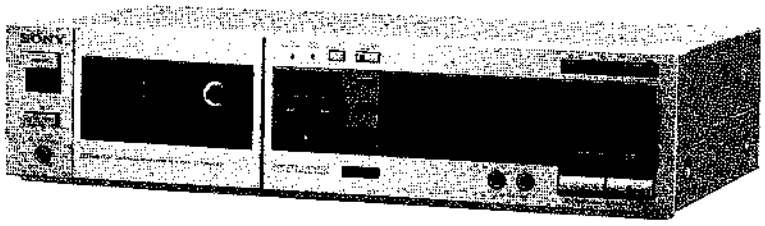
TC-FX705

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model



'Dolby' and the double-D symbol are the trade marks of Dolby Laboratories Licensing Corporation. Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.

SPECIFICATIONS

Recording system 4-track 2-channel stereo
Fast-forward and rewind time
Approx. 90 sec. (with C-60 cassette)
Bias frequency 105 kHz
Signal-to-noise ratio (NAB, at peak level)

Cassette \ Dolby NR button	OFF	B-TYPE ON	C-TYPE ON
TYPE IV (Sony METALLIC)	59 dB	66 dB	72 dB
TYPE III (Sony FeCr)	60 dB	67 dB	73 dB
TYPE II (Sony UCX)	58 dB	65 dB	71 dB
TYPE I (Sony BHF)	54 dB	61 dB	67 dB

Total harmonic distortion
1.0% (with Sony METALLIC and FeCr cassettes)
Frequency response DOLBY NR OFF
- With TYPE IV cassette (Sony METALLIC)
  20 - 19,000 Hz
  30 - 17,000 Hz (±3 dB)
  30 - 13,000 Hz (±3 dB, 0 VU recording)
  30 - 13,000 Hz (±3 dB, 0 VU recording)
- With TYPE III cassette (Sony FeCr)
  20 - 19,000 Hz
  30 - 17,000 Hz (±3 dB)
- With TYPE II cassette (Sony UCX)
  20 - 19,000 Hz
  30 - 17,000 Hz (±3 dB)
- With TYPE I cassette (Sony BHF)
  20 - 17,000 Hz

Wow and flutter 0.04% WRMS (NAB)
Inputs
Microphone inputs (phone jacks)
Sensitivity 0.25 mV (−70 dB)
For a low-impedance microphone
Line inputs (phono jacks)
Sensitivity 77.5 mV (−20 dB)
Input impedance 50 k ohms
Outputs
Line outputs (phono jacks)
Rated output level 0.44 V (−5 dB) at load impedance 50 k ohms, with the LINE OUT/PHONE control at "00"
Output level variable from 0.014 V to 0.44 V
Load impedance over 10 k ohms
Headphone output
Output level variable from −26 dB to −56 dB at a load impedance of 8 ohms

Tape Transport Mechanism	TCM-110R1, R2

Power requirements
120 V ac, 60 Hz . . . . (US, Canadian model)
220 V ac, 50/60 Hz (240 V ac adjustable by authorized Sony personnel) . . . . (AEP model)
240 V ac, 50/60 Hz (220 V ac adjustable by authorized Sony personnel) . . . . (UK model)
110, 120, 220 or 240 V ac adjustable, 50/60 Hz . . . . (E model)

— Continued on next page —

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ 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 TRAME ET UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

MICROFILM

STEREO CASSETTE DECK

SONY®

TC

Power consumption	25 watts . . . . (US, Canadian, AEP, UK model) 27 watts . . . . (E model)
Dimensions	Approx. 430 x 105 x 275 mm (w/h/d) (17 x 4 1/4 x 10 7/8 inches) including projecting parts and controls
Weight	Approx. 5.9 kg (13 lbs 1 oz)

0 dB = 0.775 V

FEATURES

Digital level monitor
The digital level monitor displays the input level exceeding the proper recording level in dB so that you can readjust the recording level appropriately.

Cassette stabilizer
The cassette stabilizer holds the cassette firmly to suppress vibration and makes the reproduced sound clear and the location of the sound image stable.

Automatic fader
During recording, special fade-in and fade-out effects can be made automatically simply by pressing the AUTO FADER button.

Audio memory
The recording and playback settings: the recording level, the Dolby NR setting, for example, can be memorized and instantly retrieved. Two settings can be made for each type of tape.

Function memory
A total of 8 steps of tape operations controlled by the ▶, ▶▶, ◀◀ and RESET buttons can be memorized and activated in the memorized sequence by pressing one button.

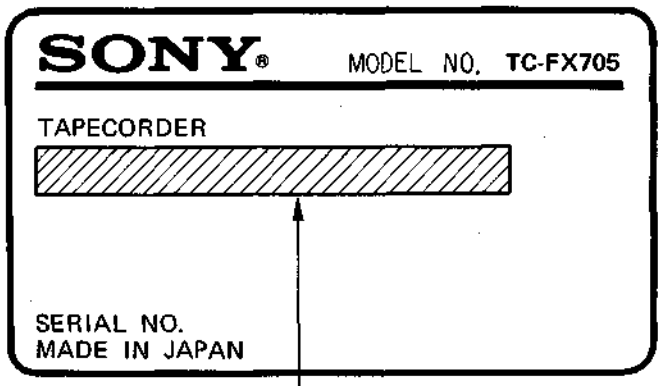
Automatic attenuator
The automatic attenuator lowers the recording level automatically when the level of input signals is beyond the proper recording level. This assures undistorted recording.

Digital display
The recording level, recording level balance and LINE OUT/headphone level are displayed in digits for accurate and easy reading.

Other useful functions
- The LA (LaserAmorphous) record/playback head provides a wider dynamic range and a more extended frequency response.
- The C-type Dolby NR system reduces tape noise twice as effectively as the conventional B-type system.
- The AMS (Automatic Music Sensor), blank skip and music scan functions allow you to locate the desired selection easily.
- The automatic tape select system adjusts the cassette deck to achieve the optimum recording and playback characteristics for each tape type.
- The digital linear counter indicates the elapsed or remaining recording or playback time in minutes and seconds. The pre-end winker warns that the tape is about to run out during recording.
- Remote control operations are possible.
- The deck can be turned on and off using an optional timer.

MODEL INDENTIFICATION

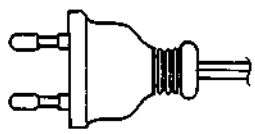
– Specification Label –



US, Canadian model: AC: 120 V 60 Hz 25W
AEP, G-AEP model: AC: 220 V 50/60 Hz 25W
UK model: AC: 240 V 50/60 Hz 25W
E model: AC: 110, 120, 220, 240 V 50/60 Hz 27W

– Power Cord –

E_3 model: euro-plug 1-555-734-00



E_2 model: parallel-blade plug 1-551-472-00

SAFETY CHECK-OUT (US Model)

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 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

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

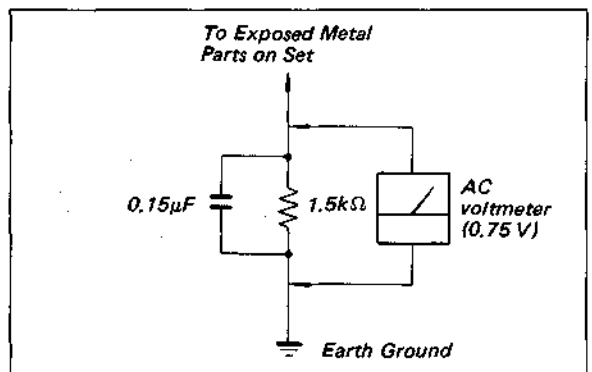
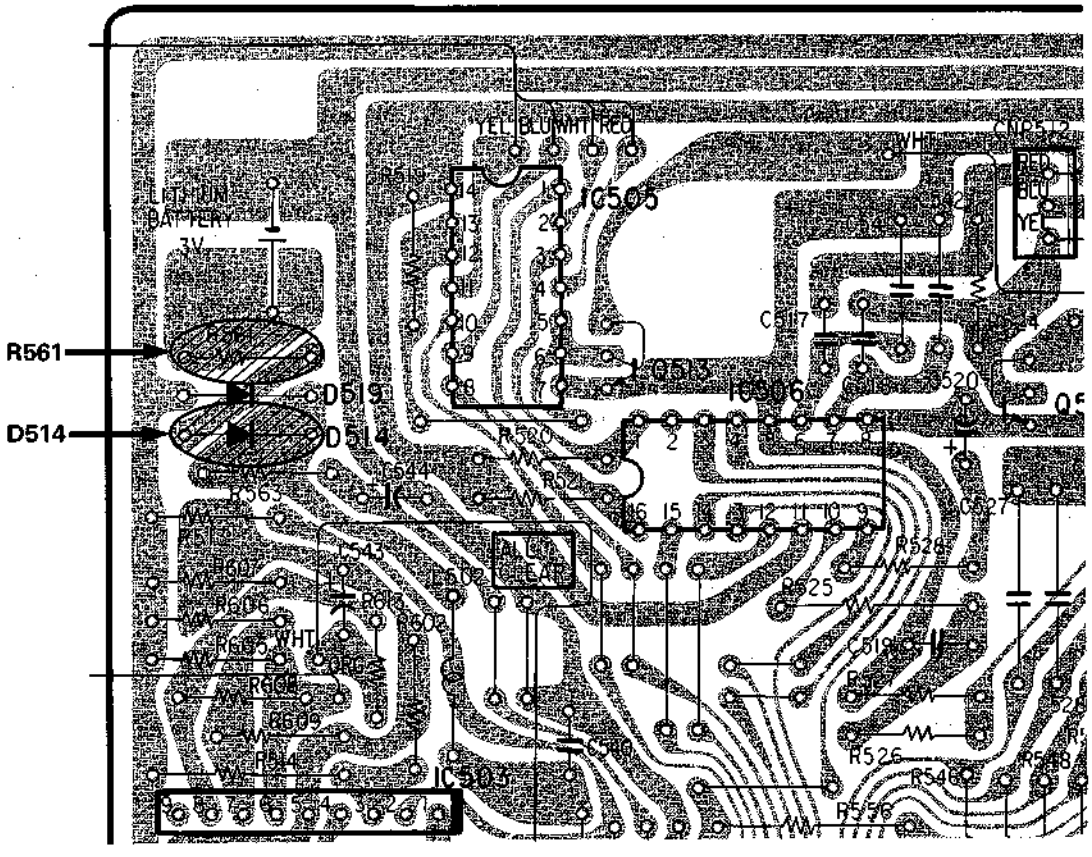


Fig. A. Using an AC voltmeter to check AC leakage.

Servicing Precaution

1. Before starting to replace ICs or other parts, be sure to turn off the back-up battery by disconnecting R561 or D514.
2. After completing to repair, connect R561 or D514 and proceed as follows as soon as possible, to return to normal back-up mode. Otherwise, the energy of the back-up battery will be wasted.
   (1) Turn on the power.
   (2) Short the "ALL CLEAR" jumper wire instantly with a screwdriver.
   (3) Turn off the power.
3. When the power is turned off, and the back-up battery is connected, never short the conductive pattern on the circuit board.
4. When CT301 is adjusted, an insulating tube should be over an adjustment screwdriver used.

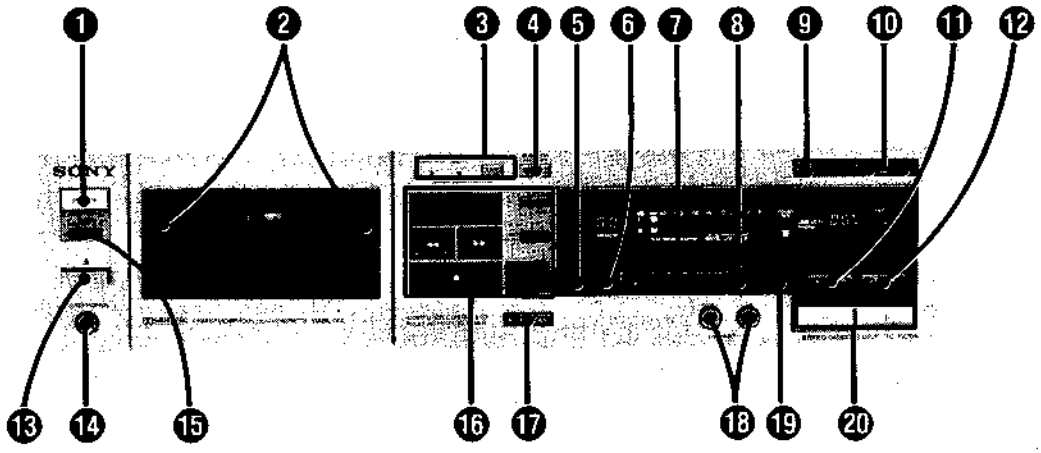
【SYSTEM CONTROL BOARD】



FUNCTION OF CONTROLS

Each number in the text is keyed to that of the photo and illustrations.

Front panel



❶ POWER switch
This turns the power on or off.

❷ Cassette stabilizer

❸ TAPE OPERATION button and indicators
To activate the AMS/blank skip function or the music scan function, press the TAPE OPERATION button, so that the corresponding indicator lights up. Each time the button is pressed, the AMS/BLANK SKIP indicator, MUSIC SCAN indicator or no indicator lights up in sequence.

❹ FUNCTION MEMORY button and indicator
Used for memorizing a series of tape operations and starting the memorized operations. (See "Function memory" on page 13.)

❺ RESET button
Press to reset the tape counter to zero.

❻ MEMORY button
Used for the memory stop/play. See page 11.
When this button is pressed, the MEMORY indicator appears on the display.

❼ AUTO/HI tape select button and tape type indicators
When a cassette is inserted, the appropriate tape type indicator lights up and the optimum recording and playback settings for the tape are set by the automatic tape select system. Press this button if the indicator and the type of tape inserted are not the same. This button is operable only when a cassette has been inserted.

⑧ DOLBY NR button
Press this button to select the Dolby* NR system when recording or playing back. The type of Dolby NR system applied will change in the following sequence when the button is pressed: Dolby NR B type (B indicator illuminates), Dolby NR C type (C indicator illuminates), Dolby NR off (indicator off).

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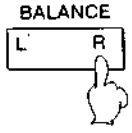
⑨ WRITE button
When memorizing the recording and playback settings on the AUDIO MEMORY buttons, first press this button, then the A or B AUDIO MEMORY button.

⑩ AUDIO MEMORY buttons and indicators
The recording and playback settings for each type of tape can be memorized on A and B buttons. The memorized settings can be retrieved simply by pressing the A or B button. See page 9.

⑪ BALANCE (recording level balance) control button
This button adjusts the balance of the left and right channel recording levels. When the L side of the button is pressed, the sound image to be recorded will be moved to the left as the level of the right channel is attenuated. When the R side is pressed, the sound image will be moved to the right. The difference of the level in dB between two channels is displayed on the audio level display. Normally set the balance to 00.

Example of the balance setting



The right channel level is 2 dB higher than the left channel level.

⑫ AUTO ATTENUATOR (automatic attenuator) button
Press this button to attenuate the preset recording level automatically when the input level is too high, so that the recording will not be distorted. The AUTO ATT indicator appears on the display. Press this button again to cancel the automatic attenuator function.
When the automatic attenuator is engaged, the digital level monitor display does not operate and always indicates  .

⑬ ⏏ (eject) button
Press this button to open the cassette holder.

⑭ HEADPHONES jack (stereo phone jack)
Connect a pair of headphones either to monitor the input signals to be recorded or to listen to a recording in the playback mode.

⑮ TIMER switch
You can set the unit to record or play back at a predetermined time by connecting any commercially available timer.

⑯ Function buttons
It is possible to switch directly from one mode to another.

- ▶ (forward) button : Press this button to play the tape back. To record, press this button while holding the ● button down.
- ▶▶ (fast-forward) button : Press this button to advance the tape rapidly. It is also used for the AMS and music scan functions.
- ◀◀ (rewind) button : Press this button to rewind the tape. It is also used for the auto play, AMS and music scan functions.
- ■ (stop) button : Press this button to stop the tape, or to disengage the ● button or the FUNCTION MEMORY button.
- ● REC (record) button : Press this button together with the ▶ button to start recording.
- ○ REC MUTE (record muting) button : Press this button to eliminate unwanted material and to insert a blank space during recording.
- ❚❚ PAUSE button : Press this button to stop the tape running for a moment during recording or playback.

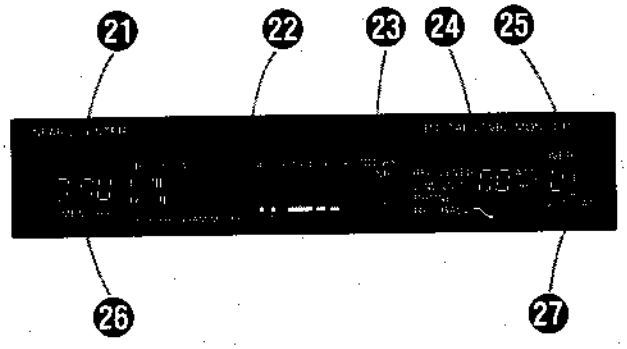
⑰ AUTO FADER (automatic fader) button
Press this button to fade in or fade out the recording. See page 14.

⑱ MIC jacks (phone jack)
Any low-impedance microphone equipped with a phone plug may be used.

⑲ LINE OUT/PHONE level control button
This button adjusts the output level of the LINE OUT jacks and the headphone level. When the + side of the button is pressed, the level will increase by 2 dB, and when the – side is pressed, the level will be attenuated by 2 dB, up to 30 dB. When the button is kept depressed, the level changes continuously. The attenuated level is indicated on the audio level display. The digits "00" indicate the maximum output level.

⑳ REC LEVEL (recording level) control buttons
Adjust the recording level by observing the peak program meters and the digital level monitor. Press the + button to increase the level, and the – button to decrease it. Each time the button is pressed, the level will change by 1 dB. When the button is held down, the level will change by 2 dB continuously. The attenuated level is displayed on the audio level display. The digits "00" indicate the maximum level.

Display section



㉑ Digital linear counter
Indicates the tape running time. See "Digital linear counter" on page 10.

㉒ Peak program meters
These meters show the peak input level of each channel during recording, and recorded levels in the playback mode. For easy reading the highest input of each channel is held for about 4 seconds on the scale, except when a higher peak occurs before 4 seconds have passed, in which case that peak is immediately indicated.

㉓ Dolby NR indicator
The selected Dolby NR B or C type is indicated here.

㉔ Audio level display
The attenuated level set by the REC LEVEL buttons, LINE OUT/PHONE button, or BALANCE button is indicated here.
- When the REC LEVEL button is pressed, the display shows the recording level (REC LEVEL).

When the + REC LEVEL button is pressed, the display will count down to (maximum recording level). When the – button is pressed, the display will count up to , and then to (infinitesimal level).
- When the LINE OUT/PHONE button is pressed, the display shows the output level of the LINE OUT jacks or the headphone level (LINE OUT/PHONE).

When the + side of the button is pressed, the display will count down to (rated output level). When the – side is pressed, the display will count up to (the minimum output level) in 2 dB steps.
- When the BALANCE button is pressed, the display shows the recording level balance of the right and left channels (REC BAL).

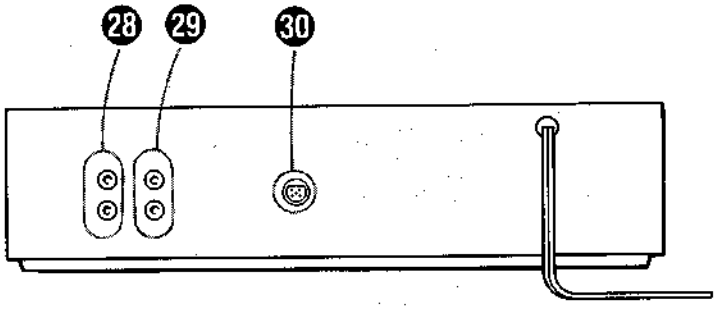
The display indicates the sound image is at the center. Pressing the L side will move the sound image to the left, shown by . Pressing the R side will move the sound image to the right, shown by . The or display will remain when the digit display is changed to the REC LEVEL indicator.
- When the BALANCE or REC LEVEL button is released, the display will automatically revert to the LINE OUT/PHONE level indicator, or the REC LEVEL indicator if the ● button is engaged.

㉕ DIGITAL LEVEL MONITOR
Indicates the input level exceeding the proper recording level for each type of tape, in 1 dB steps. When the input level is lower than the proper level, the display remains .

㉖ MEMORY indicator
When the MEMORY button is pressed, this indicator shows that the memory counter function is engaged.

㉗ AUTO ATT (automatic attenuator) indicator
When the AUTO ATTENUATOR button is pressed, this indicator appears to indicate the automatic attenuator is engaged.

Rear panel



㉘ LINE IN (line input) jacks (phono jack)
Accepts tape outputs from an amplifier for tape recording and line outputs from another tape deck when duplicating a tape from that unit.

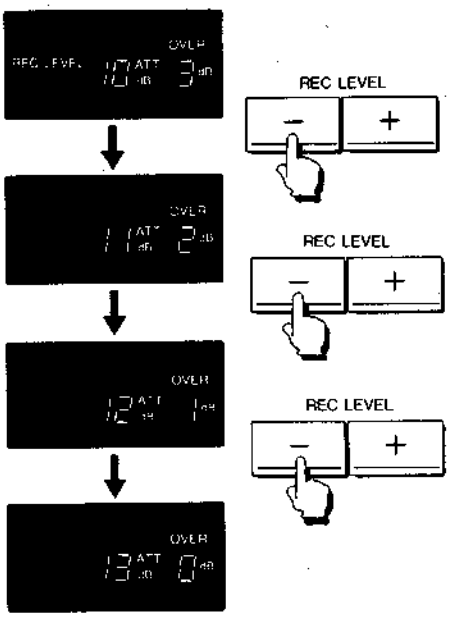
㉙ LINE OUT (line output) jacks (phono jack)
Accepts tape inputs from an amplifier for playing back a tape and line inputs from another tape deck for duplicating a tape onto that unit.

㉚ REMOTE control connector
Connect the optional RM-50 (wired) or RM-80 (wireless) remote control unit to operate the tape transport functions from a distance. The tape deck function buttons are still operative when the remote control unit is connected. The RM-65 synchro remote control unit can be connected to this connector.
Read the instruction manual of your remote control unit before operating.

DIGITAL LEVEL MONITOR

The digital level monitor indicates the input level exceeding the proper recording level for the type of tape in use. When the level of input signals is higher than the proper level, the number of decibels in excess appears on the digital level monitor.

To adjust the recording level using the digital level monitor
Play the program source to be recorded and set the recording level with the REC LEVEL buttons, observing the peak program meters. If a digit higher than 0 appears on the digital level monitor, the recording level is too high and should be attenuated.
For example, if appears on the digital level monitor when the REC LEVEL indicator shows , press the – REC LEVEL button until appears on the digital level monitor. (Do not press the – REC LEVEL button more, since remains even if the – REC LEVEL button is kept depressed.) The proper recording level is obtained.



The digital level monitor automatically indicates the amount over the proper recording level for the type of tape detected by the automatic tape select system. Since this indication is factory-adjusted to a standard cassette of each type, the actual recording level can be adjusted slightly up or down from the reading, according to the program source to be recorded or the characteristics of the cassette used.
For example,
- When you want to record at a higher recording level, making the most of a high-quality cassette, set the recording level so that the digital level monitor always indicates .
- When recording a program source which contains many mid and high frequencies, such as synthesizer music or jazz cymbals, use a lower recording level. First adjust the recording level to , then press the – REC LEVEL button once more.

Notes
- Since the digital level monitor cannot indicate anything below , even if the – REC LEVEL button is kept depressed. Be careful not to reduce the recording level excessively.
- The digital level monitor reading remains after the higher level signals have passed through. (This allows you to find the highest signal level of a selection.)
- The digital level monitor does not operate during playback or when the automatic attenuator is engaged. At that time, it displays .
- The levels of the program exceeding the proper level are averaged and then indicated on the digital level monitor. The highest level of the program at a given moment is indicated on the peak program meters. So, the readings may not be the same. If a calibration tone of a tuner or a monotone from an external oscillator is input, the digital level monitor indicates level in excess even if the peak program meter reading is lower than the proper setting level.

AUTOMATIC ATTENUATOR

The automatic attenuator lowers the recording level automatically when the input level exceeds the proper recording level, so that the recording is not distorted.

To adjust the recording level using the automatic attenuator
1 Play the program source to be recorded.
2 Set the recording level to a level higher than the proper range of the peak program meters.
3 Press the AUTO ATTENUATOR button. The AUTO ATT indicator appears on the display.
If the input level is excessive, the recording level is automatically attenuated to the proper level.
4 Start actual recording.

The automatic attenuator also handles unexpected high input during live recording with external microphones or timer-activated recording, and this assures undistorted recording.

Note
The recording level once attenuated by the automatic attenuator will not revert to the original level. Readjust the level, if necessary.

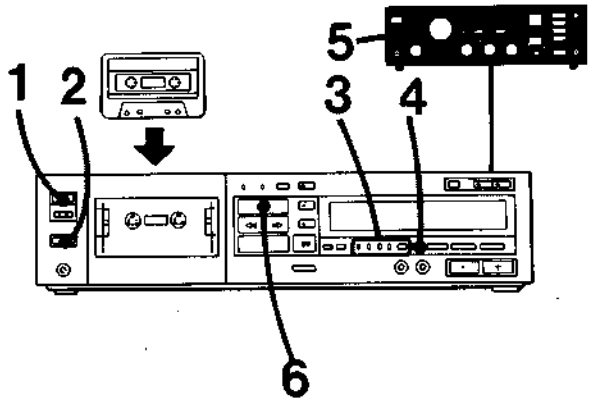
PLAYBACK

CAUTION

● **Before turning the power on, make sure that the TIMER switch is set to OFF.** If the power is turned on when this switch is set to the REC or PLAY position, recording or playback will start automatically in 4 seconds.

● The logic-controlled function buttons are not activated until 4 seconds after the unit is turned on, during which the ▮▮ indicator blinks. If the ▶, ▶▶ or ◀◀ button is pressed during this period, the tape will start running after the ▮▮ indicator goes off.

Follow the numbered sequence.



1 Depress the POWER switch to turn on the unit.
2 Press the ⏏ button and insert a recorded cassette.
3 Check that the correct tape type indicator illuminates.
If not, press the AUTO/III button.

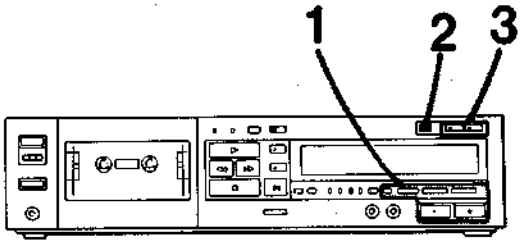
4 Select the same Dolby NR system used in recording.
5 Set the input selector of the amplifier for tape monitor.
6 Press the ▶ button. Playback will begin.

At the end of the tape, the unit will automatically shut off.
To stop playback in the middle of a tape, press the ■ button.

RECORDING AND PLAYBACK USING THE AUDIO MEMORY

This cassette deck can memorize and retrieve recording and playback settings. Two different settings can be memorized for each of the four types of tape (a total of 8 settings), on the A and B AUDIO MEMORY buttons.
Once a setting has been memorized, you can retrieve it only by pressing the same button.
The recording level, recording level balance, line out/headphone level, Dolby NR system and automatic attenuator ON/OFF settings can be memorized.

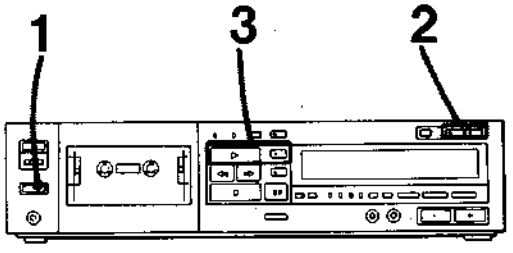
TO MEMORIZE THE SETTINGS



1 Adjust the settings to be memorized.
2 Press the WRITE button.
The indicators on both A and B AUDIO MEMORY buttons blink.
3 While the indicators are blinking (about 3 seconds), press either the A or B button on which you want to memorize the settings.
The indicator of the pressed button will light steadily to indicate the settings have been memorized.

Repeat the same steps to memorize other settings for the same type of tape on the other AUDIO MEMORY button, and settings for the other types of tape.
Once the settings are memorized, they cannot be cancelled until new settings for the same type of tape are memorized on the same AUDIO MEMORY button. We recommend that you label the cassette according to the AUDIO MEMORY button used.

TO RECORD OR PLAY BACK USING THE AUDIO MEMORY



1 Press the ⏏ button and insert a cassette.
2 Press the A or B AUDIO MEMORY button.
The settings for the type of tape inserted will be recalled.
3 Start recording or playback.

When the cassette is changed to one with a different type of tape or when the AUTO/III button is pressed while the indicator of the A or B AUDIO MEMORY button is illuminated, the settings of the button will be recalled for the type of new cassette.

TO CHANGE SOME OF THE SETTINGS ON A BUTTON
Simply change the settings as you want. The original settings memorized can be recalled later simply by pressing the AUDIO MEMORY button again.
If you change the recalled settings, the indicator on the AUDIO MEMORY button goes off.

Note on the memory back-up circuit
The settings memorized on the AUDIO MEMORY buttons and the figures of the tape counter will not be cancelled even when the power is turned off, because of a built-in memory back-up battery. When the power is turned on again, the memorized settings which there were just before the power was turned off will be recalled.
If the memory back-up battery is exhausted after prolonged use, the memory contents will be cancelled. Set the controls as required before recording or playback. The battery can be replaced by your Sony dealer.

Note: Even if the battery is exhausted, the other operations of the cassette deck can be activated normally.

DIGITAL LINEAR COUNTER

The first two digits of this tape counter show the approximate recording or playback time in minutes, and the last two digits show the seconds.
The figures on the tape counter and the memory counter function are memorized while the power is turned off.

TO INDEX THE WHOLE TAPE

Before recording or playback, press RESET.
The counter shows 0.00.

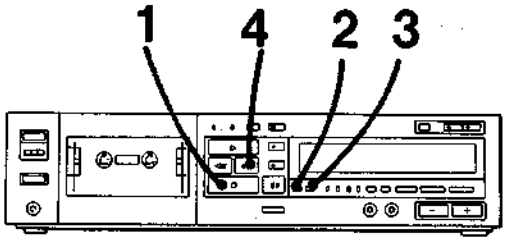
As the tape runs, the figures of the counter change. Note the numbers and the program being recorded or played back. Any point of the tape can be easily located later by reference to these numbers.

TO CHECK THE AVAILABLE RECORDING TIME ON ONE SIDE

1 **At the beginning of the tape, press RESET.**
The counter shows 0.00.
2 **Press ▶▶.**
The tape advances rapidly to the end.

At the end of the tape, the digits will show the approximate available recording time.

TO CHECK THE REMAINING RECORDING TIME

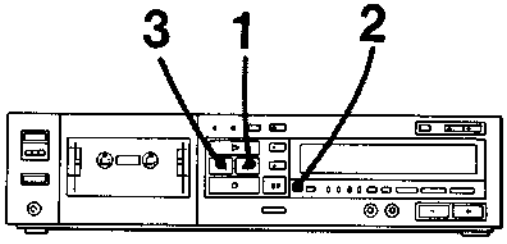


1 **Press ■.**
The tape stops at the point at which you wish to begin recording.
2 **Press RESET.**
The counter shows 0.00.
3 **Press MEMORY.**
The memory counter activates. (The MEMORY indicator appears.)
4 **Press ▶▶.**
The tape advances rapidly to the end. As the tape is moving, the digits will show the approximate recording time that remains.

Press ◀◀.
The tape will stop at 0.00.

TO MONITOR THE REMAINING TIME WHILE RECORDING —using the minus display

The counter can also show the recording or playback time from the 0.00 point preceded by a minus sign when the tape is rewound beyond 0.00.



1 **Press ▶▶.**
The tape advances rapidly to the end.
2 **Press RESET.**
The counter shows 0.00.
3 **Press ◀◀.**
The tape rewinds to the beginning. When it reaches this point, the digits will indicate the approximate recording time on that side of the cassette.

Press ▶ and ●.
Recording will begin.

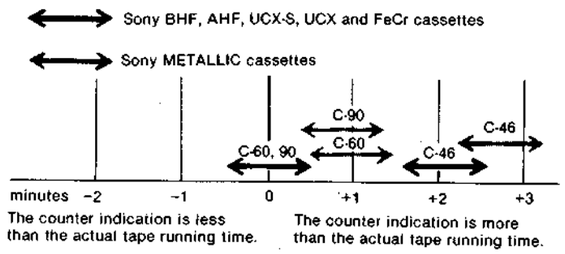
The digits will change from −30.00 to −29.59, −29.58 ... as the recording goes on, and you can monitor the remaining recording time at any point on the tape.
The function memory facilitates this tape operation. See page 13.

TC-FX705

THE ACCURACY OF THE COUNTER

This counter is not actually a digital clock, so that the displayed figures are not exactly equal to the actual elapsed time. The accuracy will vary depending on the type of tape being used.
This counter has been designed using Sony C-60 cassettes as the standard. Make sure that the displayed time is greater than the time required when using a Sony C-46 cassette.

Difference between the counter indication range and actual running time

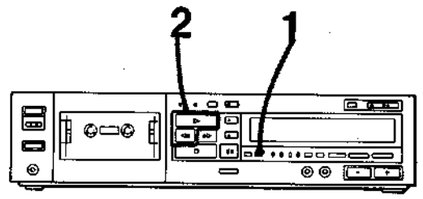


THE RECORDING PRE-END WINKER

When the tape approaches the end during recording, the digits of the counter will blink, warning that the tape is about to run out. The blinking will begin 2 to 3 minutes before the end of the tape for a Sony C-46 or C-60 cassette, and 3 to 5 minutes before the end of the tape for a Sony C-90 cassette.
Note that the pre-end winker may not function when using a cassette whose hubs are very thick.

AUTO PLAY AND MEMORY STOP/PLAY

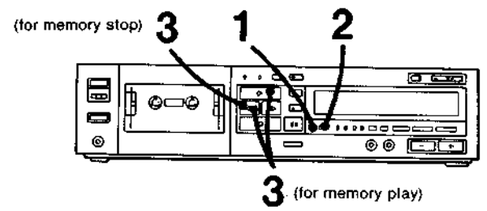
AUTO PLAY —To play from the beginning of the tape



1 **Make sure that the MEMORY indicator is not displayed.**
(If it is displayed, press the MEMORY button.)
2 **While holding ◀◀ down, press ▶.**
After the tape is completely rewound, the tape will automatically replay.

MEMORY STOP —To rewind the tape to the desired point

MEMORY PLAY —To rewind the tape and play from the desired point



1 **Play back or record, and press RESET.**
The counter shows 0.00.
2 **Press MEMORY.**
The memory counter activates and the MEMORY indicator appears.
3 After playback or recording,
For memory stop, press ◀◀.
The tape rewinds and stops at 0.00 automatically.
For memory play, while holding ◀◀ down, press ▶.
The tape will replay automatically after rewinding to 0.00.

Note
The AMS and the music scan functions have priority over the auto play function. When using the auto play function, make sure that none of the indicators of the AMS/BLANK SKIP or the MUSIC SCAN buttons lights.

Why does the tape stop around −0.01?
—In order to avoid cutting off the starting point.

How does one rewind the tape further than 0.00?
—Press the ◀◀ button again.

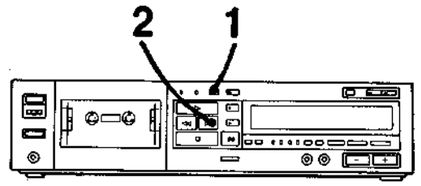
When should one press the MEMORY button?
—Any time. If the MEMORY indicator is displayed, the tape will stop or replay automatically at the 0.00 point.

VARIOUS TAPE OPERATIONS

AMS (AUTOMATIC MUSIC SENSOR)
—To play from the beginning of the following selection or the selection being played

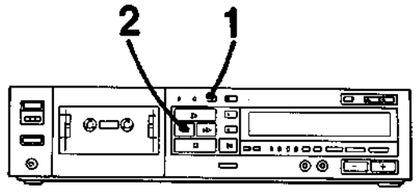
During playback, use the AMS to locate the beginning of the selection being played or the following selection. The AMS searches either forward or in reverse for the blank space between selections. Playback will begin automatically from the beginning of the selection.

To play from the beginning of the following selection



1 **Press TAPE OPERATION to illuminate the AMS/BLANK SKIP indicator.**
2 **During playback, press ▶▶.**
The indicator of the ▶ button blinks rapidly.

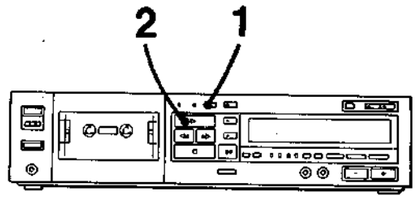
To play from the beginning of the selection being played



1 **Press TAPE OPERATION to illuminate the AMS/BLANK SKIP indicator.**
2 **During playback, press ◀◀.**
The indicator of the ▶ button blinks rapidly.

If you operate the AMS at a blank space between selections, playback may begin from the beginning of the selection after the following one or from the beginning of the previous selection.

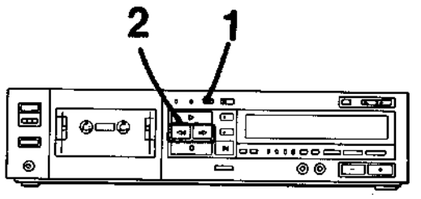
BLANK SKIP —To play skipping blank spaces



1 **Press TAPE OPERATION to illuminate the AMS/BLANK SKIP indicator.**
2 **Start playback.**

Where there is a blank about 10 seconds long, the cassette deck will automatically go into the fast-forward mode and will resume playback when a new selection begins.
When the tape reaches its end in fast-forward mode, the unit will automatically shut off.

MUSIC SCAN —To play only the beginnings of all selections in sequence



1 **Press TAPE OPERATION twice to illuminate the MUSIC SCAN indicator.**
2 During playback,
To locate the beginnings of the selections ahead, press ▶▶.
The deck skips the selection being played in the fast-forward mode, plays the beginning of the following selection for about 10 seconds, then goes into the fast-forward mode again. This fast-forward and playback cycle will be repeated for each selection ahead.
To locate the beginnings of the previous selections, press ◀◀.
The deck skips the selection being played in the rewind mode, plays the beginning of the previous selection for about 10 seconds, then goes into the rewind mode again. This rewind and playback cycle will be repeated for each previous selection.

During fast-forward or rewind, the indicator of the ▶ button blinks rapidly.
During playback, the indicator of the ▶ button blinks slowly. If the ▶ button is pressed during playback, the music scan function will be cancelled and normal playback will resume. The indicator of the ▶ button will light steadily.

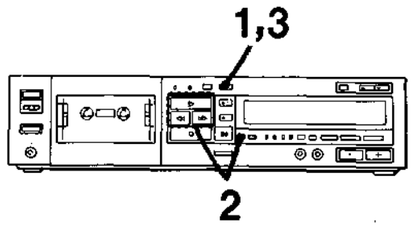
Notes on the AMS, blank skip and music scan functions

- A low-frequency monotone signal may have been recorded for 2 seconds or so at the beginning and at the end of some commercially available recorded cassettes. If the blank skip function is used with such a cassette, it may malfunction and repeat the last selection on the tape over and over again.
  If this happens, erase the monotone signal or press the TAPE OPERATION button so that neither the AMS/BLANK SKIP or MUSIC SCAN indicator illuminates.
- If there is noise in the space between selections, or if the space is less than 4 seconds long, the AMS or the music scan may not operate.
  The record muting facility of this cassette deck can make a 4-second blank space that will assure correct operation on any recorded tape.
- If the recorded music includes a long pause, if it continues for a time at such low frequencies as those of a bass saxophone or at very low volume, or if its volume increases or decreases gradually, as may happen with classical music, the AMS, music scan or blank skip will treat these passages as blanks and playback will begin in the middle of a selection. If this happens, press the ▶▶ or ◀◀ button.
- If the ▶▶ button is pressed immediately before the following selection, the AMS, blank skip or music scan may skip the selection and search for the selection after the one immediately following.

FUNCTION MEMORY

Up to 8 steps of tape operations controlled by the ▶, ▶▶, ◀◀ and RESET buttons can be set on the FUNCTION MEMORY button and can be executed in the memorized sequence automatically simply by pressing one button.

Examples of the operations to be memorized
❶ ▶▶ button → ◀◀ button
(to wind the tape uniformly)
❷ ▶ button → ◀◀ button → ▶ button
(to repeat playback of one side of the cassette)



1 **Stop the tape, and press FUNCTION MEMORY.**
The indicator of the FUNCTION MEMORY button lights up.
2 **Press ▶, ▶▶, ◀◀ and RESET in the order in which you want the deck to operate later.**
When a button is pressed, the indicator of the FUNCTION MEMORY button blinks once to indicate the operation has been set in the memory.
3 **Press FUNCTION MEMORY again.**
The memorized operation starts.

During the operation, the indicator on the FUNCTION MEMORY indicator blinks slowly.

- If more than 8 buttons are pressed to be memorized, the indicator of the FUNCTION MEMORY button blinks rapidly, indicating the memory is full. No more buttons cannot be memorized.
- To erase the memory contents while memorizing, press the ■ button.
- To cancel the on-going memory operation, press a function button or RESET button. The indicator of the FUNCTION MEMORY button goes off.

How to work the counter memory function when the memorized operation is being executed

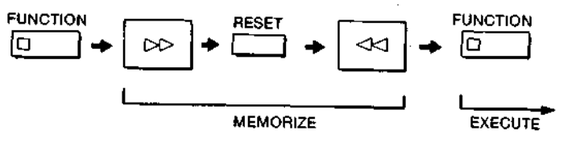
When the MEMORY indicator is displayed, the tape stops at the 0.00 point of the tape counter and the deck goes into the next operation memorized.
When the MEMORY indicator is not displayed, the tape stops at the beginning or at the end, and the deck goes into the next operation memorized.

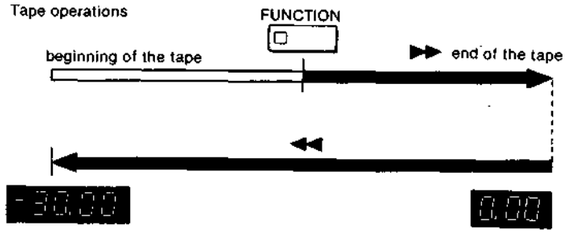
Notes

- While executing the memorized operations, the remote control operation, the AMS, blank skip and music scan functions cannot be used.
- The function memory is erased when the unit is turned off.

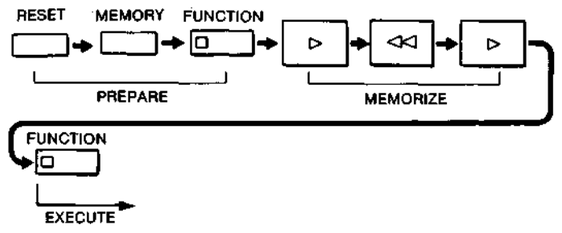
EXAMPLES OF TAPE OPERATIONS USING THE FUNCTION MEMORY

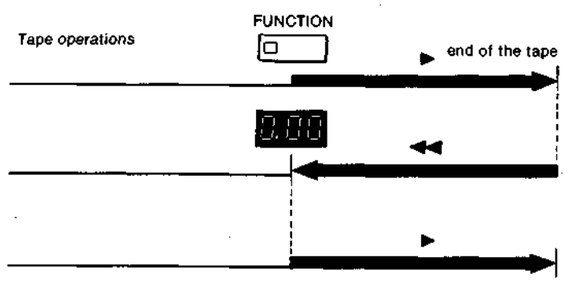
- To wind a new tape uniformly and set the tape counter to monitor the remaining recording time.



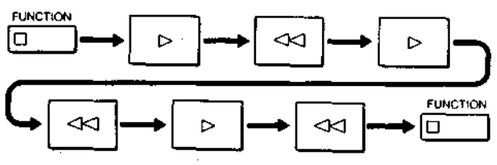


- To repeat a later part of the tape twice.

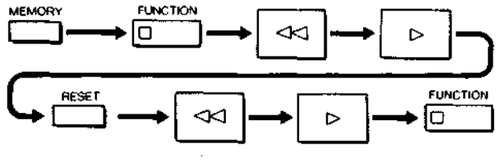




- To repeat one side of the cassette three times and rewind to the beginning.



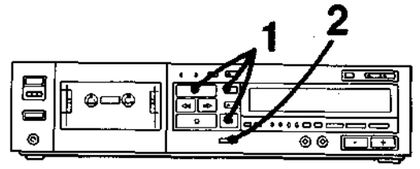
- To rewind the tape to the desired point (0.00 point), play it to the end, and then play from the beginning to the end.



AUTOMATIC FADER

Using the automatic fader function, you can increase the recording level gradually at the start of a recording (automatic fade-in), or decrease it gradually and pause the tape automatically (automatic fade-out).

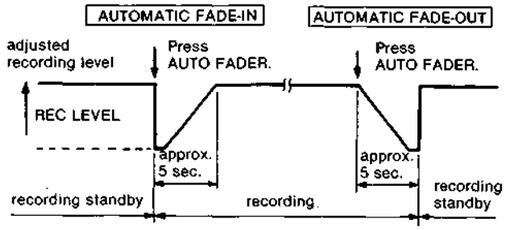
TO FADE IN



1 **Set the deck in the recording standby mode.**
(The indicators of the ●, ▶ and ❚❚ buttons illuminate.)
2 **Press AUTO FADER when you want to start fade-in.**
The recording level is attenuated to the minimum (REC LEVEL), recording resumes, then the recording level gradually increases up to the previous level.

TO FADE OUT

During recording, press AUTO FADER when you want to start fade-out.
The recording level decreases gradually and the tape pauses automatically when the level has decreased to the minimum (REC LEVEL).
Then the recording level immediately reverts to the previous level.



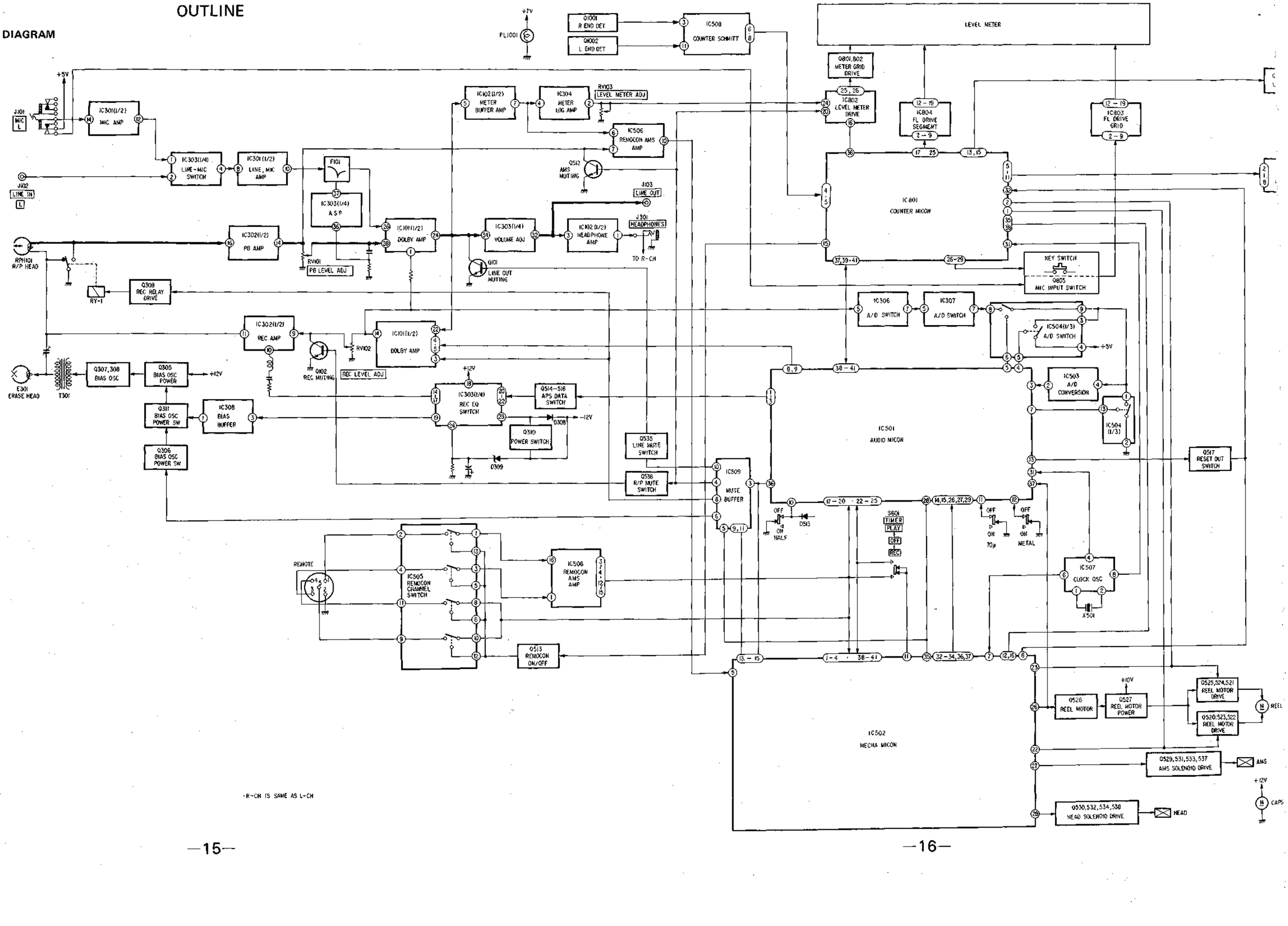
The output level of the LINE OUT jacks or the headphone level also changes with automatic fade-in or fade-out.

Notes

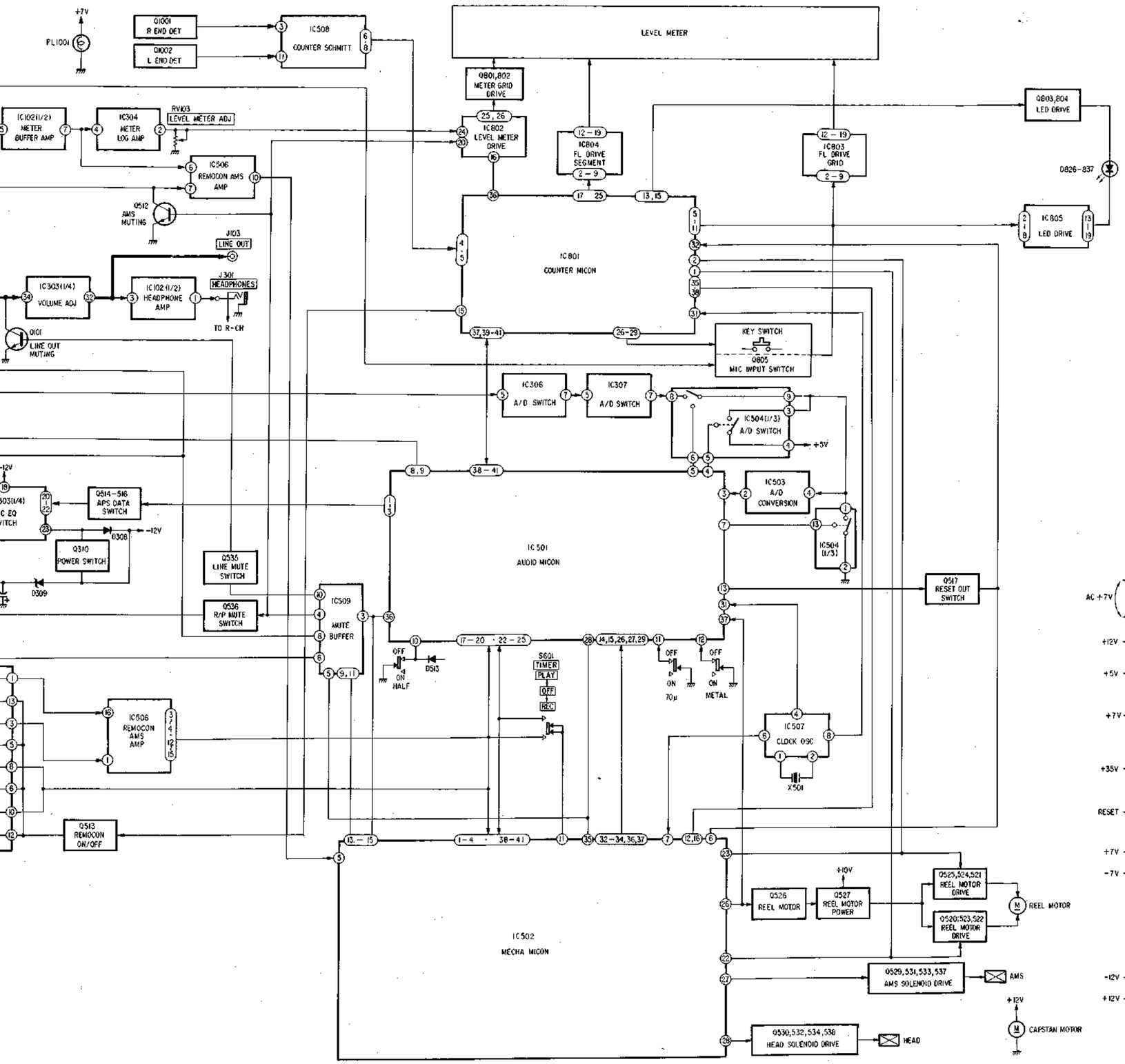
- If the automatic fade-in is activated immediately after the automatic fade-out, a sufficient blank space for the AMS and music scan functions is not made. To assure these functions, press the ○ button after the automatic fade-out. A four second blank will be made.
- Do not press the REC LEVEL, LINE OUT/PHONE or BALANCE button during automatic fade-in or fade-out, as this will cancel automatic fader function.

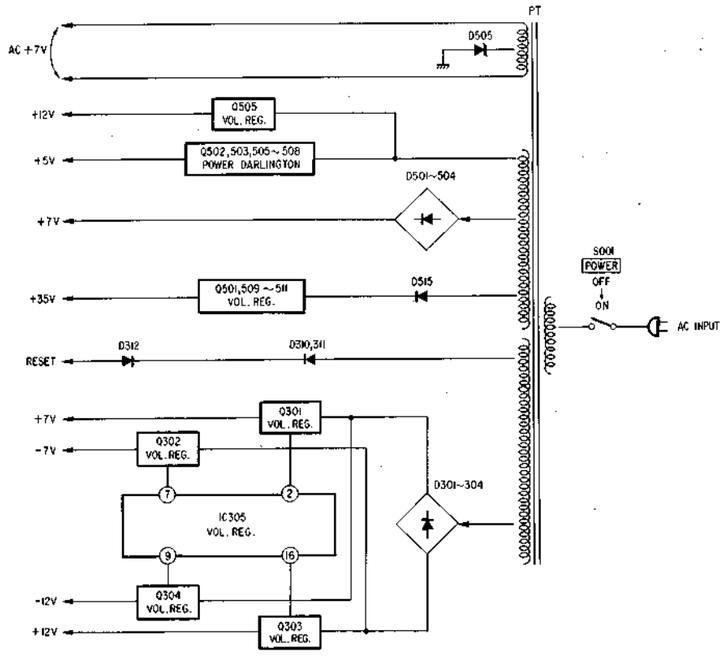
SECTION 1
OUTLINE

1-1. BLOCK DIAGRAM



·R-CH IS SAME AS L-CH


+7V
PL1001
Q1001 R END DET
Q1002 L END DET
IC508 COUNTER SCHMITT
LEVEL METER
Q801,802 METER GRID DRIVE
IC802 LEVEL METER DRIVE
IC804 FL DRIVE SEGMENT
IC803 FL DRIVE GRID
Q803,804 LED DRIVE
Q826-837
IC805 LED DRIVE
IC102(1/2) METER BUFFER AMP
IC304 METER LOG AMP
RV103 LEVEL METER ADJ
IC506 REMOCON AMS AMP
Q512 AMS MUTING
J103 LINE OUT
J301 HEADPHONES
IC303(1/4) VOLUME ADJ
IC102(1/2) HEADPHONE AMP
TO R-CH
Q101 LINE OUT MUTING
IC801 COUNTER MICON
KEY SWITCH
Q805 MIC INPUT SWITCH
IC306 A/D SWITCH
IC307 A/D SWITCH
IC504(1/3) A/D SWITCH
+5V
IC503 A/D CONVERSION
IC504 (1/3)
IC501 AUDIO MICON
Q514-516 APS DATA SWITCH
Q308
-12V
Q310 POWER SWITCH
D309
Q535 LINE MUTE SWITCH
Q536 R/P MUTE SWITCH
IC509 MUTE BUFFER
Q517 RESET OUT SWITCH
OFF ON HALF
D513
S601 TIMER PLAY OFF REC
OFF ON 70μ
OFF ON METAL
IC507 CLOCK OSC
X501
IC506 REMOCON AMS AMP
Q513 REMOCON ON/OFF
IC502 MECHA MICON
+10V
Q526 REEL MOTOR
Q527 REEL MOTOR POWER
Q525,524,521 REEL MOTOR DRIVE
Q520,523,522 REEL MOTOR DRIVE
REEL MOTOR
Q529,531,533,537 AMS SOLENOID DRIVE
AMS
+12V
CAPSTAN MOTOR
Q530,532,534,538 HEAD SOLENOID DRIVE
HEAD


PT
AC +7V
D505
+12V
Q505 VOL. REG.
+5V
Q502,503,505~508 POWER DARLINGTON
D501~504
+7V
S001 POWER OFF ON
AC INPUT
+35V
Q501,509~511 VOL. REG.
D515
RESET
D312
D310,311
+7V
Q301 VOL. REG.
-7V
Q302 VOL. REG.
D301~304
IC305 VOL. REG.
-12V
Q304 VOL. REG.
+12V
Q303 VOL. REG.

1-2. CIRCUIT OUTLINE

TC-FX705 is a stereo cassette deck having an ASP IC CX7919 (electronic volume control). This IC controls the volume of the audio circuit and serves as switches.
The three microcomputers are employed as mechanical controller in this set. As the data signals from each microcomputer are related with the other one, be careful to the following explanation.

1. Three microcomputers
   - IC501 (audio microcomputer):
     ASP control, Level A/D control, memory back-up, etc.
   - IC502 (mechanism microcomputer):
     mechanical control, AMS, etc.
   - IC801 (counter microcomputer):
     Linear counter, switch input, dynamic scanning of display output, etc.

2. As the audio microcomputer is backed-up by lithium cell, the contents (information) of the audio memory and the value of the linear counter are not erased. Normally, reset signal is not applied to the audio microcomputer (IC501 ㉝ is connected to cell). Either normal operation or back-up mode is determined according to the level at the HOLD terminal of IC501 ㉞ when the power is turned on or off.

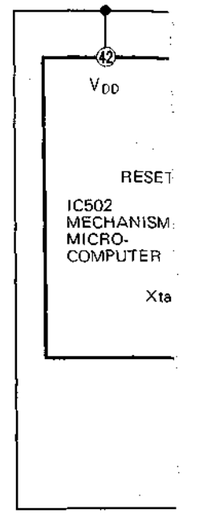
Power ON

→ Normal operation

Power OFF

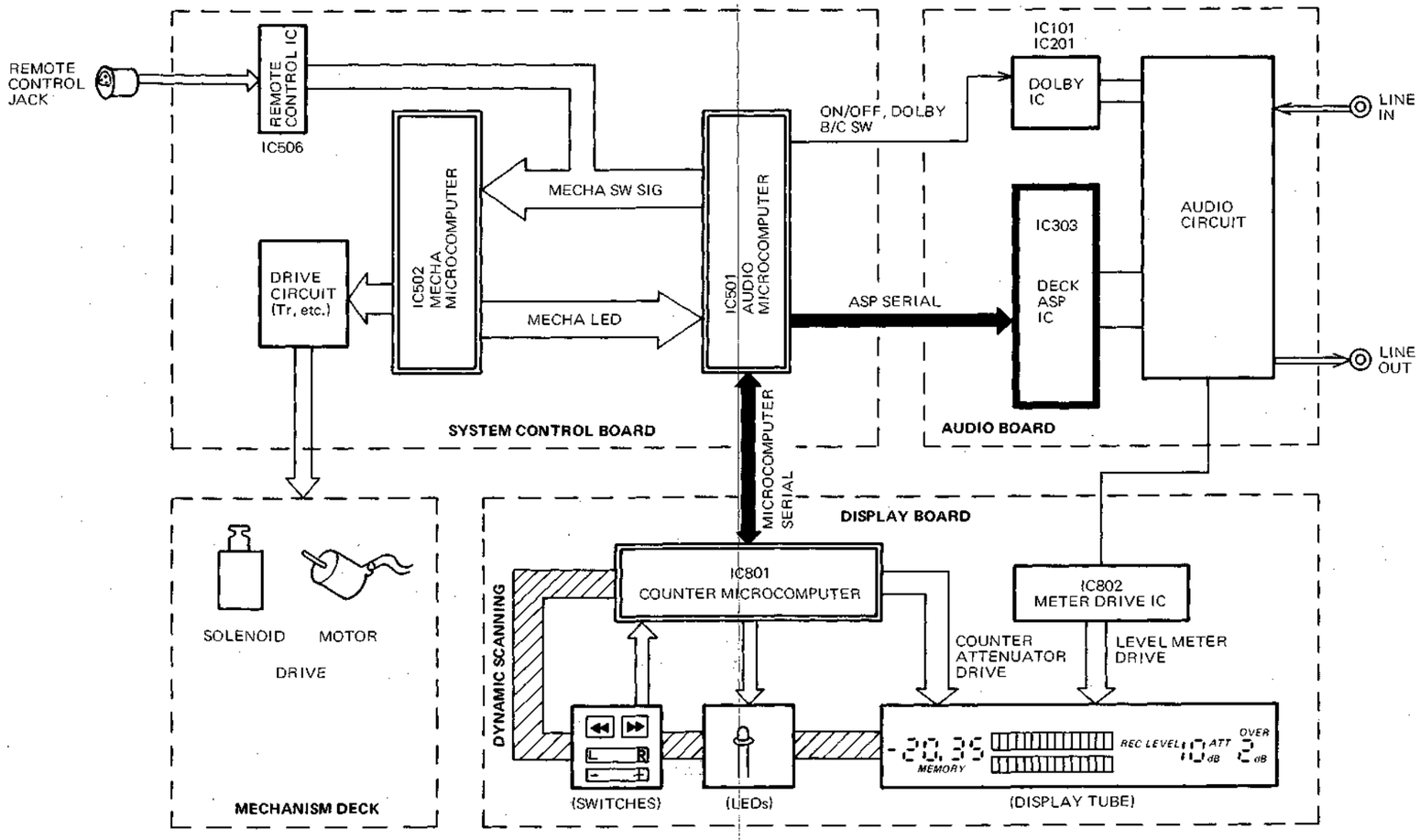
→ Back-up mode

This trigger voltage is applied to IC501 ㉞ from the power transformer via D310, D311 (rectifiers) and IC503 (comparator).



3. IC501 is s
   The level
   drops to
   RESET O
   Q517 and
   (0V
   power is r
   If this sig
   operate (T
   may go o
   will be fou

— Block Diagram for TC-FX705 Microcomputer System —



2. As the audio microcomputer is backed-up by lithium cell, the contents (information) of the audio memory and the value of the linear counter are not erased. Normally, reset signal is not applied to the audio microcomputer (IC501 ㉝ is connected to cell). Either normal operation or back-up mode is determined according to the level at the HOLD terminal of IC501 ㉞ when the power is turned on or off.

Power ON

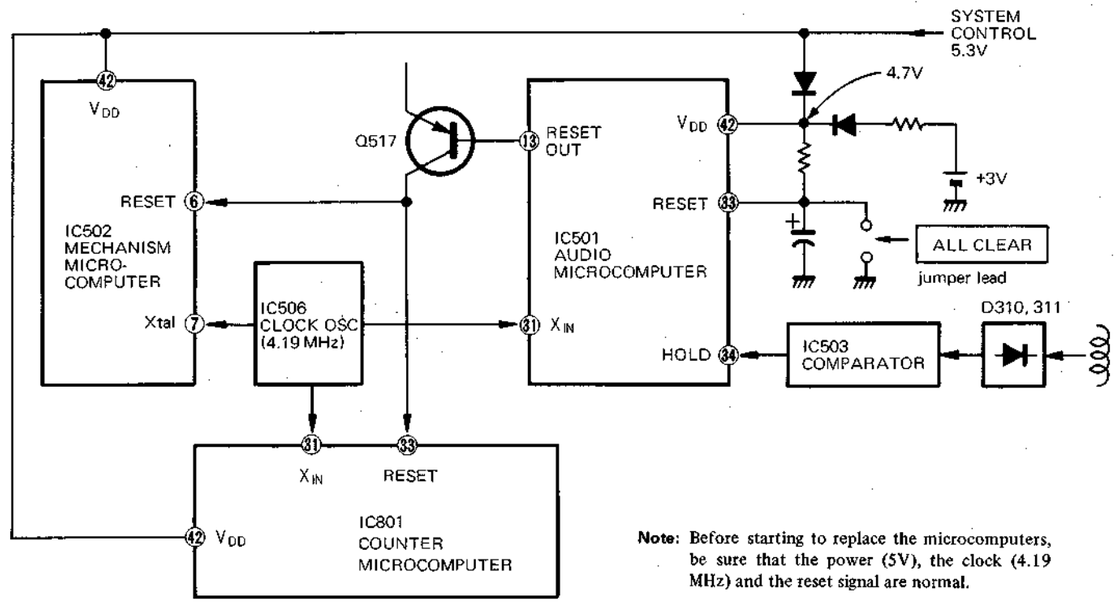
→ Normal operation

Power OFF

→ Back-up mode

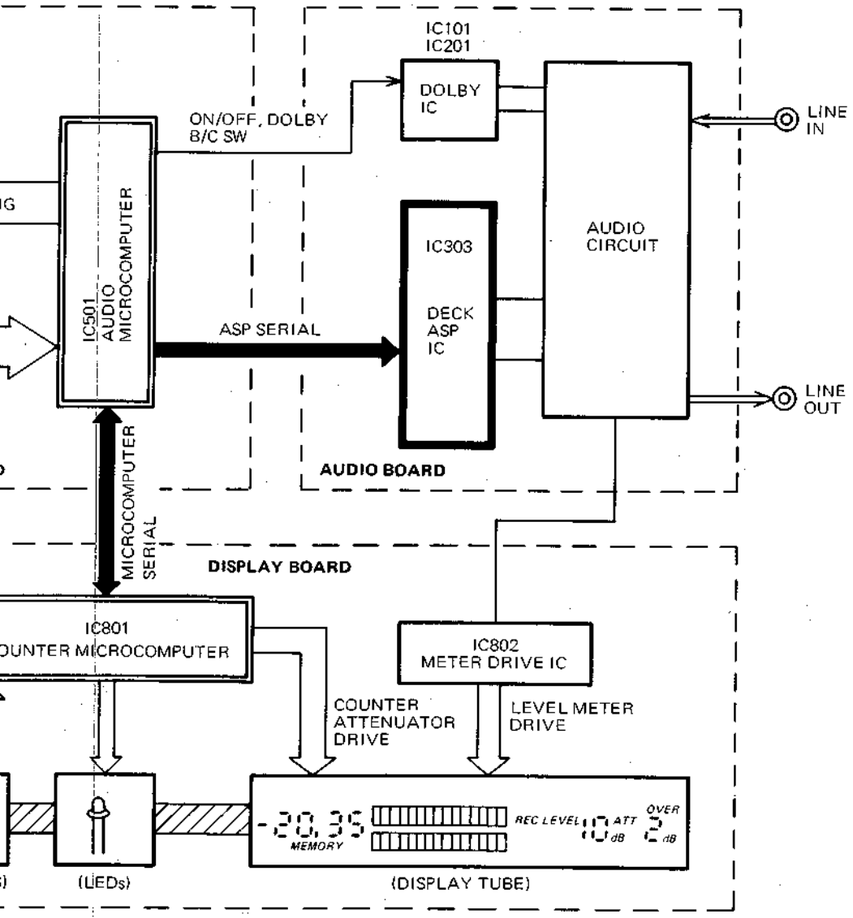
This trigger voltage is applied to IC501 ㉞ from the power transformer via D310, D311 (rectifiers) and IC503 (comparator).

— Simplified Circuit for Power and Reset Signal Among Three Microcmputers —



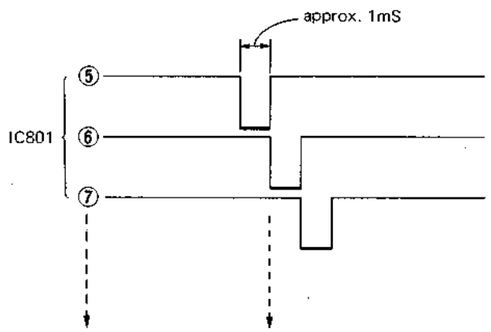
Note: Before starting to replace the microcomputers, be sure that the power (5V), the clock (4.19 MHz) and the reset signal are normal.

— Block Diagram for TC-FX705 Microcomputer System —

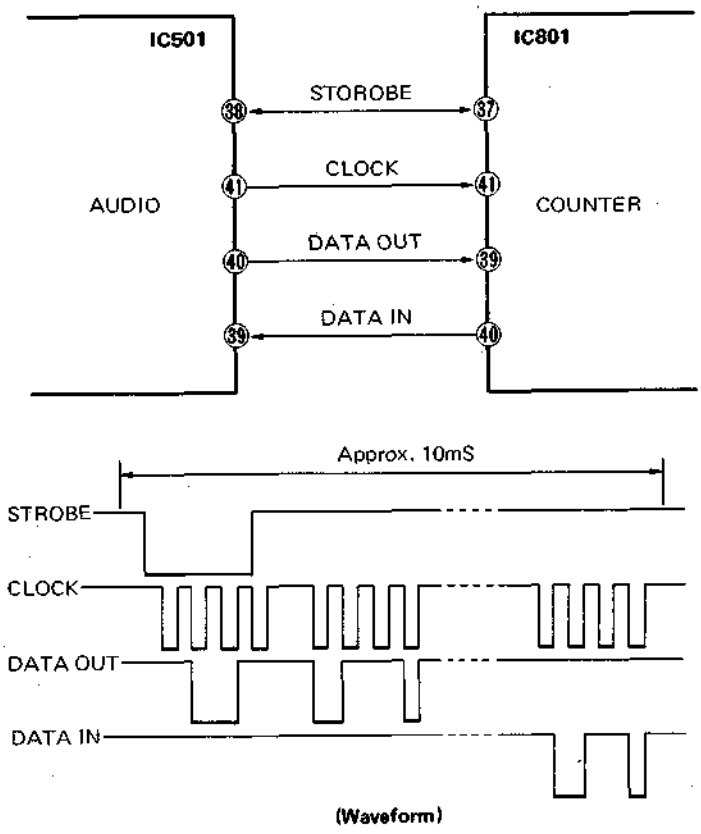


3. IC501 is started to activate to normal operation. The level at the reset terminal ⑬ of IC501 drops to 0V from 5V (5V ┐ 0V). The RESET OUT signal at IC501 ⑬ is inverted by Q517 and applied to IC502 ⑥ and IC801 ㉝ (0V ┌ 5V). Then, the muting for FL tube power is released and all the circuit is initialized. If this signal is not normal, the unit will not operate (The light in the cassette compartment may go on). Accordingly, the defective section will be found by tracing this signal.

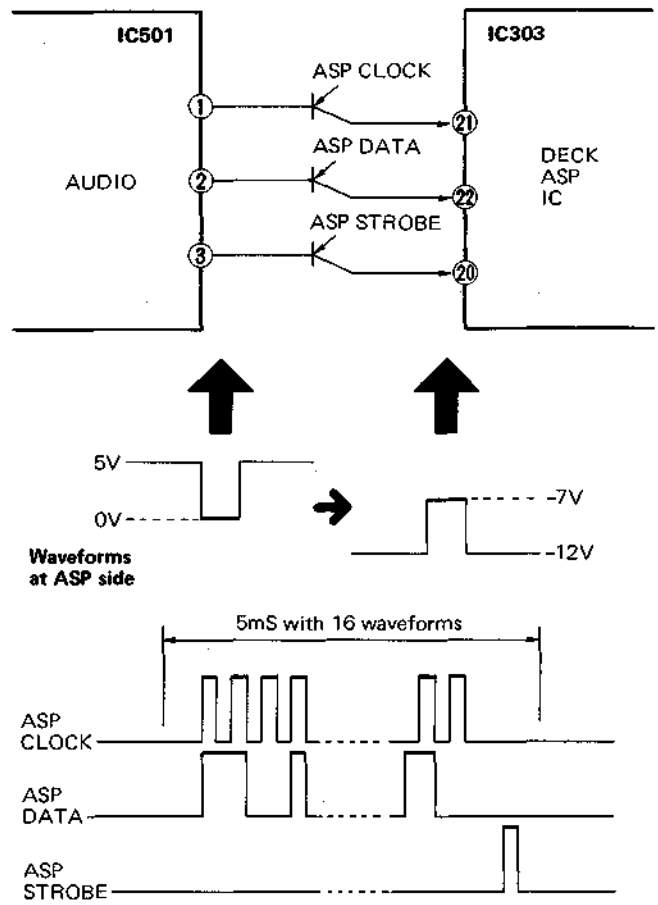
4. The counter microcomputer (IC801) operates dynamic scanning of the tact switch input related with all the mechanism and audio circuit and of the display output of FL tube except for the LEDs and the level meter besides common linear counter. IC801 ⑤ – ⑫ outputs the scan signal of eight figures as shown below. These signals drop to "L" level in order at intervals of approx. 1mS. However, these are scanned synchronized by dividing output of the level meter IC, IC802 ⑯ . Therefore, if IC802 is defective, the dynamic scanning is not made.



5. The switch input signal and the display output signal are transferred between IC501 and IC801 by the serial data signal manner. This outputs the data according to the clock of 4 cycles and 17 pairs when the switch is pushed or released, the LED is turned on, the input or the output condition is changed and so on (See figure below).



6. The switch inputs (for example; ▶, ◀◀ switches) and the display outputs (for example; ●, ▮▮ lamps) of IC502 are transferred in serial operation and connected to the controls on the front panel via the IC501, which excutes serial-parallel conversion. Accordingly, if IC501 or the serial data bus is defective, the mechanism deck will not operate. As mentioned in the block diagram, the remote-control input is directly connected to IC502 via IC506. Therefore, if the mechanism is operated by using the remote control, IC502 is normal.
7. The configuration of this audio circuit is almost the same as that of common one. The difference between them is that the mechanical level controls and the switches are integrated in the ASP IC (IC303) as a semiconductor switch. The bias current switching depending on tape type is made by variable dc output from IC303 ⑲. IC303 is controlled by the ASP serial data from IC501. The ASP data are outputted when the audio condition is changed (for example, when the record level or the tape type is changed) as shown below. The ASP signal is phase-inverted and level-shifted by Q514-Q516).



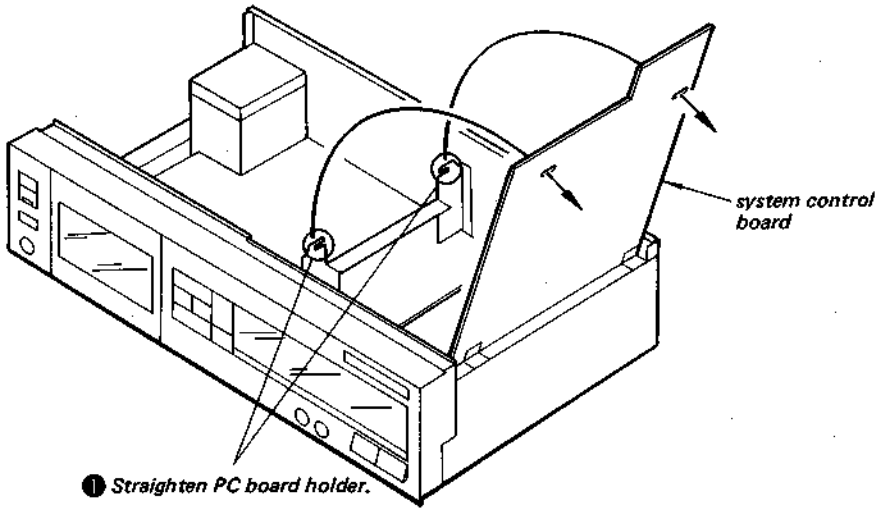
8. The recording level detection A/D converter circuit for the digital level monitor and the automatic attenuator function is controlled by IC501.
   The recording signal passed in the A/D amplifier (IC501) is rectified, sampled by IC504 to L-CH and R-CH, and charged in C513. It is discharged by IC514.
9. After replacing the microcomputers or cell, be sure to initialize the microcomputers by applying the reset signal. This can be performed by shorting the "ALL CLEAR" jumper wire near the cell on the system control board with a screwdriver.

SECTION 2
DISASSEMBLY

- Follow the disassembly procedure in the numerical order given.

Remove the top cover.

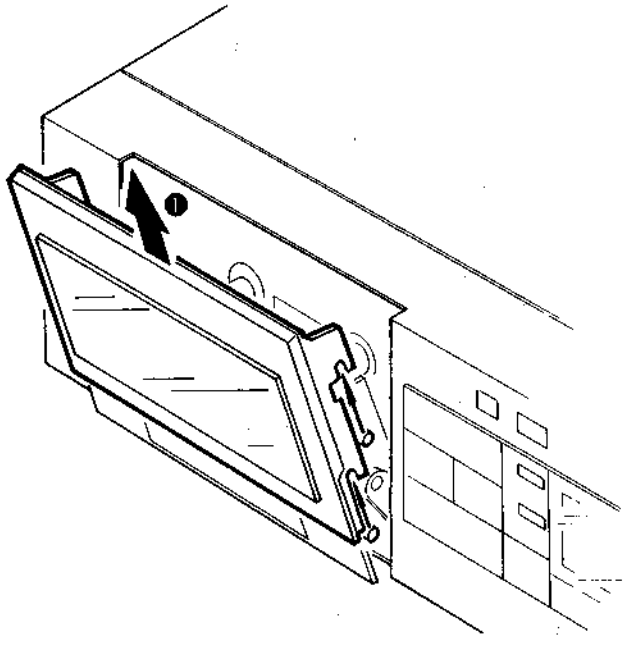
System Control Board



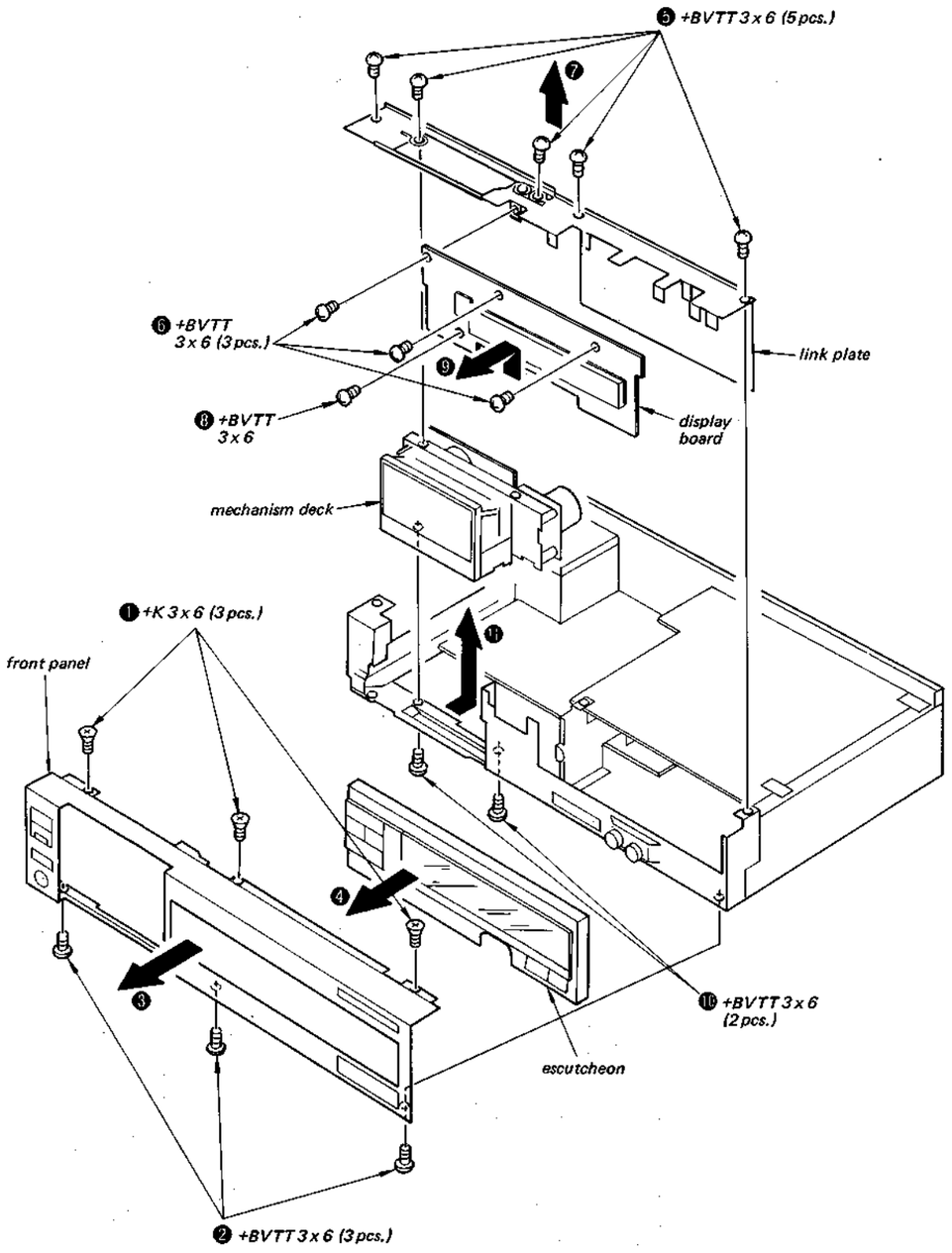
❶ *Straighten PC board holder.*

Cassette Window

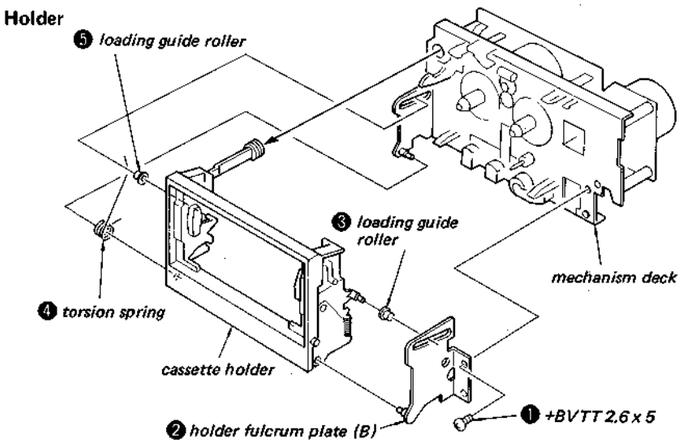
❶ *Push the EJECT button and pull up.*



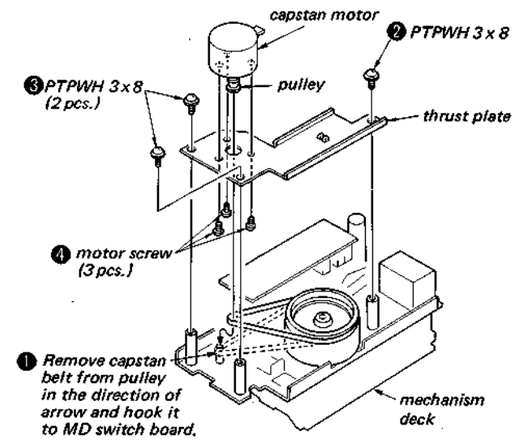
Front Panel/Escutcheon/Mechanism Deck/Display Board/Link Plate



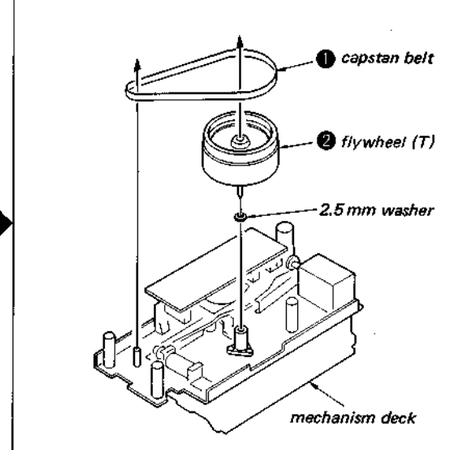
Cassette Holder



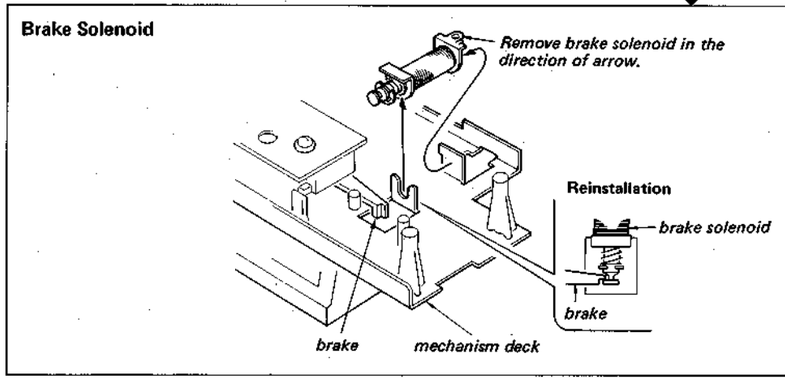
Capstan Motor



Flywheel



Brake Solenoid



SECTION 3
ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:

record/playback head	pinch roller
erase head	rubber belts
capstan	idlers

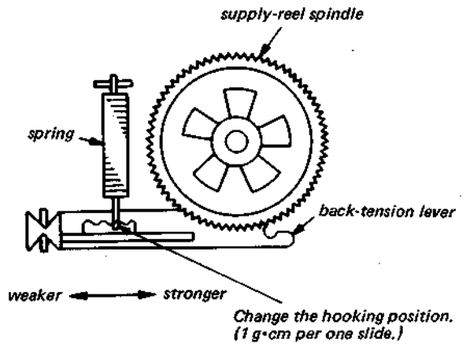
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement and Back Tension Torque Adjustment

1.

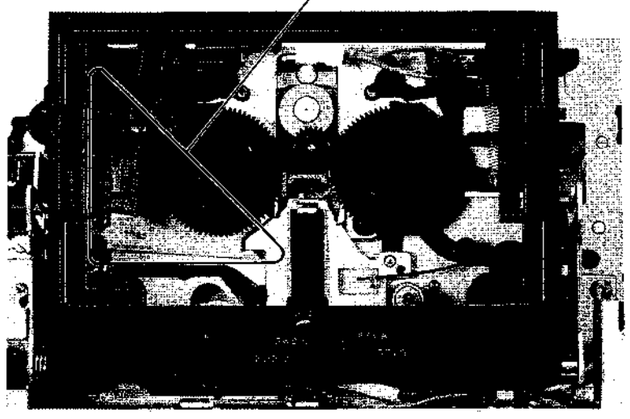
Torque	Torque meter	Meter reading
Forward	CQ-102C	28 – 60 g•cm (0.39 – 0.83 oz•inch)
Back tension	CQ-102C	2.5 – 5.0 g•cm (0.04 – 0.07 oz•inch)

2. If the specified back-tension torque is not obtained, change the hooking position.



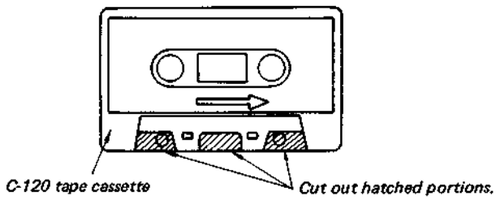
FF/REW Torque Measurement

Torque	Torque meter	Meter reading
FF REW	CQ-201B	110 – 175 g•cm (1.52 – 2.42 oz•inch)

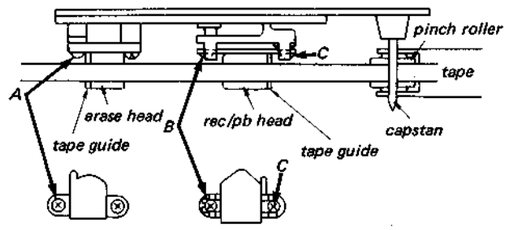


Head height Adjustment

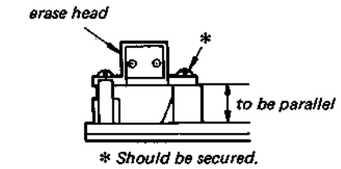
1. Prepare an adjustment cassette as shown below.

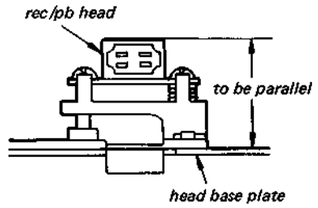


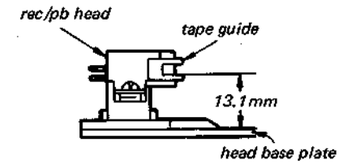
2. In playback mode and viewing from the front, adjust the head heights to eliminate tape curl and tape twist at portions of the arrow (A – C).



Position Checking:

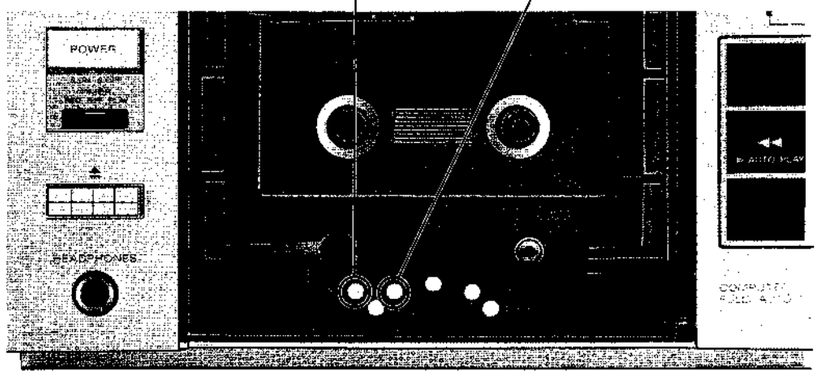






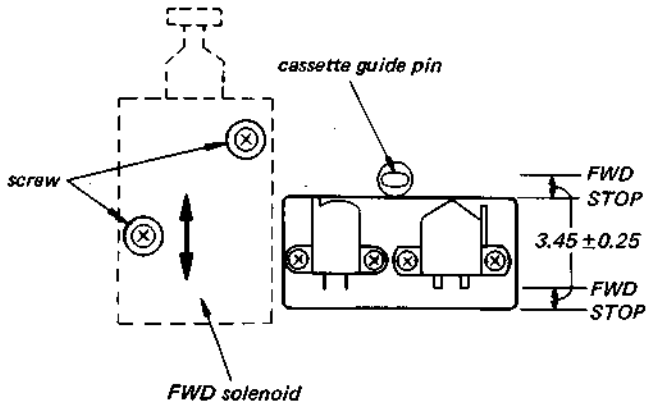
Operation Checking:

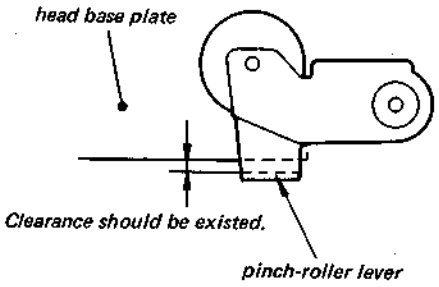
1. Insert a tape cassette and place the set in FWD mode. Make sure that no tape noise is generated and no tape slack is produced.
2. Repeat the FF and REW modes three times. Make sure that the mode is normally changed.
3. Repeat the PAUSE ON and OFF modes three times in FWD mode. Make sure that no tape slack is produced and the tape cassette is normally placed in the cassette compartment.
4. Make sure that the set is shut off at tape end in FWD mode.



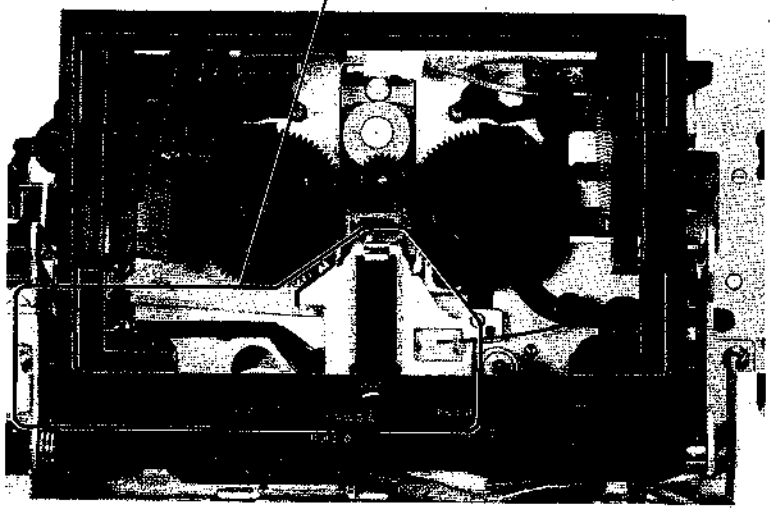
FWD Solenoid Position Adjustment

1. Loosen the FWD solenoid holding screw.
2. While pushing the cassette half lever with no tape cassette inserted, repeat FWD and STOP modes.
3. Adjust the FWD solenoid position so that the head base plate or the head shifts 3.45 ± 0.25 mm when the mode is changed to FWD from STOP.
4. After completing the adjustment, apply suitable locking compound to the screw.
5. When the set is placed in FWD mode, some clearance should be existed between the pinch -roller lever and the head base plate.





– FWD mode –



3-2. ELECTRICAL ADJUSTMENTS

Note: The adjustment should be performed in the order given in this service manual.
The adjustments should be performed for both L-CH and R-CH.

- Set the BIAS and EQ switches according to the tape as follows.

Tape	TAPE SELECT switch	LED display
CS-15	AUTO	I: NORM
CS-26	AUTO	II: CrO_2
CS-30	Fe-Cr (METAL)	III: Fe-Cr
CS-40	AUTO Fe-Cr (METAL)	IV: METAL

- Switches and controls should be set as follows unless otherwise specified.

DOLBY NR ..... OFF
TAPE ..... TYPE I
TIMER ..... OFF
REC BALANCE ..... 0dB (CENTER)
LINEOUT/PHONE
LEVEL ..... 0dB (MAX)
AUTO ATT ..... OFF

- Standard Record:

Deliver the standard input signal level to the input jack and set the REC LEVEL control to obtain the standard output signal level.

Standard Input Level

	MIC	LINE IN
source impedance	300Ω	10kΩ
input level	0.77 mV (-60 dB)	0.25 V (-10 dB)

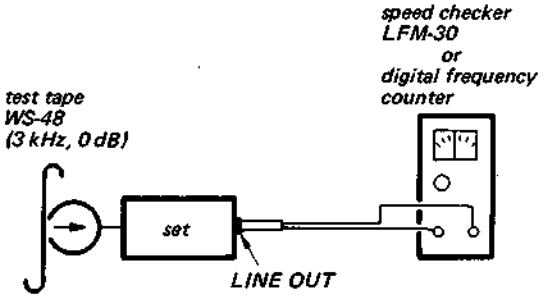
Standard output Level

	HEADPHONES	LINE OUT
load impedance	8Ω	47kΩ
output level	31 mV (-26 dB)	0.435 V (-5 dB)

Tape Speed Adjustment

Procedure:

Mode: forward playback



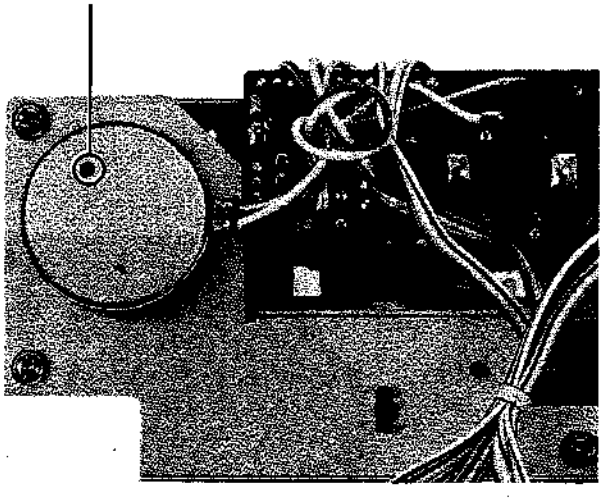
Specification:

Speed checker	Digital frequency counter
-0.66 ~ -0.33%	2,980 – 2,990 Hz

Frequency difference between the beginning and the end of the tape should be within 0.84% (25 Hz).

Adjustment Location:

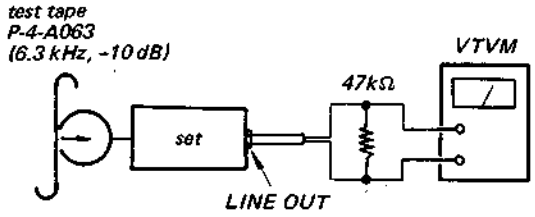
Adjust the speed by using screwdriver. When turning the screw clockwise, speed is faster.



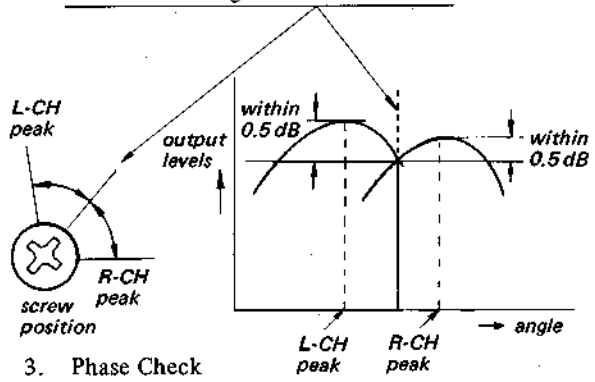
Record/playback Head Azimuth Adjustment

Procedure:

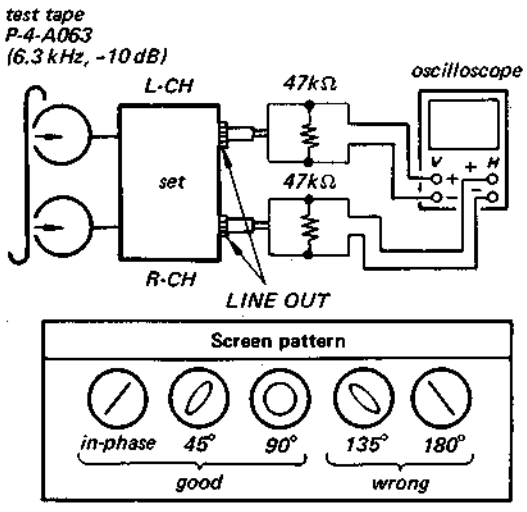
1. Mode: playback



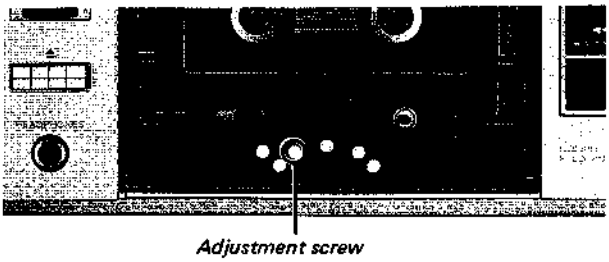
2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 0.5 dB.



3. Phase Check
   Mode: playback



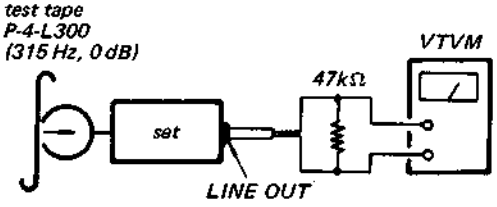
Adjustment Location:



Playback Level Adjustment

Procedure:

Mode: playback



Specification:

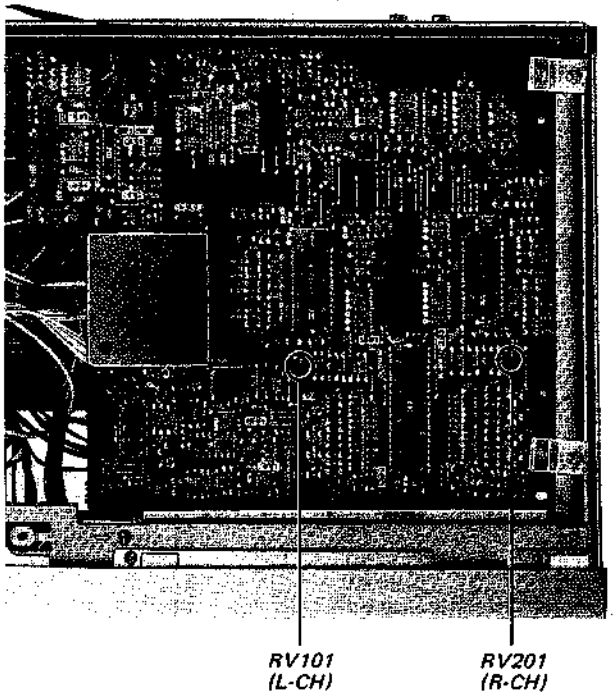
LINE OUT level: 0.41 – 0.46 V
(-5.5 – -4.5 dB)

Level difference between channels:
less than 0.5 dB

Check that the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location:

– audio board –



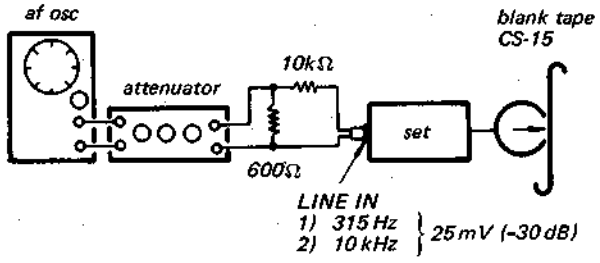
Record Bias Adjustment

Setting:

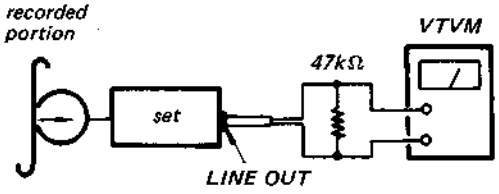
REC LEVEL control: standard record
(See page 28)

Procedure:

1. Mode: record



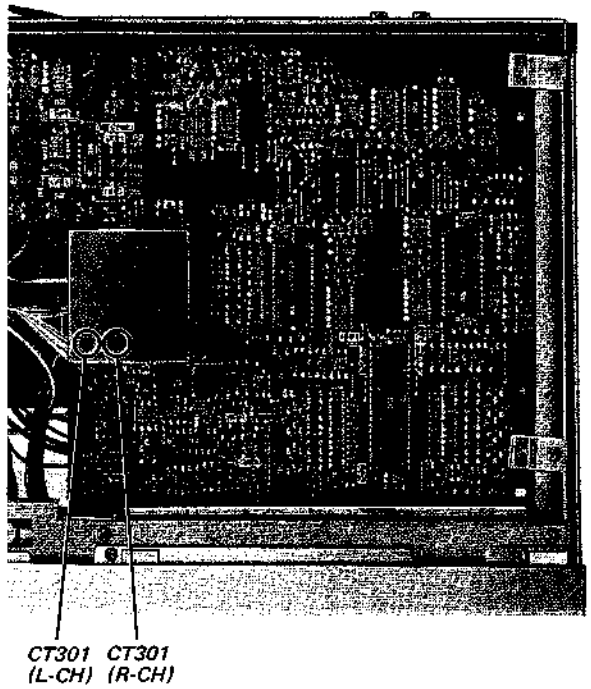
2. Mode: playback



Adjust CT301 so that the LINE OUT level of 10 kHz signal is 0 dB relative to that of 1 kHz.

Adjustment Location:

– audio board –



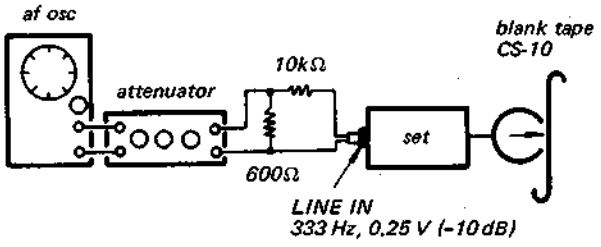
Record Level Adjustment

Setting:

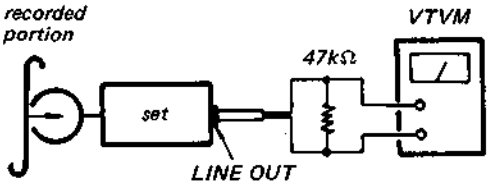
REC LEVEL control: standard record
(See page 28)

Procedure:

1. Mode: record



2. Mode: playback

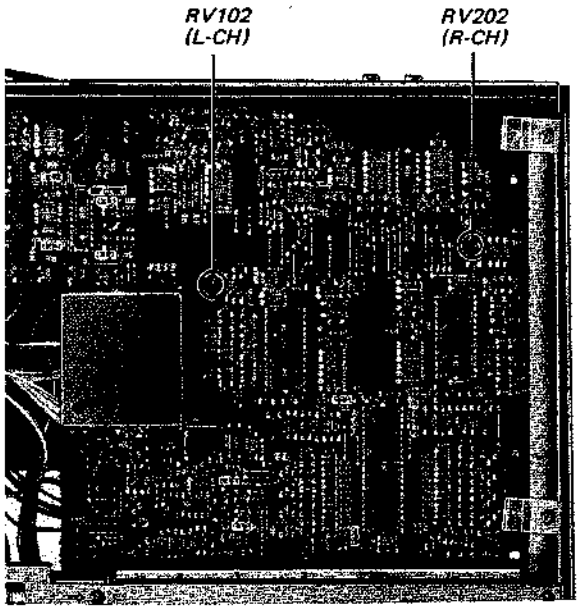


Specification:

LINE OUT level: CS-15; 0.41 – 0.46 V (–5.5 – –4.5 dB)
CS-26; CS-30; CS-42; 0.39 – 0.49 V (–6 – –4 dB)

Adjustment Location:

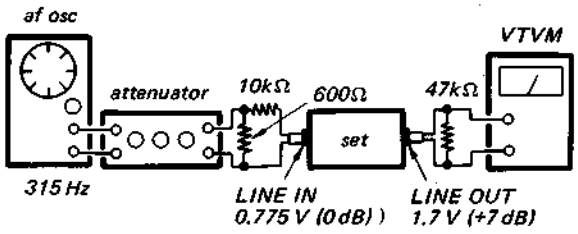
– audio board –



Level Meter Calibration

Procedure:

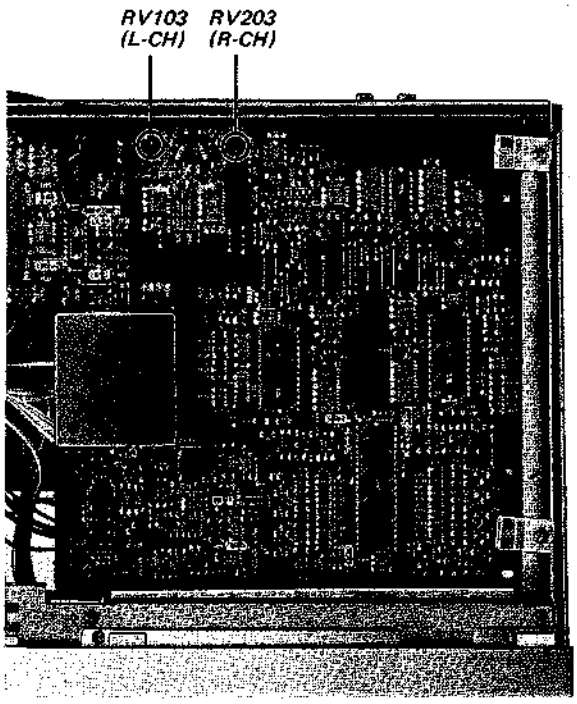
1. Mode: record



2. Set the REC LEVEL control so that the LINE OUT level is 1.7 V (+7 dB).
3. Adjust RV103 (L-CH) and RV203 (R-CH) so that all the segment of the LED meter go on.
4. Make sure that the LED meter indicates –4 dB (0 VU) when VTVM reads –5 dB (0.44 V).

Adjustment Location:

– audio board –



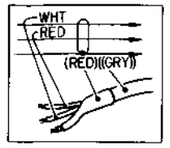
SECTION 4 DIAGRAMS

4-1. MOUNTING DIAGRAM — *Audio Section* —

• See page 39 for Semiconductor Lead Layouts.

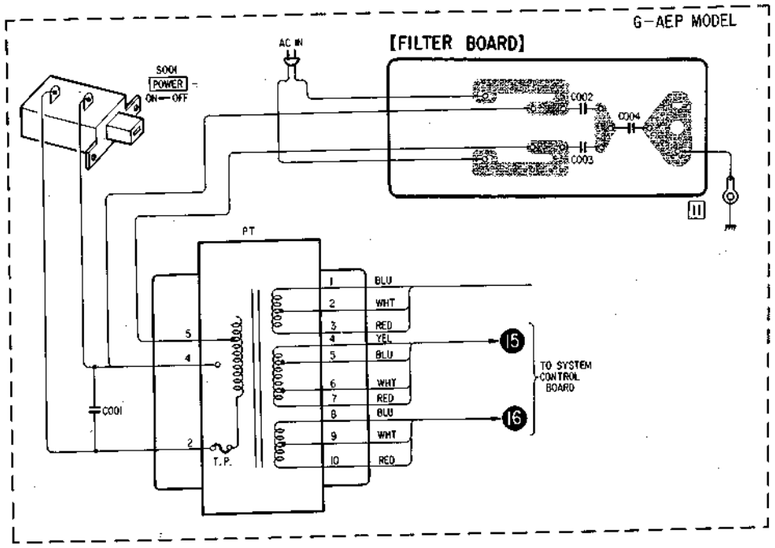
Note:

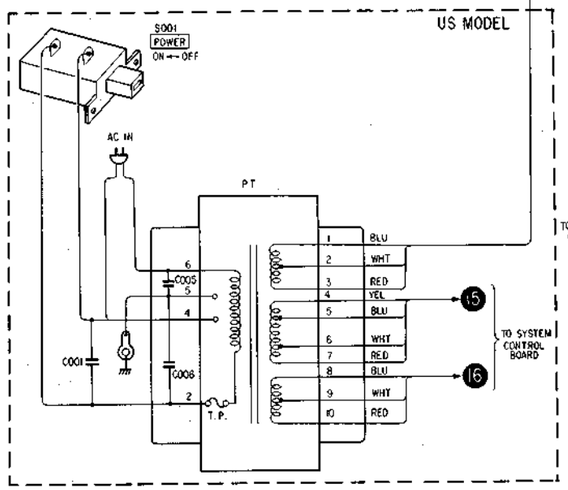
- Color code of sleeving over the end of the jacket.

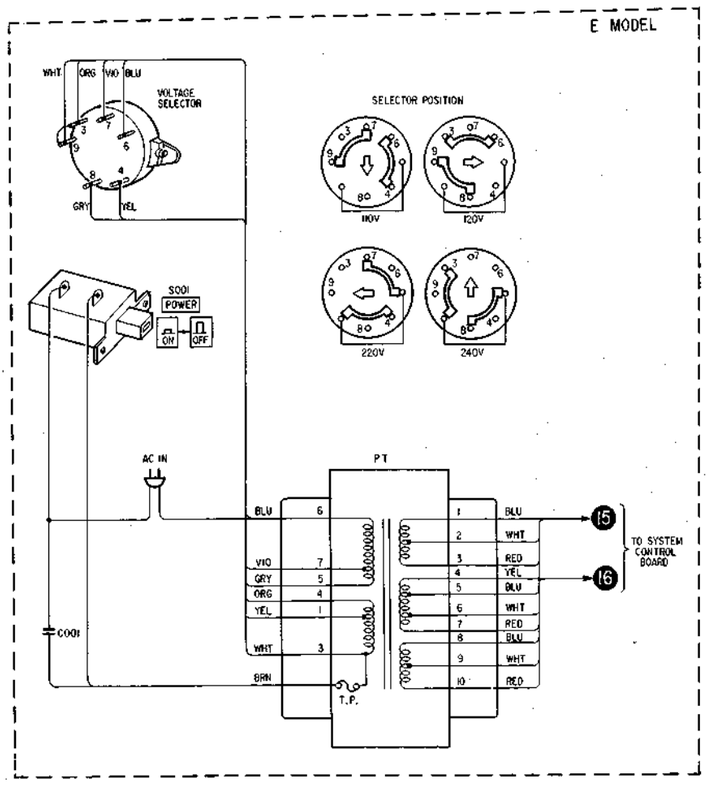


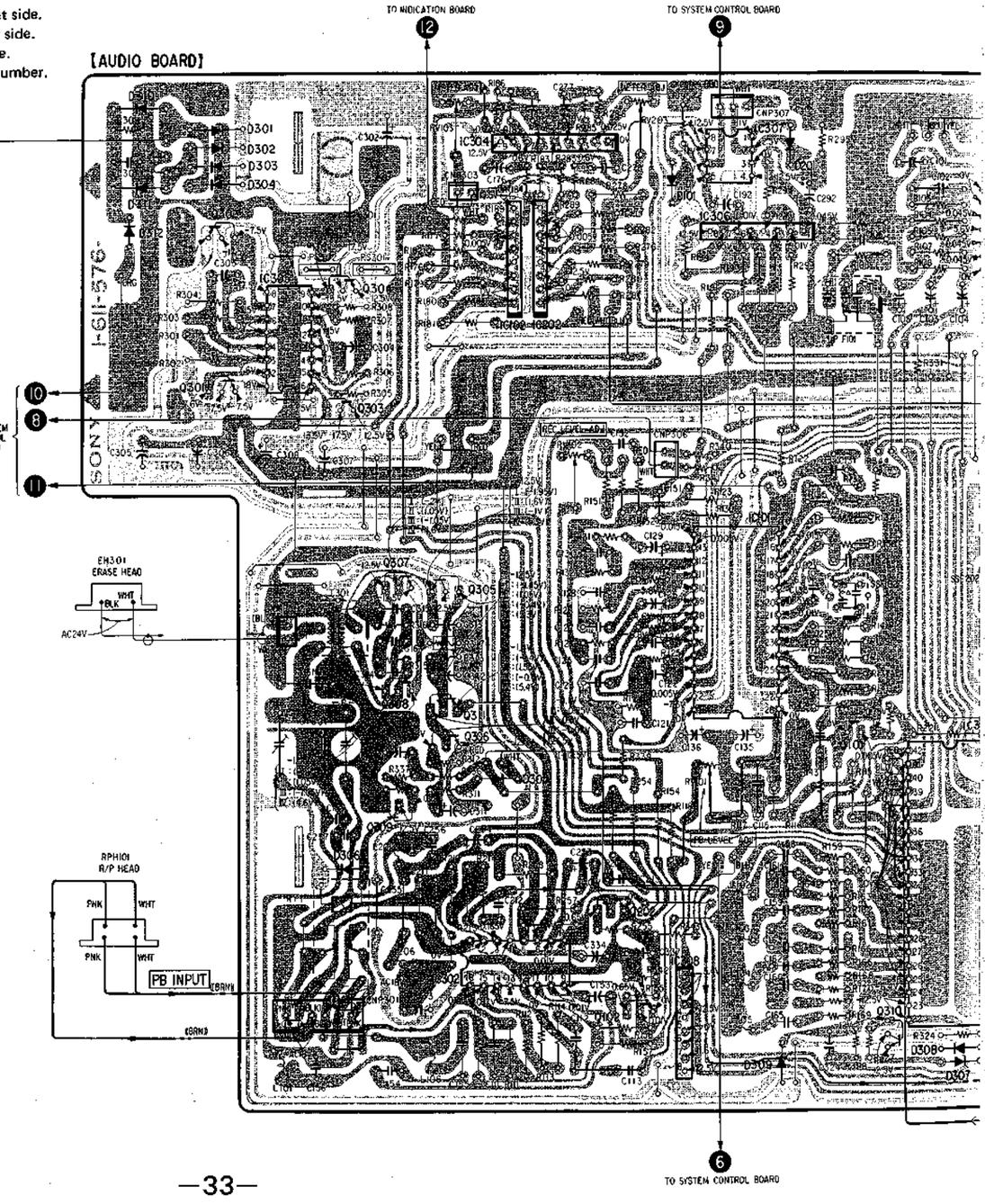
- ○— : parts extracted from the component side.
- •— : parts extracted from the conductor side.
- ■ : part mounted on the conductor side.
- [ ]— : indicates side identified with part number.
- ▲ : nonflammable resistor.
- Ⓕ : fusible resistor.
- : B + pattern
- : B − pattern
- ▬▶▬ : signal path
- ▬▶▬ : L-CH signal path
- ▬▶▬ : R-CH signal path

Q IC		302 301	IC305	304 303	307 308 309	305 311 306	IC304 IC102, IC202 IC302	202	102	IC308	IC307 IC306 IC101	101	310	IC303
D	310, 312 311	301, 303 302, 304		306			305			101	201 309			308 307



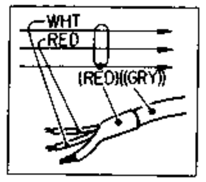






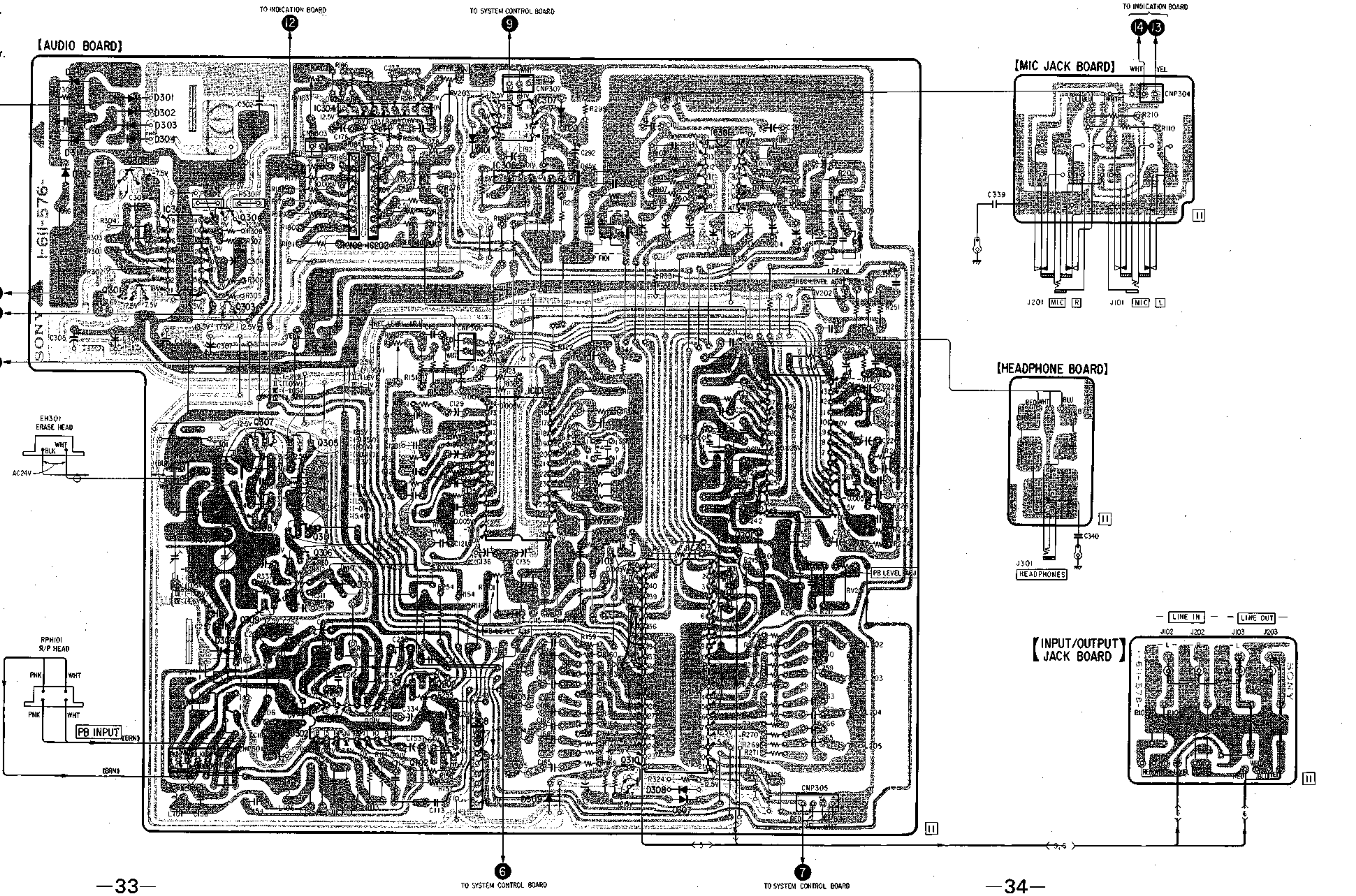
Note:

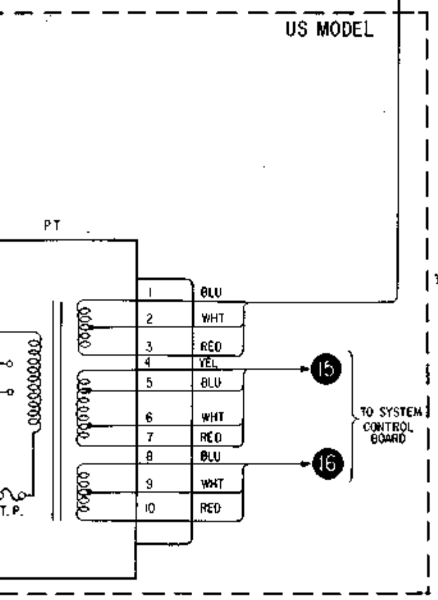
- Color code of sleeving over the end of the jacket.

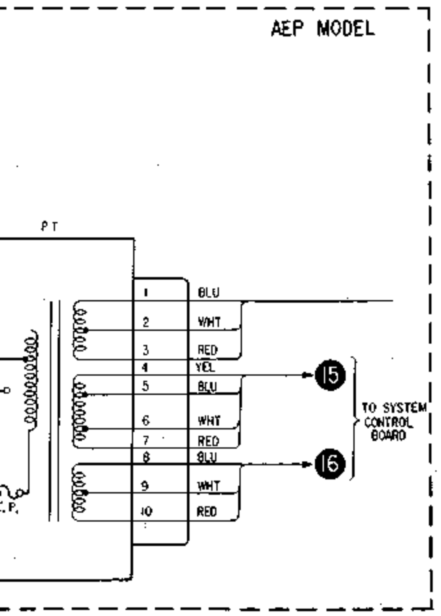


- ○— : parts extracted from the component side.
- ●— : parts extracted from the conductor side.
- ■ : part mounted on the conductor side.
- [ ]— : indicates side identified with part number.
- ▲ : nonflammable resistor.
- Ⓕ : fusible resistor.
- ▒ : B + pattern
- ░ : B – pattern
- ━━▶━ : signal path
- ━━━▶ : L-CH signal path
- ━━━▶ : R-CH signal path

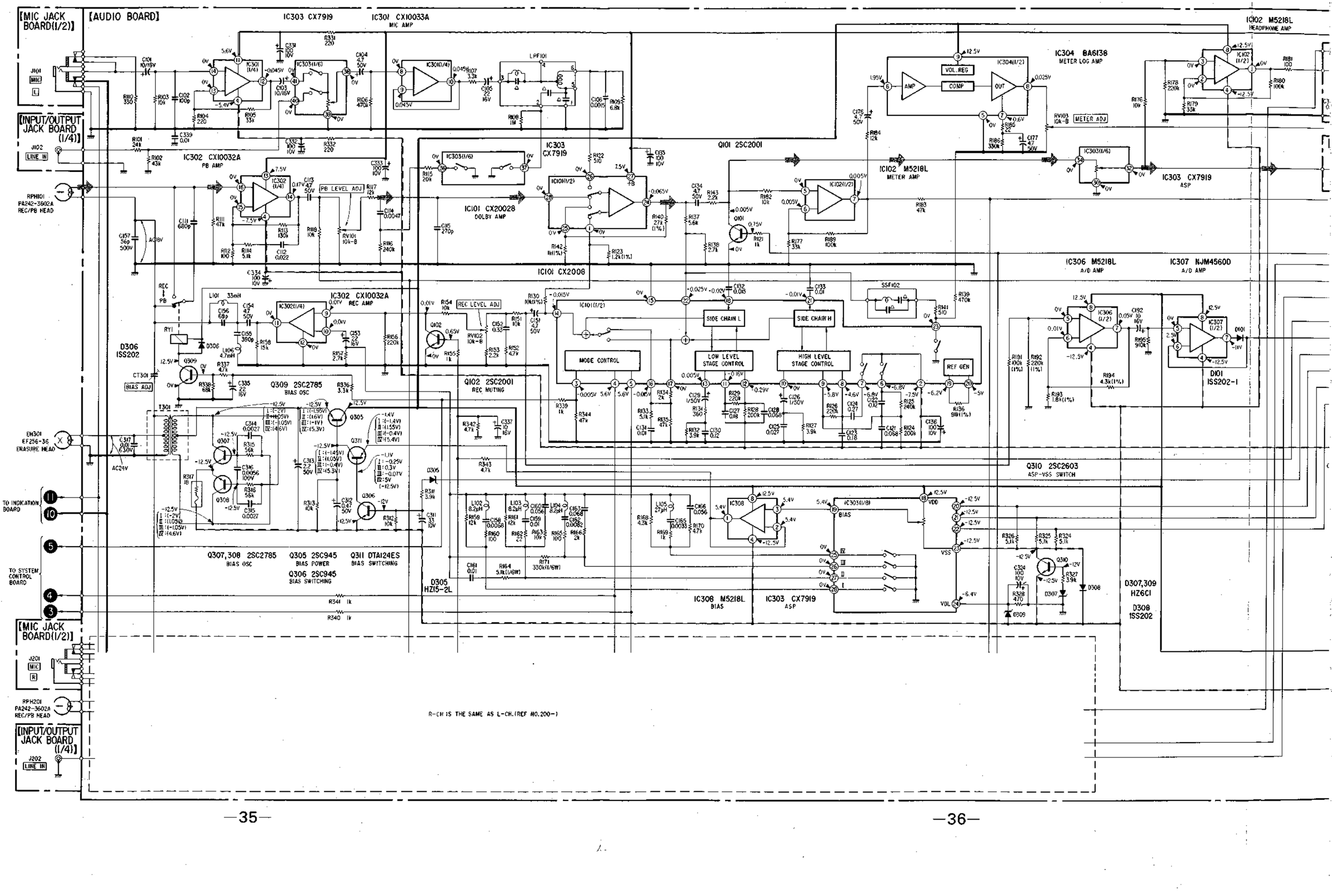
	11	12	13	14	15	16	17	18
Q · IC	302 301	IC305 304 303	307 308 309 305 311 306 IC304 IC102, IC202 IC302	202 102	IC308 IC307 IC306 IC101	101 310	IC303 IC301 201	IC201
D	310, 312 311 301, 303 302, 304	306	305		101 201 309		308 307	

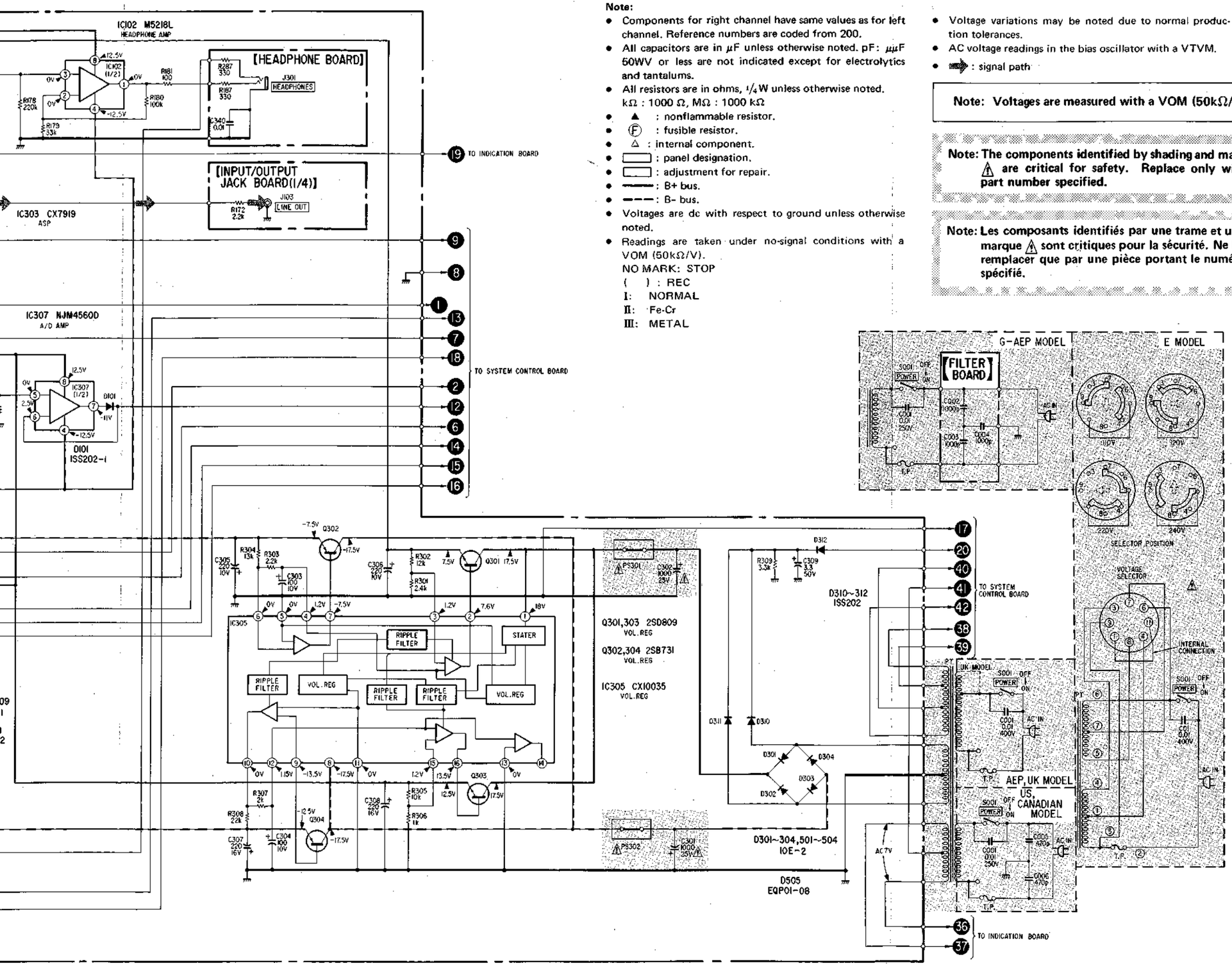






4-2. SCHEMATIC DIAGRAM — *Audio Section* —





Note:

- Components for right channel have same values as for left channel. Reference numbers are coded from 200.
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/4W unless otherwise noted. kΩ : 1000 Ω, MΩ : 1000 kΩ
- ▲ : nonflammable resistor.
- Ⓕ : fusible resistor.
- △ : internal component.
- ▭ : panel designation.
- ▭ : adjustment for repair.
- ——: B+ bus.
- – – –: B- bus.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal conditions with a VOM (50kΩ/V).
  NO MARK: STOP
  ( ) : REC
  I: NORMAL
  II: Fe-Cr
  III: METAL
- Voltage variations may be noted due to normal production tolerances.
- AC voltage readings in the bias oscillator with a VTVM.
- ➡ : signal path

Note: Voltages are measured with a VOM (50kΩ/V).

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

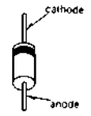
Note: Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- Switches

Ref. No.	Switch	Position
S001	POWER	OFF
S601	TIMER	OFF
S802	■	OFF
S803	TAPE OPERATION	OFF
S804	AUTO III	III
S805	REC BALANCE L	OFF
S806	DOLBY NR	OFF
S807	AUTO FADER	OFF
S808	▶▶	OFF
S809	●	OFF
S810	PROGRAM	OFF
S811	WRITE	OFF
S812	REC BALANCE R	OFF
S813	AUTO ATT	OFF
S814	◀◀	OFF
S815	■■	OFF
S816	RESET	OFF
S817	A	OFF
S818	REC LEVEL -	OFF
S819	LINE OUT -	OFF
S820	▶	OFF
S821	O	OFF
S822	FUNCTION MEMORY	OFF
S823	B	OFF
S824	REC LEVEL +	OFF
S825	LINE OUT +	OFF
S1001	FWD PAWL	W/O
S1002	REC BIAS	70μ
S1003	TAPE SELECT	METAL
S1005	CASSETTE HALF	W/O
S1006	DIR	R

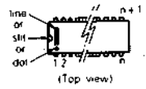
- Semiconductor Lead Layouts

10E-2
1SS202-1
EQB01-08
HZ15-2L
HZ24-2L
HZ36-2L
HZ7A1L
HZ9B1L
HZ11B1L
HZ12B2L
HZ6C1L

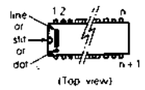


2SD774

CX10032A
CX10033A
CX10034
CX10035
CX20028
CX565-031
CX7919
LB1200
LB1245
MSL9359RS
NJM4560D
TC4066BP
TC4069UBP
TC40H004P
TMP4720N-1008
TMP47C40P-6302



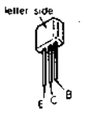
CX20027



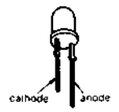
2SB740

2SA952

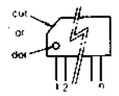
2SC2785
2SD1020



SLR34DC5
SLR34PC5
SLR34URC5
SLR34YC5

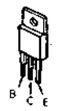


BA6138
M5218L
NJM2903C



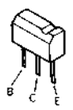
2SC2458

2SD1406

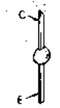


2SB731
2SD809

DTA124ES
DTC124EF



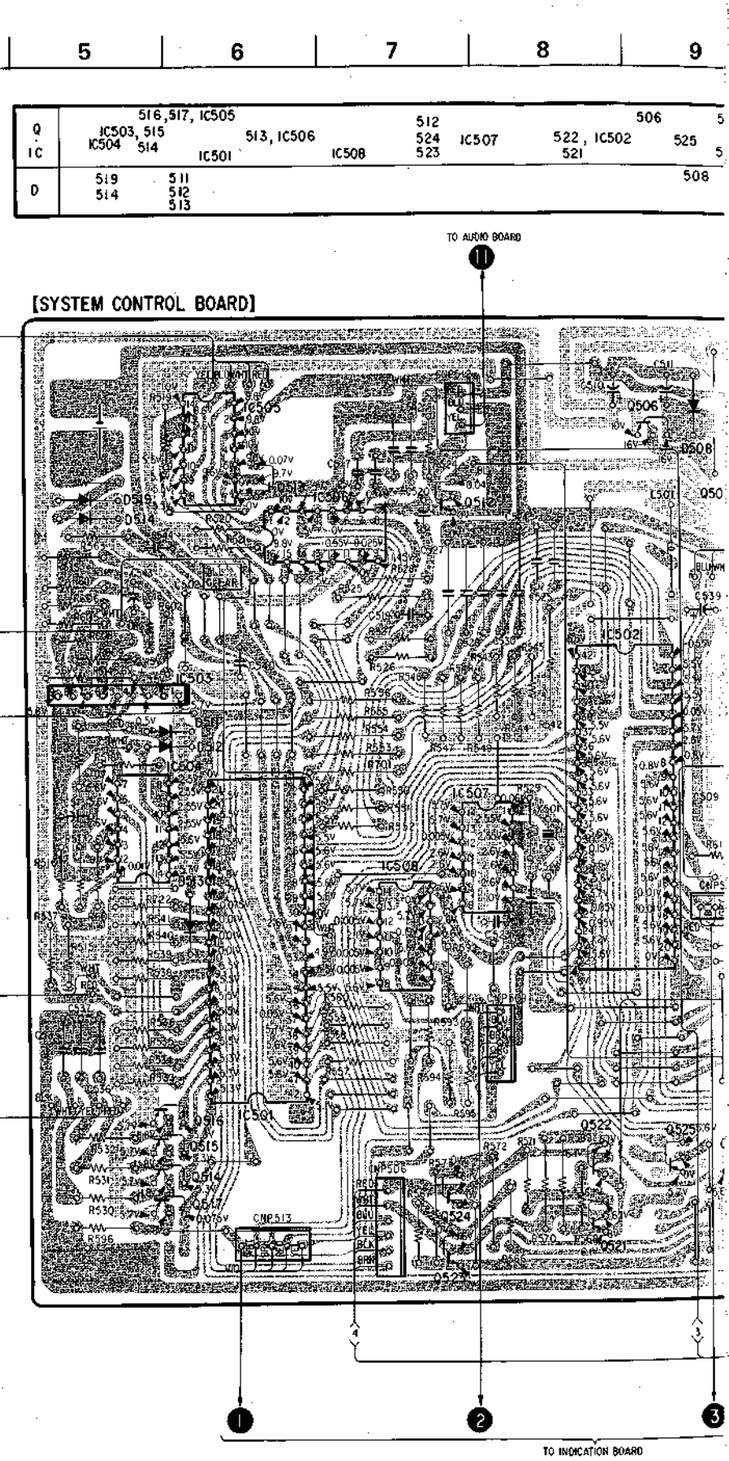
PH102



4-3. MOUNTING DIAGRAM

– System Control Section –

- See page 39 for Semiconductor Lead Layouts.
- See page 33 for Note.



	8	9	10	11	12	13
2 4 3	IC507 522, IC502 521	506 525 508 520 502 503 507	535 IC509, 536	505 527, 509 526, 501 537 510, 511 529, 533, 531	538, 530, 532 534	
		508 510 509		506 516 517	504 503, 502 501, 515 505 518	

Q IC		1002	1001	
D	1003 1001		1002	1004

[SYSTEM CONTROL BOARD]

IC504 TC4066BP
A/D SWITCH

IC503 NJM2903S
COMPARATOR

Q512 DTC124ES
AMS MUTING

Q535 DTA124ES
LINE MUTE SWITCH

Q536 DTA124ES
REC MUTE SWITCH

IC509 TC4069UBP
PM MUTE BUFF

IC505 TC4066BP
REMOCON CHANCELL SWITCH

IC506 CX10034
REMOCON AMS AMP

Q513 DTC124ES
REMOCON ON/OFF

Q707 DTC124ES
REV MODE SWITCH

Q517 DTA124ES
RESET OUT SWITCH

0514~516
DTA124ES
ASP DATA SWITCH

IC501 TMP47C40P-6302
AUDIO MICOM

IC502 CX565-031
MECHA MICOM

Q527 2SD809
REEL MOTOR POWER

Q520,525
DTA124ES
REEL MOTOR SWITCH

Q526 DTC124ES
REEL MOTOR H/L

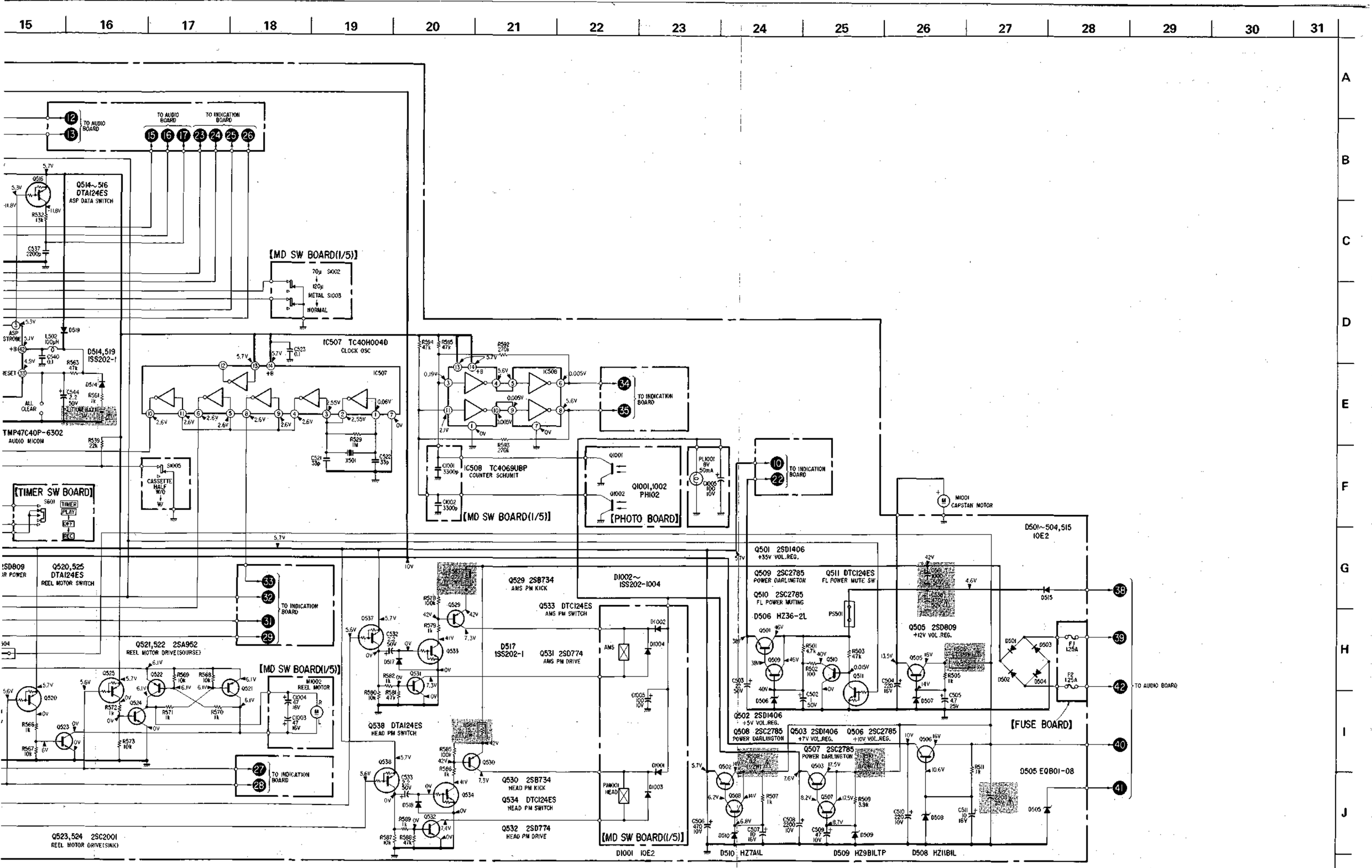
Q523,524 2SC2001
REEL MOTOR DRIVE(SINK)

Q521,522
REEL MOTOR DRIVE

[REMOCON SOKET BOARD]

[TIMER SW BOARD]

[MD SW BOARD(1/5)]

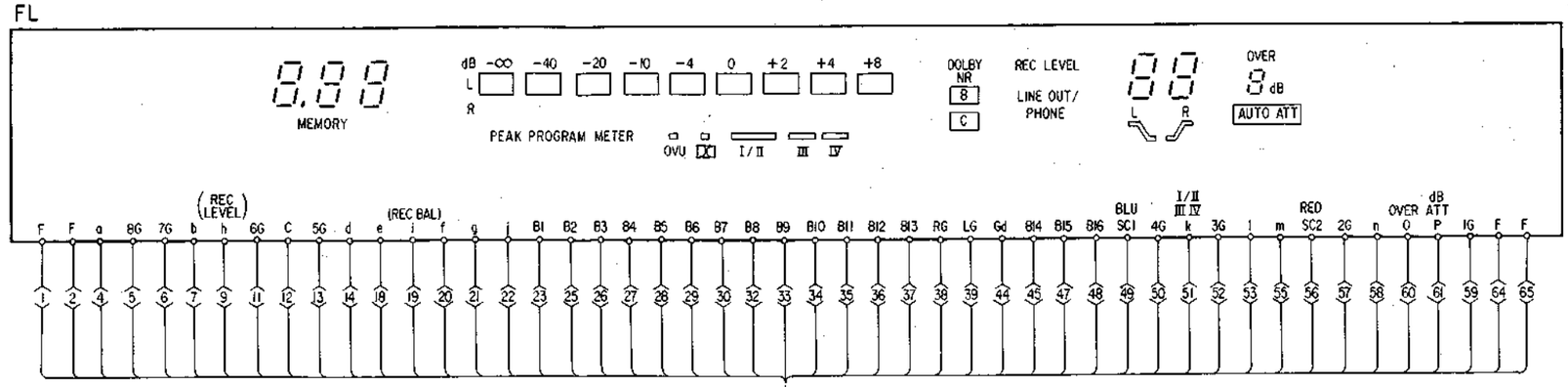

TO AUDIO BOARD
TO AUDIO BOARD
TO INDICATION BOARD
Q516
Q514~516 DTA124ES ASP DATA SWITCH
[MD SW BOARD(1/5)]
70μ S1002
120μ METAL S1003
NORMAL
IC507 TC40H004D CLOCK OSC
D514,519 1SS202-1
TMP47C40P-6302 AUDIO MICOM
IC508 TC4069UBP COUNTER SCHMITT
[MD SW BOARD(1/5)]
Q1001,1002 PH102
[PHOTO BOARD]
TO INDICATION BOARD
M1001 CAPSTAN MOTOR
[TIMER SW BOARD]
S601 TIMER PLAY OFF REC
S1005 CASSETTE HALF W/O
Q520,525 DTA124ES REEL MOTOR SWITCH
Q521,522 2SA952 REEL MOTOR DRIVE(SOURSE)
[MD SW BOARD(1/5)]
M1002 REEL MOTOR
TO INDICATION BOARD
TO INDICATION BOARD
Q523,524 2SC2001 REEL MOTOR DRIVE(SINK)
Q529 2SB734 AMS PM KICK
Q533 DTC124ES AMS PM SWITCH
D517 1SS202-1
Q531 2SD774 AMS PM DRIVE
D1002~ 1SS202-1004
Q538 DTA124ES HEAD PM SWITCH
Q530 2SB734 HEAD PM KICK
Q534 DTC124ES HEAD PM SWITCH
Q532 2SD774 HEAD PM DRIVE
[MD SW BOARD(1/5)]
D1001 10E2
Q501 2SD1406 +35V VOL.REG.
Q509 2SC2785 POWER DARLINGTON
Q511 DTC124ES FL POWER MUTE SW
Q510 2SC2785 FL POWER MUTING
D506 HZ36-2L
PS501
Q505 2SD809 +12V VOL.REG.
D501~504,515 10E2
D515
Q502 2SD1406 +5V VOL.REG.
Q508 2SC2785 POWER DARLINGTON
Q503 2SD1406 +7V VOL.REG.
Q506 2SC2785 +10V VOL.REG.
Q507 2SC2785 POWER DARLINGTON
[FUSE BOARD]
D505 EQB01-08
TO AUDIO BOARD
D510 HZ7AIL
D509 HZ9BILTP
D508 HZ11BIL

4-5. MOUNTING DIAGRAM

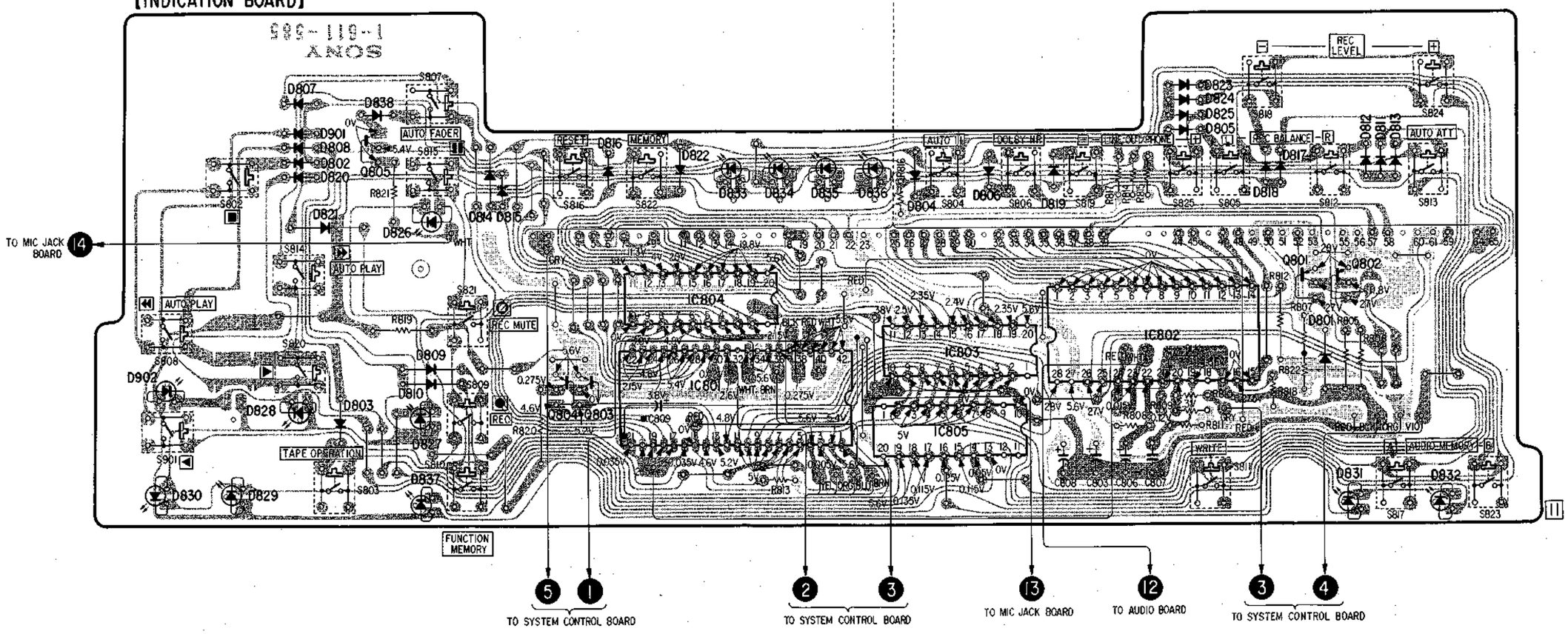
– Indicator Section –

- See page 39 for Semiconductor Lead Layouts.
- See page 33 for Note.

FL



【INDICATION BOARD】

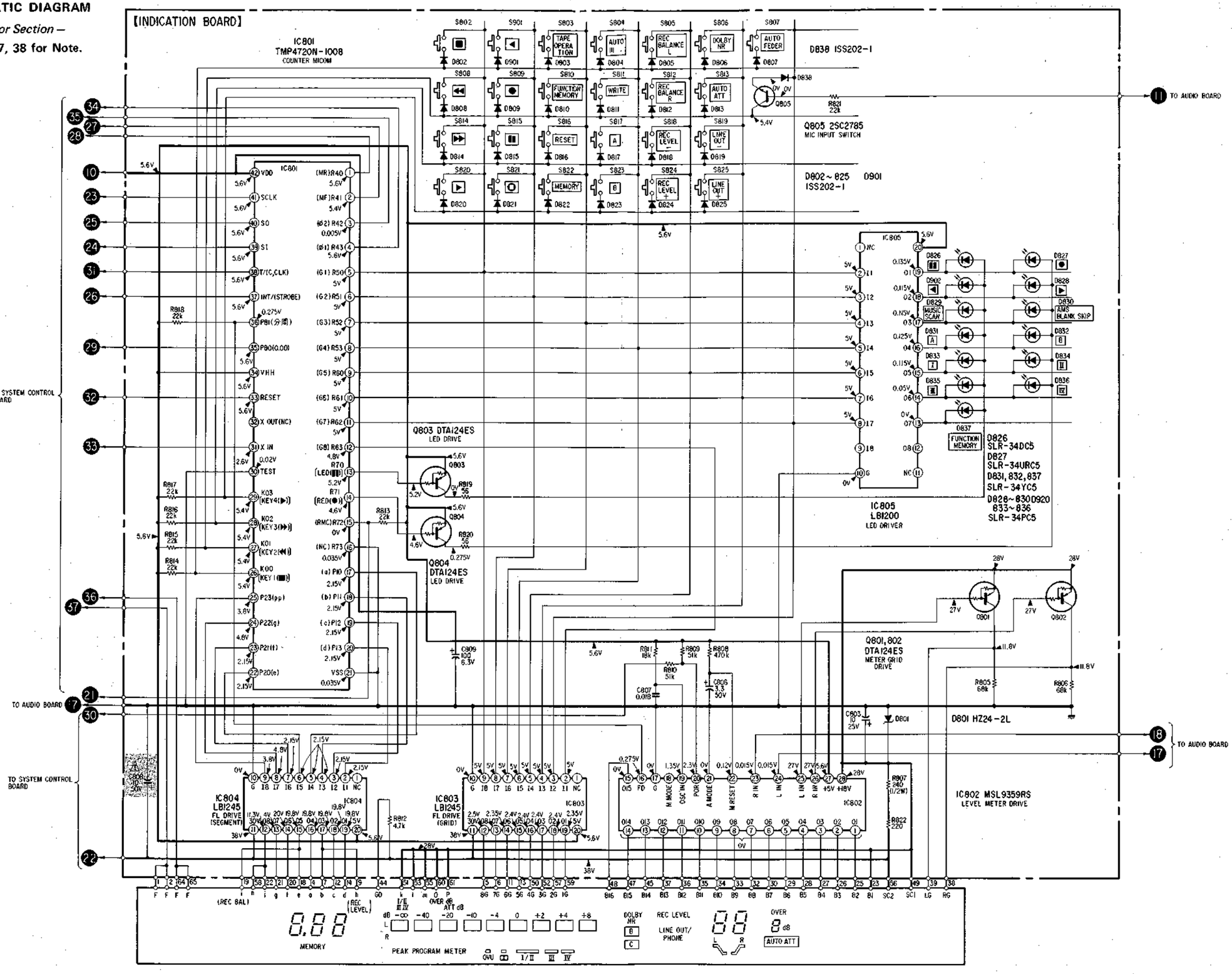


Q IC	805	804 803	IC804 IC801	IC803 IC805	IC802	801 802
D	902 807 901 828 808 821 830 829 802 803 838 820 826 809 810 827,837	814,815 816	822 833 834	835 836 804 806 819	823 824 825 805	818 817 812,811,813 801 831 832

4-6. SCHEMATIC DIAGRAM

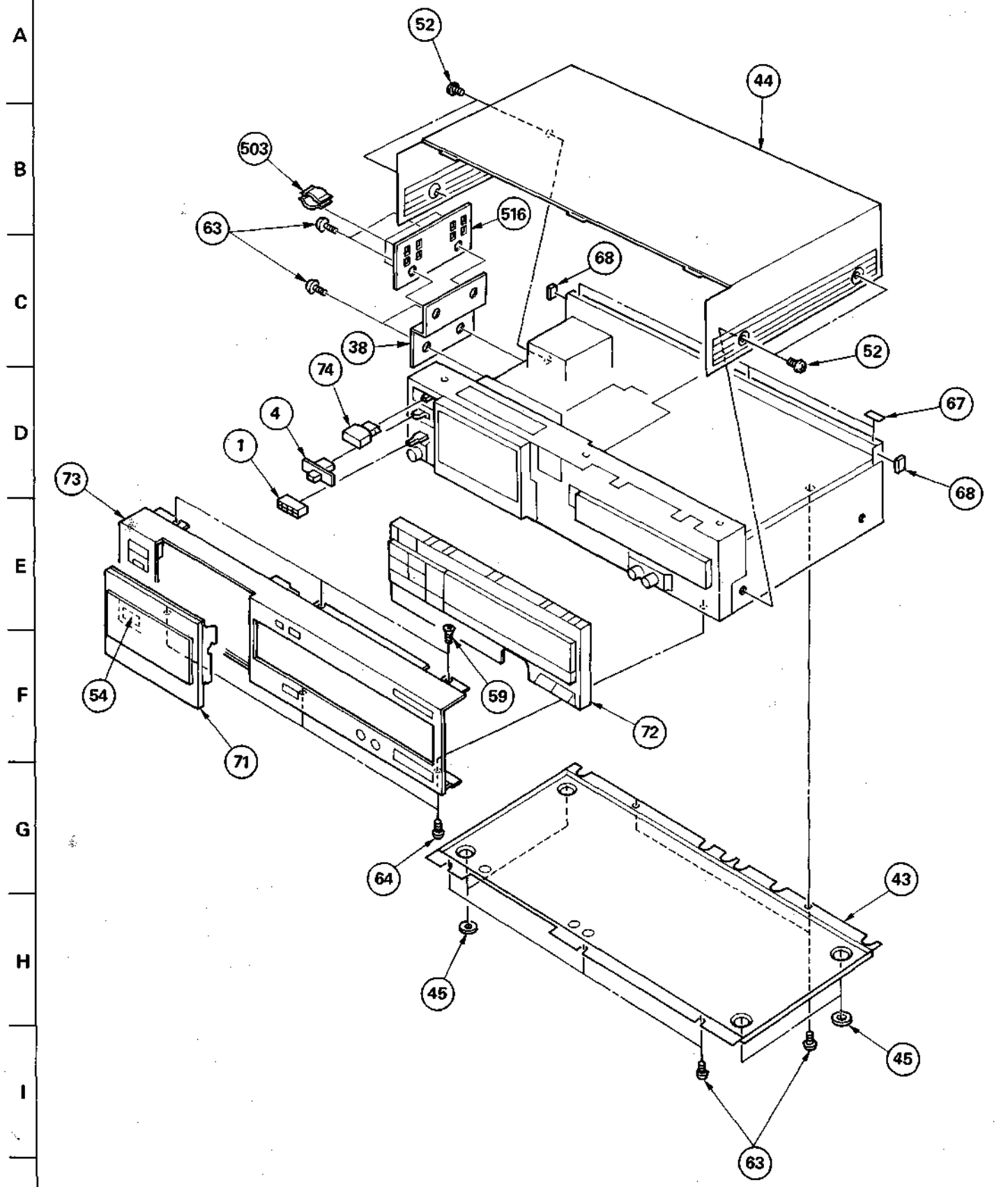
– Indicator Section –

• See pages 37, 38 for Note.

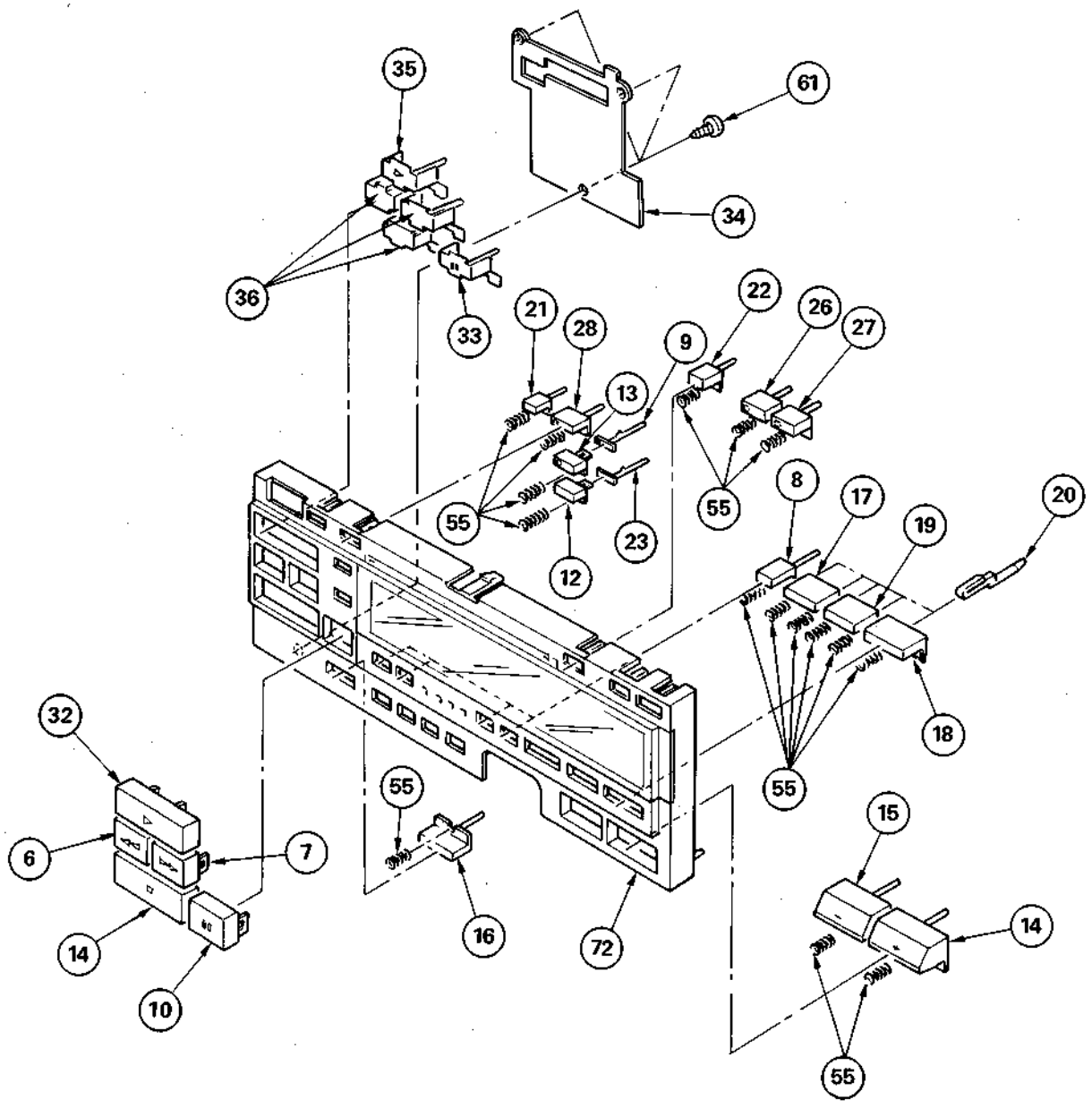


SECTION 5
EXPLODED VIEWS AND PARTS LIST

5-1.



5-2.


35
61
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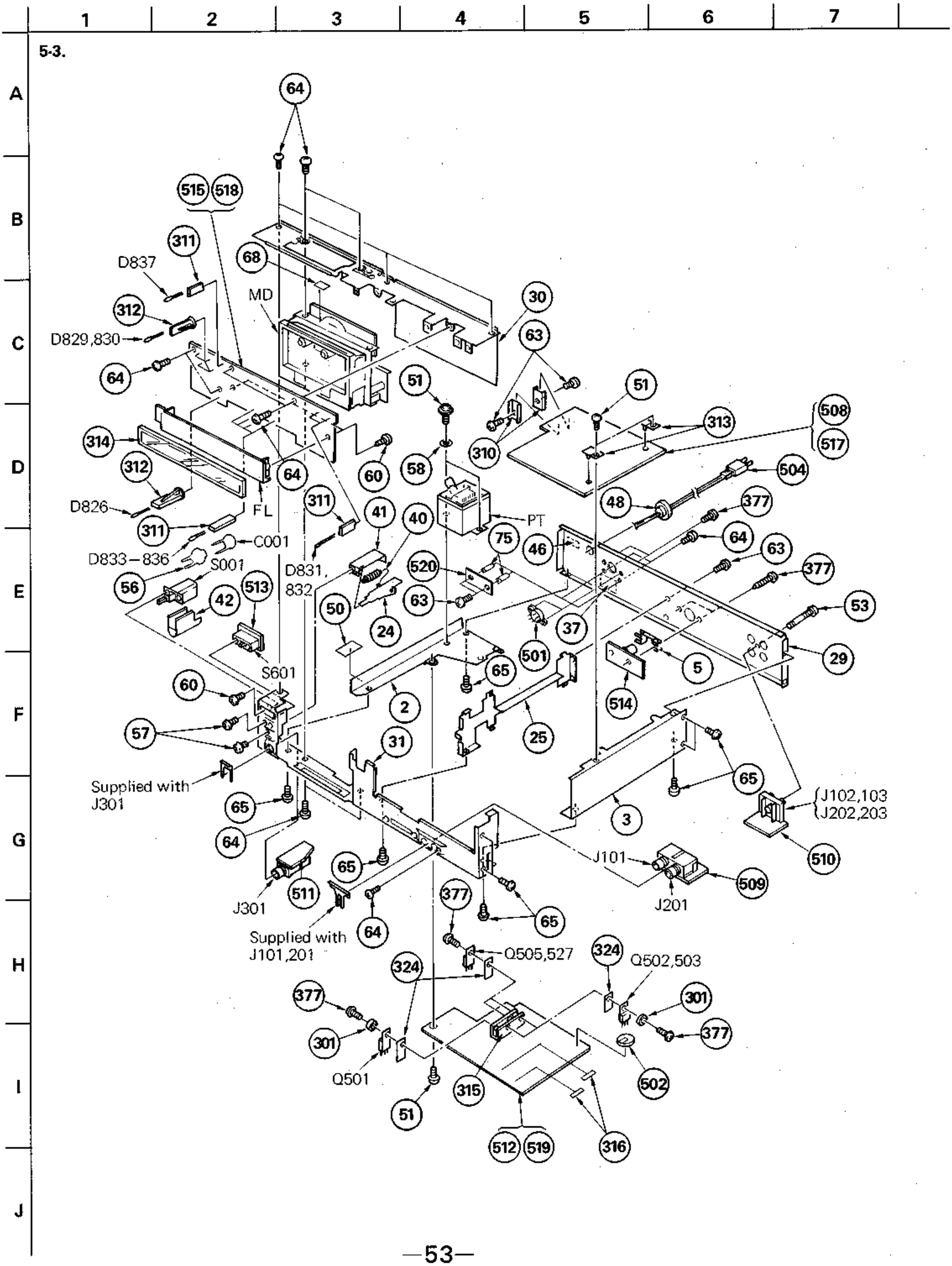
5-3.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H
I
J
64
515 518
311
D837
68
MD
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312
D829,830
63
64
51
51
508
517
313
314
310
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D826
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PT
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C001
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D833－836
46
63
S001
D831,
832
520
377
56
513
42
63
53
50
24
37
501
29
5
S601
65
60
2
514
25
57
31
65
Supplied with
J301
3
J102,103
J202,203
65
64
J101
510
65
509
511
J301
64
J201
377
65
Supplied with
J101,201
Q505,527
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Q502,503
377
301
301
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Q501
502
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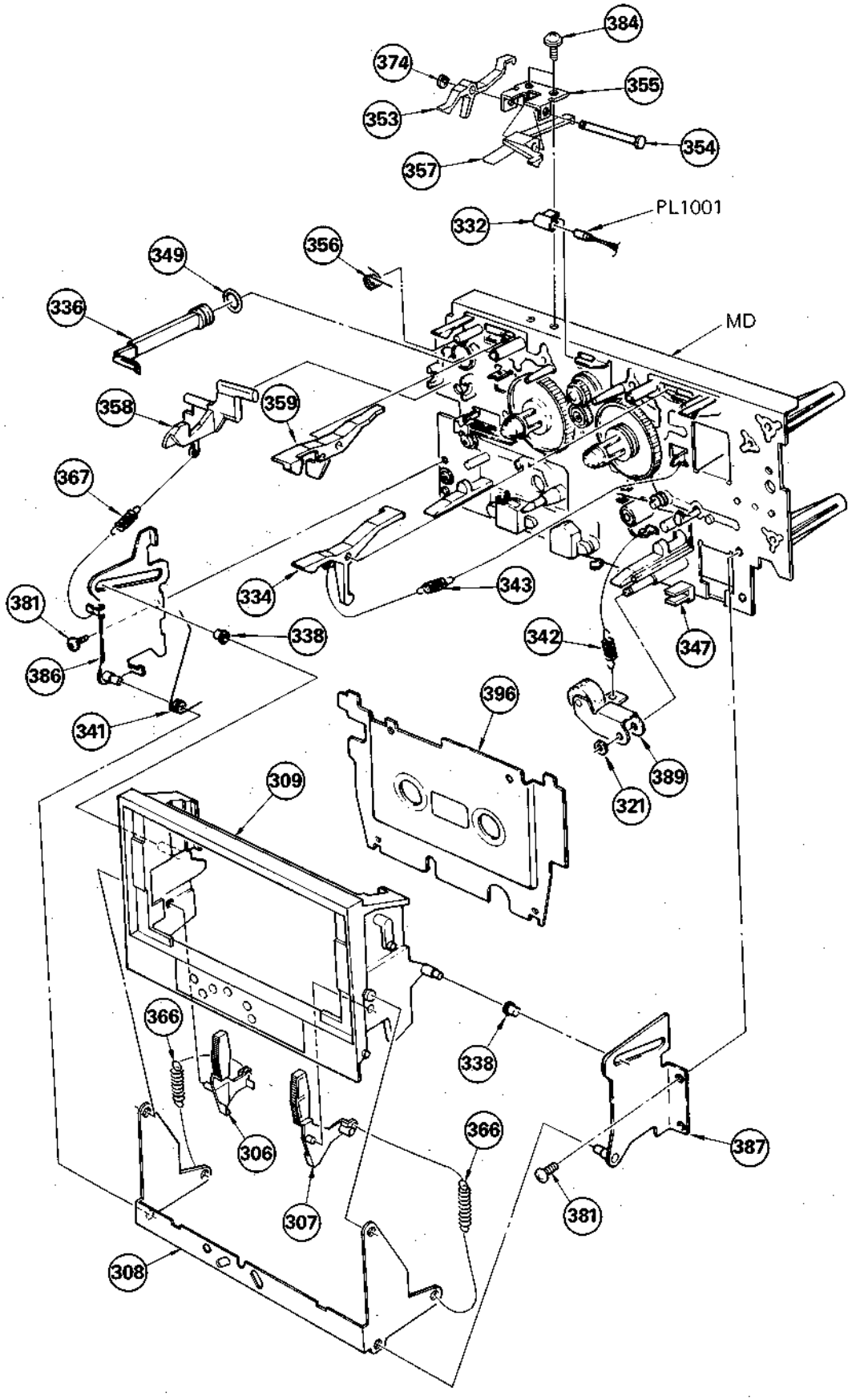
315
512 519
316

5-4.


384
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PL1001
332
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MD
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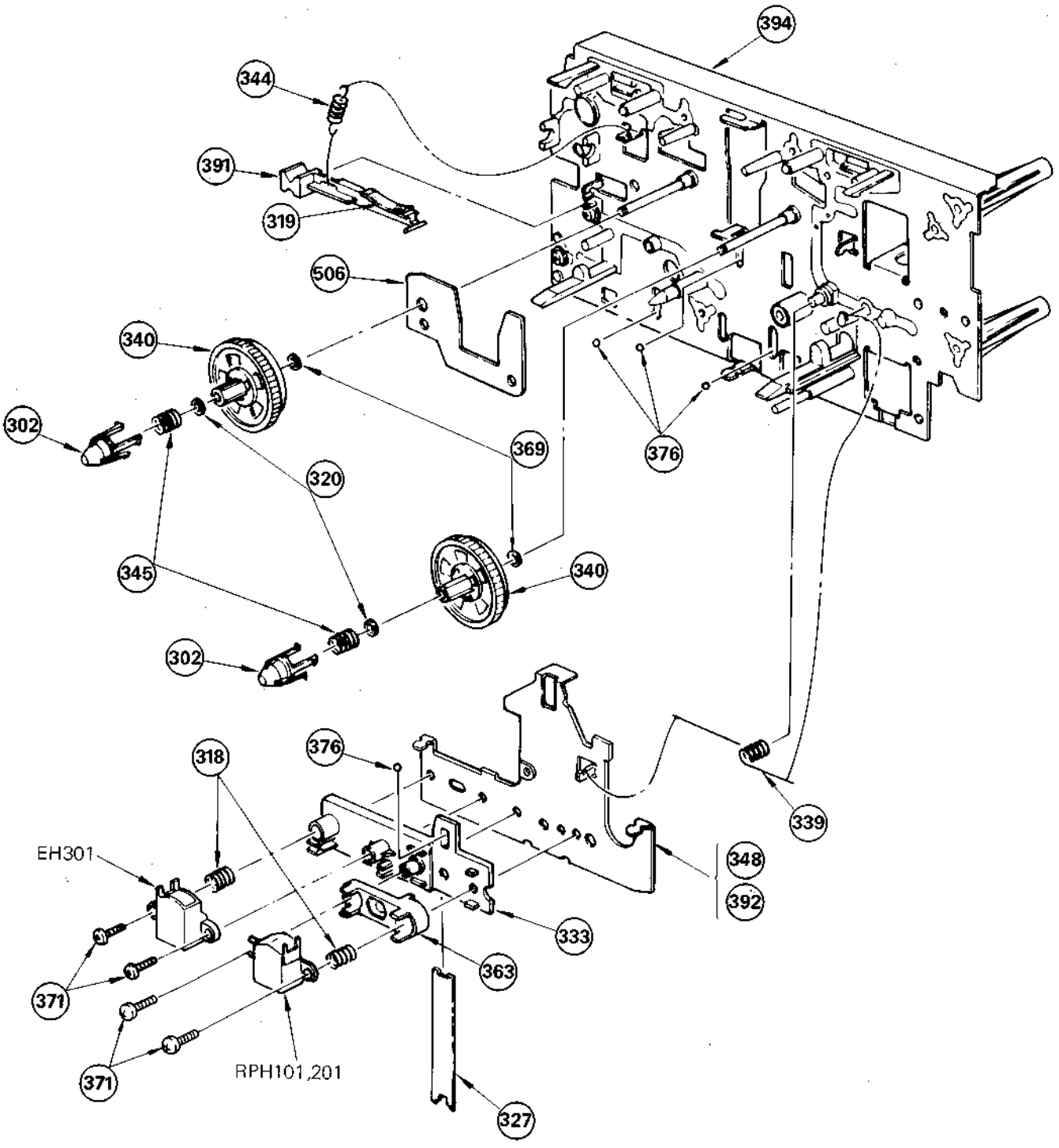
5-5.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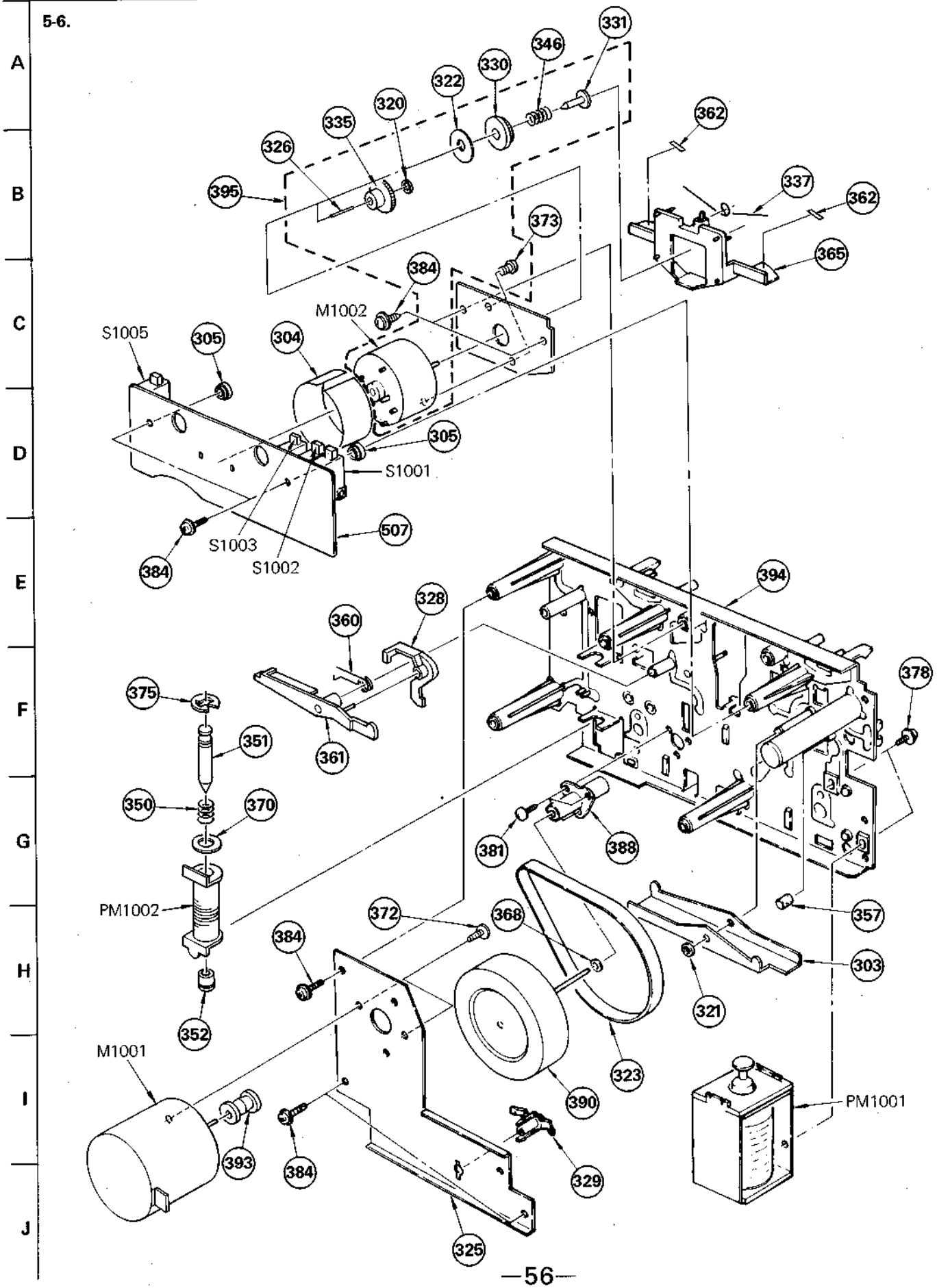
RPH101,201
327

5-6.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326
395
362
337
362
365
373
384
M1002
S1005
305
304
305
S1001
507
384
S1003
S1002
394
328
360
378
375
351
361
350
370
381
388
PM1002
372
368
357
384
303
321
352
M1001
323
390
PM1001
393
384
329
325

GENERAL SECTION

No.	Part No.	Description
1	3-304-419-00	(SILVER)...BUTTON, EJECT
1	3-304-419-31	(BLACK)....BUTTON, EJECT
2 ♣	3-304-423-00	PLATE, SIDE, LEFT
3 ♣	3-304-944-00	PLATE, SIDE, RIGHT
4	3-307-538-21	(BLACK)....KNOB, SWITCH, TIMER
4	3-307-538-51	(SILVER)...KNOB, SWITCH, TIMER
5 ♣	3-315-156-00	SPACER, REMOTE CONTROL
6	3-317-101-11	BUTTON, REW-FF
7	3-317-101-21	BUTTON, REW-FF
8	3-317-102-00	BUTTON (A), SQUARE
9	3-317-103-00	MOLD, RECORD BUTTON
10	3-317-105-00	BUTTON, PAUSE
11	3-317-106-00	BUTTON, STOP
12	3-317-107-00	BUTTON, RECORD MUTE
13	3-317-108-00	BUTTON, RECORD
14	3-317-110-00	(SILVER)...BUTTON (+), RECORD LEVEL
14	3-317-110-11	(BLACK)....BUTTON (+), RECORD LEVEL
15	3-317-111-00	(SILVER)...BUTTON (-), RECORD LEVEL
15	3-317-111-11	(BLACK)....BUTTON (-), RECORD LEVEL
16	3-317-113-00	KNOB (A), SQUARE
17	3-317-114-01	KNOB (B), SQUARE
18	3-317-114-11	KNOB (B), SQUARE
19	3-317-114-21	KNOB (B), SQUARE
20	3-317-116-00	MOLD, CONTROL BUTTON
21	3-317-117-01	(SILVER)...BUTTON (B), SQUARE
21	3-317-117-21	(BLACK)....BUTTON (B), SQUARE
22	3-317-117-11	BUTTON (B), SQUARE
23	3-317-120-00	MOLD, RECORD MUTE BUTTON
24 ♣	3-317-121-00	SLIDER, EJECT
25 ♣	3-317-123-00	PLATE, RELAY
26	3-317-125-01	BUTTON, TRANSLUCENT
27	3-317-125-11	BUTTON, TRANSLUCENT
28	3-317-125-21	(SILVER)...BUTTON, TRANSLUCENT
28	3-317-125-31	(BLACK)....BUTTON, TRANSLUCENT
29	3-317-129-11	(AEP,G-AEP,UK)...PLATE, JACK
29 ♣	3-317-129-21	(US,Canadian)....PLATE, JACK
29	3-317-129-31	(E2/3).....PLATE, JACK
30 ♣	3-317-130-00	JOINT
31 ♣	3-317-133-00	CHASSIS, AMPLIFIER
32	3-317-134-00	BUTTON, FWD
33	3-317-135-00	MOLD, PAUSE BUTTON
34 ♣	3-317-136-00	GUIDE, CONTROL BUTTON
35	3-317-137-00	MOLD, FWD BUTTON
36	3-317-138-00	MOLD, STOP BUTTON

GENERAL SECTION

No.	Part No.	Description
37	3-317-149-01	(E2/3).....LABEL, MODEL NUMBER
37	3-317-151-01	(US,Canadian)...LABEL, MODEL NUMBER
37	3-317-153-01	(UK).....LABEL, MODEL NUMBER
37	3-317-155-01	(AEP).....LABEL, MODEL NUMBER
37	3-317-161-01	(G-AEP).....LABEL, MODEL NUMBER
38 ♣	3-317-156-01	BRACKET, FUSE
39	3-317-157-01	INSTRUCTIONS
40	3-534-238-XX	SPRING, TENSION
41 ♣	3-575-502-00	BRACKET, EJECT
42	3-575-524-00	(US,Canadian,AEP,UK)...COVER, POWER SWITCH
43	3-575-538-11	PLATE, BOTTOM
44	3-575-539-00	(SILVER)...TOP COVER
44	3-575-539-41	(BLACK)....TOP COVER
45	3-576-731-00	FELT (H)
46	3-701-030-00	LABEL, SERIAL NUMBER
47	3-701-437-21	WASHER
48	3-701-682-00	(US,Canadian,E2/3)...STOPPER, CORD
48	3-703-244-00	(AEP,G-AEP,UK).....BUSHING, CORD
49	3-701-690-00	(UK)....LABEL (MADE IN JAPAN)
50	3-703-044-26	(US,Canadian)...LABEL, CAUTION
51	3-703-249-01	SCREW, S TIGHT, +PTTWH 3X6
52	3-703-354-01	(AEP,G-AEP,UK,E2/3)...SCREW (OS), TOP COVER, CLAW
52	4-889-321-01	(US,Canadian).....SCREW
53	3-703-473-00	SCREW, TERMINAL
54	3-703-710-01	STICKER, SONY SYMBOL (12)
55	4-864-435-00	SPRING, COMPRESSION
56	4-875-455-01	(AEP,G-AEP,UK)...COVER (DIA,20), CAPACITOR
56	4-875-455-21	(E2/3).....COVER (DIA,20), CAPACITOR
57	7-621-775-10	SCREW +B 2.6X4
58	7-623-210-22	SW 4, TYPE 2
59	7-682-247-04	SCREW +K 3X6
60	7-682-647-01	SCREW +PS 3X6
61	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S
62	7-685-870-01	SCREW +BVTT 3X5 (S)
63	7-685-871-01	SCREW +BVTT 3X6 (S)
64	7-685-871-09	SCREW +BVTT 3X6 (S)
65	7-685-872-01	SCREW +BVTT 3X8 (S)
66	9-911-815-02	CUSHION
67	9-911-837-XX	CUSHION (B), FILTER
68	9-911-841-XX	CUSHION
69	9-911-850-XX	FELT, TENSION REGULATOR
70	9-911-863-XX	SHEET, INSULATING

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
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- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

COILS

- MMH : mH, UH : μH

SEMICONDUCTORS

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

GENERAL SECTION

No.	Part No.	Description
71	A-2169-073-A	(SILVER)...WINDOW ASSY, CASSETTE
71	A-2169-081-A	(BLACK)....WINDOW ASSY, CASSETTE
72	A-2191-007-A	(SILVER)...METER ASSY, ESCUTCHEON
72	A-2191-015-A	(BLACK)....METER ASSY, ESCUTCHEON
73	A-2310-236-A	(SILVER)...PANEL ASSY, FRONT
73	A-2310-249-A	(BLACK)....PANEL ASSY, FRONT
74	X-3304-405-0	(SILVER)...KNOB ASSY, POWER
74	X-3304-911-0	(BLACK)....KNOB ASSY, POWER
75	2-066-111-08	(G-AEP).....COLLAR

ACCESSORY & PACKING MATERIAL

No.	Part No.	Description
111	1-551-734-11	CORD, CONNECTION (RK-74A)
112	3-315-149-00	CUSHION (LEFT), LOWER
113	3-315-150-00	CUSHION (RIGHT), LOWER
114	3-315-151-00	CUSHION (LEFT), UPPER
115	3-315-152-00	CUSHION (RIGHT), UPPER
116	3-317-153-00	CARTON
117	3-573-625-00	SHEET, POLYETHYLENE
118	3-701-630-00	BAG, POLYETHYLENE
119	3-773-630-11	(AEP,G-AEP,UK,E2/3)...MANUAL, INSTRUCTION
119	3-773-630-21	(US,Canadian).....MANUAL, INSTRUCTION
119	3-773-630-41	(AEP,G-AEP).....MANUAL, INSTRUCTION
120	3-793-828-11	QUESTIONNAIRE
121	8-890-454-10	(Canadian)...TAPE (UCX-S)
122	X-3701-105-0	ROD ASSY, CLEANING, HEAD

MECHANISM SECTION

No.	Part No.	Description
301	2-371-561-00	BUSHING (P), INSULATING
302	3-306-257-00	CLAW, REEL TABLE
303 ♣	3-306-260-00	LEVER, FWD
304	3-306-261-00	PLATE, SHIELD, MOTOR
305	3-306-277-00	LIFTER, PC BOARD
306	3-306-283-00	RETAINER (LEFT), CASSETTE
307	3-306-284-00	RETAINER (RIGHT), CASSETTE
308 ♣	3-306-285-00	LEVER, HOLDER FULCRUM
309	3-306-286-00	HOLDER, CASSETTE
310 ♣	3-312-615-11	HEAT SINK
311 ♣	3-317-118-00	HOLDER (A), LED
312 ♣	3-317-119-00	HOLDER (B), LED

MECHANISM SECTION

No.	Part No.	Description
313	3-317-122-00	HINGE, PC BOARD
314 ♣	3-317-126-00	HOLDER, FL TUBE
315 ♣	3-317-140-00	HEAT SINK, SYSTEM CONTROL
316 ♣	3-317-143-00	BOX (2), IC SHIELD
317 ♣	3-317-144-01	PLATE, SHIELD, BIAS
318	3-481-272-00	SPRING, COMPRESSION
319	3-538-051-00	RUBBER, BRAKE
320	3-558-708-11	WASHER, STOPPER
321	3-558-708-21	WASHER, STOPPER
322	3-564-027-11	FELT, LIMITER
323	3-564-319-00	BELT, CAPSTAN
324	3-572-365-01	SHEET (A), INSULATING
325 ♣	3-575-302-00	RETAINER, THRUST
326	3-575-304-00	SHAFT, GEAR, FR
327 ♣	3-575-312-00	SPRING
328	3-575-318-00	LEVER, LOCK, TUNING
329	3-575-321-00	RETAINER, THRUST, CAPSTAN
330	3-575-324-00	GEAR, LIMITER
331	3-575-327-00	STOPPER
332	3-575-328-00	HOLDER, LAMP
333	3-575-330-00	BRACKET, HEAD
334 ♣	3-575-331-00	LEVER, DETECTION, HALF
335	3-575-332-00	GEAR, FR
336	3-575-333-00	PISTON
337	3-575-345-00	SPRING
338	3-575-348-00	ROLLER, GUIDE, THREADING
339	3-575-351-00	SPRING
340	3-575-353-11	TABLE, REEL
341	3-575-356-00	SPRING
342	3-575-357-00	SPRING, TENSION
343	3-575-358-00	SPRING, TENSION
344	3-575-359-00	SPRING, TENSION
345	3-575-365-00	SPRING, COMPRESSION
346	3-575-368-00	SPRING, COMPRESSION
347 ♣	3-575-378-00	GUIDE, LEAD
348	3-575-383-00	CHASSIS, HEAD
349	3-575-392-00	RING, PISTON
350	3-575-414-00	SPRING, COMPRESSION
351	3-575-415-11	ARBOR, MOVABLE
352	3-575-416-11	ARBOR, FIXED
353	3-575-438-00	LEVER, DETECTION
354 ♣	3-575-439-00	SHAFT, LEVER, DETECTION
355 ♣	3-575-440-00	BRACKET, LEVER, DETECTION
356	3-575-441-00	SPRING
357	3-575-446-00	LEVER, DETECTION, METAL

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CAPACITORS:

- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

COILS

- MMH : mH, UH : μH

SEMICONDUCTORS

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

MECHANISM SECTION

No.	Part No.	Description
358	3-575-448-00	LEVER, LOCK
359	3-575-449-00	LEVER, DETECTION, REC
360	3-575-458-00	SPRING
361	3-575-460-00	LEVER, SELECT TUNE
362	3-575-469-00	LINING, BRAKE
363	3-575-471-00	TABLE, ADJUSTMANT, HEAD
364	3-575-490-00	RUBBER, STOPPER
365	3-575-491-00	PLATE, BRAKE
366	3-578-390-00	SPRING, TENSION
367	3-632-261-00	SPRING
368	3-701-438-21	WASHER, 2.5MM (t=0.5)
369	3-701-439-21	WASHER, 3MM (t=0.5)
370	3-701-444-11	WASHER, 6
371	3-703-496-00	SCREW +PWH2X14
372	7-621-259-15	SCREW +P 2.6X3
373	7-621-775-10	SCREW +B 2.6X4
374	7-624-104-04	STOP RING 2.0, TYPE -E
375	7-624-109-04	STOP RING 5.0, TYPE -E
376	7-671-112-11	BALL, STEEL
377	7-682-548-04	SCREW +B 3X8
378	7-682-949-01	SCREW +PSW 3X10
379	7-685-647-71	SCREW +BVTP 3X10 TYPE2 SLIT
380	7-685-860-04	SCREW +BVTT 2.6X4 (S)
381	7-685-861-01	SCREW +BVTT 2.6X5 (S)
382	7-685-870-01	SCREW +BVTT 3X5 (S)
383	7-685-871-01	SCREW +BVTT 3X6 (S)
384	7-687-246-21	SCREW, TOTSU PTPWH 3X8, TYPE2
385	9-911-815-02	CUSHION
386 ♣	X-3575-301-0	PLATE (A) ASSY, HOLDER FULCRUM
387 ♣	X-3575-302-0	PLATE (B) ASSY, FULCRUM
388	X-3575-303-0	METAL ASSY, CAPSTAN
389	X-3575-304-0	PINCH LEVER (T) ASSY
390	X-3575-305-0	FLYWHEEL (T) ASSY
391	X-3575-310-0	LEVER ASSY, TENSION, BACK
392	X-3575-324-0	CHASSIS ASSY, HEAD
393	X-3575-328-1	PULLEY, MOTOR
394 ♣	X-3575-343-0	CHASSIS ASSY, MECHANISM
395	X-3575-348-0	MOTOR ASSY, REEL
396	X-3575-374-0	PLATE ASSY, ORNAMENTAL

ELECTRICAL PARTS

Ref.No.	Part No.	Description
501 ⚠	1-526-476-11	(E2/3)...SELECTOR, POWER VOLTAGE
502 ⚠	1-528-120-00	BATTERY, LITHIUM (CR-2025)
503	1-533-131-00	HOLDER, FUSE

ELECTRICAL PARTS

Ref.No.	Part No.	Description
504 ⚠	1-534-817-XX	(AEP,G-AEP)....CORD, POWER, EURO PLUG
504 ⚠	1-551-472-00	(E2)....CORD, POWER
504 ⚠	1-551-506-XX	(US,Canadian)....CORD, POWER
504 ⚠	1-551-884-00	(UK)....CORD, POWER
504 ⚠	1-565-734-00	(E3)....CORD, POWER
505	1-561-965-00	SOCKET 5P
506 ♣	1-603-823-00	PC BOARD, PHOTO
507 ♣	1-611-500-00	PC BOARD, MD SW
508 ♣	1-611-576-00	PC BOARD, AUDIO
509 ♣	1-611-577-00	PC BOARD, MIC JACK
510 ♣	1-611-578-00	PC BOARD, INPUT/OUTPUT JACK
511 ♣	1-611-579-00	PC BOARD, HEADPHONE JACK
512 ♣	1-611-580-11	PC BOARD, SYSTEM CONTROL
513 ♣	1-611-581-11	PC BOARD, TIMER SW
514 ♣	1-611-583-11	PC BOARD, REMOCON SOCKET
515 ♣	1-611-585-00	PC BOARD, INDICATION
516 ♣	1-612-397-21	(US,Canadian).....PC BOARD, FUSE
516 ♣	1-612-397-31	(AEP,G-AEP,UK,E2/3)...PC BOARD, FUSE
517 ♣	A-2056-211-A	PC BOARD ASSY, AUDIO
518 ♣	A-2056-213-A	PC BOARD ASSY, INDICATION
519 ♣	A-2056-222-A	PC BOARD ASSY, SYSTEM CONTROL
520	1-612-712-11	(G-AEP)....PC BOARD, FILTER
C001 ⚠	1-161-744-00	CAP, CERAMIC 10000PF E2 400V
C002	1-161-741-00	(G-AEP)....CERAMIC 1000PF
C003	1-161-741-00	(G-AEP)....CERAMIC 1000PF
C004	1-161-741-00	(G-AEP)....CERAMIC 1000PF
C005	1-161-740-00	(US).....CERAMIC 470PF
C006	1-161-740-00	(US).....CERAMIC 470PF
C101	1-123-356-00	ELECT 10MF 20% 16V
C102	1-161-271-00	CERAMIC 100PF 5% 50V
C103	1-123-356-00	ELECT 10MF 20% 16V
C104	1-123-369-00	ELECT 4.7MF 20% 50V
C105	1-123-330-00	ELECT 22MF 20% 16V
C106	1-161-380-00	CERAMIC 0.0015MF 10% 50V
C111	1-161-321-00	CERAMIC 680PF 10% 50V
C112	1-130-305-00	FILM 0.022MF 5% 100V
C113	1-124-185-00	ELECT 4.7MF 20% 50V
C114	1-108-571-00	MYLAR 0.0047MF 5% 50V
C115	1-161-316-00	CERAMIC 270PF 10% 50V
C121	1-130-630-00	FILM 0.068MF 5% 50V
C122	1-130-633-00	FILM 0.12MF 5% 50V
C123	1-130-635-00	FILM 0.18MF 5% 50V
C124	1-130-637-00	FILM 0.27MF 5% 50V
C125	1-130-625-00	FILM 0.027MF 5% 50V
C126	1-123-380-00	ELECT 1MF 20% 50V
C127	1-130-635-00	FILM 0.18MF 5% 50V
C128	1-130-630-00	FILM 0.068MF 5% 50V
C129	1-123-380-00	ELECT 1MF 20% 50V

NOTE:

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CAPACITORS:

- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

COILS

- MMH : mH, UH : μH

SEMICONDUCTORS

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

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

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

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C130	1-130-633-00	FILM	0.12MF	5%	50V
C131	1-130-620-00	FILM	0.01MF	5%	50V
C132	1-130-622-00	FILM	0.015MF	5%	50V
C133	1-130-620-00	FILM	0.01MF	5%	50V
C134	1-124-185-00	ELECT	4.7MF	20%	50V
C135	1-123-307-00	ELECT	100MF	20%	10V
C136	1-123-307-00	ELECT	100MF	20%	10V
C151	1-123-369-00	ELECT	4.7MF	20%	50V
C152	1-130-638-00	FILM	0.33MF	5%	50V
C153	1-123-330-00	ELECT	22MF	20%	16V
C154	1-124-185-00	ELECT	4.7MF	20%	50V
C155	1-161-318-00	CERAMIC	390PF	10%	50V
C156	1-107-036-00	MICA	68PF	5%	500V
C157	1-107-165-00	MICA	56PF	5%	500V
C158	1-108-575-00	MYLAR	0.0068MF	5%	50V
C159	1-130-620-00	FILM	0.01MF	5%	50V
C160	1-130-629-00	FILM	0.056MF	5%	50V
C161	1-130-620-00	FILM	0.01MF	5%	50V
C162	1-108-577-00	MYLAR	0.0082MF	5%	50V
C163	1-130-630-00	FILM	0.068MF	5%	50V
C165	1-108-567-00	MYLAR	0.0033MF	5%	50V
C166	1-130-629-00	FILM	0.056MF	5%	50V
C176	1-123-369-00	ELECT	4.7MF	20%	50V
C177	1-123-369-00	ELECT	4.7MF	20%	50V
C192	1-123-356-00	ELECT	10MF	20%	16V
C201	1-123-356-00	ELECT	10MF	20%	16V
C202	1-161-271-00	CERAMIC	100PF	5%	50V
C203	1-123-356-00	ELECT	10MF	20%	16V
C204	1-123-369-00	ELECT	4.7MF	20%	50V
C205	1-123-330-00	ELECT	22MF	20%	16V
C206	1-161-380-00	CERAMIC	0.0015MF	10%	50V
C211	1-161-321-00	CERAMIC	680PF	10%	50V
C212	1-130-305-00	FILM	0.022MF	5%	100V
C213	1-124-185-00	ELECT	4.7MF	20%	50V
C214	1-108-571-00	MYLAR	0.0047MF	5%	50V
C215	1-161-316-00	CERAMIC	270PF	10%	50V
C221	1-130-630-00	FILM	0.068MF	5%	50V
C222	1-130-633-00	FILM	0.12MF	5%	50V
C223	1-130-635-00	FILM	0.18MF	5%	50V
C224	1-130-637-00	FILM	0.27MF	5%	50V
C225	1-130-625-00	FILM	0.027MF	5%	50V
C226	1-123-380-00	ELECT	1MF	20%	50V
C227	1-130-635-00	FILM	0.18MF	5%	50V
C228	1-130-630-00	FILM	0.068MF	5%	50V
C229	1-123-380-00	ELECT	1MF	20%	50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C230	1-130-633-00	FILM	0.12MF	5%	50V
C231	1-130-620-00	FILM	0.01MF	5%	50V
C232	1-130-622-00	FILM	0.015MF	5%	50V
C233	1-130-620-00	FILM	0.01MF	5%	50V
C234	1-124-185-00	ELECT	4.7MF	20%	50V
C235	1-123-307-00	ELECT	100MF	20%	10V
C236	1-123-307-00	ELECT	100MF	20%	10V
C251	1-123-369-00	ELECT	4.7MF	20%	50V
C252	1-130-638-00	FILM	0.33MF	5%	50V
C253	1-123-330-00	ELECT	22MF	20%	16V
C254	1-124-185-00	ELECT	4.7MF	20%	50V
C255	1-161-318-00	CERAMIC	390PF	10%	50V
C256	1-107-036-00	MICA	68PF	5%	500V
C257	1-107-165-00	MICA	56PF	5%	500V
C258	1-108-575-00	MYLAR	0.0068MF	5%	50V
C259	1-130-620-00	FILM	0.01MF	5%	50V
C260	1-130-629-00	FILM	0.056MF	5%	50V
C261	1-130-620-00	FILM	0.01MF	5%	50V
C262	1-108-577-00	MYLAR	0.0082MF	5%	50V
C263	1-130-630-00	FILM	0.068MF	5%	50V
C265	1-108-567-00	MYLAR	0.0033MF	5%	50V
C266	1-130-629-00	FILM	0.056MF	5%	50V
C276	1-123-369-00	ELECT	4.7MF	20%	50V
C277	1-123-369-00	ELECT	4.7MF	20%	50V
C292	1-123-356-00	ELECT	10MF	20%	16V
C301	1-123-337-00	ELECT	1000MF	20%	25V
C302	1-123-337-00	ELECT	1000MF	20%	25V
C303	1-123-307-00	ELECT	100MF	20%	10V
C304	1-123-307-00	ELECT	100MF	20%	10V
C305	1-124-070-00	ELECT	220MF	20%	10V
C306	1-124-070-00	ELECT	220MF	20%	10V
C307	1-123-321-00	ELECT	220MF	20%	16V
C308	1-123-321-00	ELECT	220MF	20%	16V
C309	1-123-382-00	ELECT	3.3MF	20%	50V
C311	1-123-356-00	ELECT	10MF	20%	16V
C312	1-123-379-00	ELECT	0.47MF	20%	50V
C313	1-124-089-00	ELECT	2.2MF	20%	50V
C314	1-130-023-00	FILM	0.0027MF	5%	100V
C315	1-130-023-00	FILM	0.0027MF	5%	100V
C316	1-130-291-00	FILM	0.0056MF	5%	100V
C317	1-130-062-00	FILM	0.0056MF	5%	630V
C324	1-123-307-00	ELECT	100MF	20%	10V
C331	1-123-307-00	ELECT	100MF	20%	10V
C332	1-123-307-00	ELECT	100MF	20%	10V
C333	1-123-307-00	ELECT	100MF	20%	10V

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CAPACITORS:

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

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C334	1-123-307-00	ELECT	100MF	20%	10V
C335	1-123-330-00	ELECT	22MF	20%	16V
C337	1-123-356-00	ELECT	10MF	20%	16V
C339	1-161-330-00	CERAMIC	0.01MF	30%	25V
C340	1-161-330-00	CERAMIC	0.01MF	30%	25V
C501	1-123-364-00	ELECT	1000MF	20%	50V
C502	1-123-380-00	ELECT	1MF	20%	50V
C503	1-123-357-00	ELECT	22MF	20%	50V
C504	1-123-321-00	ELECT	220MF	20%	16V
C505	1-123-328-00	ELECT	4.7MF	20%	25V
C506	1-123-310-00	ELECT	470MF	20%	10V
C507	1-123-356-00	ELECT	10MF	20%	16V
C508	1-123-312-00	ELECT	2200MF	20%	10V
C509	1-123-306-00	ELECT	47MF	20%	10V
C510	1-123-308-00	ELECT	220MF	20%	10V
C511	1-123-356-00	ELECT	10MF	20%	16V
C512	1-123-338-00	ELECT	2200MF	20%	25V
C513	1-123-380-00	ELECT	1MF	20%	50V
C514	1-161-330-00	CERAMIC	0.01MF	30%	25V
C515	1-161-330-00	CERAMIC	0.01MF	30%	25V
C516	1-161-330-00	CERAMIC	0.01MF	30%	25V
C517	1-130-628-00	FILM	0.047MF	5%	50V
C518	1-130-628-00	FILM	0.047MF	5%	50V
C519	1-130-634-00	FILM	0.15MF	5%	50V
C520	1-123-380-00	ELECT	1MF	20%	50V
C521	1-162-056-00	CERAMIC	33PF	5%	50V
C522	1-162-056-00	CERAMIC	33PF	5%	50V
C523	1-161-974-00	CERAMIC	0.1MF	0	16V
C524	1-161-494-00	CERAMIC	0.022MF	30%	25V
C525	1-161-494-00	CERAMIC	0.022MF	30%	25V
C526	1-161-494-00	CERAMIC	0.022MF	30%	25V
C527	1-161-494-00	CERAMIC	0.022MF	30%	25V
C528	1-161-494-00	CERAMIC	0.022MF	30%	25V
C529	1-161-494-00	CERAMIC	0.022MF	30%	25V
C530	1-161-494-00	CERAMIC	0.022MF	30%	25V
C531	1-123-295-00	ELECT	100MF	20%	6.3V
C532	1-123-381-00	ELECT	2.2MF	20%	50V
C533	1-123-381-00	ELECT	2.2MF	20%	50V
C534	1-123-298-00	ELECT	470MF	20%	6.3V
C535	1-161-326-00	CERAMIC	0.0022MF	30%	50V
C536	1-161-326-00	CERAMIC	0.0022MF	30%	50V
C537	1-161-326-00	CERAMIC	0.0022MF	30%	50V
C538	1-123-363-00	ELECT	470MF	20%	50V
C539	1-123-295-00	ELECT	100MF	20%	6.3V
C540	1-161-974-00	CERAMIC	0.1MF	0	16V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C541	1-161-262-00	CERAMIC	18PF	5%	50V
C542	1-161-262-00	CERAMIC	18PF	5%	50V
C543	1-123-356-00	ELECT	10MF	20%	16V
C544	1-124-089-00	ELECT	2.2MF	20%	50V
C803	1-123-356-00	ELECT	10MF	20%	25V
C806	1-123-354-00	ELECT	3.3MF	20%	50V
C807	1-130-623-00	FILM	0.018MF	5%	50V
C808	1-123-356-00	ELECT	10MF	20%	50V
C809	1-123-295-00	ELECT	100MF	20%	6.3V
C810	1-161-741-00	(US,G-AEP)...CERAMIC	0.022MF	30%	25V
C1001	1-161-327-00	CERAMIC	0.0033MF	30%	50V
C1002	1-161-327-00	CERAMIC	0.0033MF	30%	50V
C1003	1-123-332-00	ELECT	47MF	20%	16V
C1004	1-123-322-00	ELECT	47MF	20%	16V
C1005	1-123-307-00	ELECT	100MF	20%	10V
♦CNP301	1-560-605-00	PIN, CONNECTOR 6P			
♦CNP302	1-560-708-00	PIN, CONNECTOR 2P			
♦CNP303	1-560-708-00	PIN, CONNECTOR 2P			
♦CNP304	1-560-060-00	PIN, CONNECTOR 2P			
♦CNP305	1-560-062-00	PIN, CONNECTOR 4P			
♦CNP306	1-560-708-00	PIN, CONNECTOR 2P			
♦CNP307	1-560-602-00	PIN, CONNECTOR 3P			
♦CNP502	1-560-061-00	PIN, CONNECTOR 3P			
♦CNP503	1-560-338-00	PIN, CONNECTOR 7P			
♦CNP504	1-560-062-00	PIN, CONNECTOR 4P			
♦CNP505	1-560-063-00	PIN, CONNECTOR 5P			
♦CNP506	1-560-064-00	PIN, CONNECTOR 6P			
♦CNP507	1-560-062-00	PIN, CONNECTOR 4P			
♦CNP508	1-560-061-00	PIN, CONNECTOR 3P			
♦CNP509	1-560-063-00	PIN, CONNECTOR 5P			
♦CNP512	1-560-061-00	PIN, CONNECTOR 3P			
♦CNP513	1-560-063-00	PIN, CONNECTOR 5P			
CT301	1-141-225-00	CAP, TUNING, TRIMMER			
D101	8-719-107-94	DIODE 1SS202-1			
D201	8-719-107-94	DIODE 1SS202-1			
D301	8-719-200-02	DIODE 10E-2			
D302	8-719-200-02	DIODE 10E-2			
D303	8-719-200-02	DIODE 10E-2			
D304	8-719-200-02	DIODE 10E-2			
D305	8-719-910-52	DIODE HZ15-2L			
D306	8-719-107-94	DIODE 1SS202-1			
D307	8-719-910-67	DIODE HZ6C1L			
D308	8-719-107-94	DIODE 1SS202-1			
D309	8-719-910-67	DIODE HZ6C1L			
D310	8-719-200-02	DIODE 10E-2			

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- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

COILS

- MMH : mH, UH : μH

SEMICONDUCTORS

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

ELECTRICAL PARTS

Ref.No.	Part No.	Description
D311	8-719-200-02	DIODE 10E-2
D312	8-719-107-94	DIODE 1SS202-1
D501	8-719-200-02	DIODE 10E-2
D502	8-719-200-02	DIODE 10E-2
D503	8-719-200-02	DIODE 10E-2
D504	8-719-200-02	DIODE 10E-2
D505	8-719-931-08	DIODE EQB01-08
D506	8-719-913-62	DIODE HZ36-2L
D507	8-719-910-25	DIODE HZ12B2L
D508	8-719-910-14	DIODE HZ11B1L
D509	8-719-910-94	DIODE HZ9B1L
D510	8-719-910-71	DIODE HZ7A1L
D511	8-719-107-94	DIODE 1SS202-1
D512	8-719-107-94	DIODE 1SS202-1
D513	8-719-107-94	DIODE 1SS202-1
D514	8-719-107-94	DIODE 1SS202-1
D515	8-719-200-02	DIODE 10E-2
D516	8-719-200-02	DIODE 10E-2
D517	8-719-107-94	DIODE 1SS202-1
D518	8-719-107-94	DIODE 1SS202-1
D519	8-719-107-94	DIODE 1SS202-1
D801	8-719-990-42	DIODE HZ24-2L
D802	8-719-107-94	DIODE 1SS202-1
D803	8-719-107-94	DIODE 1SS202-1
D804	8-719-107-94	DIODE 1SS202-1
D805	8-719-107-94	DIODE 1SS202-1
D806	8-719-107-94	DIODE 1SS202-1
D807	8-719-107-94	DIODE 1SS202-1
D808	8-719-107-94	DIODE 1SS202-1
D809	8-719-107-94	DIODE 1SS202-1
D810	8-719-107-94	DIODE 1SS202-1
D811	8-719-107-94	DIODE 1SS202-1
D812	8-719-107-94	DIODE 1SS202-1
D813	8-719-107-94	DIODE 1SS202-1
D814	8-719-107-94	DIODE 1SS202-1
D815	8-719-107-94	DIODE 1SS202-1
D816	8-719-107-94	DIODE 1SS202-1
D817	8-719-107-94	DIODE 1SS202-1
D818	8-719-107-94	DIODE 1SS202-1
D819	8-719-107-94	DIODE 1SS202-1
D820	8-719-107-94	DIODE 1SS202-1
D821	8-719-107-94	DIODE 1SS202-1
D822	8-719-107-94	DIODE 1SS202-1
D823	8-719-107-94	DIODE 1SS202-1
D824	8-719-107-94	DIODE 1SS202-1

ELECTRICAL PARTS

Ref.No.	Part No.	Description
D825	8-719-107-94	DIODE 1SS202-1
D826	8-719-902-78	DIODE SLR-34DC5
D827	8-719-934-05	DIODE SLR-34URC5
D828	8-719-902-77	DIODE SLR-34PC5
D829	8-719-902-77	DIODE SLR-34PC5
D830	8-719-902-77	DIODE SLR-34PC5
D831	8-719-906-46	DIODE SLR34YC5
D832	8-719-906-46	DIODE SLR34YC5
D833	8-719-902-77	DIODE SLR-34PC5
D834	8-719-902-77	DIODE SLR-34PC5
D835	8-719-902-77	DIODE SLR-34PC5
D836	8-719-902-77	DIODE SLR-34PC5
D837	8-719-906-46	DIODE SLR34YC5
D838	8-719-107-94	DIODE 1SS202-1
D1001	8-719-200-02	DIODE 10E-2
D1002	8-719-200-02	DIODE 10E-2
D1003	8-719-107-94	DIODE 1SS202-1
D1104	8-719-107-94	DIODE 1SS202-1
EH301	8-825-724-00	HEAD, ERASE EF201-36
F1	⚠ 1-532-286-00	(AEP,G-AEP,UK,E2/3) FUSE, TIME-LAG
F1	⚠ 1-532-570-00	(US,Canadian) FUSE, GLASS TUBE
F2	⚠ 1-532-286-00	(AEP,G-AEP,UK,E2/3) FUSE, TIME-LAG
F2	⚠ 1-532-570-00	(US,Canadian) FUSE, GLASS TUBE
FL	1-519-309-00	INDICATOR TUBE, FLUORESCENT
IC101	8-752-002-80	IC CX20028
IC102	8-759-600-02	IC M5218L
IC201	8-752-002-70	IC CX20027
IC202	8-759-600-02	IC M5218L
IC301	8-759-101-56	IC CX10033A
IC302	8-759-101-55	IC CX10032A
IC303	8-757-919-00	IC CX-7919
IC304	8-759-961-38	IC BA6138
IC305	8-759-700-47	IC CX10035
IC306	8-759-600-02	IC M5218L
IC307	8-759-745-60	IC NJM4560D
IC308	8-759-600-02	IC M5218L
IC501	8-759-201-90	IC TMP47C40P-6302
IC502	8-755-650-31	IC CX565-031
IC503	8-759-700-48	IC NJM2903S
IC504	8-759-240-66	IC TC4066BP
IC505	8-759-240-66	IC TC4066BP
IC506	8-759-700-46	IC CX10034
IC507	8-759-220-04	IC TC40H004P
IC508	8-759-240-69	IC TC4069UBP
IC509	8-759-240-69	IC TC4069UBP

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- MMH : mH, UH : μH

SEMICONDUCTORS

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

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

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

ELECTRICAL PARTS

Ref.No.	Part No.	Description
IC801	8-759-201-91	IC TMP4720N-1008
IC802	8-759-904-72	IC MSL9359RS
IC803	8-759-800-76	IC LB1245
IC804	8-759-800-76	IC LB1245
IC805	8-759-800-80	IC LB1200
J101	1-507-797-21	JACK, LARGE TYPE (L-MIC)
J201	1-507-797-21	JACK, LARGE TYPE (R-MIC)
J102	1-507-908-11	JACK, PIN 4P (L-LINE IN)
J103	1-507-908-11	JACK, PIN 4P (L-LINE OUT)
J202	1-507-908-11	JACK, PIN 4P (R-LINE IN)
J203	1-507-908-11	JACK, PIN 4P (R-LINE OUT)
J301	1-507-796-21	JACK (HEADPHONES)
L101	1-408-930-00	MICRO INDUCTOR 33MMH
L102	1-408-923-00	MICRO INDUCTOR 8.2MMH
L103	1-408-923-00	MICRO INDUCTOR 8.2MMH
L104	1-408-923-00	MICRO INDUCTOR 8.2MMH
L105	1-408-929-00	MICRO INDUCTOR 27MMH
L106	1-408-253-00	MICRO INDUCTOR 4.7MMH
L201	1-408-930-00	MICRO INDUCTOR 33MMH
L202	1-408-923-00	MICRO INDUCTOR 8.2MMH
L203	1-408-923-00	MICRO INDUCTOR 8.2MMH
L204	1-408-923-00	MICRO INDUCTOR 8.2MMH
L205	1-408-929-00	MICRO INDUCTOR 27MMH
L206	1-408-253-00	MICRO INDUCTOR 4.7MMH
L501	1-408-080-00	MICRO INDUCTOR 100UH
L502	1-408-080-00	MICRO INDUCTOR 100UH
LPF101	1-235-099-00	FILTER, LOW PASS
LPF201	1-235-099-00	FILTER, LOW PASS
M1001	1-541-239-00	MOTOR
M1002		INCLUDED IN 395
PL1001	1-518-340-71	LAMP, PILOT (CASSETTE THROUGH)
PM1001	1-454-301-00	SOLENOID, PLUNGER (HEAD)
PM1002	1-454-291-00	SOLENOID, PLUNGER (AMS)
PS301	1-532-605-00	LINK, IC
PS302	1-532-605-00	LINK, IC
PS501	1-532-605-00	LINK, IC
PS504	1-532-605-00	LINK, IC
PT	A 1-447-818-11	(US,Canadian) TRANSFORMER, POWER
PT	△ 1-447-819-11	(E2/E3) TRANSFORMER, POWER
PT	A 1-447-820-11	(AEP & AEP UK) TRANSFORMER, POWER
Q101	8-729-102-03	TRANSISTOR 2SD1020
Q102	8-729-102-03	TRANSISTOR 2SD1020
Q201	8-729-102-03	TRANSISTOR 2SD1020

ELECTRICAL PARTS

Ref.No.	Part No.	Description
Q202	8-729-102-03	TRANSISTOR 2SD1020
Q301	8-729-180-93	TRANSISTOR 2SD809
Q302	8-729-173-13	TRANSISTOR 2SB731
Q303	8-729-180-93	TRANSISTOR 2SD809
Q304	8-729-173-13	TRANSISTOR 2SB731
Q305	8-729-245-83	TRANSISTOR 2SC2458
Q306	8-729-245-83	TRANSISTOR 2SC2458
Q307	8-729-245-83	TRANSISTOR 2SC2458
Q308	8-729-245-83	TRANSISTOR 2SC2458
Q309	8-729-245-83	TRANSISTOR 2SC2458
Q310	8-729-245-83	TRANSISTOR 2SC2458
Q311	8-729-900-63	TRANSISTOR DTA124ES
Q501	8-729-201-78	TRANSISTOR 2SD1406
Q502	8-729-201-78	TRANSISTOR 2SD1406
Q503	8-729-201-78	TRANSISTOR 2SD1406
Q505	8-729-180-93	TRANSISTOR 2SD809
Q506	8-729-245-83	TRANSISTOR 2SC2458
Q507	8-729-245-83	TRANSISTOR 2SC2458
Q508	8-729-245-83	TRANSISTOR 2SC2458
Q509	8-729-245-83	TRANSISTOR 2SC2458
Q510	8-729-245-83	TRANSISTOR 2SC2458
Q511	8-729-900-37	TRANSISTOR DTC124EF
Q512	8-729-900-37	TRANSISTOR DTC124EF
Q513	8-729-900-37	TRANSISTOR DTC124EF
Q514	8-729-900-63	TRANSISTOR DTA124ES
Q515	8-729-900-63	TRANSISTOR DTA124ES
Q516	8-729-900-63	TRANSISTOR DTA124ES
Q517	8-729-900-63	TRANSISTOR DTA124ES
Q520	8-729-900-63	TRANSISTOR DTA124ES
Q521	8-729-195-23	TRANSISTOR 2SA952
Q522	8-729-195-23	TRANSISTOR 2SA952
Q523	8-729-102-03	TRANSISTOR 2SD1020
Q524	8-729-102-03	TRANSISTOR 2SD1020
Q525	8-729-900-63	TRANSISTOR DTA124ES
Q526	8-729-900-37	TRANSISTOR DTC124EF
Q527	8-729-180-93	TRANSISTOR 2SD809
Q529	8-729-103-43	TRANSISTOR 2SB740
Q530	8-729-103-43	TRANSISTOR 2SB740
Q531	8-729-177-43	TRANSISTOR 2SD774
Q532	8-729-177-43	TRANSISTOR 2SD774
Q533	8-729-900-37	TRANSISTOR DTC124EF
Q534	8-729-900-37	TRANSISTOR DTC124EF

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ELECTRICAL PARTS

Ref.No.	Part No.	Description			
Q535	8-729-900-63	TRANSISTOR DTA124ES			
Q536	8-729-900-63	TRANSISTOR DTA124ES			
Q537	8-729-900-63	TRANSISTOR DTA124ES			
Q538	8-729-900-63	TRANSISTOR DTA124ES			
Q801	8-729-900-63	TRANSISTOR DTA124ES			
Q802	8-729-900-63	TRANSISTOR DTA124ES			
Q803	8-729-900-63	TRANSISTOR DTA124ES			
Q804	8-729-900-63	TRANSISTOR DTA124ES			
Q805	8-729-245-83	TRANSISTOR 2SC2458			
Q1001	8-729-101-02	TRANSISTOR PH102			
R101	1-246-506-00	CARBON	24K	5%	1/4W
R102	1-246-512-00	CARBON	43K	5%	1/4W
R103	1-247-155-00	CARBON	10K	5%	1/4W
R104	1-247-115-00	CARBON	220	5%	1/4W
R105	1-247-167-00	CARBON	33K	5%	1/4W
R106	1-246-537-00	CARBON	470K	5%	1/4W
R107	1-246-485-00	CARBON	3.3K	5%	1/4W
R108	1-246-545-00	CARBON	1M	5%	1/4W
R109	1-247-151-00	CARBON	6.8K	5%	1/4W
R110	1-247-119-00	CARBON	330	5%	1/4W
R111	1-247-171-00	CARBON	47K	5%	1/4W
R112	1-247-107-00	CARBON	100	5%	1/4W
R113	1-246-524-00	CARBON	130K	5%	1/4W
R114	1-246-490-00	CARBON	5.1K	5%	1/4W
R115	1-246-504-00	CARBON	20K	5%	1/4W
R116	1-246-530-00	CARBON	240K	5%	1/4W
R117	1-246-499-00	CARBON	12K	5%	1/4W
R118	1-247-155-00	CARBON	10K	5%	1/4W
R121	1-247-831-00	CARBON	1K	5%	1/6W
R122	1-246-466-00	CARBON	510	5%	1/4W
R123	1-214-731-00	METAL	1.2K	1%	1/4W
R124	1-247-886-00	CARBON	200K	5%	1/6W
R125	1-247-888-00	CARBON	240K	5%	1/6W
R126	1-247-887-00	CARBON	220K	5%	1/6W
R127	1-247-845-00	CARBON	3.9K	5%	1/6W
R128	1-247-886-00	CARBON	200K	5%	1/6W
R129	1-247-887-00	CARBON	220K	5%	1/6W
R130	1-214-753-00	METAL	10K	1%	1/4W
R131	1-247-820-00	CARBON	360	5%	1/6W
R132	1-247-845-00	CARBON	3.9K	5%	1/6W
R133	1-246-490-00	CARBON	5.1K	5%	1/4W
R134	1-246-480-00	CARBON	2K	5%	1/4W
R135	1-247-171-00	CARBON	47K	5%	1/4W
R136	1-214-776-00	METAL	91K	1%	1/4W
R137	1-247-149-00	CARBON	5.6K	5%	1/4W
R138	1-246-483-00	CARBON	2.7K	5%	1/4W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R139	1-246-537-00	CARBON	470K	5%	1/4W
R140	1-214-763-00	METAL	27K	1%	1/4W
R141	1-246-466-00	CARBON	510	5%	1/4W
R142	1-214-729-00	METAL	1K	1%	1/4W
R143	1-247-139-00	CARBON	2.2K	5%	1/4W
R151	1-247-155-00	CARBON	10K	5%	1/4W
R152	1-247-147-00	CARBON	4.7K	5%	1/4W
R153	1-247-139-00	CARBON	2.2K	5%	1/4W
R154	1-247-155-00	CARBON	10K	5%	1/4W
R155	1-247-831-00	CARBON	1K	5%	1/6W
R156	1-246-529-00	CARBON	220K	5%	1/4W
R157	1-246-483-00	CARBON	2.7K	5%	1/4W
R158	1-247-159-00	CARBON	15K	5%	1/4W
R159	1-247-857-00	CARBON	12K	5%	1/6W
R160	1-247-807-00	CARBON	100	5%	1/6W
R161	1-247-857-00	CARBON	12K	5%	1/6W
R162	1-247-791-00	CARBON	22	5%	1/6W
R163	1-247-855-00	CARBON	10K	5%	1/6W
R164	1-247-848-00	CARBON	5.1K	5%	1/6W
R165	1-247-807-00	CARBON	100	5%	1/6W
R166	1-247-838-00	CARBON	2K	5%	1/6W
R168	1-247-846-00	CARBON	4.3K	5%	1/6W
R169	1-247-815-00	CARBON	220	5%	1/6W
R170	1-247-847-00	CARBON	4.7K	5%	1/6W
R171	1-247-891-00	CARBON	330K	5%	1/6W
R172	1-247-139-00	CARBON	2.2K	5%	1/4W
R176	1-247-155-00	CARBON	10K	5%	1/4W
R177	1-247-867-00	CARBON	33K	5%	1/6W
R178	1-246-529-00	CARBON	220K	5%	1/4W
R179	1-247-167-00	CARBON	33K	5%	1/4W
R180	1-247-179-00	CARBON	100K	5%	1/4W
R181	1-247-107-00	CARBON	100	5%	1/4W
R182	1-247-155-00	CARBON	10K	5%	1/4W
R183	1-247-871-00	CARBON	47K	5%	1/6W
R184	1-247-857-00	CARBON	12K	5%	1/6W
R185	1-247-791-00	CARBON	22	5%	1/6W
R186	1-247-891-00	CARBON	330K	5%	1/6W
R187	1-247-119-00	CARBON	330	5%	1/4W
R189	1-247-879-00	CARBON	100K	5%	1/6W
R191	1-214-777-00	METAL	100K	1%	1/4W
R192	1-214-785-00	METAL	220K	1%	1/4W
R193	1-214-735-00	METAL	1.8K	1%	1/4W
R194	1-214-744-00	METAL	4.3K	1%	1/4W
R195	1-247-902-00	CARBON	910K	5%	1/6W
R201	1-246-506-00	CARBON	24K	5%	1/4W

NOTE:

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- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

COILS

- MMH : mH, UH : μH

SEMICONDUCTORS

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

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R202	1-246-512-00	CARBON	43K	5%	1/4W
R203	1-247-155-00	CARBON	10K	5%	1/4W
R204	1-247-115-00	CARBON	220	5%	1/4W
R205	1-247-167-00	CARBON	33K	5%	1/4W
R206	1-246-537-00	CARBON	470K	5%	1/4W
R207	1-246-485-00	CARBON	3.3K	5%	1/4W
R208	1-246-545-00	CARBON	1M	5%	1/4W
R209	1-247-151-00	CARBON	6.8K	5%	1/4W
R210	1-247-119-00	CARBON	330	5%	1/4W
R211	1-247-171-00	CARBON	47K	5%	1/4W
R212	1-247-107-00	CARBON	100	5%	1/4W
R213	1-246-524-00	CARBON	130K	5%	1/4W
R214	1-246-490-00	CARBON	5.1K	5%	1/4W
R215	1-246-504-00	CARBON	20K	5%	1/4W
R216	1-246-530-00	CARBON	240K	5%	1/4W
R217	1-246-499-00	CARBON	12K	5%	1/4W
R218	1-247-155-00	CARBON	10K	5%	1/4W
R221	1-247-831-00	CARBON	1K	5%	1/6W
R222	1-246-466-00	CARBON	510	5%	1/4W
R223	1-214-731-00	METAL	1.2K	1%	1/4W
R224	1-247-886-00	CARBON	200K	5%	1/6W
R225	1-247-888-00	CARBON	240K	5%	1/6W
R226	1-247-887-00	CARBON	220K	5%	1/6W
R227	1-247-845-00	CARBON	3.9K	5%	1/6W
R228	1-247-886-00	CARBON	200K	5%	1/6W
R229	1-247-887-00	CARBON	220K	5%	1/6W
R230	1-214-753-00	METAL	10K	1%	1/4W
R231	1-247-820-00	CARBON	360	5%	1/6W
R232	1-247-845-00	CARBON	3.9K	5%	1/6W
R233	1-246-490-00	CARBON	5.1K	5%	1/4W
R234	1-246-480-00	CARBON	2K	5%	1/4W
R235	1-247-171-00	CARBON	47K	5%	1/4W
R236	1-214-776-00	METAL	91K	1%	1/4W
R237	1-247-149-00	CARBON	5.6K	5%	1/4W
R238	1-246-483-00	CARBON	2.7K	5%	1/4W
R239	1-246-537-00	CARBON	470K	5%	1/4W
R240	1-214-763-00	METAL	27K	1%	1/4W
R241	1-246-466-00	CARBON	510	5%	1/4W
R242	1-214-729-00	METAL	1K	1%	1/4W
R243	1-247-139-00	CARBON	2.2K	5%	1/4W
R251	1-247-155-00	CARBON	10K	5%	1/4W
R252	1-247-147-00	CARBON	4.7K	5%	1/4W
R253	1-247-139-00	CARBON	2.2K	5%	1/4W
R254	1-247-155-00	CARBON	10K	5%	1/4W
R255	1-247-831-00	CARBON	1K	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R256	1-246-529-00	CARBON	220K	5%	1/4W
R257	1-246-483-00	CARBON	2.7K	5%	1/4W
R258	1-247-159-00	CARBON	15K	5%	1/4W
R259	1-247-857-00	CARBON	12K	5%	1/6W
R260	1-247-807-00	CARBON	100	5%	1/6W
R261	1-247-857-00	CARBON	12K	5%	1/6W
R262	1-247-791-00	CARBON	22	5%	1/6W
R263	1-247-855-00	CARBON	10K	5%	1/6W
R264	1-247-848-00	CARBON	5.1K	5%	1/6W
R265	1-247-807-00	CARBON	100	5%	1/6W
R266	1-247-838-00	CARBON	2K	5%	1/6W
R268	1-247-846-00	CARBON	4.3K	5%	1/6W
R269	1-247-815-00	CARBON	220	5%	1/6W
R270	1-247-847-00	CARBON	4.7K	5%	1/6W
R271	1-247-891-00	CARBON	330K	5%	1/6W
R272	1-247-139-00	CARBON	2.2K	5%	1/4W
R276	1-247-155-00	CARBON	10K	5%	1/4W
R277	1-247-867-00	CARBON	33K	5%	1/6W
R278	1-246-529-00	CARBON	220K	5%	1/4W
R279	1-247-167-00	CARBON	33K	5%	1/4W
R280	1-247-179-00	CARBON	100K	5%	1/4W
R281	1-247-107-00	CARBON	100	5%	1/4W
R282	1-247-155-00	CARBON	10K	5%	1/4W
R283	1-247-871-00	CARBON	47K	5%	1/6W
R284	1-247-857-00	CARBON	12K	5%	1/6W
R285	1-247-791-00	CARBON	22	5%	1/6W
R286	1-247-891-00	CARBON	330K	5%	1/6W
R287	1-247-119-00	CARBON	330	5%	1/4W
R289	1-247-879-00	CARBON	100K	5%	1/6W
R291	1-214-777-00	METAL	100K	1%	1/4W
R292	1-214-785-00	METAL	220K	1%	1/4W
R293	1-214-735-00	METAL	1.8K	1%	1/4W
R294	1-214-744-00	METAL	4.3K	1%	1/4W
R295	1-247-902-00	CARBON	910K	5%	1/6W
R301	1-246-482-00	CARBON	2.4K	5%	1/4W
R302	1-246-499-00	CARBON	12K	5%	1/4W
R303	1-247-139-00	CARBON	2.2K	5%	1/4W
R304	1-246-500-00	CARBON	13K	5%	1/4W
R305	1-247-855-00	CARBON	10K	5%	1/6W
R306	1-247-831-00	CARBON	1K	5%	1/6W
R307	1-247-838-00	CARBON	2K	5%	1/6W
R308	1-247-863-00	CARBON	22K	5%	1/6W
R309	1-247-843-00	CARBON	3.3K	5%	1/6W
R311	1-247-845-00	CARBON	3.9K	5%	1/6W
R312	1-247-855-00	CARBON	10K	5%	1/6W

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CAPACITORS:

- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

COILS

- MMH : mH, UH : uH

SEMICONDUCTORS

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

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R313	1-247-855-00	CARBON	10K	5%	1/6W
R315	1-247-873-00	CARBON	56K	5%	1/6W
R316	1-247-873-00	CARBON	56K	5%	1/6W
R317	1-217-526-00	FUSIBLE	18	5%	1/4W
R324	1-247-848-00	CARBON	5.1K	5%	1/6W
R325	1-247-848-00	CARBON	5.1K	5%	1/6W
R326	1-247-848-00	CARBON	5.1K	5%	1/6W
R327	1-247-845-00	CARBON	3.9K	5%	1/6W
R328	1-247-823-00	CARBON	470	5%	1/6W
R331	1-247-115-00	CARBON	220	5%	1/4W
R332	1-247-115-00	CARBON	220	5%	1/4W
R336	1-247-843-00	CARBON	3.3K	5%	1/6W
R337	1-247-847-00	CARBON	4.7K	5%	1/6W
R338	1-247-875-00	CARBON	68K	5%	1/6W
R339	1-247-831-00	CARBON	1K	5%	1/6W
R340	1-247-831-00	CARBON	1K	5%	1/6W
R341	1-247-831-00	CARBON	1K	5%	1/6W
R342	1-247-847-00	CARBON	4.7K	5%	1/6W
R343	1-247-847-00	CARBON	4.7K	5%	1/6W
R344	1-247-871-00	CARBON	47K	5%	1/6W
R501	1-247-147-00	CARBON	4.7K	5%	1/4W
R502	1-247-107-00	CARBON	100	5%	1/4W
R503	1-247-171-00	CARBON	47K	5%	1/4W
R505	1-247-131-00	CARBON	1K	5%	1/4W
R506	1-212-849-00	FUSIBLE	4.7	5%	1/4W F
R507	1-247-131-00	CARBON	1K	5%	1/4W
R508	1-212-956-00	FUSIBLE	8.2	5%	1/4W F
R509	1-247-145-00	CARBON	3.9K	5%	1/4W
R510	1-212-956-00	FUSIBLE	8.2	5%	1/4W F
R511	1-247-131-00	CARBON	1K	5%	1/4W
R513	1-247-155-00	CARBON	10K	5%	1/4W
R514	1-214-753-00	METAL	10K	1%	1/4W
R515	1-214-154-00	METAL	8.2K	1%	1/4W
R516	1-214-754-00	METAL	11K	1%	1/4W
R517	1-247-167-00	CARBON	33K	5%	1/4W
R518	1-247-145-00	CARBON	3.9K	5%	1/4W
R519	1-246-505-00	CARBON	22K	5%	1/4W
R520	1-247-147-00	CARBON	4.7K	5%	1/4W
R521	1-247-155-00	CARBON	10K	5%	1/4W
R524	1-247-147-00	CARBON	4.7K	5%	1/4W
R525	1-247-147-00	CARBON	4.7K	5%	1/4W
R526	1-247-167-00	CARBON	33K	5%	1/4W
R527	1-246-511-00	CARBON	39K	5%	1/4W
R528	1-246-455-00	CARBON	180	5%	1/4W
R529	1-246-545-00	CARBON	1M	5%	1/4W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R530	1-246-500-00	CARBON	13K	5%	1/4W
R531	1-246-500-00	CARBON	13K	5%	1/4W
R532	1-246-500-00	CARBON	13K	5%	1/4W
R533	1-246-505-00	CARBON	22K	5%	1/4W
R534	1-246-505-00	CARBON	22K	5%	1/4W
R535	1-246-505-00	CARBON	22K	5%	1/4W
R536	1-246-505-00	CARBON	22K	5%	1/4W
R537	1-246-505-00	CARBON	22K	5%	1/4W
R538	1-246-505-00	CARBON	22K	5%	1/4W
R539	1-246-505-00	CARBON	22K	5%	1/4W
R540	1-246-505-00	CARBON	22K	5%	1/4W
R541	1-246-505-00	CARBON	22K	5%	1/4W
R542	1-246-505-00	CARBON	22K	5%	1/4W
R543	1-246-505-00	CARBON	22K	5%	1/4W
R544	1-246-505-00	CARBON	22K	5%	1/4W
R545	1-246-505-00	CARBON	22K	5%	1/4W
R546	1-246-505-00	CARBON	22K	5%	1/4W
R547	1-246-505-00	CARBON	22K	5%	1/4W
R548	1-246-505-00	CARBON	22K	5%	1/4W
R549	1-246-505-00	CARBON	22K	5%	1/4W
R550	1-247-115-00	CARBON	220	5%	1/4W
R551	1-247-115-00	CARBON	220	5%	1/4W
R552	1-247-115-00	CARBON	220	5%	1/4W
R553	1-247-115-00	CARBON	220	5%	1/4W
R554	1-247-115-00	CARBON	220	5%	1/4W
R555	1-247-115-00	CARBON	220	5%	1/4W
R556	1-247-115-00	CARBON	220	5%	1/4W
R557	1-247-147-00	CARBON	4.7K	5%	1/4W
R558	1-247-147-00	CARBON	4.7K	5%	1/4W
R559	1-247-147-00	CARBON	4.7K	5%	1/4W
R560	1-247-147-00	CARBON	4.7K	5%	1/4W
R561	1-247-131-00	CARBON	1K	5%	1/4W
R563	1-247-171-00	CARBON	47K	5%	1/4W
R566	1-247-131-00	CARBON	1K	5%	1/4W
R567	1-247-155-00	CARBON	10K	5%	1/4W
R568	1-247-155-00	CARBON	10K	5%	1/4W
R569	1-247-155-00	CARBON	10K	5%	1/4W
R570	1-247-131-00	CARBON	1K	5%	1/4W
R571	1-247-131-00	CARBON	1K	5%	1/4W
R572	1-247-131-00	CARBON	1K	5%	1/4W
R573	1-247-155-00	CARBON	10K	5%	1/4W
R574	1-247-119-00	CARBON	330	5%	1/4W
R575	1-246-468-00	CARBON	620	5%	1/4W
R576	1-247-131-00	CARBON	1K	5%	1/4W
R578	1-247-179-00	CARBON	100K	5%	1/4W

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- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

COILS

- MMH : mH, UH : μH

SEMICONDUCTORS

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

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

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

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R579	1-247-131-00	CARBON	1K	5%	1/4W
R580	1-247-155-00	CARBON	10K	5%	1/4W
R581	1-247-171-00	CARBON	47K	5%	1/4W
R582	1-247-131-00	CARBON	1K	5%	1/4W
R583 ⚠	1-206-473-00	METAL OXIDE	27	5%	2W F
R584 ⚠	1-206-467-00	METAL OXIDE	15	5%	2W F
R585	1-247-179-00	CARBON	100K	5%	1/4W
R586	1-247-131-00	CARBON	1K	5%	1/4W
R587	1-247-155-00	CARBON	10K	5%	1/4W
R588	1-247-171-00	CARBON	47K	5%	1/4W
R589	1-247-131-00	CARBON	1K	5%	1/4W
R590	1-247-107-00	CARBON	100	5%	1/4W
R591	1-247-107-00	CARBON	100	5%	1/4W
R592	1-246-531-00	CARBON	270K	5%	1/4W
R593	1-246-531-00	CARBON	270K	5%	1/4W
R594	1-247-171-00	CARBON	47K	5%	1/4W
R595	1-247-171-00	CARBON	47K	5%	1/4W
R596	1-246-505-00	CARBON	22K	5%	1/4W
R600	1-247-155-00	CARBON	10K	5%	1/4W
R601	1-247-123-00	CARBON	470	5%	1/4W
R602	1-214-729-00	METAL	1K	1%	1/4W
R605	1-246-505-00	CARBON	22K	5%	1/4W
R606	1-246-492-00	CARBON	6.2K	5%	1/4W
R607	1-247-155-00	CARBON	10K	5%	1/4W
R608	1-247-179-00	CARBON	100K	5%	1/4W
R609	1-246-502-00	CARBON	16K	5%	1/4W
R611	1-247-147-00	CARBON	4.7K	5%	1/4W
R613	1-247-783-00	CARBON	10	5%	1/6W
R805	1-247-875-00	CARBON	68K	5%	1/6W
R806	1-247-875-00	CARBON	68K	5%	1/6W
R807	1-246-458-00	CARBON	240	5%	1/4W
R808	1-247-895-00	CARBON	470K	5%	1/6W
R809	1-247-872-00	CARBON	51K	5%	1/6W
R810	1-247-872-00	CARBON	51K	5%	1/6W
R811	1-247-861-00	CARBON	18K	5%	1/6W
R812	1-247-847-00	CARBON	4.7K	5%	1/6W
R813	1-247-863-00	CARBON	22K	5%	1/6W
R814	1-247-863-00	CARBON	22K	5%	1/6W
R815	1-247-863-00	CARBON	22K	5%	1/6W
R816	1-247-863-00	CARBON	22K	5%	1/6W
R817	1-247-863-00	CARBON	22K	5%	1/6W
R818	1-247-863-00	CARBON	22K	5%	1/6W
R819	1-246-443-00	CARBON	56	5%	1/4W
R820	1-246-443-00	CARBON	56	5%	1/4W
R821	1-247-863-00	CARBON	22K	5%	1/6W
R822 ⚠	1-202-862-00	SOLID	220		1/4W F

ELECTRICAL PARTS

Ref.No.	Part No.	Description
RPH101	8-825-529-50	HEAD, REC/PB (PA259-3602)
RPH201	8-825-529-50	HEAD, REC/PB (PA259-3602)
RV101	1-228-542-00	RES, ADJ, METAL GLAZE 10K
RV102	1-228-542-00	RES, ADJ, METAL GLAZE 10K
RV103	1-226-236-00	RES, ADJ, CARBON 10K
RV201	1-228-542-00	RES, ADJ, METAL GLAZE 10K
RV202	1-228-542-00	RES, ADJ, METAL GLAZE 10K
RV203	1-226-236-00	RES, ADJ, CARBON 10K
RY1	1-515-323-00	RELAY
S001 ⚠	1-553-318-00	SWITCH, PUSH (AC POWER)(1 KEY)
S601	1-554-208-00	SWITCH, SLIDE (TIMER)
S802	1-554-303-00	SWITCH, KEY BOARD
S803	1-554-303-00	SWITCH, KEY BOARD
S804	1-554-303-00	SWITCH, KEY BOARD
S805	1-554-303-00	SWITCH, KEY BOARD
S806	1-554-303-00	SWITCH, KEY BOARD
S807	1-554-303-00	SWITCH, KEY BOARD
S808	1-554-303-00	SWITCH, KEY BOARD
S809	1-554-303-00	SWITCH, KEY BOARD
S810	1-554-303-00	SWITCH, KEY BOARD
S811	1-554-303-00	SWITCH, KEY BOARD
S812	1-554-303-00	SWITCH, KEY BOARD
S813	1-554-303-00	SWITCH, KEY BOARD
S814	1-554-303-00	SWITCH, KEY BOARD
S815	1-554-303-00	SWITCH, KEY BOARD
S816	1-554-303-00	SWITCH, KEY BOARD
S817	1-554-303-00	SWITCH, KEY BOARD
S818	1-554-303-00	SWITCH, KEY BOARD
S819	1-554-303-00	SWITCH, KEY BOARD
S820	1-554-303-00	SWITCH, KEY BOARD
S821	1-554-303-00	SWITCH, KEY BOARD
S822	1-554-303-00	SWITCH, KEY BOARD
S823	1-554-303-00	SWITCH, KEY BOARD
S824	1-554-303-00	SWITCH, KEY BOARD
S825	1-554-303-00	SWITCH, KEY BOARD
S1001	1-554-205-00	SWITCH, PUSH (LEVER DET)
S1002	1-554-205-00	SWITCH, PUSH (LEVER DET)
S1003	1-554-205-00	SWITCH, PUSH (LEVER DET)
S1005	1-554-205-00	SWITCH, PUSH (LEVER DET)
SSF102	1-235-186-00	ENCAPSULATED COMPONENT
SSF202	1-235-186-00	ENCAPSULATED COMPONENT
T301	1-433-278-00	TRANSFORMER, BIAS OSCILLATOR
X501	1-567-160-00	OSCILLATOR, CERAMIC

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " ♦ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

COILS

- MMH : mH, UH : μH

SEMICONDUCTORS

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

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

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