

DTC-60ES

SERVICE MANUAL

*US Model
Canadian Model
AEP Model
UK Model
E Model*

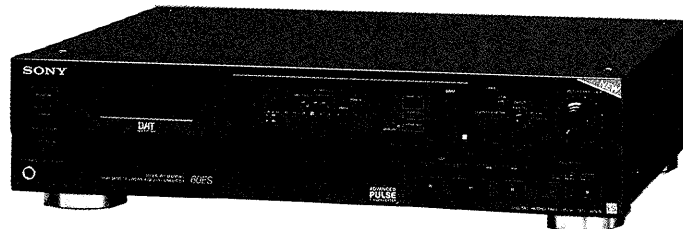


Photo: Black type

SPECIFICATIONS

Tape	Digital audio tape
Recording head	Rotary head
Recording time	Standard: 120 minutes. Long-play mode: 240 minutes (with DT-120)
Tape speed	Standard: 8.15 mm/s, Long play mode: 4.075 mm/s
Drum rotation	Standard: 2,000 rpm, Long-play mode: 1,000 rpm
Error correction	Double Read Solomon code
Tape	
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 channel	2 channels, stereo
D/A conversion (Quantization)	Standard: 16-bit linear Long-play mode: 12-bit non-linear
Frequency response	Standard: 2 - 22,000 Hz (± 0.5 dB) Long-play mode: 2 - 14,500 Hz (± 0.5 dB)
Signal to noise ratio	Standard: more than 92 dB Long-play mode: more than 92 dB
Dynamic range	Standard: more than 92 dB Long-play mode: more than 92 dB
Total harmonic distortion	Standard: less than 0.0045 % (1 kHz) Long-play mode: less than 0.08 % (1 kHz)

Model Name Using Similar Mechanism	DTC-59ES
Tape Transport Mechanism Type	DATM-102

Wow and flutter Below measurable limit
(± 0.001 % W. PEAK)

Input

	Jack type	Impedance	Rated input level
LINE IN	phono jack	47 kohms	-4 dBs
DIGITAL IN	phono jack	75 ohms	0.5 Vp-p, ± 20 %
DIGITAL IN	optical jack	—	—

Output

	Jack type	Impedance	Rated output	Load impedance
LINE OUT	phono jack	470 ohms	-4 dBs	More than 10 kohms
PHONES	stereo phone jack	220 ohms	0.6 mW	32 ohms
DIGITAL OUT	phono jack	75 ohms	0.5 Vp-p ± 20 %	—

DIGITAL OUT (optical jack): wavelength 660 nm

— Continued on next page —



DIGITAL AUDIO TAPE DECK
SONY®

General

Power requirements

US, Canadian model: 120 V AC, 60 Hz
AEP model: 220 — 230 V AC, 50/60 Hz
UK model: 240 V AC, 50/60 Hz
German model: 220 — 230 V AC, 50 Hz
E model: 110 — 120/220 — 240 V AC,
50/60 Hz

Power consumption

US, Canadian model: 33 W
EXCEPT US, Canadian model: 35 W

Dimensions

US model:
Approx. 430 x 110 x 350 mm
(w/h/d)
(17 x 4 ³/₈ x 13 ⁷/₈ inches)
EXCEPT US model:
Approx. 470 x 110 x 350 mm
(w/h/d)
(18 ⁵/₈ x 4 ³/₈ x 13 ⁷/₈ inches)

Mass

US model:
Approx. 6.0 kg (13 lb 4 oz)
(w/h/d)
EXCEPT US model:
Approx. 6.6 kg (14 lb 10 oz)

Remote commander (supplied)

Remote control system Infrared control
Power requirements 3 V DC, with two size AA (R6)
batteries

Dimensions

Approx. 63 x 19 x 175 mm
(w/h/d)
(2 ¹/₂ x ³/₄ x 7 inches)

Mass

Approx. 130 g (4 oz) incl.
batteries.

Supplied accessories

Sony batteries SUM-3(NS) (2)
Audio connecting cords (2 phono plugs — 2 phono plugs,
stereo for line inputs and outputs) (2)
Screws (4) (only on the Canadian model)

Design and specifications are subject to change without
notice.

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SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK Δ OR DOTTED LINE
WITH MARK Δ 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 Δ SUR
LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES
SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNE-
MENT. NE REMPLACER SES COMPOSANTS QUE PAR DES
PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS
CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR
SONY.

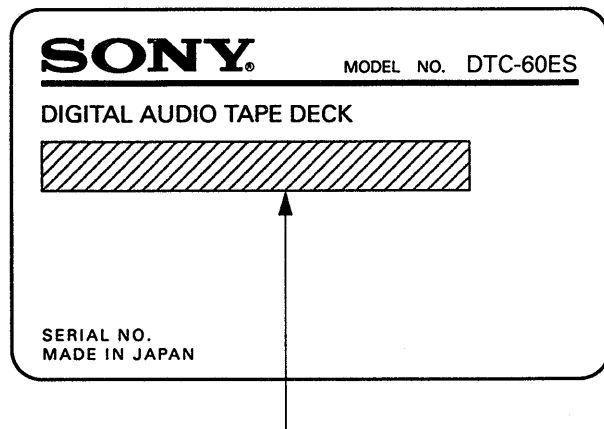
PRECAUTIONS FOR INSPECTIONS AND REPAIR WITH POWER OFF

Remove the flexible board (CN752 on the DISPLAY board) 10 seconds after the POWER is turned off when performing repair under the power off condition. In such a case, pull the flexible board straight, not moving it left or right.

Otherwise, residual charge in a smoothing capacitor on the power supply circuit even after power off could destroy an element if the power terminal shorts with adjacent terminal during disconnection of flexible board.

MODEL IDENTIFICATION

— Model Number Portion —



US, Canadian model : AC 120V 60Hz 33W
 AEP, German model : AC 220V-230V~ 50/60Hz 35W
 UK model : AC 240V ~50/60Hz
 E model : AC : 110-120, 220-240V~ 50/60Hz 35W

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check 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 TEST

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 0.5mA (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.

CAUTION

Danger of explosion if battery is incorrectly replaced.
 Replace only with the same or equivalent type recommended by the equipment manufacturer.
 Discard used batteries according to manufacture's instructions.

ADVARSEL!

Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering.
 Udskiftning må kun ske med batteri
 af samme fabrikat og type.
 Lever det brugte batteri tilbage til leverandøren.

ADVARSEL

Ekspløsjonsfare ved feilaktig skifte av batteri.
 Benytt samme batteritype eller en tilsvarende
 type anbefalt av apparatfabrikanten.
 Brukte batterier kasseres i henhold til fabrikantens
 instruksjoner.

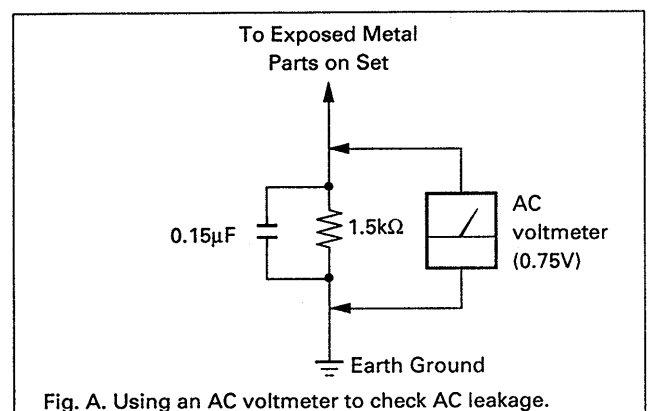
VARNING

Explosionsfara vid felaktigt batteribyte.
 Använd samma batterityp eller en likvärdig typ som
 rekommenderas av apparattillverkaren.
 Kassera använt batteri enligt gällande föreskrifter.

VAROITUS

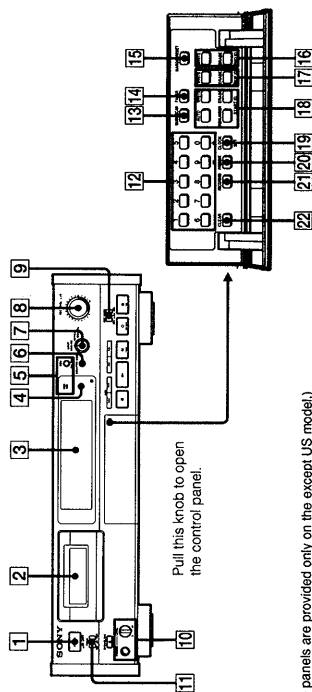
Paristo voi räjähtää, jos se on virheellisesti asennettu.
 Vaihda paristo ainoastaan laitevalmistajan suosittelemaan
 tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden
 mukaisesti.

3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75V, 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)



Location and Function of Controls

Front Panel/Remote Commander

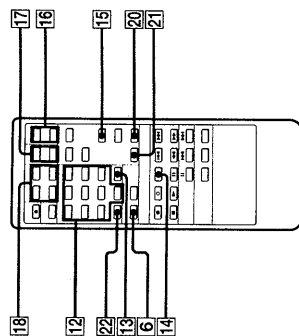


(Side panels are provided only on the except US model.)

- 1 POWER switch**
Turns the power on and off.
- 2 Cassette compartment**
Insert a cassette with the window side up and the safety tab facing you.
- 3 Display window**
- 4 Remote sensor**
Receives the signal from the remote commander.
- 5 SBM (Super Bit Mapping) switch and indicator**
Set to ON for Super Bit Mapping during analog recording through the LINE IN jacks in STANDARD recording mode (REC MODE selector). SBM indicator lights when the SBM function is on (applicable during analog recording only).
- 6 COUNTER MODE button**
Selects the display of the absolute time, elapsed time of the current selection, remaining time to the end of whole tape or linear counter (tape running time). Each time you press the button, the display changes sequentially.
- 7 INPUT selector**
Set according to the signal to be recorded.
ANALOG: For recording from the equipment connected to the LINE IN jacks.
OPTICAL: For recording from the equipment connected to the DIGITAL IN (OPTICAL) jack.
COAXIAL: For recording from the equipment connected to the DIGITAL IN (COAXIAL) jack.
- 8 REC LEVEL (recording level) controls**
Adjust the recording levels and balance for the analog input signals.
The outer knob controls the L (left) channel level and the inner knob the R (right) channel level. The knobs can be adjusted together. To adjust each channel independently, turn the knob while holding the other knob.
When recording digital signals, it is not necessary to adjust the recording levels.
- 9 REC MODE selector**
Normally set to the STANDARD position.
When this selector is set to the LONG position, you can record analog input signals or digital signals with 32 kHz in the long-play mode.
- 10 PHONES-LEVEL jack and control**
Insert the headphones plug to this jack and turn the control to adjust the headphones volume level.
- 11 TIMER switch**
Normally set to the OFF position. When recording or playing back at the desired time using a commercially available audio timer, set to the REC position or the PLAY position respectively.
- 12 Numeric buttons (0 - 9)**
Designate the desired program number to be played back before starting playback. Designate the desired number in the record-pause mode, the program number is written consecutively from the designated number.
- 13 MUSIC SCAN button**
Press to listen to the beginning of each selection successively.
- 14 FADER button**
Press to fade in or fade out during recording or playback.
- 15 MARGIN RESET button**
Press to reset the margin of peak level.
- 16 END ID buttons**
WRITE: Press to write the ID signifying the end of playback or recording.
ERASE: Press to erase the end ID.
- 17 SKIP ID buttons**
WRITE: Press at the beginning of the portion you may wish to skip later. A skip ID will be written from the point where you pressed this button.
ERASE: Press to erase the nearest skip ID which is before the current position.
- 18 START ID buttons**
AUTO: Press to turn on and off the AUTO indicator. When the AUTO indicator is lit, the start ID will automatically be written during recording. When the AUTO indicator is not lit, press the START ID WHITE button at the point where you want to write a start ID.
WRITE: Press to write the start ID at the desired point during recording or playback.
- 19 CLOCK SET button**
Press to adjust the time of the clock built in this unit. In this mode, the 0 button and the 9 button function as the + and - buttons respectively.
- 20 PRESENT button**
Press to display the current time.
Each time the RECORDED or PRESENT button is pressed, day, month and year display, the day of the week display or hour, minute and second display is switched sequentially.
- 21 RECORDED button**
Press to display the recording day of the tape being played.
- 22 CLEAR button**
Press to cancel the program number which has been mistakenly entered.

SECTION 1 GENERAL

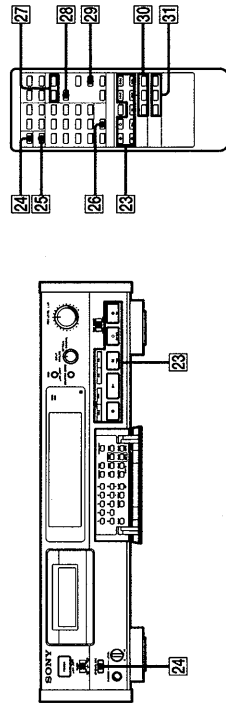
This section is extracted from instruction manual.



- 13 MUSIC SCAN button**
Press to listen to the beginning of each selection successively.
- 14 FADER button**
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- 22 CLEAR button**
Press to cancel the program number which has been mistakenly entered.

Location and Function of Controls

Front Panel/Remote Commander



23 Tape operating buttons

- **(play)**: Press to stop recording or playback.
- ▶ **(stop)**: Press to play back the tape.
- ⏏ **(PAUSE (pause))**: Press to stop for a moment during recording or playback. To restart recording or playback, press this button again or press the ▶ button.
- If the unit is left in the pause mode for about 10 minutes, it will automatically be released and the deck will enter the stop mode. To restart recording or playback from the stop mode, press the ● REC or ▲ button respectively.
- ⏏ **REC MUTE (record muting)**: Inserts a sound-muted portion (space).
- **REC (recording)**: Press to enter the record-pause mode. After pressing this button, press the ⏏ PAUSE or ▲ button.
- ⏏ **1/2▶ (AMS)**: Press to locate the beginning of the selection during the playback.
- ◀◀ / ▶▶ **(rewind/review, fast-forward/cue)**: In the stop mode, press to rewind/fast-forward the tape. During playback, press to rewind or fast-forward the tape while listening to the sound.

24 OPEN/CLOSE button

Press to open or close the cassette compartment.

25 DISPLAY MODE button

Changes the display mode. (Refer to page 10.)

26 RESET

Resets the linear counter to "00:00s".

27 RMS play buttons

ENTER: To program the selections in a desired order, press this button after pressing the numeric buttons.

CHECK: Press to check the programmed contents.

28 REPEAT 1/ALL button

Press to play a desired portion repeatedly. Each time you press the button, the indicator changes as follows: REPEAT 1 → REPEAT ALL → off

29 SKIP PLAY button

Press to activate the skip ID code function. The portion of the tape previously marked will be skipped.

30 CD operation buttons

Operative only for the Sony CD player equipped with a Remote Commander.

⏏ **(pause)**: Press this button twice to start playback.

Press this button once in the playback mode, the deck enters the pause mode.

◀◀ / ▶▶ **(AMS)**: Press to locate the desired selection on the Compact Disc during playback or in the stop mode.

31 CD SYNCHRO (CD synchronized recording) buttons

(The playback of the Sony CD player equipped with a Remote Commander and the recording of the DAT deck can be performed simultaneously.)

STANDBY: Press to set the unit in the record-standby mode.

START: Press to start recording of the DAT deck and then playback of the CD player.

STOP: Press to stop the DAT deck recording and the CD player playback.

Remote Commander Operation

Each button on the remote commander functions in the same way as those having the same name on the front panel.

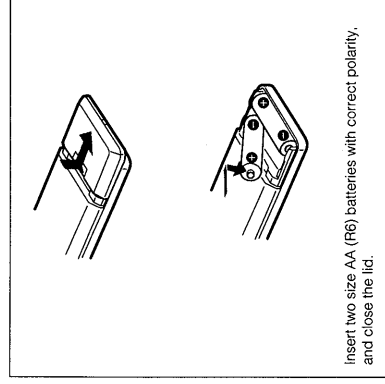
However, the following operations cannot be performed using the remote commander. Use the front panel controls instead.

- Turning the power on and off
- Selecting digital/optical/coaxial/analog input source
- Setting the clock
- Adjusting the recording level and balance
- Adjusting the headphones level
- Setting the timer recording/playback
- Selecting the record mode (standard or long)
- Turning the SBM function on and off

The following operations can be performed only with the remote commander.

- Activating CD synchronized recording using a Sony CD player and controlling the CD player
- Locating a selection on the Compact Disc or changing the CD player to pause mode (possible only when a Sony CD player is used)
- Repeat play
- Skip play
- RMS* play
- * RMS: Random Music Sensor
- Resetting the linear counter to "00:00s"

Installing Batteries



Insert two size AA (R6) batteries with correct polarity, and close the lid.

Notes on remote control

- Do not expose the remote sensor on the deck to strong light such as direct sunlight, lighting apparatus, etc.
- Do not place any obstructions between the Remote Commander and the remote sensor, or else operations will not be performed correctly.
- The controllable range is limited. Point the Remote Commander directly at the remote sensor on the deck.
- When remote control operation distance becomes shorter, the batteries are weak. Replace both batteries with new ones.

To avoid battery leakage

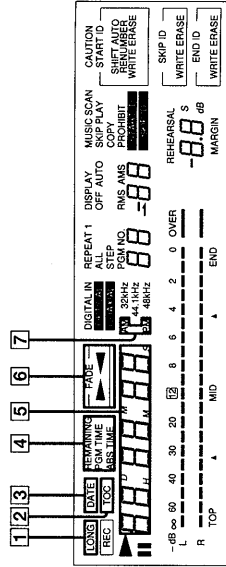
When the commander will not be used for a long period of time, remove the batteries to avoid damage caused by battery leakage and corrosion.

Battery life

About half a year of normal operation can be expected when using the Sony SUM-3 (NS) batteries.

Location and Function of Controls

Display Window



To turn off the display window

When the power is turned on, the display window also is turned on. During recording or playback, all display or some parts of the display can be turned off as follows:

When operating with the front panel controls
While pressing the COUNTER MODE button, press the 0 button.

When operating with the remote commander

Press the DISPLAY MODE button.
Each time you press the above buttons, the indicators change as follows:

Normal indicators

Peak level meters and margin indicators go off.
(The DISPLAY OFF indicator lights.)

All the indicators go off during recording or playback*.
(The DISPLAY OFF AUTO indicator lights momentarily just before the indicators go off.)

* When pressing the COUNTER MODE or DISPLAY MODE button except during recording or playback, the DISPLAY OFF AUTO indicator lights. In this case, all the indicators go off immediately after recording or playback starts.

To change the brightness of the display window

While pressing the COUNTER MODE button on the front panel or the COUNTER MODE button on the remote commander, press one of the numeric buttons 1, 2 and 3. The greater number pressed, the darker the display window becomes.

1 LONG play mode indicator

Lights when recording or playback is being performed in the long play mode.

2 TOC (Table Of Contents) indicator

When a pre-recorded DAT cassette is played back, this indicator will light.

3 DATE indicator

Lights when the RECORDED button is pressed to display the recording day of the tape being played. Flashes when the PRESENT button is pressed to display the current time.

4 REMAINING (remaining time) indicator

Lights when the counter shows the remaining time of the tape.
PGM TIME (program time): Lights when the counter shows the elapsed time of the current selection.
ABS TIME (absolute time) indicator: Lights when the counter shows the elapsed time from the beginning of the tape.

5 Time indicator

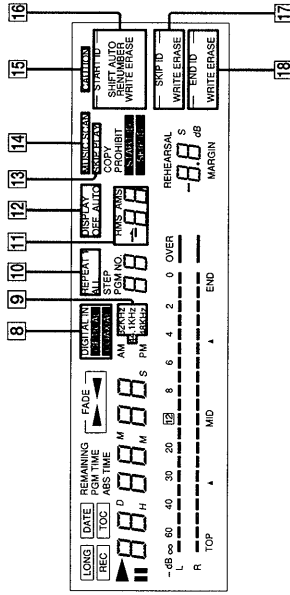
Indicates the tape running time, absolute time, elapsed time of the current selection, remaining time or recording day. Each time the COUNTER MODE button is pressed, the display is changed.

6 Fade in/out indicator

Flashes when recording or playback fades in. Flashes when recording or playback fades out.

7 AM/PM indicators

Show AM or PM of the time.



8 INPUT selector indicators

The DIGITAL IN OPTICAL or COAXIAL indicator lights according to the position of the INPUT selector. No indicator lights when the INPUT selector is set to the ANALOG position.

9 SAMPLING FREQ. (Sampling frequency) indicator

48kHz: For recording/playback of analog input signals (standard mode).
44.1kHz: For recording/playback of CD, a pre-recorded DAT cassette or analog input signals.
32kHz: For recording/playback of analog input signals (long-play mode).

10 REPEAT indicators

REPEAT 1: Lights when a desired selection is played back repeatedly.
REPEAT ALL: Lights when all the selections are played back repeatedly.

11 AMS (Automatic Music Sensor)/RMS (Random Music Sensor) indicators

Show the number of selections to be skipped ahead or behind in the AMS operation. When designating a selection directly by the numeric button and the button, the display shows the program number of the target selection while the selection is being searched for. When programming the desired selections in the RMS operation (page 39), the display shows the program number of the selection to be programmed.

12 DISPLAY OFF/AUTO indicators

The DISPLAY OFF indicator lights when peak level meters and margin indicators are turned off. The DISPLAY OFF AUTO indicator lights momentarily before all the indicators are turned off.

13 SKIP PLAY indicator

When this indicator is lit during playback, the portion marked by the skip ID is skipped and playback continues from the next start ID.

14 MUSIC SCAN indicator

Lights after the MUSIC SCAN button is pressed to listen to the beginning of each selection successively.

15 CAUTION indicator

Lights when moisture condensation occurs. If this happens, the deck stops functioning automatically. (See page 4.)

16 START ID mode indicators

AUTO: Lights when the AUTO button is pressed to write the start ID automatically.
RENUMBER: Lights when the RENUMBER button is pressed to renumber the program numbers.
WRITE: Lights when writing the start ID manually.
ERASE: Lights when erasing the start ID.
AUTO RENUMBER: Lights when renumbering program numbers automatically.
SHIFT RENUMBER: Lights when shifting the start ID and program number position.

17 SKIP ID mode indicator

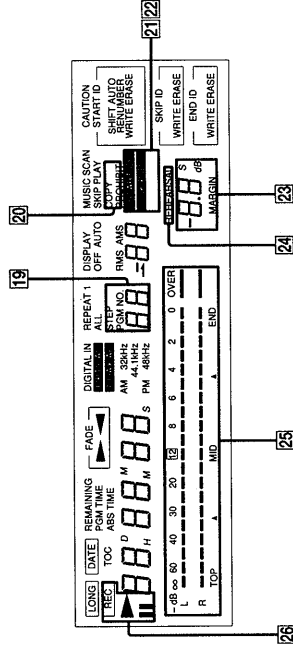
WRITE: Lights when writing the skip ID.
ERASE: Lights when erasing the skip ID.

18 END ID mode indicator

WRITE: Lights when writing the end ID.
ERASE: Lights when erasing the end ID.

Location and Function of Controls

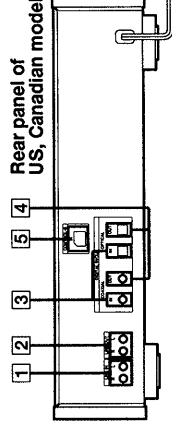
Display Window



- 19 STEP/PGM NO. indicator**
Shows the program number of the selection being played. When programming the desired selection with the RMS operation (page 39), the display shows the step number of the programmed selection.
- 20 COPY PROHIBIT indicator**
Lights when recording the digital signal with the copy prohibit code. In this case, record with the LINE IN jacks.
- 21 START ID indicator**
Flashes when writing (for 9 or 18 seconds) or erasing a start ID code, and lights when the start ID is detected during playback.
- 22 SKIP ID indicator**
Lights when writing (for 1 or 2 seconds) or erasing a skip ID code or when the skip ID is detected during playback.
- 23 MARGIN indicator**
Shows how much margin there is between the peak level of input audio signal and 0 dB.
- 24 REHEARSAL indicator**
Lights while the rehearsal function is activated (page 29).
- 25 Peak level meters/Frequencies map**
Indicate the signal levels during playback and recording. There are separate meters for each left and right channel. These meters have a peak hold function which indicates the peak level momentarily. When pressing the 4 button while keeping the COUNTER MODE button pressed, the sampling frequencies with which the tape was recorded is displayed (page 35).
- 26 Tape operation indicators**
REC: Lights during recording or in the record-pause mode.
▶: Lights during recording or playback. It also lights in the record-pause mode or in the play-pause mode.
II: Lights in the record-pause mode or in the play-pause mode.

Connections

Rear Panel Jacks



1 LINE IN (line input) jacks (phono jack)

- Connect to the recording outputs of an amplifier. Signals supplied by the amplifier can be recorded using the sampling frequency of 48 kHz or 44.1 kHz in the standard play mode or 32 kHz in the long play mode.
- Notes on connection**
- Use the connecting cords specified in the illustrations.
 - Turn off the power for all equipments before making connections.
 - Be sure to insert the plugs firmly into the jacks. Loose connections may cause hum and noise. When unplugging, grasp the plug and not the cord.

2 LINE OUT (line output) jacks (phono jack)

- Connect to the DAT or tape inputs of an amplifier. The playback signal of this deck will be output.

3 COAXIAL/OPTICAL DIGITAL IN (digital input) jacks (coaxial phono jack/optical jack)

- Connect to the digital outputs of an amplifier with a digital output jack or another digital source such as a CD player for digital-to-digital recording.

4 COAXIAL/OPTICAL DIGITAL OUT (digital output) jack (coaxial phono jack/optical jack)

- Connect to the digital inputs of an amplifier having a built-in D/A converter or another DAT deck, for playback of a DAT cassette or digital-to-digital recording.

5 CONTROL-S IN jack (US, Canadian model only)

- Connect to the CONTROL-S output of a Sony amplifier or receiver for remote control.

- Notes on the optical cable**
- Do not bend the cord. When the cord is not used, curl it with a diameter of more than 15 cm (5 7/8 inches).
 - Do not use it under high temperatures.
 - When the optical cable is not connected, cover the OPTICAL IN/OUT jacks with the supplied caps.

Note on sound signals

- When connecting an optical cable to the DIGITAL IN/ DIGITAL OUT jacks, sound signals (L/R) are transmitted together through the cable.

Note on the CONTROL-S IN jack (US, Canadian model only)

- To remote control this unit through a receiver or amplifier, connect the input of this unit to the CONTROL-S output of a Sony receiver or amplifier, with a CONTROL-S cable. When this connection is used, only remote control commands sent through the receiver or amplifier will be executed. The remote sensor of this unit will not function.

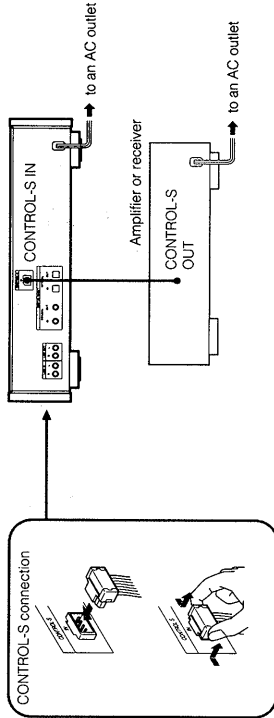
Connections

Connecting Cords

There are following three types of connecting jacks at the rear of the deck. Each type of jack requires a different type of connecting cord.

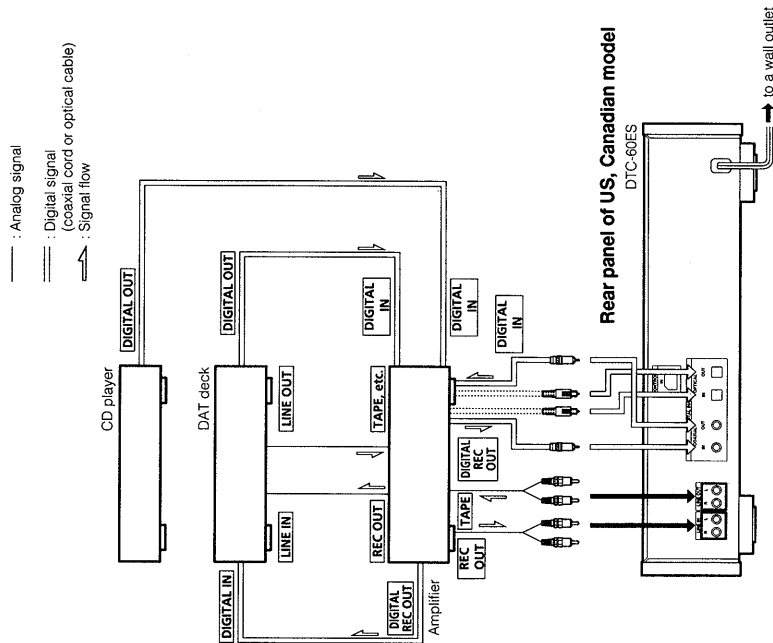
Jack	Required cord
LINE IN/OUT (analog input/output) jacks	Audio signal connecting cord (supplied, or optional PK-CS10HG etc.)
COAXIAL IN/OUT (digital input/output) jacks	Coaxial digital connecting cord (optional VMC-10HG, etc.)
OPTICAL IN/OUT (optical transmission digital input/output) jacks	Optical cable (optional POC-15SP, etc.) OPTICAL IN

Connecting the Remote Control System US, Canadian model only



Connection Examples

If your amplifier is equipped with digital signal jacks



Rear panel of US, Canadian model

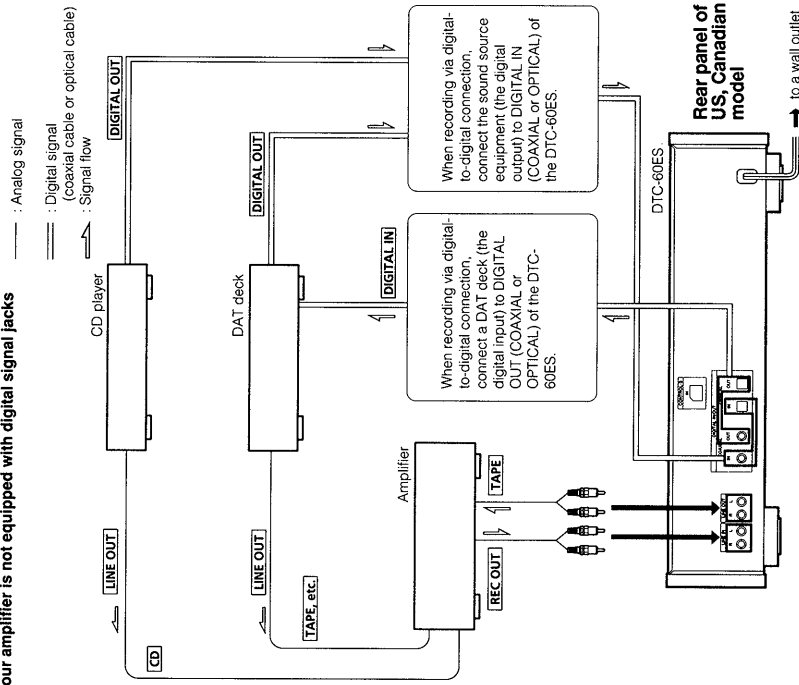
DTC-60ES

Note
If "COPY PROHIBIT" appears in the display window, recording via digital-to-digital connection cannot be performed.
In this case, connect the sound source equipment using LINE IN and OUT jacks.

Connections

Connection Examples

If your amplifier is not equipped with digital signal jacks



When connecting a microphone

Connecting a stereo microphone amplifier (the analog output) to LINE IN of the DTC-60ES.

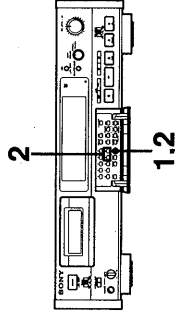
Note

If "COPY PROHIBIT" appears in the display window, recording via digital-to-digital connection cannot be performed. In this case, connect the sound source equipment using LINE IN and OUT jacks.

Clock Setting

This unit uses a built-in clock to keep track of the current date and time. Once you set the date and time, this information will be recorded on the tape along with the audio signal during recording, allowing you to check the recording date of the tape during playback at a later time.

Setting the Date and Time



1 With the unit stopped, press the CLOCK SET button.
The year display begins to flash.

2 Press 9 (-) or 0 (+) to decrease or increase the displayed item, then press the CLOCK SET button.
The next item begins to flash.

3 Repeat step 2 until all items have been set.
For greater accuracy, set the seconds display to zero, then press the CLOCK SET button in synchronization with a timecast (from the telephone or other time source).

To confirm the date or time
Press the PRESENT button to display the date, the day of the week or time. When pressing the PRESENT button once, the date is displayed, when pressing twice, the day of the week is displayed and when pressing three times, the time is displayed. To return to the original counter display, press the COUNTER MODE button.

Time display

The time is displayed in 12-hour format.
Midnight and noon are displayed as follows:
Midnight: 12:00 AM
Noon: 12:00 PM

Built-in clock

This unit's built-in clock operates using a quartz oscillator, and time variations caused by changes in temperature, etc., may accumulate. For precise recording of hour, minute, and second data by the built-in date function, it is recommended that you set the clock once a week.

Precautions when setting the clock

- Set the clock while the tape is stopped.
- Although this unit's clock automatically adjusts for leap years and long and short months, do not enter a date which does not exist.

The day of the week is displayed as follows:

Sunday	SU
Monday	MO
Tuesday	TU
Wednesday	WE
Thursday	TH
Friday	FR
Saturday	SA

Note

This unit uses a back-up battery to keep the clock running when the power is turned off. The life of the battery under normal use is approximately seven years. When the battery starts to run down, the clock will stop operating normally. When this occurs, have the battery replaced at your dealer or nearest Sony Service Center (a battery replacement fee is required).

SBM (Super Bit Mapping) Function

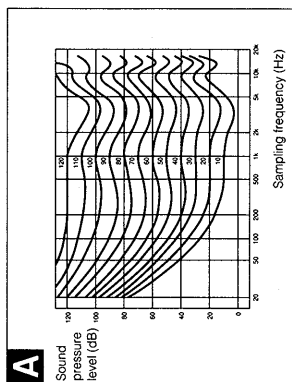
During analog recording, the SBM function lowers noise within the frequency band to which the human ear is most receptive to noise, thereby, sharply expanding the auditory dynamic range of the recorded signal. To activate the function, turn on the SBM switch when recording an analog source through the analog (LINE IN) connectors except when long-play mode (32 kHz) is selected.

High-precision pulse A/D converter

The DAT deck uses a pulse A/D converter and decimation filter to convert an analog signal into a quantized 24-bit digital signal. DAT, like CDs, uses 16-bit quantization, and thus the 8-bit difference results in more precise quantization, more signal information and less quantizing noise than 16-bit quantization. During conversion of the 24-bit data to a 16-bit DAT recording signal, the SBM function boosts sound quality by re-integrating into the 16-bit signal 4 bits of signal information that would normally be lost.

Applying the principle of human hearing

The SBM function applies the principle of human hearing in the reintegration of signal information. The auditory range of the human ear is generally considered to be 20 Hz to 20 kHz; hearing sensitivity, however, shows greater sensitivity to the range between 3 kHz and 4 kHz, and lower sensitivity to frequencies above and below this range (see Fig. A). This principle applies also to quantizing noise as well. By reducing quantizing noise in this particular range, signals can be recorded to produce more expansive sound than is possible by a uniform reduction of noise over the entire audible range.



Noise-shaping filter

The SBM function uses a noise-shaping filter (see Fig. B) with a frequency response similar to that of the human ear to reduce quantizing noise within the most sensitive frequency range, and to feed back the quantizing error (that is normally lost) back to the input signal, re-integrating the low-end bit information with the high-end bit information (see Fig. B).

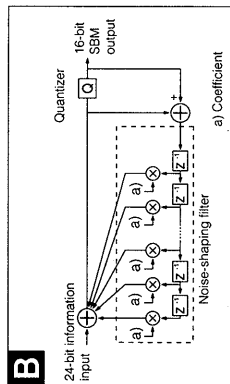
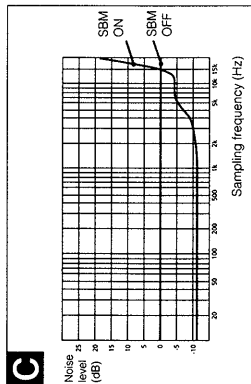


Fig. C shows the improvement in the quantizing noise level when the SBM switch is on. Given a noise level of 0 dB when the SBM switch is off, the improvement in noise level for sampling frequencies lower than 3 kHz exceeds 10 dB when the SBM is activated.



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 DAT deck being used.

SECTION 2 DISASSEMBLY

- Remove the following devices shown by ❶, etc. in the order of the numbers.

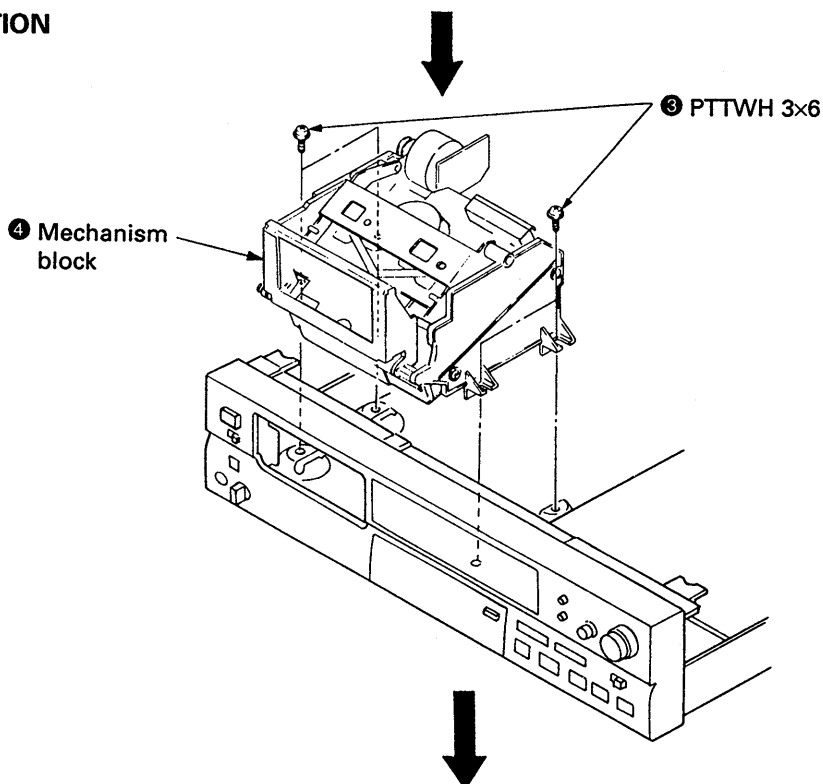
[CASE]

Unscrew the four case attachment screws and remove the case.

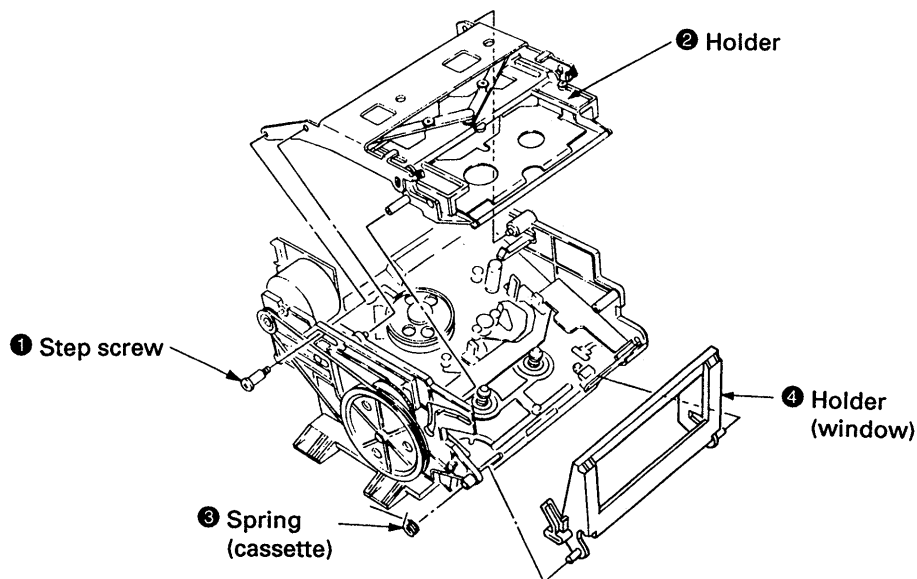
[CASSETTE WINDOW]

- 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.)
- Remove the cassette by lifting the window up.

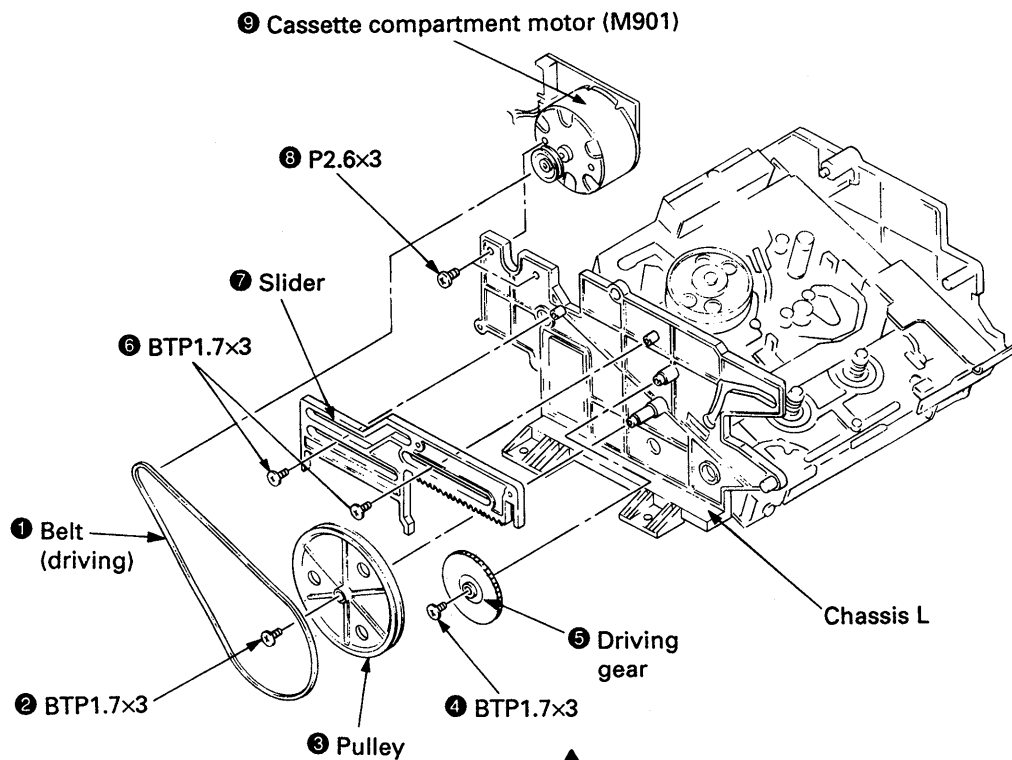
MECHANISM SECTION



HOLDER



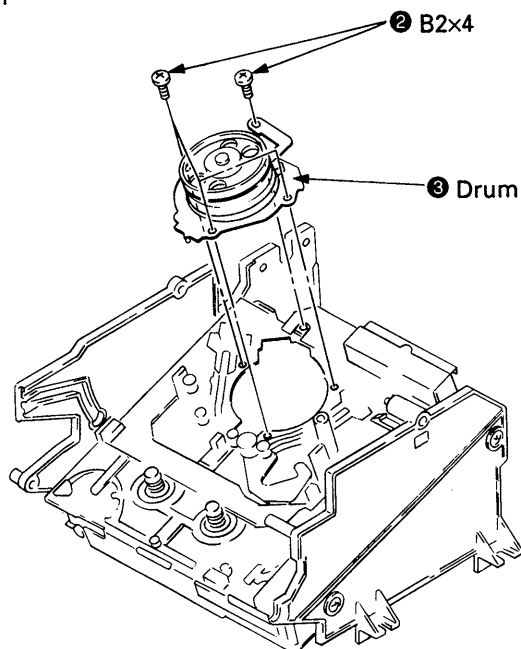
CASSETTE COMPARTMENT MOTOR (M901), PULLEY, GEAR (CAM) AND SLIDER



A

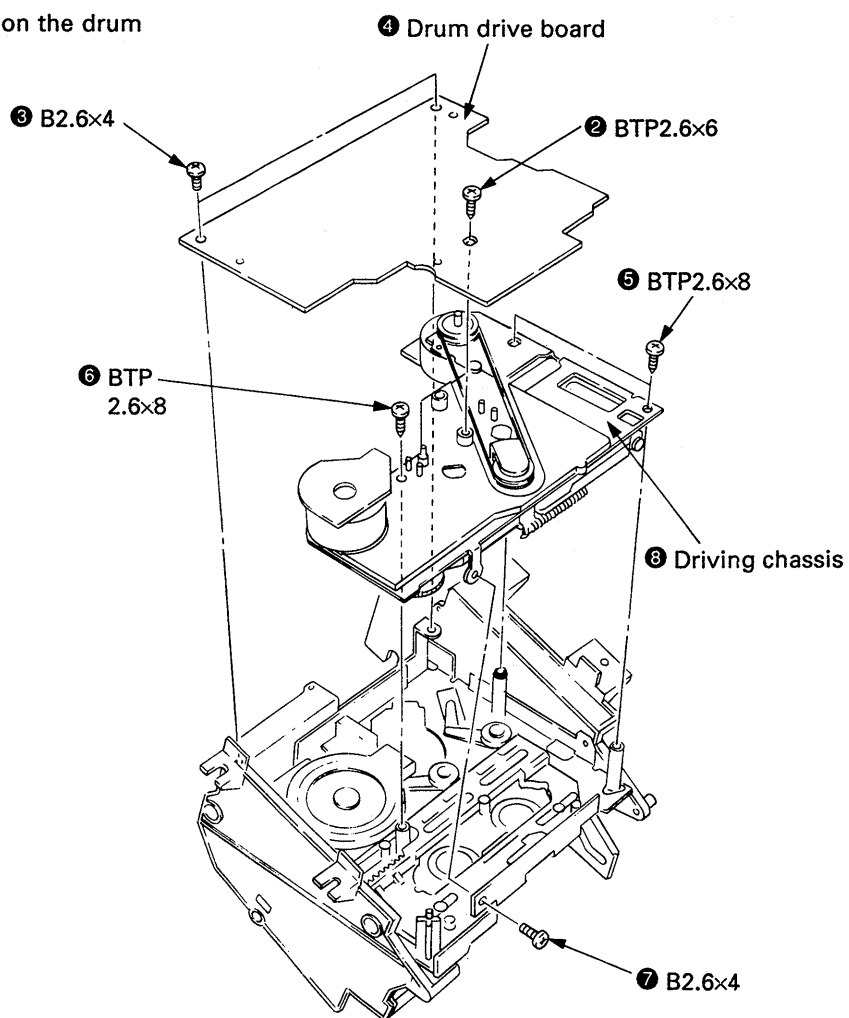
DRUM

- ① Remove the drum lead wires from connectors.

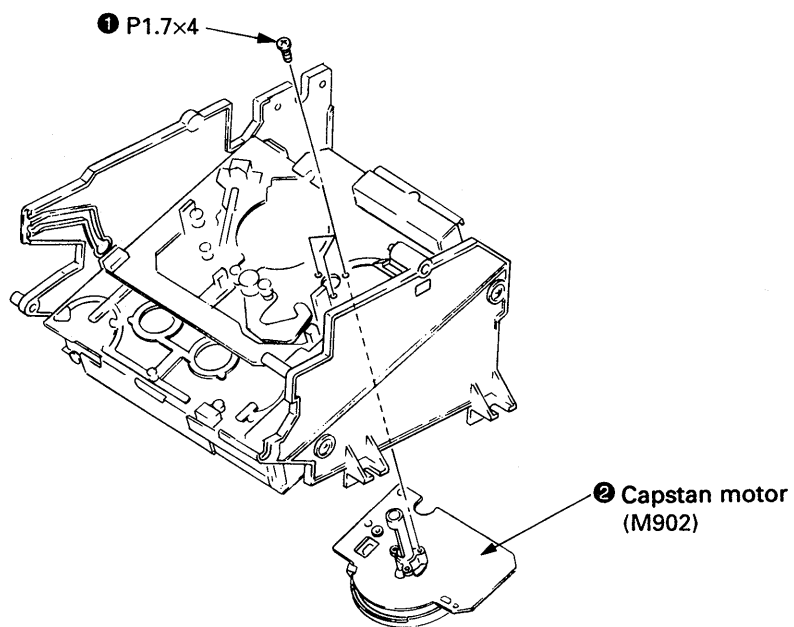


DRUM DRIVE BOARD, DRIVING CHASSIS

- 1 Remove the lead wires from connectors on the drum drive board.



CAPSTAN MOTOR (M902)



SECTION 3 ADJUSTMENTS

Notes When Making Adjustments

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

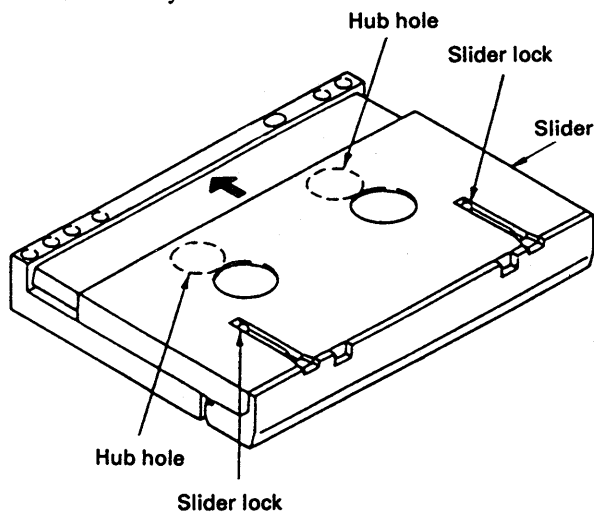
TY-7111X (8-909-823-00)	Level
TY-7251 (8-909-813-00)	Tracking
TY-7551 (8-909-814-00)	Functions
TY-30B (8-892-358-00)	Blank
- Use the following torque meter:

TW-7131 (8-909-708-71)	FWD
------------------------------	-----
3. Switches and controls should be set as follows unless otherwise specified.

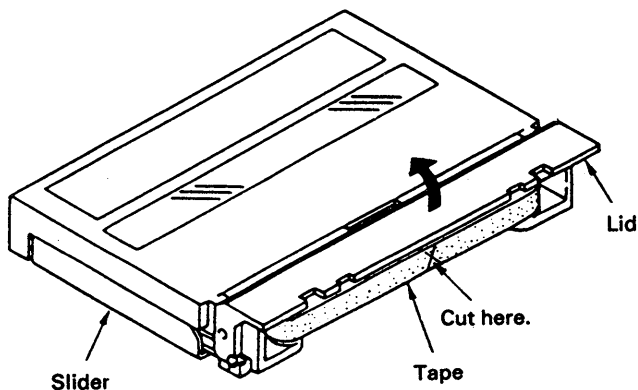
TIMER switch	: OFF
REC MODE switch	: LONG
INPUT switch	: COAXIAL
SBM switch	: OFF
REC LEVEL control	: Min.
LEVEL (PHONES) control	: Min.

4. Creating an end sensor cassette

- (1) Press the tape slider lock and move the slider in the direction indicated by the arrow.



- (2) Open the lid and cut the tape.



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

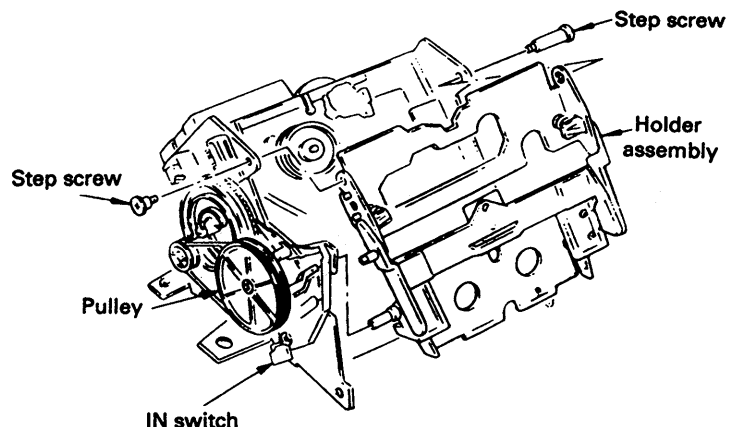
5. Cleaning of the Revolving Drum

- (1) Fold a chamois (2-034-697-00) or a knit cloth into 4 or more files, slightly impregnate it with a cleaning liquid (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.
- (2) At that time, be careful not to move the chamois vertically to the head tip. Otherwise, the head tip may probably be damaged.

6. Be careful not to move RV1 and RV2 on the RF AMP board in the mechanism assembly.

7. To adjust the tape path and guides, remove the holder assembly as shown in the diagram and use the DAT holder jig (J-8000-002-A). This will make it easier to perform 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.



8. Test mode

The test mode is effected by shorting TP (XTEST MAIN, XTEST SERVO and XTEST DISP) on the MAIN board and the DISPLAY board and GND.

- (1) Test mode (main · servo)

Turn OFF the power switch, connect XTEST MAIN and XTEST SERVO on the MAIN board to GND and perform the following adjustments.

- Tape path fine adjustment
- DPG adjustment
- ATF pilot (GCA) checking
- End sensor checking
- FWD torque adjustment
- FWD back tension checking and adjustment

- (2) Test mode (display)

Remove the flexible board (CN752) on DISPLAY board 10 seconds after the POWER is turned off, connect the XTEST DISP to the GND, and turn the POWER on, so that you can check the following FL display tube and panel switches.

Each grid of the FL display tube sequentially lights up while all tubes being lighted up finally.



Level meters go out one after one.



Press any of the remote controller for DAT in this state. Thus, all level meters go out. (It may sometimes occur that one or two meters remain lighting up according to switch setting at that time.)



Everytime a switch on the panel is pressed, display tubes light up sequentially one after one. With all keys once pressed, all level meters go out.

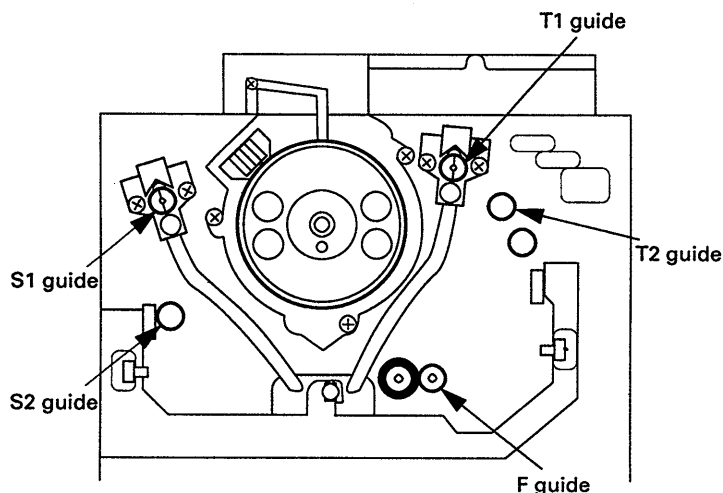
- To reset the test mode, disconnect the wire shorting XTEST and GND. After completion of adjusting, be sure to reset the test mode.

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

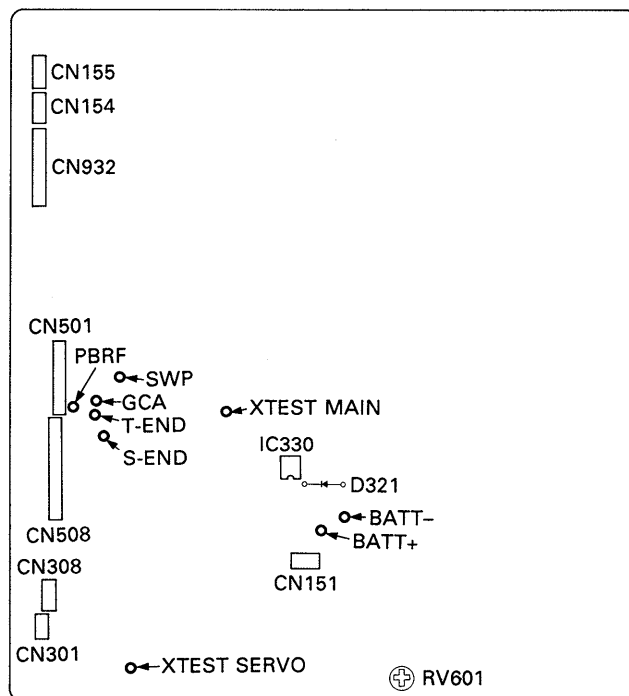
- (1) Set the REC MODE switch to STANDARD and check for normal recording and playback. (× 1)
- (2) Set the REC MODE switch to LONG and check for normal recording and playback. (× 0.5)
- (3) With QUE (▶ + ▶▶) or REVIEW (▶ + ◀◀), check that qurrr, qurrr sound is heard. (× 3, × 8)
- (4) Check that correct time is displayed after FF (▶▶▶) or REV (◀◀◀). (× 16)
- (5) Check that SEARCH (▶▶▶, ◀◀◀) is normal.

Adjust Parts Location

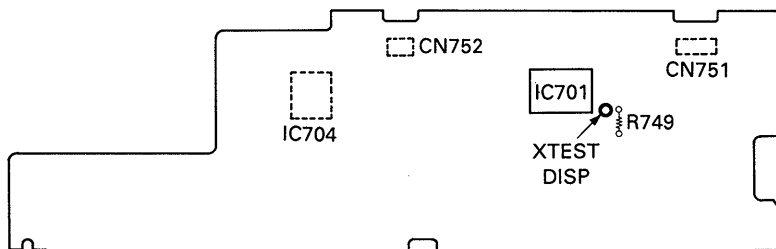
— Mechanism assembly —



— MAIN board —
(Component side)



— DISPLAY board —
(Conductor side)



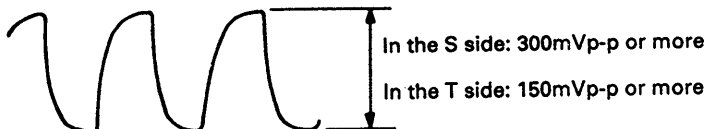
3-1. ELECTRICAL ADJUSTMENTS

End Sensor Check

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

Check Procedure:

1. Connect an oscilloscope to the test land S-END (in the S side) and T-END (in the T side) of the MAIN board.
2. Actuate the test mode (main • servo), mount an end sensor cassette and effect the STOP (■) mode.
3. Check that p-p values of waveform of the oscilloscope satisfy the following.



FWD Torque Adjustment

Adjustment 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. Adjust RV601 so that the minimum value of FWD take up torque (take-up side rewinding torque) is between 9 – 10 g • cm (0.12 – 0.14 oz • inch). Also, make sure that the maximum reading does not exceed 15 g • cm (does not exceed 0.21 oz • inch).
4. Confirm that the value indicated by the torque meter is maintained for one full cycle.

Adjustment Point: MAIN board

FWD Back Tension Adjustment

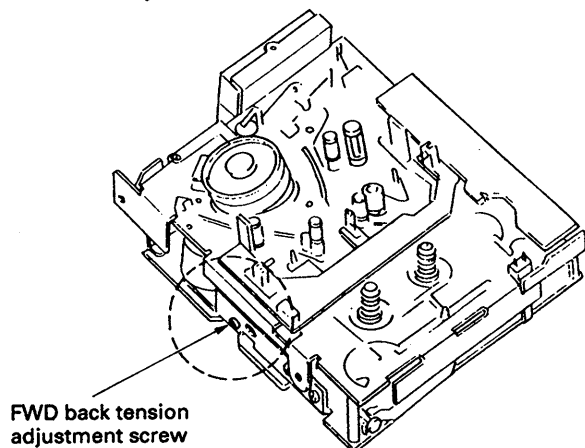
Adjustment procedure:

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 5 – 6 g • cm (0.07 – 0.09 oz • inch).

Also, make sure that the maximum reading does not exceed 10 g • cm (does not exceed 0.14 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.



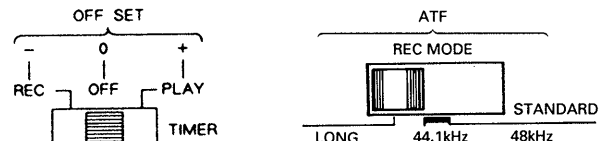
To tighten (clockwise) — back tension becomes larger.
To loosen (counterclockwise) — back tension becomes smaller.

Tape Path Fine Adjustments (× 1.5 FWD Mode)

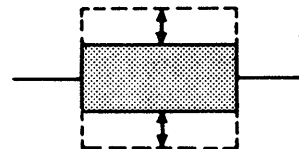
Perform the following adjustment when the drum has been replaced.

Adjustment Procedure :

1. Connect an oscilloscope CH-1 to TP (PBRF) and CH-2 to TP (SWP) on the MAIN board.
2. Put the set into the test mode (main • servo) and load test tape TY-7252 (8-909-822-00).
3. Press the AMS (▶▶) key.
Each part of switches on Test Mode.

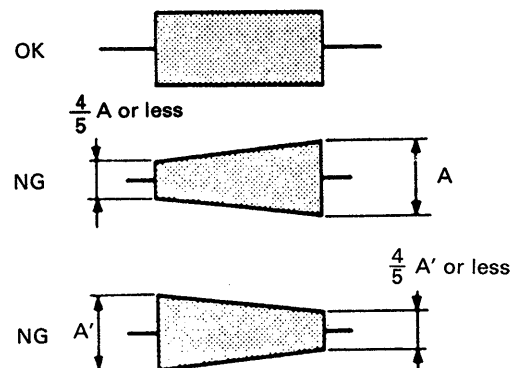


4. With the REC MODE switch set to STANDARD (ATF: OFF) and the TIMER switch set to PLAY or REC (OFFSET: + or –), fine adjust the S1 and T1 guides so that the oscilloscope RF signal waveform remains the same when high-low is repeated.



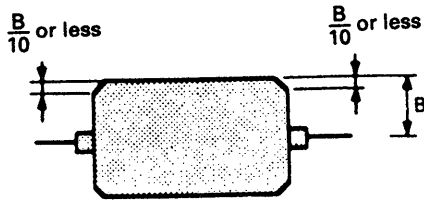
* Finish the adjustment by screwing in.

5. Check the RF signal waveform with the REC MODE switch set to LONG (ATF: ON) and the TIMER switch set to PLAY or REC (OFFSET: + or –).



6. Check the RF signal waveform with the REC MODE switch set to LONG (ATF: ON) and the TIMER switch set to OFF (OFFSET: 0).
(1) Confirm that the RF signal waveform peak value (B) is 60 mV or more.

- (2) Confirm that the undershoot level of the RF signal waveform's flat portion is within 10%.



7. When the measured values are not within the above tolerances, repeat items 3 – 6 above.

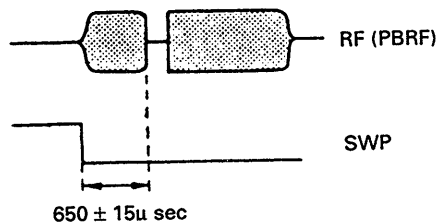
Adjustment Point: mechanism assembly

DPG Adjustment

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

Adjustment Procedure:

1. Connect an oscilloscope CH-1 to TP (PBRF) and CH-2 to TP (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.)
2. Put the set into the test mode (main · servo) and load test tape TY-7252 (8-909-822-00).
3. Set the REC MODE switch to LONG (ATF: ON) and the TIMER switch to OFF (OFFSET: 0).
4. Press the AMS (▶◀) key.
5. Press the ◀◀ and ▶▶ keys as appropriate so that the gap between the oscilloscope SWP and RF signals becomes $650 \pm 15 \mu\text{sec}$. (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.)



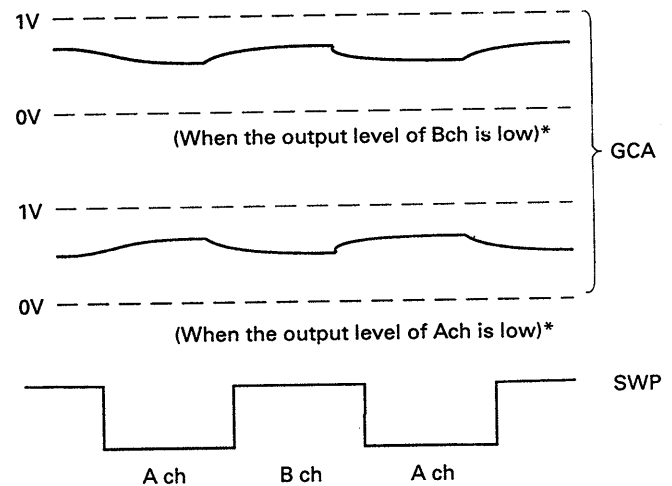
ATF Pilot (GCA) Check

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

Check Procedure:

1. Connect an oscilloscope CH-1 to TP (GCA: Gain Control Amp.) and CH-2 to TP (SWP) on the MAIN board. (When the CH-2 signal is inverted, the trailing edge can be used for synchronization.)
2. Put the set into the test mode (main · servo) and load test tape TY-7111 (8-909-812-00).

3. Actuate 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 GND level.

3-2. CHECKS FOR DATE FUNCTION

Clock IC Back-up Check

- When there is the short-circuit position on the pattern around the lithium battery (BT301) or the clock IC (IC330) or disconnecting CN151 on removing the front panel assembly the clock is reset. (In spite of pressing PRESENT button, the data indication becomes “--Y--M--D” “--H--M--S”)
At this time, check the back-up function by the procedures given below.
 - Connect DC voltmeter to TP (BATT+) and TP (BATT-) on the MAIN board.
 - When the power is off, the voltage value of the item (1) should be less than +30 mV.
(When the voltage value becomes +30 mV or more, Check around IC330 or replace IC330.)
 - When the power is on, the voltage value of the item (1) should be less than 0 mV (– (minus) indication).
(When the voltage value becomes + (plus) indication, Check around D321 or replace D321.)
 - When the above voltage values are normal, set the preset date and time (year, month, day, day of the week, hour, minute, second) according to the instruction manual.
 - After setting the time on the item (4), turn power off and turn power on several seconds later, and check the clock works normally.

Back-up Battery Replacement

The life of the back-up battery under normal use (normal temperature, normal humidity) is approximately ten years or more. (On the instruction manual, described “approximately seven years”.)

Be careful about the following points on the battery replacement.

- Repair the cause of the battery wastage by performing mentioned above “Clock IC Back-up Check”.
- The open-circuit voltage of the replaced battery is 3.0 V or more as the new one, and when it is 2.0 V or less, it is completely consumed, replace it with new one.
- After the battery replacement, perform “Clock IC Back-up Check” again and set the time.

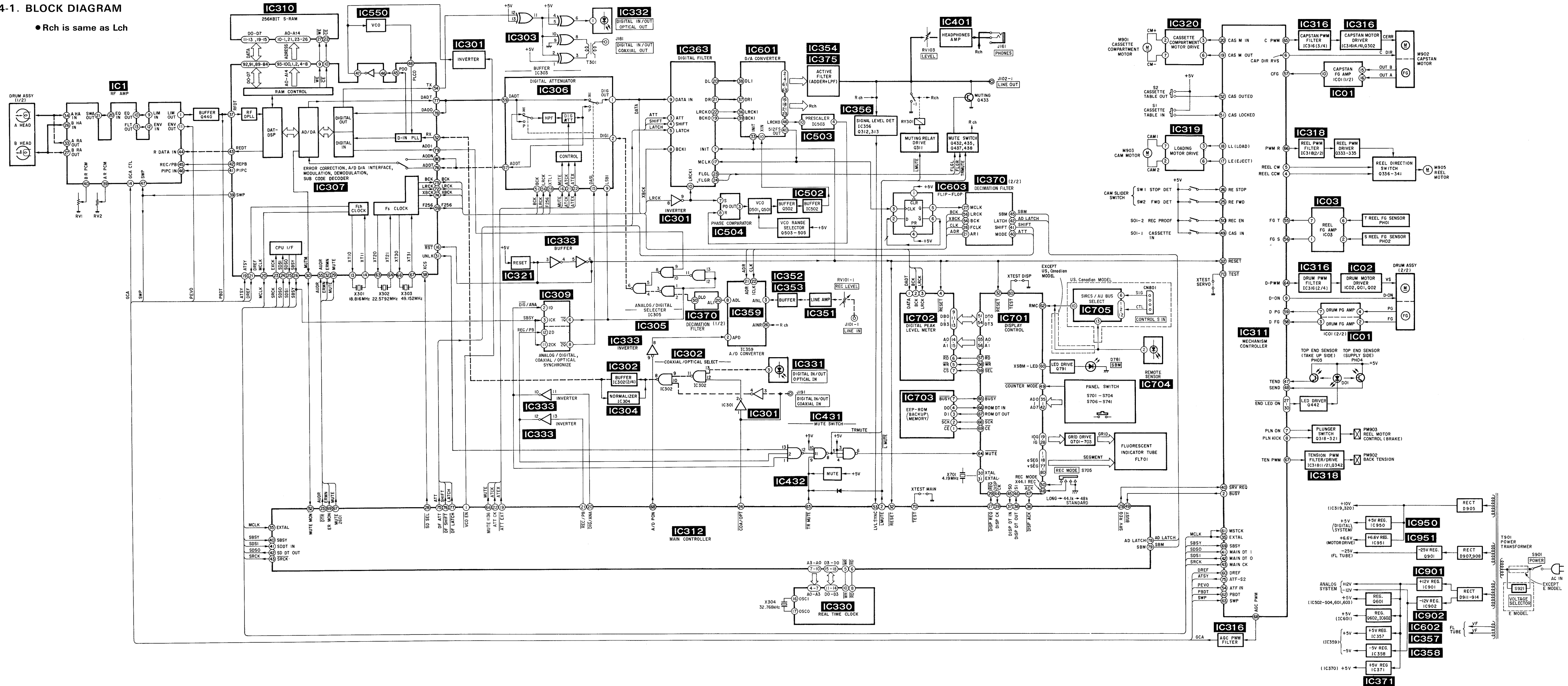
Clock Frequency Adjustment

Adjustment Procedure:

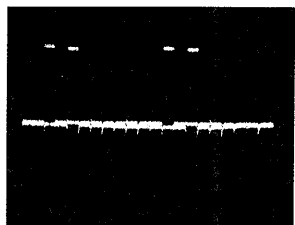
- Connect a frequency counter to pin ⑮ of IC330 and GND on the MAIN board.
- Turn power on and confirm that the reading on the frequency counter is 2048.00 ± 0.02 Hz. (in normal temperature)
- Perform “Clock IC Back-up Check” described above.

* Time setting procedure described on page 9.

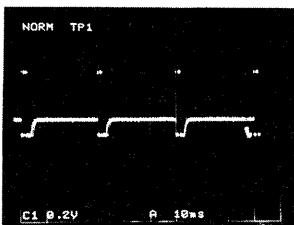
- Rch is same as Lch



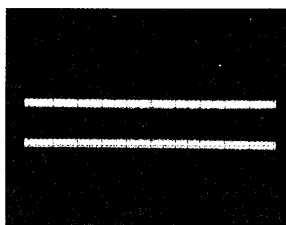
4-2. WAVEFORMS



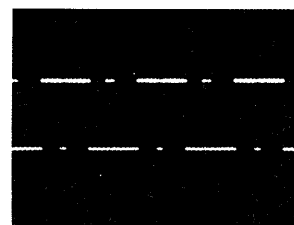
① FL701 ①-②pin
(1G-20G)
32Vp-p, 2.5ms



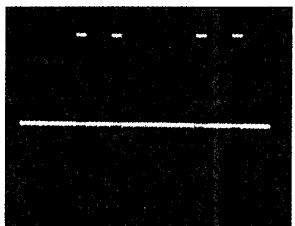
⑥ IC701 ④pin (SI),
IC312 ③pin
(DISP DT O)
5.1Vp-p, 0.64ms



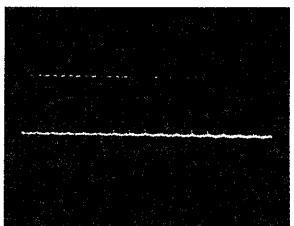
⑪ IC1 ①pin,
Q440 Base (PBDT)
PLAY mode 0.93Vp-p



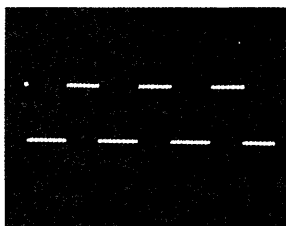
⑯ IC307 ⑧pin,
IC306 ⑨pin (DADO)
PLAY mode
5.2Vp-p, 5μs



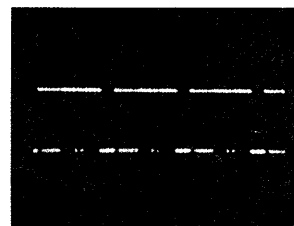
② IC701 ⑯-⑲pin
(10G-1G)
34Vp-p, 2.45ms



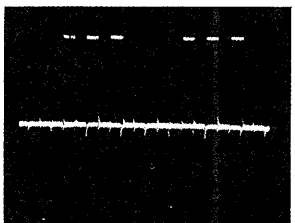
⑦ IC702 ①pin (DATA)
6.4Vp-p, 0.3μs



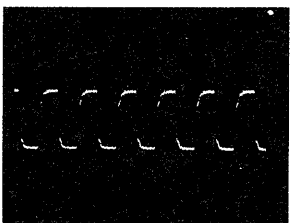
⑫ IC01 ⑩pin,
IC311 ⑤pin (CFG)
PLAY mode
5Vp-p, 1.5ms



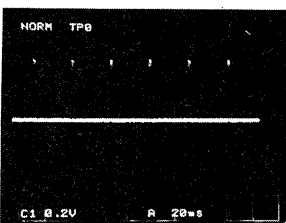
⑰ IC307 ⑥pin,
IC306 ⑦pin (ADDT)
REC mode
5.2Vp-p, 5μs



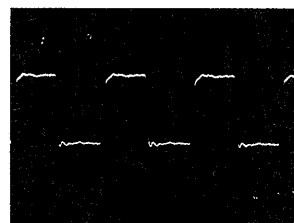
③ IC701 ⑦-⑩pin,
①-⑩pin (a-v)
38Vp-p, 1.2ms



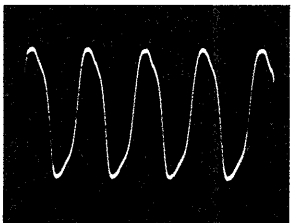
⑧ IC702 ②pin (BCK)
5.2Vp-p, 0.3μs



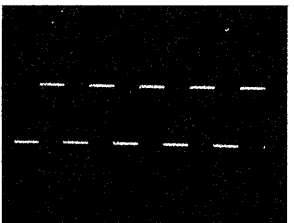
⑬ IC01 ⑦pin,
IC311 ⑨pin (DPG)
PLAY mode
5Vp-p, 10ms



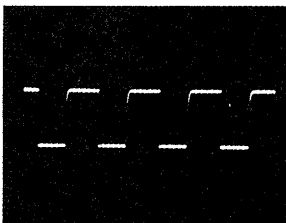
⑱ IC307 ⑤pin (BCK)
5.3Vp-p, 0.1μs



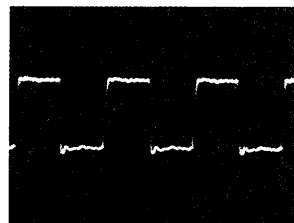
④ IC701 ⑩pin (XTAL)
5.5Vp-p, 2.5μs



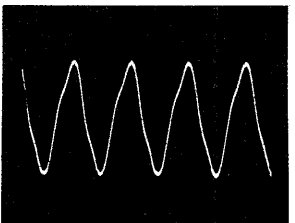
⑨ IC702 ③pin (LRCK)
5.7Vp-p, 20μs



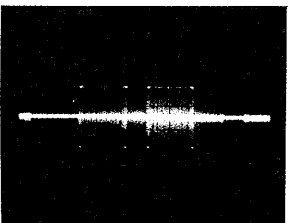
⑭ IC01 ③pin,
IC311 ⑧pin (DFG)
PLAY mode
5Vp-p, 1.25ms



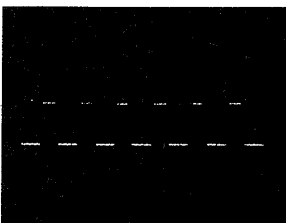
⑲ IC307 ④pin,
IC359 ⑮pin (XBCK),
IC363 ⑥pin (BCKI)
5.3Vp-p, 0.1μs



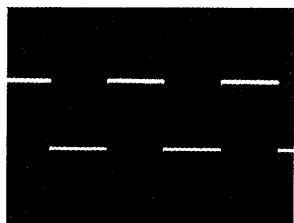
⑤ IC701 ⑩pin (EXTAL)
5.5Vp-p, 2.5μs



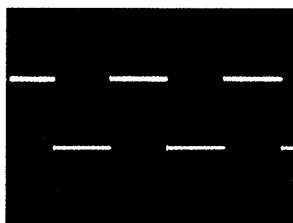
⑩ IC1 ② ③pin (HEAD)
REC mode 4.2Vp-p



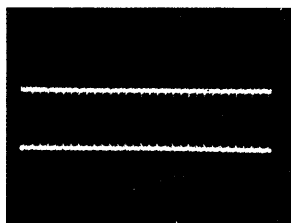
⑮ IC03 ①, ⑦pin,
IC311 ⑤, ⑥pin
(FGS, FGT)
FF, REW mode 4.1Vp-p, 0.1ms



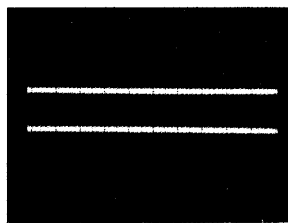
⑳ IC307 ②pin (LRCK)
5.1Vp-p, 5μs



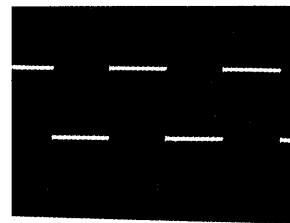
21 IC307 69pin, IC359
14pin (LR03)
5.1Vp-p, 5μs



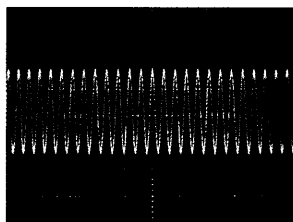
25 IC307 54pin (TX)
PLAY mode
5.3Vp-p, 0.2s



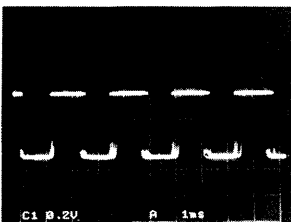
31 IC307 37pin,
IC311 62pin (RFDT)
PLAY mode
1Vp-p, 10ms



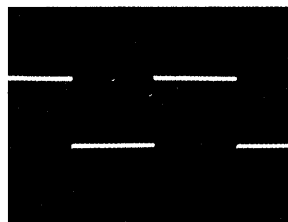
36 IC333 2pin,
IC363 10pin (LRCKI)
5Vp-p, 5μs



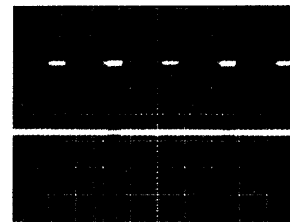
22 IC307 67pin (XT3I)
462mVp-p, 50ns



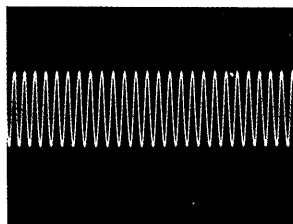
27 IC307 62pin (RX)
5.2Vp-p, 0.5ms



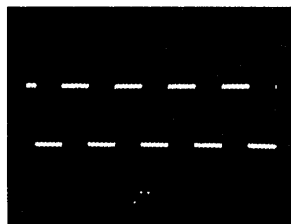
32 IC307 21pin,
IC311 60pin (DREF)
5Vp-p, 5ms



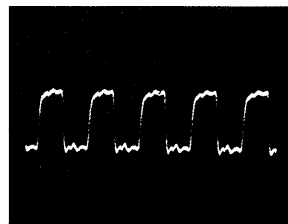
37 IC306 1pin,
IC363 9pin (DATAI)
5.3Vp-p, 5μs



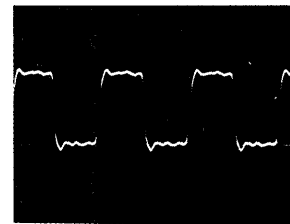
23 IC307 66pin
(X3TO)
1.7Vp-p, 50ns



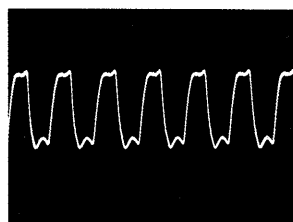
28 IC307 66pin (LRCK)
5.6Vp-p



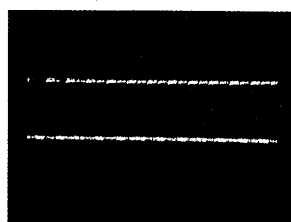
33 IC307 20pin,
IC311 35pin,
IC312 35pin (MCLK)
5.8Vp-p, 50ns



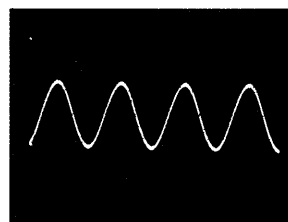
38 IC363 20, 21pin
(DL, DR)
6Vp-p, 50ns



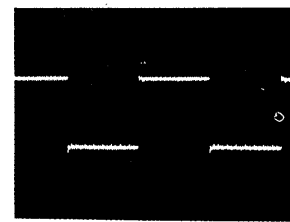
24 IC307 59pin, IC359
20pin (F256)
5.2Vp-p, 50ns



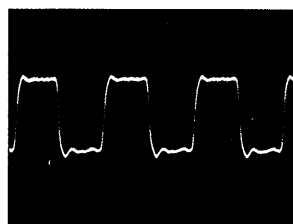
29 IC307 48pin (REDT)
REC mode
5.3Vp-p, 0.5μs



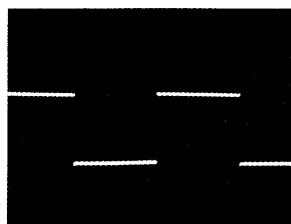
34 IC307 14pin, (XT1I)
1.7Vp-p, 50ns



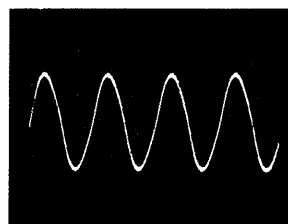
39 IC363 22pin,
IC601 36pin (LRCK)
5.3Vp-p, 0.5μs



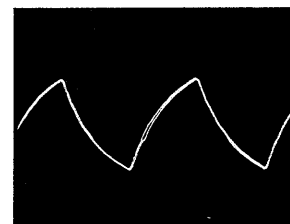
25 IC307 58pin (F128)
5.4Vp-p, 50ns



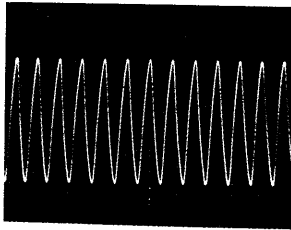
30 IC307 39pin,
IC311 68pin (SWP)
PLAY mode
5.2Vp-p, 50ms



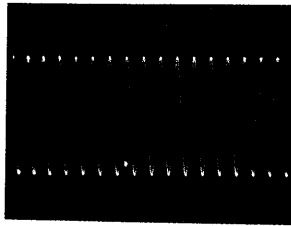
35 IC307 13pin, (XT10)
2.7Vp-p, 50ns



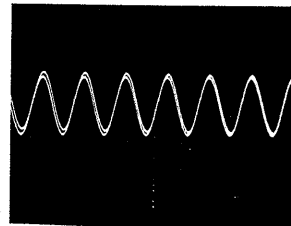
40 IC503 10pin,
IC601 43pin (128FS)
5.0Vp-p, 50ns



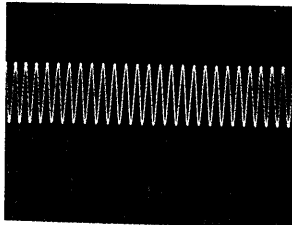
41 IC601 40pin,
IC363 17pin (512FS)
3Vp-p, 50ns



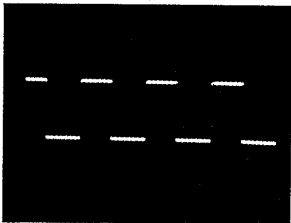
46 Q502 Source
(VCO)
1Vp-p, 50ns



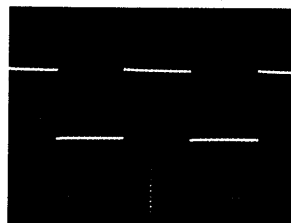
51 IC330 16pin
(XIN)
925mVp-p, 20μs



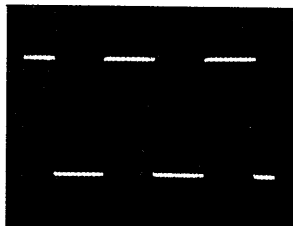
42 IC601 10pin (1024FS)
IC502 5pin
1.4Vp-p, 50ns



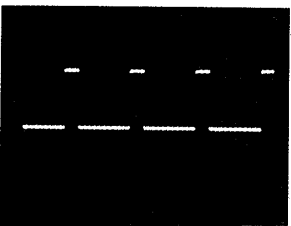
47 IC311 64pin
(D PWM)
PLAY mode
5Vp-p, 10μs



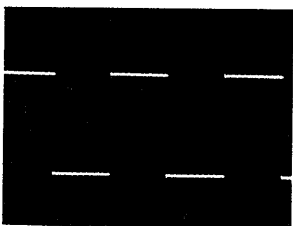
52 IC330 15pin
(XINTR)
5.2Vp-p, 0.1μs



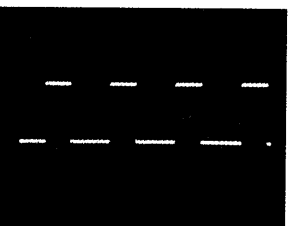
43 IC504 7pin
(LRCKI)
5.5Vp-p, 5μs



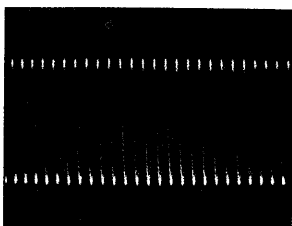
48 IC311 65, 66pin
(C PWM, PWMR)
PLAY mode
5Vp-p, 10μs



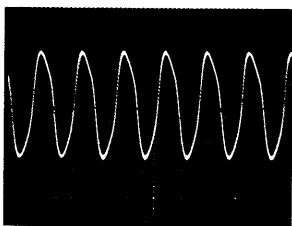
44 IC504 8pin
(1/512FS)
5.5Vp-p, 5μs



49 IC311 67, 68pin
(TEN PWM, AGC PWM)
PLAY mode
5Vp-p, 10μs

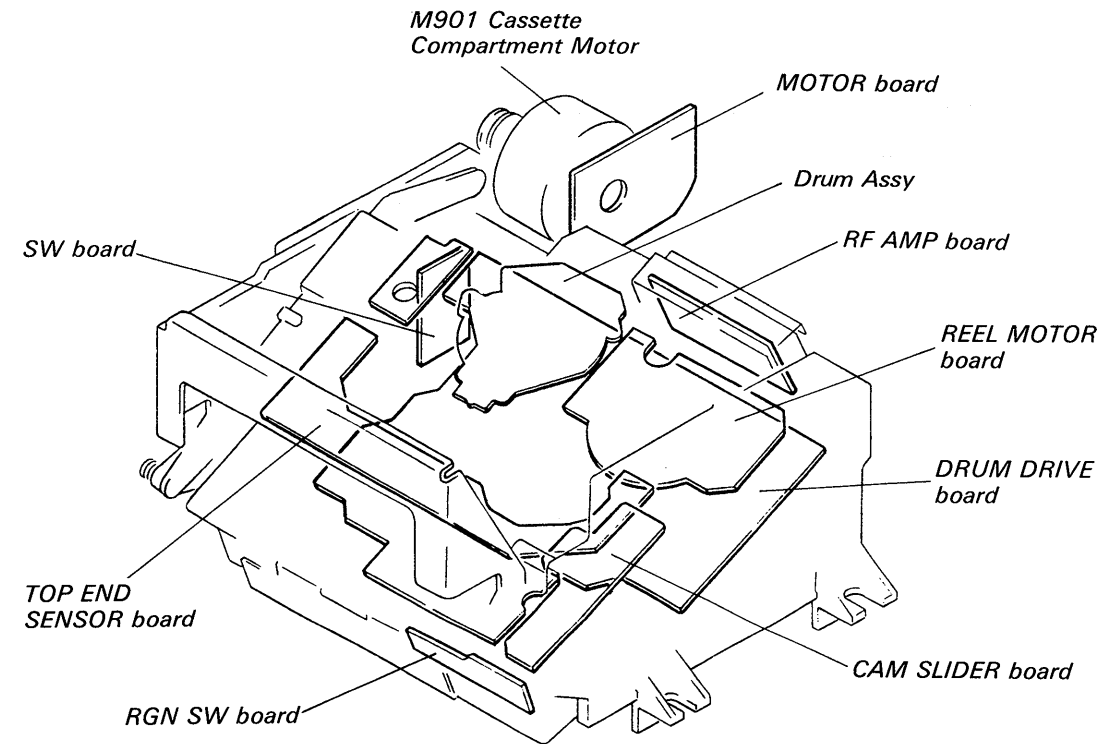
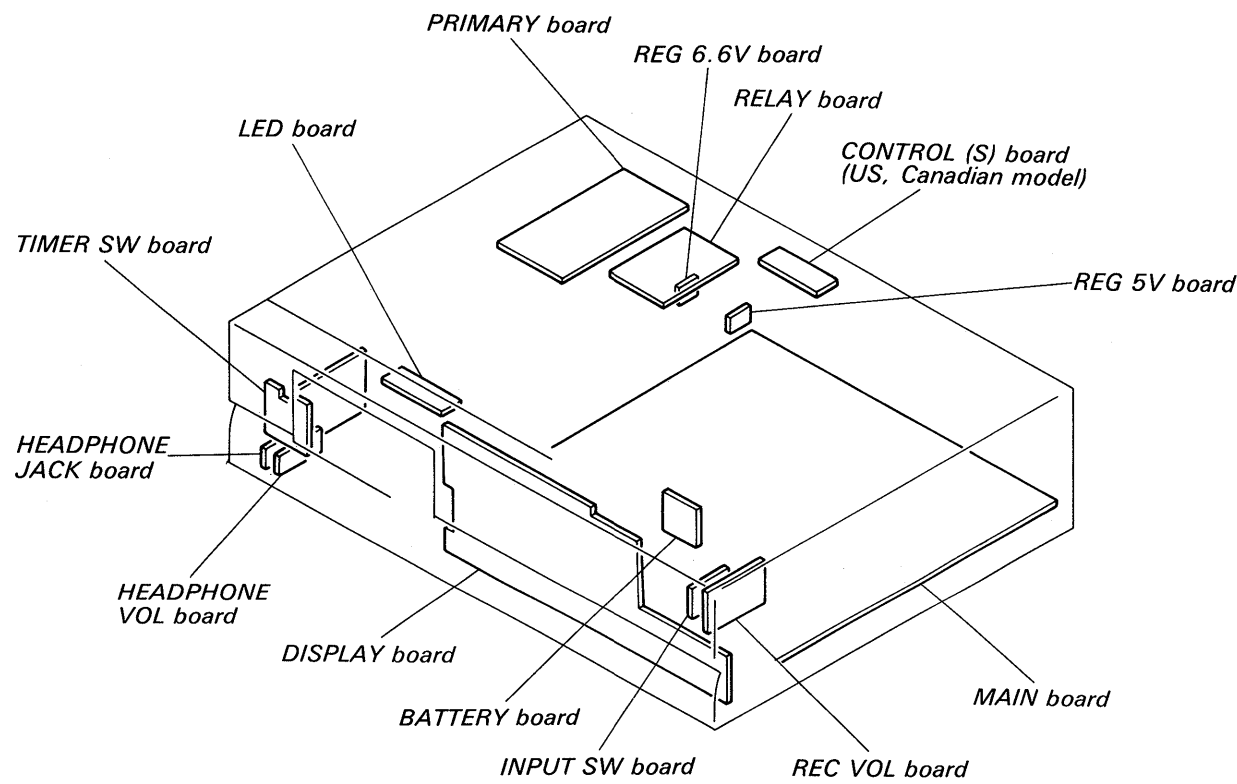


45 Q501 Source
(VCO)
1.3Vp-p, 50ns

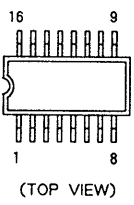


50 IC330 17pin
(XOUT)
1.85Vp-p, 20μs

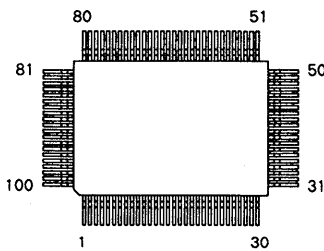
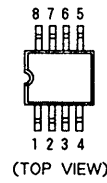
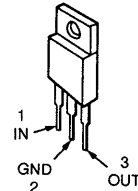
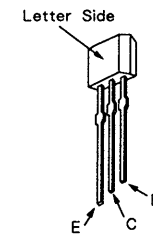
4-3. CIRCUIT BOARDS LOCATION



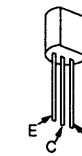
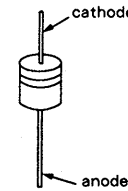
4-4. SEMICONDUCTOR LEAD LAYOUTS

CX20115A-T4
SN74HC4020ANS

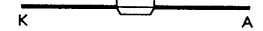
CXD2601AQ

LM358M
TC7W00FTA7805S
TA7812S
 μ PC2406HF2SA1175-HFE
2SA1585S-QR
2SC3623A-K
2SC4115S-QR

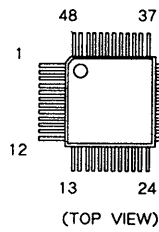
2SD1387

HZS6A1L
RD4.7JS-B3
RD5.1JS-B2
1SS106
1SS202-1
11ES2

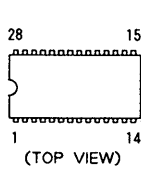
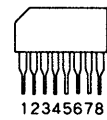
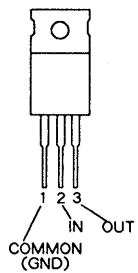
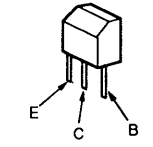
LN01401C(Q)-3-LF



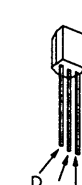
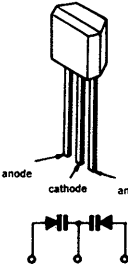
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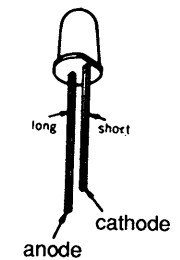
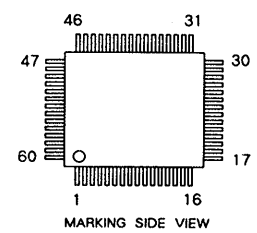
CXD8493P

M5218AL
M54641LTA79005S
TA79012S2SB734-34
2SD774-34

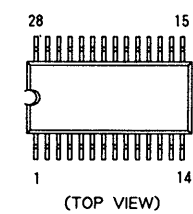
2SK241-GR

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KV1550NT

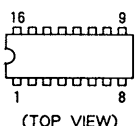
SEL1410E

CXD1136Q
CXD8482Q

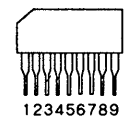
CXK58257AM-10LL



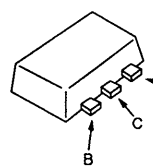
MSM6338RS



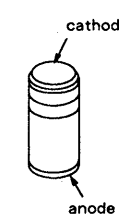
TC5081AP



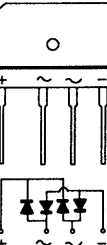
2SB798-DL



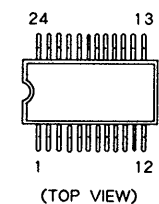
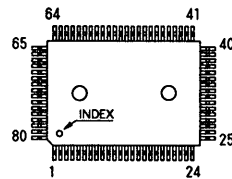
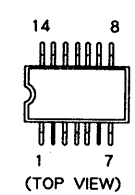
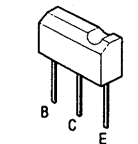
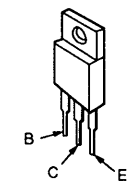
GL-453S



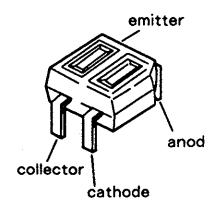
RBA406B



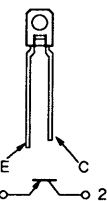
CXD2567M

CXP5058H-661Q
CXP80524-091Q
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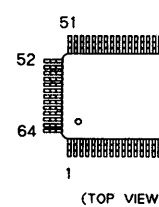
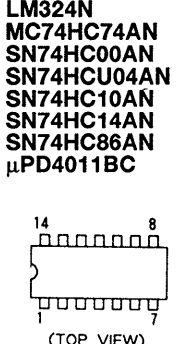
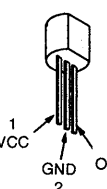
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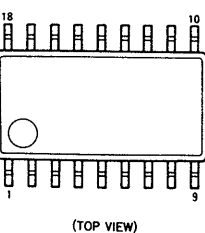
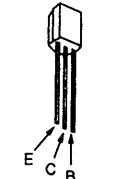
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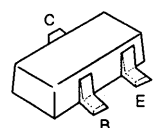
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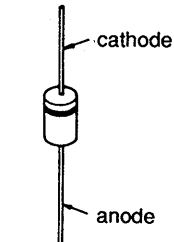
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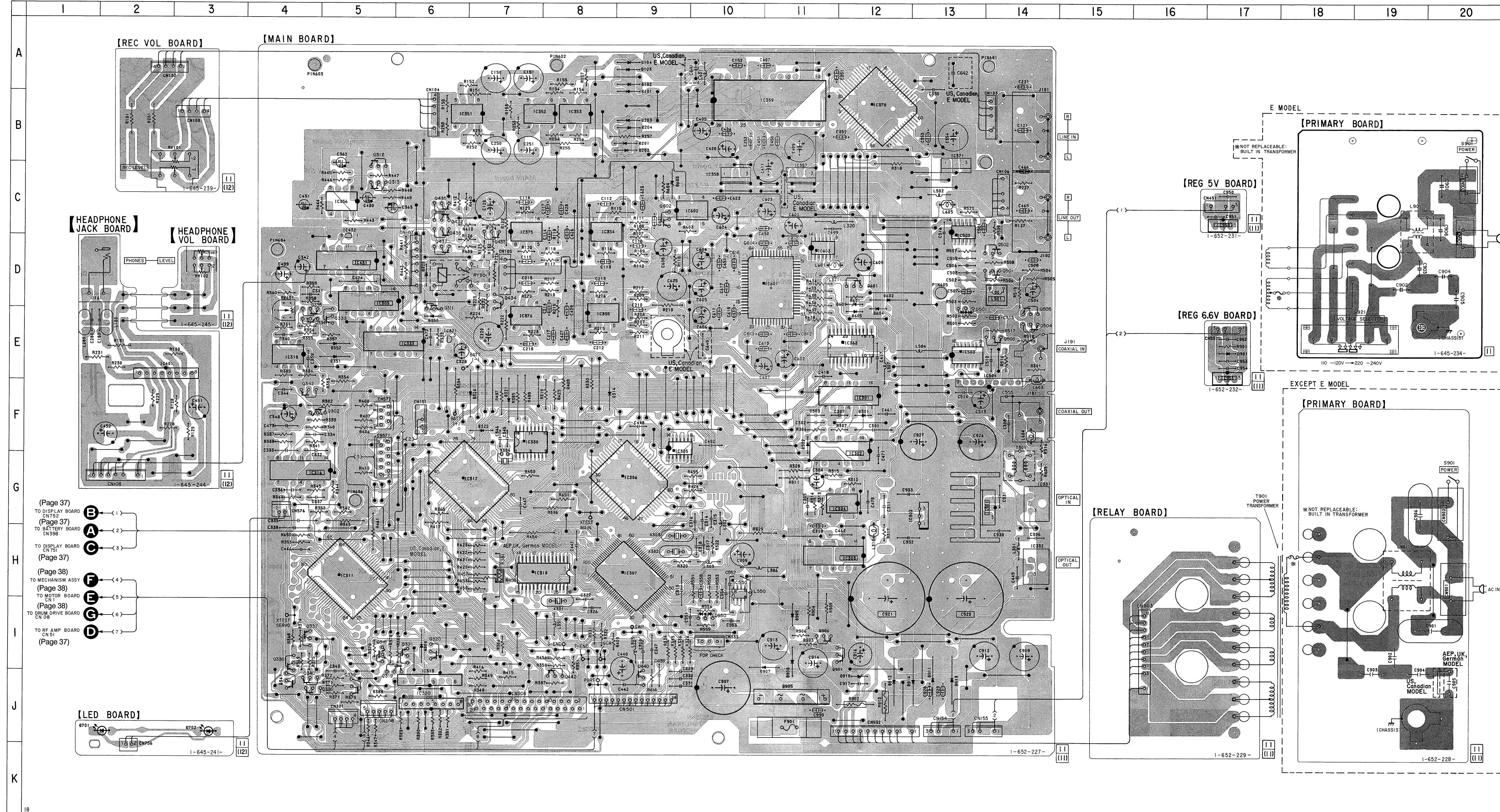
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30DF2



4-5. PRINTED WIRING BOARDS —MAIN Section— • See page 25 for Circuit Boards Location and Semiconductor Lead Layouts.



• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D101	A - 9	IC354	C - 8
D102	A - 9	IC355	E - 8
D103	A - 9	IC356	C - 5
D104	A - 9	IC357	C - 11
D201	B - 9	IC358	C - 10
D202	B - 9	IC359	A - 10
D203	B - 9	IC363	E - 12
D204	B - 9	IC370	A - 12
D301	F - 12	IC371	B - 13
D302	F - 11	IC375	C - 7
D306	I - 6	IC376	E - 7
D308	D - 6	IC401	E - 2
D314	F - 8	IC431	D - 5
D321	F - 7	IC432	D - 5
D322	F - 7	IC502	C - 13
D324	F - 7	IC503	E - 13
D350	E - 6	IC504	F - 13
D351	E - 5	IC550	H - 10
D352	E - 5	IC601	D - 11
D501	E - 13	IC602	C - 9
D550	I - 10	IC603	D - 11
D601	E - 12	IC901	G - 14
D602	E - 12	IC902	G - 13
D603	C - 9	IC950	C - 17
D604	E - 12	IC951	F - 17
D605	E - 12		
D701	J - 1	Q302	F - 4
D702	J - 3	Q311	E - 6
D901	E - 17	Q312	C - 5
D905	J - 11	Q313	C - 5
D907	J - 11	Q318	I - 5
D908	J - 11	Q319	J - 5
D909	I - 11	Q320	I - 6
D910	J - 12	Q321	I - 6
D911	J - 13	Q333	E - 5
D912	J - 12	Q334	E - 4
D913	J - 13	Q335	E - 4
D914	J - 13	Q336	I - 4
		Q337	I - 4
		Q338	J - 4
		Q339	J - 5
		Q340	J - 4
		Q341	J - 4
		Q342	F - 4
		Q343	C - 6
		Q344	D - 7
		Q345	C - 6
		Q346	D - 6
		Q347	C - 6
		Q348	J - 9
		Q349	J - 8
		Q350	D - 14
		Q351	D - 14
		Q352	E - 14
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		Q496	E - 14
		Q497	E - 14
		Q498	E - 14
		Q499	E - 14
		Q500	E - 14

Notes on printed wiring board:

- — : Indicated a lead wire mounted on the component side
- : pattern from the side which enables seeing
- ■ : parts mounted on the conductor side

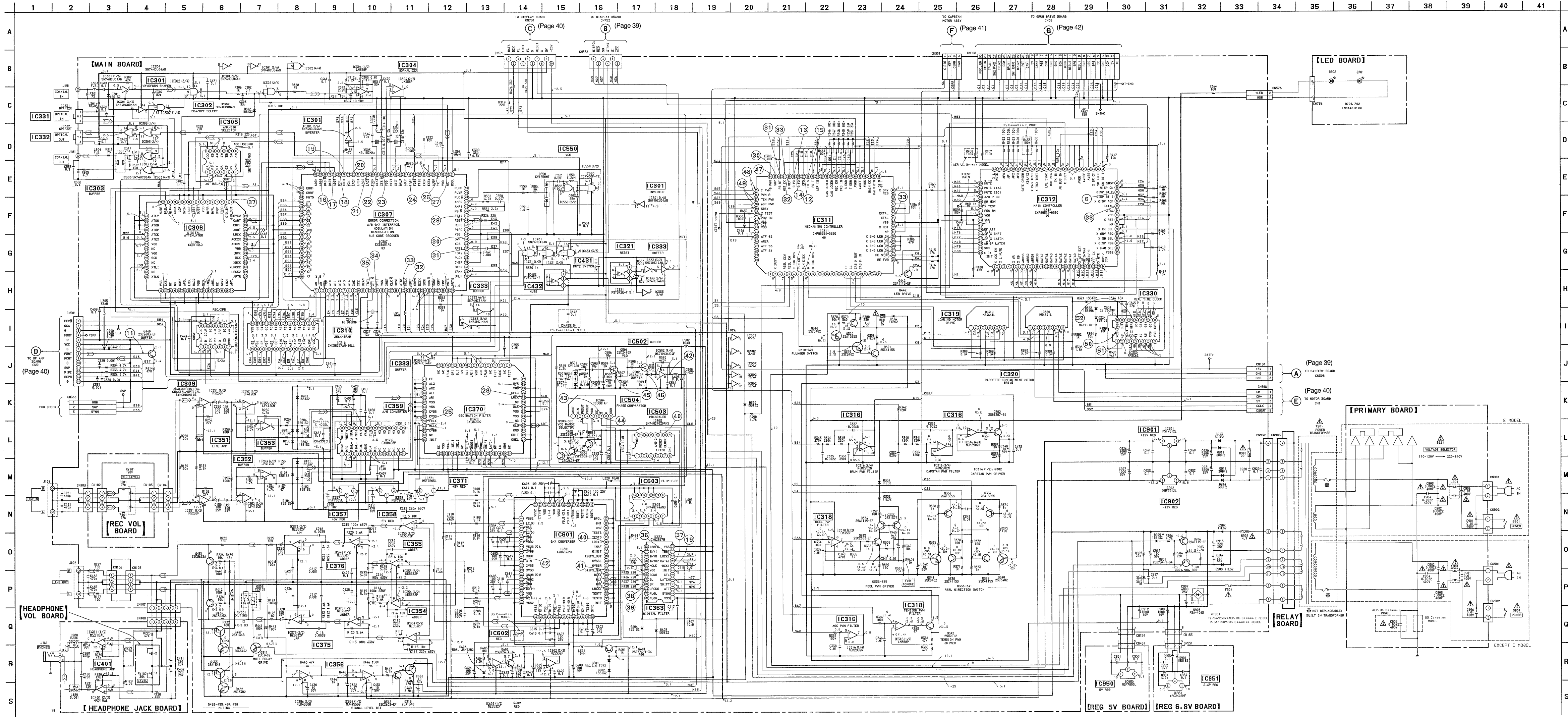
4-6. SCHEMATIC DIAGRAM —MAIN Section— •See page 22 for Waveforms and 43 for IC Block Diagrams.

- Notes on schematic diagram:
- All capacitors are in μF unless otherwise noted. pF: μF 50WV or less are not indicated except for electrolytics and tantalums.
 - All resistors are in ohms, 1/4W or less unless otherwise noted.
 - Δ : Internal component
 - ∇ : Nonflammable resistor
 - WV : Fuse resistor

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.

- —: B+ Line
- ----: B- Line
- —: Adjustment for repair
- Voltage are dc with respect to ground under no-signal (STOP) conditions.
- No mark: Stop
- () : PLAY
- (||) : REC
- < : FF
- > : REW
- << : MOMENTARILY WHEN >>, << and > BUTTON IS PRESSED.
- (||) : MUTING
- Voltages are taken with a VOM (input impedance 10M Ω).
- Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Waveforms are taken with a oscilloscope.
- Voltage variations may be noted due to normal production tolerances.
- Signal path
- PS
- REC



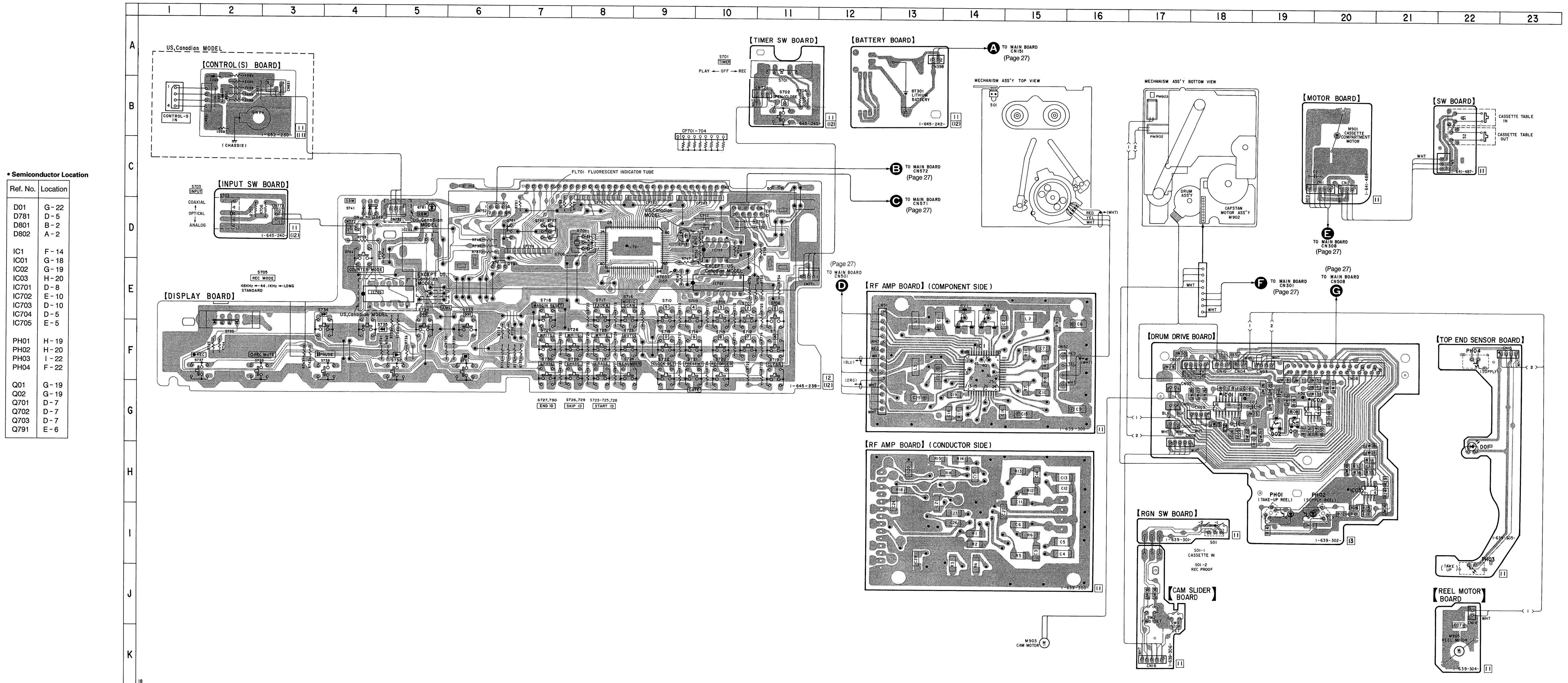
Notes on printed wiring board:

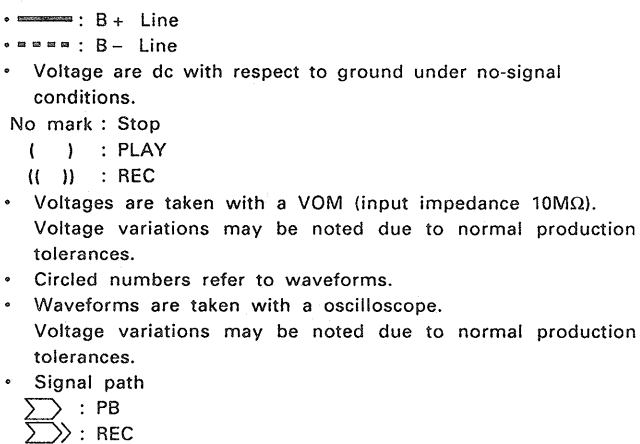
- — : Indicated a lead wire mounted on the component side.
- ■ : Parts mounted on the conductor side
- ● : Through hole
-  : Pattern from the side which enables seeing

(The other layers' patterns are not indicated.)

Caution:	
Pattern face side: (Conductor side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component side)	Parts on the parts face side seen from the parts face are indicated.

4-7. PRINTED WIRING BOARDS –DISPLAY/MD Section— ● See page 25 for Circuit Boards Location and Semiconductor Lead Layouts.





4-10. IC PIN FUNCTIONS

IC306 Digital Attenuator (CXD1136Q)

The captioned attenuator is used with the equipment as a digital attenuator in fade IN and fade OUT.

Pin No.	Pin Name	I/O	Description
1	DIGO	O	Serial data output synchronized with BCK (complement of 2)
2	DIGI	I	Serial data input synchronized with BCK (complement of 2)
3	ERFO	O	Signal output for discriminating whether or not DADT has interpolated data (Not in use)
4	UNDF	O	Detect result for ADDT L, R channel data of -54 dB or less ("L": -54 dB or less) (Not in use)
5	OVFL	O	Detect result for ADDT L channel overflow ("L": overflow detected) (Not in use)
6	OVFR	O	Detect result for ADDT R channel overflow ("L": overflow detected) (Not in use)
7	VSS	—	GND
8	SUBT	I	Selects whether subcode or 18-bit data is output to ADDT and DIGO ("H" or open: 18-bit data output, "L": subcode output)
9	LSB1	I	MSB/LSB fast switching for DADT, ADDT, DIGI, DIGO ("H" or open MSB fast, L: LSB fast)
10	LSB2	I	MSB/LSB fast switching for DAC2, ADC2L (ADC2R) ("H" or open MSB fast, L: LSB fast)
11	OVON	I	Overflow detect result on/off ("H" or open: OVFL, OVFR output valid, L: OVFL, OVFR fixed "H")
12	LCF	I	Low-cut filter on/off ("H" or open: on)
13	ADDA	O	"H" in AD mode (DASL = DIAN = "L") (Not in use)
14	DIAN	I	Sets AD and DA modes
15	DASL	I	Sets AD and DA modes
16	MUTE	I	Soft muting on/off ("H": mute on)
17	ATLV	I	Digital volume range setting ("H" or open: 0 - -60, -∞ dB, "L": +12 - -48, ∞ dB)
18	ATON	I	Digital volume on/off ("H" or open: off)
19	ATDN	I	Digital volume level down
20	ATUP	I	Digital volume level up
21	ATCK	I	Digital volume level setting clock and soft muting external clock
22	ATEX	I	Soft muting operation clock selection ("H" or open: internal clock, "L": ATCK)
23	VDD	—	Power supply (+5 V)
24	NC	—	
25	VDD	—	Oscillator circuit power supply (+5 V)
26	SCK	O	Oscillator clock output (Not in use)
27	NC	—	
28	XTLI	I	Crystal connector and clock input pin
29	NC	—	
30	XTLO	O	Crystal connector pin (24.576 MHz oscillation frequency possible) (Not in use)
31	VSS	—	Oscillator circuit GND
32	CKSL	I	Oscillator clock division selection ("H" or open: no division, "L": 1/2 division)
33	NC	—	
34	NC	—	
35	DOFF	I	DAC2 digital offset on/off ("H" or open: on) (Not in use)
36	APSL	I	Aperture correction filter coefficient selection (not valid in AD mode) ("H" or open: correction active)
37	LRSL	I	L, R channel phase difference correction selection ("H" or open: correction active) (Not in use)
38	DAC2	O	Serial data output to 2-times oversampling DA converter (complement of 2) (Not in use)
39	VSS	—	Power supply (+5 V)
40	BKSL	I	LRCK, BCK input timing switch ("H" or open: LRCK change point and BCK leading edge synchronized, "L": LRCK change point and BCK trailing edge synchronized)
41	INSL	I	DADT, DIGI, ADC2L (ADC2R) data incorporation clock selection ("H" or open: BCK, "L": INCK)
42	ADSL	I	ADC2L, ADC2R data selection ("H" or open: ADC2L, "L": ADC2L and ADC2R switched by LRCK2)
43	NC	—	
44	WCK2	O	Clock equivalent to 4fs (Not in use)
45	LR21	O	DAC2 L, R channel discrimination signal in I ² S format (Not in use)

Pin No.	Pin Name	I/O	Description
46	APTL	O	Aperture signal (Not in use)
47	APTR	O	Aperture signal (Not in use)
48	LRCK2	O	DAC2, ADC2L (ADC2R) L, R channel discrimination signal (equivalent to 2fs) ("L": L channel, "H": R channel) (Not in use)
49	XHRCK2	O	LRCK2 inverted output (Not in use)
50	XBCK	O	BCK inverted output (Not in use)
51	BCK	I	Clock equivalent to 64fs for DADT, ADDT, DIGI, DIGO data incorporation
52	INCK	I	DADT, DIGI, ADC2L (ADC2R) data incorporation clock
53	VDD	—	Power supply (+5 V)
54	ADC2L	I	Serial data input from 2-times oversampling AD converter (complement of 2)
55	ADC2R	I	Serial data input from 2-times oversampling AD converter (complement of 2)
56	LRCK	I	DADT, ADDT, DIGI, DIGO L, R channel discrimination signal (fs) ("L": L channel, "H": R channel)
57	ADDT	O	Serial data output synchronized with BCK (complement of 2)
58	ERFI	I	Signal input for discriminating whether or not DADT has interpolated data (complement of 2)
59	DADT	I	Serial data input synchronized with BCK (complement of 2)
60	OVCW	I	Clock input which determines detect time for OVFL, OVFR and UNDF

IC307 DAT Signal Processor (CXD2601AQ)

This processor is an LSI to process recording and playback signals of the R-DAT system, in a single chip and provided with digital PLL, modem, error correction circuit, digital I/O, RAM control circuit, etc.

Pin No.	Pin Name	I/O	Description
1, 2 3 4-6 7, 8 9	A08, A09 VDD A10-A12 A13, A14 XWE	I/O — I/O O O	RAM address A08, A09 5 V RAM address A10-A12 RAM address A13, A14 RAM write enable signal
10 11 12 13 14	XOE XEAN TST1 XT1O XT1I	O O I O I	RAM output enable signal External addressing bus interrupt enable signal (Not in use) Test pin (normally "L") 18.816 MHz crystal oscillator output 18.816 MHz crystal oscillator input
15 16 17 18 19	VSS XRST CLKO XCST ATSY	— I I/O I/O I	GND Reset pin (normally "H") 18.816 MHz clock output (Not in use) SYEK (internal system clock) generation CLKO division timing signal (Not in use) ATF sync signal input
20 21 22 23 24	MCLK DREF SBPM EXCK SDSI	O O O I I	9.408 MHz clock output Drum servo reference signal Discrimination signal determining whether the subcode I/O clock (EXCK) is accepted ("L": accept, "H": ignore) (Not in use) Subcode I/O data transfer clock (DUTY50) Subcode serial data input
25 26 27 28 29	SDSO SBSY COPY EMP MUTE	O O O O I	Subcode serial data output Subcode I/O sync signal Copy data output (Not in use) Emphasis data output (Not in use) Mute pin
30 31 32 33 34	MUTM UNLK ERMN SYMN CHER	O O O O I	Mute discrimination signal ("H": muted) RX PLL lock discrimination signal ("H": locked) Detects presence or absence of RF ("H": RF present, "L" during REC) C1 check result for RF ("H": OK) (Not in use) Signal for discriminating whether C2 is 1 or 2 times (C2 → C1 → C2 or C1 → C2) ("H": 1 time, "L": 2 times) (Not in use)
35 36 37 38 39	PLCK TST2 RFDT XCS SWP	I/O I I I I	RF PLL clock output (Not in use) Test pin (normally "L") RF signal input Subcode I/O chip select ("L": select) RF switching pulse ("L": A-CH, "H": B-CH)
40 41 42 43 44	VSS PIPC REPB REDT TST4	— O O O I	GND REC data PILOT/PCM discrimination signal ("H": PILOT, during playback: always "L") Record/playback switching signal ("H": record) Recording signal output, fixed "L" during playback Test pin (normally "L")
45 46 47 48	PDO AMPI AMPO PLCO	O I O I	RX APLL PD output (comparator output) RX APLL oscillator cell amp input RX APLL oscillator cell amp inverted output RX APLL external VCO clock input

Pin No.	Pin Name	I/O	Description
49	PLVR	O	RX APLL comparison signal when external comparator is active (Vin) (Not in use)
50	PLRF	O	RX APLL comparison signal when external comparator is active (Rin) (Not in use)
51	MSSL	I	Master/slave setting (“H”: master (fixed with the equipment), “L”: slave)
52	RX	I	Digital input
53	VDD	—	5 V
54	TX	O	Digital output
55	AUDR	I	Audio mode/data recorder mode setting (“H”: audio mode, “L”: data recorder mode)
56	EXSY	I/O	Complete copy sync signal (25/3 - 100/3 Hz)
57	EXSN	I/O	Complete copy sync signal (25/3 - 100/3 Hz)
58	F128	I/O	128fsCK (normal)/256fsCK (×2) (DUTY50) (Not in use)
59	F256	O	256fsCK (normal)/512fsCK (×2) (DUTY50)
60	F512	O	512fsCK (normal)/512fsCK (×2) (DUTY50) (Not in use)
61	ADLF	I	Signal for discriminating whether ADDT serial data is MSB first or LSB first (“H”: LSB first)
62	DALF	I	Signal for discriminating whether DADT serial data is MSB first or LSB first (“H”: LSB first)
63	XT20	O	22.5792 MHz crystal oscillator output
64	XT21	I	22.5792 MHz crystal oscillator input
65	VSS	—	GND
66	XT30	O	49.152 MHz crystal oscillator output (24.576 MHz in B mode)
67	XT31	I	49.152 MHz crystal oscillator input (24.576 MHz in B mode)
68	FSEN	I	F128, BCK, LRCK input/output switch (“H”: output)
69	LR03	O	LR02 inversion (Not in use)
70	LR02	O	LRCK 16BCK delay signal (Not in use)
71	LR01	O	LRCK 15BCK delay signal (Not in use)
72	LRCK	I/O	fs (normal)/2fs (×2) (“L”: L-CH, “H”: R-CH)
73	WCK	I/O	2fs (normal)/4fs (×2) (input mode only for testing) (Not in use)
74	XBCK	O	BCK inversion
75	BCK	I/O	64fs (normal)/128fs (×2)
76	ADDT	I	Serial AD data (complement of 2)
77	DADT	O	Serial DA data (complement of 2)
78	DADO	I	Digital output (DA) data input (normally connected to DADT)
79	ADDI	O	Digital input (AD) data output (normally connected to ADDN)
80	ADDN	I	Digital input (DA) data input
81	ERRI	I	Digital output V-FLAG data input (normally connected to ERRF)
82	ERRF	O	Signal output for discriminating whether or not DADT has interpolated data (“H”: interpolated data)
83	MUTG	O	Error correction status monitor trigger (Not in use)
84-89	D7-D2	I/O	RAM data bus D7-D2
90	VSS	—	GND
91, 92	D1, D0	I/O	RAM data bus D1, D0
93-100	A00-A07	I/O	RAM address A00-A07

IC311 Mechanism/Servo Microcomputer (CXP80524-092Q)

The mechanical deck servo systems are controlled by the captioned microcomputer according to instructions from the main microcomputer (IC312).

Micom: Microcomputer

Pin No.	Pin Name	I/O	Connected to	Description
1		O		Not in use
2	<u>BUSY</u>	O	Main Micom	Busy (Active "L") to the Main Micom
3		O		Not in use
4	REEL_CCW	O	Mechanism	Reel motor CCW ("L": RVS direction) } *1
5	REEL_CW	O	Mechanism	Reel motor CW ("H": FWD direction)
6	C_DIR_RVS	O	Mechanism	Capstan Direction ("L": FWD, "H": RVS)
7	PLN_ON	O	Mechanism	Plunger On
8	PLN_KICK	O	Mechanism	Plunger Kick
9	D_ON	O	Mechanism	Drum On ("H": The drum is revolving)
10	D_DIR_RVS	O	Mechanism	Not in use
11-16		O		Not in use
17	LE	O	Mechanism	Loading Motor Eject } *2
18	LL	O	Mechanism	Loading Motor Load
19	CAS_M_OUT	O	Mechanism	Cassette control motor Out } *3
20	CAS_M_IN	O	Mechanism	Cassette control motor In
21-24		—		Not in use
25	RE_FWD	I	Mechanism	Encoder SW2 } *4
26	RE_STOP	I	Mechanism	Encoder SW1
27-30	<u>END_LED_ON</u>	O	Mechanism	End sensor ON Illuminated upon "L" (rectangular wave of about 1kHz). It is not output unless a cassette is mounted ("H").
31	MP	I		Microprocessor mode selected (the equipment is fixed at "L").
32	RST	I		System Reset (low active)
33	Vss	—		Power terminal (GND)
34	XTAL	O		System Clock Output (Not in use)
35	EXTAL	I	CXD2601AQ	System Clock Input (9.408 MHz)
36-39		—		Not in use
40	X_SRV_REQ	I	Main Micom	Request for communication from the Main Micom
41	MAIN_DT_I	I	Main Micom	Serial Input from the Main Micom
42	MAIN_DT_O	O	Main Micom	Serial Output to the Main Micom
43	MAIN_CK	I	Main Micom	Serial Clock with the Main Micom
44	AVss	—		GND for A/D
45	AVref	—		Reference Voltage for A/D (+5 V)
46	AVdd	—		Power Supply for A/D (+5 V)
47	T_END	I	Mechanism	Take-up side end sensor input (analog) } Magnetic matter: 0V,
48	S_END	I	Mechanism	Supply side end sensor input (analog) } Leader tape: AC (*5)
49	CAS_IN	I	Mechanism	Cassette-in switch (S01). "H": Cassette is mounted.
50	REC_EN	I	Mechanism	Rec-enable switch (S01). "H": REC enabled.
51	CAS_LCKed	I	Mechanism	Casecon locked Upon completion of loading: "H"
52	CAS_OUTed	I	Mechanism	Casecon outed Upon completion of loading OUT: "H"
53		I	Pull up	Not in use
54	ATF_IN	I	RF Amp	ATF PILOT input
55	FG_T	I	Mechanism	Reel FG (T Side) } 6/24Hz (Small reel diameter) -
56	FG_S	I	Mechanism	Reel FG (S Side) } 15/24Hz (Large reel diameter) (In SP FWD)
57	C_FG	I	Mechanism	Capstan FG SP: 674 Hz, LP: 337 Hz
58	D_FG	I	Mechanism	Drum FG 400 Hz: LP REC, 800 Hz: Other modes
59	D_PG	I	Mechanism	Drum PG } Other than LP REC: 800/24Hz
60	D_REF	I	CXD2601AQ	Drum Reference In LP REC: 400/24Hz

Pin No.	Pin Name	I/O	Connected to	Description
61	MST_CK	I	CXD2601AQ	Master clock (9.408MHz)
62	PB_DT	I	RF Amp	PB Data input to create ATF Sync
63	SWP	O	CXD2601AQ	Switching Pulse "L": Ach, "H": Bch
64	D_PWM	O	Mechanism	PWM Out for Drum
65	C_PWM	O	Mechanism	PWM Out for Capstan
66	PWM_R	O	Mechanism	PWM Out for Reel
67	TEN_PWM	O	Mechanism	PWM Out for Tension Regulator Plunger
68	AGC_PWM	O	RF Amp	PWM Out for AGC
69	SBSY	I	CXD2601AQ	↓ of subsync is detected (XINT2).
70	TEST	I	Pull-up	Test Mode (active "L")
71	POW_DN	I		Not in use
72	Vdd	—		Power terminal (+5 V)
73	Vss	—		Power terminal (GND)
74		—		Not in use
75	ATF_S2	O	CXD2601AQ	ATF Sampling Pulse
76-80		—		Not in use

* 1 Reel motor control

	CCW (counterclockwise)	CW (clockwise)
STOP (only in POWER ON)	L	L
FWD	L	H
RVS	H	L
Prohibit	H	H

*2 Loading motor control

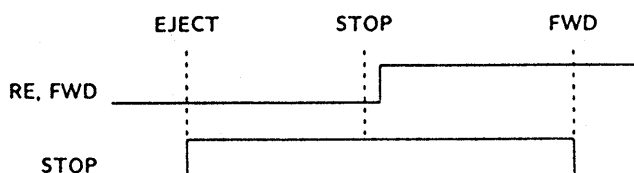
	LE	LL
—	L	L
LOAD	L	H
EJECT	H	L
Brake	H	H

*3 Casecon motor control

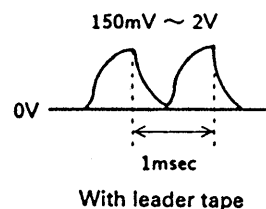
	OUT	IN
—	L	L
IN	L	H
OUT	H	L
Brake	H	H

*4 Encoder

RF-FWD	RE_STOP	Position
L	L	EJECT
L	H	STOP UNLD-STOP
H	L	FWD
H	H	STOP-FWD



*5 End sensor



IC312 Main Microcomputer (CXP80524-091Q)

This Microcomputer generally controls the operation of the equipment while exchanging data with the display microcomputer (IC701) and mechanism/servo microcomputer (IC311) in serial communications, including the DAT signal processor (IC307), digital filter (IC363) and other IC.

Micom: Microcomputer

Pin No.	Pin Name	I/O	Connected to	Description
1	VCO EN	O	VCO Circuit	VCO enable out
2	$\overline{\text{L_MUTE}}$	O	Line Out	Line Mute (Active "L")
3		O		Not in use
4		O		Not in use
5	$\overline{\text{WRT}}$	O	Clock IC	Write request (Active "L")
6	RD	O	Clock IC	Read request (Active "L")
7-10	ADRS_3-0	O	Clock IC	Address 3-0 (Address BUS)
11-14	DATA_7-4	I/O		DATA 7-4 (DATA BUS). Not in use with the equipment
15-18	DATA_3-0	I/O	Clock IC	DATA 3-0 (DATA BUS)
19	$\overline{\text{ATT_EXT}}$	O	CXD1136Q	Fade attenuator ck externally selected (Active "L")
20	$\overline{\text{DIG/ANA}}$	O	CXD1136Q	Fade In/Out switching for DIG ("L")/ANA ("H")
21	$\overline{\text{REC/PB}}$	O	CXD1136Q	Fade In/Out REC switching for ("L")/PB ("H")
22	ATT_CK	O	CXD1136Q	Clock for fade In/Out
23	$\overline{\text{DTR}}$	O	CXD2601AQ	Audio use ("H")/Data Recorder use ("L"). Becomes "L" in after-recording and searching.
24	$\overline{\text{OPT/COA}}$	O	Digital I/O	Switching for Optical ("L")/Coaxial ("H")
25	FS32	O		Not in use
26	$\overline{\text{RAM_SEL}}$	O		Not in use
27	$\overline{\text{DISP_REQ}}$	O	Display Micom	Request for communication with the Display Micom ("L" Active)
28	$\overline{\text{SD_SEL}}$	O	CXD2601AQ	Request for communication with CXD2601 ("L" Active)
29	$\overline{\text{SRV_REQ}}$	O	Mechanism Micom	Request for communication with the Mechanism Micom ("L" Active)
30	$\overline{\text{CLOCK_SEL}}$	O	Clock IC	Clock IC chip selected
31	MP	I		Microprocessor mode selected (fixed at "L" with the equipment)
32	$\overline{\text{RST}}$	I		System Reset ("L" Active)
33	Vss	—		Power terminal (GND)
34	XTAL	O		System Clock Output (Not in use)
35	EXTAL	I	CXD2601AQ	System Clock Input (9.048 MHz)
36	$\overline{\text{DISP_ACK}}$	I	Display Micom	ACKnowledge (Active "L")
37	DISP_DT_I	I	Display Micom	Serial Input
38	DISP_DT_O	O	Display Micom	Serial Output
39	DISP_CK	I	Display Micom	Serial clock
40	$\overline{\text{SBSY}}$	I	CXD2601AQ	Subcode sync
41	SR_DT_IN	I	} CXD2601AQ & Mechanism Micom	Serial Data In
42	SR_DT_OUT	O		Serial Data Out
43	$\overline{\text{SR_CK}}$	I/O		Serial clock (In/Out) to Sub Code Interface
44	AVss	—		GND for A/D
45	AVref	—		Reference Voltage for A/D (+5 V)
46	AVdd	—		Power Supply for A/D (+5 V)
47		I		Not in use
48		I		Not in use
49	$\overline{\text{BUSY}}$	I	Mechanism Micom	Mechanism servo Micom Busy (Active "L")
50	AU_BUS_IN	I	Pull-up	Not in use

Pin No.	Pin Name	I/O	Connected to	Description
51	TM_IN	I	+5V	Not in use
52	MUT_MON	I	CXD2601AQ	Mute monitor (Active "H")
53	LVL_SYNC	I	Audio Block	Start ID is written by entering Level Sync Input audio.
54		I	+5V	Not in use
55	TRQ_TEST	I	Pull-up	Not in use
56	NO_CAS_TEST	I	Pull-up	Not in use
57	TIME_24/12	I	Pull-up	Time indication "H": 12 hours (AM, PM) "L": 24 hours display
58	DATE_ORDER	I	Pull-up	Order of DATA display "H": Year, month and day "L": Month, day and year
59-62	AF_3-0	I	Pull-up	Not in use
63		O	Pull-up	Not in use
64	L_MUTE	O		Line Mute (Active "L"). Not in use with the equipment (Not in use)
65	TR_MUTE	O	Line Out	Transistor Mute (Active "L")
66	MUTE_1136	O	CXD1136Q	Mute for CXD1136Q (Active "H")
67	MUTE_2601	O	CXD2601AQ	Mute for CXD2601 (Active "H")
68	A_D_PWR_DWN	O	IC333	A/D Converter Power Down Mode (Active "H"). The AD converter is turned OFF upon digital input/output.
69	ER_MON	I	CXD2601AQ	Error Monitor (Data Valid)
70	TEST	I	Pull-up	Test Mode (Active "L")
71	POW_DN	I	+5 V	Not in use
72	Vdd	—		Power terminal (+5V)
73	Vss	—		Power terminal (GND)
74		—	Pull-up	Not in use
75	D_F_ATT	O	CXD2567M	Communication line (Serial Data) with Digital Filter
76	D_F_SHIFT	O	CXC2567M	Communication line with Digital Filter (Shift Clock; shifted by ↓ and taken in by ↑)
77	D_F_LATCH	O	CXD2567M	Communication line (Latch Pulse) with Digital Filter
78	AD_DF_LATCH	O	CXD8482Q	Communication line (latch pulse) with Decimation Filter
79	SBM	O	CXD8482Q	SBM ON "H" SBM OFF "L"
80	DA_INIT	O	CXD2567M CXD2562Q (1 BIT DAC)	Initialize output to Digital Filter and 1 Bit DAC

IC330 Real Time Clock (RF5C62)

The Clock is an IC for clock and calendar and backed up by a lithium battery when the power supply to the set is OFF.

Pin No.	Pin Name	I/O	Description
1	$\overline{CS}$	I	Chip select input. Active "L"
2	CE	I	Chip enable input. Active "H"
3	TMOUT	O	Interval output (Not in use)
4-7	A0-3	I	4 bit address input
8	$\overline{RD}$	I	Read-out control input
9	Vss	—	Power terminal (GND)
10	$\overline{WR}$	I	Write-in control input
11-14	D0-3	I/O	4 bit data input/output
15	INTR	O	Interrupt output. A 2048Hz signal is output here with the equipment.
16	OSCIN	I	Clock input (32.768kHz)
17	OSCOUT	O	Clock output
18	VDD	—	Power terminal (+5 V)

IC359 A/D CONVERTER (CXD8493P)

Pin No.	Pin Name	I/O	Description
1	AGND	—	Analog GND
2	PD	I	Power down (“H”: ON, “L”: OFF)
3	AIL+	I	Lch analog (+) input
4	AIL–	I	Lch analog (–) input
5	SEL	I	Input select (“H”: AGND, “L”: Normaly)
6	DGND	—	Digital GND
7	VD+	—	Digital power supply (+5V)
8	AL	O	Lch modulator output
9	NC	—	Not in use
10	NC	—	Not in use
11	NC	—	Not in use
12	NC	—	Not in use
13	NC	—	Not in use
14	NC	—	Not in use
15	NC	—	Not in use
16	NC	—	Not in use
17	NC	—	Not in use
18	NC	—	Not in use
19	NC	—	Not in use
20	NC	—	Not in use
21	AR	O	Rch modulator output
22	FCLK	I	Master clock input (128fs)
23	VA+	—	Analog (+) power supply (+5V)
24	VA–	—	Analog (–) power supply (–5V)
25	AIR–	I	Rch Analog (–) input
26	AIR+	I	Rch Analog (+) input
27	REF–	O	Standard voltage (–) output (–3.68V)
28	REF+	O	Standard voltage (+) output (+3.68V)

IC370 (CXD8482Q) DECIMATION FILTER

Pin No.	Pin Name	I/O	Description								
1	TEST	I	Test pin (normally “L”)								
2	NC	—	Not in use								
3	STNC	—	Not in use								
4	INIT	I	Power down mode input (Active “H”)								
5	NC	—	Not in use								
6	CFLG	—	Not in use								
7	VDD	—	Power supply (+5V)								
8	VDD	—	Power supply (+5V)								
9	LRCKI	—	Not in use								
10	BKI	—	Not in use								
11	NV	—	Not in use								
12	DLI	—	Not in use								
13	DRI	—	Not in use								
14	IFLG	—	Not in use								
15	NC	—	Not in use								
16	NC	—	Not in use								
17	FE	—	Not in use								
18	AL2	—	Not in use								
19	AR2	—	Not in use								
20	AL1	I	Lch DATA input (when 64fs)								
21	AR1	I	Rch DATA input (when 64fs)								
22	VSS	—	GND								
23	VSS	—	GND								
24	CVSS	—	GND								
25	CVSS	—	GND								
26	FCLK	O	Clock output for FE (128fs)								
27	MCLK	I	Master clock input (256fs)								
28	CVDD	—	Power supply (+5V)								
29	NC	—	Not in use								
30	1BIT	—	Not in use								
31	NC	—	Not in use								
32	VSS	—	Power supply (0V)								
33	SCALE	I	Scaling quantity select (when 64fs) (“H”:×2.0, “L”:×2.5)								
34	ISEL1	I	Input select <table><tr><td>“H” 8fs</td><td>“H” 2fs</td><td>“L” fs</td><td>“L” 64fs</td></tr><tr><td>“H”</td><td>“L”</td><td>“H”</td><td>“L”</td></tr></table>	“H” 8fs	“H” 2fs	“L” fs	“L” 64fs	“H”	“L”	“H”	“L”
“H” 8fs	“H” 2fs	“L” fs		“L” 64fs							
“H”	“L”	“H”	“L”								
35	ISEL2	I									
36	NC	—	Not in use								
37	DITH	I	Dither (“H”: ON, “L”: OFF)								
38	BOOST	I	Boost (“H”: ON, “L”: OFF)								
39	VDD	—	Power supply (+5V)								
40	MODE	I	MODE data input								

Pin No.	Pin Name	I/O	Description
41	SHIFT	I	SHIFT clock input
42	LATCH	I	LATCH clock input
43	NC	—	Not in use
44	LC	I	Low cut (“H”: ON, “L”: OFF)
45	SBM	I	Super bit mapping (“H”: ON, “L”: OFF)
46	NC	—	Not in use
47	OSEL	I	Output select (“H”: 2fs, “L”: fs)
48	OBIT	I	24bit/16bit select (“H”: 24bit, “L”: 16bit)
49	DRO	O	Rch data output (Not in use)
50	DLO	O	Lch data output
51	NC	—	Not in use
52	VSS	—	GND
53	VSS	—	GND
54	BCK	I/O	SYNC “H”: BCK output, SYNC “L”: BCK input
55	NC	—	Not in use
56	LRCK	I/O	SYNC “H”: LRCK output, SYNC “L”: LRCK input
57	OFLG	—	Not in use
58	VDD	—	Power supply (+5V)
59	OVR	—	Not in use
60	OVL	—	Not in use

IC701 Display Microcomputer (CXP5058H-661Q)

The Microcomputer controls key input, FL tube display, remote control signal input, level meter (IC702) and EEP-ROM (IC703) according to instructions from the Main Microcomputer (IC312).

Micom: Microcomputer

Pin No.	Pin Name	I/O	Connected to	Description
1-18	e_-v_SEG	O	FL tube FL701	FL Segment 'e'-'v'
19-28	10_-1_G	O	FL tube FL701	FL Grid #10-#1
29	DSP_REQ	I	MAIN Micom	Communication request (Active "L")
30	XTAL	—	Ceramic oscillator	
31	EXTAL	I	Ceramic oscillator	4.19MHz ceramic oscillator
32	RST	I		System Reset (Active "L")
33	NC	—		Not in use
34	Vdd	I		Power terminal (+5 V)
35-42	AD_0-7	I	Panel switch	Key input A/D converter input #0 - #7
43	NC	—		Not in use
44	DISP_CK	O	MAIN Micom	Shift clock
45	SO	O	MAIN Micom	Serial data OUT
46	SI	I	MAIN Micom	Serial data IN
47	DSP_ACK	O	MAIN Micom	Acknowledge (Active "L")
48	44.1kHz REC	I	S705	S44.1kHz REC (Active "L")
49	COUNTER MODE	I	S704	MODE (counter) switch (Active "L")
50	REC MODE	I	S705	REC MODE "H": Standard, "L": Long
51-54	LVL_DT_0-3	I/O	Level Meter IC	Level Meter Data 0-3
55, 56	LVL_ADRS_0, 1	O	Level Meter IC	Level Meter Data 0, 1
57	LVL_RD	O	Level Meter IC	Level Meter Read Mode (Active "L")
58	LVL_WR	O	Level Meter IC	Level Meter Write Mode (Active "L")
59	LVL_SEL	O	Level Meter IC	Level Meter IC Select (Active "L")
60	SBM_LED	O	Q791 Base	
61	RMC MON	I	Remote sensor	Remot control signal input
62	RMC	I	Remote sensor	Remot control signal input
63	TFST	I	Pull-up	Test mode (Active "L")
64	TR_MUTE	I	IC431	Level meter mute (Active "L")
65	BUSY	I	EEPROM	BUSY signal (Active "L")
66	ROM_DT_IN	I	EEPROM	Data input
67	ROM_DT_OUT	O	EEPROM	Data output
68	SHFT CK	O	EEPROM	Shift clock
69	CE	O	EEPROM	Chip enable
70	DTC/XPCM	I	Pull-up	Equipment model discrimination input. Fixed at "L" : US, Canadian model Fixed at "H" : Except US, Canadian model
71	Vss	I		Power terminal (GND)
72	TX	—	Open	Not in use
73	NC	—	Open	Not in use
74	TEX	—	+5 V	Not in use
75	Vref	I	+5 V	Analog board reference voltage
76	Vfdp	I	-25 V	FL display tube driving voltage
77-80	a_-d_SEG	O	FL tube	FL Segment 'a'-'d'

IC702 DIGITAL PEAK LEVEL METER (MSM6338RS)

Pin No.	Pin Name	I/O	Description
1	DATA	I	fs serial data input (complement of 2)
2	BCK	I	fs serial data input clock (Bit clock)
3	LRCK	I	L, R channel discrimination signal for fs input ("H": Rch, "L": Lch)
4	$\overline{\text{XRESET}}$	I	Reset input (Active: "L")
5	$\overline{\text{XWR}}$	I	Level meter write mode (Data writing at signal start)
6	$\overline{\text{XRD}}$	I	Level meter read mode (Active: "L")
7	$\overline{\text{XCE}}$	I	Chip select input (Active: "L")
8	VSS	—	GND
9	D0	I/O/Z	4bit data bus (3 state terminal)
10	NC	—	Not in use
11	D1	I/O/Z	4bit data bus (3 state terminal)
12	D2	I/O/Z	
13	D3	I/O/Z	
14	A0	I	Adress input (inside resister select)
15	A1	I	
16	VDD	—	Power supply (+5V)

SECTION 5 EXPLODED VIEWS

NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.

- Color Indication of Appearance Parts

Example:

KNOB, BALANCE (WHITE)...(RED)

Parts color

Cabinet's color

- 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.

- Abbreviations

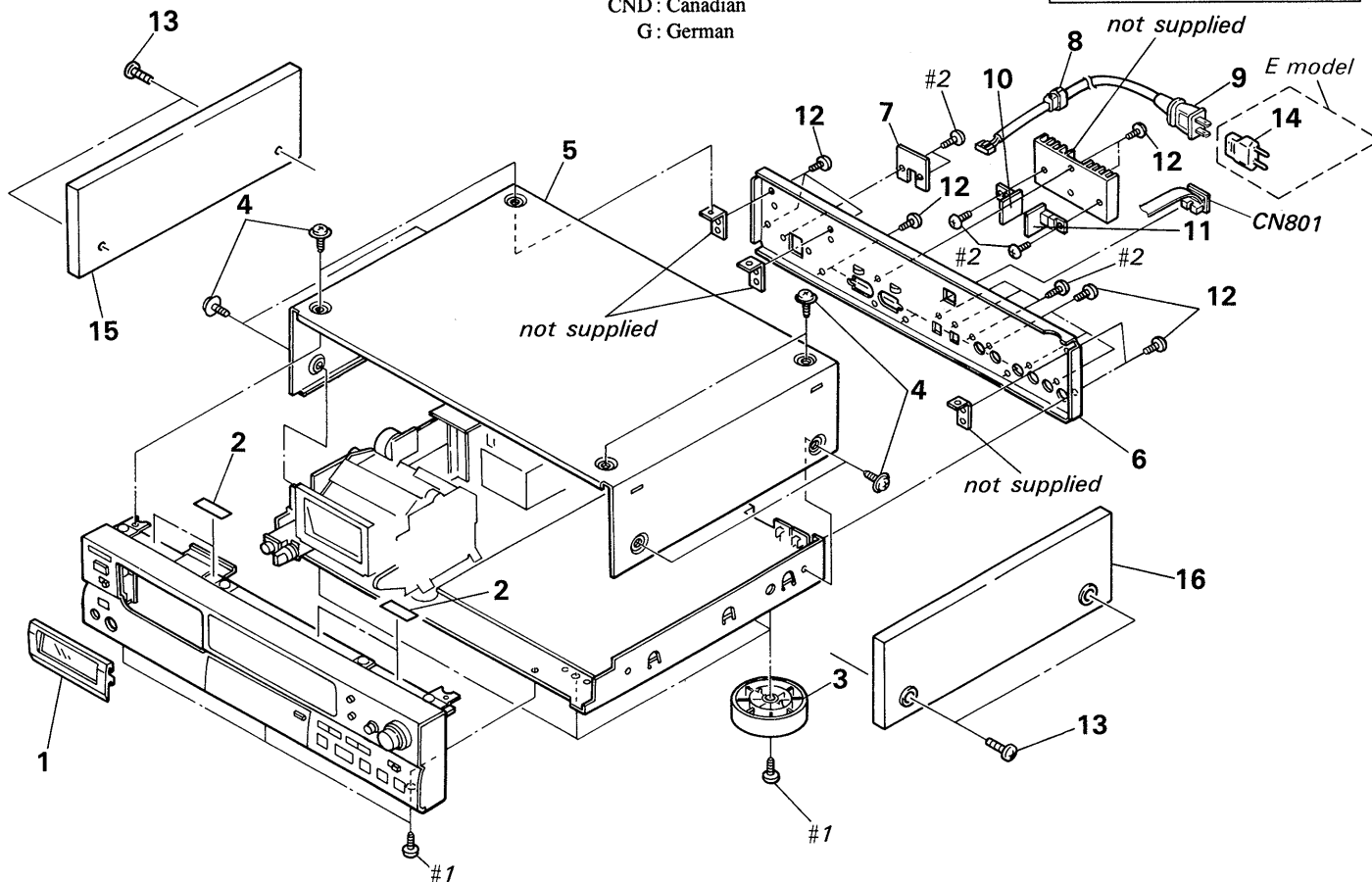
CND: Canadian

G: German

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.

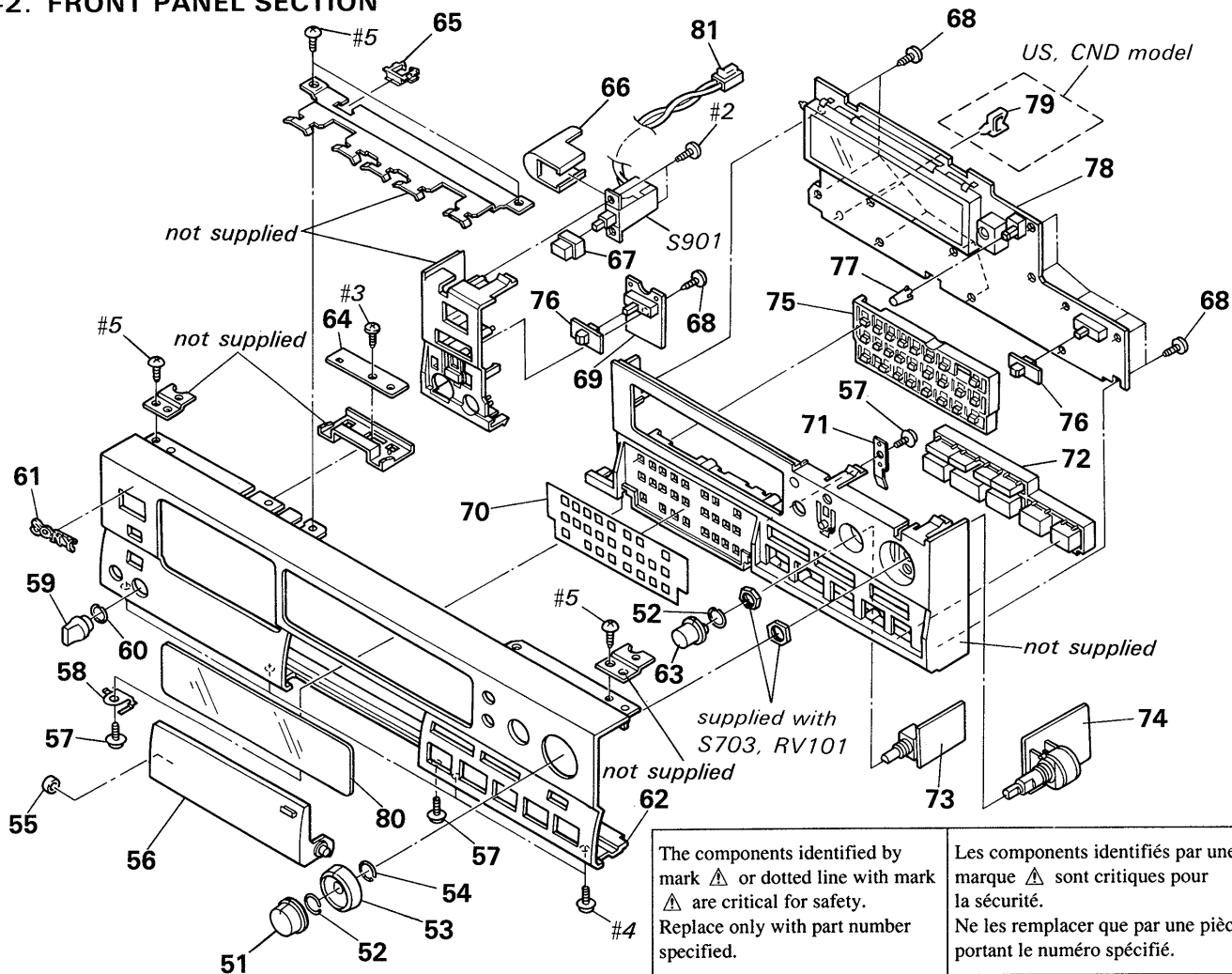
5-1. CABINET SECTION



Ref. No.	Part No.	Description	Remark
1	X-3365-595-1	PANEL (CASSETTE) ASSY (AEP, G:GOLD)	
1	X-3365-599-1	PANEL (CASSETTE) ASSY (US, CND, UK, E/AEP, G:BLACK)	
2	3-831-441-XX	CUSHION, SPEAKER	
3	4-956-885-11	FOOT (F58175S2W) (US, CND, UK, E/AEP, G:BLACK)	
3	4-956-885-21	FOOT (F58175S2W) (AEP, G:GOLD)	
4	3-363-099-11	SCREW (CASE 3 TP2) (AEP, G:GOLD)	
4	3-704-366-01	SCREW (CASE) (M3X8) (US, CND, UK, E/AEP, G:BLACK)	
5	4-934-008-01	CASE (US, CND, UK, E, /AEP, G:BLACK)	
5	4-934-008-11	CASE (AEP, G:GOLD)	
* 6	3-911-255-01	PANEL, BACK (US, CND)	
* 6	3-911-255-11	PANEL, BACK (AEP, G:BLACK)	
* 6	3-911-255-21	PANEL, BACK (E)	
* 6	3-911-255-41	PANEL, BACK (AEP, G:GOLD)	
* 6	3-911-255-61	PANEL, BACK (UK)	
* 7	4-923-873-01	BRACKET, CORD STOPPER	
* 8	3-703-244-00	BUSHING (2104), CORD (AEP, UK, G)	
8	4-916-783-01	BUSHING, CORD (US, CND, E)	

Ref. No.	Part No.	Description	Remark
Δ 9	1-559-297-31	CORD, POWER (E)	
Δ 9	1-559-479-11	CORD, POWER (US, CND)	
Δ 9	1-575-912-11	CORD, POWER (AEP, G)	
Δ 9	1-696-585-21	CORD, POWER (UK)	
* 10	1-652-232-11	REG 6.6V BOARD	
* 11	1-652-231-11	REG 5V BOARD	
12	3-703-685-21	SCREW (+BV 3X8)	
13	4-933-446-01	SCREW (SIDE PANEL) (CND, AEP, E, UK, G)	
Δ 14	1-569-007-11	ADAPTER, CONVERSION 2P (E)	
15	X-3365-593-1	PANEL (L) ASSY, SIDE (AEP, G:GOLD)	
15	X-3365-634-1	PANEL (L) ASSY, SIDE (UK/AEP, G:BLACK)	
15	X-3365-636-1	PANEL (L) ASSY, SIDE (CND, E)	
16	X-3365-594-1	PANEL (R) ASSY, SIDE (AEP, G:GOLD)	
16	X-3365-635-1	PANEL (R) ASSY, SIDE (UK/AEP, G:BLACK)	
16	X-3365-637-1	PANEL (R) ASSY, SIDE (CND, E)	
CN801	1-558-350-21	CORD (WITH CONNECTOR) (CONTROL-S IN) (US, CND)	

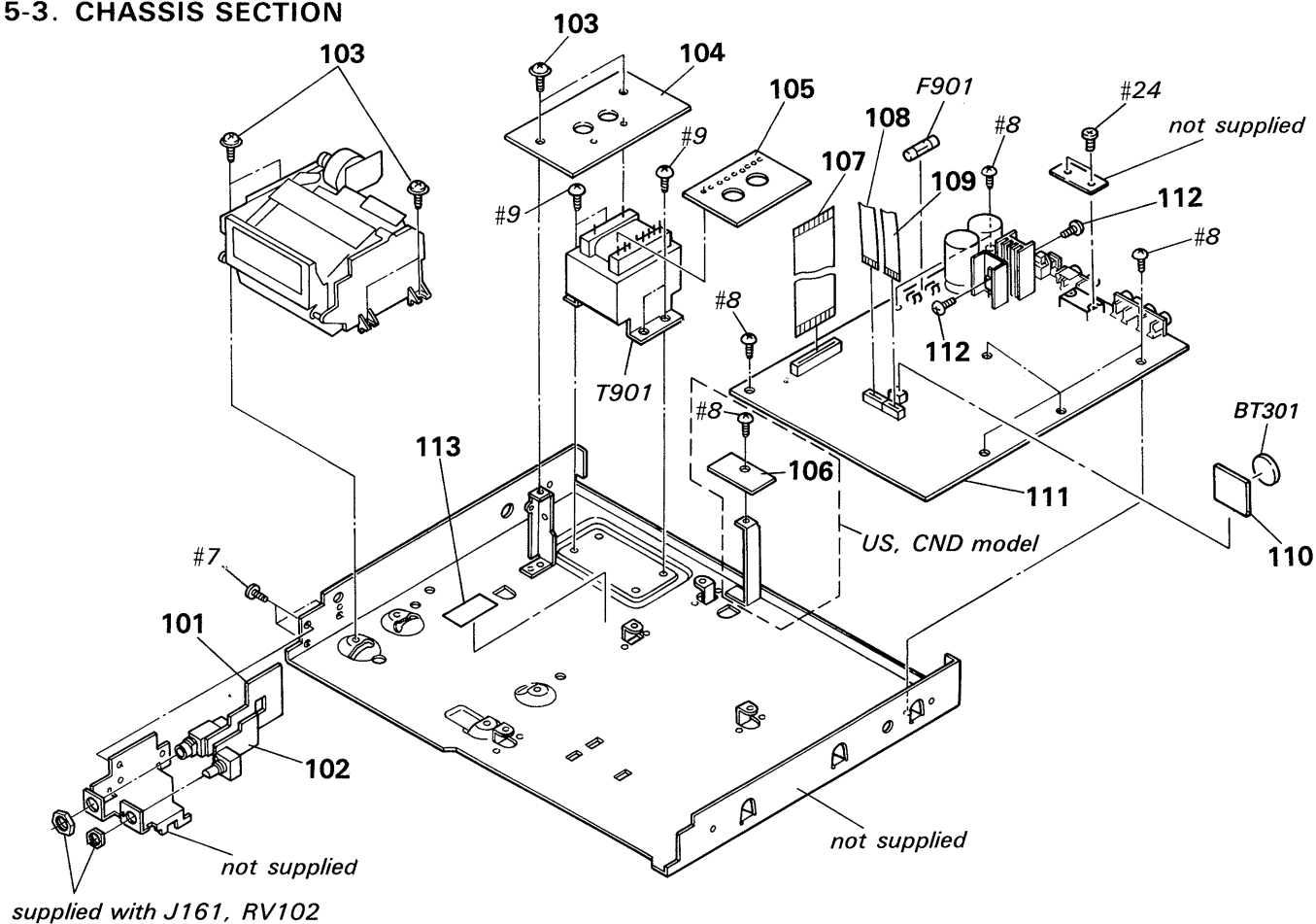
5-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	3-382-635-01	KNOB (REC-R)	(US, CND, UK, E/AEP, G:BLACK)
51	3-382-635-11	KNOB (REC-R)	(AEP, G:GOLD)
52	3-356-957-01	SPRING	
53	3-382-634-01	KNOB (REC-L)	(US, CND, UK, E/AEP, G:BLACK)
53	3-382-634-11	KNOB (REC-L)	(AEP, G:GOLD)
54	3-382-627-01	SPRING, RING	
55	3-384-566-01	SPRING, RING	
56	A-2004-110-A	LID ASSY	(US, CND, UK, E/AEP, G:BLACK)
56	A-2004-144-A	LID ASSY	(AEP, G:GOLD)
57	3-319-501-01	SCREW (+ PTPWH)	(2. 6X6)
58	3-382-757-01	PLATE (GROUND)	
59	3-354-931-01	KNOB (DIA. 10)	(US, CND, UK, E/AEP, G:BLACK)
59	3-354-931-31	KNOB (DIA. 10)	(AEP, G:GOLD)
60	3-354-981-01	SPRING (SUS), RING	(US, CND, UK, E/AEP, G:BLACK)
60	3-356-935-01	SPRING	(AEP, G:GOLD)
61	4-942-568-01	EMBLEM (NO. 5), SONY	(US, CND, UK, E/AEP, G:BLACK)
61	4-942-568-11	EMBLEM (NO. 5), SONY	(AEP, G:GOLD)
62	3-382-649-31	PANEL (FRONT)	(US, CND)
62	3-382-649-41	PANEL (FRONT)	(UK, E/AEP, G:BLACK)
62	3-382-649-51	PANEL (FRONT)	(AEP, G:GOLD)
63	3-364-173-11	KNOB (BAL)	(US, CND, UK, E/AEP, G:BLACK)
63	3-364-173-21	KNOB (BAL)	(AEP, G:GOLD)
* 64	1-645-241-11	LED BOARD	
65	3-383-699-01	CLAMP (EDGE)	
66	3-575-524-00	COVER, POWER SWITCH	

Ref. No.	Part No.	Description	Remark
67	4-917-460-01	KNOB, POWER (US, CND, UK, E/AEP, G:BLACK)	
67	4-917-460-51	KNOB, POWER (AEP, G:GOLD)	
68	4-951-620-01	SCREW (2. 6X8), +BVTP	
* 69	1-645-243-11	TIMER SW BOARD	
70	3-382-639-02	SHEET (US, CND, UK, E/AEP, G:BLACK)	
70	3-382-639-12	SHEET (AEP, G:GOLD)	
71	3-382-623-01	SPRING, LEAF	
72	3-382-644-01	BUTTON (MAIN) (US, CND, UK, E/AEP, G:BLACK)	
72	3-382-644-11	BUTTON (MAIN) (AEP, G:GOLD)	
* 73	1-645-240-11	INPUT SW BOARD	
* 74	1-645-239-11	REC VOL BOARD	
75	3-382-628-01	BUTTON (SUB) (US, CND, UK, E/AEP, G:BLACK)	
75	3-382-628-11	BUTTON (SUB) (AEP, G:GOLD)	
76	3-382-651-01	KNOB (US, CND, UK, E/AEP, G:BLACK)	
76	3-382-651-11	KNOB (AEP, G:GOLD)	
77	3-911-253-01	BUTTON (DIA. 5) (US, CND, UK, E/AEP, G:BLACK)	
77	3-911-253-11	KNOB (DIA. 5) (AEP, G:GOLD)	
* 78	A-2007-199-A	DISPLAY BOARD, COMPLETE (US, CND)	
* 78	A-2007-227-A	DISPLAY BOARD, COMPLETE (AEP, UK, E, G)	
* 79	3-742-419-01	CLAMP, HARNESS (US, CND)	
80	3-911-254-01	WINDOW (FL TUBE)	
81	1-590-321-71	LEAD (WITH CONNECTOR) (E)	
△S901	1-554-920-21	SWITCH, PUSH (AC POWER) (1 KEY) (E)	
△S901	1-572-267-51	SWITCH, PUSH (AC POWER) (1 KEY)	
		(US, CND, AEP, UK, G)	

5-3. CHASSIS SECTION



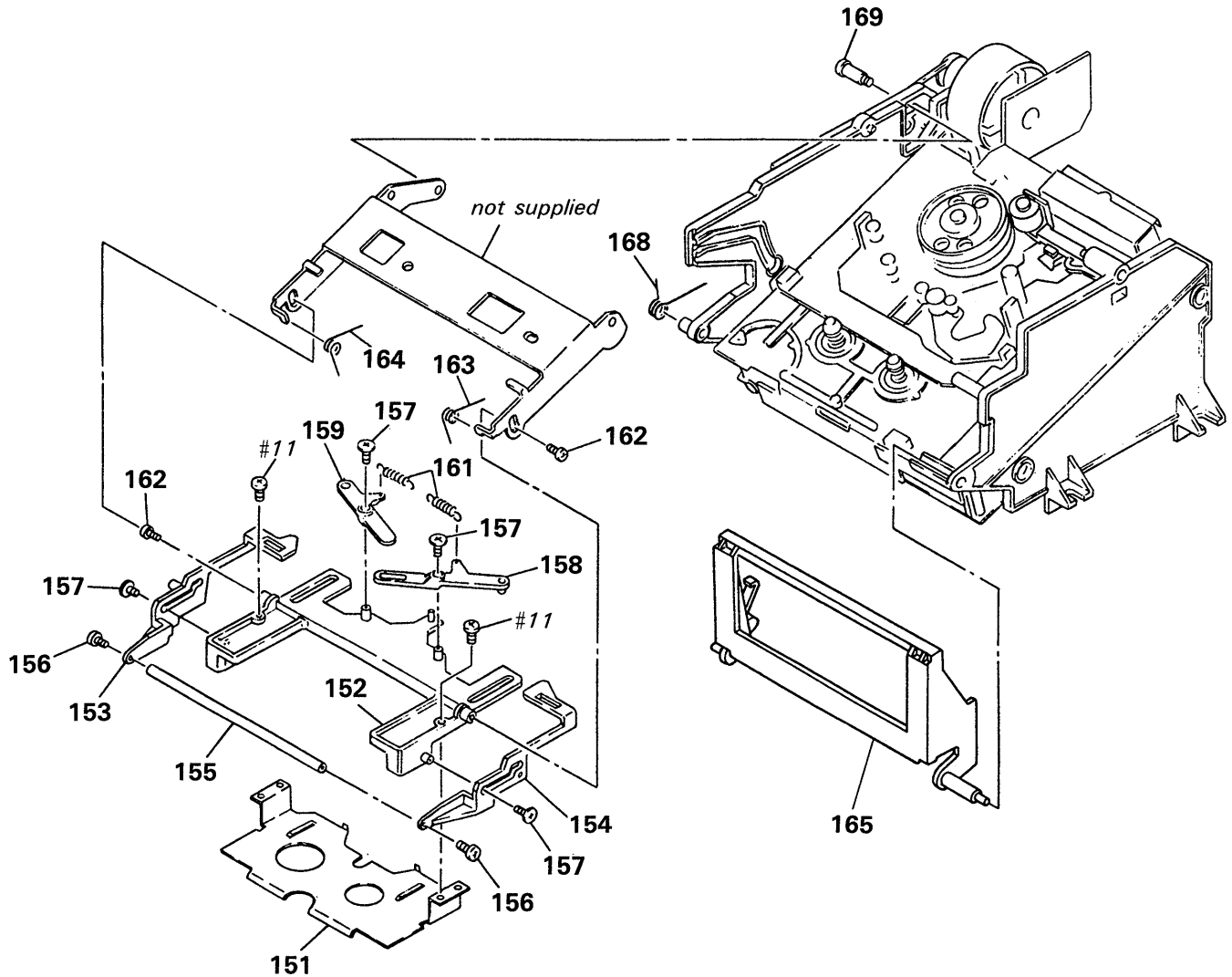
The components identified by mark $\triangle$ or dotted line with mark $\triangle$ are critical for safety. Replace only with part number specified.

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

Ref. No.	Part No.	Description	Remark
* 101	1-645-244-11	HEADPHONE JACK BOARD	
* 102	1-645-245-11	HEADPHONE VOL BOARD	
103	4-886-821-11	SCREW, S TIGHT, +PTWH 3X6	
* 104	1-652-228-11	PRIMARY BOARD (US, CND, AEP, UK, G)	
* 104	1-645-234-11	PRIMARY BOARD (E)	
* 105	1-652-229-11	RELAY BOARD	
* 106	1-652-230-11	CONTROL (S) BOARD (US, CND)	
107	1-590-915-11	WIRE, FLAT TYPE (30 CORE)	
108	1-765-457-11	WIRE (FLAT TYPE) (10 CORE)	
109	1-765-456-11	WIRE (FLAT TYPE) (6 CORE)	
* 110	1-645-242-11	BATTERY BOARD	

Ref. No.	Part No.	Description	Remark
* 111	A-2007-201-A	MAIN BOARD, COMPLETE (US, CND, E)	
* 111	A-2007-229-A	MAIN BOARD, COMPLETE (AEP, UK, G)	
112	2-259-121-01	SCREW, TR	
113	3-703-044-26	LABEL, CAUTION (US, CND)	
$\triangle$ BT301	1-528-229-11	BATTERY, LITHIUM (CR-2450)	
$\triangle$ F901	1-532-286-00	FUSE (AEP, UK, E, G)	
$\triangle$ F901	1-576-105-11	FUSE (US, CND)	
$\triangle$ T901	1-450-556-21	TRANSFORMER, POWER (US, CND)	
$\triangle$ T901	1-450-557-21	TRANSFORMER, POWER (AEP, UK, G)	
$\triangle$ T901	1-450-558-21	TRANSFORMER, POWER (E)	

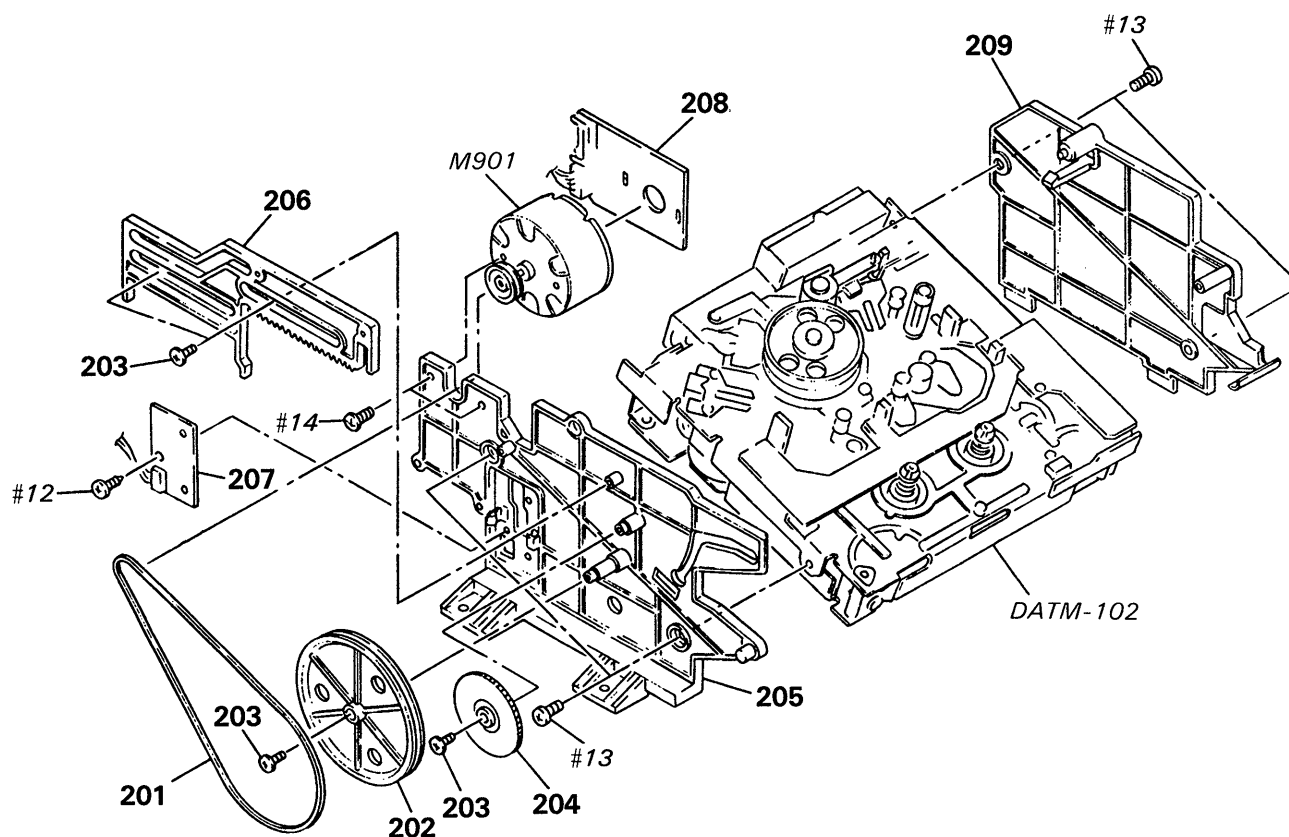
5-4. MECHANISM SECTION 1



Ref. No.	Part No.	Description	Remark
151	3-373-224-01	HOLDER (LOWER)	
152	3-373-237-03	HOLDER (UPPER), CASSETTE	
153	3-373-223-01	SLIDER (L)	
154	3-373-222-01	SLIDER (R)	
* 155	3-373-217-01	SHAFT (JOINT)	
156	3-345-648-61	SCREW (M1.4X3.0), TOOTHED LOCK	
157	3-318-201-11	SCREW (B) (1.4X3), TAPPING	
158	3-373-218-01	LEVER (R)	

Ref. No.	Part No.	Description	Remark
159	3-373-219-01	LEVER (L)	
161	3-632-859-00	SPRING, BRAKE LEVER RETURN	
162	3-318-203-61	SCREW (B1.7X4), TAPPING	
163	3-373-215-01	SPRING (R), TORSION	
164	3-373-216-01	SPRING (L), TORSION	
165	3-382-648-02	HOLDER (WINDOW)	
168	3-373-212-01	SPRING (CASSETTE)	
169	4-931-471-01	SCREW (STEP)	

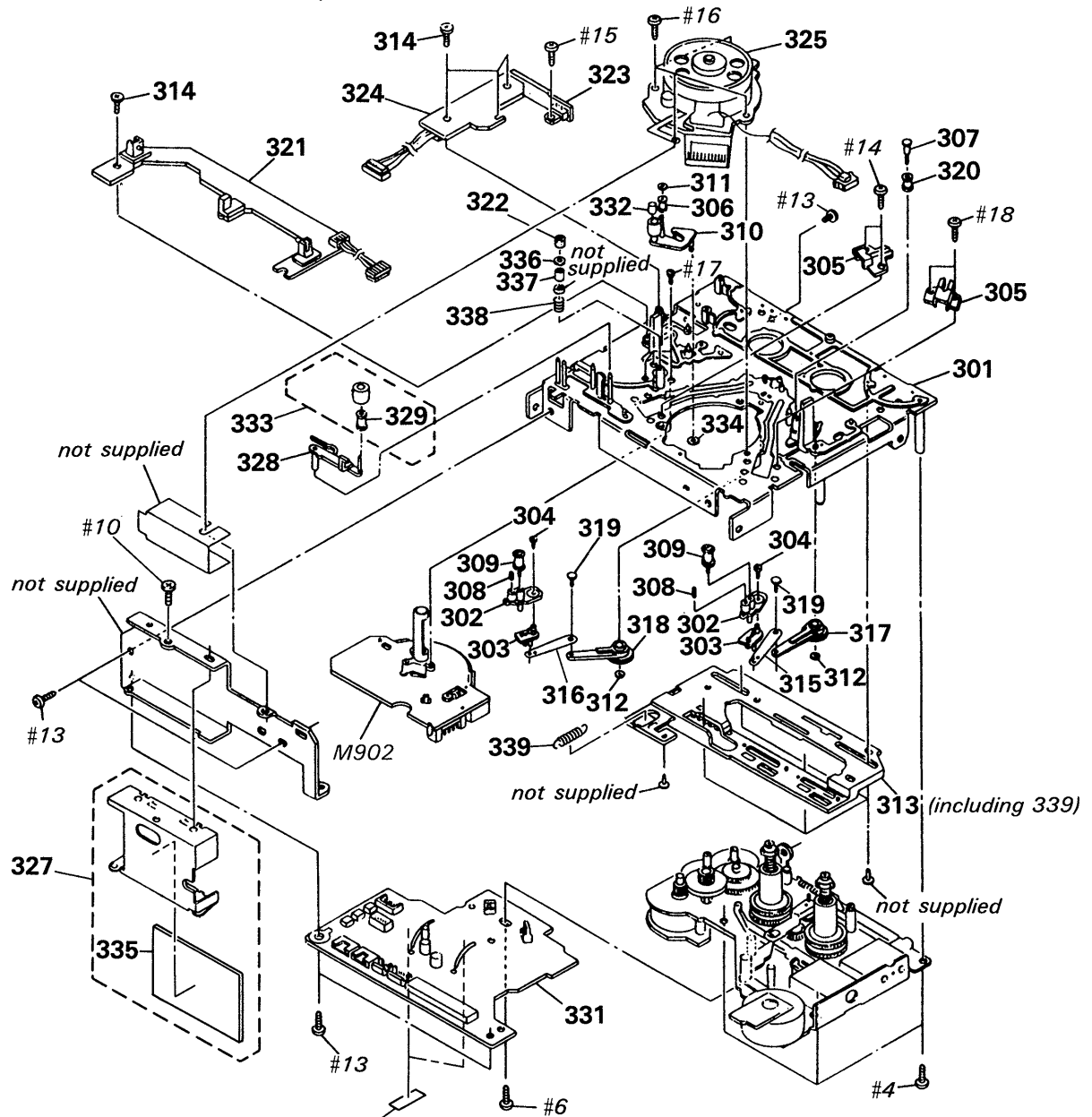
5-5. MECHANISM SECTION 2



Ref. No.	Part No.	Description	Remark
201	4-931-470-01	BELT (DRIVING)	
202	3-373-214-01	PULLEY	
203	2-623-756-01	SCREW, (B1. 7X3), TAPPING	
204	3-373-213-01	GEAR, DRIVING	
205	3-373-234-08	CHASSIS (L)	

Ref. No.	Part No.	Description	Remark
206	3-373-221-01	SLIDER (RACK)	
* 207	1-641-487-11	SW BOARD	
* 208	1-641-486-11	MOTOR BOARD	
* 209	3-373-235-01	CHASSIS (R)	
M901	A-2003-910-A	MOTOR ASSY, CASSETTE (CASSETTE COMPARTMENT)	

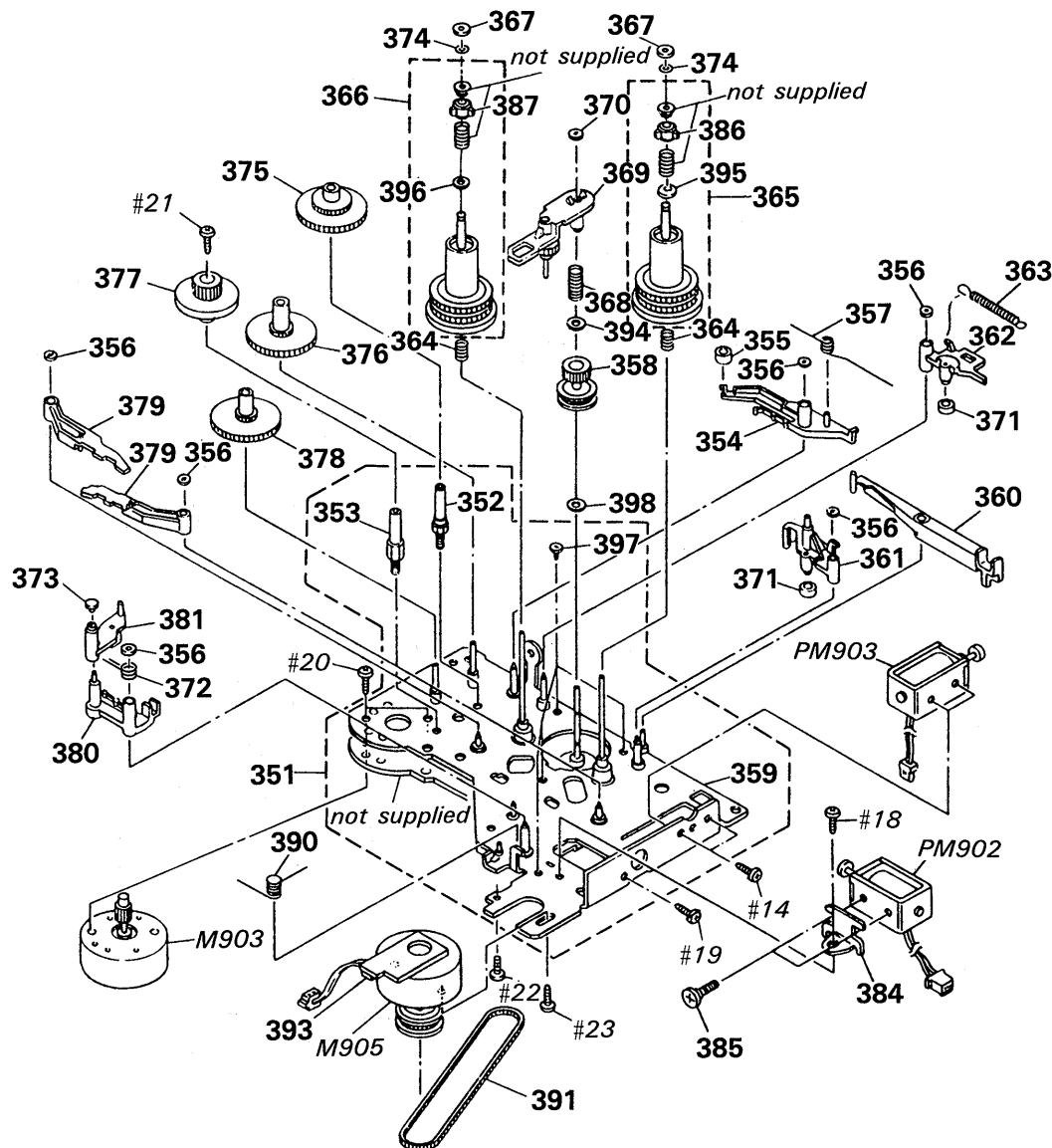
5-6. MECHANISM SECTION 3 (DATM-102)



Ref. No.	Part No.	Description	326	Remark
* 301	X-3366-740-1	CHASSIS ASSY, MECHANICAL		
* 302	3-368-390-01	BASE (#1 GUIDE)		
303	3-368-409-01	JOINT (#1 GUIDE)		
304	3-368-413-01	SCREW (1.4), +P TAPPING (B)		
* 305	3-368-442-01	CATCHER		
306	3-384-243-01	GUIDE (T3), ROLLER		
307	3-368-428-01	SHAFT (ROLLER GUIDE)		
308	3-368-436-02	SPRING (#1 GUIDE), COMPRESSION		
309	X-3337-643-1	GUIDE (RIC) ASSY, ROLLER		
310	X-3363-025-1	PINCH LEVER ASSY		
311	3-315-384-01	WASHER, STOPPER		
312	3-368-398-01	BUSHING		
* 313	A-2003-708-A	SLIDER ASSY, CAM		
314	3-372-761-01	SCREW (M1.7X4), TAPPING		
315	3-368-427-01	LEVER (LOAD-T)		
316	3-368-426-01	LEVER (LOAD-S)		
317	3-368-444-01	GEAR (LOAD-T)		
318	3-368-443-01	GEAR (LOAD-S)		
319	3-368-415-01	SHAFT (LOAD LEVER JOINT)		
320	3-368-399-01	GUIDE, ROLLER		

Ref. No.	Part No.	Description	Remark
* 321	1-639-305-11	TOP END SENSOR BOARD	
322	3-337-605-01	NUT, ADJUSTMENT	
* 323	1-639-301-11	RGN SW BOARD	
* 324	1-639-306-11	CAM SLIDER BOARD	
325	8-848-567-11	DRUM ASSY DOU-03A	
326	3-831-441-XX	CUSHION, SPEAKER	
* 327	A-2001-587-A	RF COMPLETE ASSY	
328	3-368-459-01	LEVER (CLEANER)	
329	3-353-812-01	COLLAR (ROLLER)	
* 331	A-2056-488-A	DRUM DRIVE BOARD, COMPLETE	
332	3-337-626-01	CAP, PINCH ROLLER	
333	X-3337-655-1	ROLLER (CLEANER) ASSY	
334	3-321-813-01	WASHER, COTTER POLYETHYLENE	
* 335	A-2006-455-A	RF AMP BOARD, COMPLETE	
336	3-337-677-01	FLANGE	
337	3-337-676-01	GUIDE, FIXED	
338	3-389-294-01	SPRING (T2 300G), COMPRESSION	
339	3-389-295-01	SPRING TENSION	
M902	8-835-361-01	MOTOR, DC U-17B (CAPSTAN)	

5-7. MECHANISM SECTION 4 (DATM-102)



Ref. No.	Part No.	Description	Remark
* 351	A-2003-857-A	CHASSIS (REEL) ASSY	
* 352	3-368-420-04	SHAFT (CAM DRIVE GEAR C)	
* 353	3-368-419-04	SHAFT (CAM DRIVE GEAR D)	
* 354	3-368-455-01	LEVER (GEAR LOCK)	
355	3-368-418-01	TUBE (BREAK)	
356	3-368-398-01	BUSHING	
357	3-368-430-01	SPRING (GEAR LOCK)	
358	X-3363-022-1	GEAR (REEL DRIVE) ASSY	
* 359	X-3366-312-1	CHASSIS ASSY, REEL	
* 360	3-368-453-01	LEVER (BRAKE SOLENOID)	
* 361	3-368-447-01	LEVER (BRAKE S)	
* 362	3-368-446-01	LEVER (BRAKE T)	
363	3-368-438-01	SPRING (BREAK), TENSION	
364	3-905-586-02	SPRING (FF/REW), COMPRESSION	
365	A-2003-709-A	TABLE (S) ASSY, REEL	
366	A-2003-710-D	TABLE (T) ASSY, REEL	
367	3-578-224-00	WASHER	
368	3-368-435-01	SPRING (FR LEVER), COMPRESSION	
369	X-3364-581-3	LEVER (F/R) ASSY	
370	3-315-384-31	WASHER, STOPPER	
371	3-377-332-01	TUBE (BREAK2)	
372	3-383-478-01	SPRING (B.T LEVER RETURN)	
373	3-368-415-01	SHAFT (LOAD LEVER JOINT)	
374	3-315-384-01	WASHER, STOPPER	

Ref. No.	Part No.	Description	Remark
375	3-368-421-01	GEAR (CAM DRIVE C)	
376	3-373-039-01	GEAR (CAM DRIVE B)	
377	3-368-403-01	GEAR (CAM DRIVE D)	
378	3-368-402-01	GEAR (CAM DRIVE A, B)	
379	X-3363-024-1	LEVER (BT) ASSY	
* 380	3-368-451-01	LEVER (BT SOLENOID)	
* 381	3-368-454-01	LEVER (BT SELECTION)	
* 382	3-368-416-01	BRACKET (B.T SOLENOID)	
383	3-368-423-01	SCREW (M2.6), STEP	
384	2-623-736-01	CLAW (C) (LEFT), REEL	
385	2-623-752-01	CLAW (C) (RIGHT), REEL	
386	3-368-431-01	SPRING (B.T SOLENOID)	
387	3-368-417-01	BELT (170TN10-1.0T), TIMING	
388	1-639-304-11	REEL MOTOR BOARD	
389	3-368-422-11	POLY-SLIDER (DIA. 5.5-DIA. 1.5)	
390	3-701-443-11	WASHER	
391	3-701-443-21	WASHER, 5 DIA.	
392	2-623-756-01	SCREW, (B1.7X3), TAPPING	
393	3-701-436-01	WASHER, 1.6	
M903	X-3363-109-1	MOTOR (CAM) ASSY	
M905	X-3363-110-2	MOTOR (REEL) ASSY	
PM902	1-454-536-11	SOLENOID, PLUNGER (BACK TENSION)	
PM903	1-454-535-11	SOLENOID, PLUNGER (REEL MOTOR CONTROL (BRAKE))	

SECTION 6 ELECTRICAL PARTS LIST

BATTERY

CAM SLIDER

CONTROL (S)

DISPLAY

NOTE:

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

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

SEMICONDUCTORS

In each case, u : 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

Abbreviations

CND: Canadian

G: German

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

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
*	1-645-242-11	BATTERY BOARD *****	
		< BATTERY >	
Δ BT301	1-528-229-11	BATTERY, LITHIUM(CR-2450) < CONNECTOR >	
* CN398	1-569-499-11	PIN, CONNECTOR 3P *****	
*	1-639-306-11	CAM SLIDER BOARD *****	
		< JUMPER RESISTOR >	
JW04	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JW05	1-216-296-00	METAL GLAZE 0 5% 1/8W	
		< SWITCH >	
SW1	1-570-953-11	SWITCH, PUSH (1 KEY) (STOP DET)	
SW2	1-570-953-11	SWITCH, PUSH (1 KEY) (FWD DET)	

*	1-652-230-11	CONTROL (S) BOARD (US, CND) *****	
		< CAPACITOR >	
C801	1-164-159-11	CERAMIC 0.1uF 50V	
C802	1-164-159-11	CERAMIC 0.1uF 50V	
		< CONNECTOR >	
CN801	1-558-350-21	CORD (WITH CONNECTOR) (CONTROL-S IN)	
CN831	1-580-771-11	PIN, CONNECTOR (PC BOARD) 3P	
		< DIODE >	
D801	8-719-107-94	DIODE 1SS202-1	
D802	8-719-107-94	DIODE 1SS202-1	
		< RESISTOR >	
R801	1-249-393-11	CARBON 10 5% 1/4W	

Ref. No.	Part No.	Description	Remark
R802	1-249-429-11	CARBON 10K 5% 1/4W	
R803	1-249-429-11	CARBON 10K 5% 1/4W	
R804	1-247-807-31	CARBON 100 5% 1/4W	
R805	1-249-429-11	CARBON 10K 5% 1/4W	
R806	1-249-429-11	CARBON 10K 5% 1/4W *****	
*	A-2007-199-A	DISPLAY BOARD, COMPLETE (US, CND)	
*	A-2007-227-A	DISPLAY BOARD, COMPLETE (AEP, UK, G, E) *****	
*	4-922-523-01	HOLDER (RIGHT)	
*	4-922-524-01	HOLDER (LEFT)	
*	4-937-336-02	HOLDER, LED	
	9-911-839-XX	CUSHION	
		< CAPACITOR >	
C701	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C702	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C703	1-124-584-00	ELECT 100uF 20% 10V	
C704	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C705	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C706	1-161-379-00	CERAMIC 0.01uF 20% 25V	
		< CONNECTOR >	
CN732	1-691-992-11	PIN, CONNECTOR (PC BOARD) 3P (US, CND)	
CN751	1-568-853-11	SOCKET, CONNECTOR 10P	
CN752	1-568-849-11	SOCKET, CONNECTOR 6P	
* CN771	1-564-337-00	PIN, CONNECTOR 3P	
		< COMPOSITION CIRCUIT BLOCK >	
CP701	1-233-140-11	COMPOSITION CIRCUIT BLOCK (100KX8)	
CP702	1-233-140-11	COMPOSITION CIRCUIT BLOCK (100KX8)	
CP703	1-233-140-11	COMPOSITION CIRCUIT BLOCK (100KX8)	
CP704	1-233-140-11	COMPOSITION CIRCUIT BLOCK (100KX8)	
		< DIODE >	
D781	8-719-302-52	LED SEL1410E (SBM)	

DISPLAY

Ref. No.	Part No.	Description	Remark
< FLUORESCENT INDICATOR TUBE >			
FL701	1-519-672-21	INDICATOR TUBE, FLUORESCENT	
< IC >			
IC701	8-752-854-47	IC CXP5058H-661Q	
IC702	8-759-995-09	IC MSM6338RS	
IC703	8-752-330-61	IC CXK1013P	
IC704	8-749-922-36	IC GP1U50XB	
IC705	8-759-140-11	IC UPD4011BC (US, CND)	
< TRANSISTOR >			
Q701	8-729-902-11	TRANSISTOR 2SC2021-Q	
Q702	8-729-902-11	TRANSISTOR 2SC2021-Q	
Q703	8-729-902-11	TRANSISTOR 2SC2021-Q	
Q791	8-729-900-38	TRANSISTOR DTA114EF	
< RESISTOR >			
R701	1-249-441-11	CARBON 100K 5% 1/4W	
R702	1-249-441-11	CARBON 100K 5% 1/4W	
R703	1-249-441-11	CARBON 100K 5% 1/4W	
R708	1-249-429-11	CARBON 10K 5% 1/4W	
R709	1-249-422-11	CARBON 2.7K 5% 1/4W	
R710	1-249-424-11	CARBON 3.9K 5% 1/4W	
R711	1-249-427-11	CARBON 6.8K 5% 1/4W	
R712	1-249-432-11	CARBON 18K 5% 1/4W	
R713	1-249-429-11	CARBON 10K 5% 1/4W	
R714	1-249-422-11	CARBON 2.7K 5% 1/4W	
R715	1-249-424-11	CARBON 3.9K 5% 1/4W	
R716	1-249-429-11	CARBON 10K 5% 1/4W	
R717	1-249-422-11	CARBON 2.7K 5% 1/4W	
R718	1-249-424-11	CARBON 3.9K 5% 1/4W	
R719	1-249-427-11	CARBON 6.8K 5% 1/4W	
R720	1-249-432-11	CARBON 18K 5% 1/4W	
R721	1-249-429-11	CARBON 10K 5% 1/4W	
R722	1-249-422-11	CARBON 2.7K 5% 1/4W	
R723	1-249-424-11	CARBON 3.9K 5% 1/4W	
R724	1-249-427-11	CARBON 6.8K 5% 1/4W	
R725	1-249-432-11	CARBON 18K 5% 1/4W	
R726	1-249-429-11	CARBON 10K 5% 1/4W	
R727	1-249-422-11	CARBON 2.7K 5% 1/4W	
R728	1-249-424-11	CARBON 3.9K 5% 1/4W	
R729	1-249-427-11	CARBON 6.8K 5% 1/4W	
R730	1-249-432-11	CARBON 18K 5% 1/4W	
R731	1-249-429-11	CARBON 10K 5% 1/4W	
R732	1-249-422-11	CARBON 2.7K 5% 1/4W	
R733	1-249-424-11	CARBON 3.9K 5% 1/4W	
R734	1-249-429-11	CARBON 10K 5% 1/4W	

Ref. No.	Part No.	Description	Remark
R736	1-249-422-11	CARBON 2.7K 5% 1/4W	
R737	1-249-424-11	CARBON 3.9K 5% 1/4W	
R738	1-249-427-11	CARBON 6.8K 5% 1/4W	
R739	1-249-429-11	CARBON 10K 5% 1/4W	
R740	1-249-422-11	CARBON 2.7K 5% 1/4W	
R741	1-249-424-11	CARBON 3.9K 5% 1/4W	
R742	1-249-427-11	CARBON 6.8K 5% 1/4W	
R743	1-249-432-11	CARBON 18K 5% 1/4W	
R744	1-249-437-11	CARBON 47K 5% 1/4W	
R745	1-249-437-11	CARBON 47K 5% 1/4W	
R746	1-249-437-11	CARBON 47K 5% 1/4W	
R747	1-249-437-11	CARBON 47K 5% 1/4W	
R748	1-249-437-11	CARBON 47K 5% 1/4W	
R749	1-249-437-11	CARBON 47K 5% 1/4W	
R750	1-249-437-11	CARBON 47K 5% 1/4W	
R751	1-249-437-11	CARBON 47K 5% 1/4W	
R752	1-249-437-11	CARBON 47K 5% 1/4W	
R753	1-249-437-11	CARBON 47K 5% 1/4W	
R754	1-249-437-11	CARBON 47K 5% 1/4W	
R755	1-249-437-11	CARBON 47K 5% 1/4W	
R756	1-249-437-11	CARBON 47K 5% 1/4W (AEP, UK, G, E)	
R757	1-249-437-11	CARBON 47K 5% 1/4W (US, CND)	
R758	1-249-409-11	CARBON 220 5% 1/4W	
R759	1-249-432-11	CARBON 18K 5% 1/4W	
R781	1-249-408-11	CARBON 180 5% 1/4W	
< SWITCH >			
S704	1-554-303-21	SWITCH, TACTILE (COUNTER MODE)	
S705	1-692-478-11	SWITCH, SLIDE (REC MODE)	
S706	1-554-303-21	SWITCH, TACTILE (1)	
S707	1-554-303-21	SWITCH, TACTILE (2)	
S708	1-554-303-21	SWITCH, TACTILE (3)	
S709	1-554-303-21	SWITCH, TACTILE (4)	
S710	1-554-303-21	SWITCH, TACTILE (5)	
S711	1-554-303-21	SWITCH, TACTILE (6)	
S712	1-554-303-21	SWITCH, TACTILE (7)	
S713	1-554-303-21	SWITCH, TACTILE (8)	
S714	1-554-303-21	SWITCH, TACTILE (9)	
S715	1-554-303-21	SWITCH, TACTILE (0)	
S716	1-554-303-21	SWITCH, TACTILE (MUSIC SCAN)	
S717	1-554-303-21	SWITCH, TACTILE (FADER)	
S718	1-554-303-21	SWITCH, TACTILE (MARGIN RESET)	
S719	1-554-303-21	SWITCH, TACTILE (CLEAR)	
S720	1-554-303-21	SWITCH, TACTILE (DATE RECORDED)	
S721	1-554-303-21	SWITCH, TACTILE (DATE PRESENT)	
S722	1-554-303-21	SWITCH, TACTILE (DATE CLOCK SET)	
S723	1-554-303-21	SWITCH, TACTILE (START ID AUTO)	
S724	1-554-303-21	SWITCH, TACTILE (START ID RENUMBER)	
S725	1-554-303-21	SWITCH, TACTILE (START ID WRITE)	

DISPLAY

DRUM DRIVE

Ref. No.	Part No.	Description	Remark
S726	1-554-303-21	SWITCH, TACTILE (SKIP ID WRITE)	
S727	1-554-303-21	SWITCH, TACTILE (END ID WRITE)	
S728	1-554-303-21	SWITCH, TACTILE (START ID ERASE)	
S729	1-554-303-21	SWITCH, TACTILE (SKIP ID ERASE)	
S730	1-554-303-21	SWITCH, TACTILE (END ID ERASE)	
S731	1-554-303-21	SWITCH, TACTILE (■)	
S732	1-554-303-21	SWITCH, TACTILE (▶)	
S733	1-554-303-21	SWITCH, TACTILE (AMS K4)	
S734	1-554-303-21	SWITCH, TACTILE (AMS M4)	
S735	1-554-303-21	SWITCH, TACTILE (◀◀)	
S736	1-554-303-21	SWITCH, TACTILE (▶▶)	
S737	1-554-303-21	SWITCH, TACTILE (●REC)	
S738	1-554-303-21	SWITCH, TACTILE (PAUSE)	
S739	1-554-303-21	SWITCH, TACTILE (○REC MUTE)	
S741	1-554-118-00	SWITCH, PUSH (1 KEY) (SBM)	
< VIBRATOR >			
X701	1-577-359-21	VIBRATOR, CERAMIC (4.19MHz)	

*	A-2056-488-A	DRUM DRIVE BOARD, COMPLETE	

*	3-343-491-01	HOLDER (S SENSOR B)	
*	4-870-539-00	PLATE, GROUND	
< CAPACITOR >			
C01	1-126-176-11	ELECT 220uF 20% 10V	
C02	1-126-157-11	ELECT 10uF 20% 16V	
C03	1-124-257-00	ELECT 2.2uF 20% 50V	
C04	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V	
C05	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V	
C08	1-163-001-11	CERAMIC CHIP 220PF 10% 50V	
C21	1-163-001-11	CERAMIC CHIP 220PF 10% 50V	
C31	1-163-001-11	CERAMIC CHIP 220PF 10% 50V	
C32	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
< CONNECTOR >			
* CN01	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P	
* 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	1-568-872-11	SOCKET, CONNECTOR 30P	
* CN09	1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P	
* CN10	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P	

Ref. No.	Part No.	Description	Remark
< IC >			
IC01	8-752-060-73	IC CX20115A-T4	
IC02	8-759-502-80	IC LM358M	
IC03	8-759-502-80	IC LM358M	
< JUMPER RESISTOR >			
JW06	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JW07	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JW08	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JW09	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JW10	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JW11	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JW12	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JW13	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JW14	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JW15	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JW16	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JW17	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JW18	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JW19	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JW20	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JW21	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JW22	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JW23	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JW24	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JW25	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JW26	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JW27	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JW28	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JW29	1-216-296-00	METAL GLAZE 0 5% 1/8W	
JW30	1-216-296-00	METAL GLAZE 0 5% 1/8W	
< PHOTO INTERRUPTER >			
PH01	8-719-939-23	PHOTO INTERRUPTER GP-2S09-C	
PH02	8-719-939-23	PHOTO INTERRUPTER GP-2S09-C	
< TRANSISTOR >			
Q01	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q02	8-729-101-07	TRANSISTOR 2SB798-DL	
< RESISTOR >			
R01	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R02	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R03	1-216-029-00	METAL CHIP 150 5% 1/10W	
R04	1-216-059-00	METAL CHIP 2.7K 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	1-216-025-00	METAL CHIP 100 5% 1/10W	

DRUM DRIVE

HEADPHONE JACK

HEADPHONE VOL

INPUT SW

LED

MAIN

Ref. No.	Part No.	Description	Remark		
R08	1-216-049-00	METAL CHIP	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	1-216-089-00	METAL CHIP	47K	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	1-216-067-00	METAL CHIP	5. 6K	5%	1/10W
R25	1-216-103-00	METAL CHIP	180K	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	1-216-103-00	METAL CHIP	180K	5%	1/10W
R36	1-216-065-00	METAL CHIP	4. 7K	5%	1/10W

*	1-645-244-11	HEADPHONE JACK BOARD	*****		
		< CAPACITOR >			
C180	1-162-290-31	CERAMIC	470PF	10%	50V
C280	1-162-290-31	CERAMIC	470PF	10%	50V
C451	1-126-024-11	ELECT	220uF	20%	25V
C452	1-126-024-11	ELECT	220uF	20%	25V
		< CONNECTOR >			
CN108	1-691-768-11	PLUG (MICRO CONNECTOR) 6P			
		< IC >			
IC401	8-759-634-50	IC M5218AL			
		< JACK >			
J161	1-565-327-11	JACK, LARGE TYPE 1P (PHONES)			
		< COIL >			
L180	1-236-163-11	ENCAPSULATED COMPONENT			
L280	1-236-163-11	ENCAPSULATED COMPONENT			
		< RESISTOR >			
R128	1-259-468-11	CARBON	47K	5%	1/6W
R129	1-259-444-11	CARBON	4. 7K	5%	1/6W
R130	1-259-468-11	CARBON	47K	5%	1/6W
R131	1-259-412-11	CARBON	220	5%	1/6W
R228	1-259-468-11	CARBON	47K	5%	1/6W

Ref. No.	Part No.	Description	Remark		
R229	1-259-444-11	CARBON	4. 7K	5%	1/6W
R230	1-259-468-11	CARBON	47K	5%	1/6W
R231	1-259-412-11	CARBON	220	5%	1/6W

*	1-645-245-11	HEADPHONE VOL BOARD	*****		
< VARIABLE RESISTOR >					
RV102	1-241-537-11	RES, VAR, CARBON 20K/20K (PHONES LEVEL)	*****		
*	1-645-240-11	INPUT SW BOARD	*****		
< CONNECTOR >					
* CN772	1-564-336-00	PIN, CONNECTOR 2P	< RESISTOR >		
R706	1-249-427-11	CARBON	6. 8K	5%	1/4W
R707	1-249-432-11	CARBON	18K	5%	1/4W
< SWITCH >					
S703	1-572-758-11	SWITCH, ROTARY (INPUT)	*****		
*	1-645-241-11	LED BOARD	*****		
< DIODE >					
D701	8-719-421-98	LED LN01401C(Q)-3-LF			
D702	8-719-421-98	LED LN01401C(Q)-3-LF			

*	A-2007-201-A	MAIN BOARD, COMPLETE (US, CND, E)			
*	A-2007-229-A	MAIN BOARD, COMPLETE (AEP, UK, G)	*****		
	1-533-293-11	HOLDER, FUSE			
	2-259-121-01	SCREW, TR			
*	3-346-266-12	PLATE, GROUND			
*	4-363-146-71	HEAT SINK, V. OUT			
*	4-870-539-00	PLATE, GROUND (US, CND, E)			
*	4-880-403-11	HEAT SINK	< CAPACITOR >		
C110	1-136-275-11	FILM	390PF	5%	630V
C112	1-136-437-11	FILM	220PF	5%	630V
C113	1-136-437-11	FILM	220PF	5%	630V
C114	1-136-433-11	FILM	100PF	5%	630V
C115	1-136-433-11	FILM	100PF	5%	630V

Ref. No.	Part No.	Description	Remark
C117	1-130-471-00	MYLAR 0.001uF 5%	50V
C118	1-130-478-00	MYLAR 0.0039uF 5%	50V
C120	1-126-023-11	ELECT 100uF 20%	25V
C121	1-130-467-00	FILM 470PF 5%	50V
C150	1-126-023-11	ELECT 100uF 20%	25V
C151	1-126-023-11	ELECT 100uF 20%	25V
C152	1-130-481-00	FILM 6800PF 5%	50V
C210	1-136-275-11	FILM 390PF 5%	630V
C212	1-136-437-11	FILM 220PF 5%	630V
C213	1-136-437-11	FILM 220PF 5%	630V
C214	1-136-433-11	FILM 100PF 5%	630V
C215	1-136-433-11	FILM 100PF 5%	630V
C217	1-130-471-00	MYLAR 0.001uF 5%	50V
C218	1-130-478-00	MYLAR 0.0039uF 5%	50V
C220	1-126-023-11	ELECT 100uF 20%	25V
C221	1-130-467-00	FILM 470PF 5%	50V
C250	1-126-023-11	ELECT 100uF 20%	25V
C251	1-126-023-11	ELECT 100uF 20%	25V
C252	1-130-481-00	FILM 6800PF 5%	50V
C300	1-162-294-31	CERAMIC 0.001uF 10%	50V
C301	1-164-159-11	CERAMIC 0.1uF	50V
C302	1-164-159-11	CERAMIC 0.1uF	50V
C303	1-162-211-31	CERAMIC 33PF 5%	50V
C304	1-126-059-11	ELECT 10uF 20%	50V
C305	1-162-306-11	CERAMIC 0.01uF 20%	16V
C306	1-164-159-11	CERAMIC 0.1uF	50V
C307	1-162-280-31	CERAMIC 82PF 10%	50V
C308	1-164-159-11	CERAMIC 0.1uF	50V
C309	1-124-983-11	ELECT 330uF 20%	6.3V
C310	1-136-177-00	FILM 1uF 5%	50V
C311	1-162-279-31	CERAMIC 75PF 10%	50V
C314	1-162-199-31	CERAMIC 10PF 5%	50V
C315	1-162-294-31	CERAMIC 0.001uF 10%	50V
C316	1-162-199-31	CERAMIC 10PF 5%	50V
C317	1-162-201-31	CERAMIC 12PF 5%	50V
C318	1-162-201-31	CERAMIC 12PF 5%	50V
C319	1-164-159-11	CERAMIC 0.1uF	50V
C326	1-162-201-31	CERAMIC 12PF 5%	50V
C327	1-162-201-31	CERAMIC 12PF 5%	50V
C328	1-124-903-11	ELECT 1uF 20%	50V
C329	1-162-294-31	CERAMIC 0.001uF 10%	50V
C330	1-162-294-31	CERAMIC 0.001uF 10%	50V
C331	1-162-294-31	CERAMIC 0.001uF 10%	50V
C332	1-162-293-31	CERAMIC 820PF 10%	50V
C333	1-162-283-31	CERAMIC 120PF 10%	50V
C334	1-161-375-00	CERAMIC 0.0022uF 20%	50V
C335	1-161-375-00	CERAMIC 0.0022uF 20%	50V
C336	1-162-289-31	CERAMIC 390PF 10%	50V
C337	1-161-329-00	CERAMIC 0.0068uF 30%	16V

Ref. No.	Part No.	Description	Remark
C338	1-162-306-11	CERAMIC 0.01uF 20%	16V
C339	1-162-306-11	CERAMIC 0.01uF 20%	16V
C340	1-162-290-31	CERAMIC 470PF 10%	50V
C341	1-162-306-11	CERAMIC 0.01uF 20%	16V
C342	1-126-059-11	ELECT 10uF 20%	50V
C343	1-162-306-11	CERAMIC 0.01uF 20%	16V
C344	1-162-306-11	CERAMIC 0.01uF 20%	16V
C345	1-162-209-31	CERAMIC 27PF 5%	50V
C346	1-162-205-31	CERAMIC 18PF 5%	50V
C347	1-162-294-31	CERAMIC 0.001uF 10%	50V
C348	1-126-059-11	ELECT 10uF 20%	50V
C351	1-136-165-00	FILM 0.1uF 5%	50V
C352	1-136-165-00	FILM 0.1uF 5%	50V
C353	1-136-165-00	FILM 0.1uF 5%	50V
C354	1-124-997-11	ELECT 470uF 20%	10V
C355	1-162-306-11	CERAMIC 0.01uF 20%	16V
C362	1-126-043-11	ELECT 0.47uF 20%	50V
C363	1-126-059-11	ELECT 10uF 20%	50V
C402	1-164-159-11	CERAMIC 0.1uF	50V
C405	1-126-023-11	ELECT 100uF 20%	25V
C406	1-136-165-00	FILM 0.1uF 5%	50V
C407	1-136-165-00	FILM 0.1uF 5%	50V
C409	1-124-997-11	ELECT 470uF 20%	10V
C411	1-124-997-11	ELECT 470uF 20%	10V
C417	1-164-159-11	CERAMIC 0.1uF	50V
C418	1-162-306-11	CERAMIC 0.01uF 20%	16V
C420	1-126-023-11	ELECT 100uF 20%	25V
C426	1-136-165-00	FILM 0.1uF 5%	50V
C427	1-136-165-00	FILM 0.1uF 5%	50V
C428	1-136-165-00	FILM 0.1uF 5%	50V
C429	1-136-165-00	FILM 0.1uF 5%	50V
C430	1-126-059-11	ELECT 10uF 20%	50V
C431	1-126-059-11	ELECT 10uF 20%	50V
C439	1-164-159-11	CERAMIC 0.1uF	50V
C440	1-126-916-11	ELECT 1000uF 20%	6.3V
C441	1-164-159-11	CERAMIC 0.1uF	50V
C442	1-164-159-11	CERAMIC 0.1uF	50V
C446	1-164-159-11	CERAMIC 0.1uF	50V
C447	1-164-159-11	CERAMIC 0.1uF	50V
C448	1-164-159-11	CERAMIC 0.1uF	50V
C449	1-164-159-11	CERAMIC 0.1uF	50V
C450	1-136-165-00	FILM 0.1uF 5%	50V
C451	1-136-165-00	FILM 0.1uF 5%	50V
C461	1-164-159-11	CERAMIC 0.1uF	50V
C462	1-164-159-11	CERAMIC 0.1uF	50V
C465	1-130-467-00	FILM 470PF 5%	50V
C466	1-130-467-00	FILM 470PF 5%	50V
C470	1-164-159-11	CERAMIC 0.1uF	50V

MAIN

Ref. No.	Part No.	Description	Remark
C471	1-164-159-11	CERAMIC 0.1uF	50V
C472	1-164-159-11	CERAMIC 0.1uF	50V
C473	1-164-159-11	CERAMIC 0.1uF	50V
C474	1-164-159-11	CERAMIC 0.1uF	50V
C499	1-126-058-11	ELECT 4.7uF 20%	25V
C501	1-130-479-00	MYLAR 0.0047uF 5%	50V
C502	1-162-219-31	CERAMIC 68PF 5%	50V
C503	1-162-199-31	CERAMIC 10PF 5%	50V
C504	1-126-059-11	ELECT 10uF 20%	50V
C505	1-162-215-31	CERAMIC 47PF 5%	50V
C506	1-162-199-31	CERAMIC 10PF 5%	50V
C507	1-136-153-00	FILM 0.01uF 5%	50V
C508	1-136-158-00	FILM 0.027uF 5%	50V
C512	1-164-159-11	CERAMIC 0.1uF	50V
C513	1-126-023-11	ELECT 100uF 20%	25V
C514	1-164-159-11	CERAMIC 0.1uF	50V
C515	1-136-169-00	FILM 0.22uF 5%	50V
C516	1-164-159-11	CERAMIC 0.1uF	50V
C550	1-136-161-00	FILM 0.047uF 5%	50V
C551	1-162-306-11	CERAMIC 0.01uF 20%	16V
C552	1-162-294-31	CERAMIC 0.001uF 10%	50V
C553	1-162-219-31	CERAMIC 68PF 5%	50V
C554	1-164-159-11	CERAMIC 0.1uF	50V
C555	1-162-179-11	CERAMIC 0.1uF	50V
C601	1-126-023-11	ELECT 100uF 20%	25V
C602	1-126-023-11	ELECT 100uF 20%	25V
C603	1-126-023-11	ELECT 100uF 20%	25V
C604	1-126-023-11	ELECT 100uF 20%	25V
C605	1-126-023-11	ELECT 100uF 20%	25V
C606	1-126-023-11	ELECT 100uF 20%	25V
C607	1-126-023-11	ELECT 100uF 20%	25V
C608	1-126-023-11	ELECT 100uF 20%	25V
C609	1-126-023-11	ELECT 100uF 20%	25V
C610	1-136-165-00	FILM 0.1uF 5%	50V
C611	1-136-165-00	FILM 0.1uF 5%	50V
C612	1-136-165-00	FILM 0.1uF 5%	50V
C613	1-136-165-00	FILM 0.1uF 5%	50V
C614	1-136-165-00	FILM 0.1uF 5%	50V
C615	1-136-165-00	FILM 0.1uF 5%	50V
C616	1-136-165-00	FILM 0.1uF 5%	50V
C617	1-136-165-00	FILM 0.1uF 5%	50V
C618	1-136-165-00	FILM 0.1uF 5%	50V
C621	1-136-165-00	FILM 0.1uF 5%	50V
C622	1-136-165-00	FILM 0.1uF 5%	50V
C623	1-136-165-00	FILM 0.1uF 5%	50V
C624	1-126-023-11	ELECT 100uF 20%	25V
C625	1-126-013-11	ELECT 1000uF 20%	16V
C640	1-164-159-11	CERAMIC 0.1uF	50V (US, CND, E)

Ref. No.	Part No.	Description	Remark
C641	1-164-159-11	CERAMIC 0.1uF	50V (US, CND, E)
C642	1-164-159-11	CERAMIC 0.1uF	50V (US, CND, E)
C650	1-136-165-00	FILM 0.1uF 5%	50V
C651	1-136-165-00	FILM 0.1uF 5%	50V
C699	1-164-159-11	CERAMIC 0.1uF	50V
C907	1-126-946-11	ELECT 6800uF 20%	25V
C909	1-126-926-11	ELECT 1000uF 20%	10V
C912	1-126-926-11	ELECT 1000uF 20%	10V
C913	1-124-484-11	ELECT 220uF 20%	35V
C914	1-124-484-11	ELECT 220uF 20%	35V
C916	1-124-122-11	ELECT 100uF 20%	50V
C917	1-164-159-11	CERAMIC 0.1uF	50V
C920	1-126-982-11	ELECT 5600uF 20%	35V
C921	1-126-982-11	ELECT 5600uF 20%	35V
C926	1-126-040-11	ELECT 1000uF 20%	35V
C927	1-126-040-11	ELECT 1000uF 20%	35V
C928	1-136-177-00	FILM 1uF 5%	50V
C929	1-136-165-00	FILM 0.1uF 5%	50V
C930	1-164-159-11	CERAMIC 0.1uF	50V
C931	1-164-159-11	CERAMIC 0.1uF	50V
C932	1-164-159-11	CERAMIC 0.1uF	50V
C933	1-164-159-11	CERAMIC 0.1uF	50V
C999	1-136-165-00	FILM 0.1uF 5%	50V

< CONNECTOR >

CN103	1-691-766-31	PLUG (MICRO CONNECTOR) 4P
CN104	1-691-766-11	PLUG (MICRO CONNECTOR) 4P
CN107	1-691-768-11	PLUG (MICRO CONNECTOR) 6P
CN151	1-569-490-11	SOCKET, CONNECTOR 3P
CN154	1-691-765-11	PLUG (MICRO CONNECTOR) 3P
CN155	1-691-765-21	PLUG (MICRO CONNECTOR) 3P
* CN301	1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P
* CN308	1-564-339-00	PIN, CONNECTOR 5P
CN333	1-564-506-11	PLUG, CONNECTOR 3P
* CN501	1-564-716-11	PIN, CONNECTOR (SMALL TYPE) 14P
* CN508	1-568-933-11	SOCKET, CONNECTOR 30P
* CN571	1-568-829-11	SOCKET, CONNECTOR 10P
* CN572	1-568-825-11	SOCKET, CONNECTOR 6P
* CN576	1-564-336-00	PIN, CONNECTOR 2P
CN932	1-691-772-11	PLUG (MICRO CONNECTOR) 10P

< DIODE >

D101	8-719-107-94	DIODE 1SS202-1
D102	8-719-107-94	DIODE 1SS202-1
D103	8-719-107-94	DIODE 1SS202-1
D104	8-719-107-94	DIODE 1SS202-1
D201	8-719-107-94	DIODE 1SS202-1
D202	8-719-107-94	DIODE 1SS202-1
D203	8-719-107-94	DIODE 1SS202-1

Ref. No.	Part No.	Description	Remark
D204	8-719-107-94	DIODE 1SS202-1	
D301	8-719-107-94	DIODE 1SS202-1	
D302	8-719-107-94	DIODE 1SS202-1	
D306	8-719-200-82	DIODE 11ES2	
D308	8-719-107-94	DIODE 1SS202-1	
D314	8-719-200-82	DIODE 11ES2	
D321	8-719-107-94	DIODE 1SS202-1	
D322	8-719-911-06	DIODE 1SS106	
D324	8-719-911-06	DIODE 1SS106	
D350	8-719-107-94	DIODE 1SS202-1	
D351	8-719-200-82	DIODE 11ES2	
D352	8-719-200-82	DIODE 11ES2	
D501	8-719-936-68	DIODE KV1260	
D550	8-719-045-72	DIODE KV1550NT	
D601	8-719-114-27	DIODE RD4. 7JS-B3	
D602	8-719-107-94	DIODE 1SS202-1	
D603	8-719-114-30	DIODE RD5. 1JSB-2	
D604	8-719-107-94	DIODE 1SS202-1	
D605	8-719-107-94	DIODE 1SS202-1	
D905	8-719-312-47	DIODE RBA-406B	
D907	8-719-200-82	DIODE 11ES2	
D908	8-719-200-82	DIODE 11ES2	
D909	8-719-107-94	DIODE 1SS202-1	
D910	8-719-933-33	DIODE HZS6A1L	
D911	8-719-230-02	DIODE 30DF2	
D912	8-719-230-02	DIODE 30DF2	
D913	8-719-230-02	DIODE 30DF2	
D914	8-719-230-02	DIODE 30DF2	
< FUSE >			
△F901	1-532-286-00	FUSE, TIME-LAG (2. 5A/250V) (AEP, UK, G, E)	
△F901	1-576-105-11	FUSE (2. 5A/250V) (US, CND)	
< IC >			
IC301	8-759-917-18	IC SN74HC04AN	
IC302	8-759-916-12	IC SN74HC00AN	
IC303	8-759-921-10	IC SN74HC86AN	
IC304	8-759-135-80	IC UPC358C	
IC305	8-759-927-46	IC SN74HC00ANS	
IC306	8-759-947-57	IC CXD1136Q	
IC307	8-752-339-43	IC CXD2601AQ	
IC309	8-759-032-81	IC MC74HC74AN	
IC310	8-752-356-96	IC CXK58257AM-10LL	
IC311	8-752-854-45	IC CXP80524-092Q	
IC312	8-752-854-44	IC CXP80524-091Q	
IC316	8-759-912-77	IC LM324N	
IC318	8-759-135-80	IC UPC358C	
IC319	8-759-633-65	IC M54641L	
IC320	8-759-633-65	IC M54641L	

Ref. No.	Part No.	Description	Remark
IC321	8-759-520-90	IC PST572E	
IC330	8-759-504-23	IC RF5C62	
IC331	8-749-921-11	IC GP1F32R (OPTICAL IN)	
IC332	8-749-921-12	IC GP1F32T (OPTICAL OUT)	
IC333	8-759-916-20	IC SN74HC14AN	
IC351	8-759-602-83	IC M5238P	
IC352	8-759-972-47	IC LF412CN	
IC353	8-759-972-47	IC LF412CN	
IC354	8-759-900-72	IC NE5532P	
IC355	8-759-900-72	IC NE5532P	
IC356	8-759-145-58	IC UPC4558C	
IC357	8-759-231-53	IC TA7805S	
IC358	8-759-245-79	IC TA79005S	
IC359	8-759-196-20	IC CXD8493P	
IC363	8-752-356-03	IC CXD2567M	
IC370	8-759-196-21	IC CXD8482Q	
IC371	8-759-231-53	IC TA7805S	
IC375	8-759-900-72	IC NE5532P	
IC376	8-759-900-72	IC NE5532P	
IC431	8-759-916-18	IC SN74HC10AN	
IC432	8-759-510-43	IC PST572C	
IC502	8-759-925-74	IC SN74HC04ANS	
IC503	8-759-926-95	IC SN74HC4020ANS	
IC504	8-759-250-81	IC TC5081AP	
IC550	8-759-242-72	IC TC7W00F	
IC601	8-759-044-10	IC CXD2562Q	
IC602	8-759-900-72	IC NE5532P	
IC603	8-759-925-90	IC SN74HC74ANS	
IC901	8-759-231-58	IC TA7812S	
IC902	8-759-245-86	IC TA79012S	
< JACK >			
J101	1-568-751-61	JACK, PIN (2P SHIELD TYPE) (LINE IN)	
J102	1-568-751-61	JACK, PIN (2P SHIELD TYPE) (LINE OUT)	
J181	1-565-406-41	JACK, PIN 1P (COAXIAL OUT)	
J191	1-568-750-21	JACK, PIN (1P SHIELD TYPE) (COAXIAL IN)	
< COIL >			
L301	1-410-509-11	INDUCTOR 10uH	
L302	1-410-498-11	INDUCTOR 1. 2uH	
L303	1-410-509-11	INDUCTOR 10uH	
L305	1-410-515-11	INDUCTOR 33uH	
L306	1-410-509-11	INDUCTOR 10uH	
L307	1-410-509-11	INDUCTOR 10uH	
L310	1-410-953-11	INDUCTOR, SMALL TYPE	
L320	1-410-509-11	INDUCTOR 10uH	
L321	1-410-509-11	INDUCTOR 10uH	
L351	1-410-509-11	INDUCTOR 10uH	
L401	1-410-509-11	INDUCTOR 10uH	

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
L501	1-426-850-11	COIL (RF)	
L502	1-410-509-11	INDUCTOR 10uH	
L504	1-410-509-11	INDUCTOR 10uH	
L550	1-410-498-11	INDUCTOR 1. 2uH	
L601	1-410-397-21	FERRITE BEAD INDUCTOR	
L603	1-410-397-21	FERRITE BEAD INDUCTOR	
L604	1-410-397-21	FERRITE BEAD INDUCTOR	
L605	1-410-397-21	FERRITE BEAD INDUCTOR	
< TRANSISTOR >			
Q302	8-729-801-93	TRANSISTOR 2SD1387	
Q311	8-729-900-80	TRANSISTOR DTC114ES	
Q312	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q313	8-729-900-61	TRANSISTOR DTA114ES	
Q318	8-729-900-80	TRANSISTOR DTC114ES	
Q319	8-729-900-80	TRANSISTOR DTC114ES	
Q320	8-729-927-11	TRANSISTOR 2SA1585SQR	
Q321	8-729-927-12	TRANSISTOR 2SC4115SQR	
Q333	8-729-141-83	TRANSISTOR 2SB1094-LK	
Q334	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q335	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q336	8-729-927-11	TRANSISTOR 2SA1585SQR	
Q337	8-729-927-11	TRANSISTOR 2SA1585SQR	
Q338	8-729-927-12	TRANSISTOR 2SC4115SQR	
Q339	8-729-927-12	TRANSISTOR 2SC4115SQR	
Q340	8-729-900-80	TRANSISTOR DTC114ES	
Q341	8-729-900-80	TRANSISTOR DTC114ES	
Q342	8-729-209-15	TRANSISTOR 2SD2012	
Q432	8-729-900-80	TRANSISTOR DTC114ES	
Q433	8-729-107-85	TRANSISTOR 2SC3623A-K	
Q434	8-729-107-85	TRANSISTOR 2SC3623A-K	
Q435	8-729-900-61	TRANSISTOR DTA114ES	
Q437	8-729-900-61	TRANSISTOR DTA114ES	
Q438	8-729-900-80	TRANSISTOR DTC114ES	
Q440	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q442	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q501	8-729-200-56	TRANSISTOR 2SK241-GR	
Q502	8-729-200-56	TRANSISTOR 2SK241-GR	
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	8-729-140-96	TRANSISTOR 2SD774-34	
Q602	8-729-140-96	TRANSISTOR 2SD774-34	
Q901	8-729-140-97	TRANSISTOR 2SB734-34	
Q906	8-729-119-76	TRANSISTOR 2SA1175-HFE	
< RESISTOR >			
R107	1-247-854-11	CARBON 9. 1K 5% 1/4W	
R108	1-247-854-11	CARBON 9. 1K 5% 1/4W	

Ref. No.	Part No.	Description	Remark
R109	1-247-854-11	CARBON 9. 1K 5% 1/4W	
R110	1-247-854-11	CARBON 9. 1K 5% 1/4W	
R111	1-247-844-11	CARBON 3. 6K 5% 1/4W	
R112	1-247-844-11	CARBON 3. 6K 5% 1/4W	
R115	1-249-429-11	CARBON 10K 5% 1/4W	
R116	1-249-429-11	CARBON 10K 5% 1/4W	
R117	1-249-426-11	CARBON 5. 6K 5% 1/4W	
R118	1-249-426-11	CARBON 5. 6K 5% 1/4W	
R119	1-249-426-11	CARBON 5. 6K 5% 1/4W	
R120	1-249-426-11	CARBON 5. 6K 5% 1/4W	
R122	1-247-836-11	CARBON 1. 6K 5% 1/4W	
R123	1-247-836-11	CARBON 1. 6K 5% 1/4W	
R124	1-249-441-11	CARBON 100K 5% 1/4W	
R125	1-249-408-11	CARBON 180 5% 1/4W	
R126	1-249-429-11	CARBON 10K 5% 1/4W	
R127	1-247-807-31	CARBON 100 5% 1/4W	
R132	1-249-408-11	CARBON 180 5% 1/4W	
R150	1-249-441-11	CARBON 100K 5% 1/4W	
R151	1-249-421-11	CARBON 2. 2K 5% 1/4W	
R152	1-249-434-11	CARBON 27K 5% 1/4W	
R153	1-249-441-11	CARBON 100K 5% 1/4W	
R154	1-249-425-11	CARBON 4. 7K 5% 1/4W	
R155	1-249-401-11	CARBON 47 5% 1/4W	
R156	1-249-425-11	CARBON 4. 7K 5% 1/4W	
R157	1-249-401-11	CARBON 47 5% 1/4W	
R207	1-247-854-11	CARBON 9. 1K 5% 1/4W	
R208	1-247-854-11	CARBON 9. 1K 5% 1/4W	
R209	1-247-854-11	CARBON 9. 1K 5% 1/4W	
R210	1-247-854-11	CARBON 9. 1K 5% 1/4W	
R211	1-247-844-11	CARBON 3. 6K 5% 1/4W	
R212	1-247-844-11	CARBON 3. 6K 5% 1/4W	
R215	1-249-429-11	CARBON 10K 5% 1/4W	
R216	1-249-429-11	CARBON 10K 5% 1/4W	
R217	1-249-426-11	CARBON 5. 6K 5% 1/4W	
R218	1-249-426-11	CARBON 5. 6K 5% 1/4W	
R219	1-249-426-11	CARBON 5. 6K 5% 1/4W	
R220	1-249-426-11	CARBON 5. 6K 5% 1/4W	
R222	1-247-836-11	CARBON 1. 6K 5% 1/4W	
R223	1-247-836-11	CARBON 1. 6K 5% 1/4W	
R224	1-249-441-11	CARBON 100K 5% 1/4W	
R225	1-249-408-11	CARBON 180 5% 1/4W	
R226	1-249-429-11	CARBON 10K 5% 1/4W	
R227	1-247-807-31	CARBON 100 5% 1/4W	
R232	1-249-408-11	CARBON 180 5% 1/4W	
R250	1-249-441-11	CARBON 100K 5% 1/4W	
R251	1-249-421-11	CARBON 2. 2K 5% 1/4W	
R252	1-249-434-11	CARBON 27K 5% 1/4W	
R253	1-249-441-11	CARBON 100K 5% 1/4W	

Ref. No.	Part No.	Description	Remark		
R254	1-249-425-11	CARBON 4. 7K 5%	1/4W		
R255	1-249-401-11	CARBON 47 5%	1/4W		
R256	1-249-425-11	CARBON 4. 7K 5%	1/4W		
R257	1-249-401-11	CARBON 47 5%	1/4W		
R301	1-247-804-11	CARBON 75 5%	1/4W		
R306	1-249-417-11	CARBON 1K 5%	1/4W		
R307	1-249-437-11	CARBON 47K 5%	1/4W		
R311	1-249-431-11	CARBON 15K 5%	1/4W		
R312	1-249-421-11	CARBON 2. 2K 5%	1/4W		
R313	1-249-421-11	CARBON 2. 2K 5%	1/4W		
R314	1-249-435-11	CARBON 33K 5%	1/4W		
R315	1-249-429-11	CARBON 10K 5%	1/4W		
R316	1-247-804-11	CARBON 75 5%	1/4W		
R317	1-247-807-31	CARBON 100 5%	1/4W		
R318	1-249-409-11	CARBON 220 5%	1/4W		
R319	1-249-409-11	CARBON 220 5%	1/4W		
R320	1-249-413-11	CARBON 470 5%	1/4W		
R322	1-249-429-11	CARBON 10K 5%	1/4W		
R326	1-249-409-11	CARBON 220 5%	1/4W		
R328	1-247-804-11	CARBON 75 5%	1/4W		
R329	1-249-409-11	CARBON 220 5%	1/4W		
R330	1-249-417-11	CARBON 1K 5%	1/4W		
R331	1-249-429-11	CARBON 10K 5%	1/4W		
R332	1-249-429-11	CARBON 10K 5%	1/4W		
R333	1-247-887-00	CARBON 220K 5%	1/4W		
R334	1-249-425-11	CARBON 4. 7K 5%	1/4W		
R335	1-249-425-11	CARBON 4. 7K 5%	1/4W		
R336	1-249-425-11	CARBON 4. 7K 5%	1/4W		
R337	1-249-429-11	CARBON 10K 5%	1/4W		
R338	1-249-433-11	CARBON 22K 5%	1/4W		
R339	1-249-401-11	CARBON 47 5%	1/4W		
R340	1-247-881-00	CARBON 120K 5%	1/4W		
R341	1-247-881-00	CARBON 120K 5%	1/4W		
R342	1-247-881-00	CARBON 120K 5%	1/4W		
R343	1-247-889-00	CARBON 270K 5%	1/4W		
R344	1-247-887-00	CARBON 220K 5%	1/4W		
R345	1-247-887-00	CARBON 220K 5%	1/4W		
R346	1-249-441-11	CARBON 100K 5%	1/4W		
R347	1-249-441-11	CARBON 100K 5%	1/4W		
R348	1-249-441-11	CARBON 100K 5%	1/4W		
R349	1-249-441-11	CARBON 100K 5%	1/4W		
R350	1-249-435-11	CARBON 33K 5%	1/4W		
R351	1-249-435-11	CARBON 33K 5%	1/4W		
R352	1-249-441-11	CARBON 100K 5%	1/4W		
R353	1-249-441-11	CARBON 100K 5%	1/4W		
R354	1-249-441-11	CARBON 100K 5%	1/4W		
R355	1-249-417-11	CARBON 1K 5%	1/4W		
R356	1-249-417-11	CARBON 1K 5%	1/4W		
R357	1-247-807-31	CARBON 100 5%	1/4W		

Ref. No.	Part No.	Description	Remark		
R358	1-249-417-11	CARBON 1K 5%	1/4W		
R359	1-249-408-11	CARBON 180 5%	1/4W		
R360	1-249-432-11	CARBON 18K 5%	1/4W		
R361	1-249-431-11	CARBON 15K 5%	1/4W		
R364	1-249-408-11	CARBON 180 5%	1/4W		
R365	1-249-425-11	CARBON 4. 7K 5%	1/4W		
R368	1-249-417-11	CARBON 1K 5%	1/4W		
R369	1-247-807-31	CARBON 100 5%	1/4W		
R370	1-247-807-31	CARBON 100 5%	1/4W		
R371	1-249-417-11	CARBON 1K 5%	1/4W		
R372	1-247-807-31	CARBON 100 5%	1/4W		
R373	1-249-417-11	CARBON 1K 5%	1/4W		
R374	1-249-417-11	CARBON 1K 5%	1/4W		
R375	1-247-807-31	CARBON 100 5%	1/4W		
R378	1-249-429-11	CARBON 10K 5%	1/4W		
R379	1-249-414-11	CARBON 560 5%	1/4W		
R380	1-249-411-11	CARBON 330 5%	1/4W		
△R381	1-216-447-00	METAL OXIDE 27 5%	2W F		
R382	1-249-441-11	CARBON 100K 5%	1/4W		
R383	1-249-401-11	CARBON 47 5%	1/4W		
R384	1-249-437-11	CARBON 47K 5%	1/4W		
R385	1-249-437-11	CARBON 47K 5%	1/4W		
R386	1-249-413-11	CARBON 470 5%	1/4W		
R387	1-247-811-31	CARBON 150 5%	1/4W		
R388	1-249-423-11	CARBON 3. 3K 5%	1/4W		
R389	1-249-423-11	CARBON 3. 3K 5%	1/4W		
R390	1-249-423-11	CARBON 3. 3K 5%	1/4W		
R391	1-249-423-11	CARBON 3. 3K 5%	1/4W		
R392	1-249-417-11	CARBON 1K 5%	1/4W		
R393	1-249-420-11	CARBON 1. 8K 5%	1/4W		
R394	1-249-429-11	CARBON 10K 5%	1/4W		
R395	1-249-425-11	CARBON 4. 7K 5%	1/4W		
R396	1-249-441-11	CARBON 100K 5%	1/4W		
R400	1-249-437-11	CARBON 47K 5%	1/4W		
R406	1-249-429-11	CARBON 10K 5%	1/4W		
R407	1-249-429-11	CARBON 10K 5%	1/4W		
R408	1-249-429-11	CARBON 10K 5%	1/4W		
R409	1-249-425-11	CARBON 4. 7K 5%	1/4W		
R410	1-249-425-11	CARBON 4. 7K 5%	1/4W		
R412	1-249-441-11	CARBON 100K 5%	1/4W		
R413	1-249-437-11	CARBON 47K 5%	1/4W		
R414	1-249-413-11	CARBON 470 5%	1/4W		
R415	1-249-437-11	CARBON 47K 5%	1/4W		
R416	1-249-437-11	CARBON 47K 5%	1/4W		
R417	1-249-429-11	CARBON 10K 5%	1/4W		
R420	1-249-441-11	CARBON 100K 5%	1/4W		
R421	1-249-441-11	CARBON 100K 5%	1/4W		
R422	1-249-441-11	CARBON 100K 5%	1/4W		

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

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MAIN MOTOR

Ref. No.	Part No.	Description	Remark
R423	1-249-441-11	CARBON 100K 5% 1/4W	
R424	1-249-411-11	CARBON 330 5% 1/4W	
R425	1-249-411-11	CARBON 330 5% 1/4W	
R433	1-249-409-11	CARBON 220 5% 1/4W	
R434	1-249-419-11	CARBON 1. 5K 5% 1/4W	
R435	1-249-409-11	CARBON 220 5% 1/4W	
R436	1-249-409-11	CARBON 220 5% 1/4W	
R437	1-249-409-11	CARBON 220 5% 1/4W	
R438	1-249-409-11	CARBON 220 5% 1/4W	
R439	1-249-437-11	CARBON 47K 5% 1/4W	
R440	1-249-441-11	CARBON 100K 5% 1/4W	
R441	1-249-441-11	CARBON 100K 5% 1/4W	
R442	1-249-441-11	CARBON 100K 5% 1/4W	
R443	1-249-437-11	CARBON 47K 5% 1/4W	
R444	1-249-417-11	CARBON 1K 5% 1/4W	
R445	1-249-419-11	CARBON 1. 5K 5% 1/4W	
R446	1-247-883-00	CARBON 150K 5% 1/4W	
R447	1-249-425-11	CARBON 4. 7K 5% 1/4W	
R448	1-249-413-11	CARBON 470 5% 1/4W	
R449	1-249-424-11	CARBON 3. 9K 5% 1/4W	
R450	1-249-441-11	CARBON 100K 5% 1/4W	
R453	1-249-441-11	CARBON 100K 5% 1/4W (US, CND, E)	
R454	1-249-429-11	CARBON 10K 5% 1/4W	
R455	1-249-413-11	CARBON 470 5% 1/4W	
R456	1-249-429-11	CARBON 10K 5% 1/4W	
R457	1-249-441-11	CARBON 100K 5% 1/4W	
R458	1-249-441-11	CARBON 100K 5% 1/4W (AEP, UK, G)	
R461	1-249-441-11	CARBON 100K 5% 1/4W	
R490	1-249-425-11	CARBON 4. 7K 5% 1/4W	
R497	1-249-429-11	CARBON 10K 5% 1/4W	
R499	1-249-429-11	CARBON 10K 5% 1/4W	
R501	1-249-417-11	CARBON 1K 5% 1/4W	
R502	1-249-429-11	CARBON 10K 5% 1/4W	
R503	1-249-429-11	CARBON 10K 5% 1/4W	
R504	1-249-429-11	CARBON 10K 5% 1/4W	
R505	1-249-428-11	CARBON 8. 2K 5% 1/4W	
R506	1-249-441-11	CARBON 100K 5% 1/4W	
R507	1-249-417-11	CARBON 1K 5% 1/4W	
R508	1-249-417-11	CARBON 1K 5% 1/4W	
R509	1-249-417-11	CARBON 1K 5% 1/4W	
R516	1-249-425-11	CARBON 4. 7K 5% 1/4W	
R517	1-249-417-11	CARBON 1K 5% 1/4W	
R518	1-249-401-11	CARBON 47 5% 1/4W	
R519	1-249-421-11	CARBON 2. 2K 5% 1/4W	
R520	1-247-895-00	CARBON 470K 5% 1/4W	
R551	1-249-421-11	CARBON 2. 2K 5% 1/4W	
R552	1-249-425-11	CARBON 4. 7K 5% 1/4W	
R553	1-249-417-11	CARBON 1K 5% 1/4W	

Ref. No.	Part No.	Description	Remark
R554	1-249-429-11	CARBON 10K 5% 1/4W	
R555	1-249-441-11	CARBON 100K 5% 1/4W	
R601	1-249-417-11	CARBON 1K 5% 1/4W	
R603	1-247-807-31	CARBON 100 5% 1/4W	
R604	1-249-419-11	CARBON 1. 5K 5% 1/4W	
R605	1-249-389-11	CARBON 4. 7 5% 1/4W	
R650	1-249-417-11	CARBON 1K 5% 1/4W	
R651	1-249-417-11	CARBON 1K 5% 1/4W	
△R902	1-212-849-00	FUSIBLE 4. 7 5% 1/4W F	
R903	1-249-421-11	CARBON 2. 2K 5% 1/4W	
R904	1-249-433-11	CARBON 22K 5% 1/4W	
R905	1-249-433-11	CARBON 22K 5% 1/4W	
R906	1-249-425-11	CARBON 4. 7K 5% 1/4W	
△R910	1-212-865-00	FUSIBLE 22 5% 1/4W F	
< VARIABLE RESISTOR >			
RV601	1-241-630-11	RES, ADJ, CARBON 10K	
< RELAY >			
RY301	1-515-726-11	RELAY (MUTING)	
< TRANSFORMER >			
T301	1-459-795-11	COIL (WITH CORE)	
< VIBRATOR >			
X301	1-567-816-11	VIBRATOR, CRYSTAL (18. 816MHz)	
X302	1-567-815-11	VIBRATOR, CRYSTAL (22. 5792MHz)	
X303	1-578-667-11	VIBRATOR, CRYSTAL (49. 152MHz)	
X304	1-567-098-41	VIBRATOR, CRYSTAL (32. 768kHz)	

* 1-641-486-11 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	

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.

PRIMARY

REC VOL

REEL MOTOR

REG 5V

REG 6.6V

RELAY

RF AMP

Ref. No.	Part No.	Description	Remark
*	1-652-228-11	PRIMARY BOARD (EXCEPT E)	
*	1-645-234-11	PRIMARY BOARD (E)	

		< CAPACITOR >	
△C901	1-161-744-51	CERAMIC 0.01uF	400V
△C902	1-161-742-00	CERAMIC 0.0022uF 20%	400V
△C903	1-161-742-00	CERAMIC 0.0022uF 20%	400V
△C904	1-161-742-00	CERAMIC 0.0022uF 20%	400V
△C905	1-161-742-00	CERAMIC 0.0022uF 20%	400V (AEP, UK, G, E)
△C906	1-161-744-51	CERAMIC 0.01uF	400V
		< CONNECTOR >	
CN901	1-564-321-00	PIN, CONNECTOR 2P	
CN902	1-564-321-00	PIN, CONNECTOR 2P (E)	
CN902	1-580-629-21	PIN, CONNECTOR 2P (EXCEPT E)	
		< COIL >	
△L901	1-421-915-11	COIL, LINE FILTER	
		< SWITCH >	
△S921	1-571-722-11	SWITCH, VOLTAGE SELECTION	
		(VOLTAGE SELECTOR) (E)	

*	1-645-239-11	REC VOL BOARD	

		< CONNECTOR >	
* CN102	1-564-519-11	PLUG, CONNECTOR 4P	
		< RESISTOR >	
R101	1-259-462-11	CARBON 27K 5% 1/6W	
R201	1-259-462-11	CARBON 27K 5% 1/6W	
		< VARIABLE RESISTOR >	
RV101	1-241-937-11	RES, VAR, CARBON 20K/20K (REC LEVEL)	

*	1-639-304-11	REEL MOTOR BOARD	

		< CAPACITOR >	
C07	1-163-077-00	CERAMIC CHIP 0.1uF 10% 25V	

Ref. No.	Part No.	Description	Remark
*	1-652-231-11	REG 5V BOARD	

		< CAPACITOR >	
C950	1-164-159-11	CERAMIC 0.1uF	50V
C951	1-164-159-11	CERAMIC 0.1uF	50V
		< IC >	
IC950	8-759-231-53	IC TA7805S	

*	1-652-232-11	REG 6.6V BOARD	

		< CAPACITOR >	
C952	1-164-159-11	CERAMIC 0.1uF	50V
C953	1-164-159-11	CERAMIC 0.1uF	50V
C954	1-164-159-11	CERAMIC 0.1uF	50V
		< DIODE >	
D901	8-719-107-94	DIODE 1SS202-1	
		< IC >	
IC951	8-759-148-79	IC UPC2406HF	
		< RESISTOR >	
R901	1-249-425-11	CARBON 4.7K 5% 1/4W	

*	1-652-229-11	RELAY BOARD	

*	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	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C4	1-162-638-11	CERAMIC CHIP 1uF 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	

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

RF AMP

RGN SW

SW

TIMER SW

TOP END SENSOR

Ref. No.	Part No.	Description	Remark		
C12	1-164-299-11	CERAMIC CHIP	0.22uF	10%	25V
C13	1-162-638-11	CERAMIC CHIP	1uF		16V
C14	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C15	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C16	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C17	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C18	1-163-117-00	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	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C24	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C25	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C26	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C27	1-162-638-11	CERAMIC CHIP	1uF		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		
< 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	1-216-089-00	METAL CHIP	47K	5%	1/10W

Ref. No.	Part No.	Description	Remark		
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			

*	1-639-301-11	RGN SW BOARD			

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

*	1-641-487-11	SW BOARD			

< SWITCH >					
S1	1-571-958-11	SWITCH, PUSH (1 KEY) (CASSETTE TABLE IN)			
S2	1-571-958-11	SWITCH, PUSH (1 KEY) (CASSETTE TABLE OUT)			

*	1-645-243-11	TIMER SW BOARD			

< RESISTOR >					
R704	1-249-427-11	CARBON	6.8K	5%	1/4W
R705	1-249-432-11	CARBON	18K	5%	1/4W
< SWITCH >					
S701	1-692-478-11	SWITCH, SLIDE (TIMER)			
S702	1-554-937-11	SWITCH, KEY BOARD (p OPEN/CLOSE)			

*	1-639-305-11	TOP END 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		

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS *****	
△9	1-559-297-31	CORD, POWER (E)	
△9	1-559-479-11	CORD, POWER (US, CND)	
△9	1-575-912-11	CORD, POWER (AEP, G)	
△9	1-696-585-21	CORD, POWER (UK)	
△14	1-569-007-11	ADAPTER, CONVERSION 2P (E)	
81	1-590-321-71	LEAD (WITH CONNECTOR) (E)	
107	1-590-915-11	WIRE, FLAT TYPE (30 CORE)	
108	1-765-457-11	WIRE (FLAT TYPE) (10 CORE)	
109	1-765-456-11	WIRE (FLAT TYPE) (6 CORE)	
325	8-848-567-11	DRUM ASSY DOU-03A	
△BT301	1-528-229-11	BATTERY, LITHIUM (CR-2450)	
CN801	1-558-350-21	CORD (WITH CONNECTOR) (CONTROL-S IN) (US, CND)	
△F901	1-532-286-00	FUSE, TIME-LAG (2. 5A/250V) (AEP, UK, E, G)	
△F901	1-576-105-11	FUSE (2. 5A/250V) (US, CND)	
M901	A-2003-910-A	MOTOR ASSY, CASSETTE (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	
PM902	1-454-536-11	SOLENOID, PLUNGER (BACK TENSION)	
PM903	1-454-535-11	SOLENOID, PLUNGER (REEL MOTOR CONTROL (BRAKE))	
△S901	1-554-920-21	SWITCH, PUSH (AC POWER) (1 KEY) (E)	
△S901	1-572-267-51	SWITCH, PUSH (AC POWER) (1 KEY) (US, CND, AEP, UK, G)	
△T901	1-450-556-21	TRANSFORMER, POWER (US, CND)	
△T901	1-450-557-21	TRANSFORMER, POWER (AEP, UK, G)	
△T901	1-450-558-21	TRANSFORMER, POWER (E)	

		ACCESSORIES & PACKING MATERIALS *****	
	1-465-737-11	REMOTE COMMANDER (US, CND, UK, E/AEP, G:BLACK)	
	1-465-777-11	REMOTE COMMANDER (AEP, G:GOLD)	
	1-558-271-11	CORD, CONNECTION	
*	3-382-950-01	CUSHION	
	3-704-366-01	SCREW (CASE) (M3X8) (CND, E/AEP, G:BLACK)	
	3-704-366-11	SCREW (CASE) (M3X8) (AEP, G:GOLD)	

Ref. No.	Part No.	Description	Remark
	3-707-584-01	COVER, BATTERY	
	3-758-840-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE) (AEP, E)	
	3-758-840-21	MANUAL, INSTRUCTION (ENGLISH) (US, CND, UK,)	
	3-758-840-31	MANUAL, INSTRUCTION (FRENCH) (CND)	
	3-758-840-41	MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN) (AEP, G)	

* 3-911-729-01 INDIVIDUAL CARTON

HARDWARE LIST

#1	7-682-548-09	SCREW +BVTT 3X8 (S)
#2	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S
#3	7-685-133-19	SCREW +BTP 2. 6X6 TYPE2 N-S
#4	7-685-534-19	SCREW +BTP 2. 6X8 TYPE2 N-S
#5	7-685-645-79	SCREW +BVTP 3X6 TYPE2 N-S
#6	7-685-533-19	SCREW +BTP 2. 6X6 TYPE2 N-S
#7	7-621-775-20	SCREW +B 2. 6X5
#8	7-682-547-09	SCREW +BVTT 3X6 (S)
#9	7-682-560-04	SCREW +BVTT 4X6 (S)
#10	7-621-772-00	SCREW +B 2X3
#11	7-621-772-20	SCREW +B 2X5
#12	7-685-102-19	SCREW +P 2X4 TYPE2 NON-SLIT
#13	7-621-773-86	SCREW +B 2. 6X4
#14	7-627-556-17	SCREW, PRECISION +P 2. 6X3 TYPE1
#15	7-621-772-08	SCREW +B 2X3
#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)
#19	7-627-854-07	PRECISION SCREW +P 2X2. 5 TYPE3
#20	7-627-852-27	+P 1. 7X3
#21	7-621-255-15	SCREW +P 2X3
#22	7-627-552-27	SCREW, PRECISION +P 1. 7X2
#23	7-627-450-28	+K 1. 7X2
#24	7-621-772-08	SCREW +B 2X3

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
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DTC-60ES

SONY[®] SERVICE MANUAL

*US Model
Canadian Model
AEP Model
UK Model
E Model*

SUPPLEMENT-1

File this supplement with the service manual.

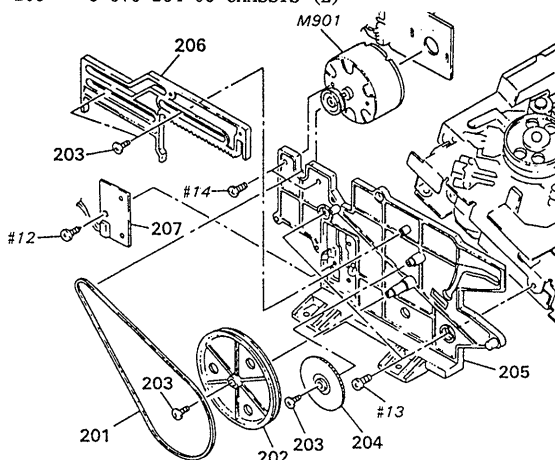
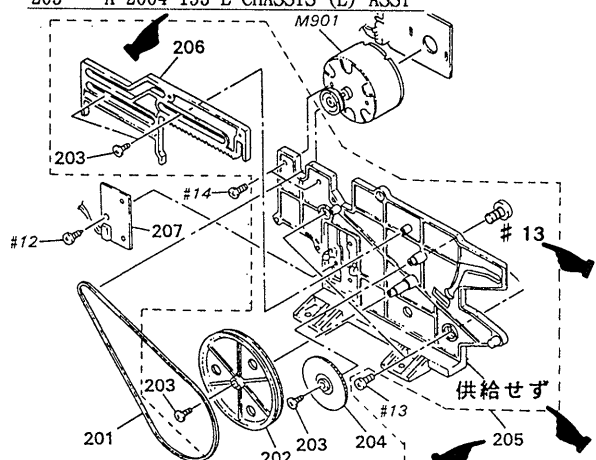
**Subject : 1. Correction
2. Parts changed
3. Board change**

(ECN-TC201118/TC500608/TC500800, SPM-95029)

• CORRECTION

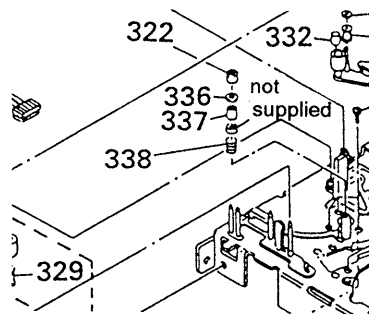
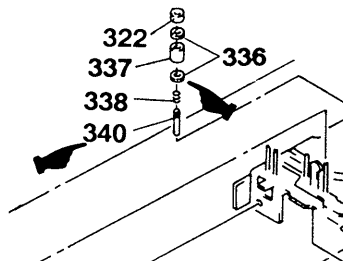
Correct your service manual as shown below.

✖ : Indicates corrected portion.

Page	INCORRECT				CORRECT			
	Ref.No	Part No	Description	Remark	Ref.No	Part No	Description	Remark
64	205	3-373-234-08	CHASSIS (L)		205	A-2004-153-E	CHASSIS (L) ASSY	
								

• Parts Changed

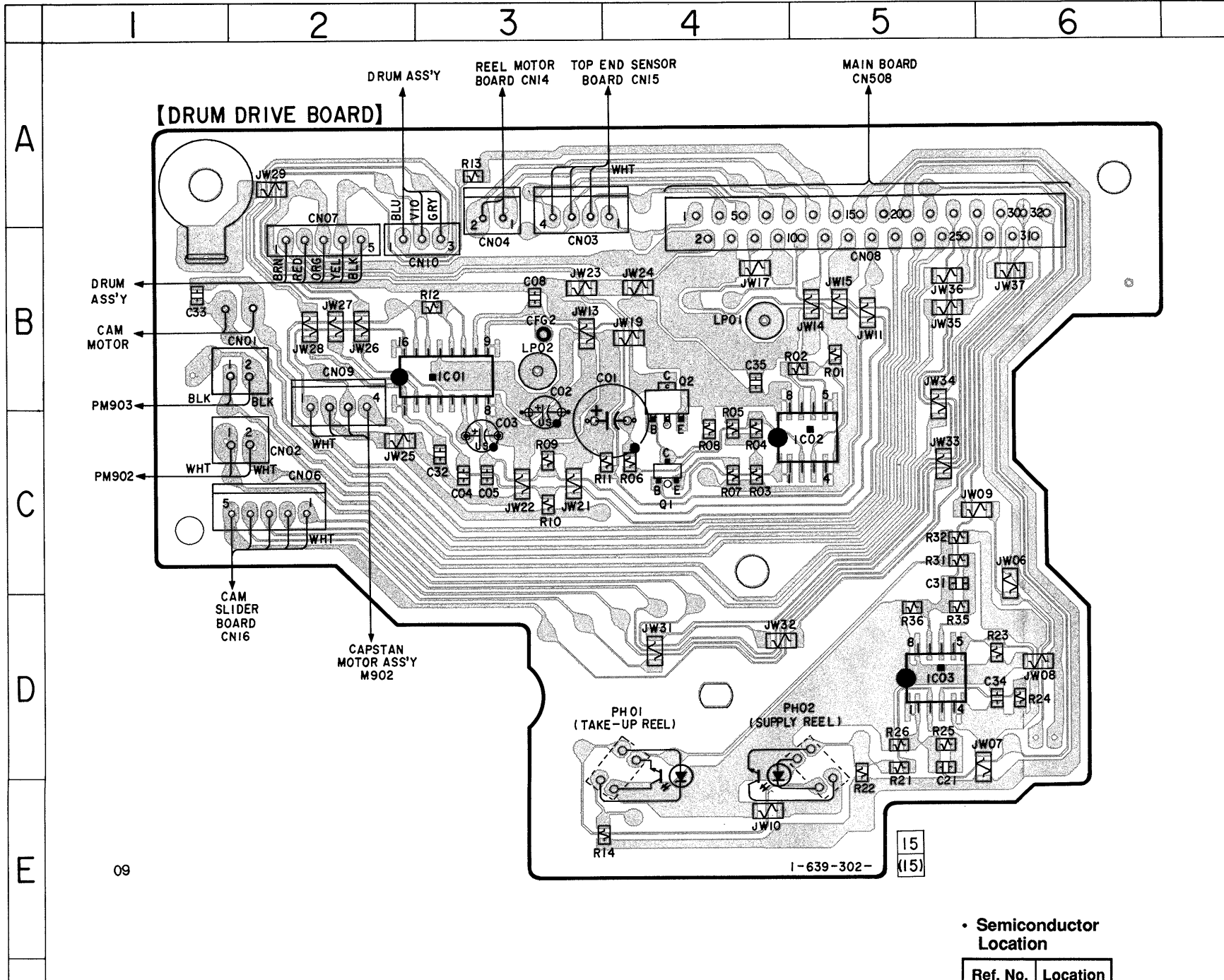
✖ : Changed portion.

Page	FORMER				NEW			
	<u>Ref.No</u>	<u>Part No</u>	<u>Description</u>	<u>Remark</u>	<u>Ref.No</u>	<u>Part No</u>	<u>Description</u>	<u>Remark</u>
65	307	3-368-428-01	SHAFT (ROLLER GUIDE) not supplied		307	3-908-644-01	SHAFT (ROLLER GUIDE)	
					340	3-337-674-01	SHAFT, GUIDE	
								

• Revise your service manual as shown below due to parts supply classification has been changed.

Page	CURRENT				REVISED			
	Ref.No	Part No	Description	Remark	Ref.No	Part No	Description	Remark
65	309	X-3337-643-1	GUIDE (RIC) ASSY, ROLLER		309	X-3371-518-1	ROLLER GUIDE ASSY	

3. BOARD CHANGE
PRINTED WIRING BOARD



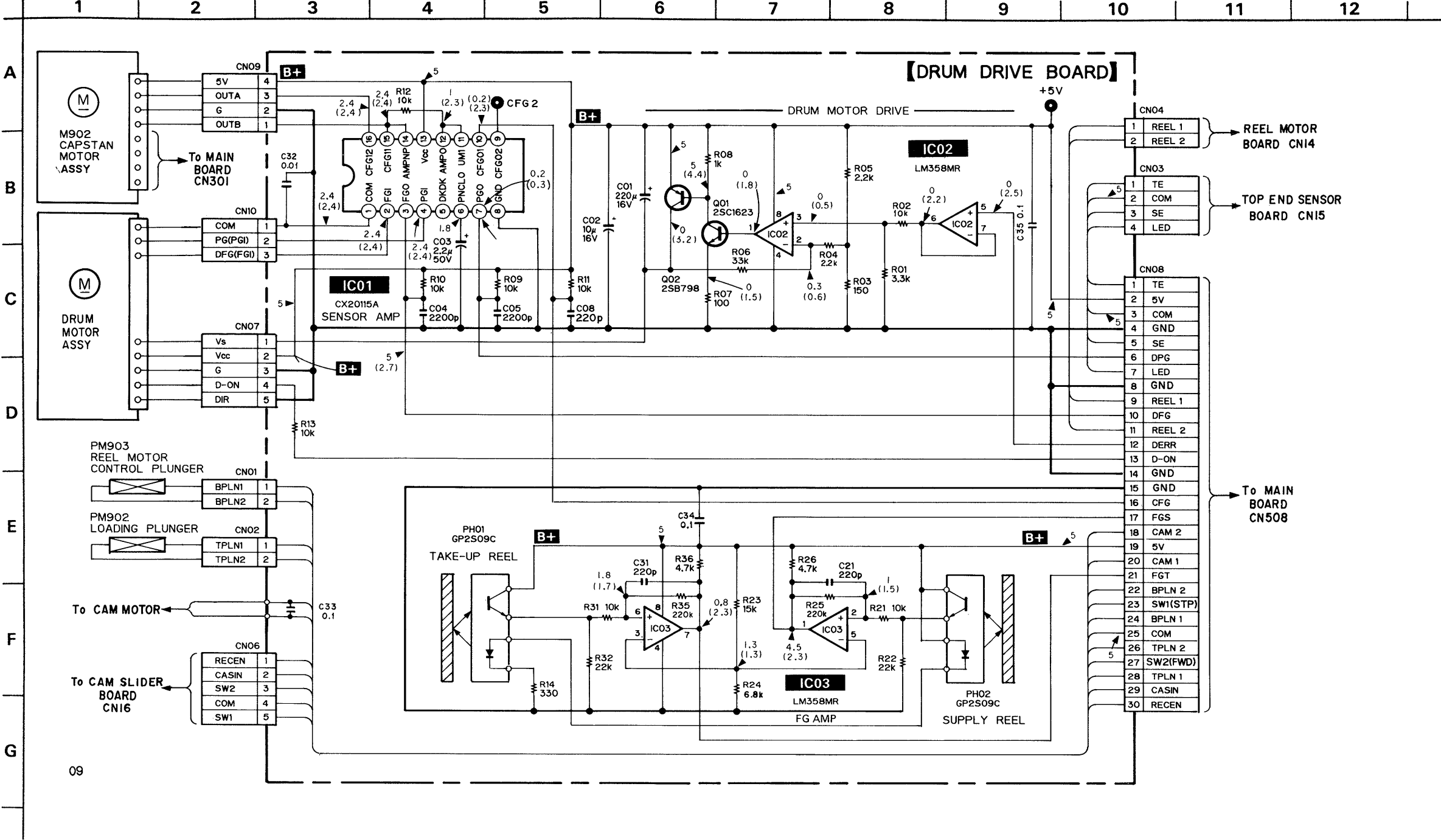
• Semiconductor Location

Ref. No.	Location
IC01	B-3
IC02	C-5
IC03	D-5
PH01	D-4
PH02	D-4
Q01	C-4
Q02	B-4

Note:

- : parts extracted from the component side.
- : parts extracted from the conductor side.
- ▨ : Pattern from the side which enable seeing.

SCHEMATIC DIAGRAM



Note:

- All capacitors are in μF unless otherwise noted. pF : μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- B+** : B+ Line
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
no mark : STOP
() : PLAY
- Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.

DRUM DRIVE

ELECTRICAL PARTS LIST

NOTE:

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.
- 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

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
*	A-2056-488-A	DRUM DRIVE BOARD, COMPLETE *****		JW13	1-216-296-91	CONDUCTOR, CHIP	(3216)
				JW14	1-216-296-91	CONDUCTOR, CHIP	(3216)
*	3-343-491-01	HOLDER (S SENSOR B)		JW15	1-216-296-91	CONDUCTOR, CHIP	(3216)
*	4-870-539-00	PLATE, GROUND		JW17	1-216-296-91	CONDUCTOR, CHIP	(3216)
		< CAPACITOR >		JW19	1-216-296-91	CONDUCTOR, CHIP	(3216)
C01	1-126-176-11	ELECT 220uF 20% 10V		JW21	1-216-296-91	CONDUCTOR, CHIP	(3216)
C02	1-126-157-11	ELECT 10uF 20% 16V		JW22	1-216-296-91	CONDUCTOR, CHIP	(3216)
C03	1-124-257-00	ELECT 2.2uF 20% 50V		JW23	1-216-296-91	CONDUCTOR, CHIP	(3216)
C04	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V		JW24	1-216-296-91	CONDUCTOR, CHIP	(3216)
C05	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V		JW25	1-216-296-91	CONDUCTOR, CHIP	(3216)
C08	1-163-001-11	CERAMIC CHIP 220PF 10% 50V		JW26	1-216-296-91	CONDUCTOR, CHIP	(3216)
C21	1-163-001-11	CERAMIC CHIP 220PF 10% 50V		JW27	1-216-296-91	CONDUCTOR, CHIP	(3216)
C31	1-163-001-11	CERAMIC CHIP 220PF 10% 50V		JW28	1-216-296-91	CONDUCTOR, CHIP	(3216)
C32	1-164-232-11	CERAMIC CHIP 0.01uF 50V		JW29	1-216-296-91	CONDUCTOR, CHIP	(3216)
C33	1-163-038-91	CERAMIC CHIP 0.1uF 25V		JW31	1-216-296-91	CONDUCTOR, CHIP	(3216)
C34	1-163-038-91	CERAMIC CHIP 0.1uF 25V		JW32	1-216-296-91	CONDUCTOR, CHIP	(3216)
C35	1-163-038-91	CERAMIC CHIP 0.1uF 25V		JW33	1-216-296-91	CONDUCTOR, CHIP	(3216)
		< CONNECTOR >		JW34	1-216-296-91	CONDUCTOR, CHIP	(3216)
* CN01	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P		JW35	1-216-296-91	CONDUCTOR, CHIP	(3216)
* CN02	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P		JW36	1-216-296-91	CONDUCTOR, CHIP	(3216)
* CN03	1-564-338-00	PIN, CONNECTOR 4P		JW37	1-216-296-91	CONDUCTOR, CHIP	(3216)
* CN04	1-564-336-00	PIN, CONNECTOR 2P				< PHOTO INTERRUPTER >	
* CN06	1-564-339-00	PIN, CONNECTOR 5P		PH01	8-719-939-23	PHOTO INTERRUPTER GP-2S09-C	(TAKE UP REEL)
CN07	1-564-721-11	PIN, CONNECTOR (SMALL TYPE) 5P		PH02	8-719-939-23	PHOTO INTERRUPTER GP-2S09-C	(SUPPLY REEL)
* CN08	1-568-872-11	SOCKET, CONNECTOR 30P				< TRANSISTOR >	
* CN09	1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P		Q01	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
* CN10	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P		Q02	8-729-101-07	TRANSISTOR 2SB798-DL	
		< IC >				< RESISTOR >	
IC01	8-752-060-73	IC CX20115A-T4		R01	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
IC02	8-759-502-80	IC LM358M		R02	1-216-073-00	METAL CHIP 10K 5% 1/10W	
IC03	8-759-502-80	IC LM358M		R03	1-216-029-00	METAL CHIP 150 5% 1/10W	
		< JUMPER RESISTOR >		R04	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
JW06	1-216-296-91	CONDUCTOR, CHIP (3216)		R05	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
JW07	1-216-296-91	CONDUCTOR, CHIP (3216)		R06	1-216-085-00	METAL CHIP 33K 5% 1/10W	
JW08	1-216-296-91	CONDUCTOR, CHIP (3216)		R07	1-216-025-91	METAL GLAZE 100 5% 1/10W	
JW09	1-216-296-91	CONDUCTOR, CHIP (3216)		R08	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
JW10	1-216-296-91	CONDUCTOR, CHIP (3216)		R09	1-216-073-00	METAL CHIP 10K 5% 1/10W	
JW11	1-216-296-91	CONDUCTOR, CHIP (3216)		R10	1-216-073-00	METAL CHIP 10K 5% 1/10W	

DRUM DRIVE

Ref.No.	Part No.	Description	Remark		
R11	1-216-073-00	METAL CHIP	10K	5%	1/10W
R12	1-216-073-00	METAL CHIP	10K	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
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

DTC-60ES

SONY SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model

CORRECTION-1

Correct your service manual as shown below.

 : indicates corrected portion.

Page	INCORRECT	CORRECT
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