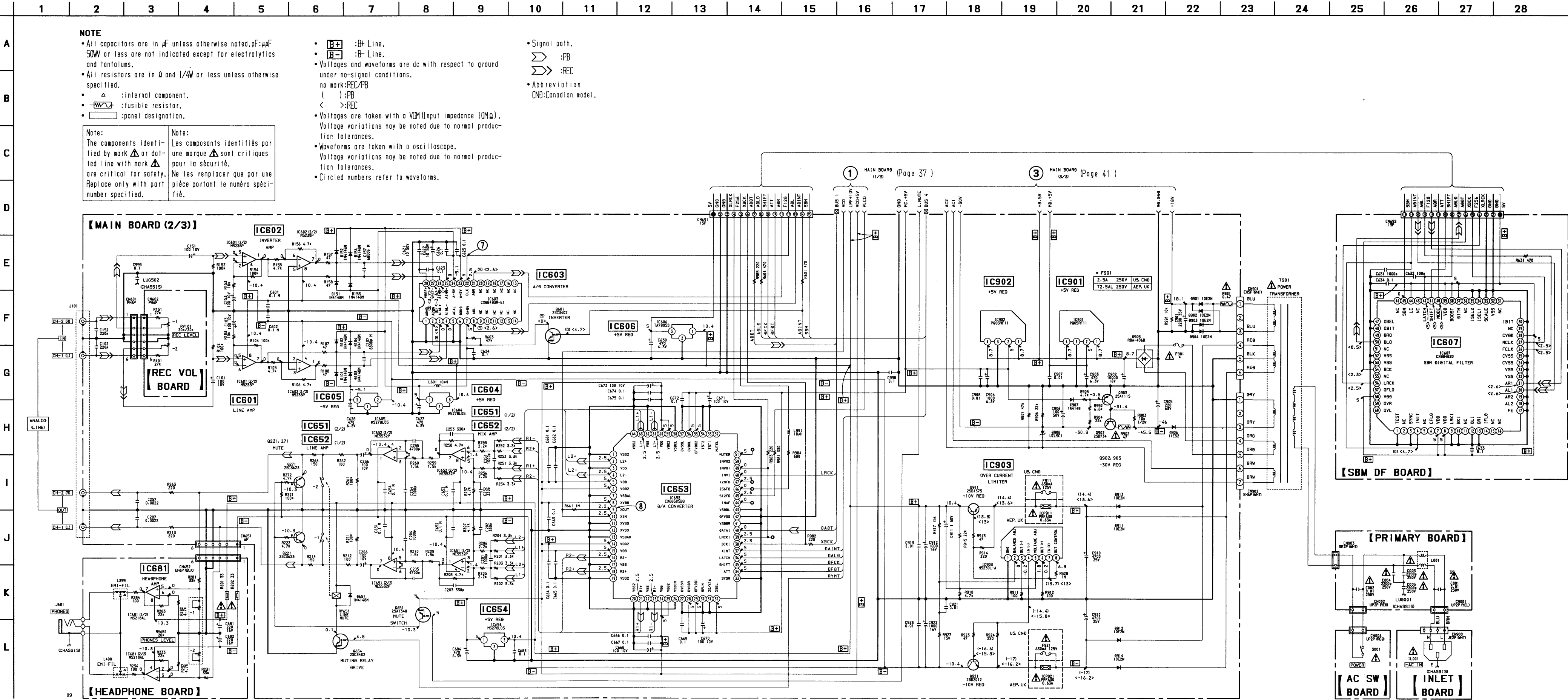
Ref. No.	Location	Ref. No.	Location
D101	I-6	IC604	K-8
D102	J-6	IC605	J-7
D103	J-6	IC606	G-7
D104	I-6	IC607	K-13
D151	H-5	IC651	C-7
D152	H-5	IC652	C-6
D153	H-5	IC653	E-6
D154	H-5	IC654	D-7
D321	D-13	IC681	J-2
D331	A-14	IC901	F-20
D333	B-14	IC902	D-18
D411	I-20	IC903	A-17
D412	I-20	IC904	G-19
D413	G-19	IC999	G-17
D421	H-20		
D422	H-20	Q221	B-8
D501	G-6	Q271	B-7
D651	B-8	Q321	D-13
D901	A-20	Q322	E-13
D902	B-20	Q340	G-11
D903	B-20	Q341	G-13
D904	B-20	Q342	E-13
D905	E-20	Q351	G-15
D906	C-20	Q411	G-20
D907	D-18	Q412	H-20
D908	D-19	Q413	H-20
D911	B-19	Q414	H-20
D912	C-19	Q441	K-9
D913	B-19	Q451	L-10
D914	C-19	Q452	J-10
		Q453	K-10
IC301	B-14	Q454	J-10
IC302	B-15	Q455	K-10
IC304	E-11	Q456	J-10
IC305	E-9	Q457	J-10
IC306	G-9	Q458	L-10
IC308	G-11	Q459	L-10
IC310	E-15	Q481	L-9
IC331	A-11	Q503	E-12
IC332	A-12	Q504	E-13
IC421	H-19	Q505	E-13
IC431	J-8	Q601	J-6
IC441	L-8	Q651	A-9
IC451	L-9	Q654	A-9
IC501	G-6	Q902	D-19
IC601	L-5	Q903	D-19
IC602	I-5	Q911	B-16
IC603	I-6	Q921	C-17

Note:

- ○ : parts extracted from the component side.
- △ : internal component.
- ▨ : Pattern from the side which enables seeing.
- Abbreviation
CND : Canadian model.



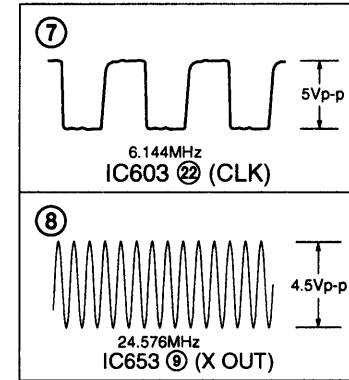




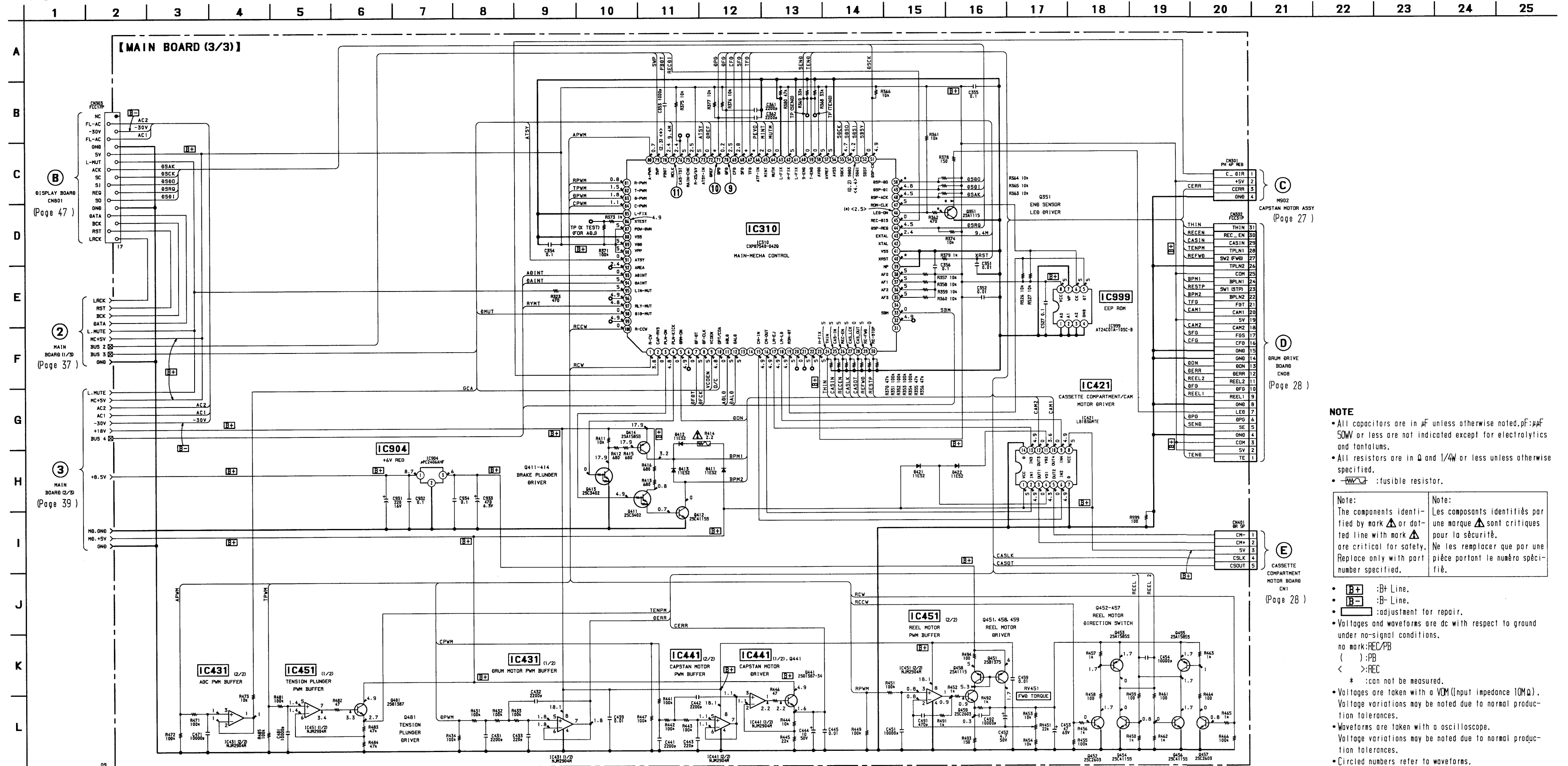
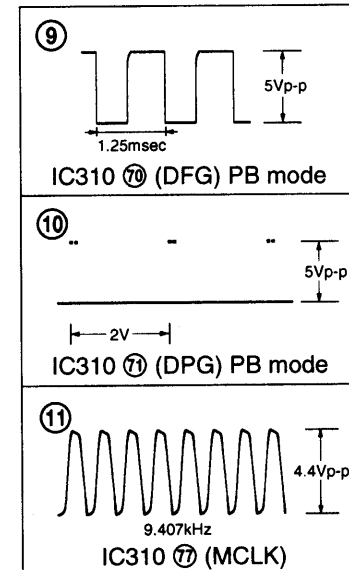
5-8. SCHEMATIC DIAGRAM — MAIN SECTION (3/3) —

- See page 49 for IC Block Diagrams.
- See page 55 for IC Pin Functions.
- See page 32 Printed wiring Boards.

- **Waveforms**



- **Waveforms**



NOTE

- All capacitors are in μF unless otherwise noted, pF : μpF
50W or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $1/4\text{W}$ or less unless otherwise specified.
-  : fusible resistor.

Note:

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

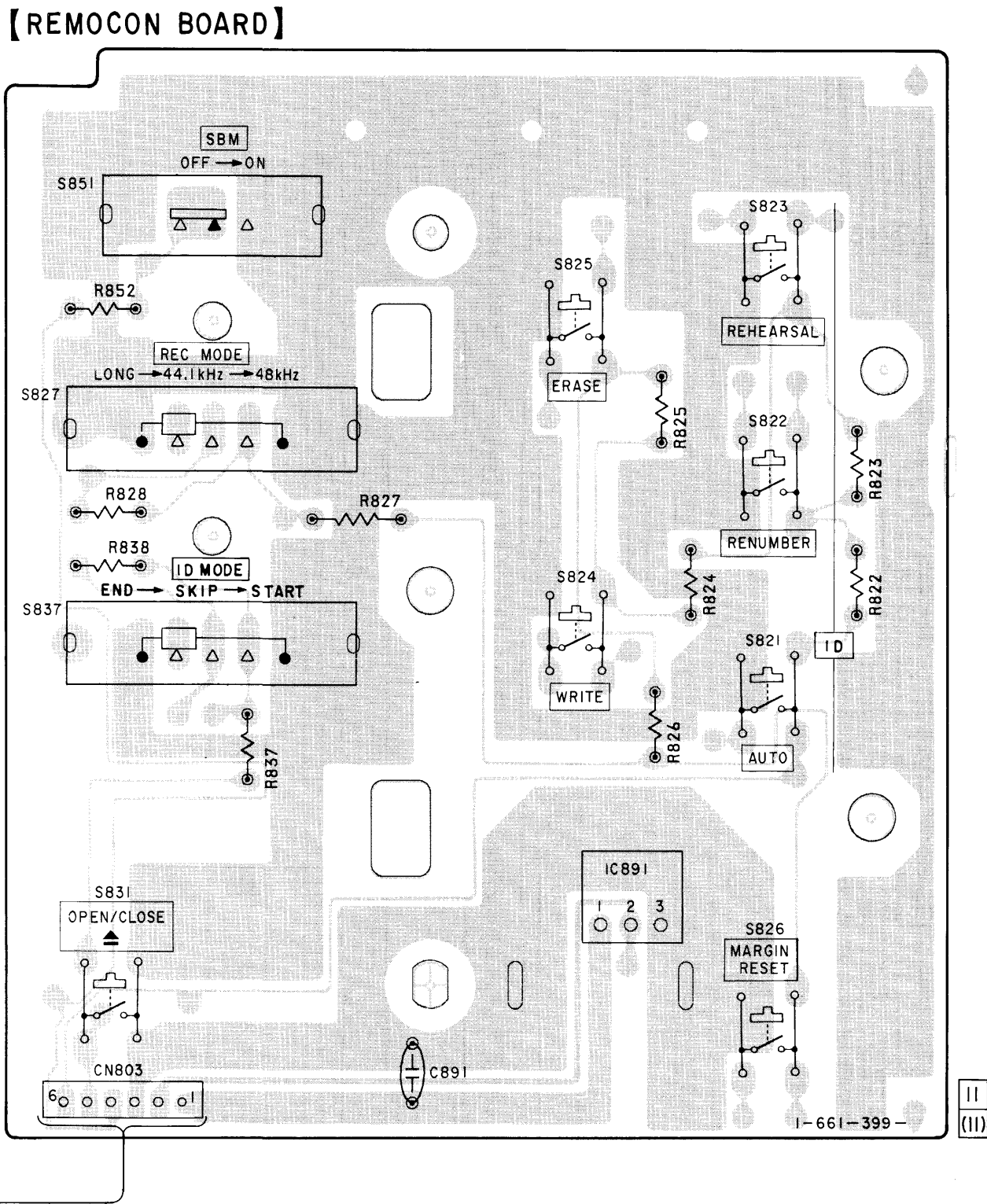
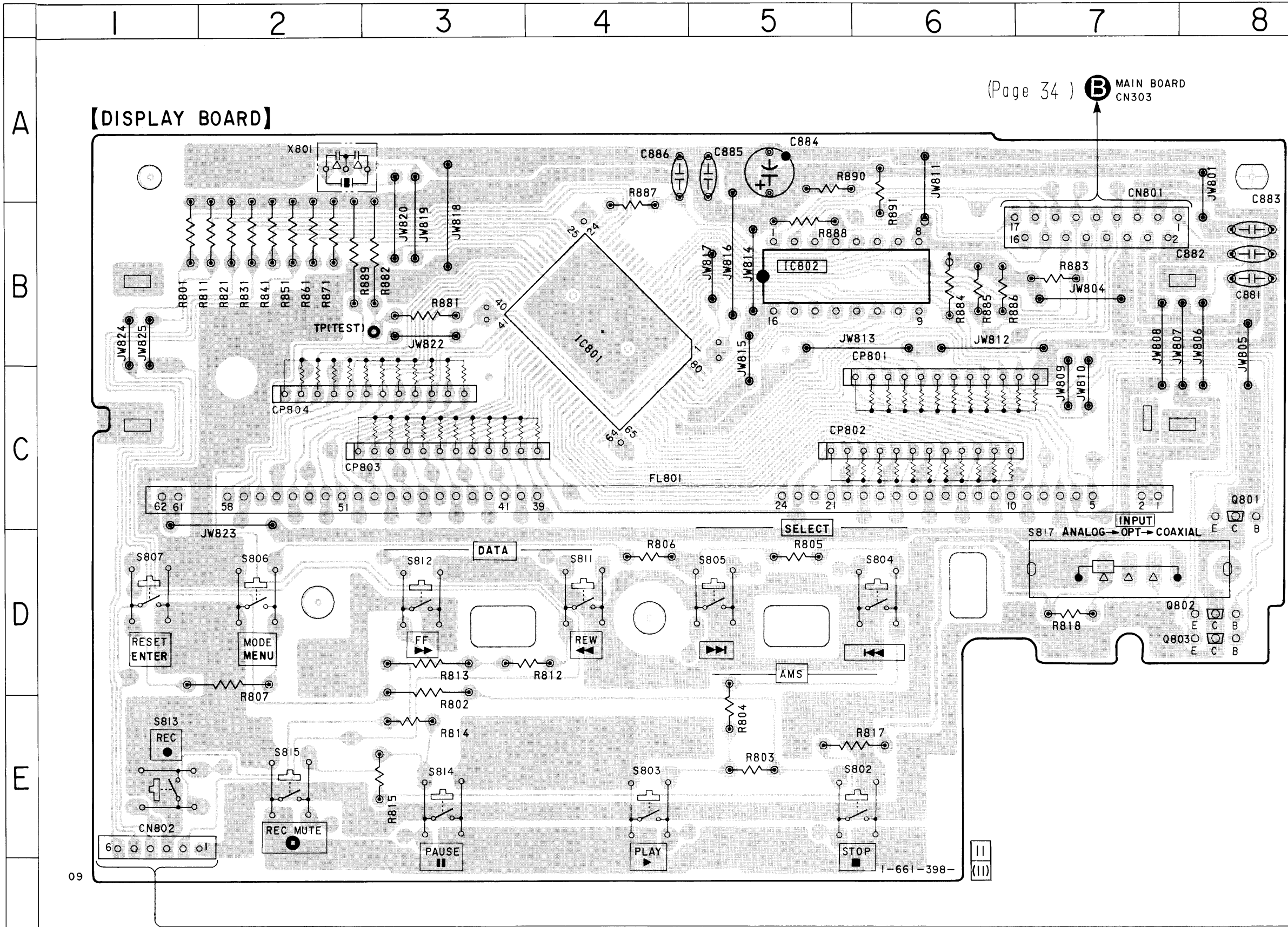
Note:

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

-  :B+ Line.
-  :B- Line.
-  :adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
no mark:REC/PB
 () :PB
 < >:REC
 * :can not be measured.
- Voltages are taken with a VOM (Input impedance 10M Ω).
Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with an oscilloscope.
Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.

• Semiconductor Location

Ref. No.	Location
IC801	B-4
IC802	B-5
IC891	E-11
Q801	C-8
Q802	D-8
Q803	D-8



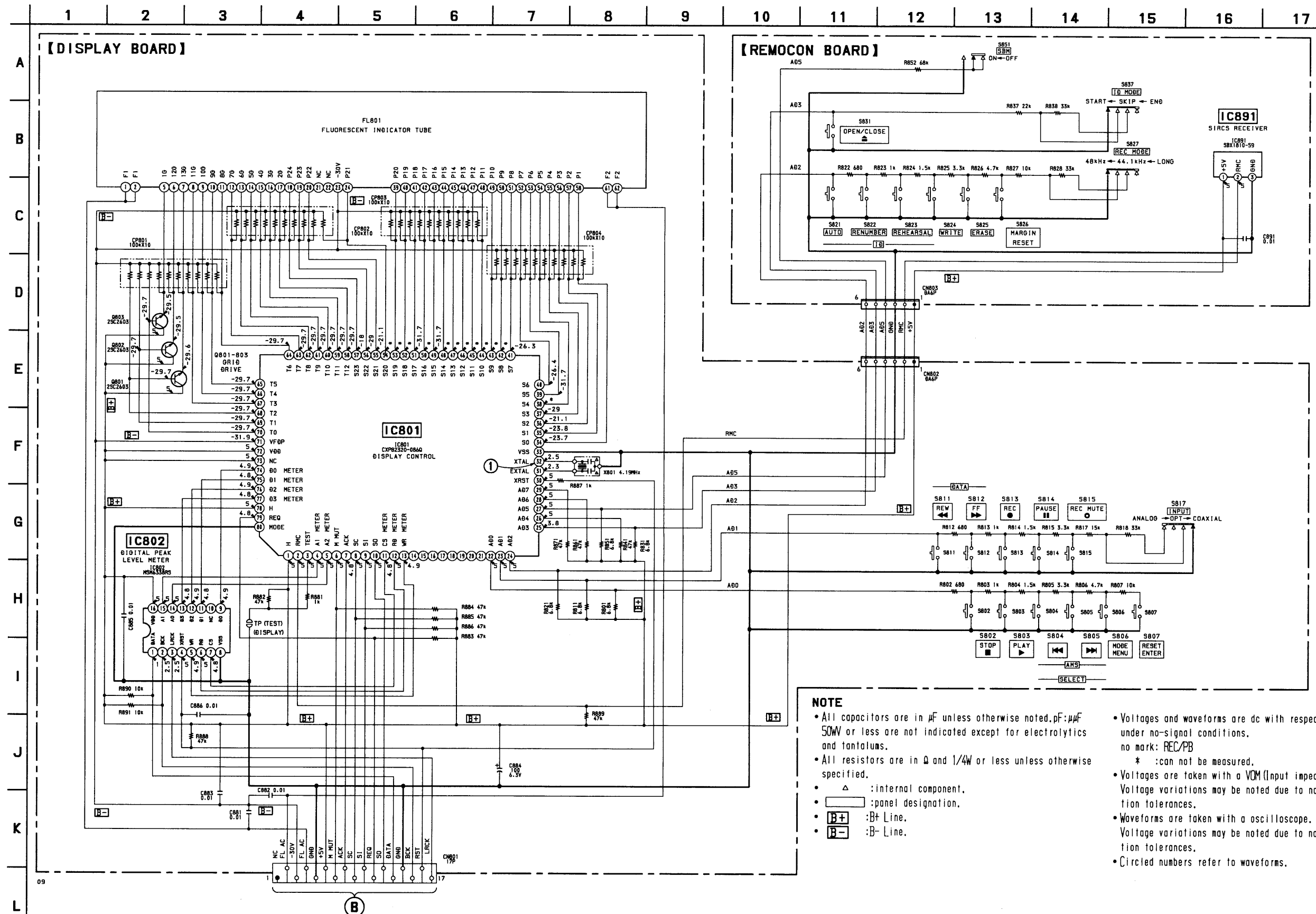
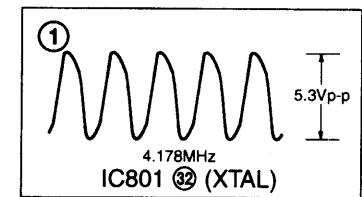
Note:

- — : parts extracted from the component side.
- △ : internal component.
- Pattern from the side which enables seeing.

5-10. SCHEMATIC DIAGRAM — DISPLAY SECTION —

- See page 52 for IC Block Diagrams.
- See page 58 for IC Pin Functions.

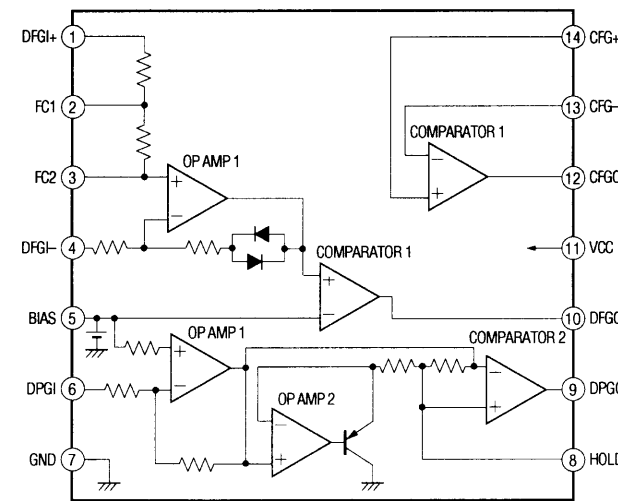
• Waveforms



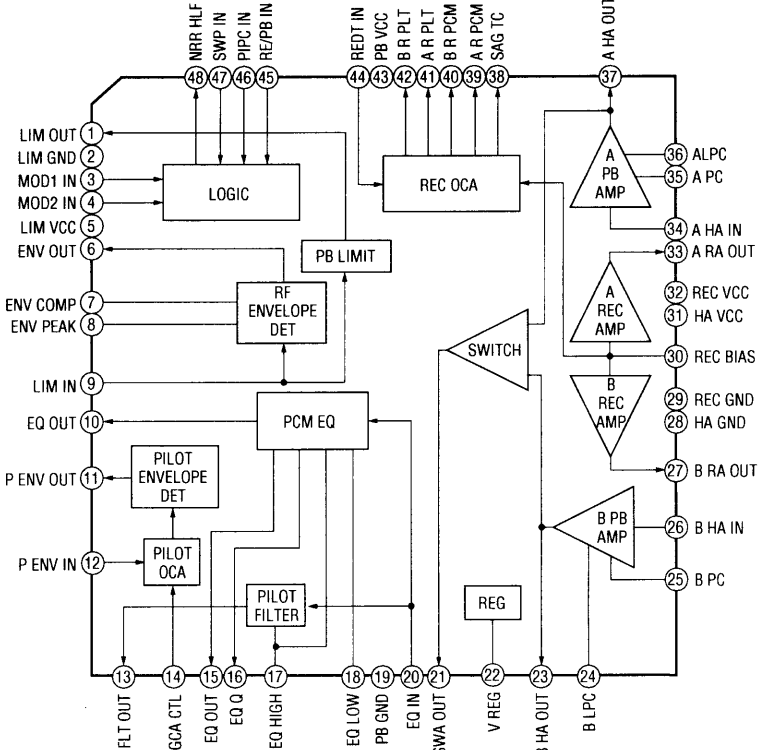
5-11. IC BLOCK DIAGRAMS

- MD Section

IC01 CXA8010M-E1

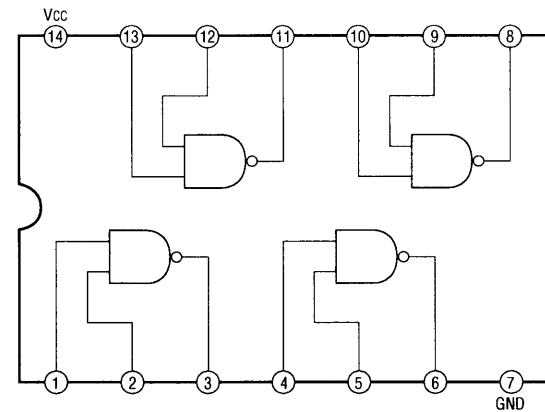


IC1 CXA1364R

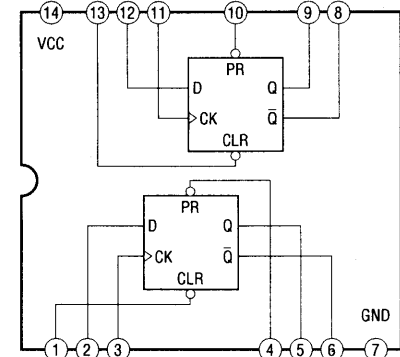


- **MAIN Section**

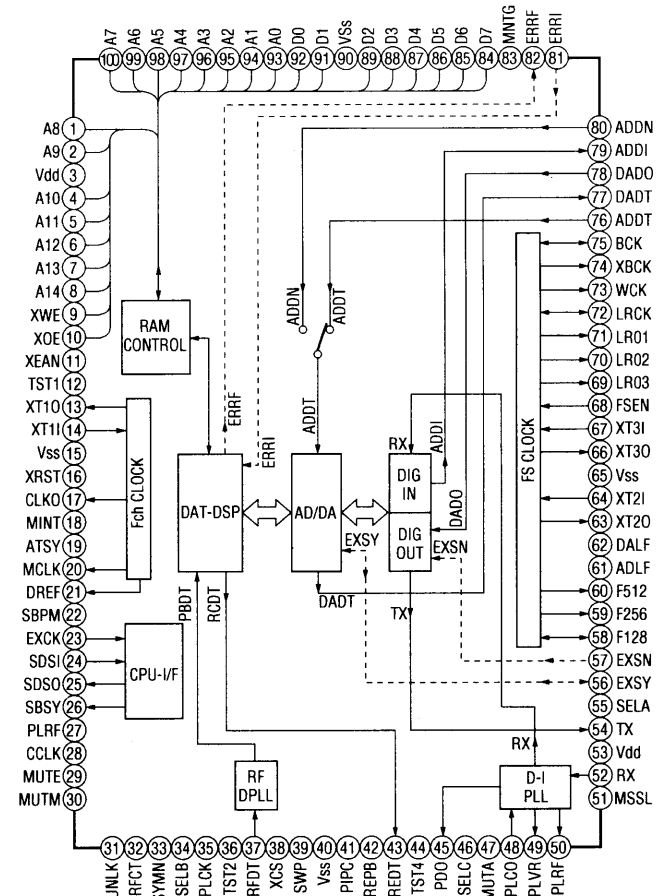
IC301 SN74HC00ANS-E20



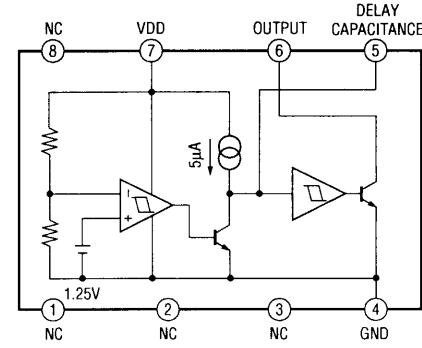
IC306 SN74HC74ANS-E20



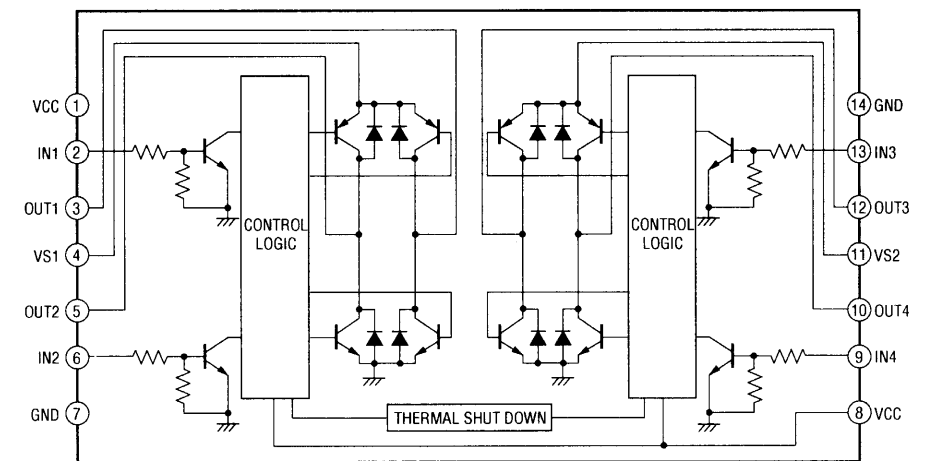
IC304 CXD2605Q



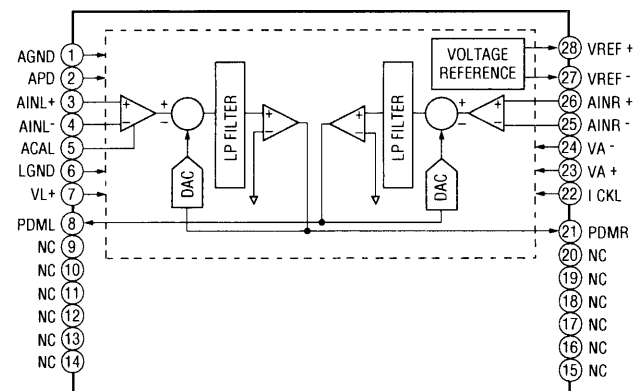
IC308 M51953BPF-TP



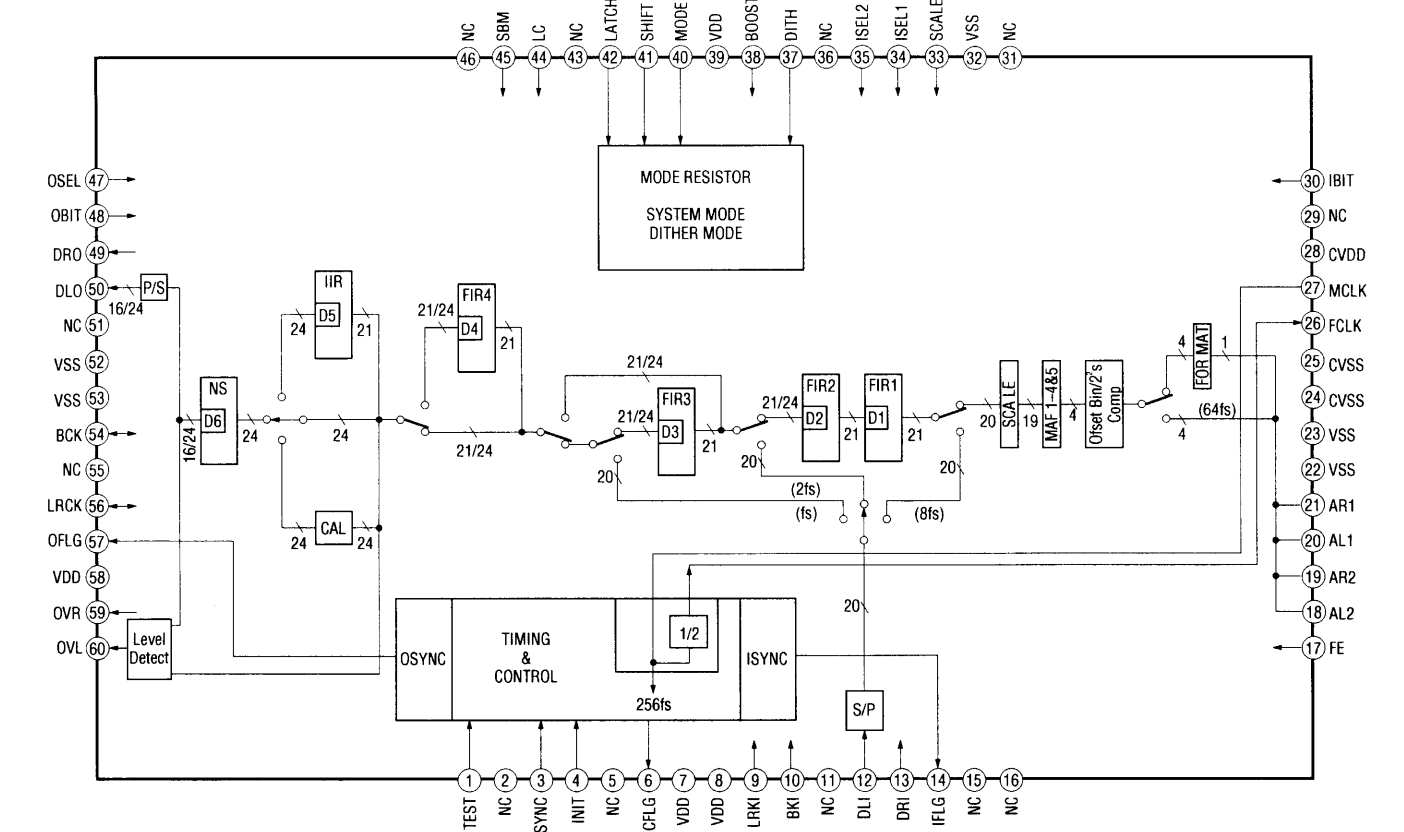
IC421 LB1836MTE-L



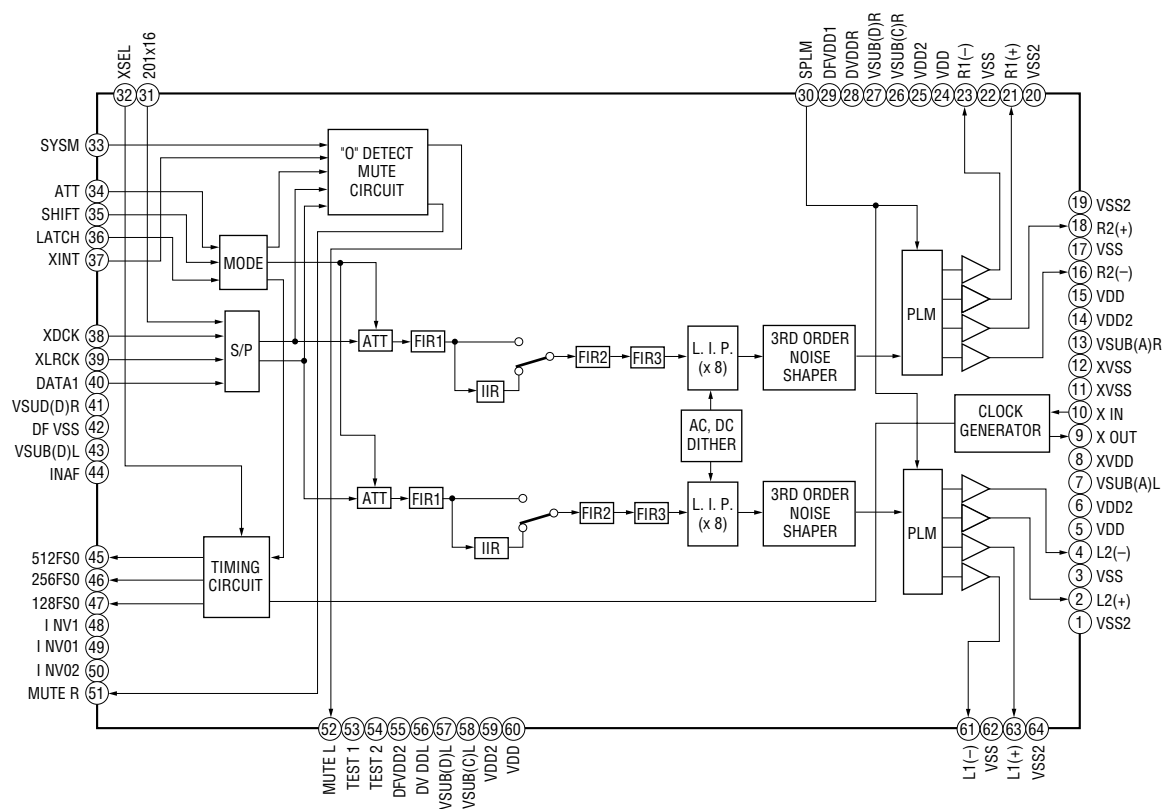
IC603 CXD8493M-E1



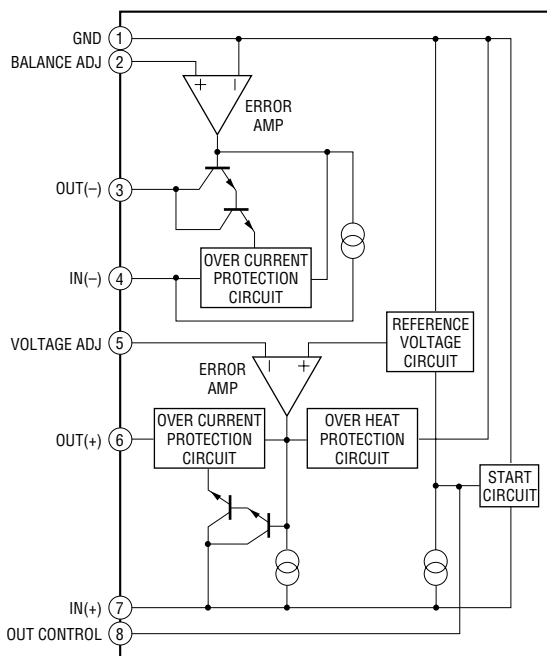
IC607 CXD8482Q



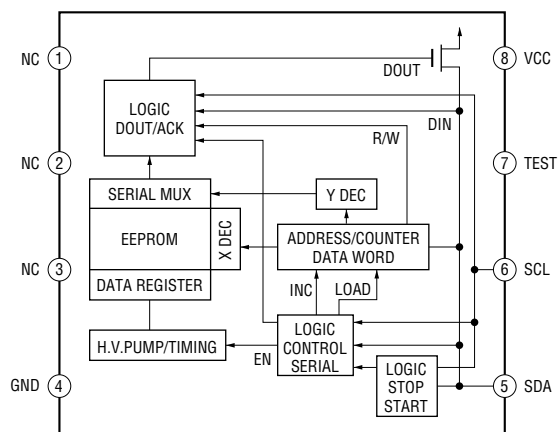
IC653 CXD8505BQ



IC903 M5230L-A

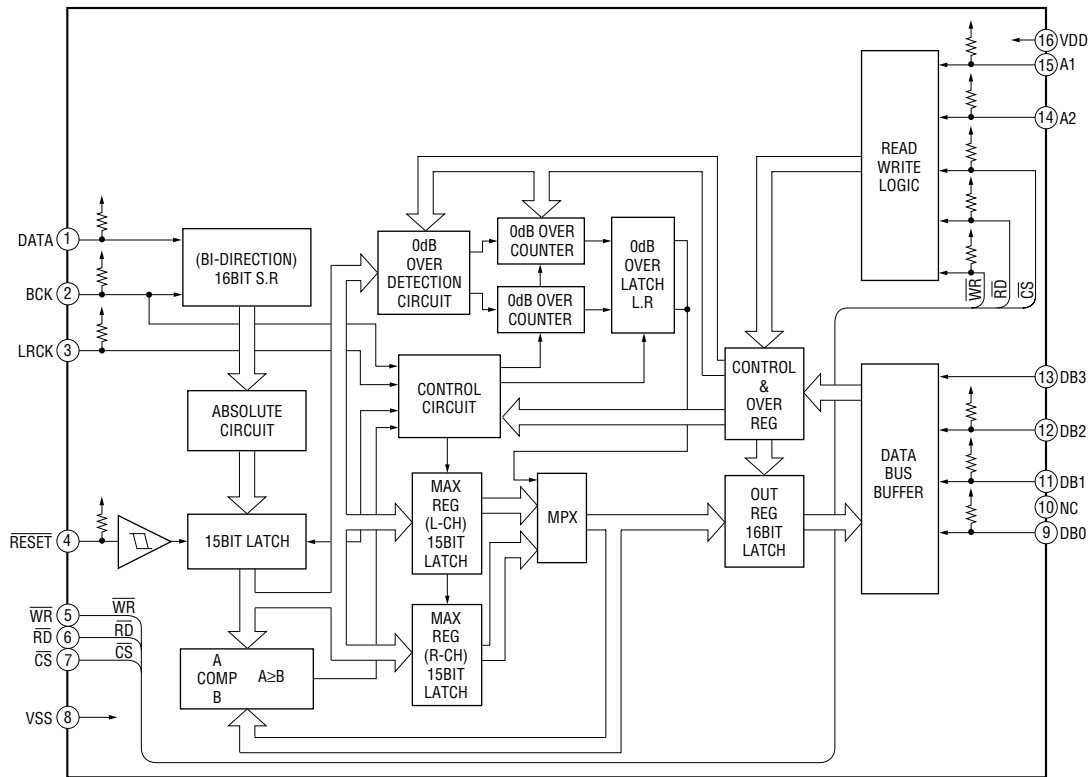


IC999 AT24C01A-10SC-TP-B



• DISPLAY Section

IC802 MSM6338RS



5-12. IC PIN FUNCTIONS

• IC304 Digital Signal Processor (CXD2605Q)

Pin No	Pin Name	I/O	Function
1, 2	A8, A9	O	External RAM address output
3	VDD	—	Power supply (+5V)
4 to 8	A10 to A14	O	External RAM address output
9	XWE	O	External RAM write enable signal output
10	XCE	O	External RAM output enable signal output
11	XEAN	O	Not used
12	TST1	I	Test pin (Fixed at “L”)
13	XT1O	O	Crystal oscillation circuit 1 output (18 MHz)
14	XT1I	I	Crystal oscillation circuit 1 input (18 MHz)
15	VSS	—	Ground
16	XRST	I	Reset input “L”: Reset
17	CLKO	O	Not used
18	MINT	O	Control byte (1) bit 1=“L”: Q code decode (Detecting between songs) output, “H”: BCK clock output by RX-PLL
19	ATSY	I	ATF sync signal input
20	MCLK	O	Not used
21	DREF	O	SBSY period, duty 50 signal output
22	SBPM	O	Not used
23	EXCK	I	Data transfer clock input from main, mecha control
24	SDSI	I	Serial data input from main, mecha control
25	SDSO	O	Serial data output to main, mecha control
26	SBSY	O	Frame sync signal output for transferring data to main, mecha control
27	PLRF	O	Not used
28	CCLK	O	Not used
29	MUTE	I	Mute input “H”: Mute Not mute REC monitor sound
30	MUTM	O	Mute monitor “H”: Indicates muting occurs
31	UNLK	O	RX-PLL lock monitor signal output “L”: Indicates locking occurs
32	RFCT	I	Playback RF signal control (“L”: Valid, “H”: Invalid) (Fixed at “L”)
33	SYMN	O	Outputs monitor signal for C1 check results corresponding to RF
34	SELB	I	Test pin (Fixed at “H”)
35	PLCK	O	Not used
36	TST2	I	Test pin (Fixed at “L”)
37	RFDT	I	Playback RF signal input
38	XCS	I	Chip select input for data transfer with microprocessor “L”: Transfer enable (Fixed at “L”)
39	SWP	I	RF switching pulse “L”: A track, “H”: B track
40	VSS	—	Ground
41	PIPC	O	ATF pilot signal/discrimination signal output for record signal “H”: Pilot signal
42	REPB	O	REC/PB discrimination signal output “H”: REC
43	REDT	O	Record signal output
44	TST4	I	Test pin (Fixed at “L”)
45	PDO	O	RX-PLL phase comparator output

- Abbreviation
PLL: Phase Locked Loop

Pin No	Pin Name	I/O	Function
46	SELC	I	Oscillation frequency select signal input (Fixed at “L”)
47	MUTA	I	Mute input “H”: Mute. Also mutes REC monitor sound
48	PLCO	I	RX-PLL external VCO clock input (512 fs as reference)
49	PLVR	O	Not used
50	PLRF	O	Not used
51	MSSL	I	Master mode/slave mode select “H”: Master (Fixed at “H”)
52	RX	I	Digital interface signal input
53	VDD	—	Power supply (+5V)
54	TX	O	Digital interface signal output
55	SELA	I	Test pin (Fixed at “H”)
56	EXSY	I/O	External sync signal input/output
57	EXSN	I/O	
58	F128	I/O	Not used
59	F256	O	
60	F512	O	
61	ADLF	I	ADTT, ADDI, ADDN serial data LSB/MSB first select input “H”: LSB first (Fixed at “L”)
62	DALF	I	DADT, DADO serial data LSB/MSB first select input “H”: LSB first (Fixed at “L”)
63	XT2O	O	Crystal oscillation circuit 2 output (22 MHz)
64	XT2I	I	Crystal oscillation circuit 2 input (22 MHz)
65	VSS	—	Ground
66	XT3O	O	Crystal oscillation circuit 3 output (24 MHz)
67	XT3I	I	Crystal oscillation circuit 3 input (24 MHz)
68	FSEN	I	F128, BCK, LRCK input/output select input “H”: Output (Fixed at “H”)
69	LR03	O	Inverted signal of LRCK 16 BCK delay output (Not used)
70	LR02	O	Not used
71	LR01	O	
72	LRCK	I/O	fs/2 fs (At 2 X speed) signal input/output
73	WCK	O	Not used
74	XBCK	O	Outputs inverted signal of BCK
75	BCK	I/O	64 fs/128 fs (At 2 X speed) signal input/output
76	ADDT	I	A/D serial data input
77	DADT	O	D/A serial data output
78	DADO	I	Audio data input for digital OUT
79	ADDI	O	Digital IN audio data output
80	ADDN	I	Digital IN audio data input
81	ERRI	I	Validity flag data input for digital OUT
82	ERRF	O	DADT data compensation data/discrimination signal output “H”: Compensation data
83	MUTG	O	Not used
84	D7	I/O	External RAM data input/output (MSB)
85 to 89	D6 to D2	I/O	External RAM data input/output
90	VSS	—	Ground
91	D1	I/O	External RAM data input/output
92	D0	I/O	External RAM data input/output (LSB)
93 to 100	A0 to A7	O	External RAM address output

• IC310 Main, Mecha Control (CXP87540-042Q)

Pin No	Pin Name	I/O	Function																		
1	R-CW	O	Reel motor CW output “H”: FWD direction																		
2	CAP-RVS	O	Capstan direction control output “L”: FWD, “H”: RVS																		
3	PLN-ON	O	Brake plunger ON control output																		
4	PLN-KICK	O	Brake plunger kick control output																		
5	DRM-ON	O	Drum motor ON control output																		
6	—	O	Not used																		
7	DF-DT	O	Communication line (Serial data) with Digital filter																		
8	DF-CLK	O	Communication line (Shift clock) with Digital filter “L”: shifted, “H”: taken																		
9	VCOEN	O	VCO enable output “H”: Active																		
10	OPT/COA	O	Digital input switch output “H”: coaxial, “L”: optical																		
11	ADLD	O	Load to Digital filter for A/D converter																		
12	DALD	O	Load to Digital filter for D/A converter																		
13	—	—	Not used																		
14	—	—																			
15	CM-IN	O	Cassette compartment motor rotation IN direction control output																		
16	CM-OUT	O	Cassette compartment motor rotation OUT direction control output																		
17	LM-EJ	O	Loading motor rotation Eject direction control output																		
18	LM-LD	O	Loading motor rotation Loading direction control output																		
19	ROM-DT	O	Data output to EEP ROM																		
20	—	—	Not used																		
21	—	—																			
22	—	—																			
23	H-FIX	I	Not used (Fixed at “H”)																		
24	THIN	I	Detect kinds of tapes “H”: normal tape, “L”: Thin tape																		
25	CAS-IN	I	Cassette IN switch input																		
26	REC-EN	I	REC enable switch input																		
27	CAS LCK	I	Cassette compartment lock switch input																		
28	CAS OUT	I	Cassette compartment out switch input																		
29	RE-FWD	I	Encoder SW2 input	<table><tr><th>SW1</th><th>SW2</th><th>Position</th></tr><tr><td>L</td><td>L</td><td>EJECT</td></tr><tr><td>H</td><td>L</td><td>STOP</td></tr><tr><td>L</td><td>H</td><td>FWD</td></tr><tr><td>H</td><td>H</td><td>STOP-FWD</td></tr></table>			SW1	SW2	Position	L	L	EJECT	H	L	STOP	L	H	FWD	H	H	STOP-FWD
SW1	SW2	Position																			
L	L	EJECT																			
H	L	STOP																			
L	H	FWD																			
H	H	STOP-FWD																			
30	RE-STOP	I	Encoder SW1 input																		
31	—	—	Not used (Open)																		
32	—	O	Not used																		
33	SBM	O	Super bit maping control output “H”: SBM ON, “L”: SBM OFF																		
34	—	O	Not used																		
35 to 38	AF3 to AF0	I	AF mode select																		
39	MP	—	Not used (Connected to Ground)																		
40	X RST	I	System reset input “L”: Active																		

Pin No	Pin Name	I/O	Function
41	VSS	—	Ground
42	XTAL	O	System clock output (Open)
43	EXTAL	I	System clock input (9.408MHz)
44	DISP-REQ	O	Communication request output to display control “L”: Active
45	REC-DIS	O	Record current control output “H”: Record disable, “L”: Record enable
46	LED-ON	O	End sensor ON control output “L”: Active
47	ROM-CK	O	Clock output to EEPROM
48	DSP-ACK	I	Communication acknowledge input from display control “L”: Active
49	DSP-DI	I	Serial data input from display control and EEPROM
50	DSP-DO	O	Serial data output to display control and EEPROM
51	DSP-CK	O	Serial clock output to display control and EEPROM
52	SBSY	I	SUB SYNC input from CXD2605Q (master)
53	SDDI	I	Serial data input from CXD2605Q
54	SDDO	O	Serial data output to CXD2605Q
55	SDCK	O	Serial clock output to CXD2605Q (for sub code interface)
56	AVSS	—	Ground for A/D port
57	AVREF	—	Reference voltage for A/D port (+5V)
58	AVDD	—	Power supply for A/D port (+5V)
59	T-END	I	T side end sensor input
60	S-END	I	S side end sensor input
61	L-FIX	I	Fixed at “L”
62	H-FIX	I	Fixed at “H”
63	L-FIX	I	Fixed at “L”
64	MUTM	I	Mute monitor input “H”: Active
65	MINT	I	Q code decode value input “H”: Between songs
66	ATF-IN	I	ATF pilot signal input (Analog input)
67	TFG	I	T side reel FG signal input
68	SFG	I	S side reel FG signal input
69	CFG	I	Capstan FG signal input
70	DFG	I	Drum FG signal input
71	DPG	I	Drum PG signal input
72	DREF	I	Drum reference signal input
73	ATSY-IN	I	DPG auto adjustment FRC signal input
74	R-X5/6V	I	Fixed at “H”
75	MAIN-CHK	O	Not used
76	CAS-TST	I	Test pin “L”: Test mode with no cassette compartment
77	MCLK	I	Channel clock input (9.408MHz)
78	PBDT	I	ATF SYNC PB data input
79	SWP	O	Switching pulse output
80	A-PWM	O	PWM signal output for AGC

Pin No	Pin Name	I/O	Function
81	R-PWM	O	PWM signal output for reel motor
82	T-PWM	O	PWM signal output for tension regulator plunger
83	D-PWM	O	PWM signal output for drum motor drive
84	C-PWM	O	PWM signal output for capstan motor
85	L-FIX	I	Fixed at “L”
86	XTEST	I	Test pin “L”: Test mode (For adjustment)
87	POW-DWN	I	Not used (Fixed at “H”)
88	VSS	—	Ground
89	VDD	—	Power supply (+5V)
90	VPP	—	Connected to +5V
91	ATSY	O	ATF sampling pulse #2 output
92	AREA	O	Not used
93	ADINT	O	A/D converter reset output “L”: Reset
94	DAINT	O	D/A digital filter reset output “L”: Reset
95	LIN-MUT	O	Line mute output “L”: Active
96	—	—	Not used
97	RLY-MUT	O	Relay mute signal output “L”: Active
98	DIG-MUT	O	Mute signal to CXD2605Q “H”: Active
99	—	—	Not used
100	R-CCW	O	Reel motor CCW output “L”: RVS direction

• **IC801 Display Control (CXP82320-086Q)**

Pin No	Pin Name	I/O	Function
1	H	I	Fixed at “H”
2	RMC	I	Remote control signal input
3	TEST	I	Test pin “L”: Test mode (For Fluorescent indicator, key and remote commander check)
4	A1 METER	O	Digital peak level meter 4-bit address bus
5	A2 METER	O	
6	M MUT	I	Level meter mute signal input
7	ACK	O	Communication standby complete signal output to main, mecha control
8	SC	I	Serial clock input from main, mecha control
9	SI	I	Serial data input from main, mecha control
10	SO	O	Serial data output to main, mecha control
11	CS METER	O	Chip select signal output to Digital peak level meter
12	RD METER	O	Read signal output to Digital peak level meter
13	WR METER	O	Write signal output to Digital peak level meter
14 to 21	—	O	Not used
22 to 29	AD0 to AD7	I	Key input
30	XRST	I	System reset input “L”: Active
31	EXTAL	I	System clock input (4.19MHz)
32	XTAL	O	System clock output (4.19MHz)
33	VSS	—	Ground
34 to 57	S0 to S23	O	Fluorescent indicator tube segment drive output
58 to 70	T12 to T0	O	Fluorescent indicator tube grid drive output
71	VFDP	I	–30V power supply for driving fluorescent indicator tube
72	VDD	—	Power supply (+5V)
73	NC	—	Connected to +5V
74 to 77	D0 to D3 METER	I/O	Digital peak level meter 4-bit data bus
78	H	I	Fixed at “H”
79	REQ	I	Communication request signal input from main, mecha control
80	MODE	I	Fixed at “L”

• **IC802 Digital Peak Level Meter (MSM6338RS)**

Pin No	Pin Name	I/O	Function
1	DATA	I	fs serial data input (2’s complement)
2	BCK	I	fs serial data fetch clock (Bit clock)
3	LRCK	I	fs input Lch/Rch discrimination signal “H”: Rch, “L”: Lch
4	XRST	I	Reset input “L”: Reset
5	WR	I	Data write request input (Data write at rising edge)
6	RD	I	Data read request input “L”: Read enable
7	CS	I	Chip select input “L”: Select
8	VSS	—	Ground
9	D0	I/O/Z	4-bit data bus (Tristate)
10	NC	—	Not used
11	D1	I/O/Z	4-bit data bus (Tristate)
12	D2	I/O/Z	
13	D3	I/O/Z	
14	A0	I	Address input Selects internal register
15	A1	I	
16	VDD	—	Power supply (+5V)

O/Z: In case of no output data, it becomes high impedance.

SECTION 6 EXPLODED VIEWS

NOTE:

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

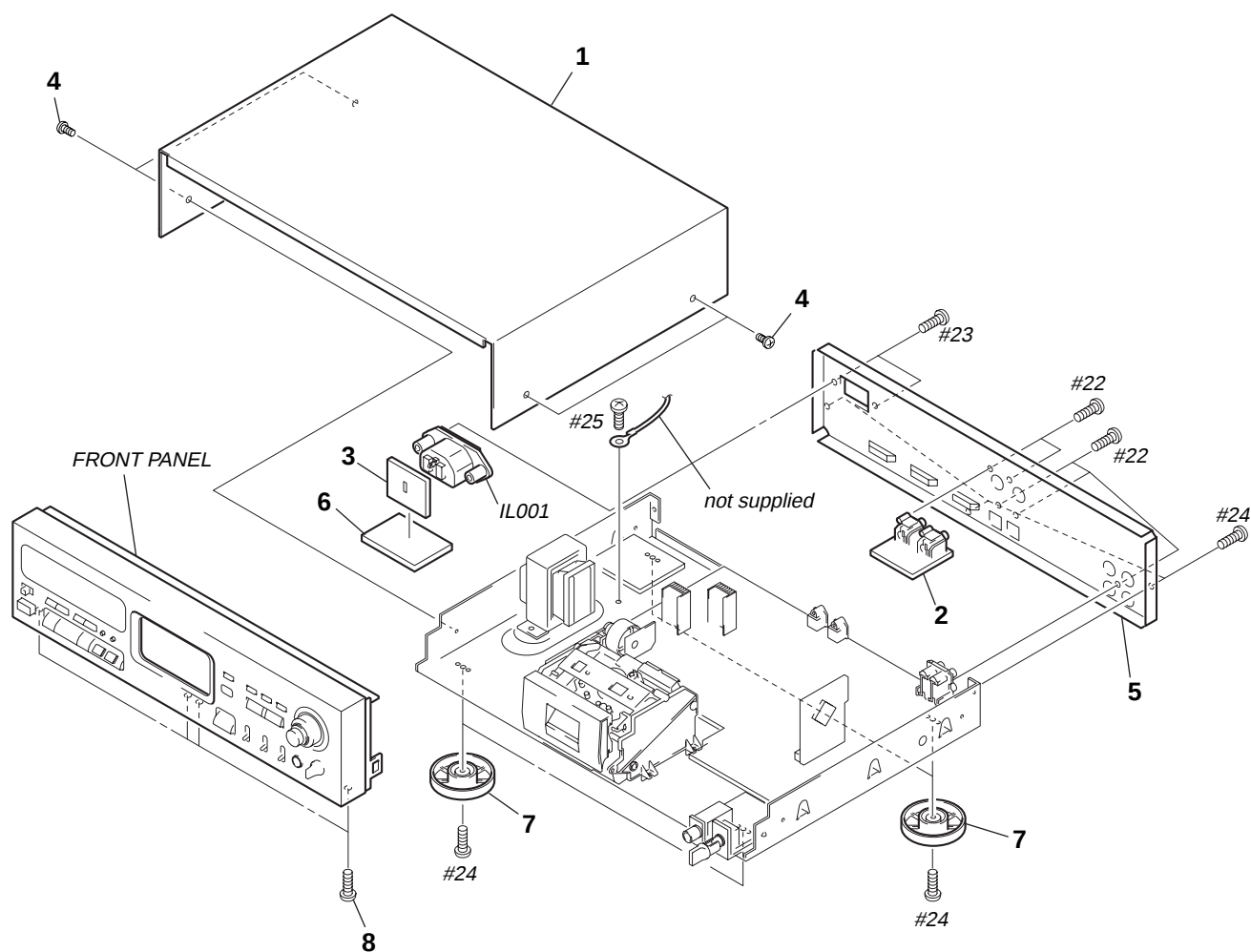
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviation
CND : Canadian model

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

Les composants identifiés par une marque $\triangle$ sont critiques pour la sécurité.

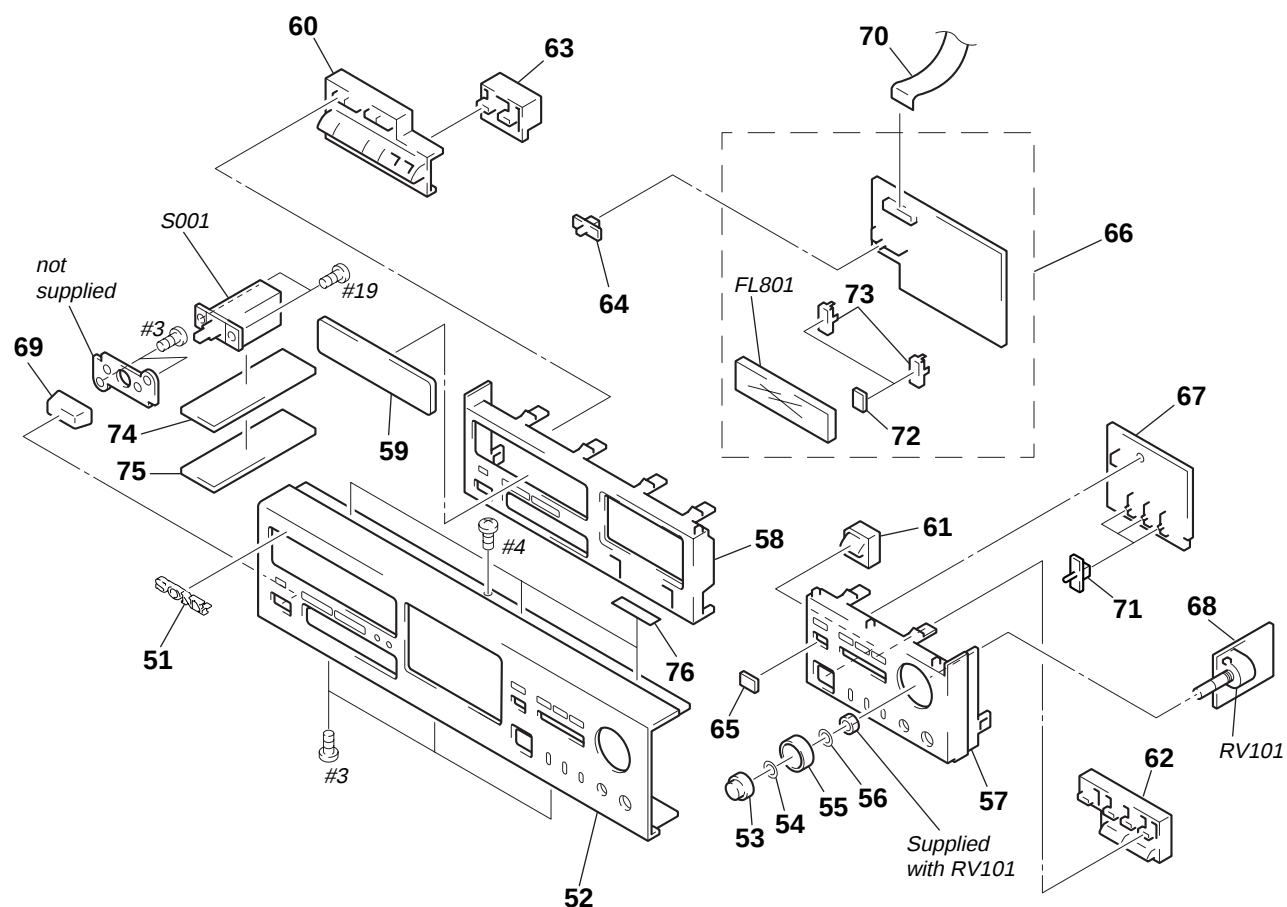
Ne les remplacer que par une pièce portant le numéro spécifié.

6-1. CASE AND BACK PANEL SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 1	3-350-407-41	CASE		* 5	3-018-941-11	PANEL, BACK (AEP,UK)	
* 2	1-661-402-11	COAX I/O BOARD		* 6	1-661-405-11	INLET BOARD	
* 3	1-661-406-11	IL COVER BOARD		7	4-956-885-01	FOOT (F58175S2W)	
4	3-704-366-21	SCREW (CASE)(M3X10)		8	3-703-685-21	SCREW (+BV 3X8)	
* 5	3-018-941-01	PANEL, BACK (US,CND)		$\triangle$ IL001	1-251-234-11	INLET, AC	

6-2. FRONT PANEL SECTION

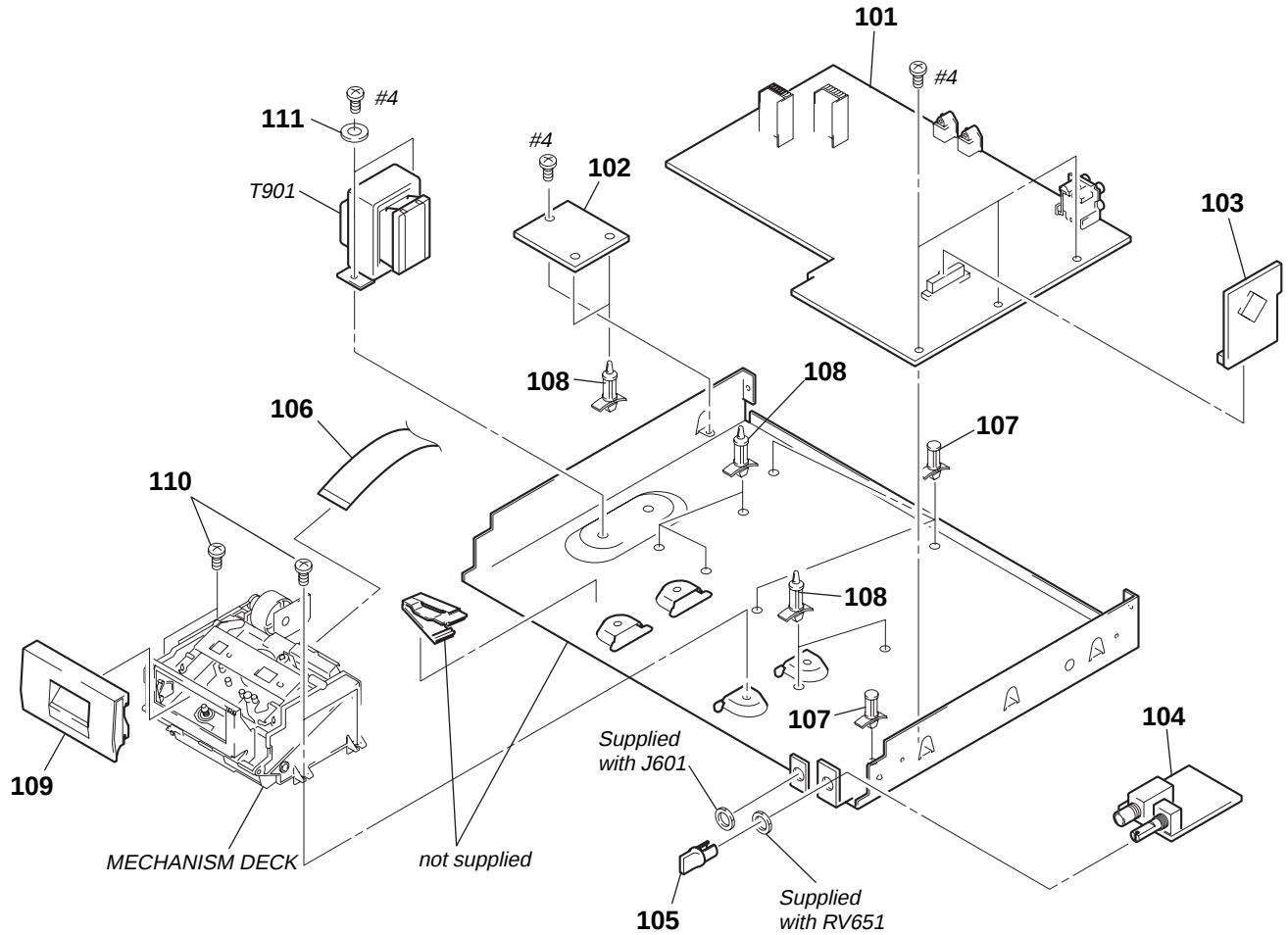


The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

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	Ref. No.	Part No.	Description	Remark
51	4-908-848-31	EMBLEM, SONY		* 66	A-2007-739-A	DISPLAY BOARD, COMPLETE	
52	3-018-940-01	PANEL, FRONT		* 67	1-661-399-11	REMOCON BOARD	
53	3-382-635-01	KNOB (REC-R)		* 68	1-661-400-11	REC VOL BOARD	
54	3-356-957-01	SPRING		69	4-922-921-21	BUTTON (POWER)	
55	3-382-634-01	KNOB (REC-L)		70	1-775-464-11	WIRE (FLAT TYPE)(17 CORE)	
56	3-382-627-01	SPRING, RING		71	3-917-216-02	KNOB (TIMER)	
57	3-922-823-21	ESCUTCHEON (R)		* 72	4-932-810-11	CUSHION (FL)	
58	3-922-822-11	ESCUTCHEON (L)		* 73	4-947-170-01	HOLDER	
59	3-922-932-01	WINDOW (FL TUBE)		* 74	1-661-403-11	AC SW BOARD	
60	3-922-824-21	BUTTON (1)		* 75	1-661-404-11	SW COVER BOARD	
61	3-922-825-21	BUTTON (2)		76	3-831-441-99	CUSHION, SPEAKER	
62	3-922-826-21	BUTTON (3)		FL801	1-517-382-11	INDICATOR TUBE, FLUORESCENT	
63	3-922-827-21	BUTTON (4)		RV101	1-241-937-11	RES, VAR, CARBON 20K/20K	
64	4-922-518-01	KNOB (TIMER)		△ S001	1-572-267-51	SWITCH, PUSH (AC POWER)(1 KEY)(POWER)	
65	4-969-185-01	WINDOW (REMOTE CONTROL)					

6-3. CHASSIS SECTION

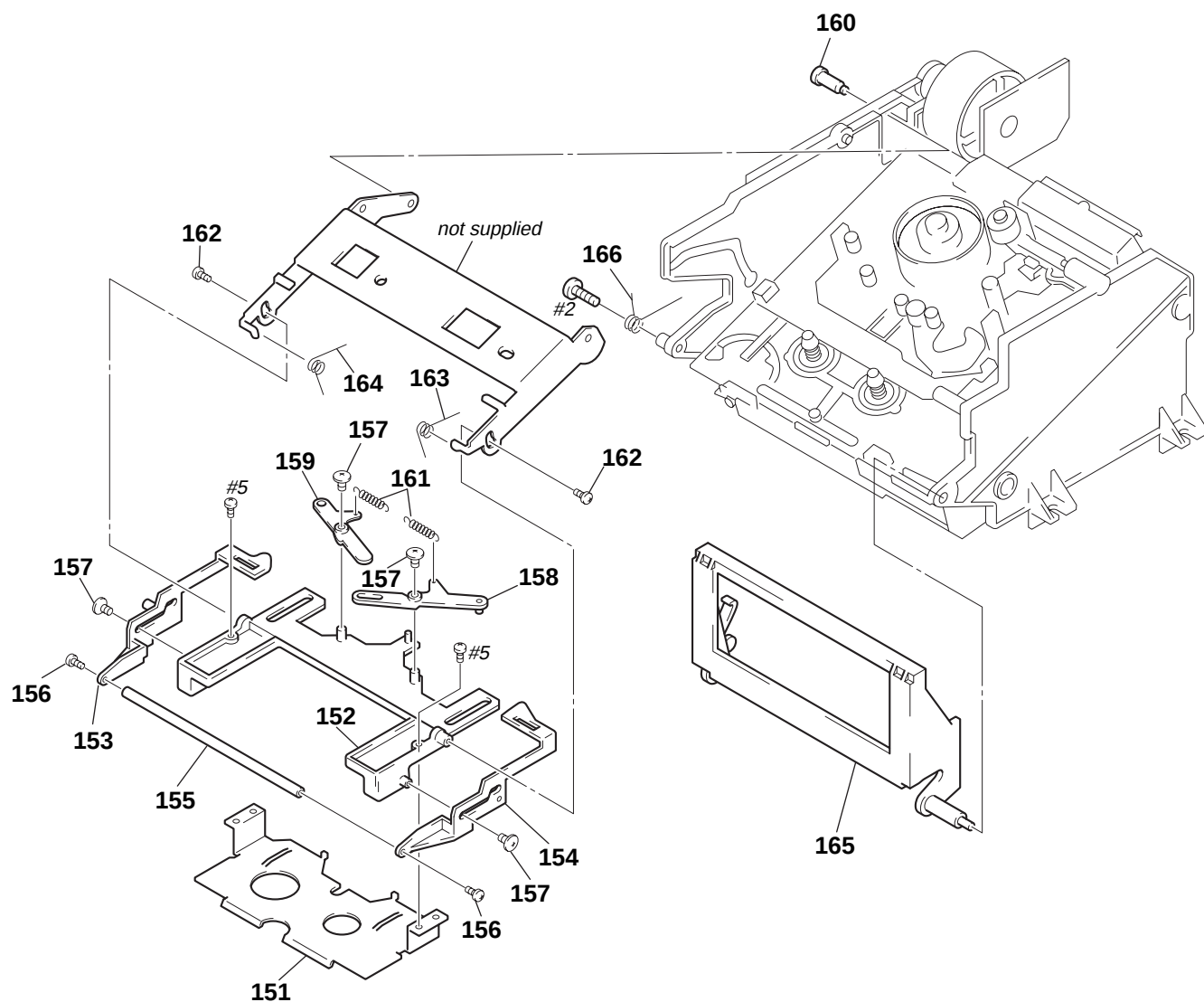


The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

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

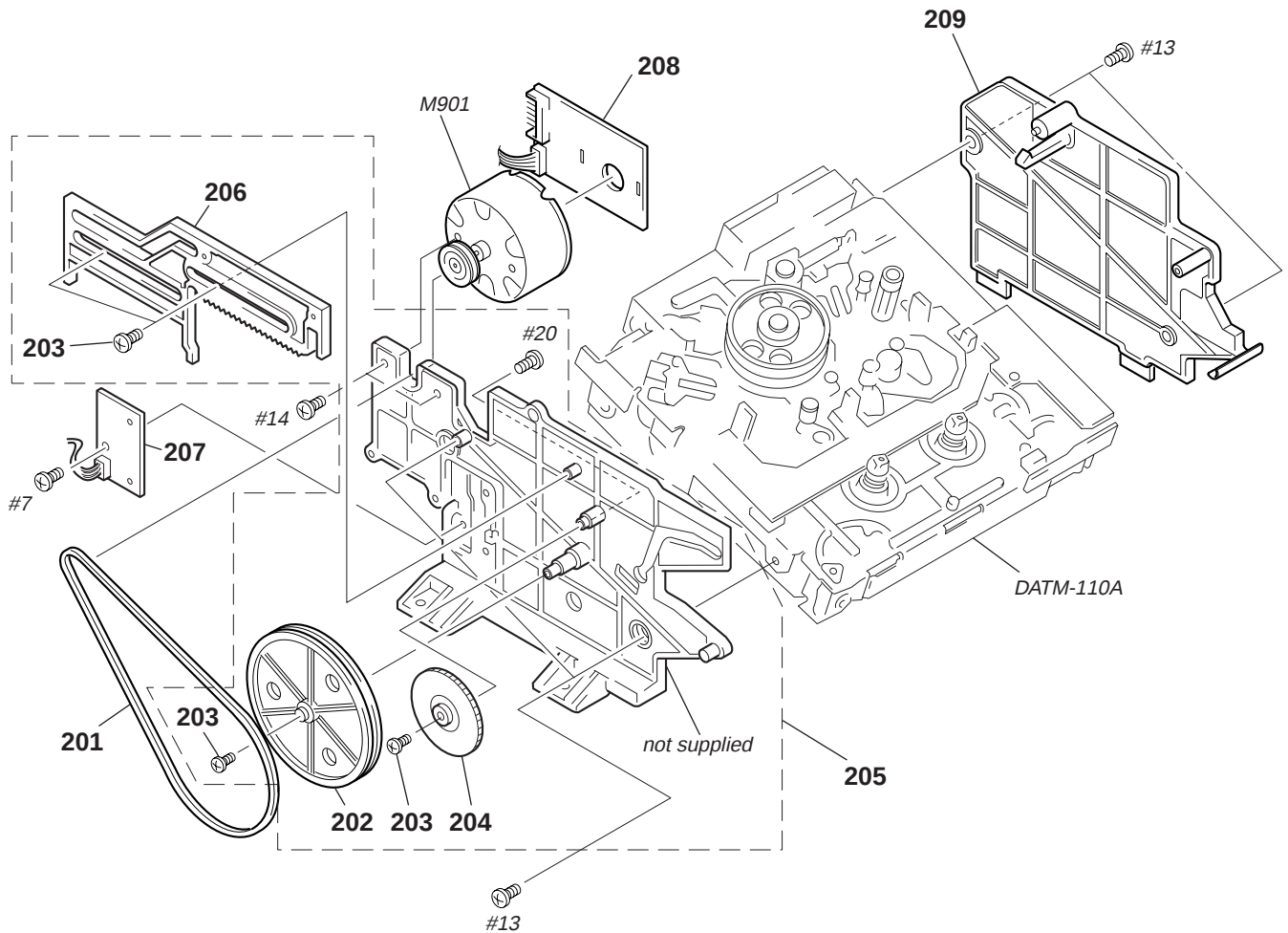
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 101	A-2007-737-A	MAIN BOARD, COMPLETE (US,CND)		* 107	3-670-570-00	SPACER, SUPPORT	
* 101	A-2007-740-A	MAIN BOARD, COMPLETE (AEP,UK)		108	4-924-098-01	HOLDER, PC BOARD	
* 102	1-661-401-11	PRIMARY BOARD		109	X-3374-441-1	PANEL (CASSETTE) ASSY	
* 103	1-656-335-11	SBM DF BOARD		110	4-886-821-11	SCREW, S TIGHT, +PTTWH 3X6	
* 104	1-656-334-11	HEADPHONE BOARD		111	3-701-418-00	WASHER, SPECIAL	
105	X-3362-818-1	KNOB (DIA. 12) ASSY (B), FLAT		Δ T901	1-427-889-11	TRANSFORMER, POWER (US,CND)	
106	1-775-389-11	WIRE (FLAT TYPE)(31 CORE)		Δ T901	1-427-890-11	TRANSFORMER, POWER (AEP,UK)	

6-4. CASSETTE COMPARTMENT SECTION



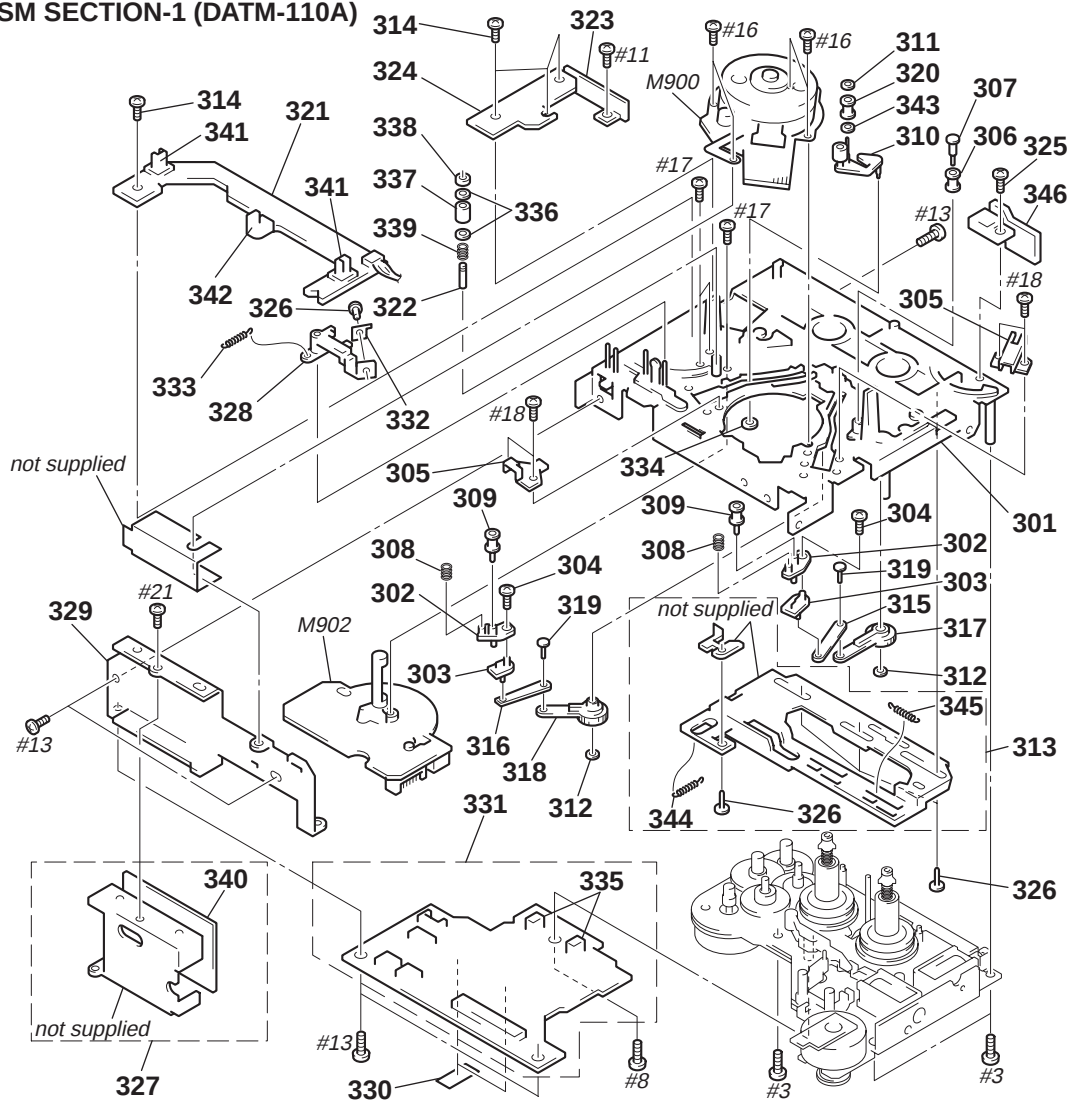
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
151	3-373-224-01	HOLDER (LOWER)		160	4-931-471-01	SCREW (STEP)	
152	3-373-237-03	HOLDER (UPPER), CASSETTE		161	3-632-859-00	SPRING, BRAKE LEVER RETURN	
153	3-373-223-01	SLIDER (L)		162	3-318-203-61	SCREW (B1.7X4), TAPPING	
154	3-373-222-01	SLIDER (R)		163	3-373-215-01	SPRING (R), TORSION	
* 155	3-373-217-01	SHAFT (JOINT)		164	3-373-216-01	SPRING (L), TORSION	
156	3-345-648-61	SCREW (M1.4), TOOTHED LOCK		165	3-382-648-01	HOLDER (WINDOW)	
157	3-318-201-11	SCREW (B)(1.4X3), TAPPING		166	3-373-212-01	SPRING (CASSETTE)	
158	3-373-218-01	LEVER (R)					
159	3-373-219-01	LEVER (L)					

6-5. CHASSIS L/R SECTION



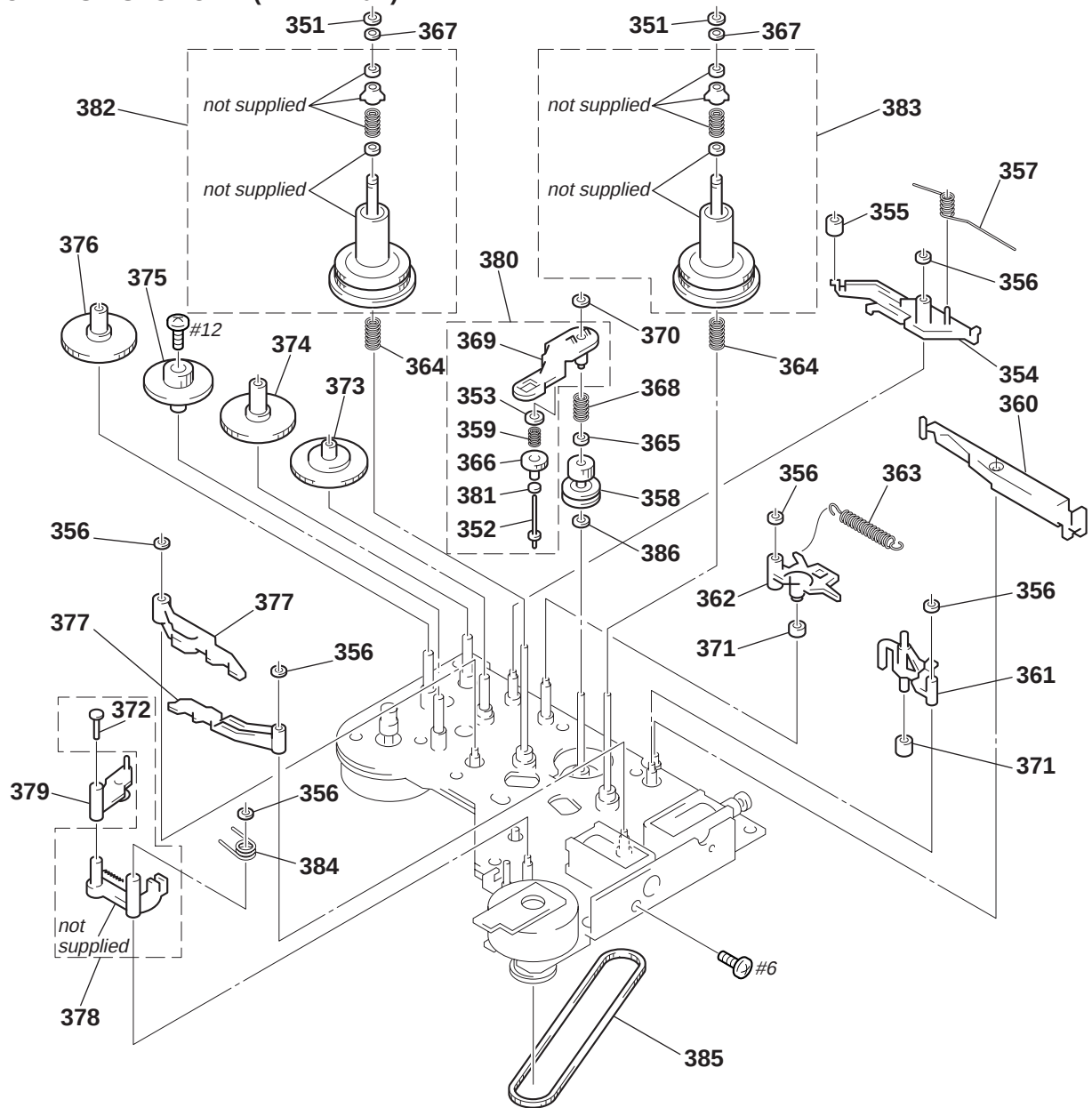
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
201	4-931-470-01	BELT (DRIVING)		206	3-373-221-01	SLIDER (RACK)	
202	3-373-214-01	PULLEY		* 207	1-655-916-11	CASSETTE COMPARTMENT SW BOARD	
203	2-623-756-01	SCREW, (B1.7X3), TAPPING		* 208	1-655-913-11	CASSETTE COMPARTMENT MOTOR BOARD	
204	3-373-213-01	GEAR, DRIVING		* 209	3-373-235-01	CHASSIS (R)	
205	A-2004-153-E	CHASSIS (L) ASSY		M901	X-3370-655-1	MOTOR ASSY (CASSETTE COMPARTMENT)	

6-6. MECHANISM SECTION-1 (DATM-110A)



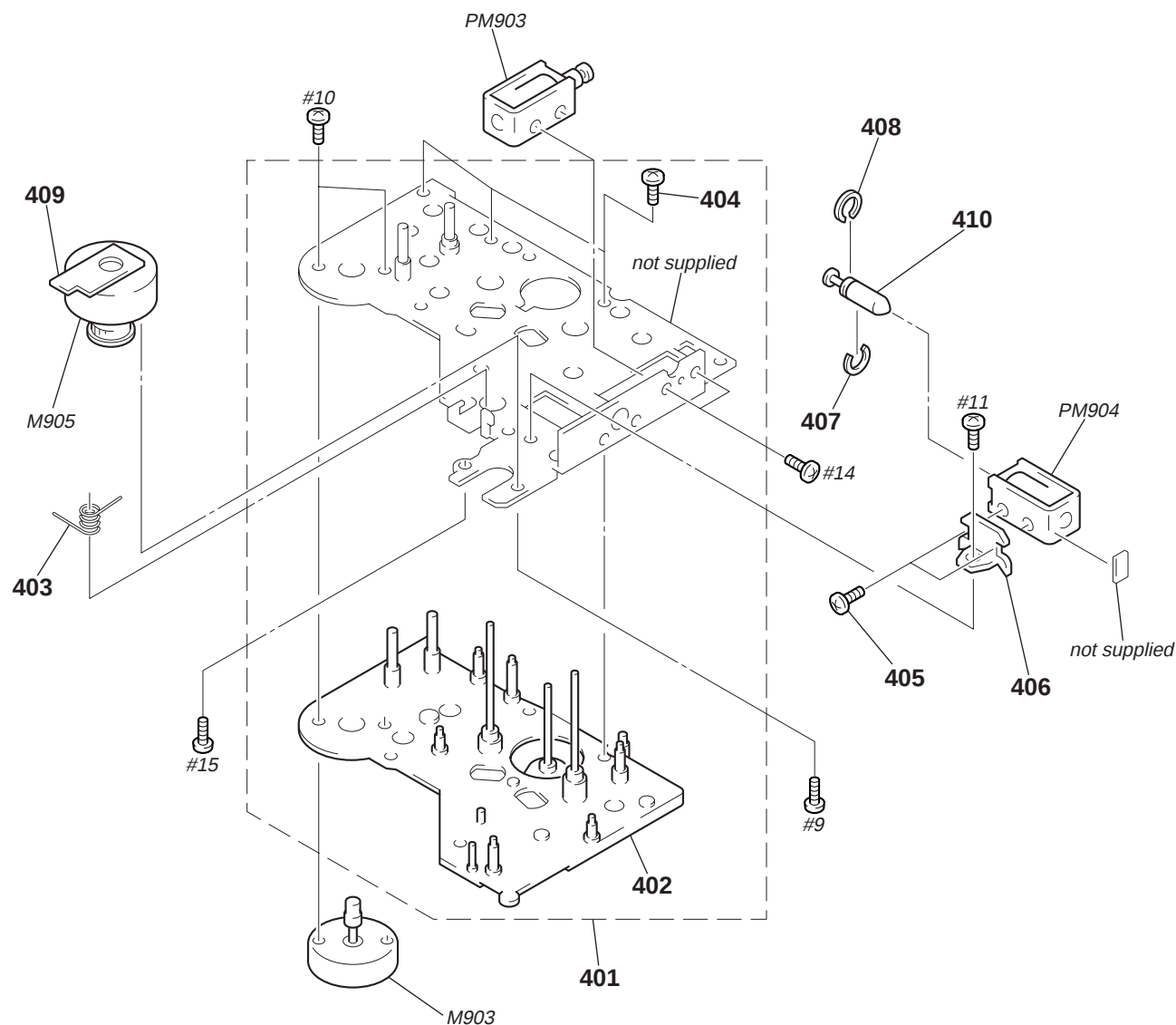
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 301	X-3366-740-1	CHASSIS ASSY, MECHANICAL		326	3-368-414-01	SHAFT (CAM SLIDER GUIDE)	
* 302	3-368-390-01	BASE (#1 GUIDE)		* 327	A-2001-587-A	RF COMPLETE ASSY	
303	3-368-409-01	JOINT (#1 GUIDE)		328	3-927-039-01	LEVER (CLEANER)	
304	3-368-413-01	SCREW (1.4), +P TAPPING (B)		* 329	3-368-391-01	BRACKET (RF)	
* 305	3-368-442-01	CATCHER		330	3-831-441-XX	CUSHION, SPEAKER	
306	3-368-399-01	GUIDE, ROLLER		* 331	A-2007-742-A	DRUM DRIVE BOARD, COMPLETE	
307	3-908-644-01	SHAFT (ROLLER GUIDE)		332	3-927-040-01	SHEET (CLEANER)	
308	3-368-436-01	SPRING (#1 GUIDE), COMPRESSION		333	3-927-041-01	SPRING (16G), TENSION	
309	X-3371-518-1	ROLLER GUIDE ASSY		334	3-701-436-11	WASHER, STOPPER	
310	X-3363-025-1	PINCH LEVER ASSY		* 335	3-343-491-01	HOLDER (S SENSOR B)	
311	3-315-384-31	WASHER, STOPPER		336	3-337-677-01	FLANGE	
312	3-368-398-01	BUSHING		337	3-337-676-01	GUIDE, FIXED	
* 313	A-2003-708-A	SLIDER ASSY, CAM		338	3-337-605-01	NUT, ADJUSTMENT	
314	3-372-761-01	SCREW (M1.7X4), TAPPING		339	3-389-294-01	SPRING (T2 300G), COMPRESSION	
315	3-368-427-01	LEVER (LOAD-T)		* 340	A-2006-455-A	RF AMP BOARD, COMPLETE	
316	3-368-426-01	LEVER (LOAD-S)		* 341	3-368-457-01	HOLDER (END SENSOR)(RECIEVE)	
317	3-368-444-01	GEAR (LOAD-T)		* 342	3-368-456-01	HOLDER (END SENSOR LIGHT)	
318	3-368-443-01	GEAR (LOAD-S)		343	3-387-983-01	POLY-SLIDER (T3 GUIDE)	
319	3-368-415-01	SHAFT (LOAD LEVER JOINT)		344	3-368-439-01	SPRING (PINCH PRESS), TENSION	
320	3-384-243-01	GUIDE (T3), ROLLER		345	3-368-441-01	SPRING (SLIDER S), TENSION	
* 321	1-667-961-11	T/E SENSOR BOARD		* 346	1-667-963-11	THIN BOARD	
322	3-337-674-01	SHAFT, GUIDE		M900	8-848-567-11	DRUM ASSY DOU-03A	
* 323	1-667-960-11	RGN SW BOARD		M902	8-835-361-01	MOTOR, DC U-17B (CAPSTAN)	
* 324	1-667-959-11	CAM SLIDER BOARD					
325	3-321-041-01	SCREW (M1.7X3.5), TAPPING					

6-7. MECHANISM SECTION-2 (DATM-110A)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
351	3-315-384-01	WASHER, STOPPER		370	3-315-384-31	WASHER, STOPPER	
352	3-375-210-01	SHAFT (GOOSENECK GEAR)		371	3-377-332-01	TUBE (BREAK2)	
353	3-368-422-01	POLY-SLIDER(DIA. 5.5-DIA. 1.5)		372	3-368-415-01	SHAFT (LOAD LEVER JOINT)	
* 354	3-368-455-01	LEVER (GEAR LOCK)		373	3-368-421-01	GEAR (CAM DRIVE C)	
355	3-368-418-01	TUBE (BREAK)		374	3-373-039-01	GEAR (CAM DRIVE B)	
356	3-368-398-01	BUSHING		375	3-368-403-01	GEAR (CAM DRIVE D)	
357	3-368-430-01	SPRING (GEAR LOCK)		376	3-368-402-01	GEAR (CAM DRIVE A,B)	
358	X-3363-022-1	GEAR (REEL DRIVE) ASSY		377	X-3363-024-1	LEVER (BT) ASSY	
359	3-923-260-01	SPRING, COMPRESSION		378	X-3369-126-1	LEVER (BT SOLENOID)	
* 360	3-368-453-01	LEVER (BRAKE SOLENOID)		* 379	3-368-454-01	LEVER (BT SELECTION)	
* 361	3-368-447-01	LEVER (BRAKE S)		380	X-3364-581-4	LEVER (F/R) ASSY	
* 362	3-368-446-01	LEVER (BRAKE T)		381	3-701-436-01	WASHER, 1.6	
363	3-368-438-01	SPRING (BREAK), TENSION		382	A-2004-476-A	TABLE (T) ASSY, REEL	
364	3-905-586-02	SPRING (FF/REW), COMPRESSION		383	A-2004-475-A	TABLE (S) ASSY, REEL	
365	3-368-422-11	POLY-SLIDER(DIA. 5.5-DIA. 1.5)		384	3-383-478-01	SPRING (B.T LEVER RETURN)	
366	3-368-406-01	GEAR (GOOSENECK)		385	3-368-417-01	BELT (170TN10-1.0T), TIMING	
367	3-578-224-00	WASHER		386	3-701-436-01	WASHER, 1.6	
368	3-923-261-01	SPRING (FR LEVER), COMPRESSION					
369	3-368-450-01	LEVER (F/R)					

6-8. MECHANISM SECTION-3 (DATM-110A)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 401	A-2004-478-A	CHASSIS (REEL) ASSY		408	3-905-867-01	SPRING (STOPPER)	
* 402	X-3366-312-1	CHASSIS ASSY, REEL		* 409	1-667-962-11	REEL MOTOR BOARD	
403	3-368-431-01	SPRING (B.T SOLENOID)		410	3-380-525-01	ARBOR (BT ADJUSTMENT), MAVABLE	
404	2-623-756-01	SCREW, (B1.7X3), TAPPING					
405	3-368-423-01	SCREW (M2.6), STEP		M903	X-3363-109-1	MOTOR (CAM) ASSY	
				M905	X-3363-110-2	MOTOR (REEL) ASSY	
* 406	3-368-416-01	BRACKET (B.T SOLENOID)		PM903	1-454-732-11	SOLENOID, PLUNGER (BRAKE)	
407	3-919-599-01	SPACER (P)		PM904	1-454-536-11	SOLENOID, PLUNGER (TENSION)	

SECTION 7 ELECTRICAL PARTS LIST CASSETTE COMPARTMENT MOTOR

AC SW

CAM SLIDER

CASSETTE COMPARTMENT SW

COAX I/O

Note:

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

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

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

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
All resistors are in ohms
METAL: Metal-film resistor
METAL OXIDE: Metal Oxide-film resistor
F : nonflammable

- SEMICONDUCTORS
In each case, u: μ , for example:
uA...: μ A..., uPA...: μ PA..., uPB...: μ PB...,
uPC...: μ PC..., uPD...: μ PD...
- CAPACITORS
uF : μ F
- COILS
uH : μ H
- Abbreviation
CND : Canadian model

Ref. No.	Part No.	Description	Remark
*	1-661-403-11	AC SW BOARD *****	
		< CONNECTOR >	
CN004	1-580-230-51	PIN, CONNECTOR (PC BOARD) 2P	
		< SWITCH >	
Δ S001	1-572-267-51	SWITCH, PUSH (AC POWER)(1 KEY)(POWER)	

*	1-667-959-11	CAM SLIDER BOARD *****	
*	1-535-303-00	WIRE, JUMPER	
		< SWITCH >	
SW1	1-570-953-11	SWITCH, PUSH (1 KEY)(STOP DET)	
SW2	1-570-953-11	SWITCH, PUSH (1 KEY)(FWD DET)	

*	1-655-913-11	CASSETTE COMPARTMENT MOTOR BOARD *****	
		< CAPACITOR >	
C1	1-161-772-11	CERAMIC 0.1uF 10% 25V	
		< CONNECTOR >	
* CN1	1-564-498-11	PIN, CONNECTOR 5P	
* CN2	1-564-337-00	PIN, CONNECTOR 3P	
		< MOTOR >	
M901	X-3370-655-1	MOTOR ASSY (CASSETTE COMPARTMENT)	

Ref. No.	Part No.	Description	Remark
*	1-655-916-11	CASSETTE COMPARTMENT SW BOARD *****	
		< SWITCH >	
S1	1-571-958-11	SWITCH, PUSH (1 KEY)(CASSETTE LOCK)	
S2	1-571-958-11	SWITCH, PUSH (1 KEY)(CASSETTE OUT)	

*	1-661-402-11	COAX I/O BOARD *****	
		< CAPACITOR >	
C520	1-162-306-11	CERAMIC 0.01uF 20% 16V	
C523	1-162-179-11	CERAMIC 0.1uF 50V	
C524	1-162-282-31	CERAMIC 100PF 10% 50V	
C525	1-162-306-11	CERAMIC 0.01uF 20% 16V	
C526	1-164-159-11	CERAMIC 0.1uF 50V	
		< CONNECTOR >	
* CN521	1-564-506-11	PLUG, CONNECTOR 3P	
		< JACK >	
J521	1-770-905-11	JACK, PIN 1P (DIGITAL COAXIAL IN)	
J522	1-778-228-11	JACK, PIN 1P (DIGITAL COAXIAL OUT)	
		< RESISTOR >	
R521	1-247-804-11	CARBON 75 5% 1/4W	
R522	1-249-401-11	CARBON 47 5% 1/4W F	
R523	1-247-804-11	CARBON 75 5% 1/4W	
R524	1-249-417-11	CARBON 1K 5% 1/4W F	
		< TRANSFORMER >	
T521	1-409-594-11	COIL (WITH CORE)	

DISPLAY

DRUM DRIVE

Ref. No.	Part No.	Description	Remark
*	A-2007-739-A	DISPLAY BOARD, COMPLETE *****	
*	4-932-810-11	CUSHION (FL)	
*	4-947-170-01	HOLDER	
< CAPACITOR >			
C881	1-164-096-11	CERAMIC 0.01uF	50V
C882	1-164-096-11	CERAMIC 0.01uF	50V
C883	1-164-096-11	CERAMIC 0.01uF	50V
C884	1-126-177-11	ELECT 100uF	20% 10V
C885	1-164-096-11	CERAMIC 0.01uF	50V
C886	1-164-096-11	CERAMIC 0.01uF	50V
< CONNECTOR >			
CN801	1-568-860-11	SOCKET, CONNECTOR 17P	
< COMPOSITION CIRCUIT BLOCK >			
CP801	1-233-566-11	COMPOSITION CIRCUIT BLOCK	
CP802	1-233-566-11	COMPOSITION CIRCUIT BLOCK	
CP803	1-233-566-11	COMPOSITION CIRCUIT BLOCK	
CP804	1-233-566-11	COMPOSITION CIRCUIT BLOCK	
< FLUORESCENT INDICATOR >			
FL801	1-517-382-11	INDICATOR TUBE, FLUORESCENT	
< IC >			
IC801	8-752-890-04	IC CXP82320-086Q	
IC802	8-759-995-09	IC MSM6338RS	
< TRANSISTOR >			
Q801	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q802	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q803	8-729-620-05	TRANSISTOR 2SC2603-EF	
< RESISTOR >			
R801	1-249-427-11	CARBON 6.8K	5% 1/4W F
R802	1-249-415-11	CARBON 680	5% 1/4W F
R803	1-249-417-11	CARBON 1K	5% 1/4W F
R804	1-249-419-11	CARBON 1.5K	5% 1/4W F
R805	1-247-843-11	CARBON 3.3K	5% 1/4W
R806	1-249-425-11	CARBON 4.7K	5% 1/4W F
R807	1-249-429-11	CARBON 10K	5% 1/4W
R811	1-249-427-11	CARBON 6.8K	5% 1/4W F
R812	1-249-415-11	CARBON 680	5% 1/4W F
R813	1-249-417-11	CARBON 1K	5% 1/4W F
R814	1-249-419-11	CARBON 1.5K	5% 1/4W F
R815	1-247-843-11	CARBON 3.3K	5% 1/4W
R817	1-249-431-11	CARBON 15K	5% 1/4W
R818	1-249-435-11	CARBON 33K	5% 1/4W
R821	1-249-427-11	CARBON 6.8K	5% 1/4W F

Ref. No.	Part No.	Description	Remark
R831	1-249-427-11	CARBON 6.8K	5% 1/4W F
R841	1-249-437-11	CARBON 47K	5% 1/4W
R851	1-249-427-11	CARBON 6.8K	5% 1/4W F
R861	1-249-437-11	CARBON 47K	5% 1/4W
R871	1-249-437-11	CARBON 47K	5% 1/4W
R881	1-249-417-11	CARBON 1K	5% 1/4W F
R882	1-249-437-11	CARBON 47K	5% 1/4W
R883	1-249-437-11	CARBON 47K	5% 1/4W
R884	1-249-437-11	CARBON 47K	5% 1/4W
R885	1-249-437-11	CARBON 47K	5% 1/4W
R886	1-249-437-11	CARBON 47K	5% 1/4W
R887	1-249-417-11	CARBON 1K	5% 1/4W F
R888	1-249-437-11	CARBON 47K	5% 1/4W
R889	1-249-437-11	CARBON 47K	5% 1/4W
R890	1-249-429-11	CARBON 10K	5% 1/4W
R891	1-249-429-11	CARBON 10K	5% 1/4W
< SWITCH >			
S802	1-554-937-11	SWITCH, KEY BOARD (STOP ■)	
S803	1-554-937-11	SWITCH, KEY BOARD (PLAY ►)	
S804	1-554-937-11	SWITCH, KEY BOARD (AMS, SELECT, ◀◀)	
S805	1-554-937-11	SWITCH, KEY BOARD (AMS, SELECT, ►►)	
S806	1-554-937-11	SWITCH, KEY BOARD (MODE, MENU)	
S807	1-554-937-11	SWITCH, KEY BOARD (RESET, ENTER)	
S811	1-554-937-11	SWITCH, KEY BOARD (DATA, REW ◀◀)	
S812	1-554-937-11	SWITCH, KEY BOARD (DATA, FF ►►)	
S813	1-554-937-11	SWITCH, KEY BOARD (REC ●)	
S814	1-554-937-11	SWITCH, KEY BOARD (PAUSE)	
S815	1-554-937-11	SWITCH, KEY BOARD (REC MUTE ○)	
S817	1-571-520-11	SWITCH, SLIDE (INPUT)	
< VIBRATOR >			
X801	1-577-359-21	VIBRATOR, CERAMIC (4.19MHz)	

*	A-2007-742-A	DRUM DRIVE BOARD, COMPLETE *****	
*	3-343-491-01	HOLDER (S SENSOR B)	
< CAPACITOR >			
C01	1-126-176-11	ELECT 220uF	20% 10V
C02	1-126-177-11	ELECT 100uF	20% 10V
C03	1-126-301-11	ELECT 1uF	20% 50V
C04	1-164-161-11	CERAMIC CHIP 0.0022uF	10% 100V
C05	1-163-017-00	CERAMIC CHIP 0.0047uF	5% 50V
C08	1-163-001-11	CERAMIC CHIP 220PF	10% 50V
C10	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C11	1-164-161-11	CERAMIC CHIP 0.0022uF	10% 100V
C12	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C21	1-163-001-11	CERAMIC CHIP 220PF	10% 50V

DRUM DRIVE

HEADPHONE

IL COVER

Ref. No.	Part No.	Description	Remark
C31	1-163-001-11	CERAMIC CHIP 220PF	10% 50V
C32	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C33	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C34	1-163-038-91	CERAMIC CHIP 0.1uF	25V
C35	1-163-038-91	CERAMIC CHIP 0.1uF	25V
< CONNECTOR >			
CN01	1-691-459-21	PIN, CONNECTOR (PC BOARD) 3P	
* CN02	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P	
* CN03	1-564-338-00	PIN, CONNECTOR 4P	
* CN04	1-564-336-00	PIN, CONNECTOR 2P	
* CN06	1-564-339-00	PIN, CONNECTOR 5P	
CN07	1-564-721-11	PIN, CONNECTOR (SMALL TYPE) 5P	
* CN08	1-568-873-11	SOCKET, CONNECTOR 31P	
* CN09	1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P	
* CN10	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P	
< IC >			
IC01	8-759-148-05	IC CXA8010M	
IC02	8-759-701-01	IC NJM2904M	
IC03	8-759-701-01	IC NJM2904M	
< TERMINAL >			
LUG01	1-537-770-21	TERMINAL BOARD, GROUND	
< PHOTO INTERRUPTER >			
PH01	8-719-939-23	PHOTO INTERRUPTER GP-2S09-C	
PH02	8-719-939-23	PHOTO INTERRUPTER GP-2S09-C	
< TRANSISTOR >			
Q01	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q02	8-729-801-84	TRANSISTOR 2SB1013-4	
< RESISTOR >			
R01	1-216-061-00	METAL CHIP 3.3K	5% 1/10W
R02	1-216-073-00	METAL CHIP 10K	5% 1/10W
R03	1-216-029-00	METAL CHIP 150	5% 1/10W
R04	1-216-057-00	METAL CHIP 2.2K	5% 1/10W
R05	1-216-057-00	METAL CHIP 2.2K	5% 1/10W
R06	1-216-085-00	METAL CHIP 33K	5% 1/10W
R07	1-216-025-91	METAL GLAZE 100	5% 1/10W
R08	1-216-049-91	METAL GLAZE 1K	5% 1/10W
R09	1-216-073-00	METAL CHIP 10K	5% 1/10W
R10	1-216-073-00	METAL CHIP 10K	5% 1/10W
R11	1-216-073-00	METAL CHIP 10K	5% 1/10W
R12	1-216-113-00	METAL CHIP 470K	5% 1/10W
R13	1-216-073-00	METAL CHIP 10K	5% 1/10W
R14	1-216-037-00	METAL CHIP 330	5% 1/10W
R21	1-216-073-00	METAL CHIP 10K	5% 1/10W
R22	1-216-081-00	METAL CHIP 22K	5% 1/10W
R23	1-216-077-00	METAL CHIP 15K	5% 1/10W
R24	1-216-069-00	METAL CHIP 6.8K	5% 1/10W

Ref. No.	Part No.	Description	Remark
R25	1-216-105-91	METAL GLAZE 220K	5% 1/10W
R26	1-216-065-00	METAL CHIP 4.7K	5% 1/10W
R31	1-216-073-00	METAL CHIP 10K	5% 1/10W
R32	1-216-081-00	METAL CHIP 22K	5% 1/10W
R35	1-216-105-91	METAL GLAZE 220K	5% 1/10W
R36	1-216-065-00	METAL CHIP 4.7K	5% 1/10W

*	1-656-334-11	HEADPHONE BOARD	*****
< CAPACITOR >			
C681	1-126-934-11	ELECT 220uF	20% 16V
C682	1-126-934-11	ELECT 220uF	20% 16V
< CONNECTOR >			
CN652	1-564-510-11	PLUG (MICRO CONNECTOR) 6P	
< IC >			
IC601	8-759-602-83	IC M5238P	
< JACK >			
J601	1-770-904-11	JACK (LARGE TYPE)(PHONES)	
< COIL >			
L399	1-236-163-11	ENCAPSULATED COMPONENT	
L400	1-236-163-11	ENCAPSULATED COMPONENT	
< RESISTOR >			
R231	1-249-435-11	CARBON 33K	5% 1/4W
R232	1-249-425-11	CARBON 4.7K	5% 1/4W F
R233	1-249-433-11	CARBON 22K	5% 1/4W
R234	1-247-807-31	CARBON 100	5% 1/4W
R281	1-249-435-11	CARBON 33K	5% 1/4W
R282	1-249-425-11	CARBON 4.7K	5% 1/4W F
R283	1-249-433-11	CARBON 22K	5% 1/4W
R284	1-247-807-31	CARBON 100	5% 1/4W
△ R691	1-808-374-11	THERMISTOR, POSITIVE	
△ R692	1-808-374-11	THERMISTOR, POSITIVE	
< VARIABLE RESISTOR >			
RV651	1-223-620-11	RES, VAR, CARBON 20K/20K (PHONES LEVEL)	

*	1-661-406-11	IL COVER BOARD	*****

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.

INLET

MAIN

Ref. No.	Part No.	Description	Remark			
*	1-661-405-11	INLET BOARD *****				
		< CONNECTOR >				
CN900	1-775-047-11	CORD (WITH CONNECTOR)				
		< INLET >				
△ IL001	1-251-234-11	INLET, AC (~ AC IN)				

*	A-2007-737-A	MAIN BOARD, COMPLETE (US,CND) *****				
*	A-2007-740-A	MAIN BOARD, COMPLETE (AEP,UK) *****				
*	1-533-213-31	HOLDER, FUSE				
		< CAPACITOR >				
C101	1-126-933-11	ELECT	100uF	20%	10V	
C102	1-162-286-31	CERAMIC	220PF	10%	50V	
C103	1-126-933-11	ELECT	100uF	20%	10V	
C107	1-130-481-00	MYLAR	0.0068uF	5%	50V	
C151	1-126-933-11	ELECT	100uF	20%	10V	
C152	1-162-286-31	CERAMIC	220PF	10%	50V	
C153	1-126-933-11	ELECT	100uF	20%	10V	
C157	1-130-481-00	MYLAR	0.0068uF	5%	50V	
C201	1-130-471-00	MYLAR	0.001uF	5%	50V	
C202	1-110-341-11	MYLAR	330PF	5%	50V	
C203	1-110-341-11	MYLAR	330PF	5%	50V	
C204	1-130-471-00	MYLAR	0.001uF	5%	50V	
C205	1-130-479-00	MYLAR	0.0047uF	5%	50V	
C206	1-126-933-11	ELECT	100uF	20%	10V	
C207	1-162-302-11	CERAMIC	0.0022uF	30%	16V	
C251	1-130-471-00	MYLAR	0.001uF	5%	50V	
C252	1-110-341-11	MYLAR	330PF	5%	50V	
C253	1-110-341-11	MYLAR	330PF	5%	50V	
C254	1-130-471-00	MYLAR	0.001uF	5%	50V	
C255	1-130-479-00	MYLAR	0.0047uF	5%	50V	
C256	1-126-933-11	ELECT	100uF	20%	10V	
C257	1-162-302-11	CERAMIC	0.0022uF	30%	16V	
C302	1-162-197-31	CERAMIC	6.8PF	10%	50V	
C304	1-126-960-11	ELECT	1uF	20%	50V	
C307	1-164-159-11	CERAMIC	0.1uF		50V	
C308	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C309	1-126-935-11	ELECT	470uF	20%	6.3V	
C310	1-164-159-11	CERAMIC	0.1uF		50V	
C311	1-162-198-31	CERAMIC	8.2PF	10%	50V	
C312	1-162-199-31	CERAMIC	10PF	5%	50V	
C313	1-162-197-31	CERAMIC	6.8PF	10%	50V	
C314	1-162-197-31	CERAMIC	6.8PF	10%	50V	
C327	1-162-198-31	CERAMIC	8.2PF	10%	50V	

Ref. No.	Part No.	Description	Remark			
C332	1-164-159-11	CERAMIC	0.1uF		50V	
C333	1-162-211-31	CERAMIC	33PF	5%	50V	
C334	1-126-964-11	ELECT	10uF	20%	50V	
C335	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C336	1-164-159-11	CERAMIC	0.1uF		50V	
C337	1-164-159-11	CERAMIC	0.1uF		50V	
C338	1-164-159-11	CERAMIC	0.1uF		50V	
C340	1-164-159-11	CERAMIC	0.1uF		50V	
C341	1-164-159-11	CERAMIC	0.1uF		50V	
C342	1-126-935-11	ELECT	470uF	20%	6.3V	
C343	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C344	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C345	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C351	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C352	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C353	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C354	1-164-159-11	CERAMIC	0.1uF		50V	
C355	1-164-159-11	CERAMIC	0.1uF		50V	
C356	1-164-159-11	CERAMIC	0.1uF		50V	
C361	1-162-302-11	CERAMIC	0.0022uF	30%	16V	
C362	1-162-302-11	CERAMIC	0.0022uF	30%	16V	
C431	1-162-302-11	CERAMIC	0.0022uF	30%	16V	
C432	1-162-302-11	CERAMIC	0.0022uF	30%	16V	
C433	1-162-286-31	CERAMIC	220PF	10%	50V	
C439	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C441	1-162-302-11	CERAMIC	0.0022uF	30%	16V	
C442	1-162-302-11	CERAMIC	0.0022uF	30%	16V	
C443	1-162-286-31	CERAMIC	220PF	10%	50V	
C444	1-126-964-11	ELECT	10uF	20%	50V	
C445	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C451	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C452	1-126-963-11	ELECT	4.7uF	20%	50V	
C453	1-126-338-11	ELECT	47uF	20%	63V	
C454	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C459	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C471	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C481	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C491	1-162-290-31	CERAMIC	470PF	10%	50V	
C492	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C502	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C503	1-162-284-31	CERAMIC	150PF	10%	50V	
C507	1-130-481-00	MYLAR	0.0068uF	5%	50V	
C509	1-164-159-11	CERAMIC	0.1uF		50V	
C511	1-164-159-11	CERAMIC	0.1uF		50V	
C515	1-136-169-00	FILM	0.22uF	5%	50V	
C527	1-164-159-11	CERAMIC	0.1uF		50V	
C601	1-136-165-00	FILM	0.1uF	5%	50V	
C602	1-136-165-00	FILM	0.1uF	5%	50V	
C621	1-126-964-11	ELECT	10uF	20%	50V	
C622	1-126-964-11	ELECT	10uF	20%	50V	
C623	1-136-165-00	FILM	0.1uF	5%	50V	
C624	1-136-165-00	FILM	0.1uF	5%	50V	

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Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark
C625	1-136-165-00	FILM	0.1uF	5%	50V	* CN303	1-568-836-11	SOCKET, CONNECTOR 17P	
C626	1-136-165-00	FILM	0.1uF	5%	50V	CN341	1-770-164-11	PIN, CONNECTOR (PC BOARD) 15P	
C627	1-126-935-11	ELECT	470uF	20%	6.3V	* CN401	1-564-339-00	PIN, CONNECTOR 5P	
C628	1-126-935-11	ELECT	470uF	20%	6.3V				
C630	1-126-935-11	ELECT	470uF	20%	6.3V				
C651	1-136-165-00	FILM	0.1uF	5%	50V	* CN601	1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P	
C652	1-136-165-00	FILM	0.1uF	5%	50V	CN651	1-564-510-11	PLUG (MICRO CONNECTOR) 6P	
C653	1-136-165-00	FILM	0.1uF	5%	50V	CN691	1-573-095-11	SOCKET, CONNECTOR 15P	
C654	1-136-165-00	FILM	0.1uF	5%	50V	CN901	1-691-767-11	PLUG (MICRO CONNECTOR) 5P	
C661	1-136-165-00	FILM	0.1uF	5%	50V	CN902	1-691-768-11	PLUG (MICRO CONNECTOR) 6P	
C662	1-136-165-00	FILM	0.1uF	5%	50V	< DIODE >			
C663	1-136-165-00	FILM	0.1uF	5%	50V	D101	8-719-987-63	DIODE 1N4148M	
C664	1-136-165-00	FILM	0.1uF	5%	50V	D102	8-719-987-63	DIODE 1N4148M	
C665	1-136-165-00	FILM	0.1uF	5%	50V	D103	8-719-987-63	DIODE 1N4148M	
C666	1-136-165-00	FILM	0.1uF	5%	50V	D104	8-719-987-63	DIODE 1N4148M	
C667	1-136-165-00	FILM	0.1uF	5%	50V	D151	8-719-987-63	DIODE 1N4148M	
C668	1-126-933-11	ELECT	100uF	20%	10V	D152	8-719-987-63	DIODE 1N4148M	
C669	1-136-165-00	FILM	0.1uF	5%	50V	D153	8-719-987-63	DIODE 1N4148M	
C670	1-126-933-11	ELECT	100uF	20%	10V	D154	8-719-987-63	DIODE 1N4148M	
C671	1-126-933-11	ELECT	100uF	20%	10V	D321	8-719-987-63	DIODE 1N4148M	
C672	1-136-165-00	FILM	0.1uF	5%	50V	D331	8-719-987-63	DIODE 1N4148M	
C673	1-126-933-11	ELECT	100uF	20%	10V	D333	8-719-987-63	DIODE 1N4148M	
C674	1-136-165-00	FILM	0.1uF	5%	50V	D411	8-719-200-82	DIODE 11ES2	
C675	1-136-165-00	FILM	0.1uF	5%	50V	D412	8-719-200-82	DIODE 11ES2	
C683	1-136-165-00	FILM	0.1uF	5%	50V	D413	8-719-200-82	DIODE 11ES2	
C684	1-126-935-11	ELECT	470uF	20%	6.3V	D421	8-719-200-82	DIODE 11ES2	
C901	1-126-953-11	ELECT	2200uF	20%	35V	D422	8-719-200-82	DIODE 11ES2	
C902	1-126-939-11	ELECT	10000uF	20%	16V	D501	8-719-066-71	DIODE KV1555NT	
C903	1-126-935-11	ELECT	470uF	20%	6.3V	D651	8-719-987-63	DIODE 1N4148M	
C904	1-126-916-11	ELECT	1000uF	20%	6.3V	D901	8-719-200-77	DIODE 10E2N	
C905	1-128-553-11	ELECT	220uF	20%	63V	D902	8-719-200-77	DIODE 10E2N	
C906	1-126-968-11	ELECT	100uF	20%	50V	D903	8-719-200-77	DIODE 10E2N	
C907	1-162-306-11	CERAMIC	0.01uF	20%	16V	D904	8-719-200-77	DIODE 10E2N	
C908	1-162-306-11	CERAMIC	0.01uF	20%	16V	D905	8-719-312-47	DIODE RBA-406B	
C910	1-128-548-11	ELECT	4700uF	20%	25V	D906	8-719-200-82	DIODE 11ES2	
C911	1-126-960-11	ELECT	1uF	20%	50V	D907	8-719-987-63	DIODE 1N4148M	
C912	1-126-767-11	ELECT	1000uF	20%	16V	D908	8-719-015-13	DIODE UZP-9.1BC-TP	
C913	1-162-306-11	CERAMIC	0.01uF	20%	16V	D911	8-719-200-77	DIODE 10E2N	
C920	1-128-548-11	ELECT	4700uF	20%	25V	D912	8-719-200-77	DIODE 10E2N	
C921	1-162-306-11	CERAMIC	0.01uF	20%	16V	D913	8-719-200-77	DIODE 10E2N	
C922	1-126-767-11	ELECT	1000uF	20%	16V	D914	8-719-200-77	DIODE 10E2N	
C923	1-162-306-11	CERAMIC	0.01uF	20%	16V	< FUSE >			
C931	1-126-934-11	ELECT	220uF	20%	16V	△ F901	1-532-464-51	FUSE, TIME-LAG (T2.5AL 250V)(AEP,UK)	
C932	1-164-159-11	CERAMIC	0.1uF		50V	△ F901	1-576-105-11	FUSE (2.5A 250V)(US,CND)	
C933	1-126-935-11	ELECT	470uF	20%	6.3V	△ F911	1-532-774-11	FUSE, MICRO (SECONDARY)(630mA 125V)	
C934	1-136-165-00	FILM	0.1uF	5%	50V	△ F921	1-532-774-11	FUSE, MICRO (SECONDARY)(630mA 125V)	
C998	1-164-159-11	CERAMIC	0.1uF		50V	< IC >			
C999	1-164-159-11	CERAMIC	0.1uF		50V	IC301	8-759-927-46	IC SN74HC00ANS	
< CONNECTOR >						IC302	8-759-701-01	IC NJM2904M	
* CN301	1-564-706-31	PIN, CONNECTOR (SMALL TYPE) 4P				IC304	8-752-355-55	IC CXD2605Q	
* CN302	1-568-845-11	SOCKET, CONNECTOR 31P				IC305	8-752-364-91	IC CXK58257BM-10LL-T6	
						IC306	8-759-925-90	IC SN74HC74ANS	

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MAIN

Ref. No.	Part No.	Description	Remark
IC308	8-759-634-43	IC M51953BFP	
IC310	8-752-890-05	IC CXP87540-042Q	
IC331	8-759-242-84	IC TORX176 (DIGITAL OPTICAL IN)	
IC332	8-759-242-85	IC TOTX176 (DIGITAL OPTICAL OUT)	
IC421	8-759-823-94	IC LB1836M	
IC431	8-759-701-01	IC NJM2904M	
IC441	8-759-701-01	IC NJM2904M	
IC451	8-759-701-01	IC NJM2904M	
IC501	8-759-242-70	IC TC7WU04F	
IC602	8-759-602-83	IC M5238P	
IC603	8-759-330-53	IC CXD8493M-E1	
IC604	8-759-602-67	IC M5278L05	
IC605	8-759-189-33	IC M5279L05-TP	
IC606	8-759-094-53	IC TA7805S	
IC651	8-759-900-72	IC NE5532P	
IC652	8-759-900-72	IC NE5532P	
IC653	8-759-370-62	IC CXD8505BQ	
IC654	8-759-602-67	IC M5278L05	
IC681	8-759-634-50	IC M5218AL	
IC901	8-759-069-28	IC PQ05RF11	
IC902	8-759-069-28	IC PQ05RF11	
IC903	8-759-602-66	IC M5230L-A	
IC904	8-759-390-48	IC uPC2406AHF	
IC999	8-759-426-52	IC AT24C01A-10SC-TP-B	
< IC LINK >			
△ ICP911	1-532-837-21	LINK, IC (PRF630 0.63A)(AEP,UK)	
△ ICP921	1-532-837-21	LINK, IC (PRF630 0.63A)(AEP,UK)	
< JACK >			
* J101	1-569-443-11	JACK, PIN 4P (ANALOG (LINE))	
< COIL >			
L301	1-410-509-11	INDUCTOR 10uH	
L302	1-410-509-11	INDUCTOR 10uH	
L331	1-410-509-11	INDUCTOR 10uH	
L341	1-410-509-11	INDUCTOR 10uH	
L501	1-410-499-41	INDUCTOR 1.5uH	
L502	1-410-509-11	INDUCTOR 10uH	
L601	1-410-509-11	INDUCTOR 10uH	
L991	1-410-509-11	INDUCTOR 10uH	
< GROUND PLATE >			
* LUG501	4-916-318-01	PLATE, GROUND	
LUG502	1-537-770-21	TERMINAL BOARD, GROUND	
< TRANSISTOR >			
Q221	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q271	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q321	8-729-900-89	TRANSISTOR DTC144ES	
Q322	8-729-900-89	TRANSISTOR DTC144ES	
Q340	8-729-620-05	TRANSISTOR 2SC2603-EF	

Ref. No.	Part No.	Description	Remark
Q341	8-729-900-89	TRANSISTOR DTC144ES	
Q342	8-729-422-57	TRANSISTOR UN4111	
Q351	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q411	8-729-900-80	TRANSISTOR DTC114ES	
Q412	8-729-927-12	TRANSISTOR 2SC4115SQR	
Q413	8-729-900-80	TRANSISTOR DTC114ES	
Q414	8-729-927-11	TRANSISTOR 2SA1585SQR	
Q441	8-729-801-93	TRANSISTOR 2SD1387	
Q451	8-729-141-83	TRANSISTOR 2SB1094-LK	
Q452	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q453	8-729-927-11	TRANSISTOR 2SA1585SQR	
Q454	8-729-927-12	TRANSISTOR 2SC4115SQR	
Q455	8-729-927-11	TRANSISTOR 2SA1585SQR	
Q456	8-729-927-12	TRANSISTOR 2SC4115SQR	
Q457	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q458	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q459	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q481	8-729-801-93	TRANSISTOR 2SD1387	
Q503	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q504	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q505	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q601	8-729-900-80	TRANSISTOR DTC114ES	
Q651	8-729-422-57	TRANSISTOR UN4111	
Q654	8-729-900-80	TRANSISTOR DTC114ES	
Q902	8-729-140-97	TRANSISTOR 2SB734-34	
Q903	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q911	8-729-141-83	TRANSISTOR 2SB1094-LK	
Q921	8-729-209-15	TRANSISTOR 2SD2012	
< RESISTOR >			
R102	1-249-441-11	CARBON 100K 5% 1/4W	
R103	1-249-429-11	CARBON 10K 5% 1/4W	
R104	1-249-441-11	CARBON 100K 5% 1/4W	
R105	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R106	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R107	1-249-401-11	CARBON 47 5% 1/4W F	
R108	1-249-401-11	CARBON 47 5% 1/4W F	
R152	1-249-441-11	CARBON 100K 5% 1/4W	
R153	1-249-429-11	CARBON 10K 5% 1/4W	
R154	1-249-441-11	CARBON 100K 5% 1/4W	
R155	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R156	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R157	1-249-401-11	CARBON 47 5% 1/4W F	
R158	1-249-401-11	CARBON 47 5% 1/4W F	
R201	1-259-440-11	CARBON 3.3K 1% 1/6W	
R202	1-259-440-11	CARBON 3.3K 1% 1/6W	
R203	1-259-440-11	CARBON 3.3K 1% 1/6W	
R204	1-259-440-11	CARBON 3.3K 1% 1/6W	
R205	1-259-436-11	CARBON 2.2K 1% 1/6W	
R206	1-259-436-11	CARBON 2.2K 1% 1/6W	
R207	1-259-444-11	CARBON 4.7K 1% 1/6W	

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Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark
R208	1-259-444-11	CARBON	4.7K	1%	1/6W	R355	1-249-437-11	CARBON	47K	5%	1/4W
R209	1-249-419-11	CARBON	1.5K	5%	1/4W F	R356	1-249-437-11	CARBON	47K	5%	1/4W
R210	1-249-419-11	CARBON	1.5K	5%	1/4W F						
R211	1-249-441-11	CARBON	100K	5%	1/4W	R357	1-249-429-11	CARBON	10K	5%	1/4W
						R358	1-249-429-11	CARBON	10K	5%	1/4W
R212	1-247-807-31	CARBON	100	5%	1/4W	R359	1-249-429-11	CARBON	10K	5%	1/4W
R213	1-249-409-11	CARBON	220	5%	1/4W F	R360	1-249-429-11	CARBON	10K	5%	1/4W
R214	1-249-407-11	CARBON	150	5%	1/4W F	R361	1-249-429-11	CARBON	10K	5%	1/4W
R221	1-249-441-11	CARBON	100K	5%	1/4W						
R222	1-249-425-11	CARBON	4.7K	5%	1/4W F	R362	1-249-413-11	CARBON	470	5%	1/4W F
						R363	1-249-429-11	CARBON	10K	5%	1/4W
R251	1-259-440-11	CARBON	3.3K	1%	1/6W	R364	1-249-429-11	CARBON	10K	5%	1/4W
R252	1-259-440-11	CARBON	3.3K	1%	1/6W	R365	1-249-429-11	CARBON	10K	5%	1/4W
R253	1-259-440-11	CARBON	3.3K	1%	1/6W	R366	1-249-429-11	CARBON	10K	5%	1/4W
R254	1-259-440-11	CARBON	3.3K	1%	1/6W						
R255	1-259-436-11	CARBON	2.2K	1%	1/6W	R368	1-249-435-11	CARBON	33K	5%	1/4W
						R369	1-249-435-11	CARBON	33K	5%	1/4W
R256	1-259-436-11	CARBON	2.2K	1%	1/6W	R370	1-249-437-11	CARBON	47K	5%	1/4W
R257	1-259-444-11	CARBON	4.7K	1%	1/6W	R371	1-249-441-11	CARBON	100K	5%	1/4W
R258	1-259-444-11	CARBON	4.7K	1%	1/6W	R373	1-249-417-11	CARBON	1K	5%	1/4W F
R259	1-249-419-11	CARBON	1.5K	5%	1/4W F						
R260	1-249-419-11	CARBON	1.5K	5%	1/4W F	R374	1-249-429-11	CARBON	10K	5%	1/4W
						R375	1-249-429-11	CARBON	10K	5%	1/4W
R261	1-249-441-11	CARBON	100K	5%	1/4W	R376	1-249-429-11	CARBON	10K	5%	1/4W
R262	1-247-807-31	CARBON	100	5%	1/4W	R377	1-249-429-11	CARBON	10K	5%	1/4W
R263	1-249-409-11	CARBON	220	5%	1/4W F	R378	1-249-407-11	CARBON	150	5%	1/4W F
R264	1-249-407-11	CARBON	150	5%	1/4W F						
R272	1-249-425-11	CARBON	4.7K	5%	1/4W F	R379	1-249-417-11	CARBON	1K	5%	1/4W F
						R380	1-249-437-11	CARBON	47K	5%	1/4W
R303	1-249-437-11	CARBON	47K	5%	1/4W	R381	1-249-409-11	CARBON	220	5%	1/4W F
R305	1-249-429-11	CARBON	10K	5%	1/4W	R382	1-249-411-11	CARBON	330	5%	1/4W
R306	1-249-429-11	CARBON	10K	5%	1/4W	R383	1-249-411-11	CARBON	330	5%	1/4W
R307	1-249-409-11	CARBON	220	5%	1/4W F						
R308	1-249-429-11	CARBON	10K	5%	1/4W	R391	1-249-437-11	CARBON	47K	5%	1/4W
						R411	1-249-429-11	CARBON	10K	5%	1/4W
R310	1-249-409-11	CARBON	220	5%	1/4W F	R412	1-249-415-11	CARBON	680	5%	1/4W F
R321	1-249-433-11	CARBON	22K	5%	1/4W	R413	1-249-415-11	CARBON	680	5%	1/4W F
R322	1-249-437-11	CARBON	47K	5%	1/4W	△ R414	1-217-639-00	FUSIBLE	2.2	5%	1/4W F
R323	1-249-413-11	CARBON	470	5%	1/4W F						
R329	1-249-427-11	CARBON	6.8K	5%	1/4W F	R415	1-249-415-11	CARBON	680	5%	1/4W F
						R416	1-249-415-11	CARBON	680	5%	1/4W F
R330	1-249-409-11	CARBON	220	5%	1/4W F	R431	1-249-441-11	CARBON	100K	5%	1/4W
R332	1-249-437-11	CARBON	47K	5%	1/4W	R432	1-249-441-11	CARBON	100K	5%	1/4W
R333	1-249-417-11	CARBON	1K	5%	1/4W F	R433	1-249-441-11	CARBON	100K	5%	1/4W
R335	1-247-807-31	CARBON	100	5%	1/4W						
R336	1-249-431-11	CARBON	15K	5%	1/4W	R434	1-249-441-11	CARBON	100K	5%	1/4W
						R441	1-249-441-11	CARBON	100K	5%	1/4W
R337	1-249-421-11	CARBON	2.2K	5%	1/4W F	R442	1-249-441-11	CARBON	100K	5%	1/4W
R338	1-249-421-11	CARBON	2.2K	5%	1/4W F	R443	1-249-441-11	CARBON	100K	5%	1/4W
R339	1-249-435-11	CARBON	33K	5%	1/4W	R444	1-249-429-11	CARBON	10K	5%	1/4W
R340	1-249-429-11	CARBON	10K	5%	1/4W						
R341	1-249-425-11	CARBON	4.7K	5%	1/4W F	R445	1-249-433-11	CARBON	22K	5%	1/4W
						R446	1-249-401-11	CARBON	47	5%	1/4W F
R342	1-249-425-11	CARBON	4.7K	5%	1/4W F	R447	1-249-441-11	CARBON	100K	5%	1/4W
R343	1-249-425-11	CARBON	4.7K	5%	1/4W F	R449	1-249-441-11	CARBON	100K	5%	1/4W
R344	1-249-437-11	CARBON	47K	5%	1/4W	R450	1-249-417-11	CARBON	1K	5%	1/4W F
R345	1-249-413-11	CARBON	470	5%	1/4W F						
R351	1-249-441-11	CARBON	100K	5%	1/4W	R451	1-249-441-11	CARBON	100K	5%	1/4W
						R452	1-249-417-11	CARBON	1K	5%	1/4W F
R352	1-249-441-11	CARBON	100K	5%	1/4W	R453	1-249-429-11	CARBON	10K	5%	1/4W
R353	1-249-441-11	CARBON	100K	5%	1/4W	R454	1-249-429-11	CARBON	10K	5%	1/4W
R354	1-249-441-11	CARBON	100K	5%	1/4W	R455	1-249-441-11	CARBON	100K	5%	1/4W

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MAIN

PRIMARY

Ref. No.	Part No.	Description			Remark
R456	1-249-417-11	CARBON	1K	5%	1/4W F
R457	1-249-417-11	CARBON	1K	5%	1/4W F
R458	1-247-807-31	CARBON	100	5%	1/4W
R459	1-247-807-31	CARBON	100	5%	1/4W
R461	1-247-807-31	CARBON	100	5%	1/4W
R462	1-249-417-11	CARBON	1K	5%	1/4W F
R463	1-249-417-11	CARBON	1K	5%	1/4W F
R464	1-247-807-31	CARBON	100	5%	1/4W
R465	1-249-417-11	CARBON	1K	5%	1/4W F
R466	1-249-441-11	CARBON	100K	5%	1/4W
R471	1-249-441-11	CARBON	100K	5%	1/4W
R472	1-249-441-11	CARBON	100K	5%	1/4W
R473	1-249-429-11	CARBON	10K	5%	1/4W
R481	1-249-441-11	CARBON	100K	5%	1/4W
R482	1-249-401-11	CARBON	47	5%	1/4W F
R483	1-249-437-11	CARBON	47K	5%	1/4W
R484	1-249-437-11	CARBON	47K	5%	1/4W
R485	1-249-441-11	CARBON	100K	5%	1/4W
R491	1-249-417-11	CARBON	1K	5%	1/4W F
R492	1-249-417-11	CARBON	1K	5%	1/4W F
R493	1-249-407-11	CARBON	150	5%	1/4W F
R494	1-247-807-31	CARBON	100	5%	1/4W
R501	1-249-417-11	CARBON	1K	5%	1/4W F
R502	1-249-429-11	CARBON	10K	5%	1/4W
R503	1-249-441-11	CARBON	100K	5%	1/4W
R516	1-249-429-11	CARBON	10K	5%	1/4W
R517	1-249-417-11	CARBON	1K	5%	1/4W F
R518	1-249-401-11	CARBON	47	5%	1/4W F
R525	1-247-807-31	CARBON	100	5%	1/4W
R526	1-249-429-11	CARBON	10K	5%	1/4W
R527	1-249-429-11	CARBON	10K	5%	1/4W
R528	1-247-903-00	CARBON	1M	5%	1/4W
R601	1-249-413-11	CARBON	470	5%	1/4W F
R603	1-249-437-11	CARBON	47K	5%	1/4W
R604	1-249-413-11	CARBON	470	5%	1/4W F
R661	1-247-903-00	CARBON	1M	5%	1/4W
△ R902	1-212-873-11	FUSIBLE	47	5%	1/4W F
R903	1-260-111-11	CARBON	10K	5%	1/2W
R904	1-249-433-11	CARBON	22K	5%	1/4W
R905	1-249-425-11	CARBON	4.7K	5%	1/4W F
R906	1-249-433-11	CARBON	22K	5%	1/4W
R907	1-249-437-11	CARBON	47K	5%	1/4W
R911	1-247-807-31	CARBON	100	5%	1/4W
R912	1-247-807-31	CARBON	100	5%	1/4W
R913	1-249-401-11	CARBON	47	5%	1/4W F
R914	1-249-409-11	CARBON	220	5%	1/4W F
R915	1-249-433-11	CARBON	22K	5%	1/4W
R917	1-249-431-11	CARBON	15K	5%	1/4W
R918	1-249-425-11	CARBON	4.7K	5%	1/4W F
R923	1-249-401-11	CARBON	47	5%	1/4W F
R924	1-249-409-11	CARBON	220	5%	1/4W F
R927	1-249-431-11	CARBON	15K	5%	1/4W

Ref. No.	Part No.	Description			Remark
△ R931	1-219-123-11	FUSIBLE	0.47	5%	1/4W F
R981	1-249-411-11	CARBON	330	5%	1/4W
R982	1-249-409-11	CARBON	220	5%	1/4W F
R983	1-249-409-11	CARBON	220	5%	1/4W F
R984	1-249-415-11	CARBON	680	5%	1/4W F
R985	1-249-409-11	CARBON	220	5%	1/4W F
R986	1-249-417-11	CARBON	1K	5%	1/4W F
R991	1-249-429-11	CARBON	10K	5%	1/4W
R992	1-249-427-11	CARBON	6.8K	5%	1/4W F
R998	1-249-413-11	CARBON	470	5%	1/4W F
R999	1-247-739-11	CARBON	100	5%	1/2W F
R1519	1-249-421-11	CARBON	2.2K	5%	1/4W F
< VARIABLE RESISTOR >					
RV451	1-241-765-11	RES, ADJ, CARBON 22K			
< RELAY >					
RY651	1-515-803-11	RELAY			
< VIBRATOR >					
X301	1-567-816-11	VIBRATOR, CRYSTAL (18MHz)			
X302	1-567-815-11	VIBRATOR, CRYSTAL (22MHz)			
X303	1-567-814-11	VIBRATOR, CRYSTAL (24MHz)			

*	1-661-401-11	PRIMARY BOARD			

< CAPACITOR >					
△ C001	1-113-916-11	CERAMIC	0.01uF	20%	250V
△ C002	1-113-916-11	CERAMIC	0.01uF	20%	250V
△ C003	1-113-920-11	CERAMIC	0.0022uF	20%	250V
△ C004	1-113-920-11	CERAMIC	0.0022uF	20%	250V
△ C005	1-113-920-11	CERAMIC	0.0022uF	20%	250V
< CONNECTOR >					
CN001	1-580-230-11	PIN, CONNECTOR (PC BOARD) 2P			
CN002	1-580-230-51	PIN, CONNECTOR (PC BOARD) 2P			
CN003	1-564-321-00	PIN, CONNECTOR 2P			
< COIL >					
△ L001	1-424-485-11	FILTER, LINE			
< GROUND PLATE >					
* LUG001	3-346-266-12	PLATE, GROUND			

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REC VOL

REEL MOTOR

REMOCON

RF AMP

Ref. No.	Part No.	Description	Remark			
*	1-661-400-11	REC VOL BOARD *****				
		< CONNECTOR >				
* CN602	1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P				
		< RESISTOR >				
R101	1-249-434-11	CARBON	27K	5%	1/4W	
R151	1-249-434-11	CARBON	27K	5%	1/4W	
		< VARIABLE RESISTOR >				
RV101	1-241-937-11	RES, VAR, CARBON 20K/20K (REC LEVEL)				

*	1-667-962-11	REEL MOTOR BOARD *****				
		< CAPACITOR >				
C07	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V	
		< MOTOR >				
M905	X-3363-110-2	MOTOR (REEL) ASSY				

*	1-661-399-11	REMOCON BOARD *****				
		< CAPACITOR >				
C891	1-164-096-11	CERAMIC	0.01uF		50V	
		< IC >				
IC891	8-742-018-00	IC SBX1810-59				
		< RESISTOR >				
R822	1-249-415-11	CARBON	680	5%	1/4W	F
R823	1-249-417-11	CARBON	1K	5%	1/4W	F
R824	1-249-419-11	CARBON	1.5K	5%	1/4W	F
R825	1-247-843-11	CARBON	3.3K	5%	1/4W	
R826	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R827	1-249-429-11	CARBON	10K	5%	1/4W	
R828	1-249-435-11	CARBON	33K	5%	1/4W	
R837	1-249-433-11	CARBON	22K	5%	1/4W	
R838	1-249-435-11	CARBON	33K	5%	1/4W	
R852	1-249-439-11	CARBON	68K	5%	1/4W	
		< SWITCH >				
S821	1-554-937-11	SWITCH, KEY BOARD (ID, AUTO)				
S822	1-554-937-11	SWITCH, KEY BOARD (ID, RENUNBER)				
S823	1-554-937-11	SWITCH, KEY BOARD (ID, REHEARSAL)				
S824	1-554-937-11	SWITCH, KEY BOARD (WRITE)				
S825	1-554-937-11	SWITCH, KEY BOARD (ERASE)				

Ref. No.	Part No.	Description	Remark			
S826	1-554-937-11	SWITCH, KEY BOARD (MARGIN RESET)				
S827	1-572-268-11	SWITCH, SLIDE (REC MDOE)				
S831	1-554-937-11	SWITCH, KEY BOARD (OPEN/CLOSE ▲)				
S837	1-572-268-11	SWITCH, SLIDE (ID MODE)				
S851	1-572-269-11	SWITCH, SLIDE (SBM)				

*	A-2006-455-A	RF AMP BOARD, COMPLETE				

< CAPACITOR >						
C1	1-124-778-00	ELECT CHIP	22uF	20%	6.3V	
C2	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V	
C3	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C4	1-107-682-11	CERAMIC CHIP	1uF	10%	16V	
C5	1-164-299-11	CERAMIC CHIP	0.22uF	10%	25V	
C6	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C7	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C8	1-124-778-00	ELECT CHIP	22uF	20%	6.3V	
C9	1-124-778-00	ELECT CHIP	22uF	20%	6.3V	
C10	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C11	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C12	1-164-299-11	CERAMIC CHIP	0.22uF	10%	25V	
C13	1-107-682-11	CERAMIC CHIP	1uF	10%	16V	
C14	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C15	1-124-778-00	ELECT CHIP	22uF	20%	6.3V	
C16	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C17	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C18	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C19	1-163-001-11	CERAMIC CHIP	220PF	10%	50V	
C20	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V	
C21	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	
C22	1-126-603-11	ELECT CHIP	4.7uF	20%	35V	
C23	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C24	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C25	1-124-778-00	ELECT CHIP	22uF	20%	6.3V	
C26	1-163-038-91	CERAMIC CHIP	0.1uF		25V	
C27	1-107-682-11	CERAMIC CHIP	1uF	10%	16V	
C28	1-164-505-11	CERAMIC CHIP	2.2uF		16V	
< CONNECTOR >						
* CN51	1-566-207-11	PIN, CONNECTOR (PC BOARD) 14P				
* CN52	1-564-720-11	PIN, CONNECTOR (SMALL TYPE) 4P				
< IC >						
IC1	8-752-039-01	IC CXA1364R				
< COIL >						
L1	1-408-781-00	INDUCTOR CHIP	22uH			
L2	1-408-789-21	INDUCTOR CHIP	100uH			
L3	1-408-781-00	INDUCTOR CHIP	22uH			

RF AMP	RGN SW	SBM DF	SW COVER	T/E SENSOR	THIN
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Ref. No.	Part No.	Description	Remark			
< RESISTOR >						
R1	1-216-082-00	METAL GLAZE	24K	5%	1/10W	
R2	1-216-082-00	METAL GLAZE	24K	5%	1/10W	
R3	1-216-066-00	METAL CHIP	5.1K	5%	1/10W	
R4	1-216-066-00	METAL CHIP	5.1K	5%	1/10W	
R5	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R6	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R7	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R8	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R9	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R10	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R11	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R12	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R13	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R14	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R15	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R16	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R17	1-216-080-00	METAL CHIP	20K	5%	1/10W	
R18	1-216-073-00	METAL CHIP	10K	5%	1/10W	
< VARIABLE RESISTOR >						
RV1	1-238-181-11	RES, ADJ, CERMET 4.7K				
RV2	1-238-181-11	RES, ADJ, CERMET 4.7K				

*	1-667-960-11	RGN SW BOARD				

< SWITCH >						
S01	1-571-878-11	SWITCH, PUSH (2 KEY) (REC PROOF, CASSETTE IN)				

*	1-656-335-11	SBM DF BOARD				

< CAPACITOR >						
C631	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C632	1-162-282-31	CERAMIC	100PF	10%	50V	
C633	1-164-159-11	CERAMIC	0.1uF		50V	
C634	1-164-159-11	CERAMIC	0.1uF		50V	
< CONNECTOR >						
CN692	1-573-109-11	PIN, CONNECTOR 15P				
< IC >						
IC607	8-759-196-21	IC CXD8482Q				
< RESISTOR >						
R631	1-249-413-11	CARBON	470	5%	1/4W	F

Ref. No.	Part No.	Description	Remark
*	1-661-404-11	SW COVER BOARD	*****

*	1-667-961-11	T/E SENSOR BOARD	*****

*	3-368-456-01	HOLDER (END SENSOR LIGHT)	
*	3-368-457-01	HOLDER (END SENSOR) (RECEIVE)	
< DIODE >			
D01	8-719-988-42	DIODE GL453S	
< PHOTO TRANSISTOR >			
PH03	8-729-907-25	PHOTO TRANSISTOR PT4850F	
PH04	8-729-907-25	PHOTO TRANSISTOR PT4850F	

*	1-667-963-11	THIN BOARD	*****
< CONNECTOR >			
* CN21	1-564-336-61	PIN, CONNECTOR 2P	
< SWITCH >			
S02	1-572-458-11	SWITCH, PUSH (THIN DET)	

MISCELLANEOUS			

70	1-775-464-11	WIRE (FLAT TYPE)(17 CORE)	
106	1-775-389-11	WIRE (FLAT TYPE)(31 CORE)	
FL801	1-517-382-11	INDICATOR TUBE, FLUORESCENT	
△ IL001	1-251-234-11	INLET, AC	
M900	8-848-567-11	DRUM ASSY DOU-03A	
M901	X-3370-655-1	MOTOR ASSY (CASSETTE COMPARTMENT)	
M902	8-835-361-01	MOTOR, DC U-17B (CAPSTAN)	
M903	X-3363-109-1	MOTOR (CAM) ASSY	
M905	X-3363-110-2	MOTOR (REEL) ASSY	
PM903	1-454-732-11	SOLENOID, PLUNGER (BRAKE)	
PM904	1-454-536-11	SOLENOID, PLUNGER (TENSION)	
RV101	1-241-937-11	RES, VAR, CARBON 20K/20K	
△ S001	1-572-267-51	SWITCH, PUSH (AC POWER)(1 KEY)(POWER)	
△ T901	1-427-889-11	TRANSFORMER, POWER (US,CND)	
△ T901	1-427-890-11	TRANSFORMER, POWER (AEP,UK)	

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Ref. No.	Part No.	Description	Remark
ACCESSORIES & PACKING MATERIALS			

△	1-473-921-11	REMOTE COMMANDER (RM-D757)	
	1-551-812-11	CORD, POWER (US,CND)	
△	1-590-910-11	CORD SET, POWER (AEP,UK)	
	2-297-913-00	WASHER (DIA.5), ORNAMENTAL	
	3-861-087-11	MANUAL, INSTRUCTION	
		(ENGLISH,FRENCH,GERMAN)	
	3-920-800-31	RACK (L/R)	
	3-925-043-31	PLATE, ORNAMENTAL	
	4-981-643-01	COVER, BATTERY (FOR RM-D757)	
	7-682-276-04	SCREW +RK 5X12	
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	

HARDWARE LIST			

#1	7-685-851-04	SCREW +BVTT 2X4 (S)	
#2	7-685-645-79	SCREW +BVTP 3X6 TYPE2 IT-3	
#3	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S	
#4	7-685-871-01	SCREW +BVTT 3X6 (S)	
#5	7-621-772-20	SCREW +B 2X5	
#6	7-627-854-07	PRECISION SCREW +P 2X2.5 TYPE3	
#7	7-685-102-19	SCREW +P 2X4 TYPE2 NON-SLIT	
#8	7-685-533-19	SCREW +BTP 2.6X6 TYPE2 N-S	
#9	7-627-450-28	+K 1.7X2	
#10	7-627-852-27	+P 1.7X3	
#11	7-621-772-00	SCREW +B 2X3	
#12	7-621-255-15	SCREW +P 2X3	
#13	7-621-773-86	SCREW +B 2.6X4	
#14	7-627-556-17	SCREW,PRECISION +P 2.6X3 TYPE1	
#15	7-627-552-27	SCREW,PRECISION +P 1.7X2	
#16	7-621-772-18	SCREW +B 2X4	
#17	7-627-552-47	SCREW,PRECISION +P 1.7X4	
#18	7-621-255-20	SCREW +BVTT 2X4 (S)	
#20	7-685-133-19	SCREW +BTP 2.6X6 TYPE2 N-S	
#21	7-621-772-08	SCREW +B 2X3	
#22	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
#23	7-685-660-29	SCREW +BVTP 4X10 TYPE2 SLIT	
#24	7-685-872-09	SCREW +BVTT 3X8 (S)	
#25	7-682-660-09	SCREW +PS 4X6	

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