

TC-FX66

US Model
Canadian Model
AEP Model
UK Model
E Model



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STEREO CASSETTE DECK

SPECIFICATIONS

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS 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, LES VUES EXPLODÉES 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.

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 switch	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 CD-α)		57 dB	63 dB	70 dB
TYPE I (Sony BHF)		54 dB	61 dB	67 dB

Total harmonic distortion 1.0% (with Sony METALLIC and FeCr cassettes)

— Continued on page 2 —



SONY[®]

SERVICE MANUAL

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 - 17,000 Hz (DIN)
- With TYPE III cassette (Sony FeCr)
20 - 19,000 Hz
30 - 17,000 Hz (± 3 dB)
30 - 17,000 Hz (DIN)
- With TYPE II cassette (Sony CD- α)
20 - 18,000 Hz
30 - 16,000 Hz (± 3 dB)
30 - 16,000 Hz (DIN)
- With TYPE I cassette (Sony BHF)
20 - 17,000 Hz
30 - 14,000 Hz (DIN)

Wow and flutter 0.04 % WRMS (NAB)
 ± 0.14 % (DIN)

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)
Output level 0.435 V (-5 dB) at load
impedance 50 k ohms
Load impedance over 10 k ohms
Headphone output
Output level 31 mV (-28 dB) at a load
impedance of 8 ohms

General

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

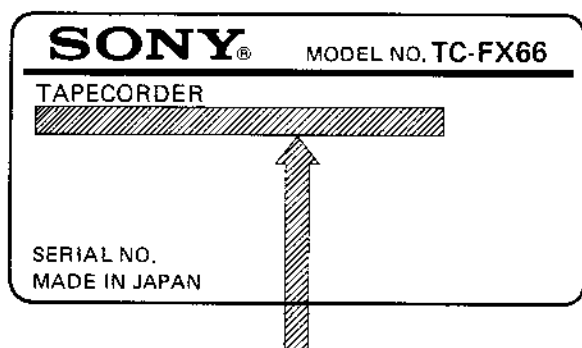
Power consumption US, Canadian, AEP model: 30 watts
E, UK model: 32 watts

Dimensions Approx. 430 $\times$ 105 $\times$ 275 mm (w/h/d)
(16 $\frac{7}{8}$ $\times$ 4 $\frac{1}{8}$ $\times$ 10 $\frac{3}{4}$ inches)

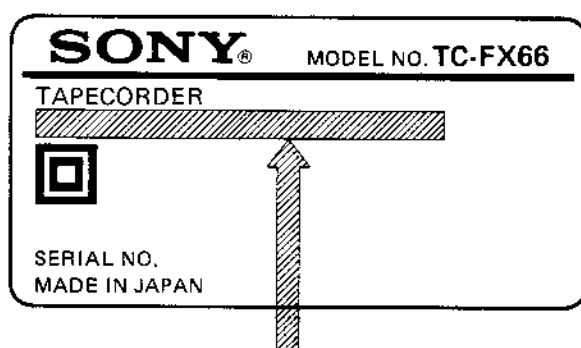
Weight Approx. 5.5 kg (12 lbs 3 oz)

MODEL IDENTIFICATION

— Specification Label —



US, Canadian model: AC 120 V 60 Hz 30 W



AEP model: AC 220 V ~ 50/60 Hz 30 W

UK model: AC 240 V ~ 50/60 Hz 32 W

E model: AC 110, 120, 220, 240 V ~ 50/60 Hz 32 W

Handling Precautions for MOS ICs

Generally, the insulation resistance of the oxide layer in MOS IC structures is very high, and the oxide layer is very thin. Because of this, it is possible that the static voltages usually present on clothes and the human body will be enough to generate a potential difference across the insulator, high enough to cause a breakdown of the insulating layer.

The following precautions should be taken while handling these ICs.

(Particular care should be taken under conditions of low humidity.)

Precautions in Replacing MOS ICs

1. Store new ICs by inserting them into a urethane-polyester cushion (which is somewhat conductive), or wrapping it in aluminum foil, so that all the pins are at the same potential. (The ICs should be stored in that manner until mounted on the circuit board.)

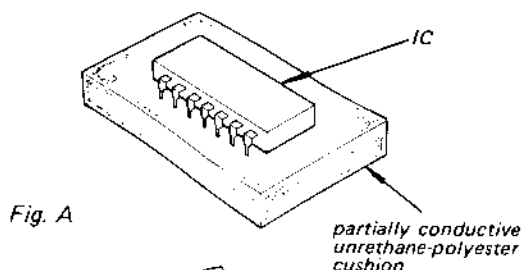


Fig. A

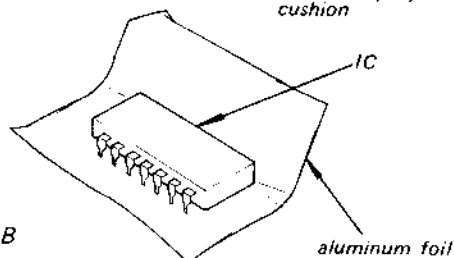


Fig. B

2. Check the soldering iron for possible power-line leakage current. Make sure that there is no leakage path by connecting an ohmmeter to the tip of the soldering iron and the plug as shown in Fig. C. If there is a leakage path, use some other soldering iron.

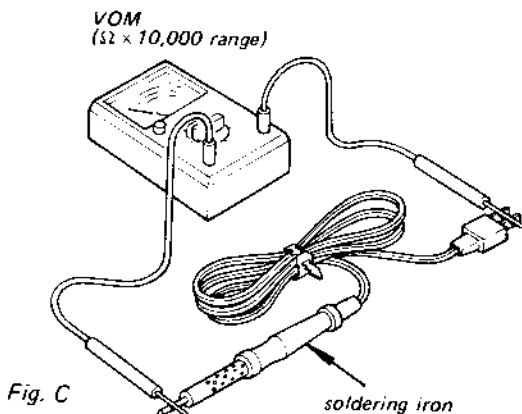


Fig. C

3. Equalize any potential difference between the clothes, the tools in use, the work bench, the set being worked on, and the packaged IC by touching them all in succession with the hands or a conductive wire or tool.
4. The following are effective methods for handling ICs that remove the potential difference across the oxide layer.
 - Use a paper clip modified by soldering in a wire braid insert.

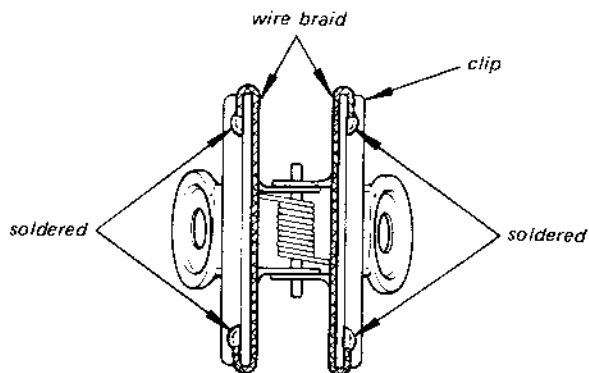


Fig. D

Make sure that there is no solder on the inside.

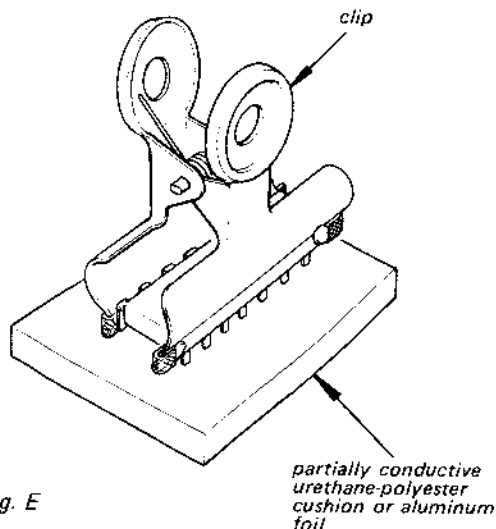


Fig. E

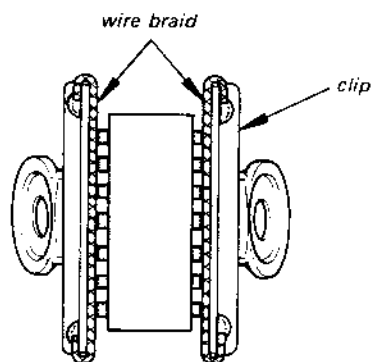


Fig. F

Make sure that all the pins are in contact with the wire braid (all the pins will then be at the same potential.).

- Take a short length of fine bare wire and wind it around the IC so that it shorts all the pins of the IC, while it is still in the urethane-polyester cushion or aluminum foil. This ensures that all the pins are at the same potential.

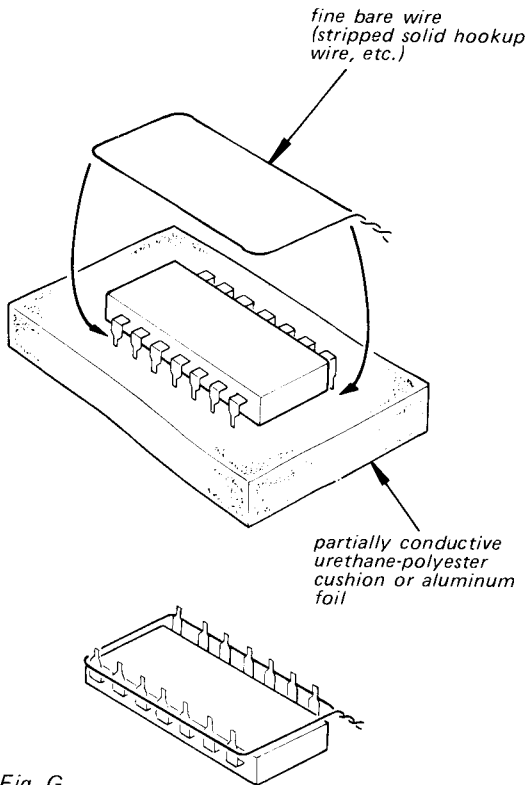


Fig. G

- When it is necessary to handle the IC with the fingers, do not touch any pin, and hold the IC at the ends of its plastic-package as shown in Fig. H.

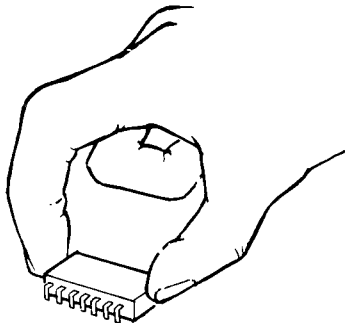


Fig. H

Method of Mounting

Insert the IC while holding it with the modified clip, and solder all the pins with the clip still shorting the pins. (Similarly, solder all the pins while the bare shorting wire is still wound around them.). Remove the clip or the bare shorting wire only after all the pins have been soldered.

Precaution while Checking C-MOS ICs

The C-MOS ICs (Complementary MOS) are MOS ICs that have their output sections made up of N-channel and P-channel push-pull stages to increase their speed of operation. If the output terminal of these ICs comes into contact with B+ or B- voltage, then the FET which is ON at that time will either become shorted or open.

This is valid for all the output sections that are connected together by the interconnections. Even the circuits that are physically separated (and not on the same board) can be destroyed simultaneously.

Example:

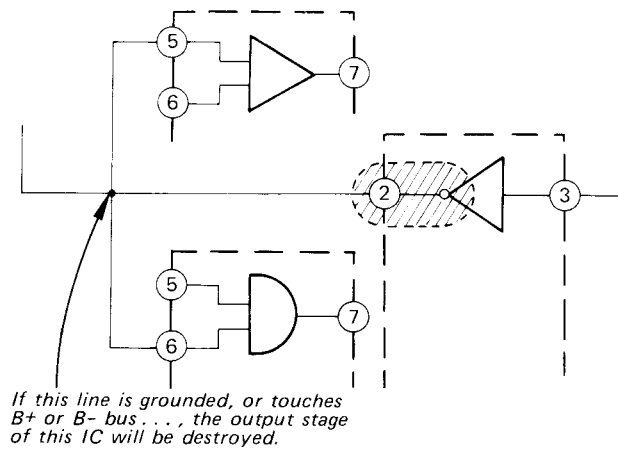


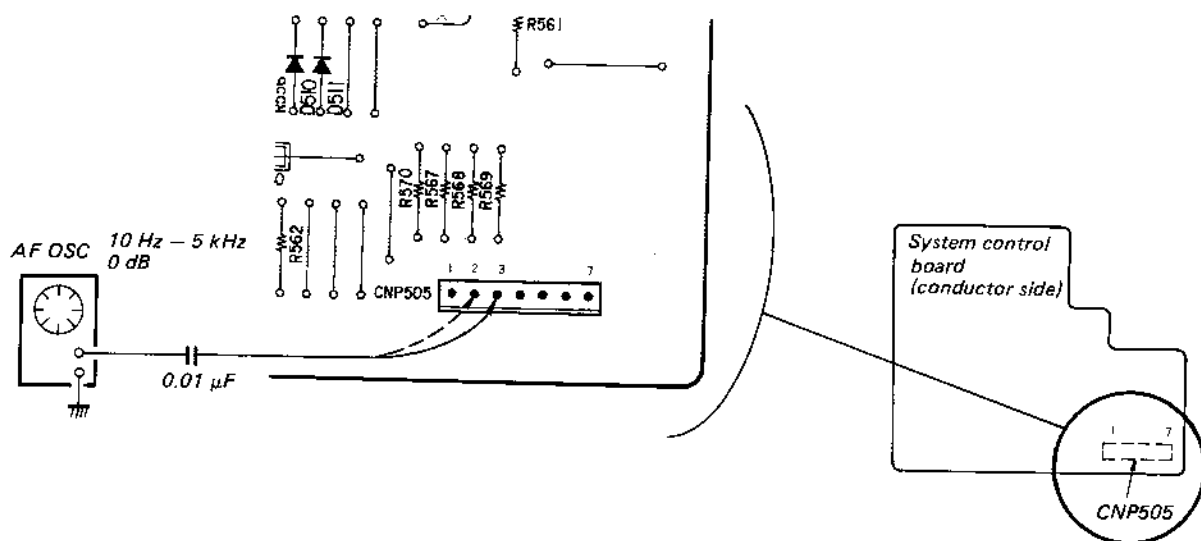
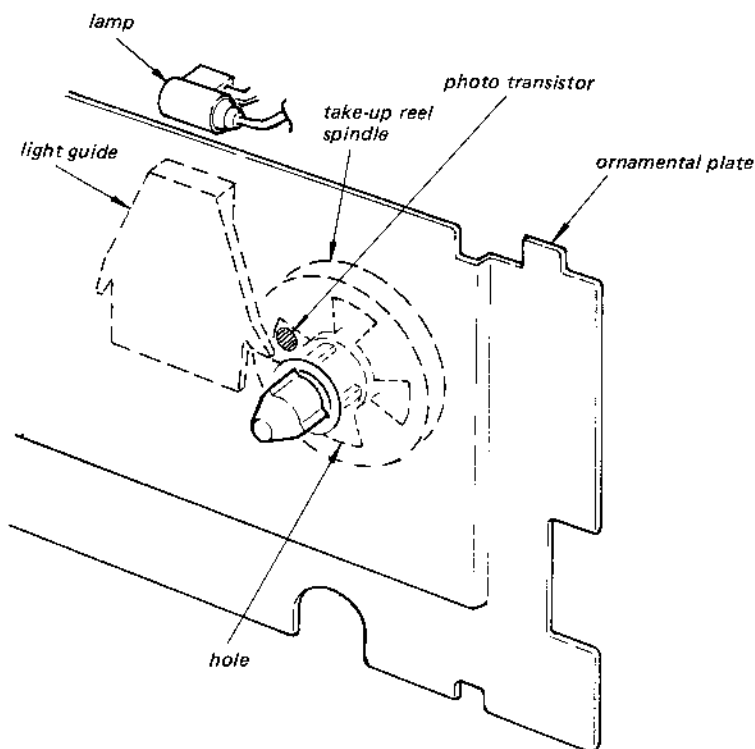
Fig. I

SERVICING NOTE

Shut-Off Detection and Precaution On Repairing

In this set, the shut-off detection is made optically. The take-up reel spindle has the four holes. The light of the lamp received by the light guide is intermittently applied to the photo transistor by means of the rotation of the reel spindle. The pulse generated by the photo transistors Q802 and Q803 is amplified by IC505 and is fed to the mechanism control IC501 and the CPU IC601.

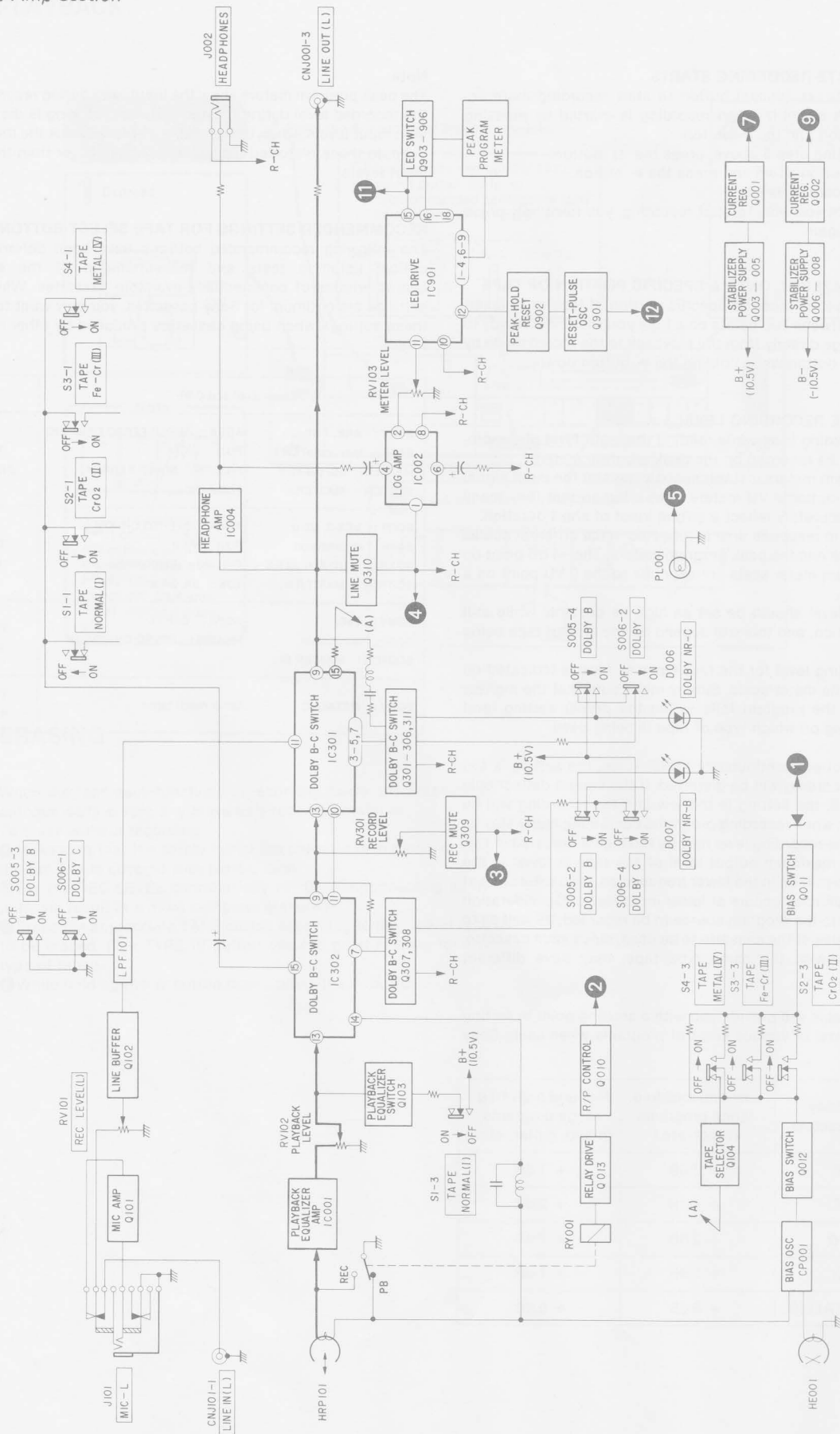
Accordingly, when it is necessary to repair the unit after removing the ornamental plate, temporarily connect an af oscillator to each input terminal of IC505 (terminals 2 and 3 of CNP505 on system control board) as shown below, so as not to operate the shut-off mechanism.

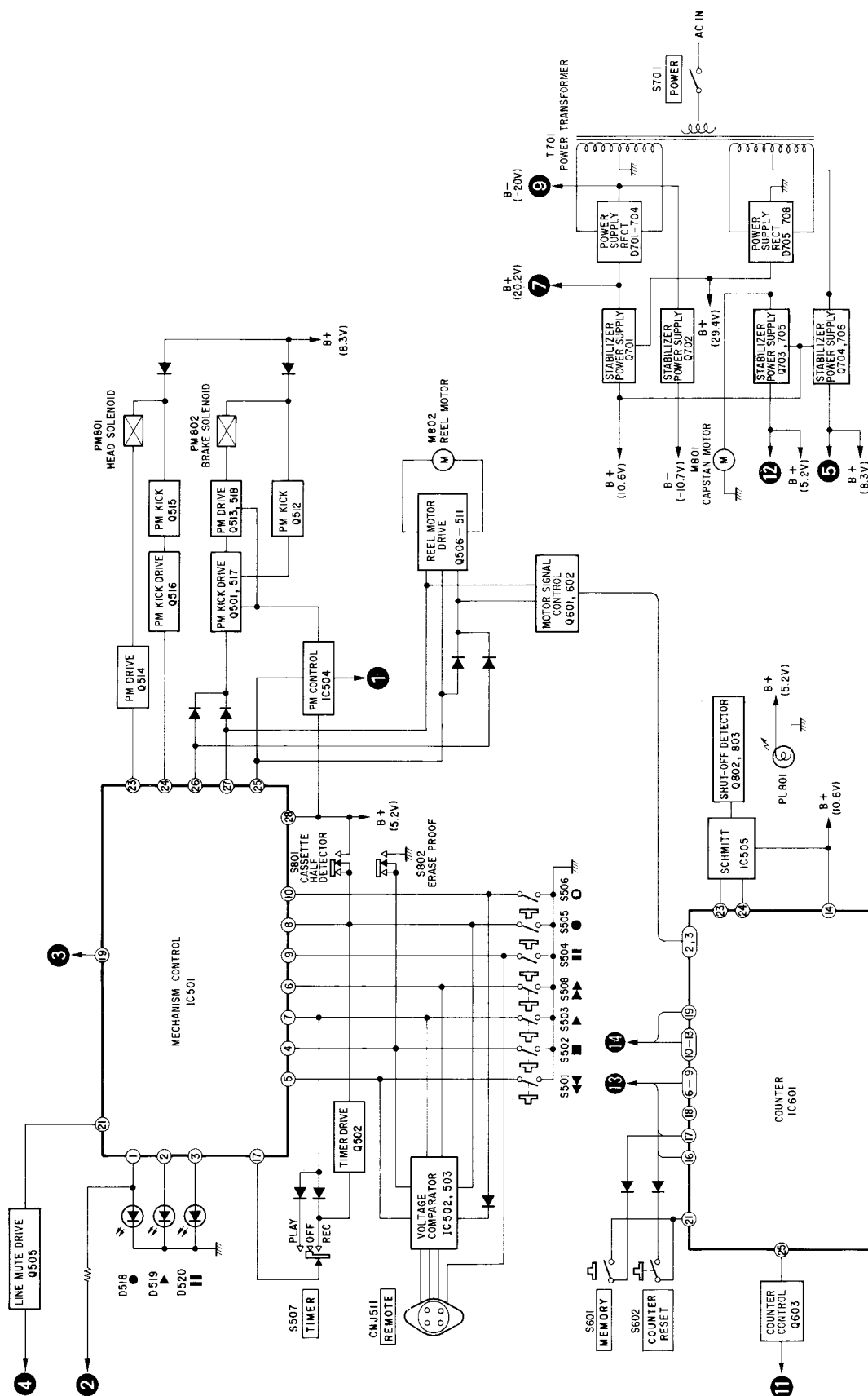


SECTION 1 OUTLINE

1-1. BLOCK DIAGRAMS

— Audio Amp Section —





RECORDING

TO RECORD

Before turning the power on, make sure that the **TIMER** switch is set to **OFF**.

Follow the numbered sequence.

- 1** Depress.
- 2** Press the button and insert a cassette.
- 3** Depress the appropriate **TAPE** select button. (Refer to page 9.)
- 4** Depress either the **DOLBY B**, **DOLBY C** or **OFF** switch.
- 5** Play the program source to be recorded.
- 6** Adjust the recording level.
- 3** Start recording.

Note

The logic-controlled function buttons do not activate until 4 seconds after the **POWER** switch is turned on. Wait until the **II** indicator goes off.

Note on TIMER switch

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. To avoid accidental erasure of previously-recorded material, check that the **TIMER** switch is set to **OFF** before turning on the **POWER** switch.

Dolby NR OFF

If you want to record the program source connected to the LINE IN jacks, unplug the microphone.

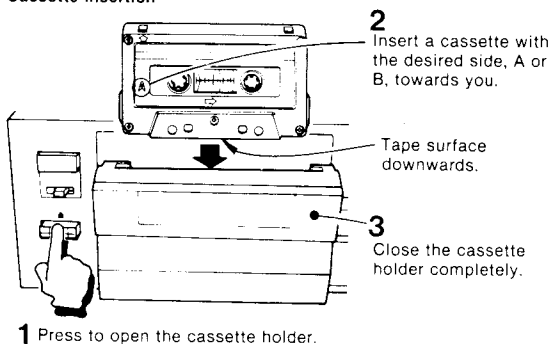
Adjust the recording level so that the peaks fall momentarily within the PROPER SETTING LEVEL range on the meter scale, depending on the type of tape being used. For more details, see "To adjust the recording level" on page 9.

for left channel

for right channel

Press simultaneously.

Cassette insertion



MORE ACCURATE RECORDING STARTS

You can use the **II** (pause) button to start recording more accurately than is possible when recording is started by pressing both the **●** button and the **▶** button.

- ➊ After completing step 5 above, press the **II** button.
- ➋ Hold the **●** button down and press the **▶** button.
- ➌ Adjust the recording level.
- ➍ At the moment you wish to start recording, you need only press the **II** button again.

TO RECORD MATERIAL ONTO A SPECIFIC PORTION OF TAPE

When you want to re-record a specific portion of tape or to insert new material between two points on a tape you will find it handy to be able to change directly from the playback to the record mode by pressing the **●** button while holding the **▶** button down.

TO ADJUST THE RECORDING LEVEL

Adjust the recording level while reading the input level of the program source to be recorded on the peak program meters. The peak program meters instantaneously register the input signal level while conventional VU meters have a lag so that they many times do not accurately reflect a strong input of short duration. This difference in response time is reflected in the different scales of the VU meters and the peak program meters. The -4 dB point on the peak program meter scale corresponds to the 0 VU point on a VU meter scale.

The recording level should be set as high as possible while still avoiding distortion, and this will depend on the type of tape being used.

The proper setting level for the four types of tape is indicated on the bottom of the meter scale. Simply make sure that the highest signal level of the program falls within the proper setting level range, depending on which type of tape is being used.

If the meters deflect continuously to full scale, the setting is too high and the recording will be distorted. If the meters deflect only to about -10 dB, the setting is too low and the recording will be noisy. However, when recording programs containing many strong, sharp pulses, the recording level may be too high if adjusted in this way. Since the maximum output level of any tape is lower in the higher frequencies than in the lower frequencies, tape saturation at the higher frequencies occurs at lower input levels. Consideration has to be given to the program source to be recorded, as well as to the characteristics of the cassette to be used, since each cassette, even cassettes with the same type tape, may have different characteristics.

The following table will provide you with a starting point in setting the recording level of various kinds of programs when using Sony cassettes.

Type of tape	Sony cassettes	Low and mid freq. range programs (vocal, etc.)	Mid and high freq. range programs (piano, guitar, etc.)
TYPE I	BHF	+ 3 dB	+ 1 dB
	AHF	+ 4 dB	+ 2 dB
TYPE II	CD-α	+ 2 dB	+ 2 dB
TYPE III	FeCr	+ 5 dB	+ 1 dB
TYPE IV	METALLIC	+ 6 dB	+ 6 dB

Note

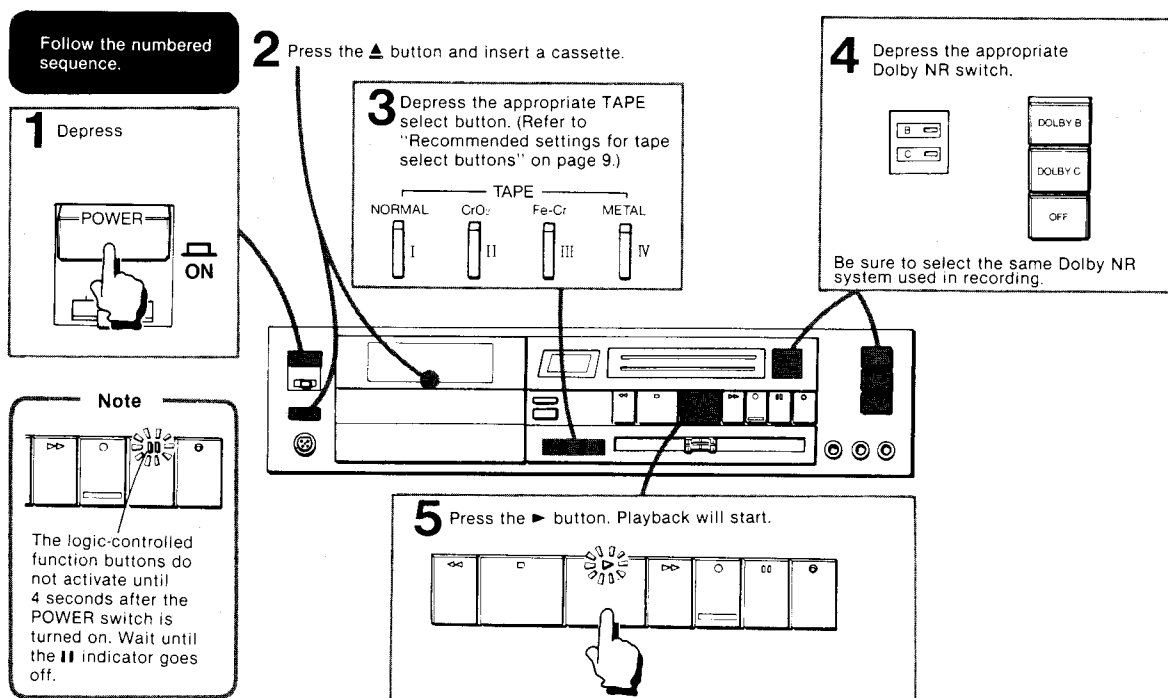
The peak program meters show the input level during recording and the recorded level during playback. If the recording is distorted at high input levels, when the recording is played back the meters will indicate these distorted passages as levels lower than the actual input levels.

RECOMMENDED SETTINGS FOR TAPE SELECT BUTTONS

The following recommended settings have been determined by critical listening tests and measurements of the electrical characteristics of commercially available cassettes. While these settings are optimum for Sony cassettes, you may want to change these settings when using cassettes produced by other manufacturers.

Tapes (C-60 and C-90)		TAPE
SONY: AHF, BHF BASF: ferro super LH I MAXELL: UD, UD-XL I SCOTCH: MASTER I	AGFA: SUPER FERRO DYNAMIC FUJI: FX-I PHILIPS: SUPER FERRO-I TDK: SD	TYPE I (NORMAL)
SONY: UCX-S, CD-α BASF: chromdioxid MAXELL: UD-XLII, XLII-S SCOTCH: MASTER II	AGFA: STEREO CHROM FUJI: FX-II PHILIPS: CHROMIUM TDK: SA, SA-X	TYPE II (CrO ₂)
SONY: FeCr BASF: ferrochrom SCOTCH: MASTER III	AGFA: CARAT PHILIPS: FERRO CHROMIUM	TYPE III (Fe-Cr)
SONY: METALLIC	Other metal tapes	TYPE IV (METAL)

PLAYBACK



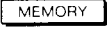
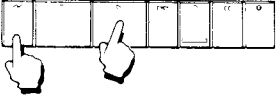
ERASING

When the tape deck functions in recording mode, the erase head automatically erases any previously recorded material.

To erase without recording:

- 1 Make sure that the safety tab of the cassette is in place, or that the tab slot is covered with plastic tape.
- 2 Set the REC LEVEL controls fully to "0". (Disconnecting all inputs will result in a more complete erasure.)
- 3 Press the appropriate TAPE button according to the type of tape to be erased. (The TYPE IV button assures good erasing for any type of tape.)
- 4 While holding the button down, press the button.

AUTO PLAY AND MEMORY STOP/PLAY

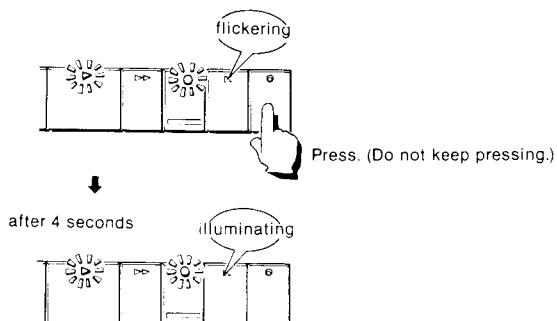
	To start the playback from the beginning after rewinding	To start the playback from a particular point after rewinding	To stop the tape at the desired point when rewinding
	Auto play	Memory play	Memory stop
Tape counter	0.00	At the desired point on the tape, press the COUNTER RESET button to set the tape counter to "0.00."	At the desired point on the tape, press the COUNTER RESET button to set the tape counter to "0.00."
MEMORY switch	OFF	ON	ON
			
When rewinding the tape	Press the ◀ and ▶ buttons simultaneously.	Press the ◀ and ▶ buttons simultaneously.	Press the ◀ button.
			
Tape path	After the tape is rewound completely, the rewind mode will be disengaged and the tape will automatically replay.	The tape replays automatically after rewinding to the "0.00" point.	The tape stops automatically when it is rewound to the "0.00" point.

- The tape stops around "-0.01" in order to avoid cutting off the starting point.
- If you want to rewind further than the "0.00" point, press the ◀ button again.
- If you hold the ◀ button down while the tape rewinds past "0.00," the tape will not stop automatically at the desired point.

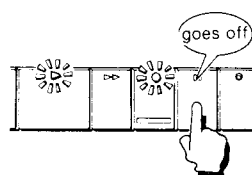
RECORD MUTING

By pressing the  (record muting) button during recording, four seconds interspacing is provided automatically, eliminating unwanted program material such as broadcasting commercials. While the record muting is operating, the incoming signal is not recorded on the tape but it continues to register on the meters and feed to the monitor so that you know exactly what is going on.

① Press the  button when the segment you do not want to record begins. The indicator of the  button will blink, and the tape path will pause automatically after four seconds.



② When you want to resume recording, press the  button.



To insert a blank less than four seconds long

Press the  button to mute recording. Press the  button when you want to resume recording.

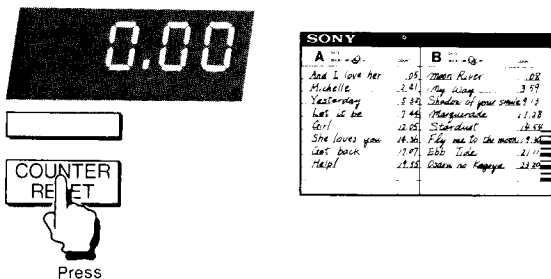
To insert a blank over four seconds long

Hold down the  button for as long as you want the blank segment on the tape to be. After four seconds, the indicator of the  button will blink more rapidly. When you release the  button, the tape deck will be in the pause mode. When you want to resume recording, press the  button to release the pause mode.

USING THE 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.

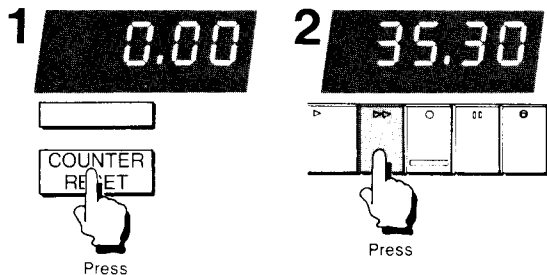
TO INDEX THE WHOLE TAPE



Before recording or playback, set the counter to "0.00" by pressing the **COUNTER RESET** button.

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 thus be readily located later by reference to these numbers.

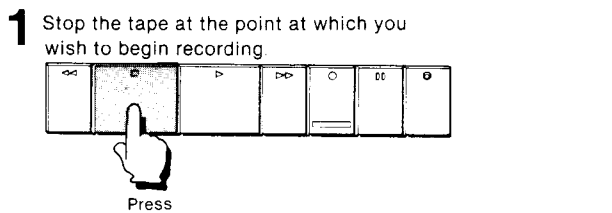
TO CHECK THE AVAILABLE RECORDING TIME ON ONE SIDE OF A CASSETTE



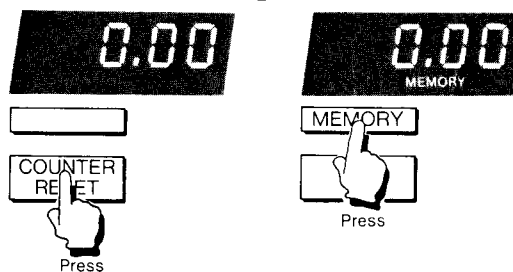
At the beginning of the tape, set the counter to "0.00".

Fast-forward the tape to the end. The digits will show the approximate available recording time.

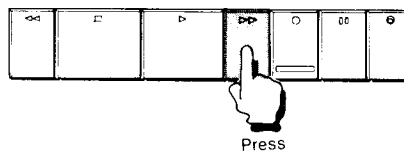
TO DETERMINE THE REMAINING RECORDING TIME



2 Set the counter to "0.00". 3 Activate the memory counter.



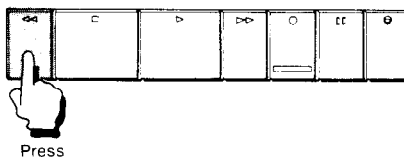
4 Fast-forward the tape to the end.



The digits will show the approximate remaining recording time.



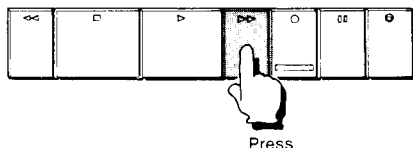
5 Rewind the tape. The tape will stop at "0.00".



TO MONITOR THE REMAINING RECORDING TIME WHILE RE- CORDING—Using the minus display

This counter shows the recording or playback time from the "0.00" point preceded by a minus sign when the tape is rewound beyond "0.00".

- 1 Fast-forward the tape to the end.

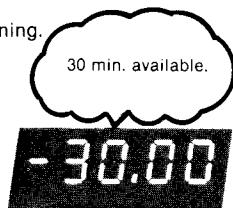
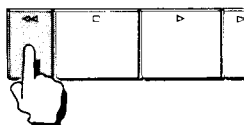


- 2 Set the counter to "0.00".

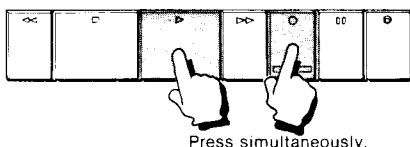


- 3 Rewind the tape to the beginning.

The digits will show the approximate recording time on one side of the cassette.



- 4 Start the recording.



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.

Note

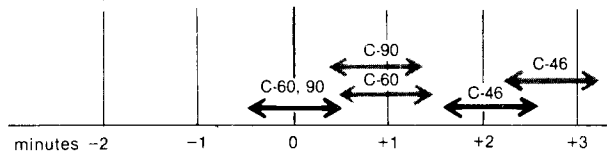
Do not turn off the power while measuring the time because the numbers will return to "0.00" when the power is turned on again.

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 C-60 cassettes as the standard. Make sure that the displayed time is greater than the time required when using a C-46 cassette.

Difference between the counter indication and the actual tape running time on one side of a cassette

↔ Sony BHF, AHF, CD-α and FeCr cassettes
↔ Sony METALLIC cassettes



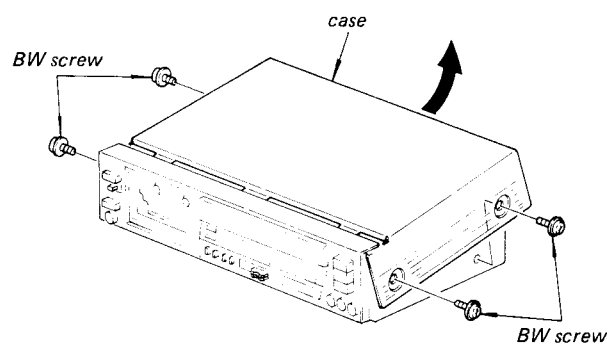
The counter indication is less than the actual tape running time.

The counter indication is more than the actual tape running time.

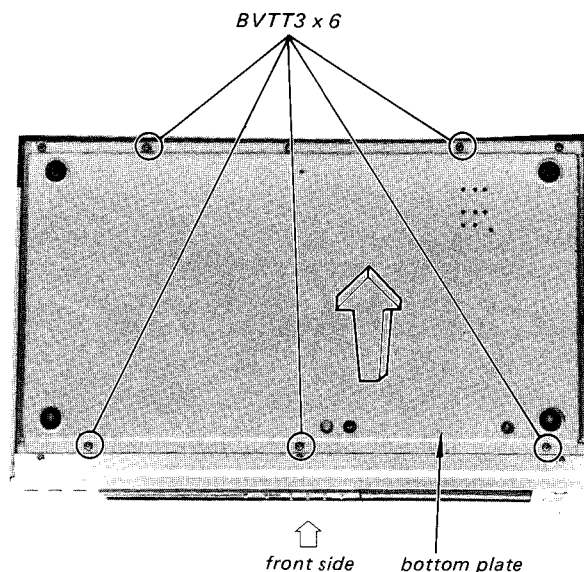
SECTION 2 DISASSEMBLY

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

CASE



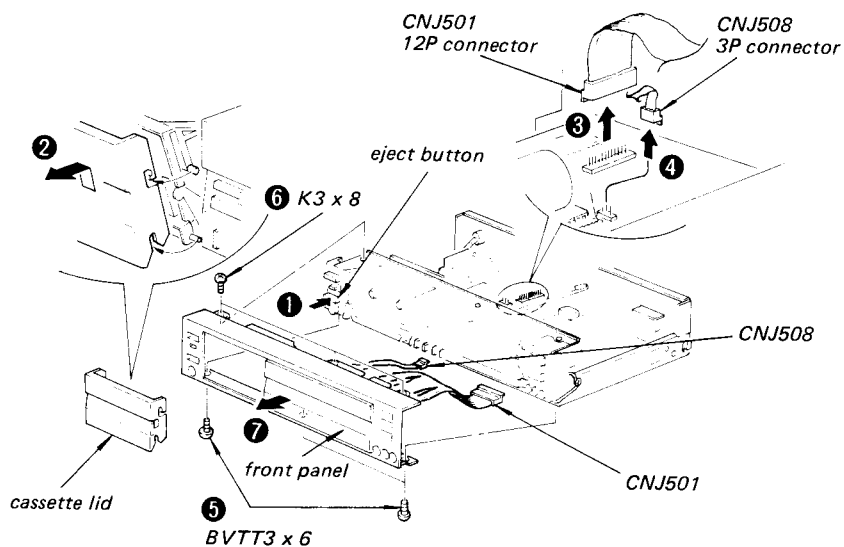
BOTTOM PLATE



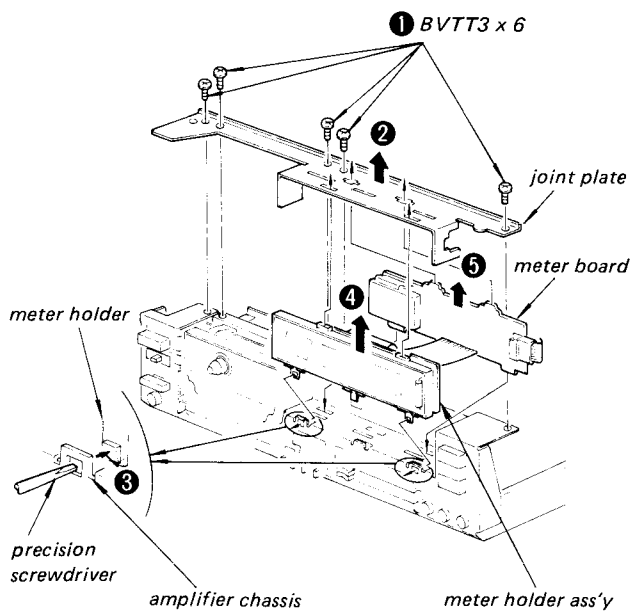
THE CONDUCTOR SIDES OF RECORD/PLAYBACK BOARD AND SYSTEM CONTROL BOARD CAN BE CHECKED IN THIS CONDITION.

CASSETTE LID ASS'Y/PANEL

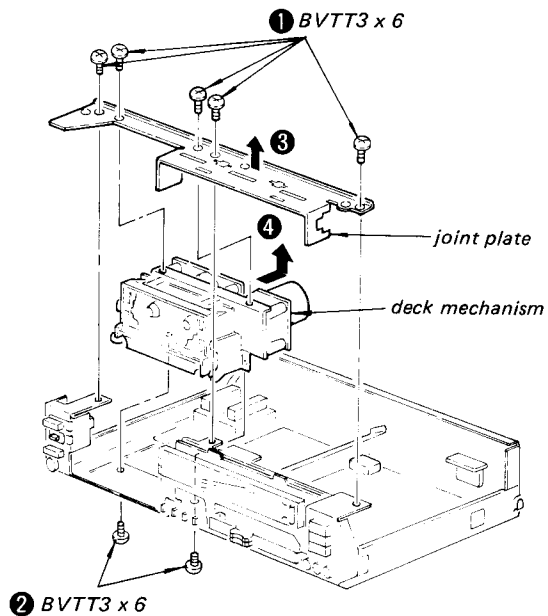
- ①, ② cassette lid
- ③ ~ ⑦ front panel



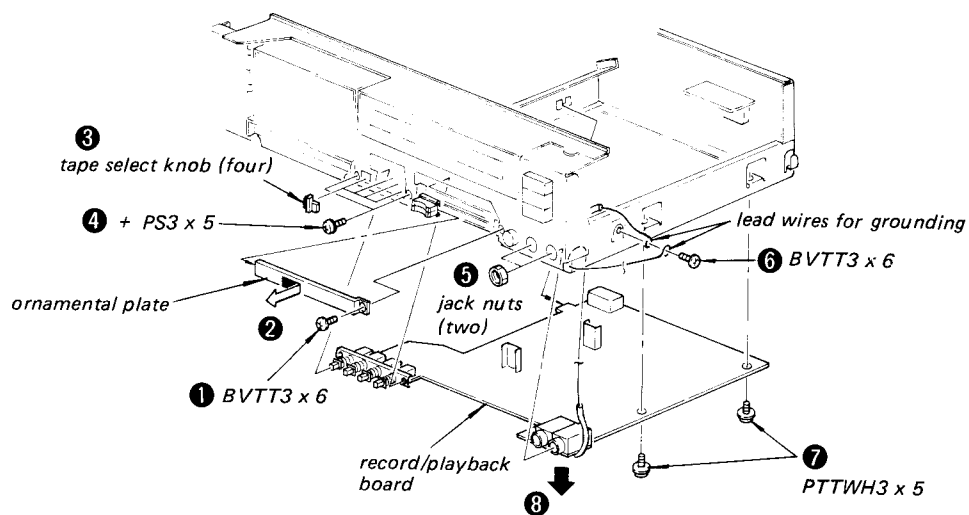
METER BOARD



DECK MECHANISM



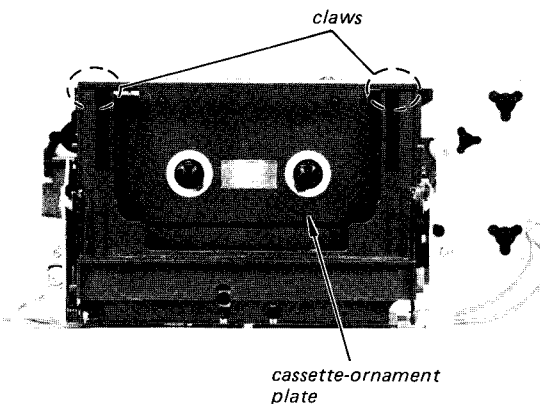
RECORD/PLAYBACK BOARD



CASSETTE-ORNAMENT PLATE

Note: This set uses a newly-developed cassette-ornament plate. This plate does not need screws to be installed. So no care is exercised about the screws in this plate-mounting system.

- 1 Press the ejection button and open the cassette lid.
- 2 Remove the cassette lid. Remove the tape cassette from the cassette holder if any.
- 3 Release the two claws from the cassette-ornament plate at both the top corners.
- 4 Depress the two slide-switch levers at the inside of the set and remove the cassette-ornament plate.
(Alternatively, push the two slide-switch levers up from inside of the cassette compartment, and remove the cassette-ornament plate.)
- 5 When reinstalling the cassette-ornament plate, perform the steps in a reverse manner.



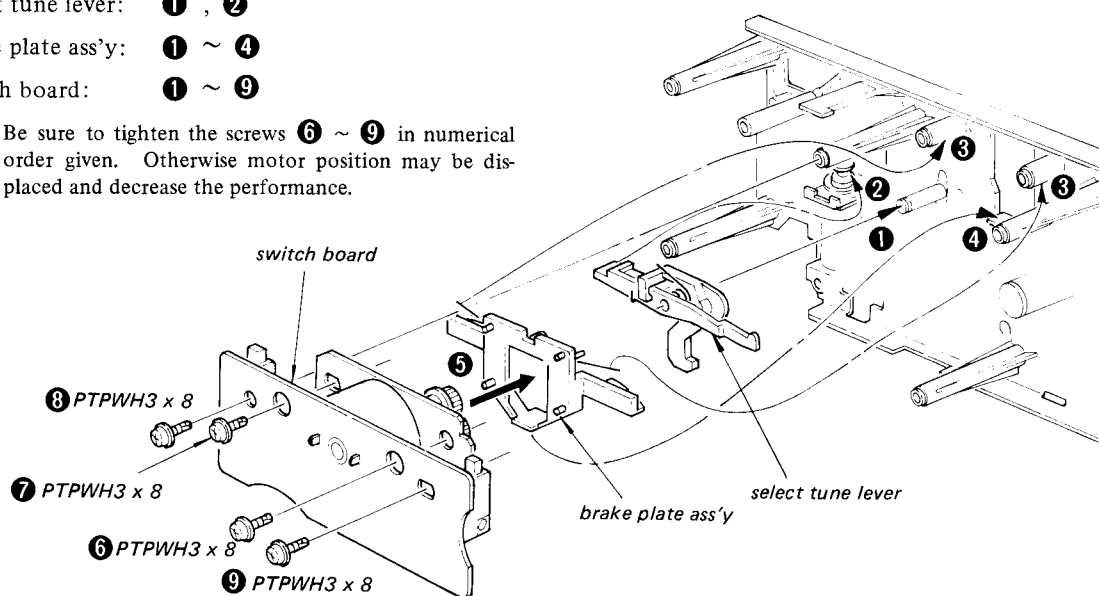
SELECT TUNE LEVER/BRAKE PLATE ASS'Y/ SWITCH BOARD

Select tune lever: ① , ②

Brake plate ass'y: ① ~ ④

Switch board: ① ~ ⑨

Note: Be sure to tighten the screws ⑥ ~ ⑨ in numerical order given. Otherwise motor position may be displaced and decrease the performance.

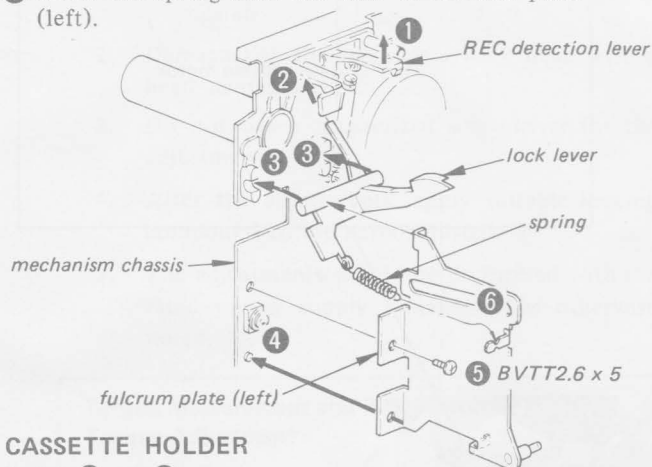


SECTION 3 ADJUSTMENTS

—CASSETTE HOLDER INSTALLATION AND NOTES—

LOCK LEVER/FULCRUM PLATE (LEFT)

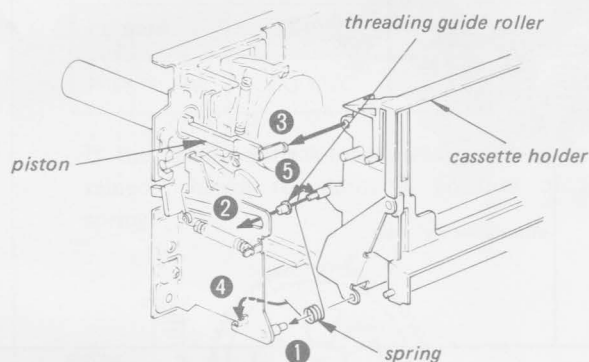
- ① Push up the REC detection lever and set the lock lever to ②, ③ position.
- ④ Fit the hole in the fulcrum plate (left) over the projection of mechanism chassis.
- ⑤ Tighten the screw (BVTT2.6 x 5).
- ⑥ Hook the spring onto the claw of fulcrum plate (left).



CASSETTE HOLDER

Instal ① ~ ③ .

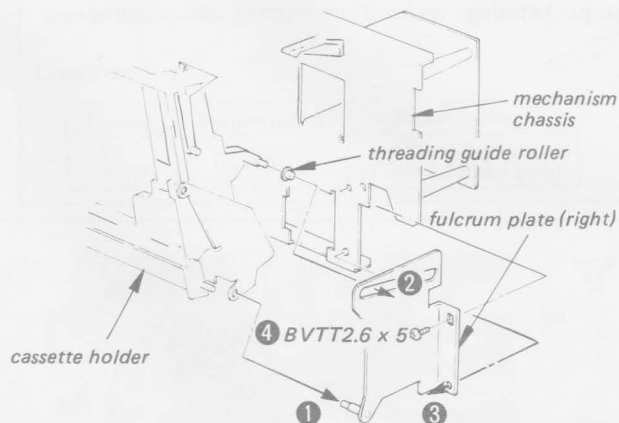
Hook the spring to ④, ⑤ position.



FULCRUM PLATE (RIGHT)

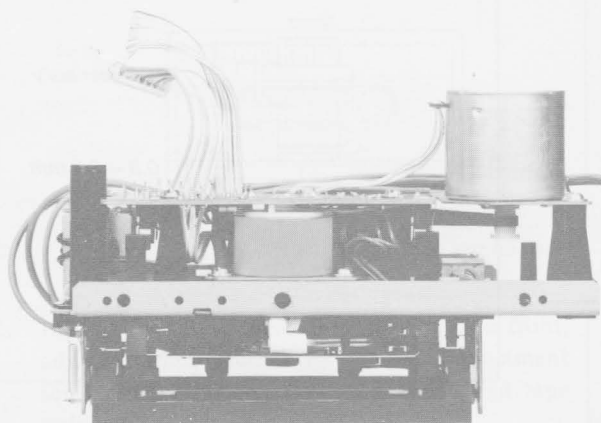
Install ①, ② .

- ③ Fit the hole in the fulcrum plate (right) over the projection of mechanism chassis.
- ④ Tighten the screw (BVTT2.6 x 5)

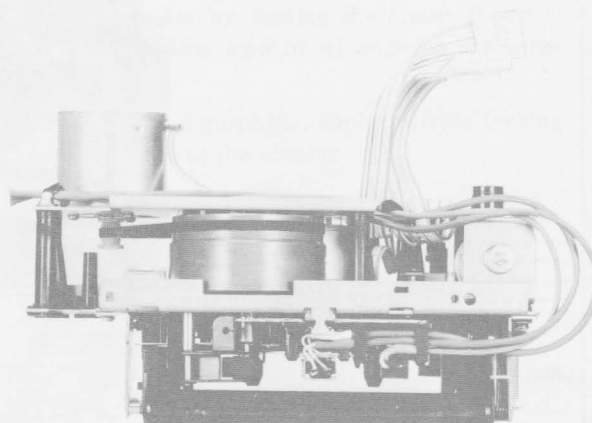


DECK-MECHANISM'S PHOTOGRAPHS

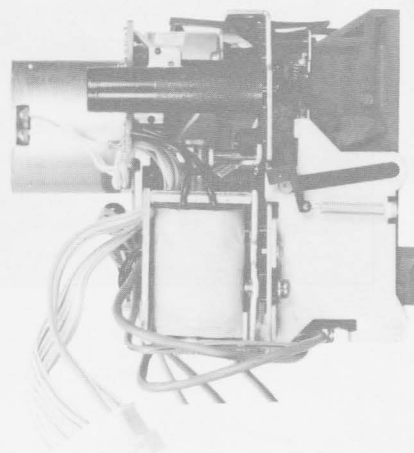
1. Top View with Cassette Holder Shut:



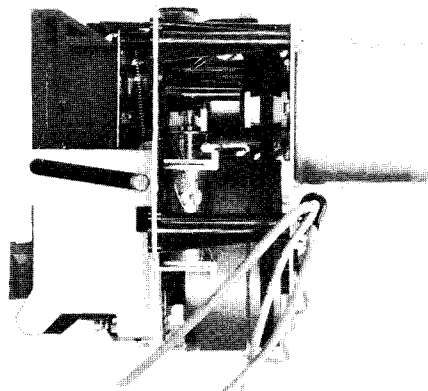
2. Bottom View with Cassette Holder Shut:



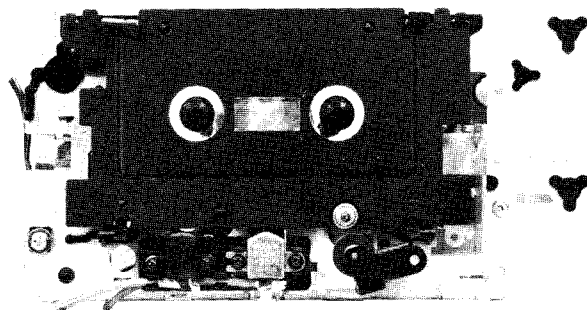
3. Left Side View with Cassette Holder Shut:



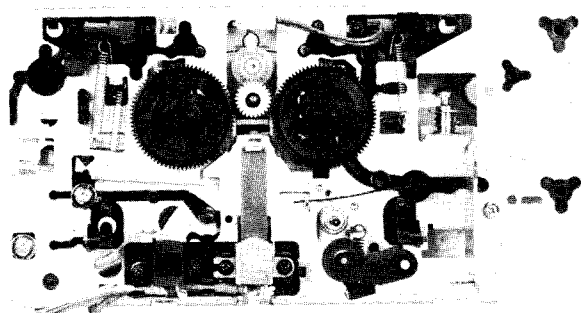
4. Right Side View with Cassette Holder Shut:



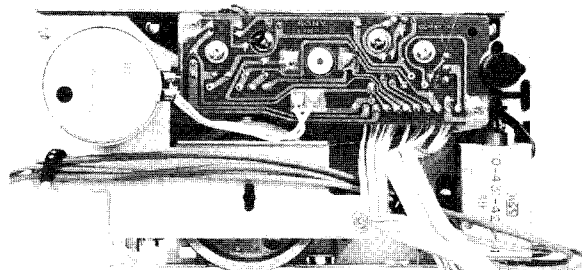
5. Front View with Cassette Holder Removed:



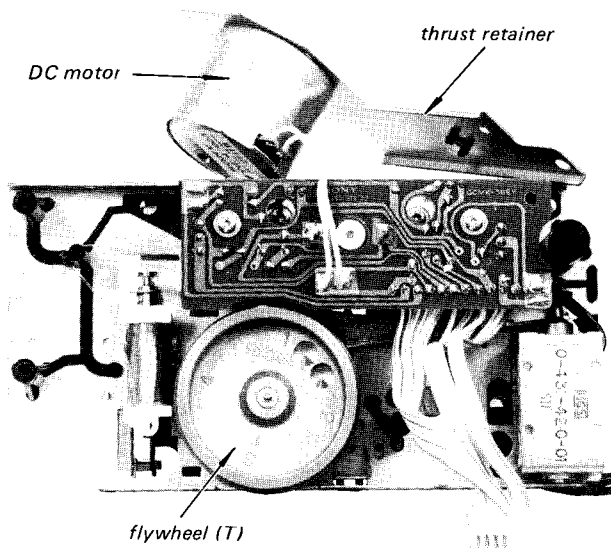
6. Front View with Cassette Holder and Cassette-Ornament Plate Removed:



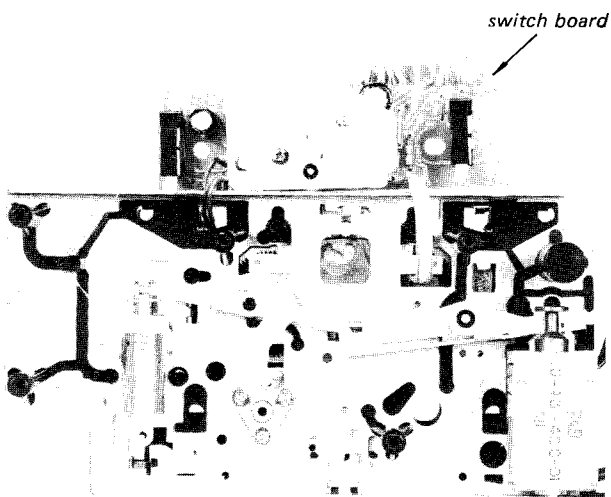
7. Rear View



8. Bottom View with Thrust Retainer and DC Motor Removed:



9. Bottom View with Switch Board and Flywheel (T) Removed:



SECTION 3 ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

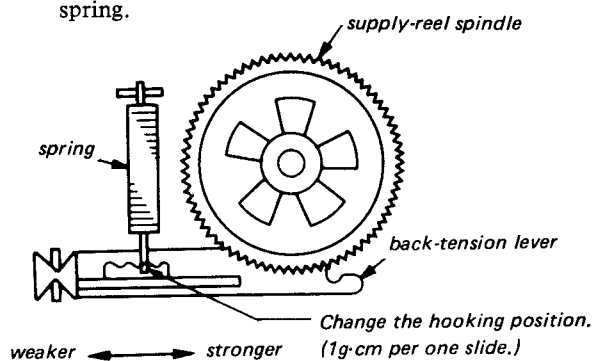
PRECAUTION

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

record/playback head	pinch roller
erase head	rubber belts
capstan	idlers
- Demagnetize the record/playback head with a head demagnetizer.
- Do not use a magnetized screwdriver for the adjustments.
- After the adjustments, apply suitable locking compound to the parts adjusted.
- The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement and Back Tension Torque Adjustment

- | Torque | Torque meter | Meter reading |
|--------------|--------------|---|
| Forward | CQ-102C | 30–60 g · cm
(0.41–0.83 oz · inch) |
| Back tension | CQ-102C | 2.5–4.5 g · cm
(0.04–0.06 oz · inch) |
- If the specified back-tension torque is not obtained, change the hooking position of the spring.

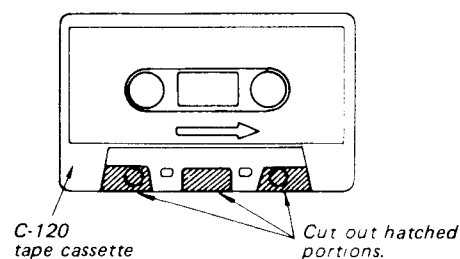


Confirmation:

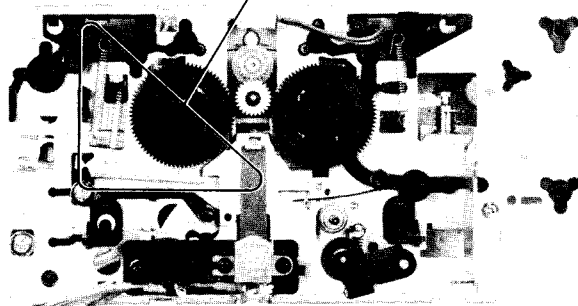
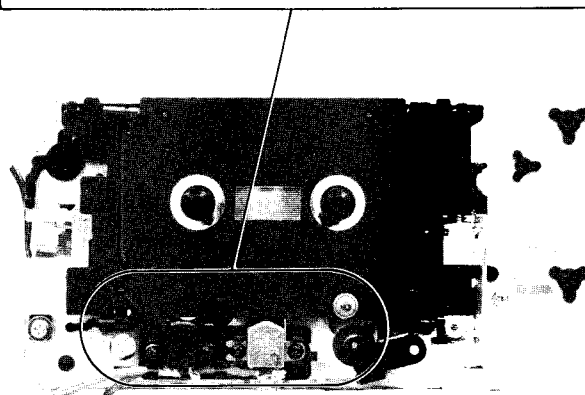
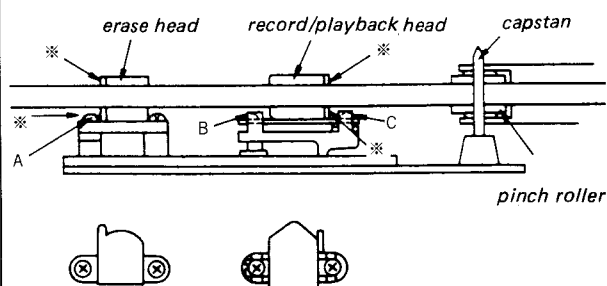
Torque	Torque meter	Meter reading
FF REW	CQ201B	100–160 g · cm (1.38–2.22 oz · inch)

Head Height Adjustment

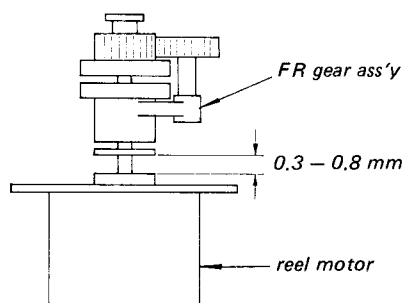
- Prepare an adjustment cassette as shown below.



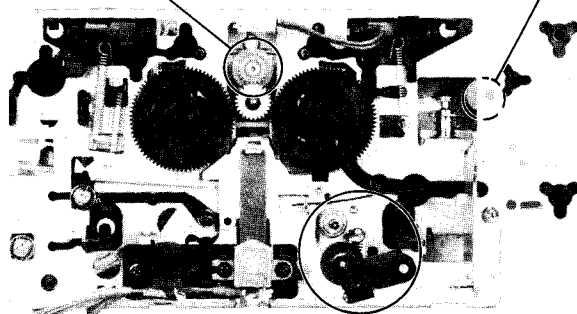
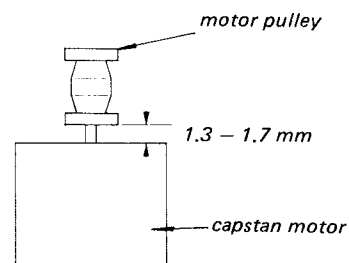
- In playback mode and viewing from the front, adjust the head heights by using the adjustment screw A, B, C, to eliminate tape curl and tape twist at portions shown by arrow (*).
- Remove the tape curl at the erase head guides by turning the screw A.
 - Remove the tape curl at the record/playback head guides by turning the screws B and C by the same amount of angle in the same direction.
 - After the adjustment, apply suitable locking compound to the screws.



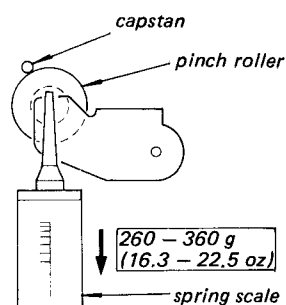
FR Gear Height Adjustment



Motor Pulley Height Adjustment



Pinch Roller Pressure Adjustment



Procedure:

1. Clean the pinch roller and the capstan.
2. Set the unit to the forward mode. Measure the pinch roller pressure by using the spring scale. Read the spring scale just when the pinch roller stops rotating without contacting the capstan.

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 TAPE switches according to the tape as follows.

Tape	TAPE switch
CS-10	TYPE I
CS-25	TYPE II
CS-30	TYPE III
CS-40	TYPE IV

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

DOLBY NR switch : OFF
TAPE switch : TYPE I
TIMER switch: 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	0.77mV (−60dB)	0.25V (−10dB)

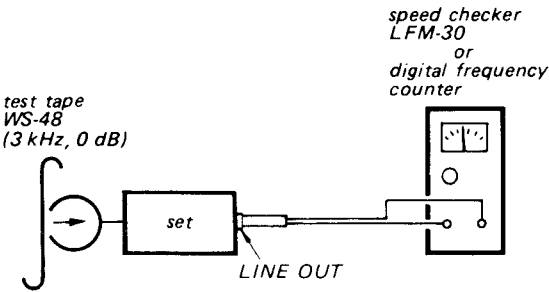
Standard Output Level

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

Capstan Motor Speed Adjustment

Procedure:

Mode: playback

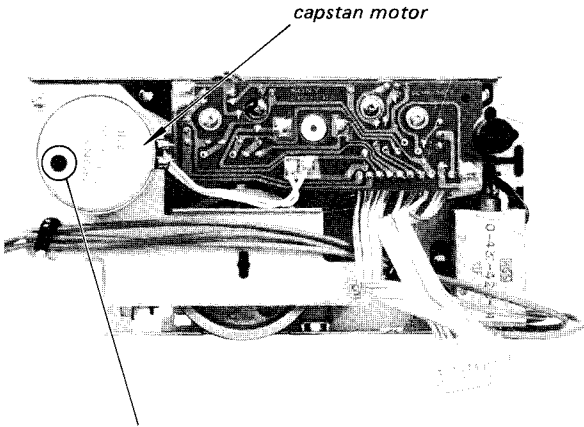


Specification:

Speed checker	Digital frequency counter
−0.17 ~ +0.17%	2.995 ~ 3.005Hz

Frequency difference between the beginning and the end of the tape should be within 0.34% (10Hz).

Adjustment Location:



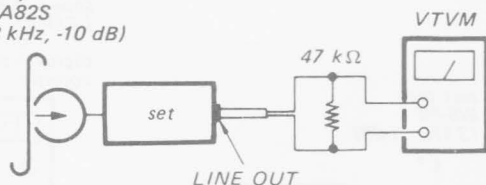
Adjustment location:
(Adjust the speed by using screwdriver. When turning the screw clockwise, speed is faster.)

Record/playback Head Azimuth Adjustment

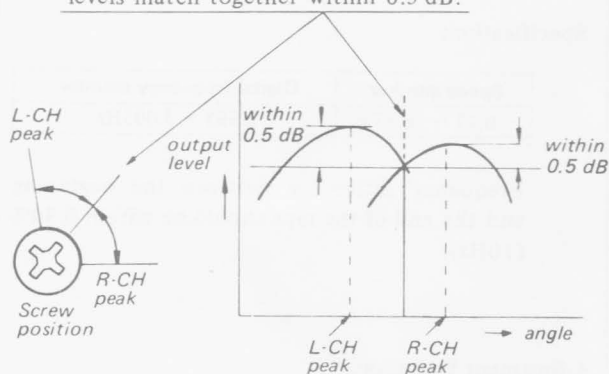
Procedure:

1. Mode: playback

test tape
P-4-A82S
(6.3 kHz, -10 dB)

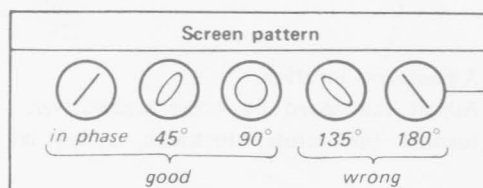
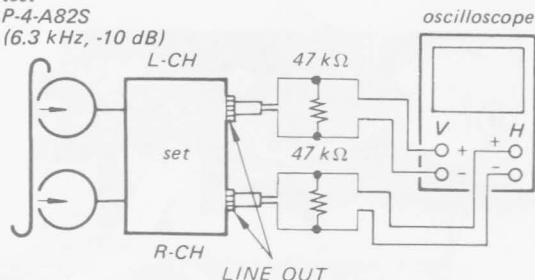


2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 0.5 dB.

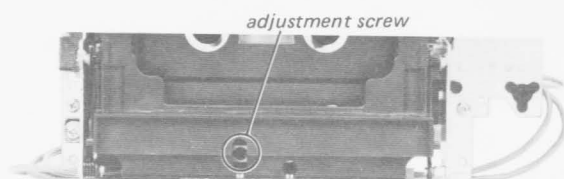


3. Phase Check
Mode: playback

test
P-4-A82S
(6.3 kHz, -10 dB)



Adjustment Location:

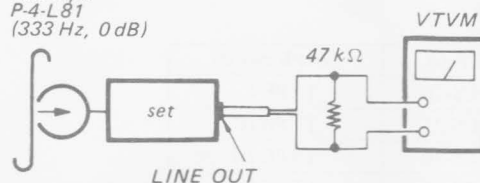


Playback Level Adjustment

Procedure:

Mode : playback

test tape
P-4-L81
(333 Hz, 0 dB)



Specification:

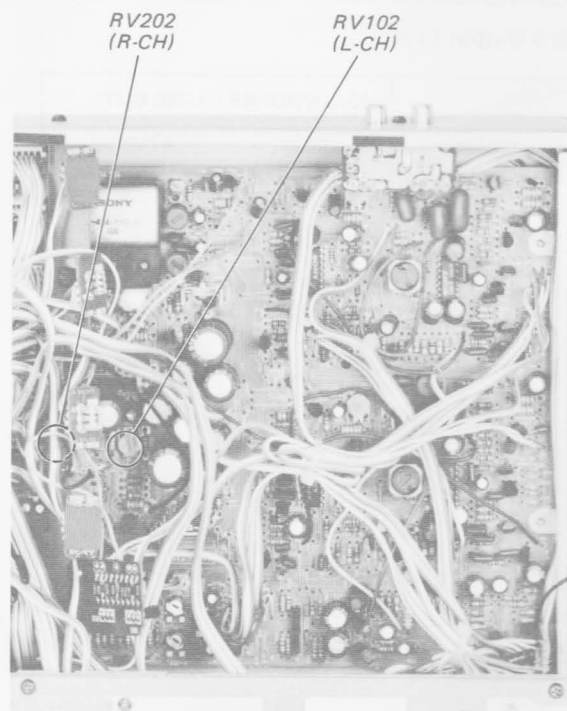
LINE OUT level : 0.52 ~ 0.59 V
(-3.5 ~ -2.5 dB)

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:

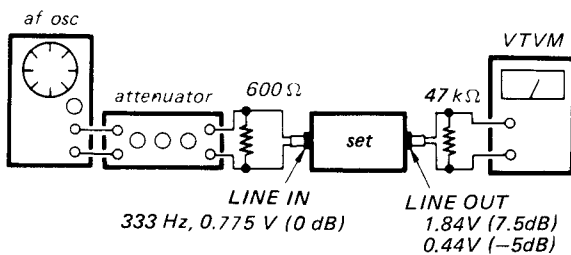
— record/playback board —



Level Meter Calibration

Procedure:

1. Mode : record

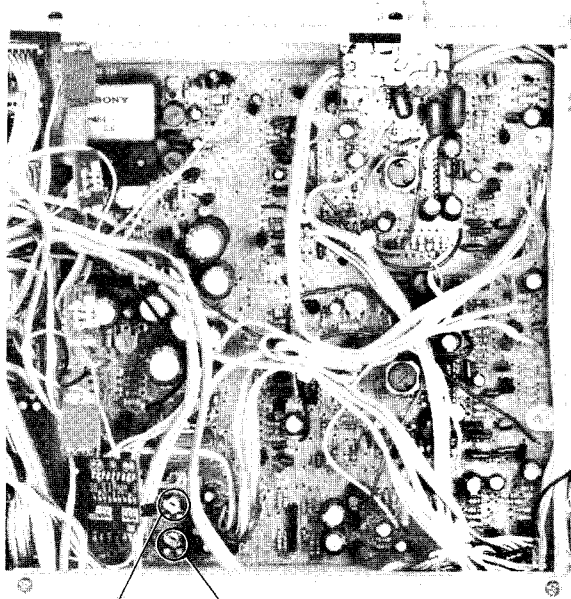


1. Set the REC LEVEL control so that the LINE OUT level is +6.5 dB.
2. Adjust RV103 (L-CH) and RV203 (R-CH) so that the LEDs including 8 dB (right-most element) light up.
3. Set the REC LEVEL control so that the LINE OUT level is -5 dB.
Make sure that LED meter indicates -4 dB (0 VU) in this time.

Note: Slide the REC LEVEL control rightward slowly.
(Be careful to peakhold indication.)

Adjustment Location:

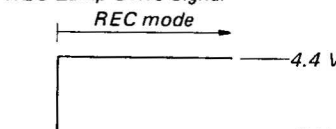
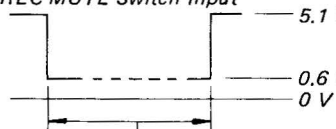
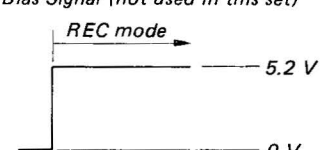
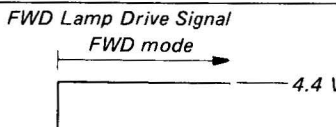
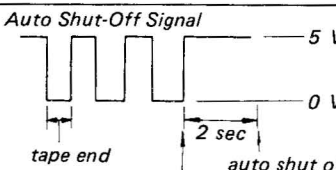
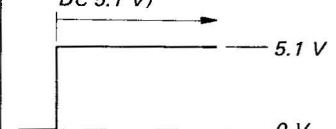
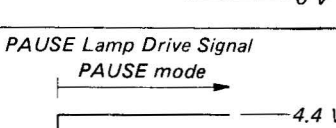
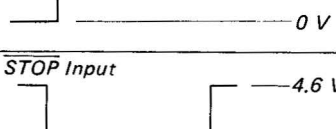
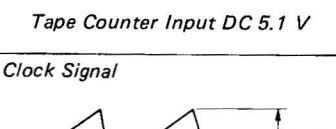
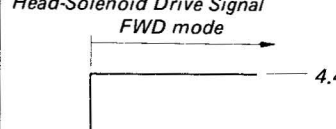
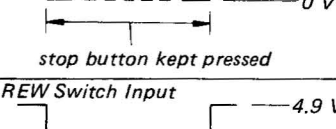
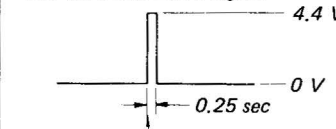
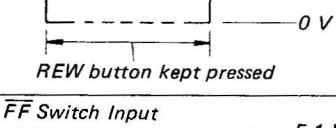
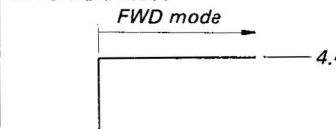
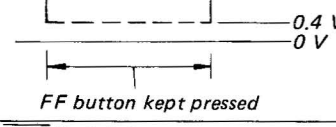
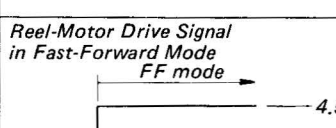
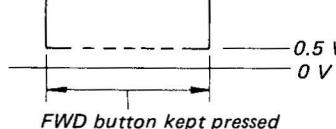
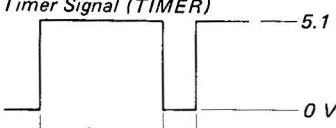
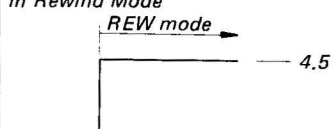
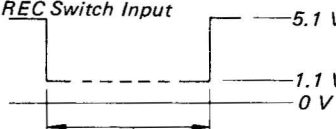
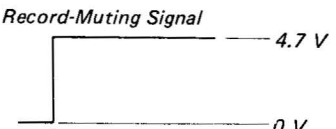
— record/playback board —



RV103
(L-CH)

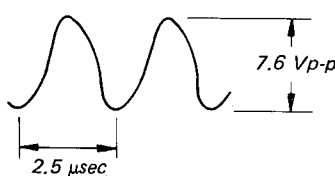
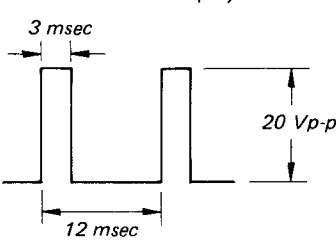
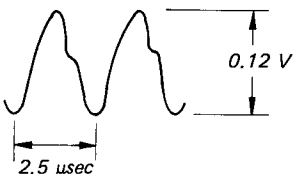
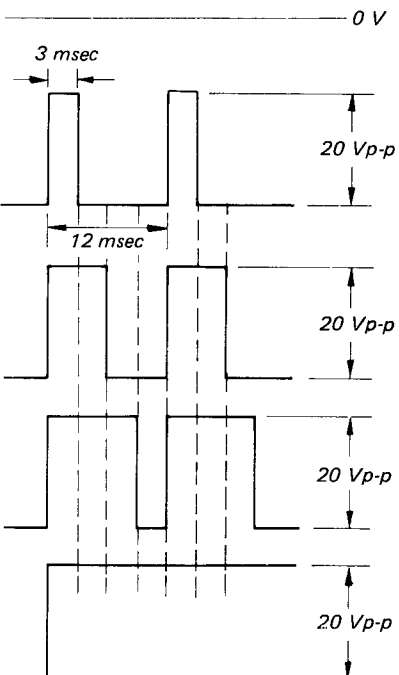
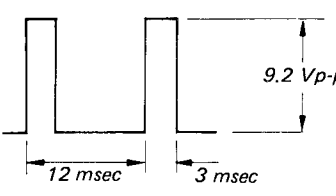
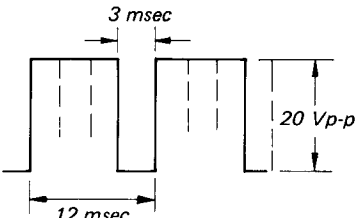
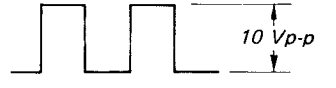
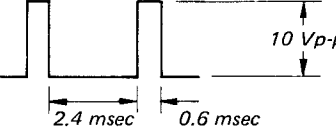
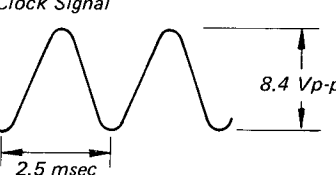
RV203
(R-CH)

IC501's Terminal Name, Waveform and/or Voltages

Pin No.	Waveform and/or Voltages	Pin No.	Waveform and/or Voltages	Pin No.	Waveform and/or Voltages
①	REC Lamp Drive Signal REC mode  4.4 V 0 V	⑩	REC MUTE Switch Input  5.1 V 0.6 V 0 V REC MUTE button kept pressed	⑳	Bias Signal (not used in this set) REC mode  5.2 V 0 V
②	FWD Lamp Drive Signal FWD mode  4.4 V 0 V	⑪	Auto Shut-Off Signal  5 V 0 V tape end 0.4 sec 2 sec auto shut off becomes in stop mode at tape end in forward mode. (may become in 0 V according to the position of take-up reel spindle.)	㉑	Line-Muting Signal FWD mode or REC mode (only record switch ON DC 5.1 V)  5.1 V 0 V
③	PAUSE Lamp Drive Signal PAUSE mode  4.4 V 0 V	⑫	Tape Counter Input DC 5.1 V	㉒	R.P.P. Signal (not used in this set) 0 V
④	STOP Input  4.6 V 0 V stop button kept pressed	⑬	Clock Signal  0.96 Vp-p 7.6 msec	㉓	Head-Solenoid Drive Signal FWD mode  4.4 V 0 V
⑤	REW Switch Input  4.9 V 0 V REW button kept pressed	⑭	GND 0 V	㉔	AMS Solenoid Drive Signal  4.4 V 0 V 0.25 sec FWD button ON
⑥	FF Switch Input  5.1 V 0.4 V 0 V FF button kept pressed	⑮	AMS Signal DC 5.2 V	㉕	Reel-Motor Drive Signal in Forward Mode FWD mode  4.4 V 0 V
⑦	FWD Switch Input  5.1 V 0.5 V 0 V FWD button kept pressed	⑯	AMS-MODE Signal (AMS) DC 5.2 V	㉖	Reel-Motor Drive Signal in Fast-Forward Mode FF mode  4.5 V 0 V
⑧	REC Switch Input  5.1 V 1.1 V 0 V REC button kept pressed	⑰	Timer Signal (TIMER)  5.1 V 0 V 4 sec 0.5 sec POWER Switch ON (regardless of position of TIMER switch)	㉗	Reel-Motor Drive Signal in Rewind Mode REW mode  4.5 V 0 V
⑨	PAUSE Switch Input  5.1 V 0.7 V 0 V PAUSE button kept pressed	⑱	Record-Muting Signal  4.7 V 0 V REC MUTE switch ON in record mode	㉘	

Note: Voltages are measured with an oscilloscope (10 MΩ probe). So readings are different from the mounting diagram and schematic diagram measured with a VOM.

IC601's Terminal Name, Waveform and/or Voltages

Pin No.	Waveform and/or Voltages	Pin No.	Waveform and/or Voltages	Pin No.	Waveform and/or Voltages
①	Clock Signal 	③, ④	FWD Mode Capstan Motor Drive Signal STOP mode: DC 9.9 V FWD mode: DC 0 V	①⑥ ①⑦ ①⑧ ①⑨	Drive Signal for Grids G1 through G9 of Fluorescent Display Tube 
②	Reel Motor Drive Signal in Rewind Mode STOP mode: DC 9.9 V REW mode: DC 0 V	⑤	Counter "0" Output 	②⑩	B + Supply Voltage DC 10.6 V
⑥	Drive Signal for "a" Segment of Fluorescent Display Tube. 1) In case of all "a" segments are not lit, i.e., all of the four digits are "1" or "4". 2) In case of only one out of four "a" segments lit, i.e., one of the four digits is "0", "2", "3", "5", "6", "7", "8", or "9" and all others are "1" or "4". 3) In case of only two out of four "a" segments lit as in the case of 2) above. 4) In case of only three out of four "a" segments lit as in the case of 2) above. 5) In case of all of the four "a" segments lit likewise.			②①	Drive Signal for "MEMORY" of Fluorescent Display Tube 
⑦	Drive Signal for "b" Segments of Fluorescent Display Tube same as pin ⑥ for Segment "a".	⑬	Drive Signal "Pp" Segment (dot) of Fluorescent Display Tube 	②②	B + Supply Voltage DC 10.6 V
⑧	Drive Signal for "c" Segments of Fluorescent Display Tube same as pin ⑥ for Segment "a".			②③ ②④	φ1 or φ2 – Signal Input from Photo Transistors fast forward and rewind modes:  Pulse width varies according to tape take-up. (Stop mode: 10.6 V DC or 0 V according to the position of photo transistors)
⑨	Drive Signal for "d" Segments of Fluorescent Display Tube same as pin ⑥ for Segment "a".			②⑤	1.5 kHz Clock Signal (INT) 
⑩	Drive Signal for "e" Segments of Fluorescent Display Tube same as pin ⑥ for Segment "a".			②⑥	RESET Signal 4.2 V
⑪	Drive Signal for "f" Segments of Fluorescent Display Tube same as pin ⑥ for Segment "a".	⑭	B + Supply Voltage 10.6 V	②⑦	GND (Ground)
⑫	Drive Signal for "g" Segments of Fluorescent Display Tube same as pin ⑥ for Segment "a".	⑮	TEST Terminal 10.6 V	②⑧	Clock Signal 

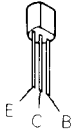
4-1. MOUNTING DIAGRAM
— Audio Amp Section —

SECTION 4
DIAGRAMS

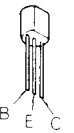
A

Semiconductor Lead Layout

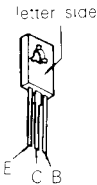
2SA844
2SC1345
2SC1364
2SC2001
2SD1152



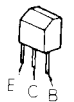
2SA952



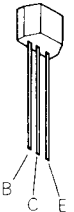
2SB548
2SB731
2SD414
2SD809



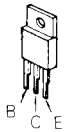
2SB734



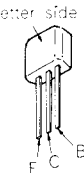
2SB808



2SD880



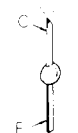
2SD1020



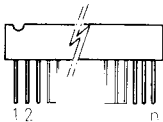
2SK120



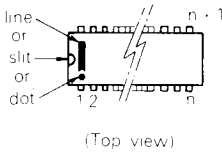
PH102



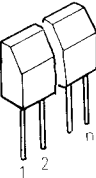
BA6138



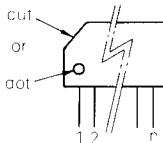
CX174-2
MSL9351
MSM4011RS
MSM4069RS
MSM58361RS
NJM2903D
 μ PC339C
 μ PD554C089



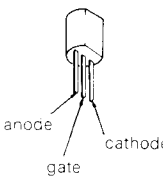
M5218L



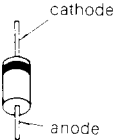
NJM2043S-D



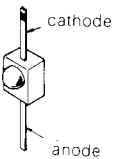
N13T1



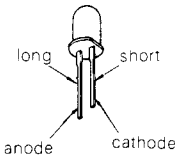
1S1555
10E-2
HZ6B1L
HZ7B1L
HZ11B1L



AA2222S
AR2222S
PG2222SX



PY5535S



1

2

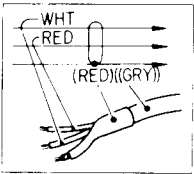
3

4

5

Note:

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

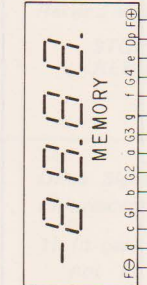


- ○ — : parts extracted from the component side.
- ● — : parts extracted from the conductor side.
- □ — : indicates side identified with part number.
- * : B + pattern

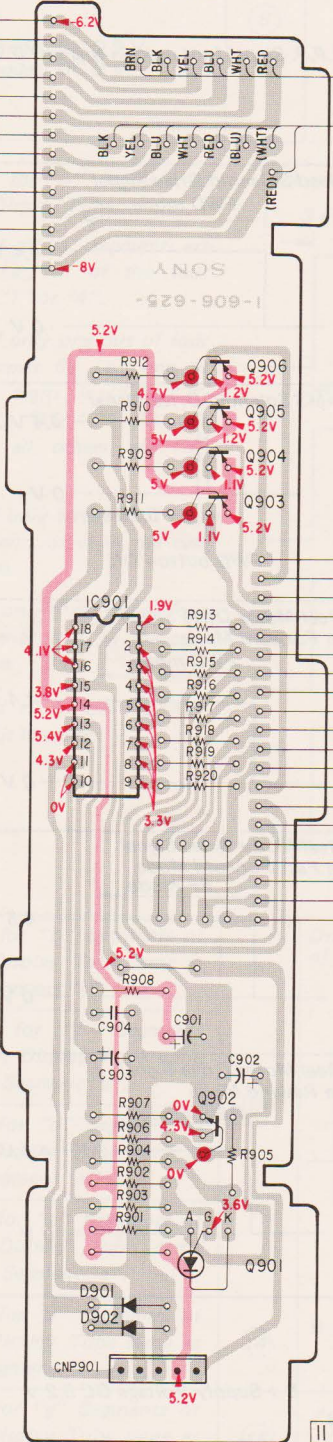
- ○ — : signal path
- ● — : LCH signal path
- * — : RCH signal path

B C D E F

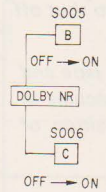
FLUORESCENT TUBE



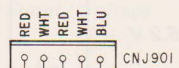
[METER BOARD]



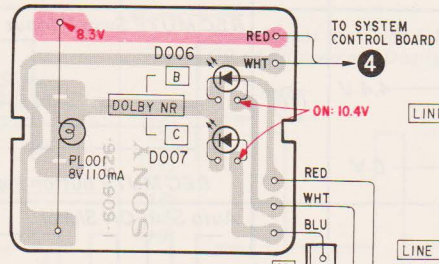
TO SYSTEM CONTROL BOARD



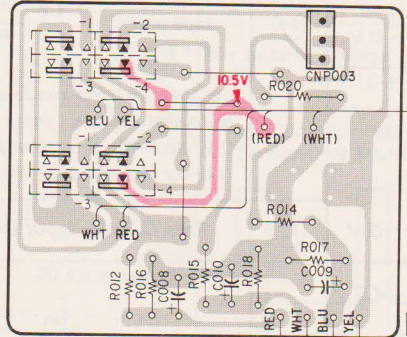
PEAK PROGRAM METER



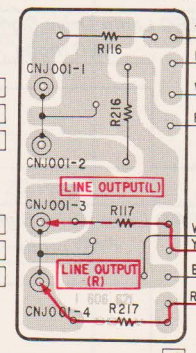
[LED BOARD]



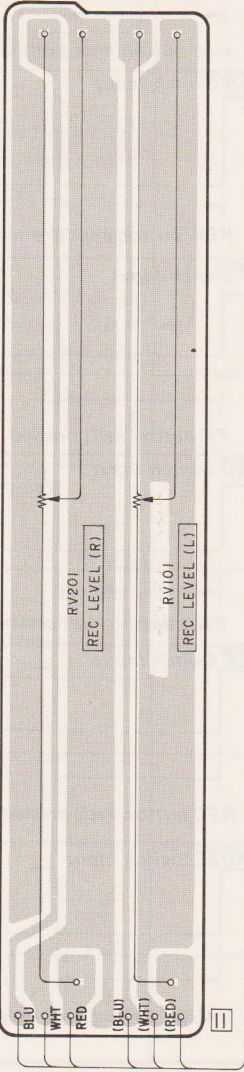
[DOLBY SW BOARD]



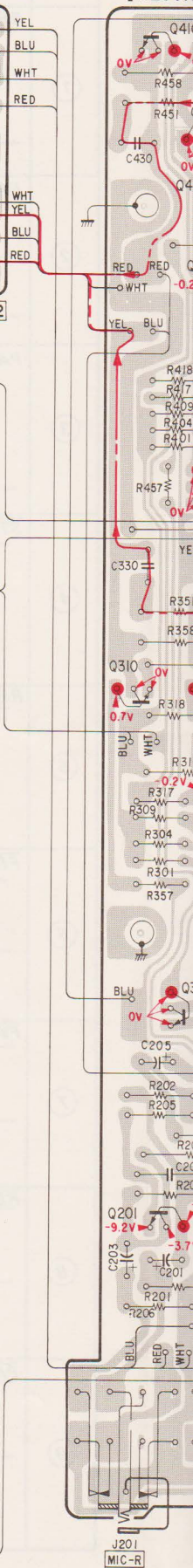
[PIN JACK BOARD]



[REC VOL BOARD]



[RECORD BOARD]



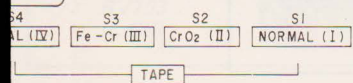
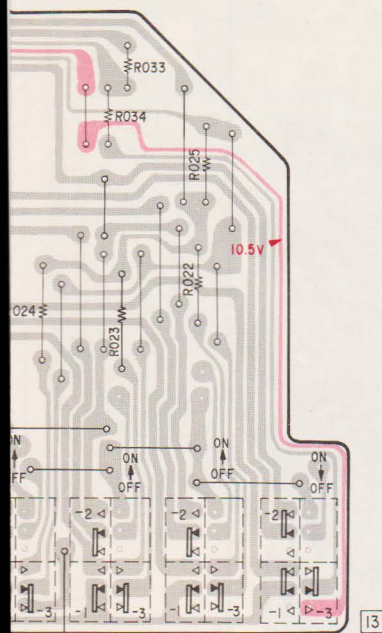
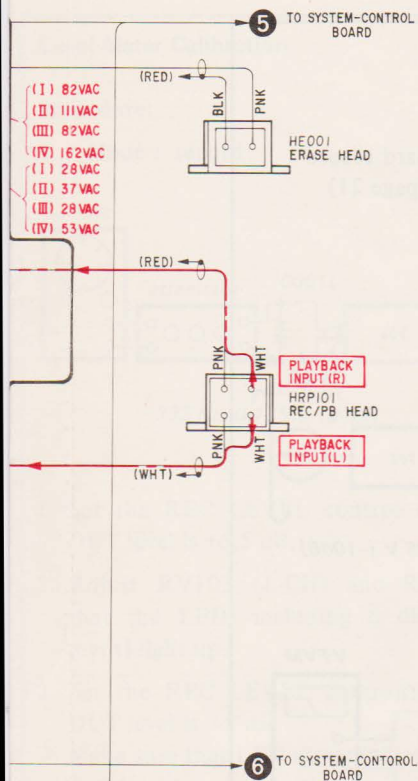
2

— 29 —

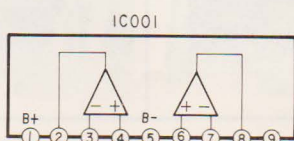
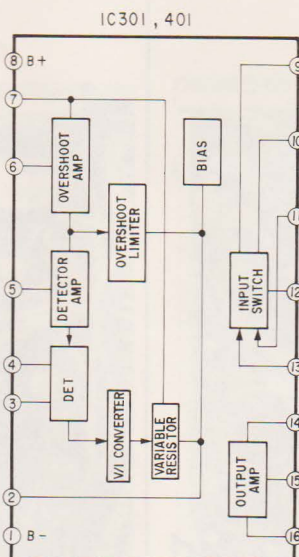
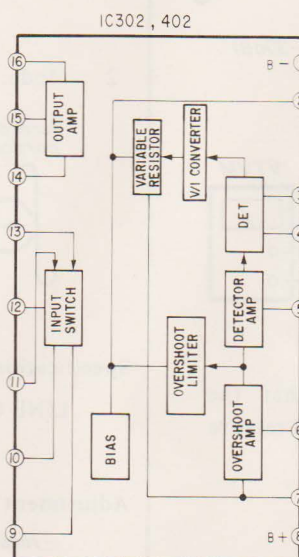
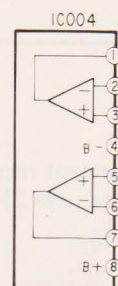
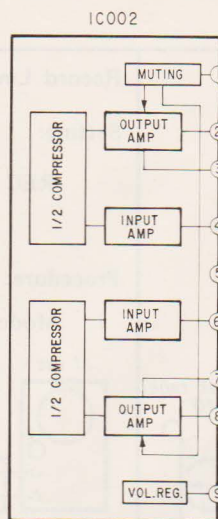
J

K

L



IC - Q	D
410 409 012	
406 010	
405	
411	004
IC402	
IC401	
404	
403 013	005
006	
007	
002	
408 008	
402 407	
401	
IC001	002
306	
309	
310	
305	
311	
IC302	
IC301	005
304	001
303	001
	004
	103
	203
	003
302	
301 308 011	003
307	
102 IC002	
IC004	
202	
201	
101	
204 104	008



C

5









4-3. SCHEMATIC DIAGRAM

— System Control Section —

Note:

- Components for right channel have same values as for left channel. Reference numbers are coded from 200 and 400.
- All capacitors are in μF unless otherwise noted. pF : $\mu\mu\text{F}$ 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, $\frac{1}{4}\text{W}$ unless otherwise noted.
 $\text{k}\Omega$: 1000Ω , $\text{M}\Omega$: $1000\text{k}\Omega$
-  : nonflammable resistor.
-  : fusible resistor.
- (N) : low-noise resistor.
- (LN) : low-noise capacitor.
- $\triangle$: internal component.
-  : panel designation.
-  : adjustment for repair.
-  : B+ bus.
-  : B- bus.
-  : signal path
- Readings are taken under no-signal conditions with a VOM (50 $\text{k}\Omega/\text{V}$).
- AC voltage readings in the bias oscillator with a VTVM.

Note: Voltages are measured with a VOM (50 $\text{k}\Omega/\text{V}$).

• Switch

Ref. No.	Switch	Position
S1	TAPE NORMAL (I)	ON
S2	TAPE CrO_2 (II)	OFF
S3	TAPE Fe-Cr (III)	OFF
S4	TAPE METAL (IV)	OFF
S005	DOLBY B	OFF
S006	DOLBY C	OFF
S501		OFF
S502		OFF
S503		OFF
S504		OFF
S505		OFF
S506		OFF
S507	TIMER	OFF
S508		OFF
S601	MEMORY	OFF
S602	COUNTER RESET	OFF
S701	POWER	OFF
S801	CASSETTE HALF DETECTOR	OFF
S802	ERASE PROOF	OFF

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

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

1

2

3

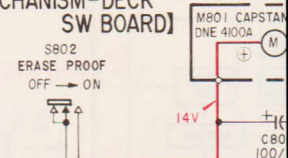
4

5

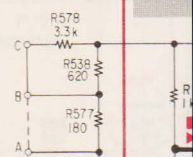
A

B

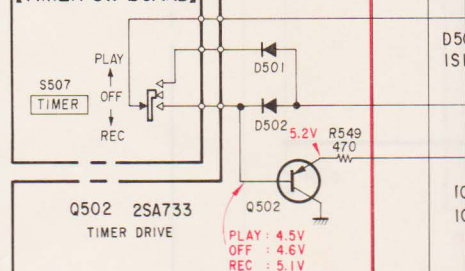
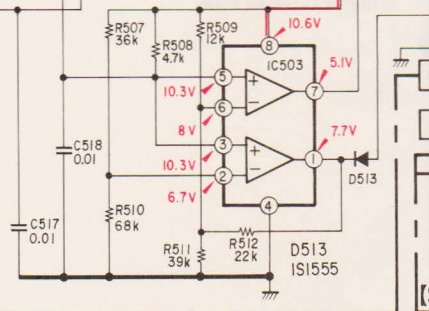
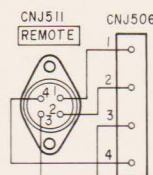
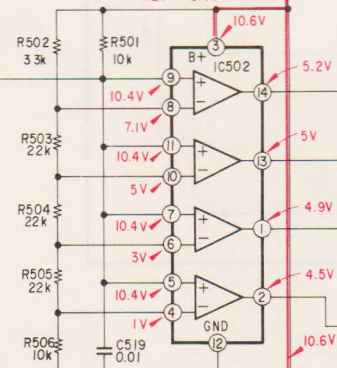
[MECHANISM-DECK SW BOARD]

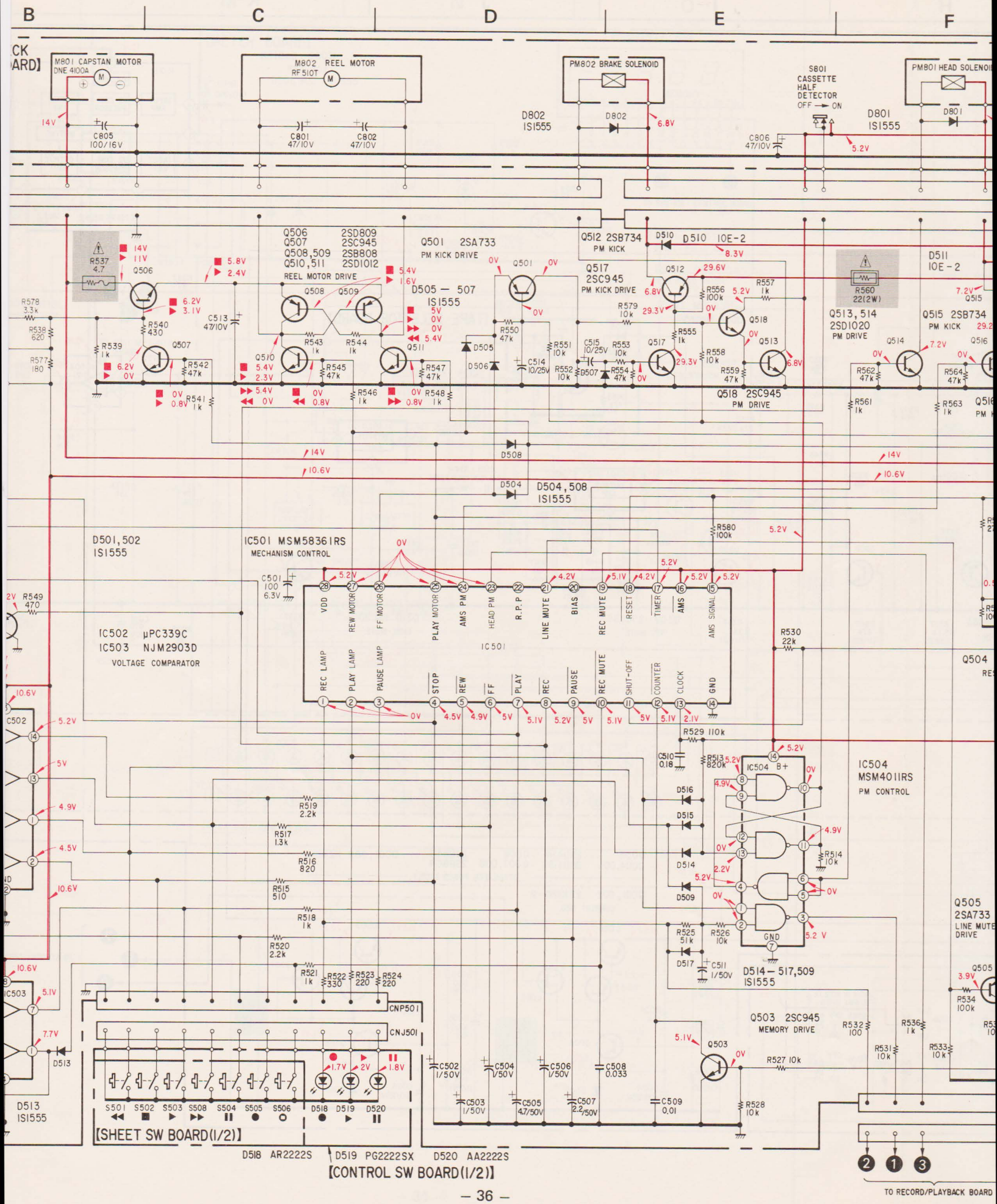


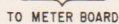
[SYSTEM-CONTROL BOARD]



[TIMER SW BOARD]

Q502 2SA733
TIMER DRIVE





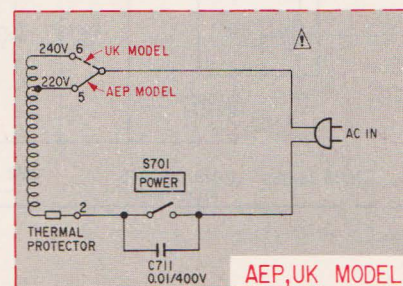
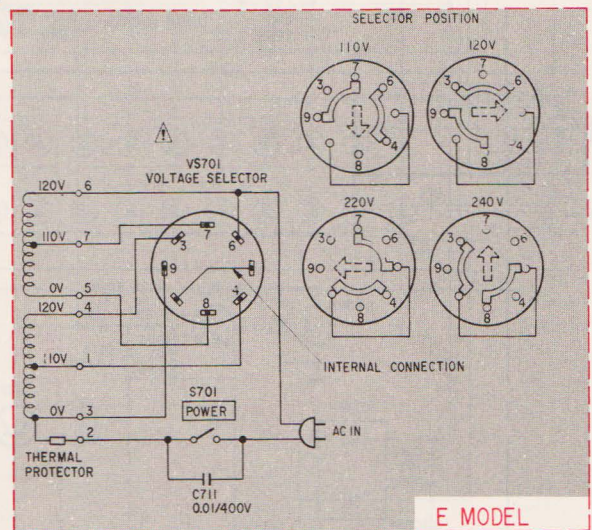
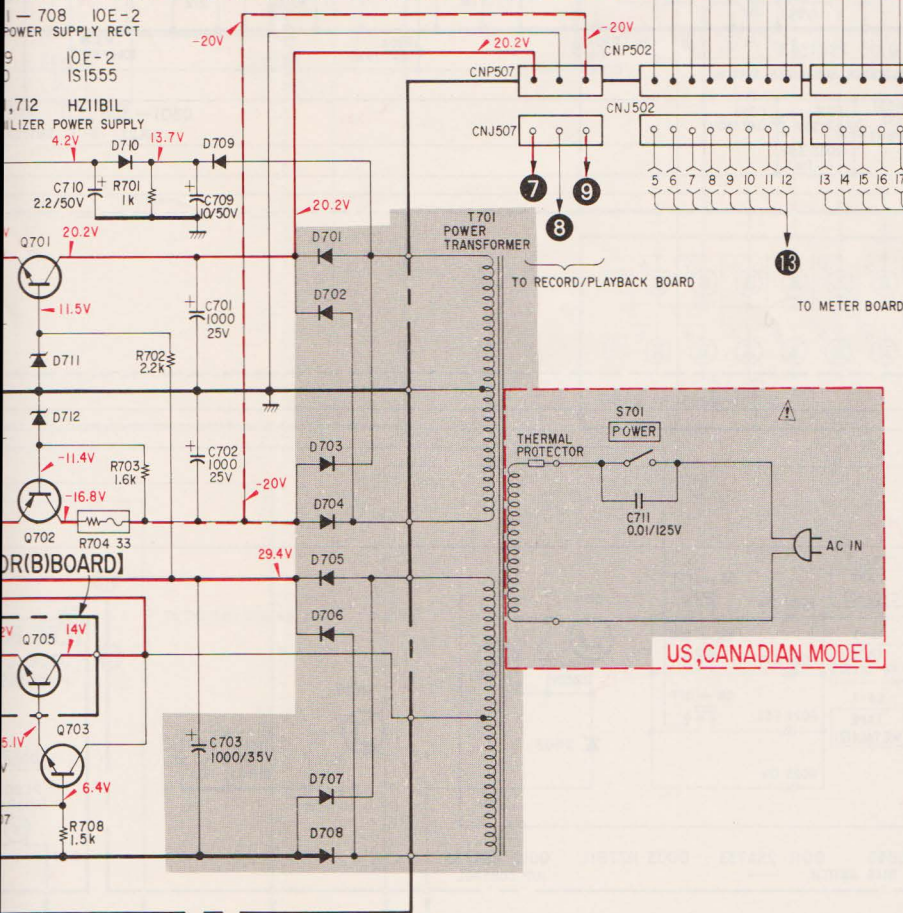
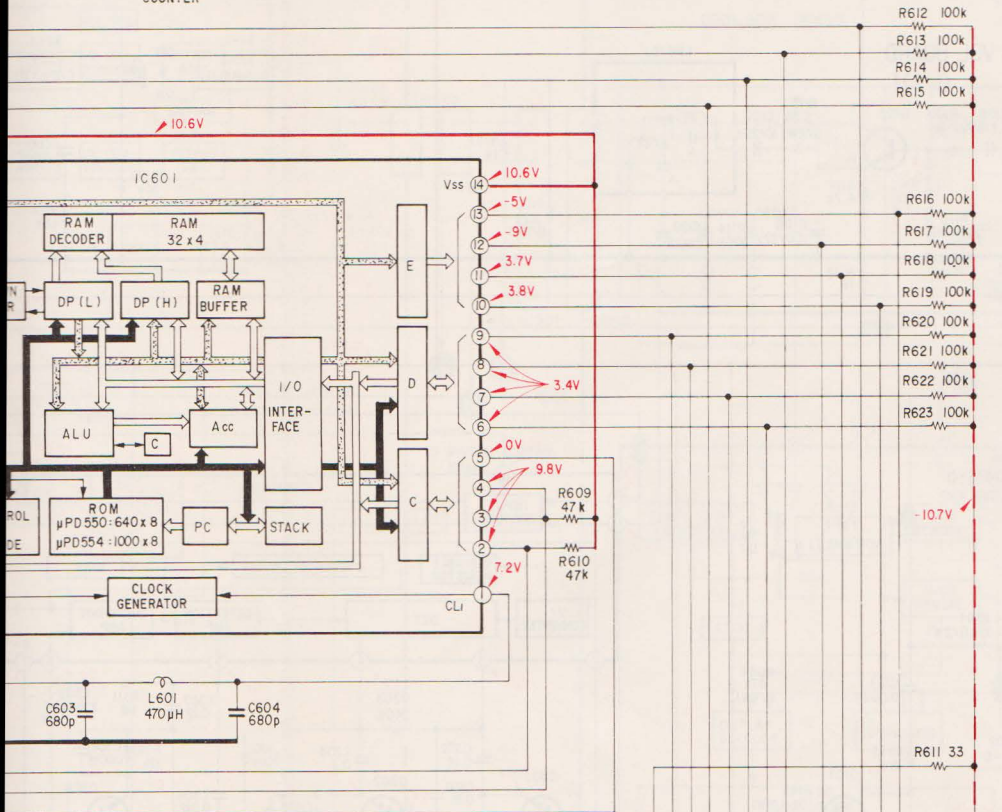
J

K

L

M

IC601 μ PD554C-089
COUNTER



4-4. MOUNTING DIAGRAM

— System Control Section —

• See page 27 for Semiconductor Lead Layouts.

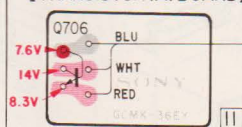
TC-FX66

TC-

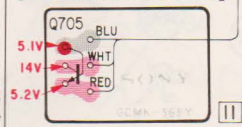
- Refer to pages 25 and 26 for voltages and waveforms at terminals of IC501 and 601.

IC · Q	D
IC503	704 707 513
IC502	702 705 703 706 701 708 709
IC501	502 501
701	710 514
	515
IC504	512
IC505	516 517 601 508 504 509 501 506 518 505
	512 513 506 515 507 510 505 511 508 517 509 511
IC601	514
	603 513 601
	602

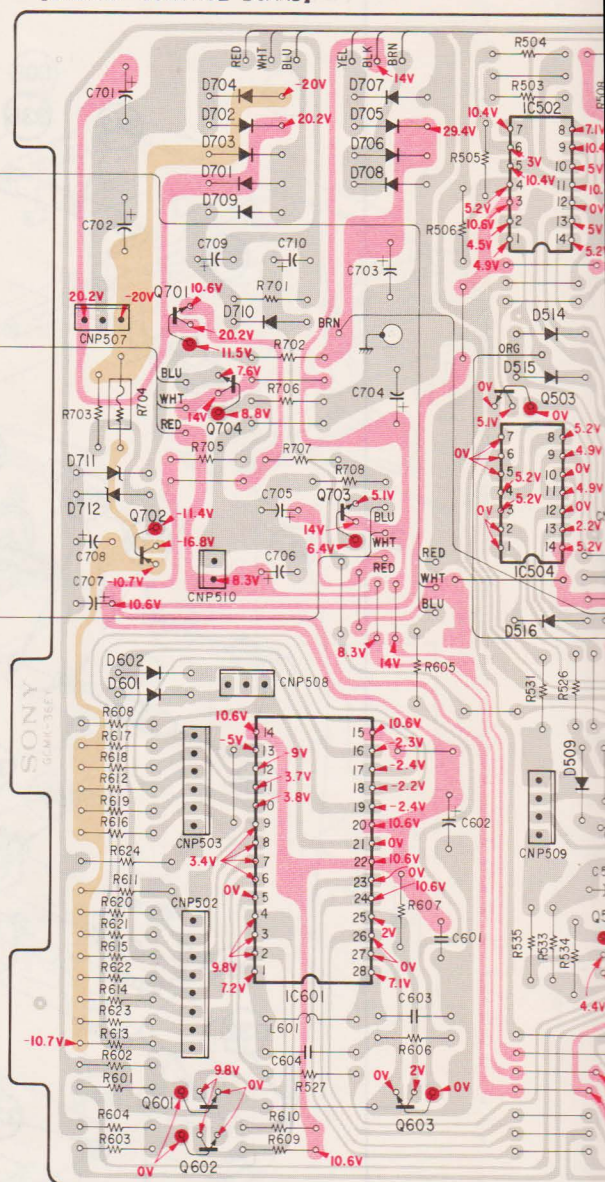
【TRANSISTOR (A) BOARD】



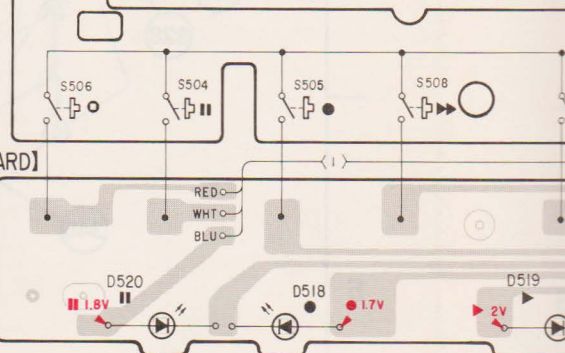
【TRANSISTOR (B) BOARD】



【SYSTEM-CONTROL BOARD】



【SHEET SW BOARD】

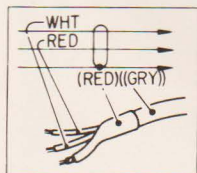


【CONTROL SW BOARD】

D
520 518 519

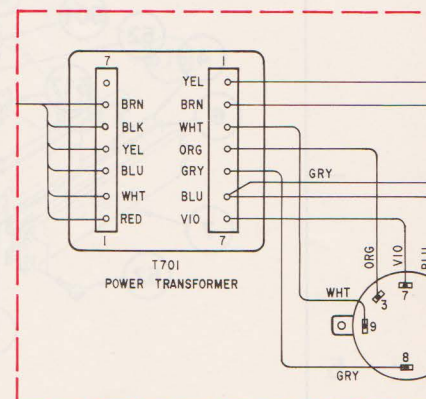
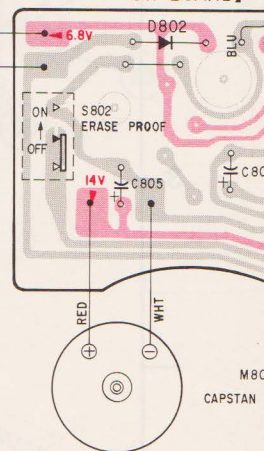
Note:

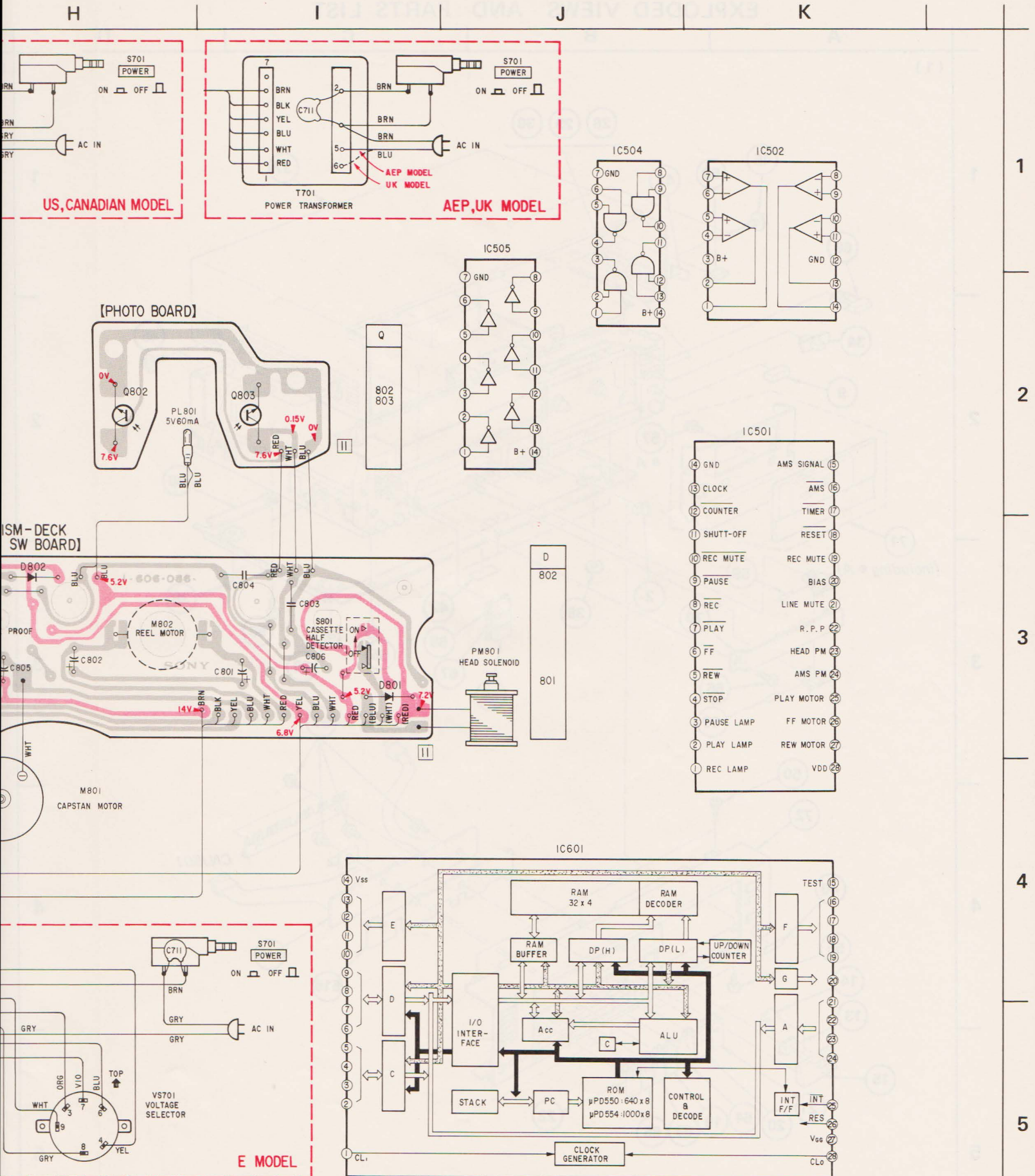
- Color code of sleeving over the end of the jacket.



- : parts extracted from the component side.
- : parts extracted from the conductor side.
- : indicates side identified with part number.

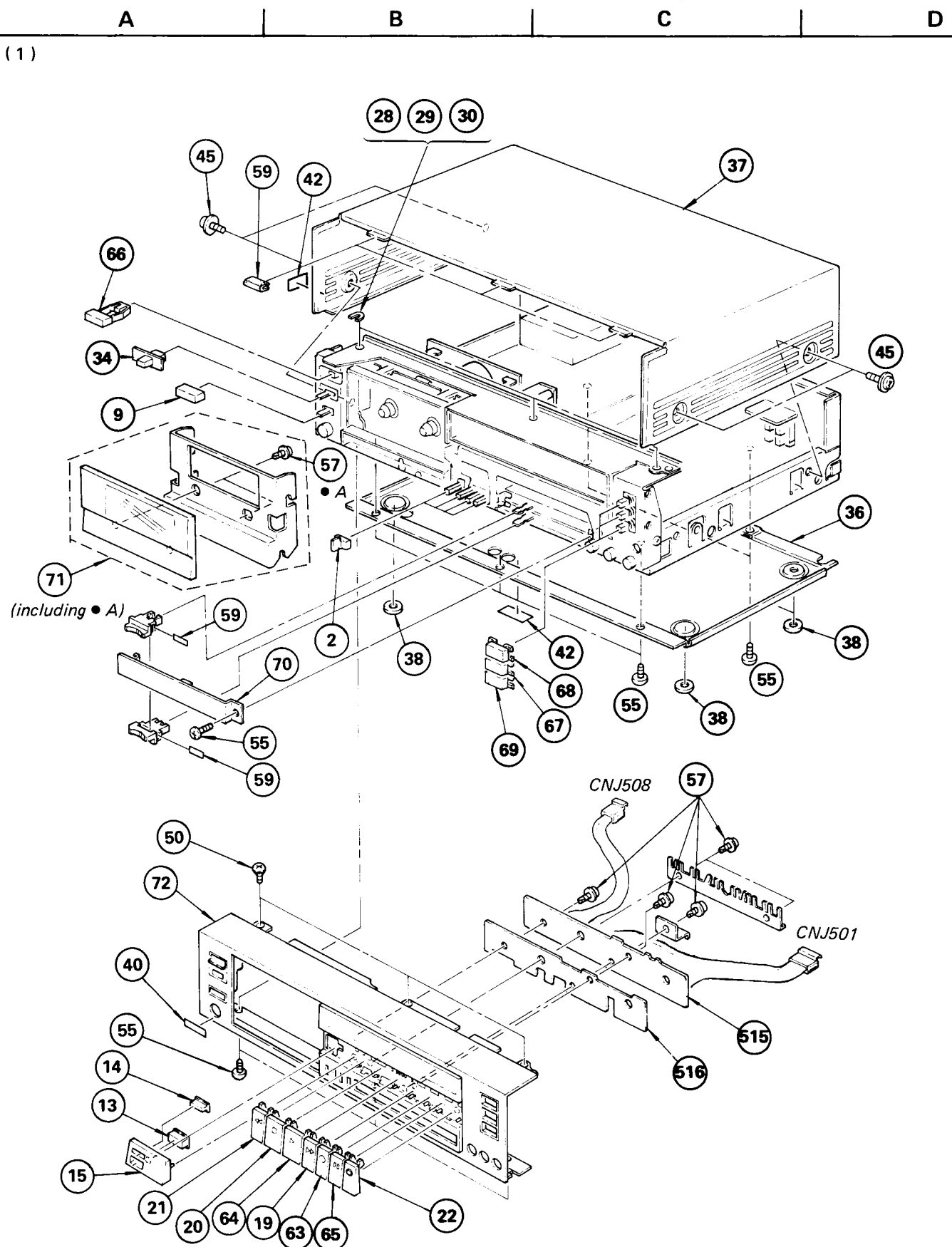
- : B + pattern
- : B - pattern



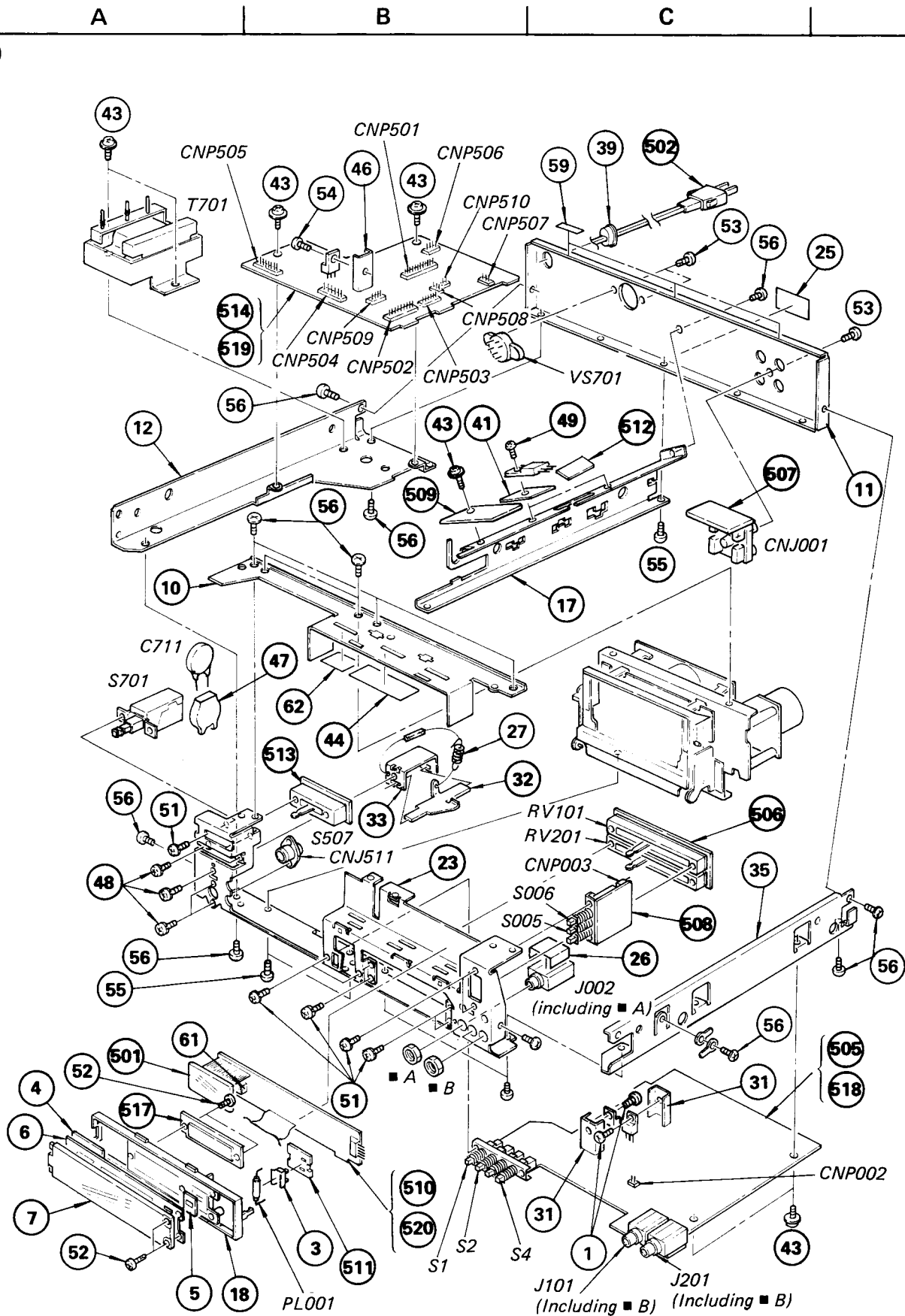


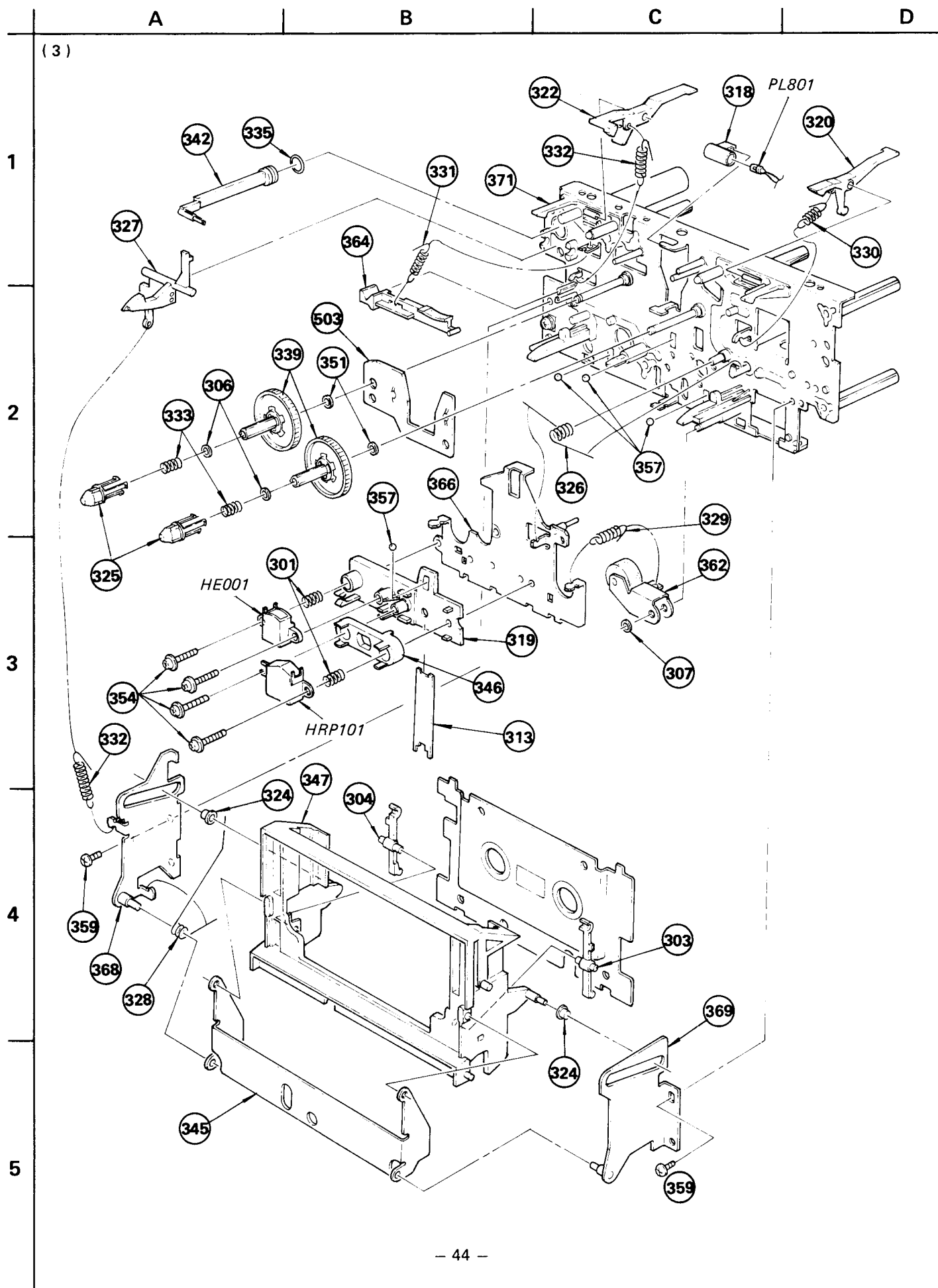
SECTION 5

EXPLODED VIEWS AND PARTS LIST



(2)





A

B

C

D

(4)

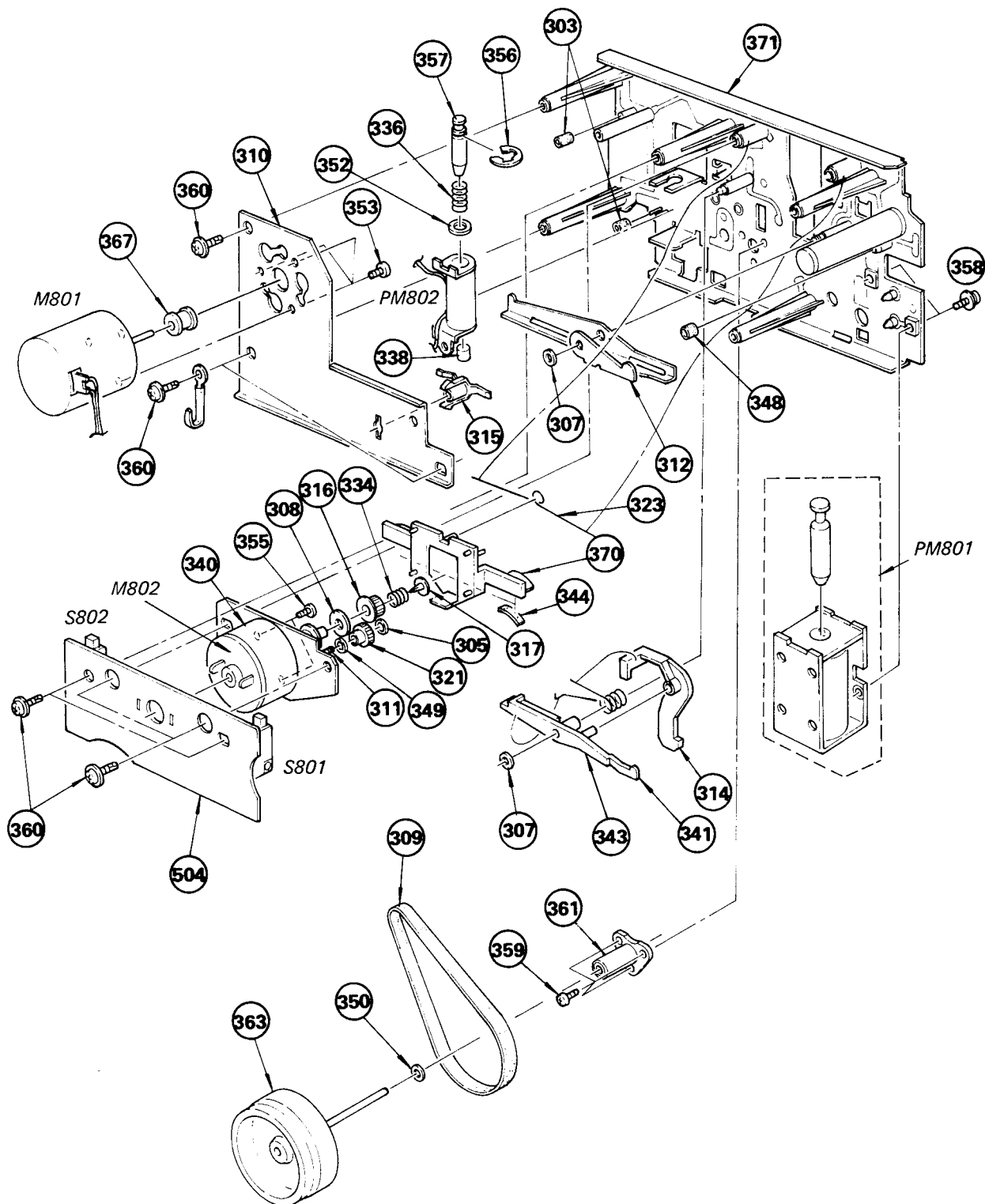
1

2

3

4

5



GENERAL SECTION

No.	Part No.	Description
1	2-259-121-00	SCREW, TR
2	3-304-401-00	KNOB, TAPE SELECT
3	▲;3-304-403-00	HOLDER, LAMP
4	▲;3-304-406-00	FILTER, COUNTER
5	▲;3-304-407-00	ILLUMINATOR
6	3-304-415-00	PLATE, ORNAMENTAL, METER
7	3-304-416-00	ILLUMINATOR
8	3-304-418-00	BUTTON, REC CONTROL
9	3-304-419-00	BUTTON, EJECT
10	▲;3-304-421-03	JOINT
11	▲;3-304-422-11	(US,Canadian)...PLATE, JACK
11	▲;3-304-446-00	(AEP,UK).....PLATE, JACK
11	▲;3-304-447-00	(E).....PLATE, JACK
12	▲;3-304-423-00	PLATE, SIDE, LEFT
13	3-304-425-00	BUTTON, RESET
14	3-304-426-00	BUTTON, MEMORY
15	3-304-427-00	ESCUTCHEON, COUNTER BUTTON
16	▲;3-304-428-00	SPRING
17	▲;3-304-429-00	PLATE, RELAY
18	▲;3-304-432-00	HOLDER, METER
19	3-304-433-00	BUTTON, FF
20	3-304-437-00	BUTTON, STOP
21	3-304-438-00	BUTTON, REW
22	3-304-439-00	BUTTON, REC MUTE
23	▲;3-304-440-02	CHASSIS, AMPLIFIER
24	▲;3-304-441-00	SPRING
25	3-304-442-00	(US,Canadian)...LABEL, MODEL NUMBER
25	3-304-443-00	(AEP).....LABEL, MODEL NUMBER
25	3-304-444-00	(UK).....LABEL, MODEL NUMBER
25	3-304-445-00	(E).....LABEL, MODEL NUMBER
26	▲;3-304-707-00	CASE, SHIELD
27	3-534-238-XX	SPRING, TENSION
28	3-544-028-01	SPACER
29	3-544-028-11	SPACER
30	3-544-028-21	SPACER
31	▲;3-567-242-00	HEAT SINK
32	▲;3-575-501-00	SLIDER, EJECT
33	▲;3-575-502-00	BRACKET, EJECT
34	3-575-515-00	KNOB, SLIDE SWITCH
35	▲;3-575-529-11	PLATE, SIDE, RIGHT
36	3-575-538-00	PLATE, BOTTOM
37	3-575-539-00	CASE
38	3-576-731-00	FELT (H)
39	▲;3-701-682-00	(E,US,Canadian)...STOPPER, CORD
39	▲;3-703-244-00	(AEP,UK).....BUSHING, CORD
40	3-701-690-00	(UK)....LABEL (MADE IN JAPAN)

NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- 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 (▲-▲▲▲-▲▲▲-XX or ▲-▲▲▲-▲▲▲-X) may be different from those used in the set.

CAPACITORS:

- All capacitors are in μ F. Common capacitors are omitted. Refer to the following lists for their part numbers.

MF: μ F, PF: μ F.

RESISTORS

- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.

- F : nonflammable

COILS

MMH : mH, UH : μ H

GENERAL SECTION

No.	Part No.	Description
41	3-703-037-00	INSULATOR, T0-220
42	3-703-079-21	(US,UK)....LABEL, CAUTION (BACK)
43	3-703-486-00	+PTWH 3X5
44	3-831-441-XX	CLOTH, INSULATING
45	4-820-330-21	SCREW, BW, PLUS MINUS
46	▲;4-861-002-11	HEAT SINK
47	4-875-455-21	(E,AEP,UK)...COVER (DIA. 20), CAPACITOR
48	7-628-253-95	SCREW +PS 2.6X4
49	7-682-147-20	SCREW +P 3X6
50	7-682-248-01	SCREW +K 3X8
51	7-682-646-01	SCREW +PS 3X5
52	7-685-104-21	SCREW +P 2X6 TYPE2 SLIT
53	7-685-532-14	SCREW +BTP 2.6X5 TYPE2 N-S
54	7-685-647-29	SCREW +BVTP 3X10 TYPE2 SLIT
55	7-685-871-01	SCREW +BVTT 3X6 (S)
56	7-685-871-09	SCREW +BVTT 3X6 (S)
57	7-687-203-21	TOTSU PTPWH 2X5, TYPE2, SLIT
58	7-687-232-21	TOTSU PTPWH 2.6X5, TYPE2, SLIT
59	9-911-837-XX	CUSHION, FILTER
60	9-911-841-XX	CUSHION
61	9-911-843-XX	CUSHION
62	9-911-845-XX	CUSHION, COUNTER
63	X-3304-401-0	BUTTON (A) ASSY, REC
64	X-3304-402-0	BUTTON ASSY, FWD
65	X-3304-403-0	BUTTON ASSY, PAUSE
66	X-3304-405-0	KNOB ASSY, POWER
67	X-3304-406-1	KNOB ASSY, PUSH
68	X-3304-406-2	KNOB ASSY, PUSH
69	X-3304-406-3	KNOB ASSY, PUSH
70	X-3304-407-0	PLATE ASSY, ORNAMENTAL
71	X-3304-408-2	LID ASSY, CASSETTE
72	X-3304-410-0	PANEL ASSY

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.

SEMICONDUCTORS

In each case, U : μ , for example:
 UA.... : μ A...., UPA.... : μ PA...., UPC.... : μ PC,
 UPD.... : μ PD....

ACCESSORY & PACKING MATERIAL

No.	Part No.	Description
101	1-551-734-11	CORD, CONNECTION (RK- 74A)
102	3-304-451-00	INDIVIDUAL CARTON
103	3-573-625-00	SHEET, POLYETHYLENE
104	3-575-564-00	CUSHION
105	3-701-630-00	BAG, POLYETHYLENE
106	3-783-842-11	(E,AEP,UK).....MANUAL, INSTRUCTION
107	3-783-842-21	(US,Canadian)...MANUAL, INSTRUCTION
108	3-783-842-31	(Canadian).....MANUAL, INSTRUCTION
109	3-793-828-11	QUESTIONNAIRE
110	8-890-434-11	(Canadian)....TAPE (EHF-46)
111	X-3701-105-0	ROD ASSY, CLEANING, HEAD

MECHANISM SECTION

No.	Part No.	Description
301	3-481-272-00	SPRING, COMPRESSION
302	3-538-051-00	RUBBER, BRAKE
303	3-555-113-00	SPRING (R)
304	3-555-114-00	SPRING (L)
305	3-558-708-01	WASHER, STOPPER
306	3-558-708-11	WASHER, STOPPER
307	3-558-708-21	WASHER, STOPPER
308	3-564-027-11	FELT, LIMITER
309	3-564-319-00	BELT, CAPSTAN
310	3-575-302-00	RETAINER, THRUST
311	3-575-304-00	SHAFT, GEAR, FR
312	3-575-307-00	LEVER, FWD
313	3-575-312-00	SPRING
314	3-575-318-03	LEVER, LOCK, TUNING
315	3-575-321-00	RETAINER, THRUST, CAPSTAN
316	3-575-324-00	GEAR, LIMITER
317	3-575-327-00	STOPPER
318	3-575-328-00	HOLDER, LAMP
319	3-575-330-00	BRACKET, HEAD
320	3-575-331-00	LEVER, DETECTION, HALF
321	3-575-332-00	GEAR, FR
322	3-575-334-00	LEVER, DETECTION, REC
323	3-575-345-00	SPRING
324	3-575-348-00	ROLLER, GUIDE, THREADING
325	3-575-350-00	CLAW, REEL TABLE
326	3-575-351-00	SPRING
327	3-575-354-00	LEVER, LOCK
328	3-575-356-00	SPRING
329	3-575-357-00	SPRING, TENSION
330	3-575-358-00	SPRING, TENSION
331	3-575-359-00	SPRING, TENSION
332	3-575-364-00	SPRING, TENSION
333	3-575-365-00	SPRING, COMPRESSION
334	3-575-368-00	SPRING, COMPRESSION
335	3-575-392-00	RING, PISTON
336	3-575-414-00	SPRING, COMPRESSION
337	3-575-415-11	ARBOR, MOVABLE
338	3-575-416-11	ARBOR, FIXED
339	3-575-447-11	DECK, REEL
340	3-575-457-00	PLATE (B), SHIELD, MOTOR
341	3-575-458-00	SPRING
342	3-575-459-00	PISTON
343	3-575-460-00	LEVER, SELECT TUNE
344	3-575-469-00	SHOE, BRAKE
345	3-575-470-00	LEVER, HOLDER FULCRUM

NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- 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.

CAPACITORS:

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

RESISTORS

- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.
- F : nonflammable

COILS

- MMH : mH, UH : μH

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

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

SEMICONDUCTORS

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

ACCESSORY & PACKING MATERIAL

No.	Part No.	Description
101	1-551-734-11	CORD, CONNECTION (RK- 74A)
102	3-304-451-00	INDIVIDUAL CARTON
103	3-573-625-00	SHEET, POLYETHYLENE
104	3-575-564-00	CUSHION
105	3-701-630-00	BAG, POLYETHYLENE
106	3-783-842-11	(E,AEP,UK).....MANUAL, INSTRUCTION
107	3-783-842-21	(US,Canadian)...MANUAL, INSTRUCTION
108	3-783-842-31	(Canadian).....MANUAL, INSTRUCTION
109	3-793-828-11	QUESTIONNAIRE
110	8-890-434-11	(Canadian)....TAPE (EHF-46)
111	X-3701-105-0	ROD ASSY, CLEANING, HEAD

MECHANISM SECTION

No.	Part No.	Description
301	3-481-272-00	SPRING, COMPRESSION
302	3-538-051-00	RUBBER, BRAKE
303	3-555-113-00	SPRING (R)
304	3-555-114-00	SPRING (L)
305	3-558-708-01	WASHER, STOPPER
306	3-558-708-11	WASHER, STOPPER
307	3-558-708-21	WASHER, STOPPER
308	3-564-027-11	FELT, LIMITER
309	3-564-319-00	BELT, CAPSTAN
310	▲;3-575-302-00	RETAINER, THRUST
311	3-575-304-00	SHAFT, GEAR, FR
312	▲;3-575-307-00	LEVER, FWD
313	▲;3-575-312-00	SPRING
314	3-575-318-03	LEVER, LOCK, TUNING
315	3-575-321-00	RETAINER, THRUST, CAPSTAN
316	3-575-324-00	GEAR, LIMITER
317	3-575-327-00	STOPPER
318	3-575-328-00	HOLDER, LAMP
319	3-575-330-00	BRACKET, HEAD
320	▲;3-575-331-00	LEVER, DETECTION, HALF
321	3-575-332-00	GEAR, FR
322	▲;3-575-334-00	LEVER, DETECTION, REC
323	3-575-345-00	SPRING
324	3-575-348-00	ROLLER, GUIDE, THREADING
325	3-575-350-00	CLAW, REEL TABLE
326	3-575-351-00	SPRING
327	3-575-354-00	LEVER, LOCK
328	3-575-356-00	SPRING
329	3-575-357-00	SPRING, TENSION
330	3-575-358-00	SPRING, TENSION
331	3-575-359-00	SPRING, TENSION
332	3-575-364-00	SPRING, TENSION
333	3-575-365-00	SPRING, COMPRESSION
334	3-575-368-00	SPRING, COMPRESSION
335	3-575-392-00	RING, PISTON
336	3-575-414-00	SPRING, COMPRESSION
337	3-575-415-11	ARBOR, MOVABLE
338	3-575-416-11	ARBOR, FIXED
339	3-575-447-11	DECK, REEL
340	3-575-457-00	PLATE (B), SHIELD, MOTOR
341	3-575-458-00	SPRING
342	3-575-459-00	PISTON
343	3-575-460-00	LEVER, SELECT TUNE
344	3-575-469-00	SHOE, BRAKE
345	▲;3-575-470-00	LEVER, HOLDER FULCRUM

NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- 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 (▲-▲▲▲-▲▲▲-XX or ▲-▲▲▲-▲▲▲-X) may be different from those used in the set.

CAPACITORS:

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

RESISTORS

- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.
- F : nonflammable

COILS

- MMH : mH, UH : μ H

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.

SEMICONDUCTORS

In each case, U : μ , for example:
 UA...: μ A..., UPA...: μ PA..., UPC...: μ PC,
 UPD...: μ PD...

MECHANISM SECTION

No.	Part No.	Description
346	3-575-471-00	TABLE, ADJUSTMANT, HEAD
347	3-575-472-00	HOLDER, CASSETTE
348	3-652-612-11	CUSHION (B)
349	3-701-437-21	WASHER
350	3-701-438-21	WASHER
351	3-701-439-21	WASHER
352	3-701-444-11	WASHER, 6
353	7-621-259-15	SCREW +P 2.6X3
354	7-621-772-70	SCREW +B 2X14
355	7-621-775-10	SCREW +B 2.6X4
356	7-624-110-04	STOP RING 6.0, TYPE -E
357	7-671-112-11	BALL, STEEL
358	7-682-949-01	SCREW +PSW 3X10
359	7-685-861-01	SCREW +BVTT 2.6X5 (S)
360	7-687-246-21	SCREW, TOTSU PTPWH 3X8, TYPE2
361	X-3575-303-0	METAL ASSY, CAPSTAN
362	X-3575-304-0	PINCH LEVER (T) ASSY
363	X-3575-305-0	FLYWHEEL (T) ASSY
364	X-3575-310-0	LEVER ASSY, TENSION, BACK
365	X-3575-314-0	PLATE ASSY, ORNAMENTAL
366	X-3575-324-0	CHASSIS ASSY, HEAD
367	X-3575-328-1	PULLEY, MOTOR
368	♣;X-3575-338-0	PLATE (LEFT) ASSY, FULCRUM
369	♣;X-3575-339-0	PLATE (RIGHT) ASSY, FULCRUM
370	♣;X-3575-342-0	PLATE ASSY, BRAKE
371	♣;X-3575-343-0	CHASSIS ASSY, MECHANISM

ELECTRICAL PARTS

Ref.No.	Part No.	Description
501	1-519-246-00	INDICATOR TUBE, FLUORESCENT
502	△.1-534-817-XX	(AEP).....CORD, PC&EP
502	△.1-534-936-XX	(US, Canadian).....CORD, PC&EP
502	△.1-551-473-31	(E).....CORD, PC&EP
502	△.1-551-962-00	(UK).....CORD, PC&EP
502	△.1-551-967-00	(UK).....CORD, PC&EP
502	△.1-555-734-00	(E).....CORD, PC&EP
503	♣;1-603-823-00	PC BOARD, PHOTO
504	♣;1-603-826-00	PC BOARD, SWITCH
505	♣;1-603-819-00	PC BOARD, REEL PB
506	♣;1-603-820-00	PC BOARD, REEL VR
507	♣;1-603-821-00	PC BOARD, PIN JACK
508	♣;1-603-822-00	PC BOARD, EJECT SWITCH
509	♣;1-603-823-00	PC BOARD, TAPE SELECTOR
510	♣;1-603-825-00	PC BOARD, METER
511	♣;1-603-826-00	PC BOARD, LED
512	♣;1-603-827-00	PC BOARD, TRANSISTOR
513	♣;1-603-828-00	PC BOARD, TOWER SWITCH
514	♣;1-603-829-00	PC BOARD, SYSTEM CONTROL
515	♣;1-603-833-00	PC BOARD, CONTROL SW
516	♣;1-603-834-00	PC BOARD, EJECT SW
517	1-800-821-11	DIODE (EJECT BLOCK) SEL8803
518	♣;1-1003-811-A	MOUNTED PCB, RECORD/PLAY
519	♣;1-1003-813-A	MOUNTED PCB, SYSTEM CONTROL
520	♣;1-1003-817-A	MOUNTED PCB, METER
C001	△.1-123-898-51	ELECT 330MF 20% 25V
C002	△.1-123-899-51	ELECT 330MF 20% 25V
C115	1-130-821-00	FILM 0.01MF 5% 50V
C121	1-161-813-00	CERAMIC 100PF 10% 50V
C122	1-161-813-00	CERAMIC 100PF 10% 50V
C123	1-161-813-00	CERAMIC 100PF 10% 50V
C125	1-130-823-00	ELECT 0.01MF 20% 50V
C130	1-130-823-00	FILM 0.002MF 5% 50V
C131	1-130-823-00	ELECT 0.01MF 20% 50V
C215	1-130-821-00	FILM 0.001MF 5% 50V
C221	1-161-813-00	CERAMIC 100PF 10% 50V
C222	1-161-813-00	CERAMIC 100PF 10% 50V
C223	1-161-813-00	CERAMIC 100PF 10% 50V
C225	1-123-823-00	ELECT 0.01MF 20% 50V
C230	1-130-823-00	FILM 0.001MF 5% 100V
C231	1-123-823-00	ELECT 0.01MF 20% 50V
C303	1-130-824-00	FILM 0.001MF 5% 50V
C304	1-130-821-00	FILM 0.01MF 5% 50V
C305	1-130-821-00	FILM 0.01MF 5% 50V
C306	1-130-821-00	FILM 0.001MF 5% 50V
C310	1-130-821-00	FILM 0.001MF 3% 100V

NOTE:

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- 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 (△-△△△-△△△-XX or △-△△△-△△△-*) may be different from those used in the set.

CAPACITORS:

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

RESISTORS

- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.

- F: nonflammable

COILS

- MMH: mH, UH: μH

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.

SEMICONDUCTORS

In each case, for example: UA...: μA...; PA...: μPA...; PC...: μPC; UPD...: μP.

ELECTRICAL PARTS

Ref.No.	Part No.	Description
D901	8-719-815-55	DIODE 1S1555
D902	8-719-815-55	DIODE 1S1555
HE101	8-825-724-00	HEAD, ERASE EF-201-36
HRP101	8-825-529-20	HEAD, REC/PB
IC001	8-759-700-05	IC NJM2043S-D
IC002	8-759-961-38	IC BA6138
IC004	8-759-600-02	IC M5218L
IC301	8-759-300-74	IC CX-174
IC302	8-759-300-74	IC CX-174
IC401	8-759-300-74	IC CX-174
IC402	8-759-300-74	IC CX-174
IC501	8-759-900-71	IC MSM5836IRS
IC502	8-759-133-90	IC UPC339C
IC503	8-759-729-03	IC NJM2903D
IC504	8-759-940-11	IC MSM4011RS
IC505	8-759-904-69	IC MSM4069RS
IC601	8-759-100-12	IC UPD554C089
IC901	8-759-993-51	IC MSL9351
J002	1-507-649-00	JACK
J101	1-507-648-00	JACK
J201	1-507-648-00	JACK
L001	1-407-177-XX	MICRO INDUCTOR 470UH
L002	1-407-177-XX	MICRO INDUCTOR 470UH
L101	1-408-262-00	MICRO INDUCTOR 27MH
L201	1-408-262-00	MICRO INDUCTOR 27MH
L301	1-408-259-00	MICRO INDUCTOR 15MH
L401	1-408-259-00	MICRO INDUCTOR 15MH
L601	1-408-096-00	MICRO INDUCTOR 470UH
LPF101	1-231-388-00	FILTER, LOWPASS
LPF201	1-231-388-00	FILTER, LOWPASS
M801	8-835-049-01	MOTOR, DC (DNE-4100A)
M802	X-3575-348-0	MOTOR ASSY, REEL
PL001	1-518-351-21	LAMP, PILOT
PL801	1-518-313-00	LAMP, PILOT
PM801	1-454-301-00	SOLENOID, PLUNGER
PM802	1-454-291-00	SOLENOID, PLUNGER
Q001	8-769-112-00	TRANSISTOR 2SK120
Q002	8-769-112-00	TRANSISTOR 2SK120
Q003	8-729-141-43	TRANSISTOR 2SD414
Q004	8-729-315-22	TRANSISTOR 2SD1152
Q005	8-729-315-22	TRANSISTOR 2SD1152
Q006	8-729-154-83	TRANSISTOR 2SB548
Q007	8-729-384-48	TRANSISTOR 2SA844
Q008	8-729-384-48	TRANSISTOR 2SA844
Q010	8-729-384-47	TRANSISTOR 2SA844

ELECTRICAL PARTS

Ref.No.	Part No.	Description
Q011	8-729-384-47	TRANSISTOR 2SA844
Q012	8-729-663-47	TRANSISTOR 2SC1364
Q013	8-729-663-47	TRANSISTOR 2SC1364
Q101	8-729-334-58	TRANSISTOR 2SC1345
Q102	8-729-334-58	TRANSISTOR 2SC1345
Q103	8-729-663-47	TRANSISTOR 2SC1364
Q104	8-729-663-47	TRANSISTOR 2SC1364
Q201	8-729-334-58	TRANSISTOR 2SC1345
Q202	8-729-334-58	TRANSISTOR 2SC1345
Q203	8-729-663-47	TRANSISTOR 2SC1364
Q204	8-729-663-47	TRANSISTOR 2SC1364
Q301	8-729-663-47	TRANSISTOR 2SC1364
Q302	8-729-663-47	TRANSISTOR 2SC1364
Q303	8-729-663-47	TRANSISTOR 2SC1364
Q304	8-729-663-47	TRANSISTOR 2SC1364
Q305	8-729-663-47	TRANSISTOR 2SC1364
Q306	8-729-663-47	TRANSISTOR 2SC1364
Q307	8-729-663-47	TRANSISTOR 2SC1364
Q308	8-729-663-47	TRANSISTOR 2SC1364
Q309	8-729-663-47	TRANSISTOR 2SC1364
Q310	8-729-100-13	TRANSISTOR 2SC2001
Q311	8-729-663-47	TRANSISTOR 2SC1364
Q401	8-729-663-47	TRANSISTOR 2SC1364
Q402	8-729-663-47	TRANSISTOR 2SC1364
Q403	8-729-663-47	TRANSISTOR 2SC1364
Q404	8-729-663-47	TRANSISTOR 2SC1364
Q405	8-729-663-47	TRANSISTOR 2SC1364
Q406	8-729-663-47	TRANSISTOR 2SC1364
Q407	8-729-663-47	TRANSISTOR 2SC1364
Q408	8-729-663-47	TRANSISTOR 2SC1364
Q409	8-729-663-47	TRANSISTOR 2SC1364
Q410	8-729-100-13	TRANSISTOR 2SC2001
Q411	8-729-663-47	TRANSISTOR 2SC1364
Q501	8-729-384-47	TRANSISTOR 2SA844
Q502	8-729-334-47	TRANSISTOR 2SA844
Q503	8-729-663-48	TRANSISTOR 2SC1364
Q504	8-729-663-48	TRANSISTOR 2SC1364
Q505	8-729-334-47	TRANSISTOR 2SA844
Q506	8-729-120-93	TRANSISTOR 2SD809
Q507	8-729-663-48	TRANSISTOR 2SC1364
Q508	8-729-820-82	TRANSISTOR 2SB808
Q509	8-729-820-82	TRANSISTOR 2SB808
Q510	8-729-811-24	TRANSISTOR 2SD1012
Q511	8-729-811-24	TRANSISTOR 2SD1012
Q512	8-729-103-43	TRANSISTOR 2SB734

NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- 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.

CAPACITORS:

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

RESISTORS

- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.

- F : nonflammable

COILS

- MMH : mH, UH : μH

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.

SEMICONDUCTORS

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

ELECTRICAL PARTS

Ref.No.	Part No.	Description
1513	8-729-102-03	TRANSISTOR 2SD1020
1514	8-729-102-03	TRANSISTOR 2SD1020
1515	8-729-103-43	TRANSISTOR 2SB734
1516	8-729-663-48	TRANSISTOR 2SC1364
1517	8-729-663-48	TRANSISTOR 2SC1364
1518	8-729-663-48	TRANSISTOR 2SC1364
1601	8-729-663-48	TRANSISTOR 2SC1364
1612	8-729-663-48	TRANSISTOR 2SC1364
1613	8-729-663-48	TRANSISTOR 2SC1364
1701	8-729-180-93	TRANSISTOR 2SD309
1712	8-729-173-13	TRANSISTOR 2SB731
1713	8-729-663-48	TRANSISTOR 2SC1364
1704	8-729-663-48	TRANSISTOR 2SC1364
1705	8-729-288-02	TRANSISTOR 2SD380
1706	8-729-288-02	TRANSISTOR 2SD380
1802	8-729-110-21	TRANSISTOR PH102
1803	8-729-110-21	TRANSISTOR PH102
1901	8-729-101-31	TRANSISTOR M13T1
1902	8-729-663-48	TRANSISTOR 2SC1364
1903	8-729-195-23	TRANSISTOR 2SA952
1904	8-729-195-23	TRANSISTOR 2SA952
1905	8-729-195-23	TRANSISTOR 2SA952
1906	8-729-195-23	TRANSISTOR 2SA952
R006	1-214-855-00	METAL 1.1K 1% 1/2W
R007	1-214-855-00	METAL 1.1K 1% 1/2W
R136	1-214-755-00	METAL 33K 1% 1/4W
R236	1-214-765-00	METAL 33K 1% 1/4W
R311	1-214-964-00	METAL 1M 1% 1/4W
R315	1-214-758-00	METAL 16K 1% 1/4W
R329	1-214-753-00	METAL 10K 1% 1/4W
R330	1-214-741-00	METAL 3.3K 1% 1/4W
R336	1-214-966-00	METAL 1.2M 1% 1/4W
R340	1-214-758-00	METAL 16K 1% 1/4W
R341	1-214-729-00	METAL 1K 1% 1/4W
R342	1-214-766-00	METAL 36K 1% 1/4W
R344	1-214-746-00	METAL 5.1K 1% 1/4W
R348	1-214-713-00	METAL 220 1% 1/4W
R350	1-214-741-00	METAL 3.3K 1% 1/4W
R411	1-214-964-00	METAL 1M 1% 1/4W
R415	1-214-758-00	METAL 16K 1% 1/4W
R429	1-214-753-00	METAL 10K 1% 1/4W
R430	1-214-741-00	METAL 3.3K 1% 1/4W
R436	1-214-966-00	METAL 1.2M 1% 1/4W
R440	1-214-758-00	METAL 16K 1% 1/4W

ELECTRICAL PARTS

Ref.No.	Part No.	Description
R441	1-214-729-00	METAL 1K 1% 1/4W
R442	1-214-766-00	METAL 36K 1% 1/4W
R444	1-214-746-00	METAL 5.1K 1% 1/4W
R448	1-214-713-00	METAL 220 1% 1/4W
R450	1-214-741-00	METAL 3.3K 1% 1/4W
R537	1-212-849-00	FUSIBLE 4.7 5% 1/4W F
R560	1-206-471-00	METAL 22 5% 2W F
R704	1-217-393-00	FUSIBLE 33 5% 1/4W F
RV101	1-226-991-00	RES, VAR, SLIDE 20K/20K
RV102	1-228-505-00	RES, ADJ, METAL GLAZE 10K
RV103	1-226-236-00	RES, ADJ, CARBON 10K
RV201	1-226-991-00	RES, VAR, SLIDE 20K/20K
RV202	1-228-505-00	RES, ADJ, METAL GLAZE 10K
RV203	1-226-236-00	RES, ADJ, CARBON 10K
RV301	1-228-221-00	RES, ADJ, METAL GLAZE 20K
RV401	1-228-221-00	RES, ADJ, METAL GLAZE 20K
RY001	1-515-323-00	RELAY
S005	1-553-992-00	SWITCH, PUSH (3 KEY)
S006	1-553-992-00	SWITCH, PUSH (3 KEY)
S1	1-553-993-00	SWITCH, PUSH (4 KEY)
S2	1-553-993-00	SWITCH, PUSH (4 KEY)
S3	1-553-993-00	SWITCH, PUSH (4 KEY)
S4	1-553-993-00	SWITCH, PUSH (4 KEY)
S507	1-553-206-00	SWITCH, SLIDE
S701	1-553-319-00	(US,Canadian)...SWITCH, PUSH (AC POWER)
S701	1-553-318-00	(AEP,UK,E).....SWITCH, PUSH (AC POWER)
S801	1-552-532-00	SWITCH, PUSH
S802	1-552-532-00	SWITCH, PUSH
T701	1-446-350-00	(US,Canadian)...TRANSFORMER, POWER
T701	1-446-518-22	(E).....TRANSFORMER, POWER
T701	1-447-279-00	(AEP,UK).....TRANSFORMER, POWER
VS701	1-526-576-31	(E)...SELECTOR, POWER VOLTAGE

NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- 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 (1-222-222-XX or 1-222-222-X) may be different from those used in the set.

CAPACITORS:

- All capacitors are in pF. Common capacitors are omitted. Refer to the following lists for their part numbers.

MF: pF, PF: pF.

RESISTORS

- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.

- F : nonflammable

COILS

- MMH : mH, UH : uH

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.

SEMICONDUCTORS

In each case, U : u, for example:

UA....: uA...., UPA....: uPA...., UPC....: uPC, UPD....: uPD....

ELECTROLYTIC CAPACITORS

RATING						
→ : Use the high voltage rated one.						
CAP. (μF)	6.3 VOLT.	10 VOLT.	16 VOLT.	25 VOLT.	35 VOLT.	50 VOLT.
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.
0.47						1-121-726-00
1.0						1-121-391-00
2.2						1-121-450-00
3.3	→			1-121-392-00	→	1-121-393-00
4.7	→	→	→	1-121-395-00	→	1-121-396-00
10	→	→	1-121-651-00	1-121-398-00	→	1-121-738-00
22	→	→	1-121-479-00	1-121-480-00	1-121-662-00	1-121-152-00
33	→	→	1-121-403-00	1-121-404-00	1-121-652-00	1-121-405-00
47	→	1-121-352-00	1-121-409-00	1-121-410-00	1-121-653-00	1-121-411-00
100	→	1-121-414-00	1-121-415-00	1-121-416-00	1-121-357-00	1-121-417-00
220	1-121-419-00	1-121-420-00	1-121-421-00	1-121-422-00	1-121-261-00	1-121-423-00
330	1-121-751-00	1-121-805-00	1-121-521-00	1-121-654-00	1-121-655-00	1-121-656-00
470	1-121-424-00	1-121-425-00	1-121-426-00	1-121-733-00	1-121-361-00	1-121-810-00
1000	—	1-121-736-00	1-121-245-00	1-121-657-00	1-121-388-00	1-123-061-00
2200	1-121-658-00	1-121-659-00	1-121-660-00	1-123-067-00	1-121-984-00	—
3300	1-121-661-00	1-123-075-00	1-123-071-00	—	—	—

CAP. (μF)	100 VOLT.	160 VOLT.	250 VOLT.	350 VOLT.
	PART No.	PART No.	PART No.	PART No.
0.47	—	—	—	—
1.0	1-123-249-00	1-123-252-00	1-123-003-00	1-121-168-00
2.2	1-123-250-00	1-123-026-00	—	1-123-028-00
3.3	1-121-995-00	—	1-123-004-00	1-123-006-00
4.7	1-123-255-00	1-121-246-00	1-121-759-00	1-123-007-00
10	1-121-126-00	1-121-999-00	1-123-254-00	1-123-008-00
22	1-121-996-00	1-123-253-00	1-123-005-00	1-123-022-00
33	1-121-997-00	1-121-757-00	—	—
47	1-123-251-00	1-121-919-00	—	—
100	1-123-084-00	—	—	—

CERAMIC CAPACITORS

RATING							
CAP. (pF)	50 VOLT.	CAP. (pF)	50 VOLT.	CAP. (pF)	50 VOLT.	CAP. (μF)	50 VOLT.
	PART No.		PART No.		PART No.		PART No.
0.5	1-101-837-00	22	1-102-959-00	150	1-101-361-00	0.001	1-102-074-00
0.75	1-101-586-00	24	1-102-960-00	160	1-101-367-00	0.0012	1-102-118-00
1.0	1-102-934-00	27	1-102-961-00	180	1-102-976-00	0.0015	1-102-119-00
1.5	1-101-576-00	30	1-102-962-00	200	1-102-977-00	0.0018	1-102-120-00
2.0	1-102-935-00	33	1-102-963-00	220	1-102-978-00	0.0022	1-102-121-00
3	1-102-936-00	36	1-102-964-00	240	1-102-979-00	0.0027	1-102-122-00
4	1-102-937-00	39	1-102-965-00	270	1-102-980-00	0.0033	1-102-123-00
5	1-102-942-00	43	1-102-966-00	300	1-102-981-00	0.0039	1-102-124-00
6	1-102-943-00	47	1-101-880-00	330	1-102-820-00	0.0047	1-102-125-00
7	1-102-944-00	51	1-101-882-00	360	1-102-821-00	0.0056	1-102-126-00
8	1-102-945-00	56	1-101-884-00	390	1-102-822-00	0.0068	1-102-127-00
9	1-102-946-00	62	1-101-886-00	430	1-102-823-00	0.0082	1-102-128-00
10	1-102-947-00	68	1-101-888-00	470	1-102-824-00	0.01	1-102-129-00
11	1-102-948-00	75	1-101-890-00	510	1-101-059-00	0.022	1-101-005-00
12	1-102-949-00	82	1-102-971-00	560	1-102-115-00	0.047	1-101-006-00
13	1-102-950-00	91	1-102-972-00	680	1-102-116-00		
15	1-102-951-00	100	1-102-973-00	820	1-102-117-00		
16	1-102-952-00	110	1-102-815-00				
18	1-102-953-00	120	1-102-816-00				
20	1-102-958-00	130	1-101-081-00				

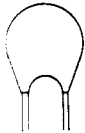
0.001μF = 1,000pF

CERAMIC (SEMICONDUCTOR) CAPACITORS

RATING					
→ : Use the high voltage rated one.					
CAP. (μF)	25 VOLT.	50 VOLT.	CAP. (μF)	25 VOLT.	50 VOLT.
	PART No.	PART No.		PART No.	PART No.
0.001	→	1-161-039-00	0.018	1-161-016-00	1-161-054-00
0.0012	→	1-161-040-00	0.022	1-161-017-00	1-161-055-00
0.0015		1-161-041-00	0.027	1-161-018-00	1-161-056-00
0.0018		1-161-042-00	0.033	1-161-019-00	1-161-057-00
0.0022		1-161-043-00	0.039	1-161-010-00	1-161-058-00
0.0027	→	1-161-044-00	0.047	1-161-021-00	1-161-059-00
0.0033	→	1-161-045-00	0.056	→	1-161-060-00
0.0039	→	1-161-046-00	0.068	→	1-161-061-00
0.0047	→	1-161-047-00	0.082	1-161-024-00	1-161-062-00
0.0056	→	1-161-048-00	0.1	1-161-025-00	1-161-063-00
0.0068	→	1-161-049-00			
0.0082	1-161-012-00	1-161-050-00			
0.01	1-161-013-00	1-161-051-00			
0.012	→	1-161-052-00			
0.015	1-161-015-00	1-161-053-00			

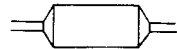
MYLAR CAPACITORS

RATING											
CAP. (μF)	50 VOLT.			CAP. (μF)	100 VOLT.			CAP. (μF)	200 VOLT.		
	PART No.	PART No.	PART No.		PART No.	PART No.	PART No.		PART No.	PART No.	PART No.
0.001	1-108-227-00	1-108-365-00	1-108-409-00	0.01	1-108-239-00	1-108-377-00	1-108-421-00	0.1	1-108-251-00	1-108-389-00	1-108-433-00
0.0012	1-108-351-00	1-108-366-00	1-108-410-00	0.012	1-108-357-00	1-108-378-00	1-108-422-00	0.12	1-108-363-00	1-108-390-00	1-108-434-00
0.0015	1-108-228-00	1-108-367-00	1-108-411-00	0.015	1-108-240-00	1-108-379-00	1-108-423-00	0.15	1-108-252-00	1-108-391-00	1-108-435-00
0.0018	1-108-352-00	1-108-368-00	1-108-412-00	0.018	1-108-358-00	1-108-380-00	1-108-424-00	0.18	1-108-364-00	1-108-392-00	1-108-436-00
0.0022	1-108-230-00	1-108-369-00	1-108-413-00	0.022	1-108-242-00	1-108-381-00	1-108-425-00	0.22	1-108-254-00	1-108-393-00	1-108-437-00
0.0027	1-108-353-00	1-108-370-00	1-108-414-00	0.027	1-108-359-00	1-108-382-00	1-108-426-00	0.27	1-108-854-00	—	—
0.0033	1-108-232-00	1-108-371-00	1-108-415-00	0.033	1-108-244-00	1-108-383-00	1-108-427-00	0.33	1-108-855-00	—	—
0.0039	1-108-354-00	1-108-372-00	1-108-416-00	0.039	1-108-360-00	1-108-384-00	1-108-428-00	0.39	1-108-856-00	—	—
0.0047	1-108-234-00	1-108-373-00	1-108-417-00	0.047	1-108-246-00	1-108-385-00	1-108-429-00	0.47	1-108-857-00	—	—
0.0056	1-108-355-00	1-108-374-00	1-108-418-00	0.056	1-108-361-00	1-108-386-00	1-108-430-00	—	—	—	—
0.0068	1-108-237-00	1-108-375-00	1-108-419-00	0.068	1-108-249-00	1-108-387-00	1-108-431-00	—	—	—	—
0.0082	1-108-356-00	1-108-376-00	1-108-420-00	0.082	1-108-362-00	1-108-388-00	1-108-432-00	—	—	—	—



TANTALUM CAPACITORS

RATING							
→ Use the high voltage rated one.							
CAP. (μF)	3.15 VOLT.		6.3 VOLT.		10 VOLT.		35 VOLT.
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.	
0.01	—	—	—	—	—	→	1-131-396-00
0.015	—	—	—	—	—	→	1-131-397-00
0.022	—	—	—	—	—	→	1-131-398-00
0.033	—	—	—	—	—	→	1-131-399-00
0.047	—	—	—	—	—	→	1-131-400-00
0.068	—	—	—	—	—	→	1-131-401-00
0.1	—	—	—	—	—	→	1-131-402-00
0.15	—	—	—	—	—	→	1-131-403-00
0.22	—	—	—	—	—	→	1-131-404-00
0.33	—	—	—	—	—	→	1-131-405-00
0.47	—	—	—	—	1-131-412-00	→	1-131-406-00
0.68	—	—	—	1-131-415-00	→	1-131-410-00	1-131-407-00
1.0	—	—	1-131-418-00	—	1-131-413-00	→	1-131-408-00
1.5	—	1-131-421-00	—	1-131-416-00	→	1-131-411-00	1-131-348-00
2.2	1-131-424-00	—	1-131-419-00	—	1-131-414-00	1-131-355-00	1-131-349-00
3.3	—	1-131-422-00	—	1-131-417-00	1-131-362-00	1-131-356-00	1-131-350-00
4.7	1-131-425-00	—	1-131-420-00	1-131-369-00	1-131-363-00	1-131-357-00	1-131-351-00
6.8	—	1-131-423-00	1-131-376-00	1-131-370-00	1-131-364-00	1-131-358-00	1-131-352-00
10	1-131-426-00	1-131-383-00	1-131-377-00	1-131-371-00	1-131-365-00	1-131-359-00	1-131-353-00
15	1-131-390-00	1-131-384-00	1-131-378-00	1-131-372-00	1-131-366-00	1-131-360-00	—
22	1-131-391-00	1-131-385-00	1-131-379-00	1-131-373-00	1-131-367-00	—	—
33	1-131-392-00	1-131-386-00	1-131-380-00	1-131-374-00	—	—	—
47	1-131-393-00	1-131-387-00	1-131-381-00	—	—	—	—
68	1-131-394-00	1-131-388-00	—	—	—	—	—
100	1-131-395-00	—	—	—	—	—	—



TANTALUM CAPACITORS

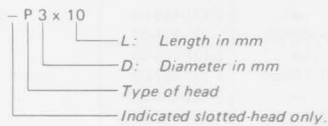
RATING						
CAP. (μF)	3 VOLT.		6.3 VOLT.		20 VOLT.	
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.
0.033	—	—	—	—	—	1-131-273-00
0.047	—	—	—	—	—	1-131-274-00
0.068	—	—	—	—	—	1-131-275-00
0.1	—	—	—	—	—	1-131-276-00
0.15	—	—	—	—	—	1-131-277-00
0.22	—	—	—	—	1-131-262-00	1-131-278-00
0.33	—	—	—	—	1-131-263-00	1-131-279-00
0.47	—	—	1-131-169-00	—	1-131-264-00	1-131-280-00
0.68	—	—	—	1-131-258-00	1-131-265-00	1-131-281-00
1.0	—	—	1-131-254-00	—	1-131-266-00	1-131-282-00
1.5	—	1-131-250-00	—	—	1-131-267-00	1-131-283-00
2.2	—	—	—	1-131-259-00	1-131-268-00	1-131-284-00
3.3	—	—	1-131-255-00	—	1-131-269-00	—
4.7	—	1-131-251-00	1-131-171-00	—	1-131-270-00	—
6.8	—	—	—	1-131-260-00	1-131-271-00	—
10	—	—	1-131-256-00	—	1-131-272-00	—
15	—	1-131-252-00	—	1-131-261-00	—	—
22	—	—	1-131-257-00	—	—	—
33	1-131-176-00	1-131-253-00	1-131-173-00	—	—	—
47	1-131-288-00	1-131-174-00	—	—	—	—
100	1-131-177-00	—	—	—	—	—

1/4 WATT CARBON RESISTORS

Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.
1.0	1-246-401-00	10	1-246-425-00	100	1-246-449-00	1.0k	1-246-473-00	10k	1-246-497-00	100k	1-246-521-00	1.0M	1-246-545-00
1.1	1-246-402-00	11	1-246-426-00	110	1-246-450-00	1.1k	1-246-474-00	11k	1-246-498-00	110k	1-246-522-00	1.1M	1-210-814-00
1.2	1-246-403-00	12	1-246-427-00	120	1-246-451-00	1.2k	1-246-475-00	12k	1-246-499-00	120k	1-246-523-00	1.2M	1-210-815-00
1.3	1-246-404-00	13	1-246-428-00	130	1-246-452-00	1.3k	1-246-476-00	13k	1-246-500-00	130k	1-246-524-00	1.3M	1-210-816-00
1.5	1-246-405-00	15	1-246-429-00	150	1-246-453-00	1.5k	1-246-477-00	15k	1-246-501-00	150k	1-246-525-00	1.5M	1-210-817-00
1.6	1-246-406-00	16	1-246-430-00	160	1-246-454-00	1.6k	1-246-478-00	16k	1-246-502-00	160k	1-246-526-00	1.6M	1-210-818-00
1.8	1-246-407-00	18	1-246-431-00	180	1-246-455-00	1.8k	1-246-479-00	18k	1-246-503-00	180k	1-246-527-00	1.8M	1-210-819-00
2.0	1-246-408-00	20	1-246-432-00	200	1-246-456-00	2.0k	1-246-480-00	20k	1-246-504-00	200k	1-246-528-00	2.0M	1-210-820-00
2.2	1-246-409-00	22	1-246-433-00	220	1-246-457-00	2.2k	1-246-481-00	22k	1-246-505-00	220k	1-246-529-00	2.2M	1-210-821-00
2.4	1-246-410-00	24	1-246-434-00	240	1-246-458-00	2.4k	1-246-482-00	24k	1-246-506-00	240k	1-246-530-00	2.4M	1-244-754-00
2.7	1-246-411-00	27	1-246-435-00	270	1-246-459-00	2.7k	1-246-483-00	27k	1-246-507-00	270k	1-246-531-00	2.7M	1-244-755-00
3.0	1-246-412-00	30	1-246-436-00	300	1-246-460-00	3.0k	1-246-484-00	30k	1-246-508-00	300k	1-246-532-00	3.0M	1-244-756-00
3.3	1-246-413-00	33	1-246-437-00	330	1-246-461-00	3.3k	1-246-485-00	33k	1-246-509-00	330k	1-246-533-00	3.3M	1-244-757-00
3.6	1-246-414-00	36	1-246-438-00	360	1-246-462-00	3.6k	1-246-486-00	36k	1-246-510-00	360k	1-246-534-00	3.6M	1-244-758-00
3.9	1-246-415-00	39	1-246-439-00	390	1-246-463-00	3.9k	1-246-487-00	39k	1-246-511-00	390k	1-246-535-00	3.9M	1-244-759-00
4.3	1-246-416-00	43	1-246-440-00	430	1-246-464-00	4.3k	1-246-488-00	43k	1-246-512-00	430k	1-246-536-00	4.3M	1-244-760-00
4.7	1-246-417-00	47	1-246-441-00	470	1-246-465-00	4.7k	1-246-489-00	47k	1-246-513-00	470k	1-246-537-00	4.7M	1-244-761-00
5.1	1-246-418-00	51	1-246-442-00	510	1-246-466-00	5.1k	1-246-490-00	51k	1-246-514-00	510k	1-246-538-00	5.1M	1-244-762-00
5.6	1-246-419-00	56	1-246-443-00	560	1-246-467-00	5.6k	1-246-491-00	56k	1-246-515-00	560k	1-246-539-00		
6.2	1-246-420-00	62	1-246-444-00	620	1-246-468-00	6.2k	1-246-492-00	62k	1-246-516-00	620k	1-246-540-00		
6.8	1-246-421-00	68	1-246-445-00	680	1-246-469-00	6.8k	1-246-493-00	68k	1-246-517-00	680k	1-246-541-00		
7.5	1-246-422-00	75	1-246-446-00	750	1-246-470-00	7.5k	1-246-494-00	75k	1-246-518-00	750k	1-246-542-00		
8.2	1-246-423-00	82	1-246-447-00	820	1-246-471-00	8.2k	1-246-495-00	82k	1-246-519-00	820k	1-246-543-00		
9.1	1-246-424-00	91	1-246-448-00	910	1-246-472-00	9.1k	1-246-496-00	91k	1-246-520-00	910k	1-246-544-00		

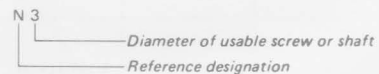
HARDWARE NOMENCLATURE

Screw:



Unless otherwise indicated, it means cross-recessed head (Phillips type).

Nut, Washer, Retaining ring:



Reference Designation	Shape	Description	Remarks
SCREWS			
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		brazier-head screw	

Reference Designation	Shape	Description	Remarks
SELF-TAPPING SCREWS			
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self-tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
SET SCREWS			
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
NUT			
N		nut	
WASHERS			
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
RETAINING RINGS			
E		retaining ring	
G		grip-type retaining ring	

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