SPECIFICATIONS

Recording System: Compact Cassette Stereo

Bias Frequency: 105 kHz

Head: Erase head x 1 (F & F head)
Record/playback head x 1 (LA head)

Motor: Reel motor x 1 (DC motor)
Capstan motor (DC servo motor)

Wow and Flutter: ± 0.06 % W. Peak
0.04 % W. RMS (NAB)
0.04 % W. RMS (DIN)

Fast-forward and Rewind Time: Approx. 90 sec. (with C-60 cassette)

Frequency Response: DOLBY NR OFF

- With TYPE Ⅳ cassette (Sony METALLIC)
  30–17,000 Hz ±3 dB
  30–13,000 Hz (±3 dB, 0 VU recording)
  20–19,000 Hz
- With TYPE Ⅲ cassette (Sony DUAD)
  30–17,000 Hz ±3 dB (NAB)
  30–17,000 Hz ±3 dB (DIN)
  20–19,000 Hz
- With TYPE Ⅱ cassette (Sony UCX)
  30–16,000 Hz ±3 dB (NAB)
  30–16,000 Hz ±3 dB (DIN)
  20–18,000 Hz
- With TYPE I cassette (Sony BHF)
  30–15,000 Hz ±3 dB (NAB)
  30–15,000 Hz ±3 dB (DIN)
  20–17,000 Hz

– Continued on page 2 –

SERVICE MANUAL

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 DUAD)	60 dB	67 dB	73 dB
TYPE II (Sony UCX)	58 dB	65 dB	71 dB
TYPE I (Sony BHF)	54 dB	61 dB	67 dB

Total Harmonic Distortion: 1.0 % (Sony DUAD and METALLIC)

Inputs: Microphone inputs (phone jacks)
Sensitivity 0.25 mV
For a low-impedance microphone
Line inputs (phono jacks)
Sensitivity 77.5 mV (50 kΩ)

Outputs: Line outputs (phono jacks)
Output level 0.44 V at load impedance 50 kΩ
Load impedance over 10 kΩ
Headphone output
Output level 0.43 mW at load impedance 32 Ω

Power Requirements: US, Canadian model: AC 120 V, 60 Hz
AEP model: AC 240, 60 Hz
UK model: AC 220, 60 Hz
E model: AC: 110, 120, 220, 240 – 50/60 Hz

Power Consumption: AC 26 W

Dimensions: Approx. 430(w) x 105(h) x 275(d) mm
16⅞ (w) x 4⅛ (h) x 10¾ (d) inches
including projecting parts and controls

Weight: Approx. 5.5 kg (12 lbs 3 oz)

0 dB = 0.775 V

Tape Transport Mechanism	TCM-110V13

FEATURES

Dolby NR C-type noise reduction system

In addition to the conventional B-type Dolby NR system, the TC-FX77 employs the newly-developed C-type Dolby NR system which reduces tape noise twice as effectively as the B-type system. The C-type system also incorporates an anti-saturation network to improve the high-frequency dynamic range by 4 dB at 10 kHz.

Newly-developed LA (Laser Amorphous) head

The record/playback head is made of a special amorphous magnetic alloy developed by Sony, and its cores are solidly welded by laser. This new highly-durable head provides a wider dynamic range and a more extended frequency response, especially in the high-frequency range. The head is designed to take full advantage of the potential of the metal tapes.

Digital linear counter

This counter indicates the recording or playback time elapsed on the tape so that the tape can be precisely indexed. While conventional displays can only indicate the elapsed recording time, this display can indicate with a minus sign how much recording time remains.

Tape programming functions

The AMS (Automatic Music Sensor), Memory, Repeat and Ending Control functions allow you to program the tape deck operation as you desire.

AMS: for locating the beginning of a selection on the tape.

Memory: for easily locating any point on the tape.

Repeat: for repeating any selection any number of times.

Ending control: for stopping the tape after playing a paticular number of selections.

Full-logic "feather-touch" operation

At the slightest touch, the "feather-touch" function buttons which control a microprocessor enable you to switch directly from one mode to another without going through the stop mode.

Bright 16 segment peak program meters and wide-scale REC LEVEL (recording level) controls

The peak program meters follow the transient peaks of the music and maintain the peak readings for about 4 seconds. This double indication and the wide-scale REC LEVEL controls make it easy to set critical recording levels precisely.

Timer-activated recording and playback

A timer switch is provided to turn the deck on and off any number of times at preset times determined by an optional timer.

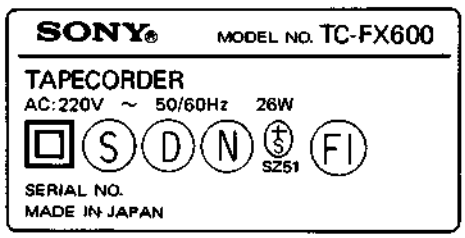
Remote control operation

Using the optional RM-50 or RM-80 remote control unit, various operations—recording, playback, record muting operation, etc.– can be remotely controlled.

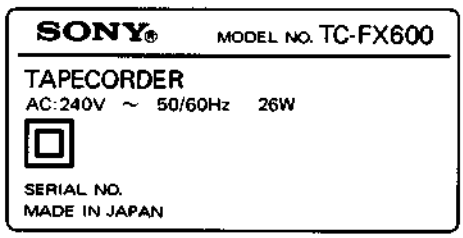
When the RM-65 synchro remote control unit is used to connect this cassette deck with a turntable equipped with a synchro remote control jack or a TC-PB5 stereo cassette player, the operation of the cassette deck and the turntable or TC-PB5 will be synchronized.

MODEL IDENTIFICATION

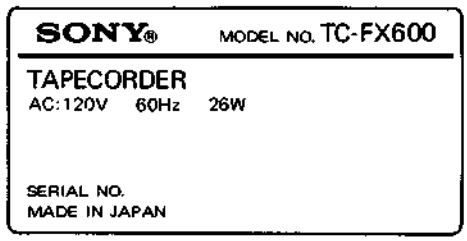
– Specification Label –



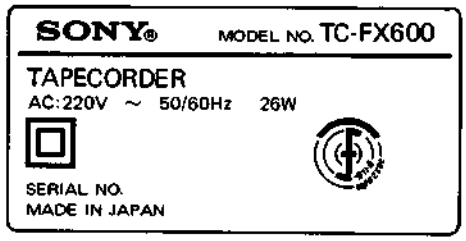
AEP model



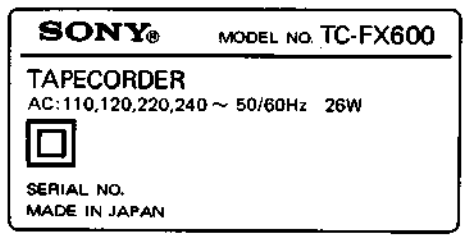
UK model



US, Canadian model



G-AEP model



E model

SAFETY CHECK-OUT (US Model)

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

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

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

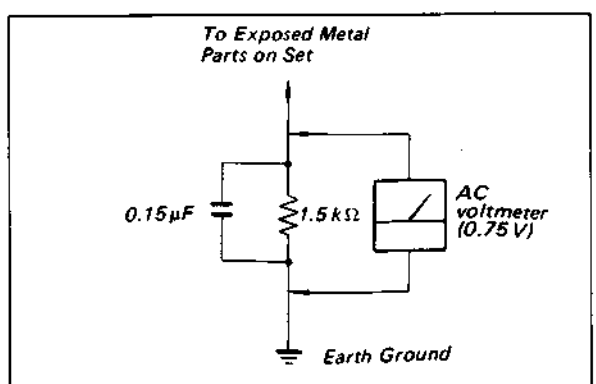
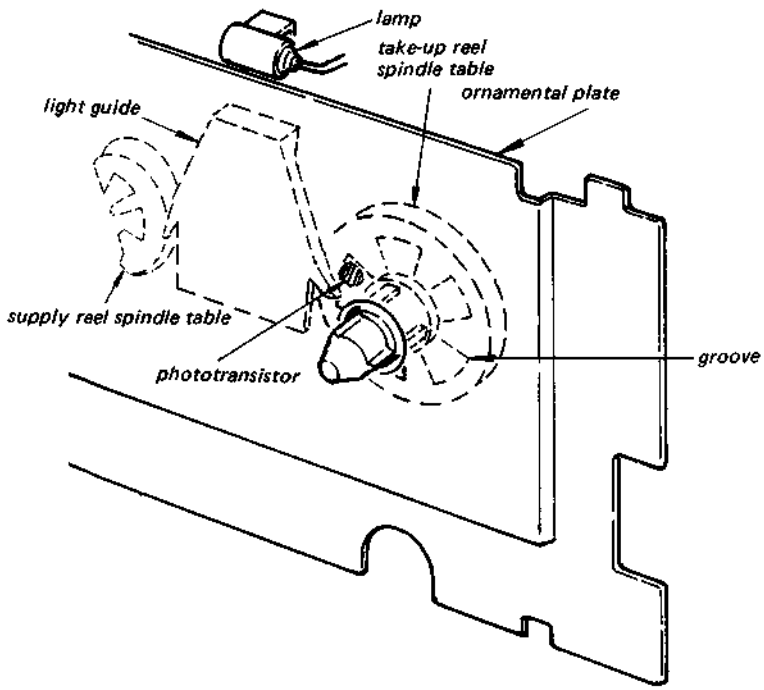


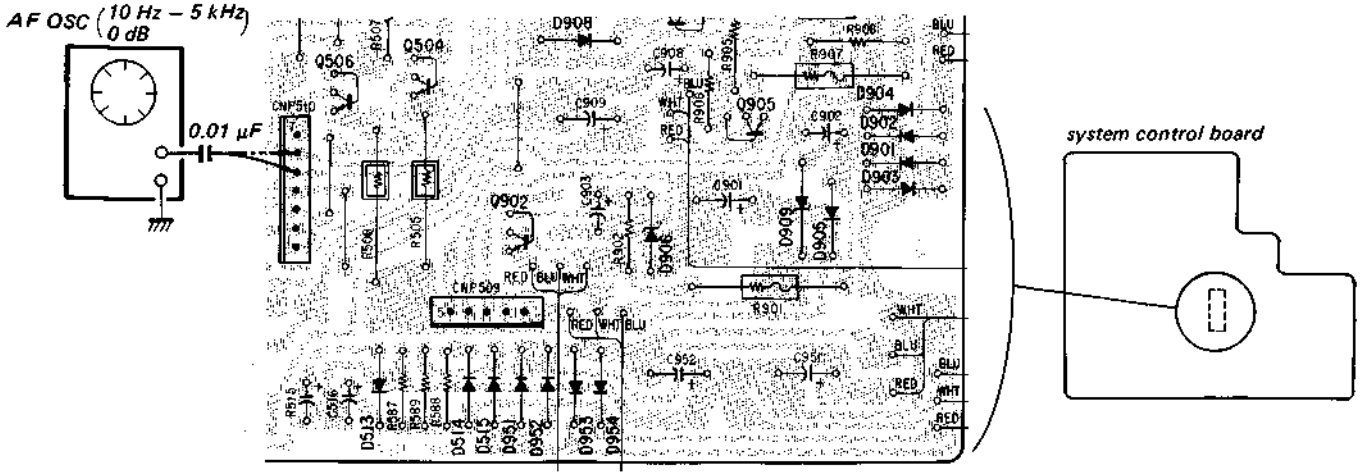
Fig. A. Using an AC voltmeter to check AC leakage.

CAUTION ON REPAIRING AND SHUT-OFF DETECTION

This set performs the shut-off detection optically. There are five grooves on each reel table, the lamp light being transmitted with light guide on the back of the ornamental plate is to the phototransistor intermittently by the rotation of reel table.

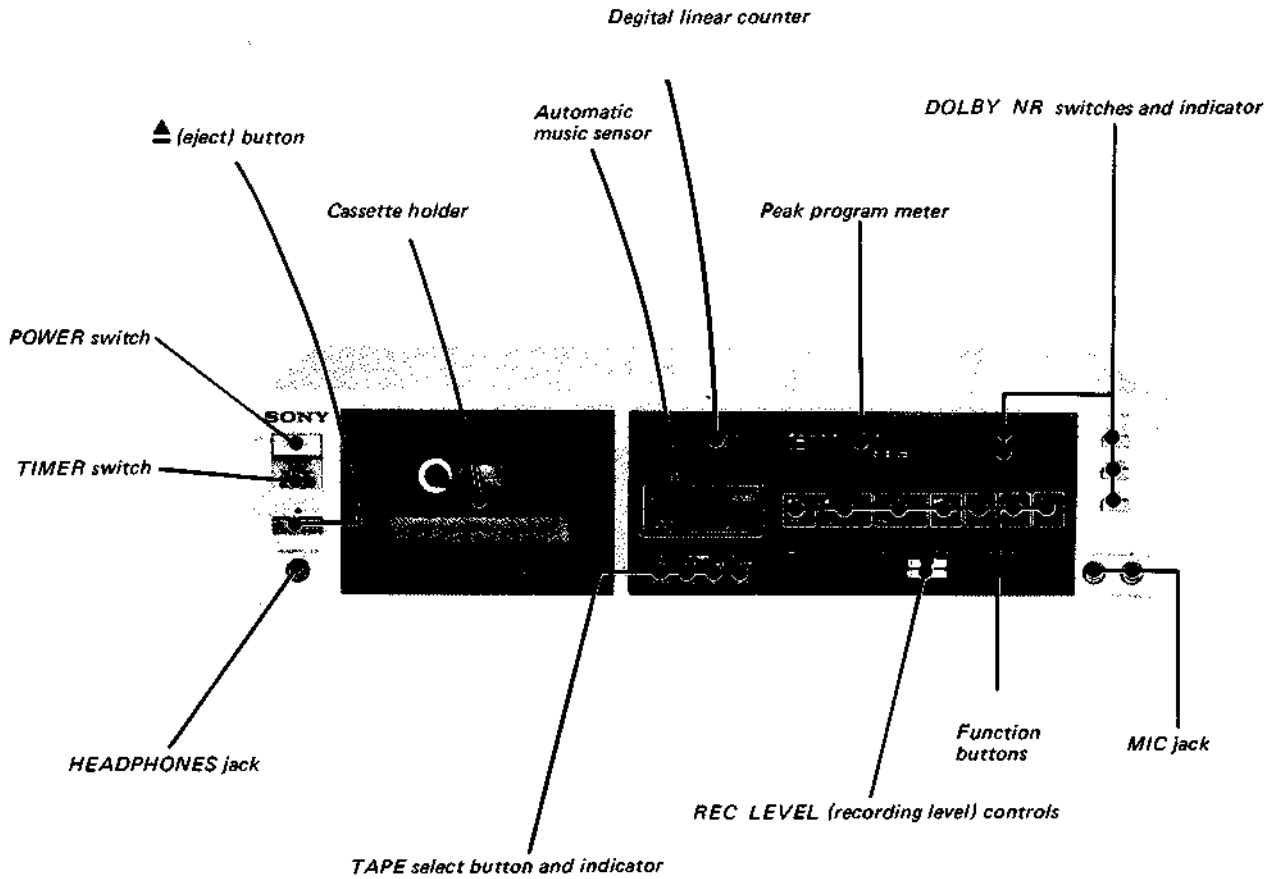
Phototransistors Q802, 803 produce pulse waves by intermittent lights, which is input to mechanism controller of IC501 and the AMS counter of IC502 after shaped at IC507. Therefore, when it is necessary to repair by removing the ornamental plate, set the oscillator temporarily to the each input terminal of IC507 (input pattern on MD board or terminal 5, 6 of CNP510 on the system control board) not to operate the auto shut-off.





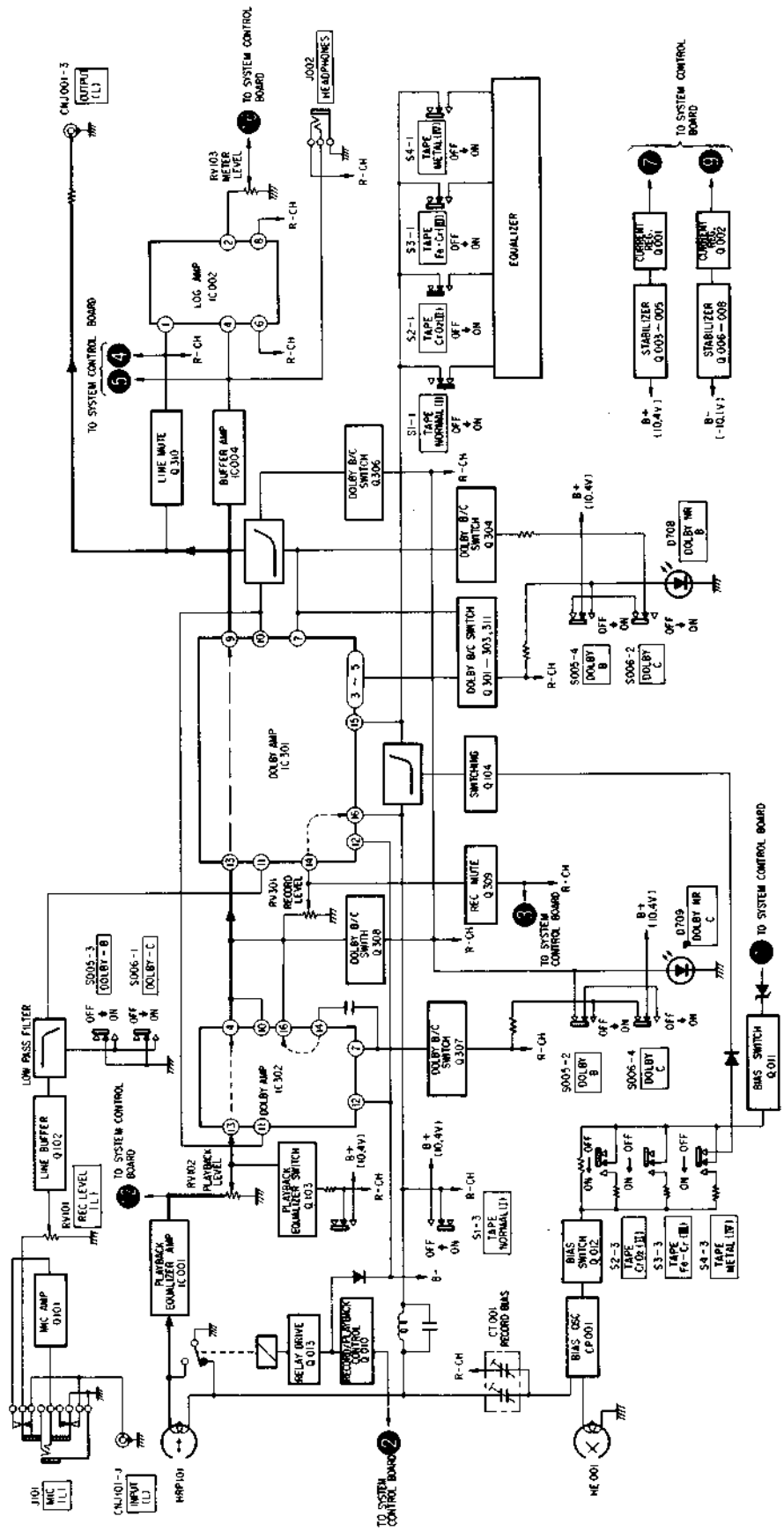
SECTION 1
OUTLINE

1-1. FUNCTION OUTLINE OF CONTROLS

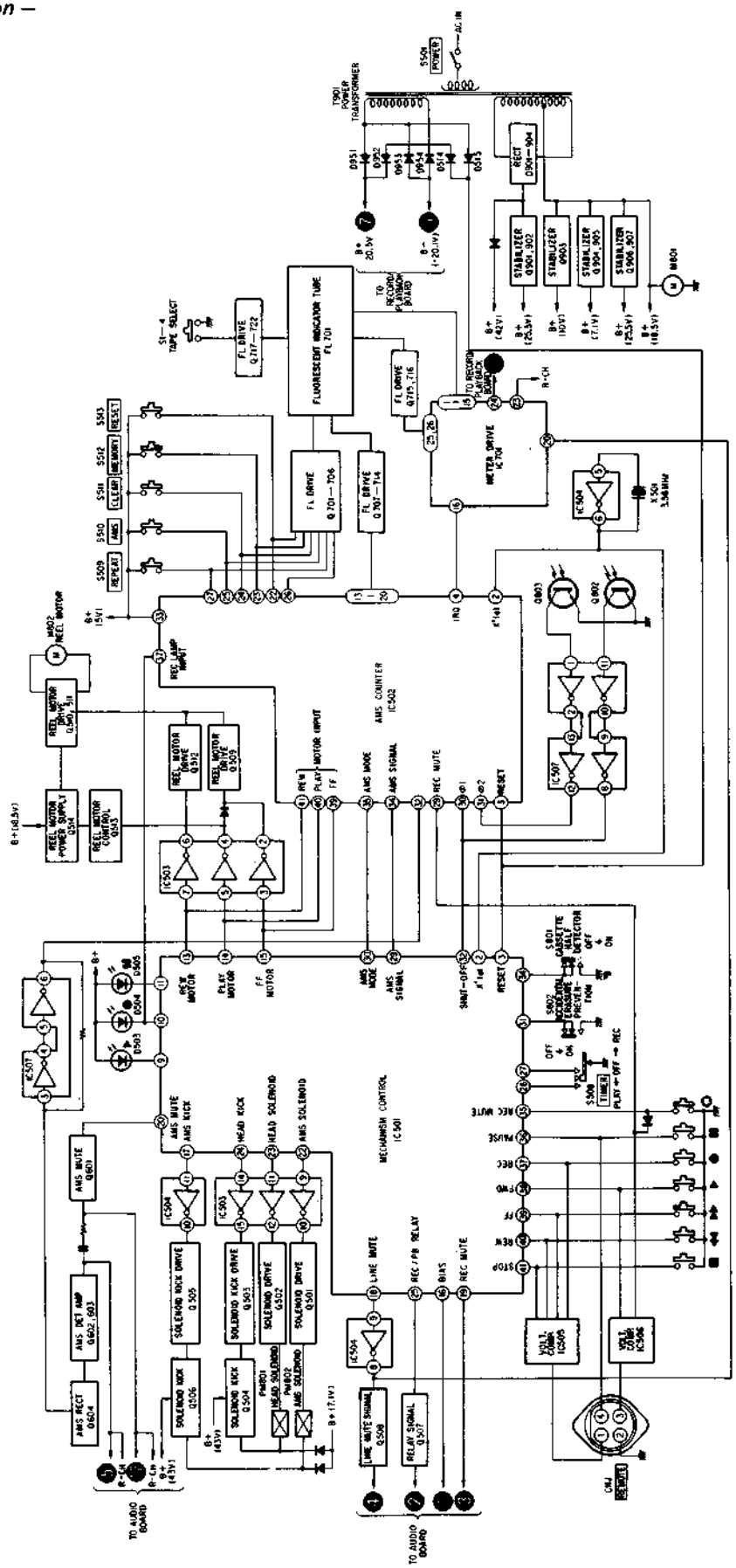


1-2. BLOCK DIAGRAM

– Audio Section –



– System Control Section –

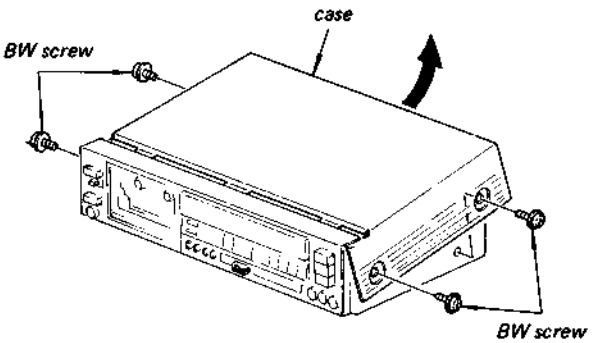


SECTION 2
DISASSEMBLY

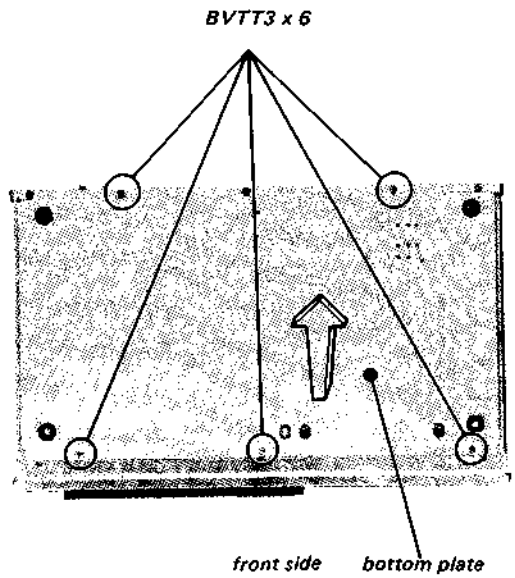
2-1. REMOVAL

Follow the disassembly procedure in the numerical order given.

CASE



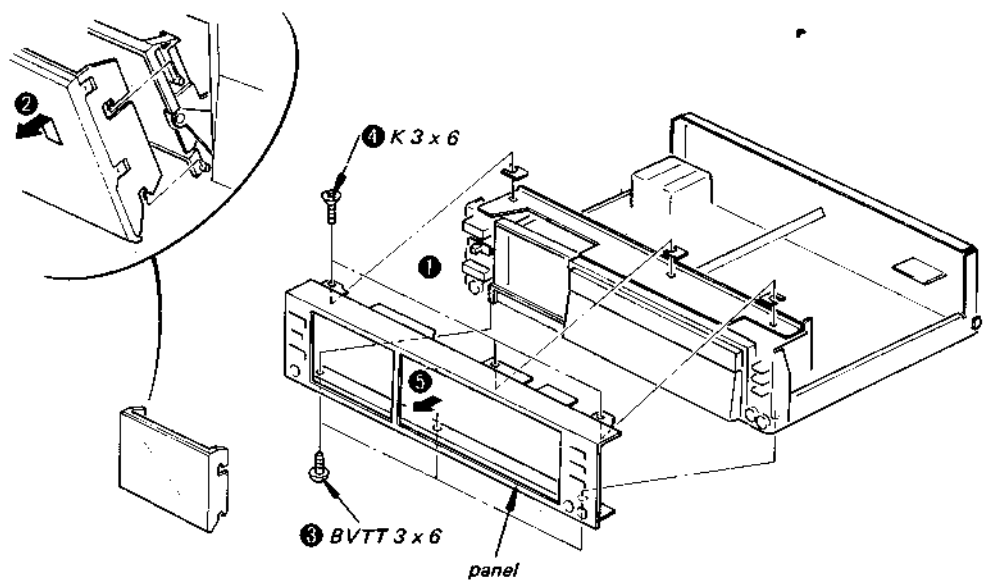
BOTTOM PLATE



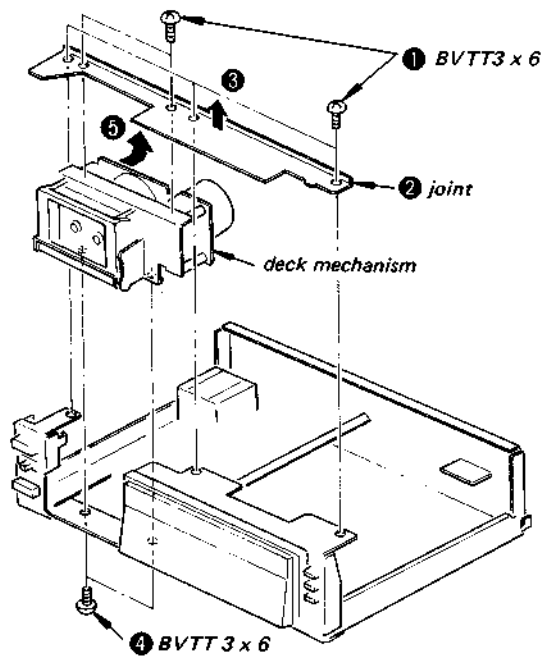
The conductor side of RECORD/PLAYBACK board and SYSTEM CONTROL board can be checked.

CASSETTE LID PANEL

❶ , ❷ : cassette lid
❸ – ❺ : panel



DECK MECHANISM



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 exersised about the screws in this plate-mounting system.

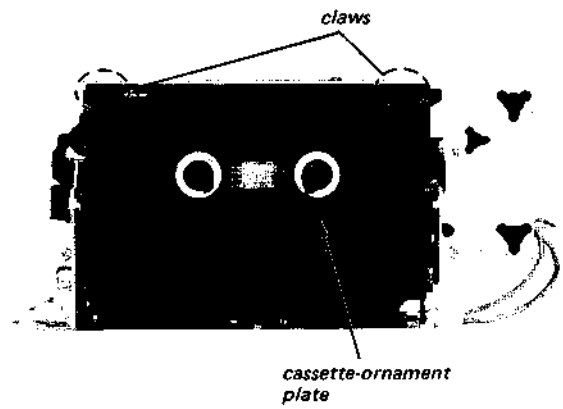
1 Press the ejection button and open the cassette lid.

2 Remove the cassette lid. Remove the tape cassette from the cassette holder if any.

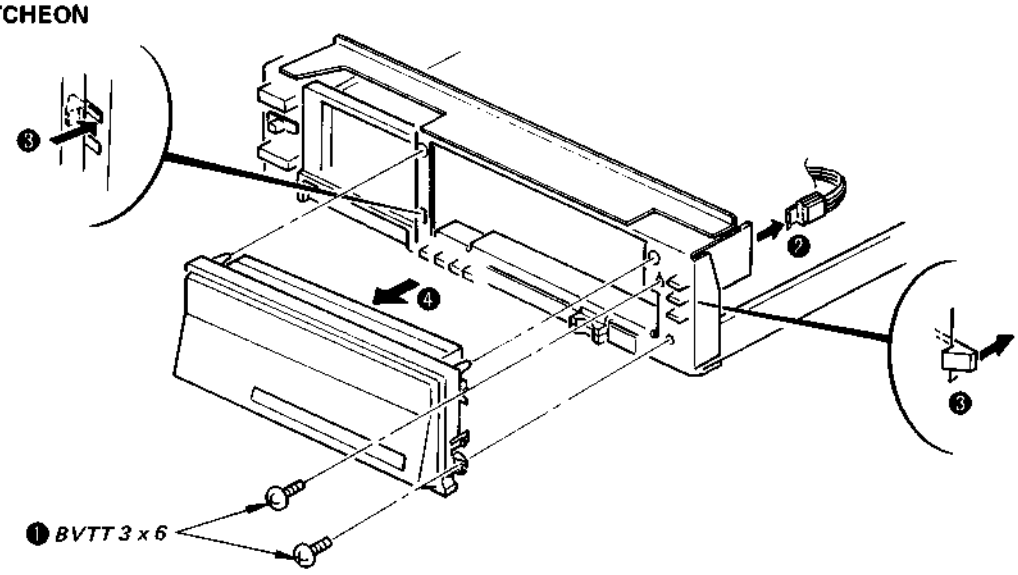
3 Release the two claws from the cassette-ornament plate at both top corners.

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.



ESCUTCHEON



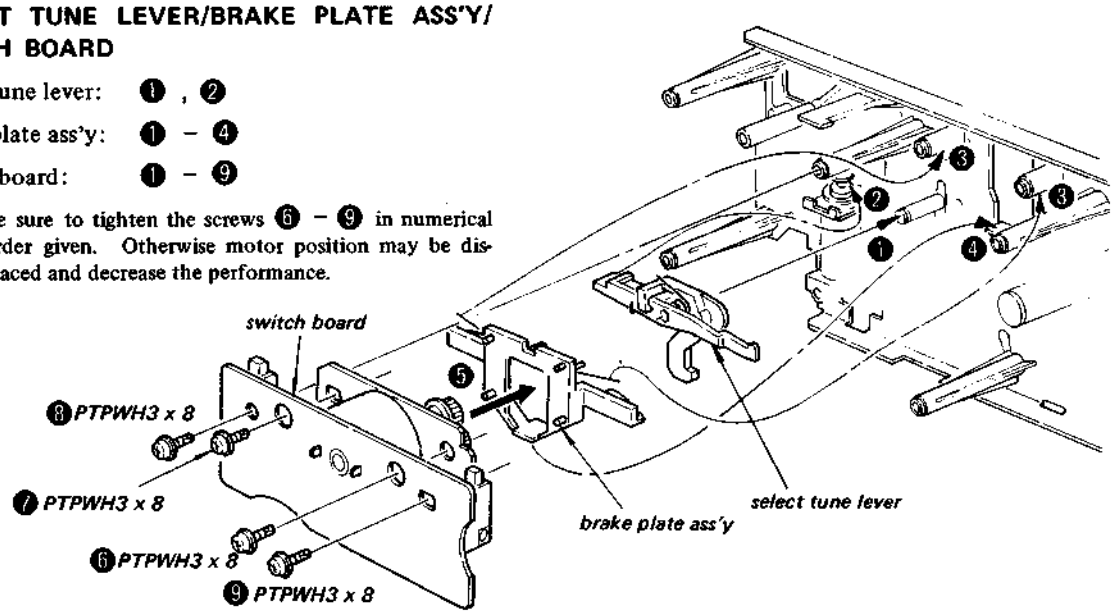
SELECT TUNE LEVER/BRAKE PLATE ASS'Y/ SWITCH BOARD

Select tune lever: ❶ , ❷

Brake plate ass'y: ❶ – ❹

Switch board: ❶ – ❾

Note: Be sure to tighten the screws ❻ – ❾ in numerical order given. Otherwise motor position may be displaced and decrease the performance.



NOTE ON CASSETTE HOLDER INSTALLATION

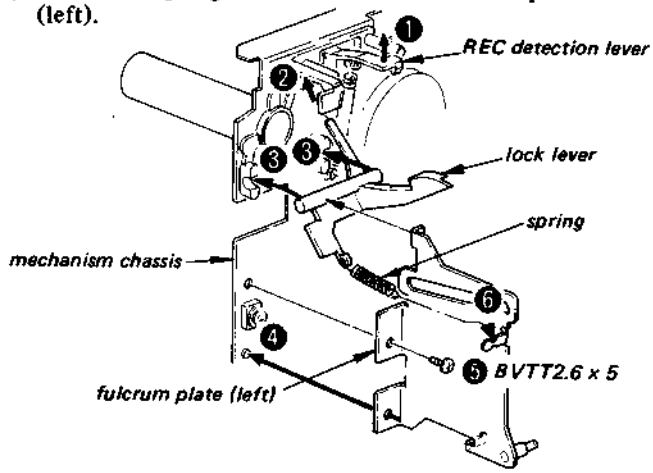
LOCK LEVER/FULCRUM PLATE (LEFT)

❶ Push up the REC detection lever and set the lock lever to positions ❷ , ❸ .

❹ Fit the hole in the fulcrum plate (left) over the projection of mechanism chassis.

❺ Tighten the screw (BVTT2.6 x 5).

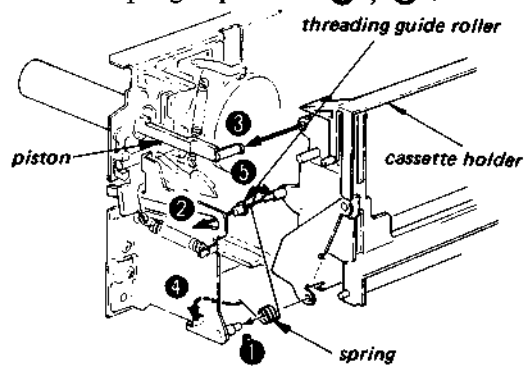
❻ Hook the spring onto the claw of fulcrum plate (left).



CASSETTE HOLDER

Install ❶ – ❸ .

Hook the spring to positions ❹ , ❺ .

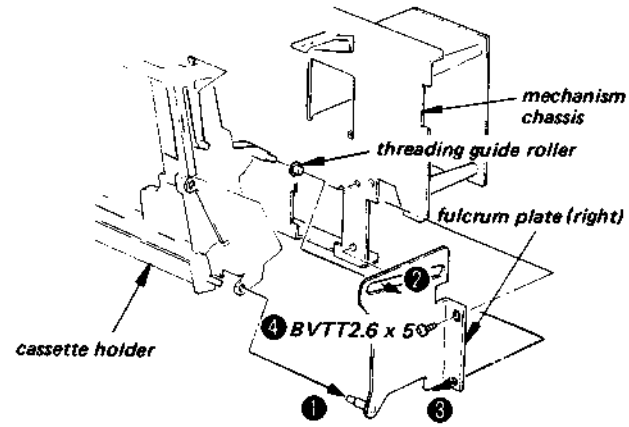


FULCRUM PLATE (RIGHT)

Install ❶ , ❷ .

❸ Fit the hole in the fulcrum plate (right) over the projection of mechanism chassis.

❹ Tighten the screw (BVTT2.6 x 5).



SECTION 3
ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

PRECAUTION

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

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

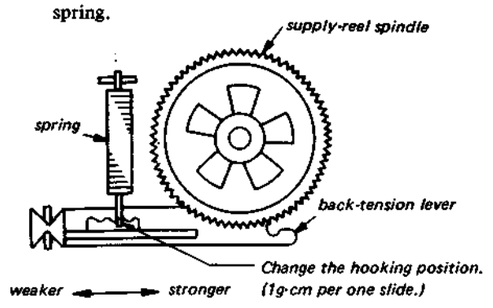
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement and Back Tension Torque Adjustment

1.

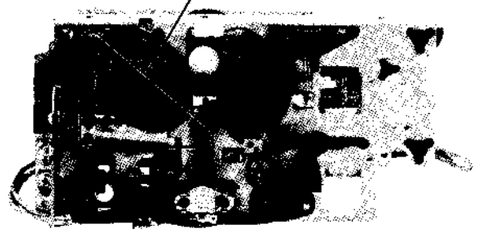
Torque	Torque meter	Meter reading
Forward	CQ-102C	30–60 g · cm (0.41–0.83 oz · inch)
Back tension	CQ-102C	2.5–4.5 g · cm (0.04–0.06 oz · inch)

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



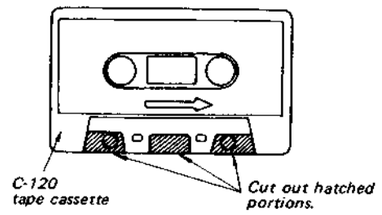
Confirmation:

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

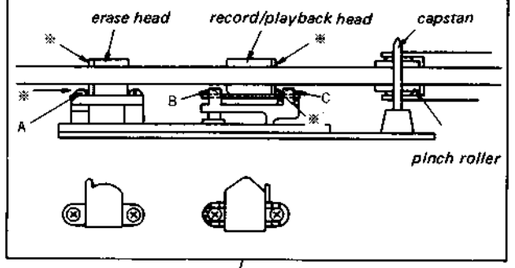


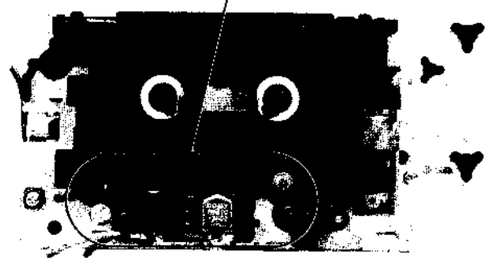
Head Height Adjustment

1. Prepare an adjustment cassette as shown below.



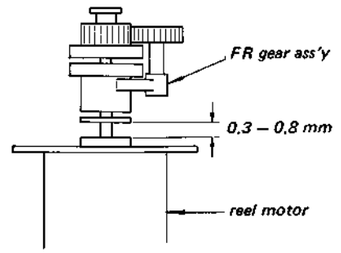
2. In playback mode and viewing from the front, adjust the head heights by using the adjustment screw A, B, C, to eliminate tape curl and tape twist at portions shown by arrow (※).
3. a) Remove the tape curl at the erase head guides by turning the screw A.
   b) Remove the tape curl at the record/playback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





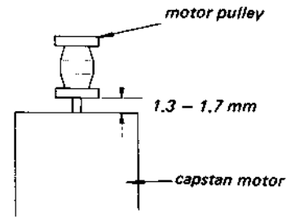
FR Gear Height Adjustment

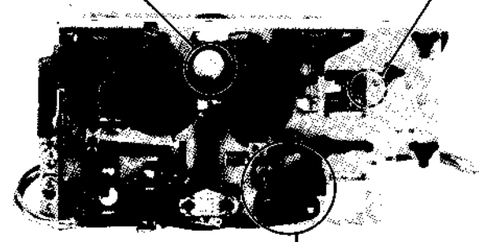
– Stop Mode –



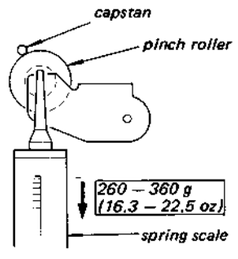
Motor Pulley Height Adjustment

– Stop Mode –





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)

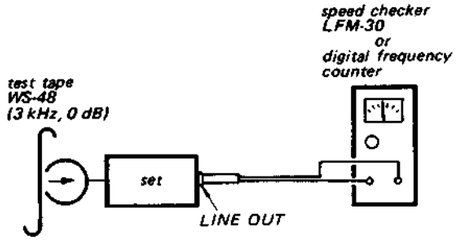
Standard Output Level

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

Capstan Motor Speed Adjustment

Procedure:

Mode: playback

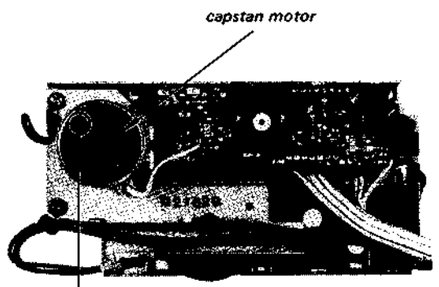


Specification:

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

Frequency difference between the beginning and the end of the tape should be within 1 % (30 Hz).

Adjustment Location:

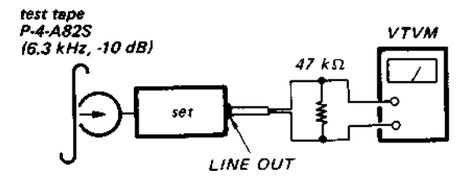


Adjust the speed by using screwdriver. When turning the screw clockwise, speed is faster.

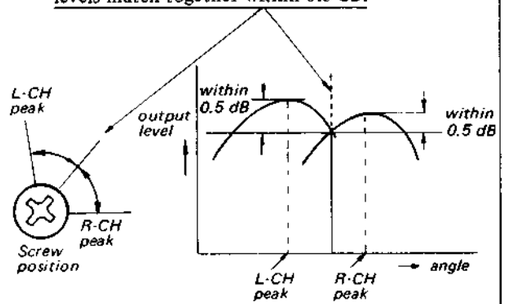
Record/Playback Head Azimuth Adjustment

Procedure:

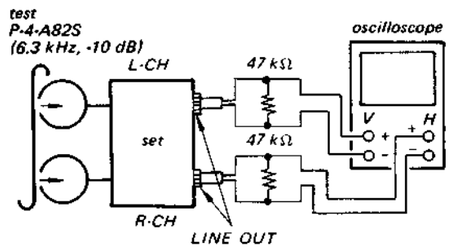
1. Mode: playback

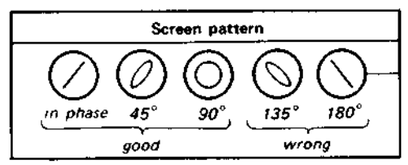


2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 0.5 dB.

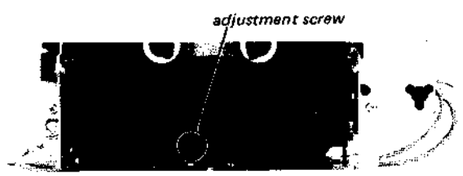


3. Phase Check
   Mode: playback





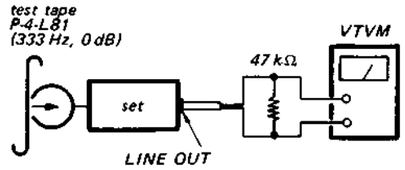
Adjustment Location:



Playback Level Adjustment

Procedure:

Mode :playback



Specification:

LINE OUT level: 0.44 to 0.49 V
(−4.9 to 3.9 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 –

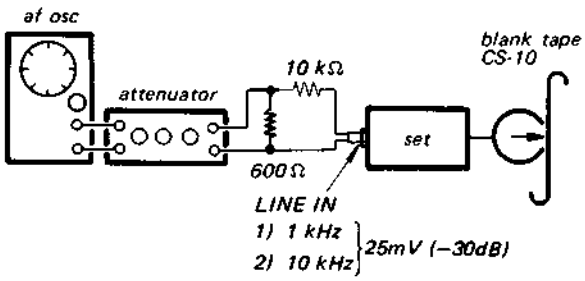
Record Bias Adjustment

Setting:

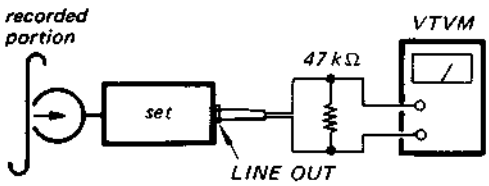
REC LEVEL control: standard record
(See page 13)

Procedure:

1. Mode: record



2. Mode: playback



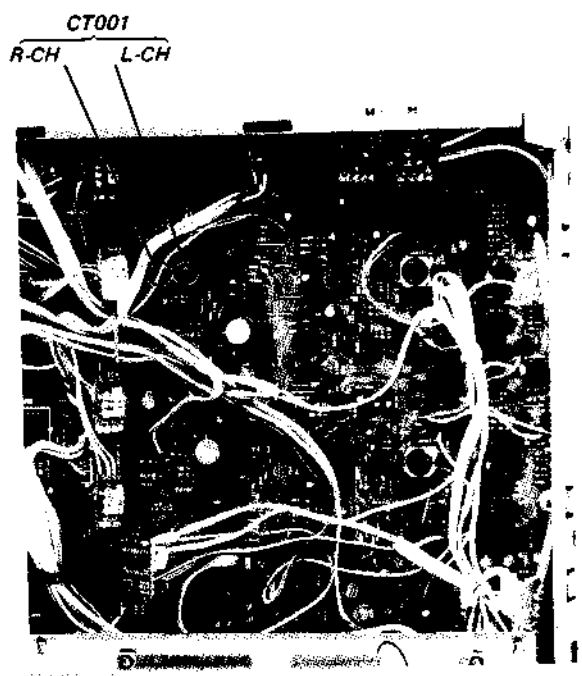
Adjust CT001 (L-CH), (R-CH) so that the LINE OUT level of 10 kHz signal is 0 dB relative to that of 1 kHz.

Specification:

0 dB ± 0.5 dB

Adjustment Location:

– record/playback board –



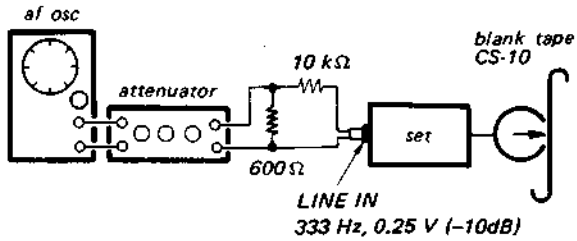
Record Level Adjustment

Setting:

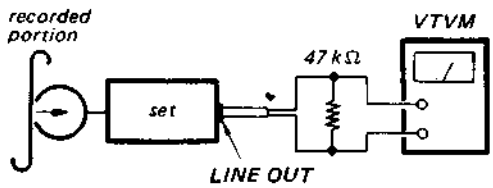
REC LEVEL control: standard record
(See page 13)

Procedure:

1. Mode: record



2. Mode: playback

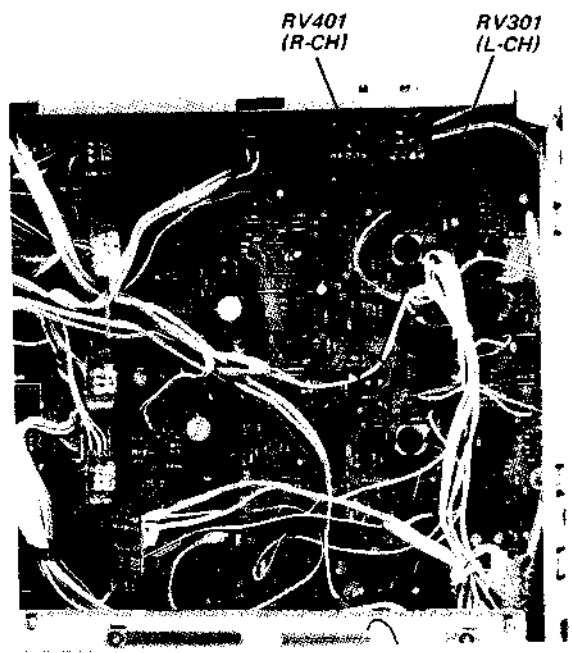


Specification:

LINE OUT level : 0.41 to 0.46 V
(−5.5 to −4.5 dB)

Adjustment Location:

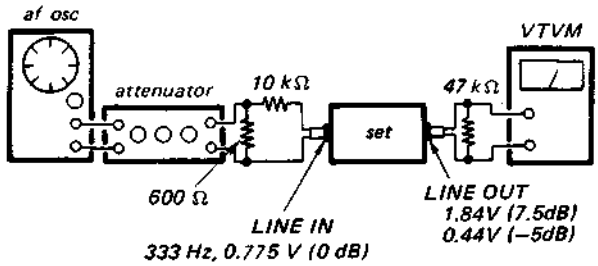
– record/playback board –



LEVEL METER ADJUSTMENT

Procedure:

1. Mode : record



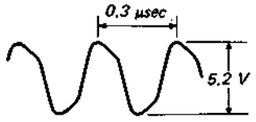
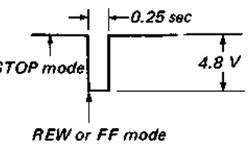
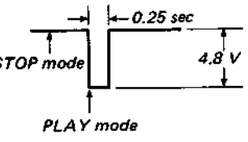
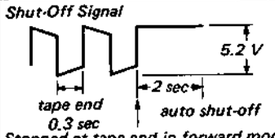
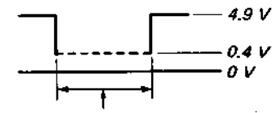
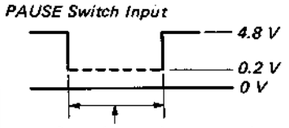
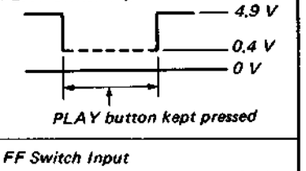
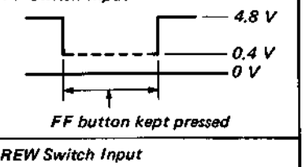
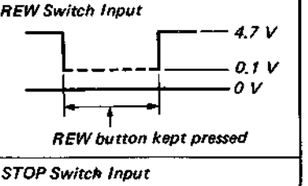
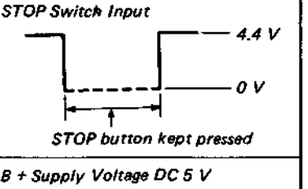
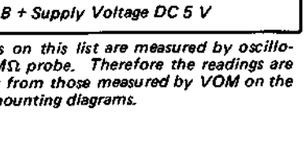
1. Set the REC LEVEL control so that the LINE OUT level is +6.5 dB.
2. Adjust RV103 (L-CH) and RV203 (R-CH) so that the LEDs including 8 dB (right-most element) light up.
3. Set the REC LEVEL control so that the LINE OUT level is −5 dB.
   Make sure that LED meter indicates −4 dB (0 VU).

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

Adjustment Location:

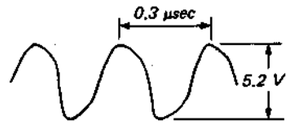
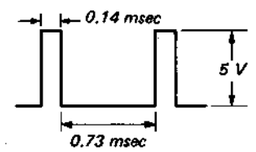
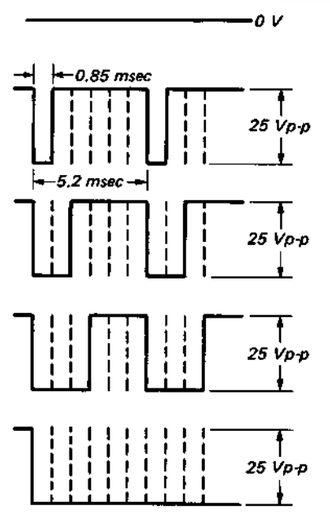
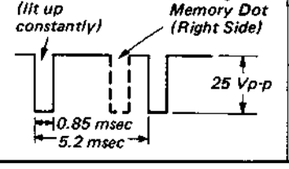
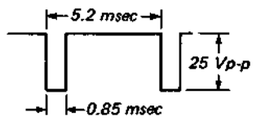
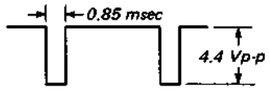
– record/playback board –

TERMINAL NAME, WAVEFORM AND OPERATING VOLTAGES OF IC501

PIN No.	WAVEFORM OR VOLTAGES
①	GND (Ground)
②	Xtal Signal 
③	Reset Signal 4.6 V
④	IRQ 5 V
⑤	Not used
⑥	S1 Signal 4.9 V
⑦	$\overline{SC/TO}$ 5 V
⑧	$\overline{TC}$ 5 V
⑨	PLAY Lamp Drive Signal PLAY mode: 0.3 V STOP mode: 3.4 V
⑩	REC Lamp Drive Signal REC mode: 0.2 V STOP mode: 4.8 V
⑪	PAUSE Lamp Drive Signal PAUSE mode: 0.3 V STOP mode: 3.5 V
⑫	Not used
⑬	REW-Motor Drive Signal REW mode: 0 V STOP mode: 4.8 V
⑭	PLAY-Motor Drive Signal PLAY mode: 0 V STOP mode: 4.8 V
⑮	FF-Motor Drive Signal FF mode: 0 V STOP mode: 4.8 V
⑯	BIAS 4.8 V
⑰	AMS-Kick Drive Signal 
⑱	LINE-Muting Drive Signal REC/PLAY mode: 0 V STOP mode: 4.8 V
⑲	REC-Muting Drive Signal REC mode: 0.1 V STOP mode: 1.6 V
⑳	AMS Muting Drive Signal 0.6 V
㉑	GND (Ground)
㉒	AMS Solenoid Drive Signal REW/FF mode: 0 V STOP mode: 5 V
㉓	Head-Solenoid Drive Signal PLAY mode: 0 V STOP mode: 4.8 V
㉔	Head-Kick Drive Signal 
㉕	REC/PB Relay Drive Signal REC mode: 0 V STOP mode: 4.8 V
㉖	Timer Signal Timer Switch OFF mode: 4.8 V PLAY mode: 0 V
㉗	Timer Signal Timer Switch OFF mode: 4.8 V REC mode: 0 V
㉘	3H/2H 4.8 V
㉙	AMS Operating Signal STOP mode: 4.8 V
㉚	AMS Mode Signal ON mode: 0.05 V OFF mode: 4.8 V
㉛	Accidental Erasure With cassette: 4.8 V Without cassette: 0 V
㉜	Shut-Off Signal  Stopped at tape end in forward mode. (May become 0 V after shut-off depending on the position of take-up reel table.)
㉝	Counter 4.8 V
㉞	Cassette Half Det With cassette: 4.8 V Without cassette: 0 V
㉟	REC-Muting Switch Input 
㊱	PAUSE Switch Input 
㊲	REC Switch Input 
㊳	PLAY Switch Input 
㊴	FF Switch Input 
㊵	REW Switch Input 
㊶	STOP Switch Input 
㊷	B + Supply Voltage DC 5 V

Note: *Voltage readings on this list are measured by oscilloscope with 10 MΩ probe. Therefore the readings are a little different from those measured by VOM on the schematic and mounting diagrams.*

TERMINAL NAME, WAVEFORM AND OPERATING VOLTAGES OF IC502

PIN No.	WAVEFORM OR VOLTAGES
①	GND (Ground)
②	Xtal Signal 
③	Reset Signal
④	IRQ Signal 
⑤	Drive Signal for "a" Segment of Fluorescent Display Tube 1) In case of all six "a" segments are not lit, i.e., all of the six digits are "1" or "4", or display of the counter section is "1" or "4" without the AMS and REPEAT. 2) In case of one of "a" segments is lit, i.e., one out of six digits is "0", "2", "3", "5", "6", "7", "8", or "9", and all others are "1" or "4". 3) In case of two "a" segments out of six digits are lit as in the case of 2) above. 4) In case of three "a" segments out of six digits are lit as in the case of 2) above. 5) In case of all "a" segments are lit in the same way. 
⑥	S1 5 V
⑦	$\overline{SC/TO}$ 5 V
⑧	$\overline{TC}$ 5 V
⑨	Not used
⑩	Not used
⑪	Not used
⑫	Not used (counter)
⑬	S0 4.9 V
⑭	Drive Signal for "b" Segments of Fluorescent Display Tube same as terminal ⑬ for segments "a".
⑮	Drive Signal for "c" Segments of Fluorescent Display Tube same as terminal ⑬ for segments "a".
⑯	Drive Signal for "d" Segments of Fluorescent Display Tube same as terminal ⑬ for segments "a".
⑰	Drive Signal for "e" Segments of Fluorescent Display Tube same as terminal ⑬ for segments "a".
⑱	Drive Signal for "f" Segments of Fluorescent Display Tube same as terminal ⑬ for segments "a".
⑲	Drive Signal for "g" Segments of Fluorescent Display Tube same as terminal ⑬ for segments "a".
⑳	Drive Signal for "Dp" (dot) of Fluorescent Display Tube 
㉑	GND (Ground)
㉒ ㉓ ㉔ ㉕ ㉖ ㉗	Drive Signal for Grids G1 through G6 of Fluorescent Display Tube In OFF mode of the each AMS Switch. 
㉘	SCL 4.8 V
㉙	REC MUTE 4.8 V
㉚ (φ1)	φ1 or φ2 – Signal Input from Photo Transistors FF, REW mode: 
㉛ (φ2)	Pulse width varies according to tape take-up. (STOP mode: 5 V DC or 0 V according to the relative positions of photo transistors and reel table.)
㉜	AMS Signal 0 V
㉝	Switch 1 Signal Following waveform appears while AMS, REPEAT, MEMORY, CLEAR, or COUNTER switch is kept pressed. 
㉞	AMS Signal Output 4.8 V
㉟	AMS MODE 4.8 V
㊱	Not used
㊲	REC Lamp Input REC mode: 0.2 V STOP mode: 4.8 V
㊳	PAUSE Lamp Input 4.8 V
㊴	FF-Motor Input FF mode: 0 V STOP mode: 4.8 V
㊵	PLAY-Motor Input PLAY mode: 0 V STOP mode: 4.8 V
㊶	REW-Motor Input REW mode: 0 V STOP mode: 4.8 V
㊷	B + Supply Voltage DC 5 V

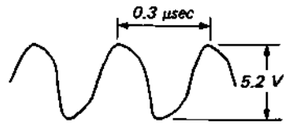
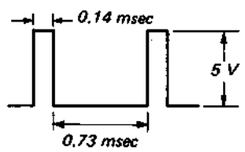
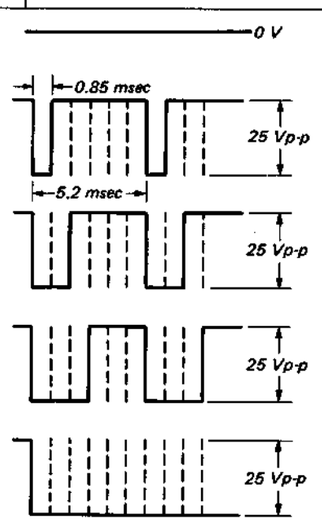
OR VOLTAGES

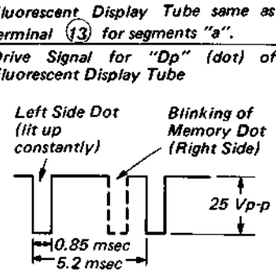
5.2 V
2 sec
auto shut-off
d in forward mode.
V after shut-off
e position of
e.)

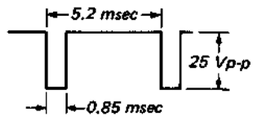
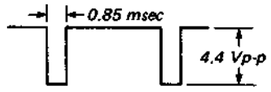
4.8 V
0 V
ch Input
4.9 V
0.4 V
0 V
utton kept pressed
put
4.8 V
0.2 V
0 V
n kept pressed.
4.9 V
0.9 V
0 V
n kept pressed
ut
4.9 V
0.4 V
0 V
on kept pressed
4.8 V
0.4 V
0 V
kept pressed
4.7 V
0.1 V
0 V
n kept pressed
ut
4.4 V
0 V
on kept pressed
ge DC 5 V

measured by oscillo-
fore the readings are
ured by VOM on the

TERMINAL NAME, WAVEFORM AND OPERATING VOLTAGES OF IC502

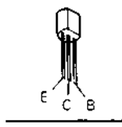
PIN No.	WAVEFORM OR VOLTAGES
1	GND (Ground)
2	Xtal Signal 
3	Reset Signal
4	IRQ Signal 
5	Drive Signal for "a" Segment of Fluorescent Display Tube 1) In case of all six "a" segments are not lit, i.e., all of the six digits are "1" or "4", or display of the counter section is "1" or "4" without the AMS and REPEAT. 2) In case of one of "a" segments is lit, i.e., one out of six digits is "0", "2", "3", "5", "6", "7", "8", or "9", and all others are "1" or "4". 3) In case of two "a" segments out of six digits are lit as in the case of 2) above. 4) In case of three "a" segments out of six digits are lit as in the case of 2) above. 5) In case of all "a" segments are lit in the same way. 
14	Drive Signal for "b" Segments of Fluorescent Display Tube same as terminal (13) for segments "a".
15	Drive Signal for "c" Segments of Fluorescent Display Tube same as terminal (13) for segments "a".
16	Drive Signal for "d" Segments of Fluorescent Display Tube same as terminal (13) for segments "a".
17	Drive Signal for "e" Segments of Fluorescent Display Tube same as terminal (13) for segments "a".

PIN No.	WAVEFORM OR VOLTAGES
5	S0 4.9 V
6	S1 5 V
7	$\overline{SC/TO}$ 5 V
8	$\overline{TC}$ 5 V
9	Not used
10	Not used
11	Not used
12	Not used (counter)
18	Drive Signal for "f" Segments of Fluorescent Display Tube same as terminal (13) for segments "a".
19	Drive Signal for "g" Segments of Fluorescent Display Tube same as terminal (13) for segments "a".
20	Drive Signal for "Dp" (dot) of Fluorescent Display Tube 

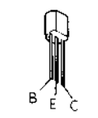
PIN No.	WAVEFORM OR VOLTAGES
21	GND (Ground)
22, 23, 24, 25, 26, 27	Drive Signal for Grids G1 through G6 of Fluorescent Display Tube in OFF mode of the each AMS Switch. 
28	SCL 4.8 V
29	REC MUTE 4.8 V
30 (φ1)	φ1 or φ2 – Signal Input from Photo Transistors FF, REW mode: 5 Vp-p
31 (φ2)	Pulse width varies according to tape take-up. (STOP mode: 5 V DC or 0 V according to the relative positions of photo transistors and reel table.)
32	AMS Signal 0 V
33	Switch 1 Signal Following waveform appears while AMS, REPEAT, MEMORY, CLEAR, or COUNTER switch is kept pressed. 
34	AMS Signal Output 4.8 V
35	AMS MODE 4.8 V
36	Not used
37	REC Lamp Input REC mode: 0.2 V STOP mode: 4.8 V
38	PAUSE Lamp Input 4.8 V
39	FF-Motor Input FF mode: 0 V STOP mode: 4.8 V
40	PLAY-Motor Input PLAY mode: 0 V STOP mode: 4.8 V
41	REW-Motor Input REW mode: 0 V STOP mode: 4.8 V
42	B + Supply Voltage DC 5 V

• Semiconductor Lead Layouts

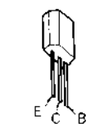
2SA733
2SA844
2SC945
2SC1345
2SC1363
2SC1364
2SC2001
2SD789
2SD1152



2SA952

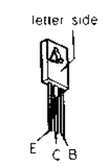


2SA1026
2SA1027R



2SB734
2SD774

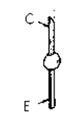
2SB548
2SD414
2SD809



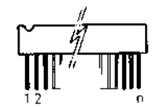
2SD880

2SK120

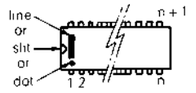
PH102



BA6138

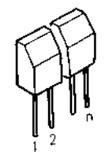


CX174-2
MB84049B
MB8843-590
MB8843-594
NJM2903D
NJM4558S
MSL9359RS
MB84069B
TC40H004P
µPC339C

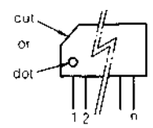


(Top view)

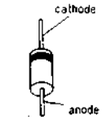
M5218L



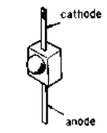
NJM2043S-D



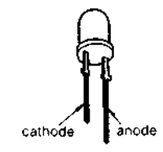
10E2
10DF2
1S1555
EQB01-07
HZ6B1L
HZ6C3L
HZ7B1L
HZ11B1L
HZ20-1L
HZ27-1L

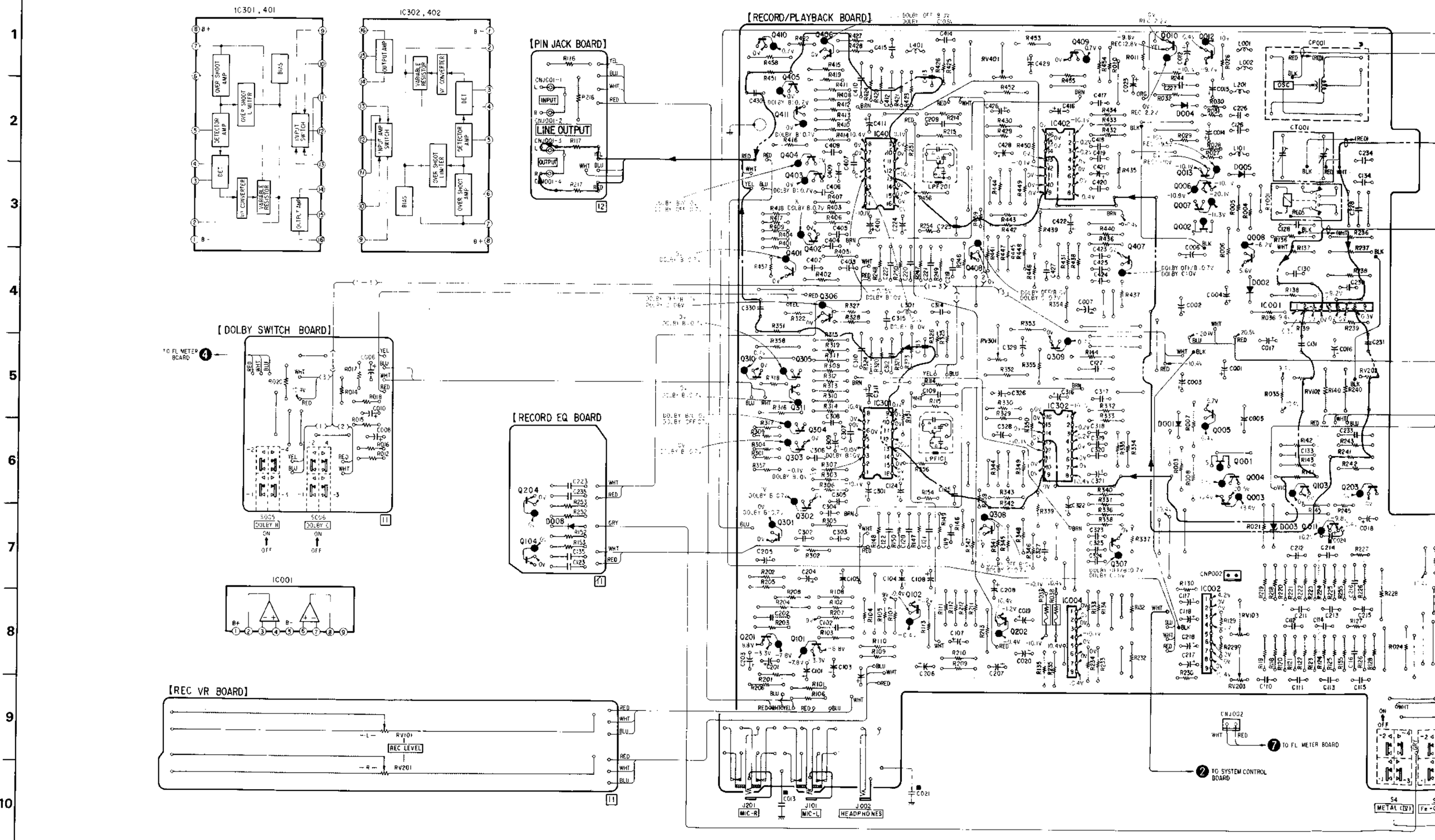


AA2222S
AR2222S
PG2222SX

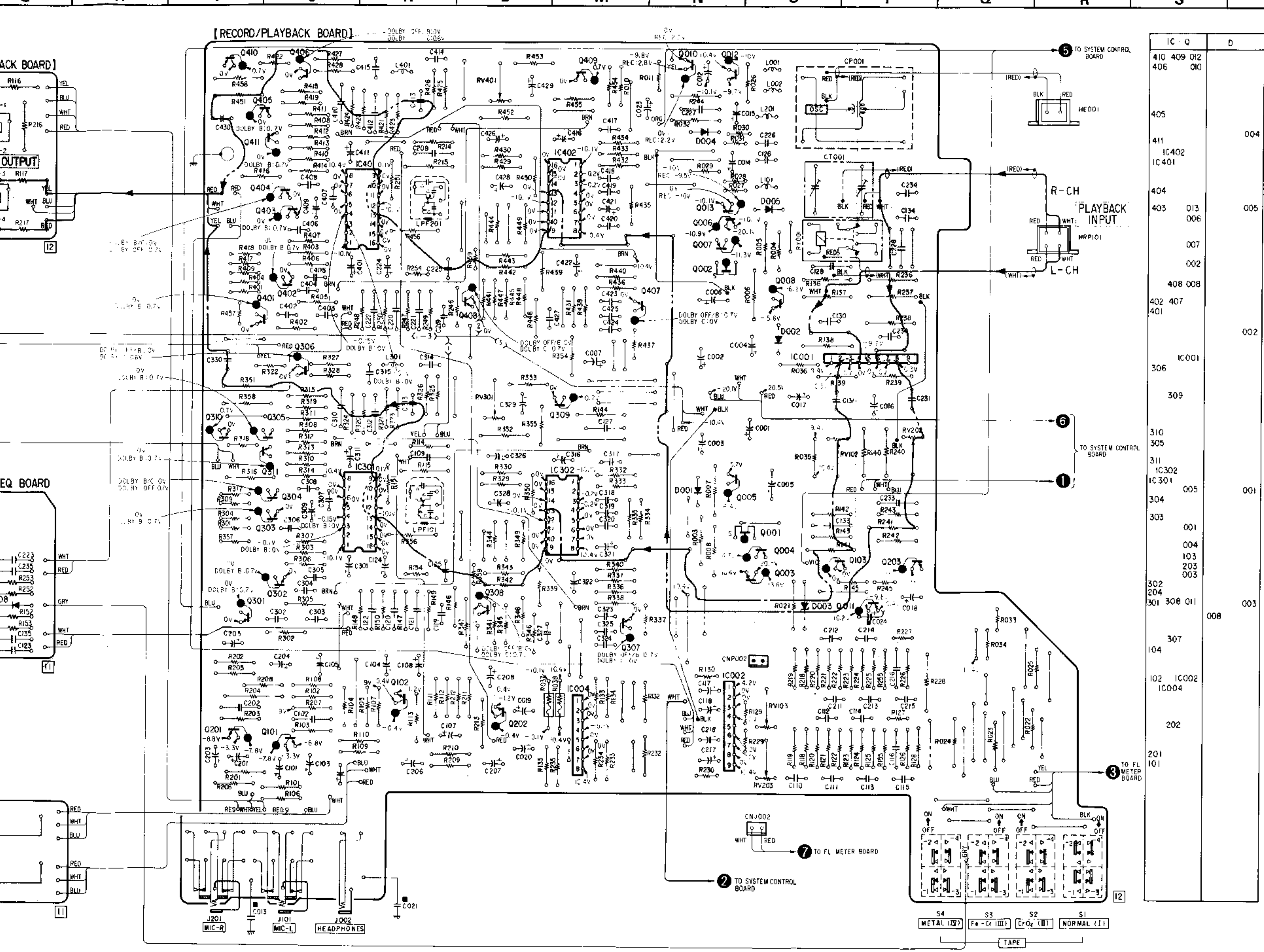


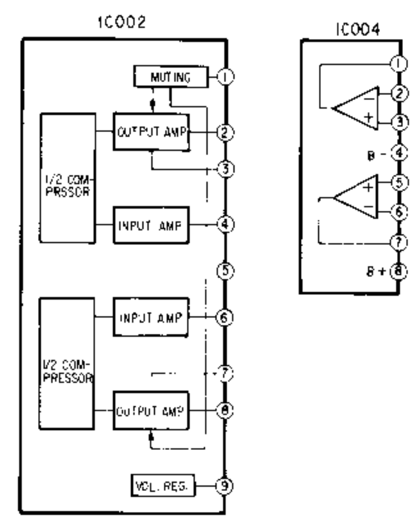
SEL1710K




– Audio Section –
A B C D E F G H I J K L M N O P
1 2 3 4 5 6 7 8 9 10
IC301, 401
IC302, 402
OVER SHOOT AMP
OVER SHOOT LIMITER
BIAS
DETECTOR AMP
DET
V/I CONVERTER
VARIABLE RESISTOR
INPUT SWITCH
OUTPUT AMP
INPUT AMP SWITCH
[PIN JACK BOARD]
CNJ001-1
INPUT
CNJ001-2
LINE OUTPUT
CNJ001-5
OUTPUT
CNJ001-4
[RECORD/PLAYBACK BOARD]
[DOLBY SWITCH BOARD]
TO FL METER BOARD
SD25 DOLBY H
SD26 DOLBY C
ON
OFF
[RECORD EQ BOARD]
IC001
[REC VR BOARD]
REC LEVEL
RV101
RV201
J201 MIC-R
J101 MIC-L
J002 HEADPHONES
CNJ002
TO FL METER BOARD
TO SYSTEM CONTROL BOARD
S4 METAL (SY)

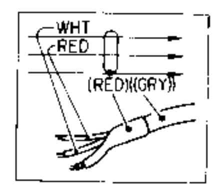
ctor Lead Layouts.





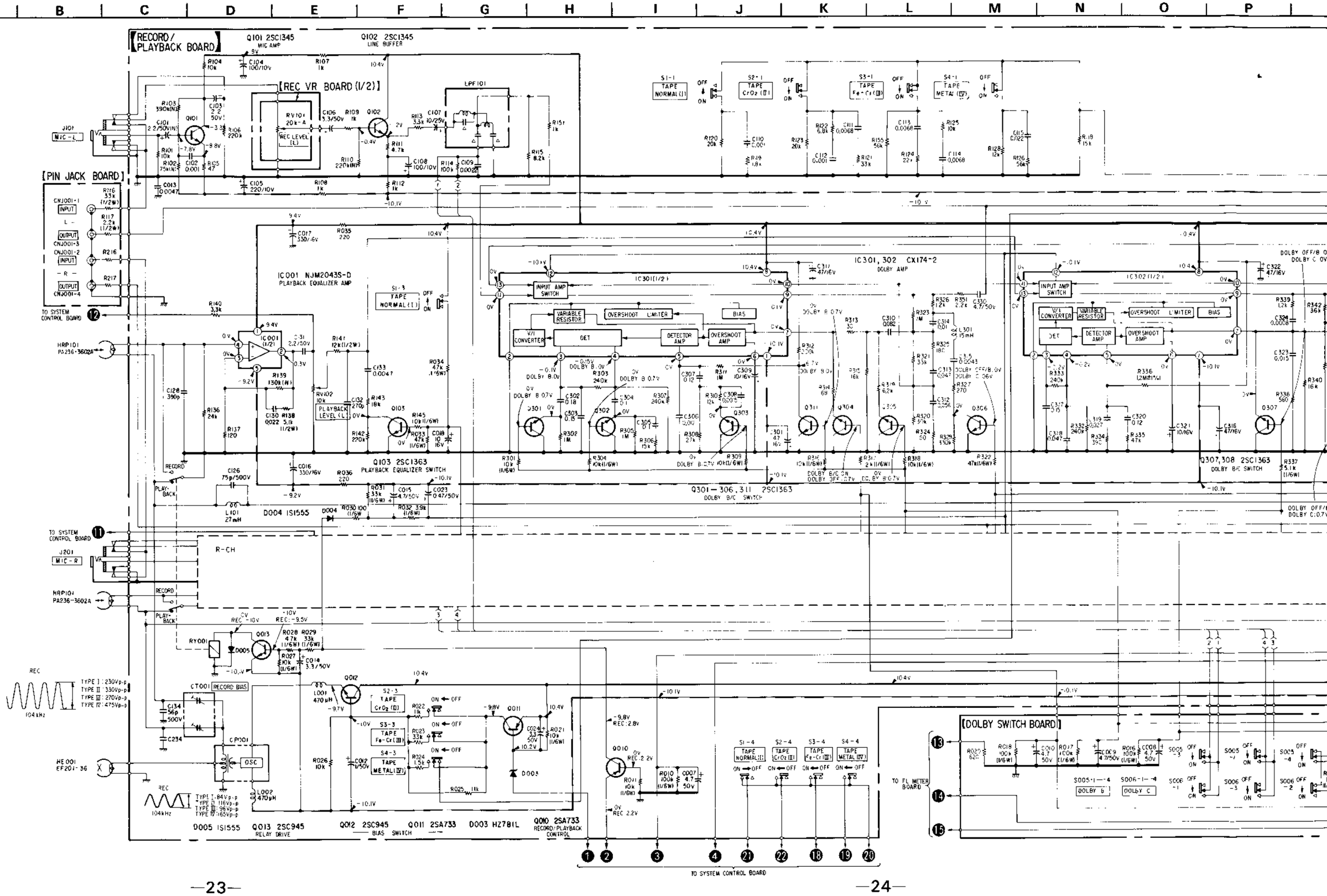
Note:

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

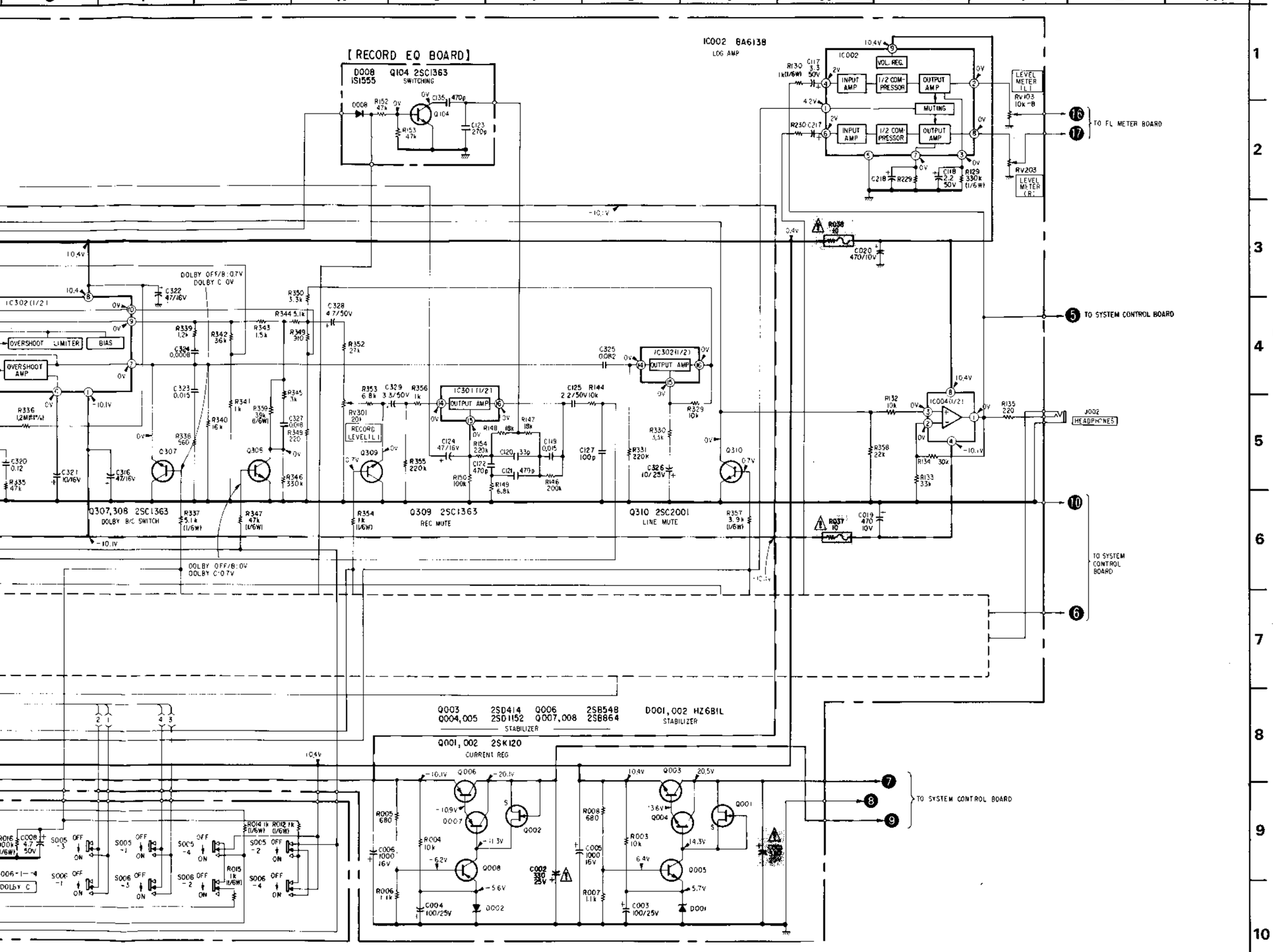


- ○— : parts extracted from the component side.
- ●— : parts extracted from the conductor side.
- ⊡ : indicates side identified with part number.
- : B+ pattern
- : signal path
- : L-CH signal path
- : R-CH signal path

— Audio Section —



– Audio Section –



Note:

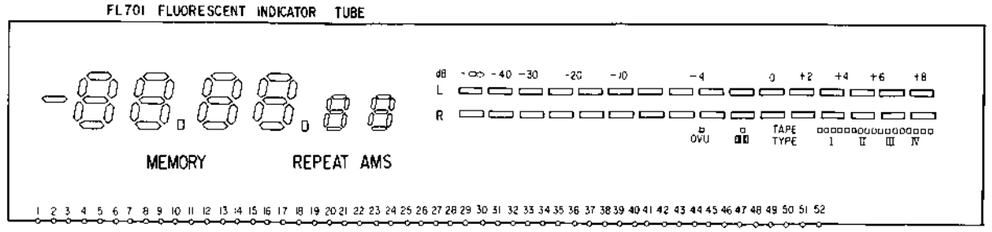
- Components for right channel have same values as for left channel. Reference numbers are codes from 200 and 400.
- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, ¼W unless otherwise noted. kΩ : 1000Ω, MΩ : 1000kΩ
- : fusible resistor.
- : panel designation.
- : adjustment for repair.
- : B+ bus.
- : B- bus.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal (detuned) conditions with a VOM (50 kΩ/V)
- Switch

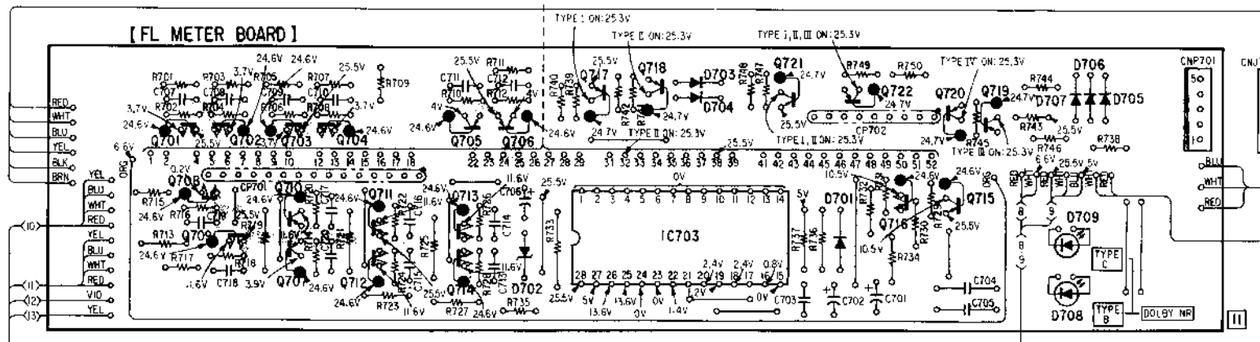
Ref. No.	Switch	Position
S1	TYPE I (NORMAL)	ON
S2	TYPE II (CrO_2)	OFF
S3	TYPE III (Fe-Cr)	OFF
S4	TYPE IV (METAL)	OFF
S005	DOLBY B	OFF
S006	DOLBY C	OFF

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

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

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



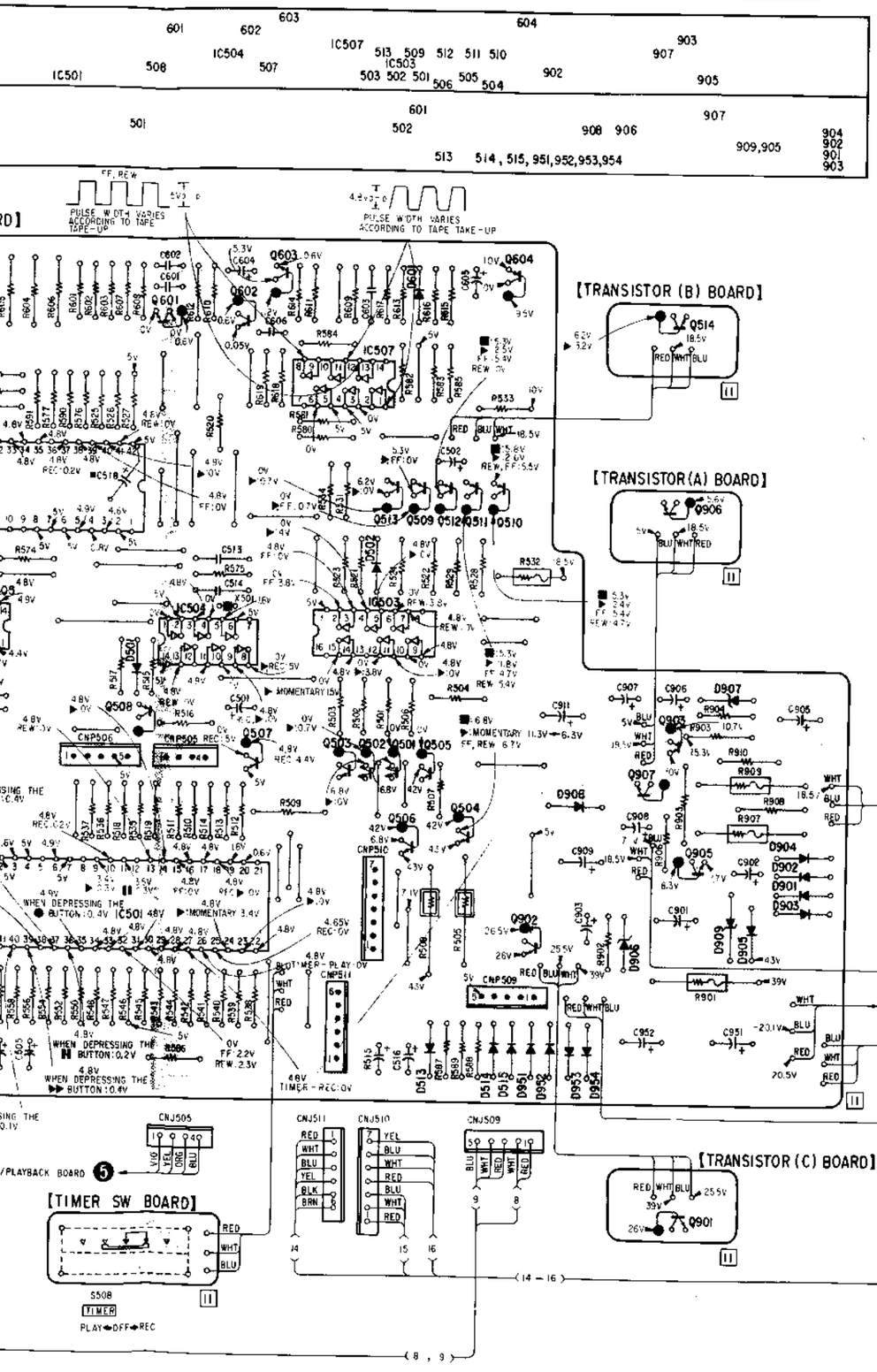


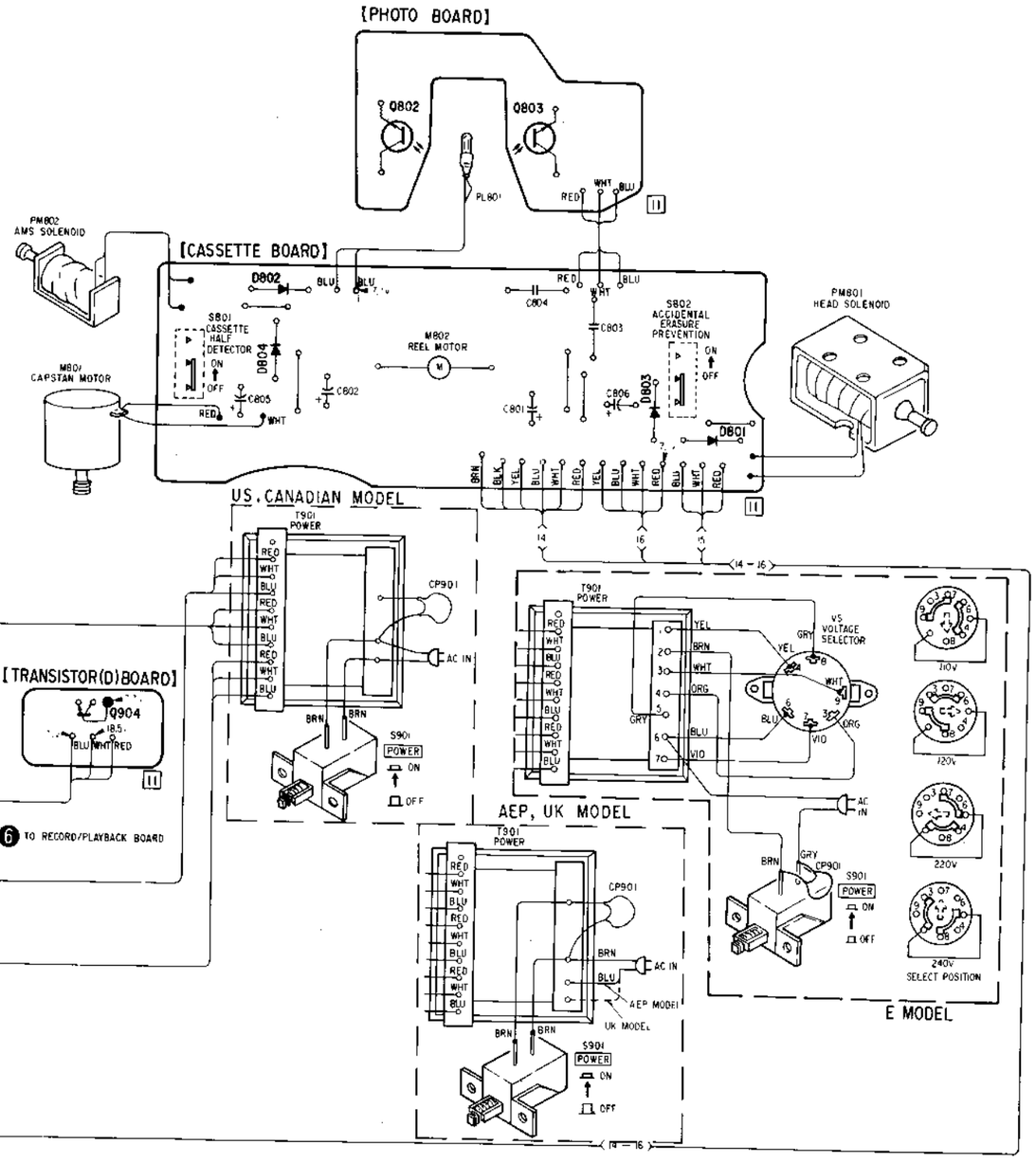
	M	N	O	P
Q·IC	IC506	IC502 IC505	IC501 601 508	602 603 IC504 507
D	512,511,508,510,509 507	506	501	

	B	C	D	E	F	G	H
Q·IC	701	708 702 709 703 710 707	704 711 712 705 713 714	706 717	718 IC701 721	722 716 715	720 719
D				702	703 704	701	707,706,705 709 708

– System Control Section –

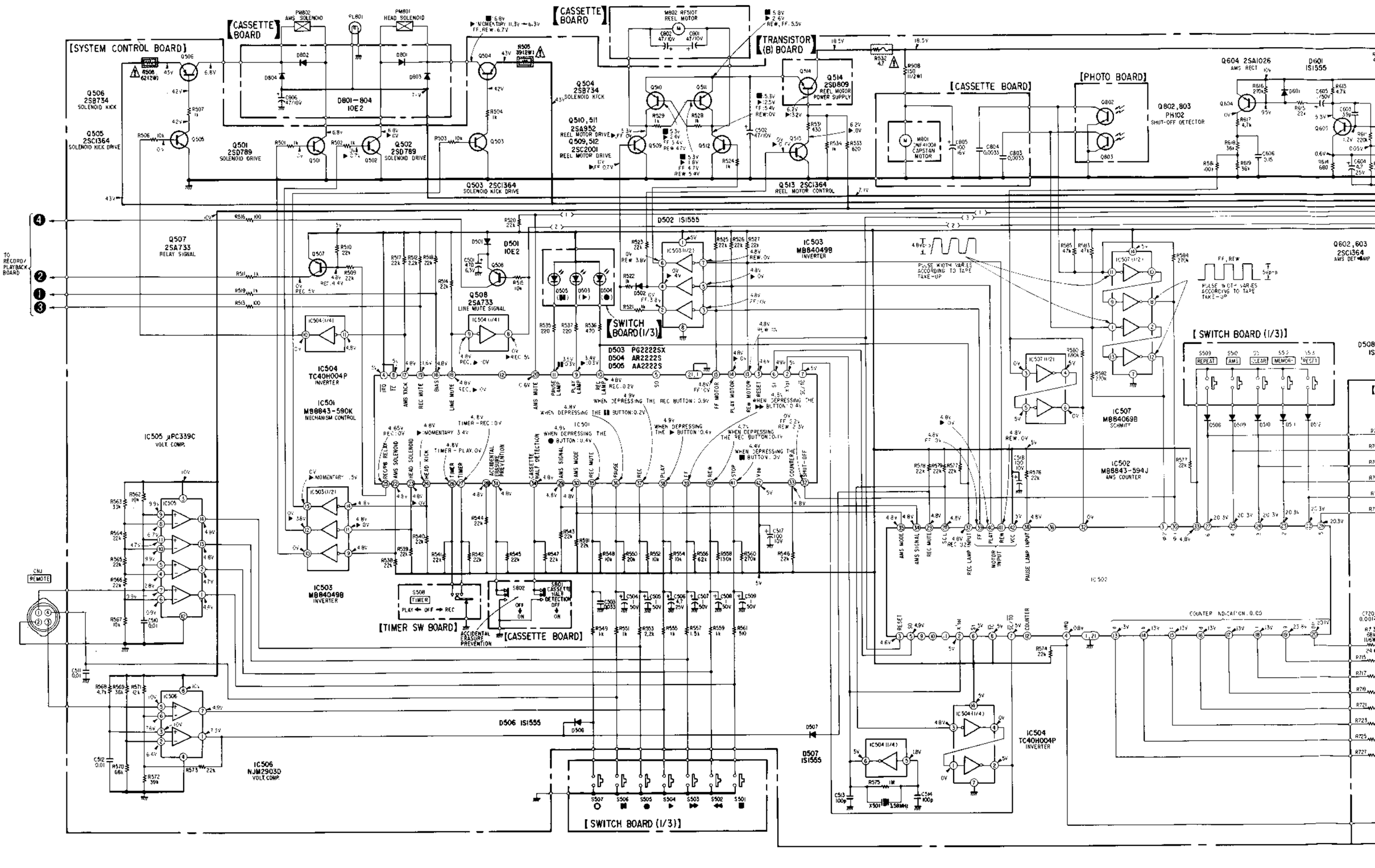
N O P Q R S T U V W X Y Z A1 B1 C1 D1



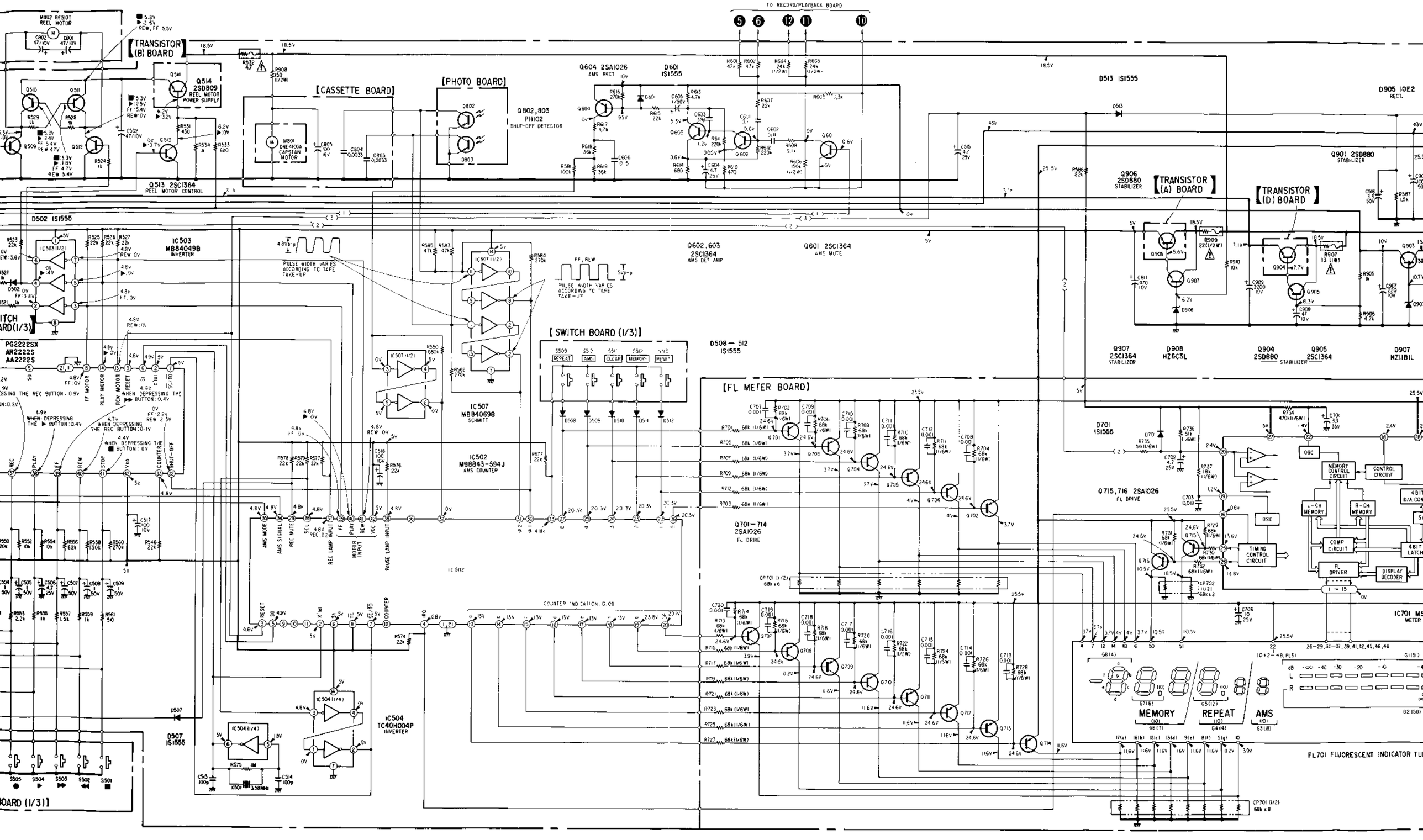


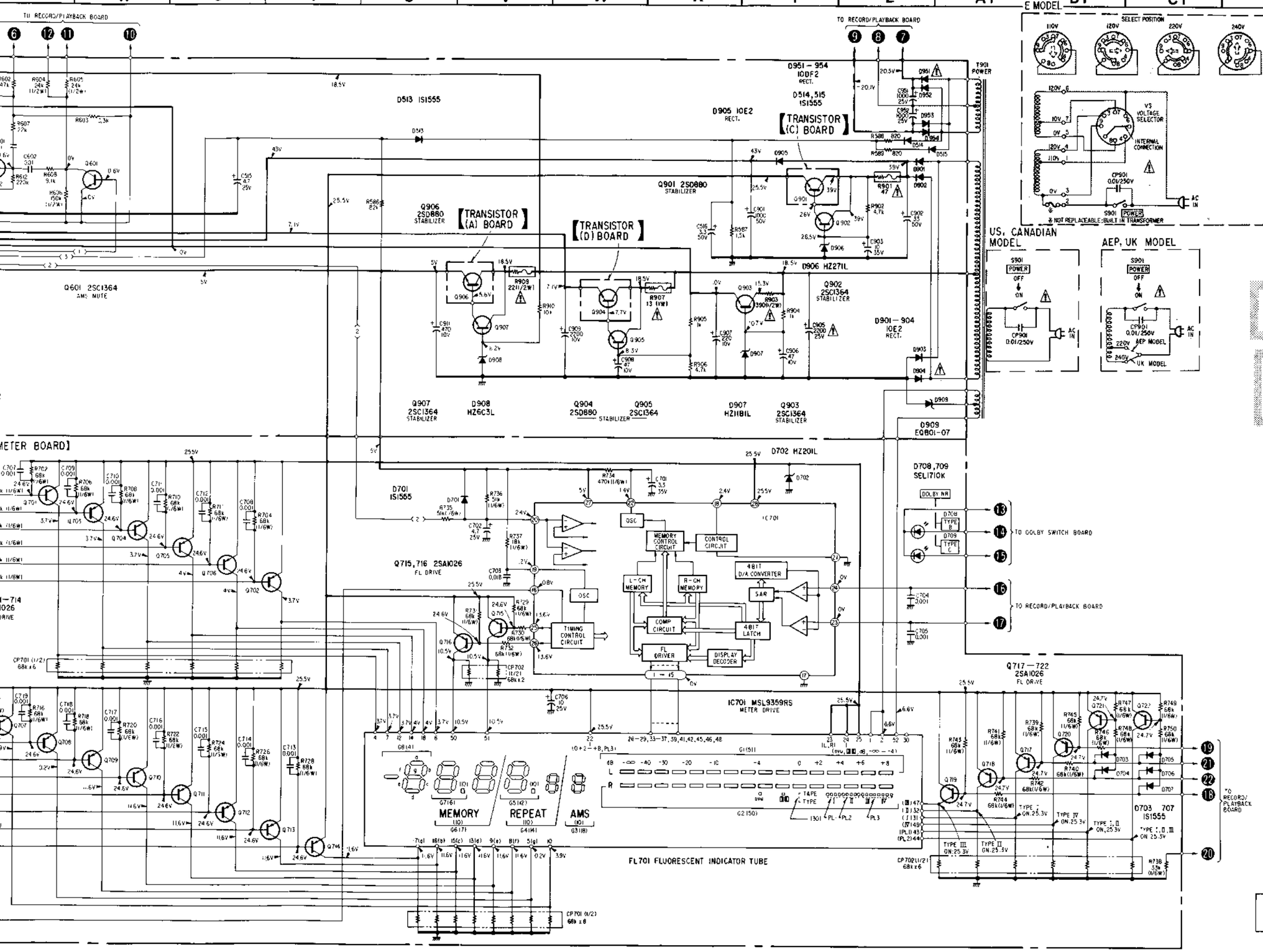
Note:
- ○—: parts extracted from the component side.
- ●—: parts extracted from the conductor side.
- : B+ pattern

1 2 3 4 5 6 7 8 9 10 11


[SYSTEM CONTROL BOARD]
[CASSETTE BOARD]
[TRANSISTOR (B) BOARD]
[PHOTO BOARD]
[SWITCH BOARD (1/3)]
[TIMER SW BOARD]
[CASSETTE BOARD]
TO RECORD/ PLAYBACK BOARD
CNJ REMOTE
Q506 2SB734 SOLENOID KICK
Q505 2SC1364 SOLENOID KICK DRIVE
Q501 2SD789 SOLENOID DRIVE
Q502 2SD789 SOLENOID DRIVE
Q503 2SC1364 SOLENOID KICK DRIVE
Q504 2SB734 SOLENOID KICK
Q510, 511 2SA952 REEL MOTOR DRIVE
Q509, 512 2SC2001 REEL MOTOR DRIVE
Q513 2SC1364 REEL MOTOR CONTROL
Q514 2SD809 REEL MOTOR POWER SUPPLY
M802 RF510T REEL MOTOR
M801 CNF41004 CAPSTAN MOTOR
Q802,803 PH102 SHUT-OFF DETECTOR
Q604 2SA1026 AMS RECT
D601 1SI555
Q602,603 2SC1364 AMS DET AMP
Q507 2SA733 RELAY SIGNAL
Q508 2SA733 LINE MUTE SIGNAL
D501 1OE2
D502 1SI555
D503 PG2222SX
D504 AR2222S
D505 AA2222S
D506 1SI555
D507 1SI555
IC503 MB840498 INVERTER
IC504 TC40H004P INVERTER
IC501 MB8843-590K MECHANISM CONTROL
IC505 μPC339C VOLT. COMP.
IC506 NJM2903D VOLT. COMP.
IC507 MB84069B SCHMITT
IC502 MB8843-594J AMS COUNTER
PULSE WIDTH VARIES ACCORDING TO TAKE-UP
FF, REW
REC MUTE
LINE MUTE
PAUSE LAMP
PLAY LAMP
REC LAMP
FF MOTOR
PLAY MOTOR
REW MOTOR
AMS SIGNAL
AMS MODE
REC MUTE
REC LAMP INPUT
MOTOR INPUT
PAUSE LAMP INPUT
COUNTER INDICATION: 0.00
S501 S502 S503 S504 S505 S506 S507
S508 TIMER
S509 REPEAT
S510 AMS
S511 CLEAR
S512 MEMORY
S513 RESET
S801 CASSETTE HALF DETECTION
S802 ACCIDENTAL ERASURE PREVENTION
X501 3.58MHz

H I J K L M N O P Q R S T U V W X





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

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

Note:

- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, ¼W unless otherwise noted. kΩ : 1000Ω, MΩ : 1000kΩ
- : nonflammable resistor.
- : fusible resistor.
- : panel designation.
- ——: B+ bus.
- – – –: B- bus.
- Readings are taken under no-signal (detuned) conditions with a VOM (50 kΩ/V)
- Switch

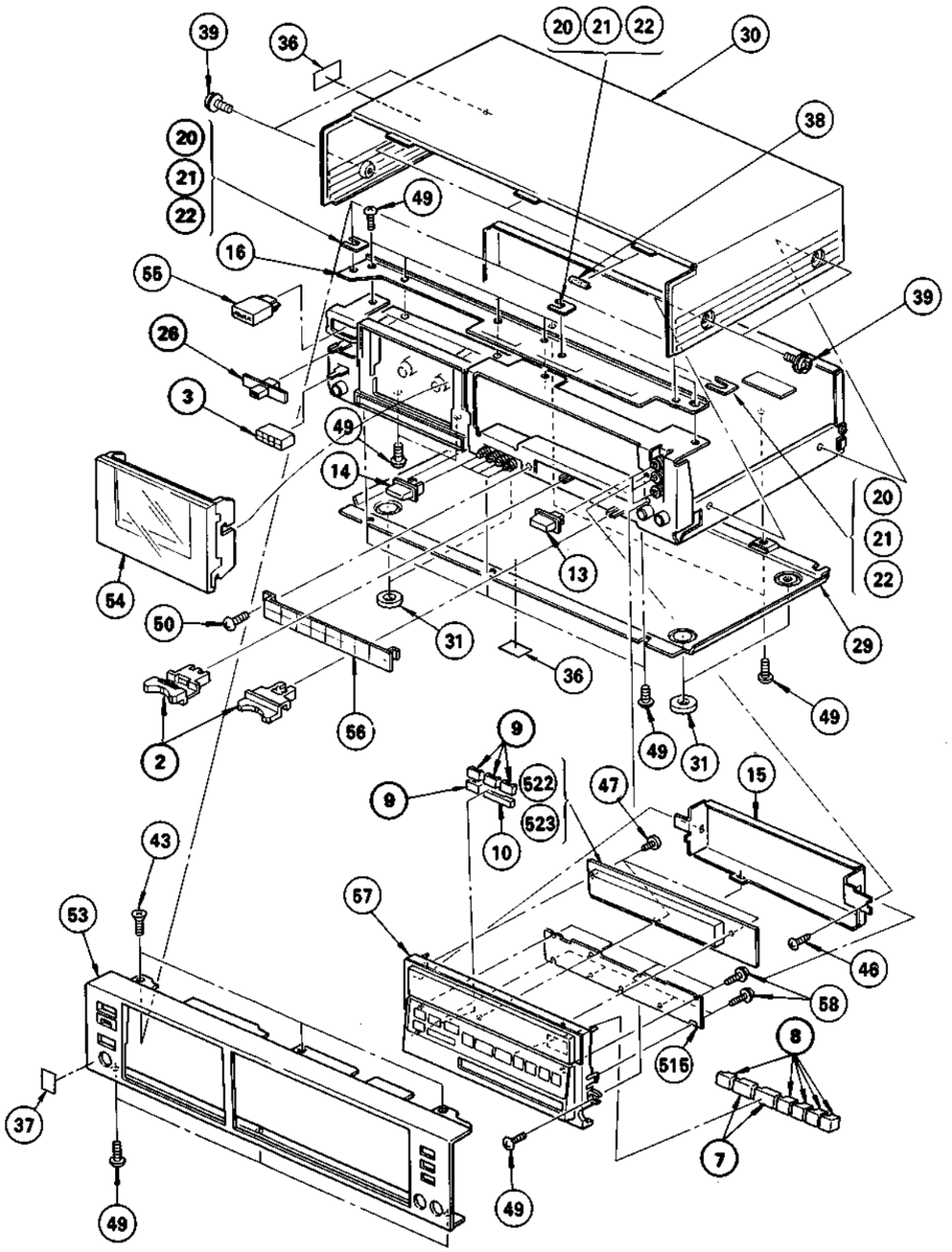
Ref. No.	Switch	Position
S501	STOP	OFF
S502	◀◀ REW	OFF
S503	▶▶ F·F	OFF
S504	▶ FWD	OFF
S505	● REC	OFF
S506	▮▮ PAUSE	OFF
S507	REC MUTE	OFF
S508	TIMER	OFF
S509	REPEAT	OFF
S510	AMS	OFF
S511	CLEAR	OFF
S512	MEMORY	OFF
S513	RESET	OFF
S801	CASSETTE HALF DET.	OFF
S802	ERASE PROOF	OFF
S901	POWER	OFF

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

SECTION 5
EXPLODED VIEWS AND PARTS LIST

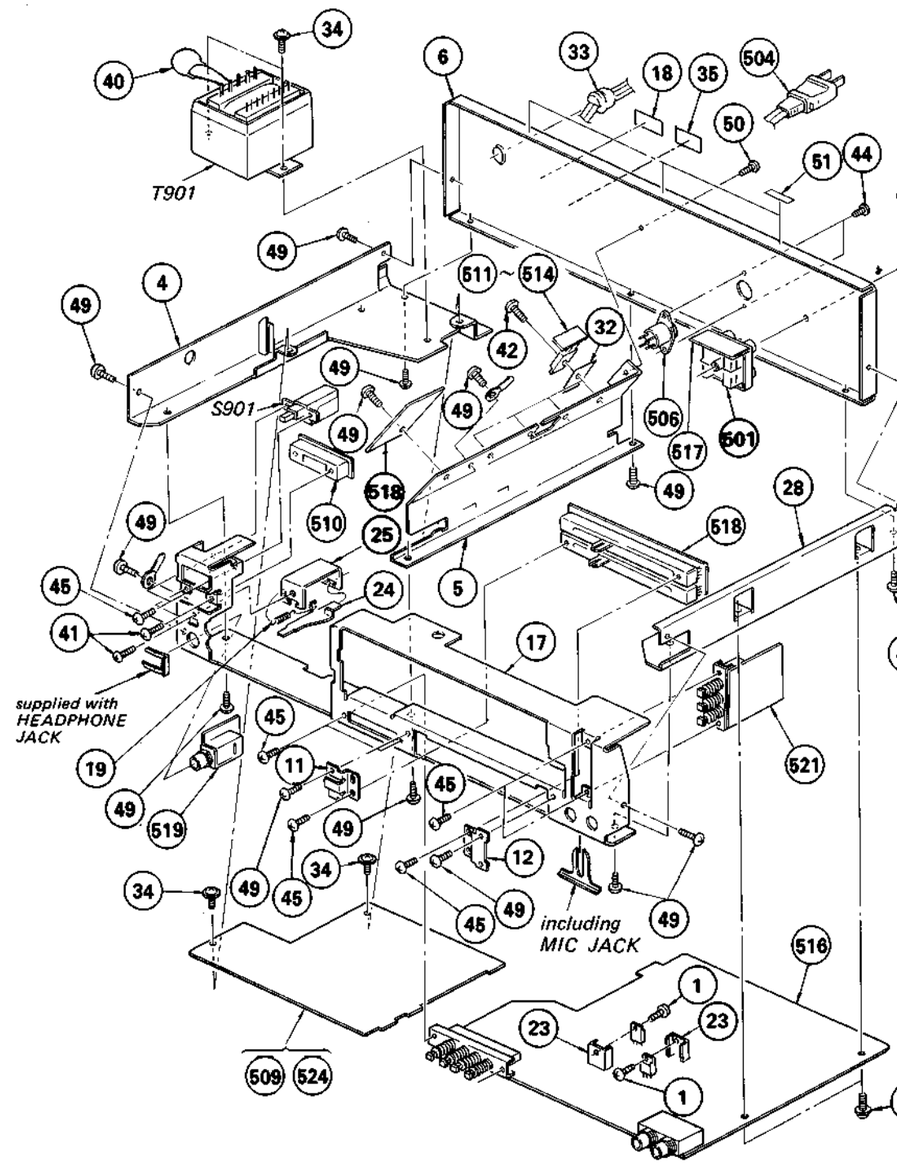
5-1.

- Refer to the parts list for these parts No. and names.



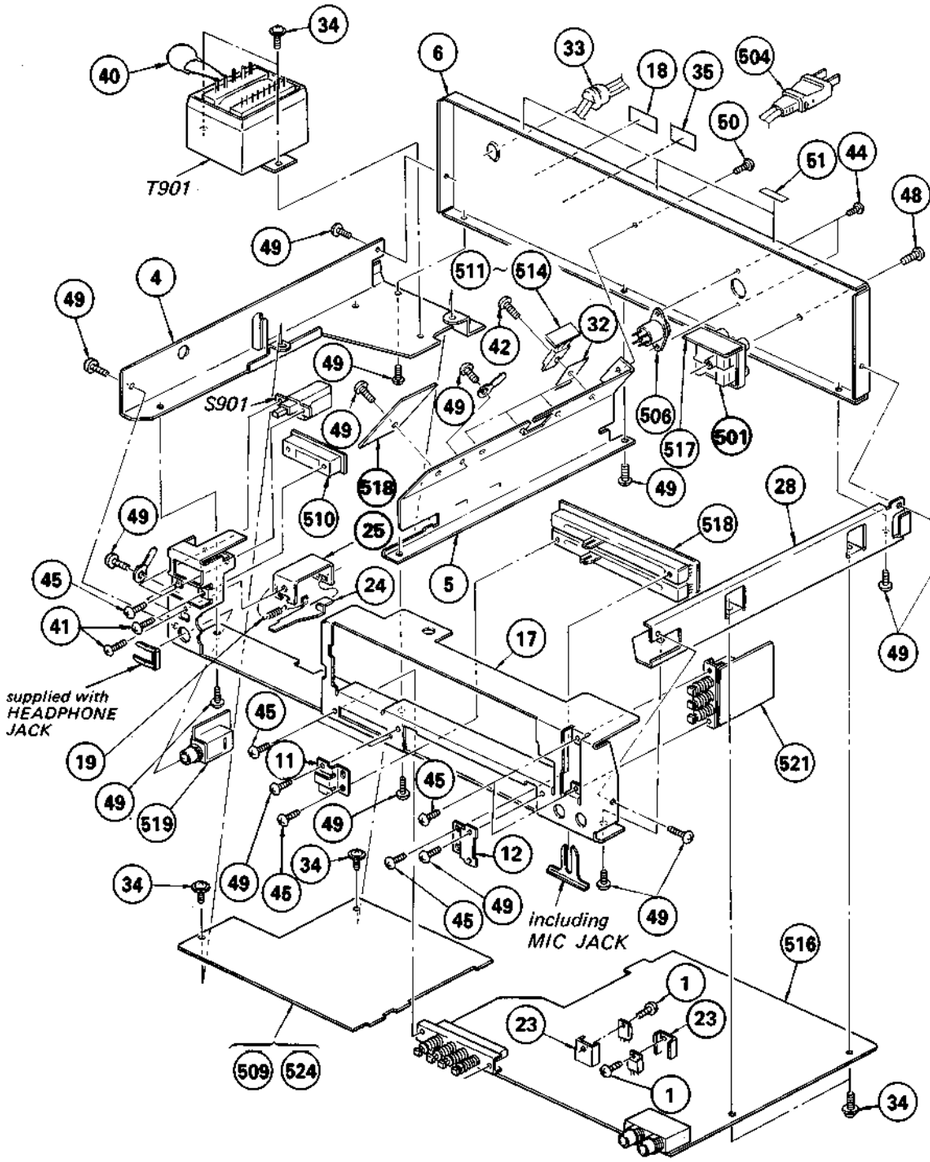
5-2.

- Refer to the parts list for these parts No. and names.



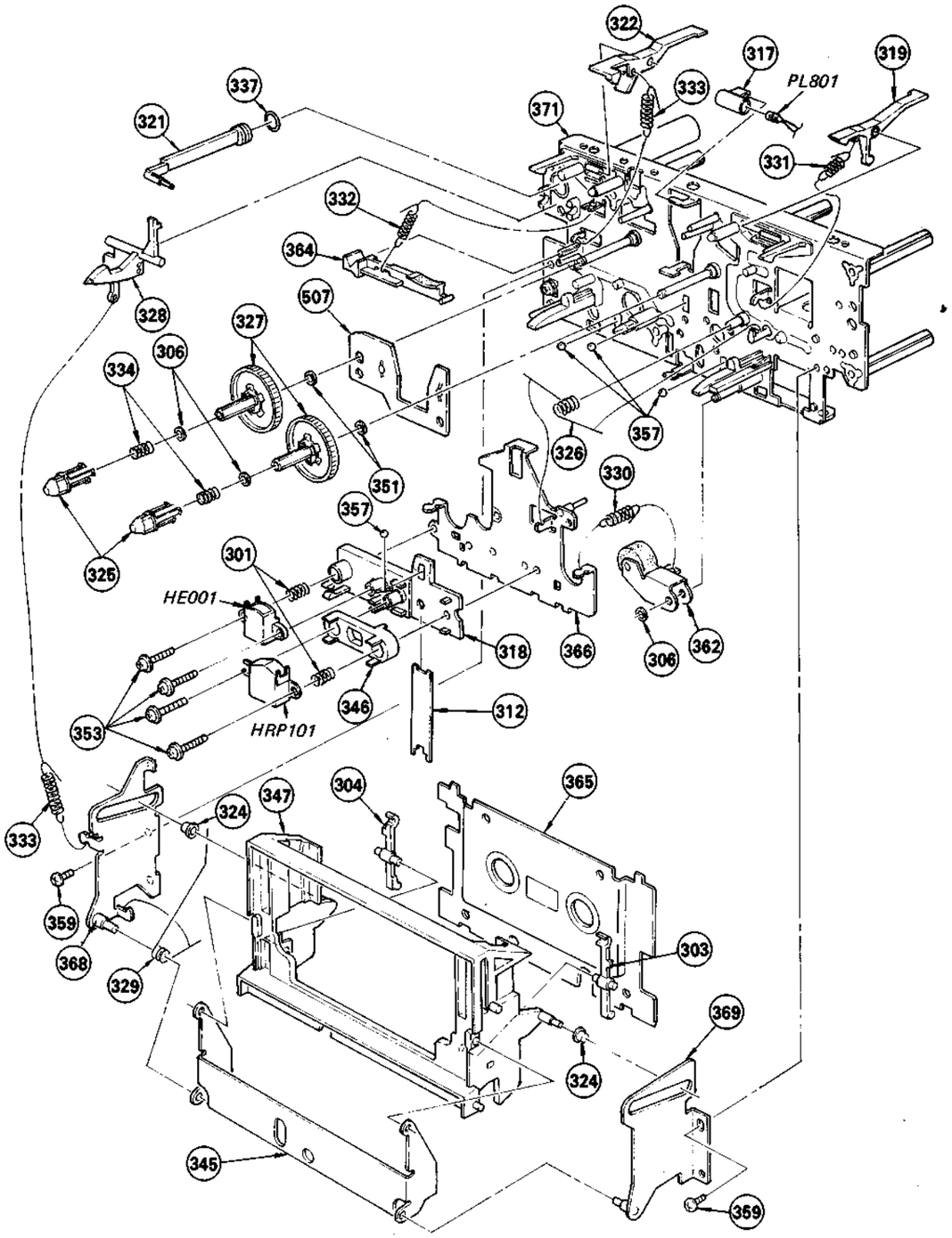
5-2.

- Refer to the parts list for these parts No. and names.



5-3.

- Refer to the parts list for these parts No. and names.



5-3.

- Refer to the parts list for these parts No. and names.

5-4.

- Refer to the parts list for these parts No. and names.

ELECTRICAL PARTS

Ref.No.	Part No.	Description
512	♦;1-606-827-00	PC BOARD, TRANSISTOR (B)
513	♦;1-606-828-00	PC BOARD, TRANSISTOR (C)
514	♦;1-606-829-00	PC BOARD, TRANSISTOR (D)
515	♦;1-608-525-00	PC BOARD, SWITCH
516	♦;1-608-629-00	PC BOARD, REC/PB
517	♦;1-608-630-00	PC BOARD, PIN JACK
518	♦;1-608-631-00	PC BOARD, REC VOL
519	♦;1-608-632-00	PC BOARD, HEADPHONE JACK
520	♦;1-608-633-00	PC BOARD, TAPE SELECT
521	♦;1-608-634-00	PC BOARD, DOLBY SWITCH
522	♦;1-608-635-00	PC BOARD, COUNTER METER
523	♦;A-2029-086-A	MOUNTED PCB, FLT
524	♦;A-2056-199-A	PC BOARD ASSY, SYSTEM CONTROL

C003	1-123-333-00	ELECT	100MF	20%	25V
C004	1-123-333-00	ELECT	100MF	20%	25V
C005	1-121-245-00	ELECT	1000MF		16V
C006	1-121-245-00	ELECT	1000MF		16V
C007	1-123-369-00	ELECT	4.7MF	20%	50V
C008	1-123-369-00	ELECT	4.7MF	20%	50V
C009	1-123-369-00	ELECT	4.7MF	20%	50V
C010	1-123-369-00	ELECT	4.7MF	20%	50V
C012	1-123-380-00	ELECT	1MF	20%	50V
C013	1-161-328-00	CERAMIC	0.0047MF	30%	50V
C014	1-123-354-00	ELECT	3.3MF	20%	50V
C015	1-123-369-00	ELECT	4.7MF	20%	50V
C016	1-123-322-00	ELECT	330MF	20%	16V
C017	1-123-322-00	ELECT	330MF	20%	16V
C018	1-123-356-00	ELECT	10MF	20%	16V
C019	1-123-310-00	ELECT	470MF	20%	10V
C020	1-123-310-00	ELECT	470MF	20%	10V
C023	1-123-351-00	ELECT	0.47MF	20%	50V
C024	1-123-354-00	ELECT	3.3MF	20%	50V
C101	1-123-381-00	ELECT	2.2MF	20%	50V
C102	1-161-323-00	CERAMIC	0.001MF	10%	50V
C103	1-123-353-00	ELECT	2.2MF	20%	50V
C104	1-123-307-00	ELECT	100MF	20%	10V
C105	1-123-308-00	ELECT	220MF	20%	10V
C106	1-123-354-00	ELECT	3.3MF	20%	50V
C107	1-123-356-00	ELECT	10MF	20%	25V
C108	1-123-307-00	ELECT	100MF	20%	10V
C109	1-161-326-00	CERAMIC	0.0022MF	30%	50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C110	1-108-555-00	MYLAR	0.001MF	5%	50V
C111	1-108-575-00	MYLAR	0.0068MF	5%	50V
C112	1-108-555-00	MYLAR	0.001MF	5%	50V
C113	1-108-575-00	MYLAR	0.0068MF	5%	50V
C114	1-108-575-00	MYLAR	0.0068MF	5%	50V
C115	1-130-624-00	FILM	0.022MF	5%	50V
C117	1-123-354-00	ELECT	3.3MF	20%	50V
C118	1-123-353-00	ELECT	2.2MF	20%	50V
C119	1-130-622-00	FILM	0.015MF	5%	50V
C120	1-161-265-00	CERAMIC	33PF	5%	50V
C121	1-161-319-00	CERAMIC	470PF	10%	50V
C122	1-161-319-00	CERAMIC	470PF	10%	50V
C123	1-161-316-00	CERAMIC	270PF	10%	50V
C124	1-123-319-00	ELECT	47MF	20%	16V
C125	1-123-230-00	ELECT	2.2MF	20%	50V
C126	1-107-167-00	MICA	75PF	5%	500V
C127	1-161-271-00	CERAMIC	100PF	5%	50V
C128	1-161-318-00	CERAMIC	390PF	10%	50V
C130	1-130-624-00	FILM	0.022MF	5%	50V
C131	1-123-230-00	ELECT	2.2MF	20%	50V
C132	1-161-316-00	CERAMIC	270PF	10%	50V
C133	1-161-328-00	CERAMIC	0.0047MF	30%	50V
C134	1-107-165-00	MICA	56PF	5%	500V
C135	1-161-319-00	CERAMIC	470PF	10%	50V
C215	1-130-624-00	FILM	0.022MF	5%	50V
C221	1-161-319-00	CERAMIC	470PF	10%	50V
C222	1-161-319-00	CERAMIC	470PF	10%	50V
C228	1-161-318-00	CERAMIC	390PF	10%	50V
C230	1-130-624-00	FILM	0.022MF	5%	50V
C235	1-161-319-00	CERAMIC	470PF	10%	50V
C301	1-123-319-00	ELECT	47MF	20%	16V
C302	1-130-635-00	FILM	0.18MF	5%	50V
C303	1-130-634-00	FILM	0.15MF	5%	50V
C304	1-130-632-00	FILM	0.1MF	5%	50V
C305	1-130-632-00	FILM	0.1MF	5%	50V
C306	1-130-621-00	FILM	0.012MF	5%	50V
C307	1-130-633-00	FILM	0.12MF	5%	50V
C308	1-108-559-00	MYLAR	0.0015MF	5%	50V
C309	1-123-356-00	ELECT	10MF	20%	16V
C310	1-130-631-00	FILM	0.082MF	5%	50V
C311	1-123-319-00	ELECT	47MF	20%	16V
C312	1-130-629-00	FILM	0.056MF	5%	50V
C313	1-130-628-00	FILM	0.047MF	5%	50V
C314	1-108-579-00	MYLAR	0.0068MF	5%	50V
C315	1-108-570-00	MYLAR	0.0043MF	5%	50V

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 ⚠ 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···: μA···, UPA···: μPA···, UPC···: μPC, UPD···: μPD···

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C316	1-123-319-00	ELECT	47MF	20%	16V
C317	1-130-634-00	FILM	0.15MF	5%	50V
C318	1-130-628-00	FILM	0.047MF	5%	50V
C319	1-130-625-00	FILM	0.027MF	5%	50V
C320	1-130-633-00	FILM	0.12MF	5%	50V
C321	1-123-356-00	ELECT	10MF	20%	16V
C322	1-123-319-00	ELECT	47MF	20%	16V
C323	1-130-622-00	FILM	0.015MF	5%	50V
C324	1-108-575-00	MYLAR	0.0068MF	5%	50V
C325	1-130-631-00	FILM	0.082MF	5%	50V
C326	1-123-356-00	ELECT	10MF	20%	25V
C327	1-130-623-00	FILM	0.018MF	5%	50V
C328	1-123-369-00	ELECT	4.7MF	20%	50V
C329	1-123-354-00	ELECT	3.3MF	20%	50V
C330	1-123-232-00	ELECT	4.7MF	20%	50V
C403	1-130-634-00	FILM	0.15MF	5%	50V
C404	1-130-632-00	FILM	0.1MF	5%	50V
C405	1-130-632-00	FILM	0.1MF	5%	50V
C406	1-130-621-00	FILM	0.012MF	5%	50V
C412	1-130-629-00	FILM	0.056MF	5%	50V
C413	1-130-628-00	FILM	0.047MF	5%	50V
C415	1-108-570-00	MYLAR	0.0043MF	5%	50V
C417	1-130-634-00	FILM	0.15MF	5%	50V
C418	1-130-628-00	FILM	0.047MF	5%	50V
C419	1-130-625-00	FILM	0.027MF	5%	50V
C427	1-130-623-00	FILM	0.018MF	5%	50V
C501	1-123-298-00	ELECT	470MF	20%	6.3V
C502	1-123-306-00	ELECT	47MF	20%	10V
C503	1-130-626-00	FILM	0.033MF	5%	50V
C504	1-123-380-00	ELECT	1MF	20%	50V
C505	1-123-380-00	ELECT	1MF	20%	50V
C506	1-123-328-00	ELECT	4.7MF	20%	25V
C507	1-123-380-00	ELECT	1MF	20%	50V
C508	1-123-380-00	ELECT	1MF	20%	50V
C509	1-123-380-00	ELECT	1MF	20%	50V
C510	1-161-330-00	CERAMIC	0.01MF	30%	25V
C511	1-161-330-00	CERAMIC	0.01MF	30%	25V
C512	1-161-330-00	CERAMIC	0.01MF	30%	25V
C513	1-161-271-00	CERAMIC	100PF	5%	50V
C514	1-161-271-00	CERAMIC	100PF	5%	50V
C515	1-123-328-00	ELECT	4.7MF	20%	25V
C516	1-123-354-00	ELECT	3.3MF	20%	50V
C517	1-119-352-00	ELECT	100MF		10V
C518	1-119-352-00	ELECT	100MF		10V
C601	1-130-632-00	FILM	0.1MF	5%	50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C602	1-130-620-00	FILM	0.01MF	5%	50V
C603	1-161-254-00	CERAMIC	3.9PF	10%	50V
C604	1-123-328-00	ELECT	4.7MF	20%	25V
C605	1-123-380-00	ELECT	1MF	20%	50V
C606	1-130-634-00	FILM	0.15MF	5%	50V
C701	1-123-613-00	ELECT	3.3MF	20%	35V
C702	1-123-616-00	ELECT	4.7MF	20%	25V
C703	1-130-623-00	FILM	0.018MF	5%	50V
C704	1-161-323-00	CERAMIC	0.001MF	10%	50V
C705	1-161-323-00	CERAMIC	0.001MF	10%	50V
C706	1-123-621-	ELECT	10MF	20%	25V
C707	1-102-074-00	CERAMIC	0.001MF	10%	50V
C708	1-102-074-00	CERAMIC	0.001MF	10%	50V
C709	1-102-074-00	CERAMIC	0.001MF	10%	50V
C710	1-102-074-00	CERAMIC	0.001MF	10%	50V
C711	1-102-074-00	CERAMIC	0.001MF	10%	50V
C712	1-102-074-00	CERAMIC	0.001MF	10%	50V
C713	1-102-074-00	CERAMIC	0.001MF	10%	50V
C714	1-102-074-00	CERAMIC	0.001MF	10%	50V
C715	1-102-074-00	CERAMIC	0.001MF	10%	50V
C716	1-102-074-00	CERAMIC	0.001MF	10%	50V
C717	1-102-074-00	CERAMIC	0.001MF	10%	50V
C718	1-102-074-00	CERAMIC	0.001MF	10%	50V
C719	1-102-074-00	CERAMIC	0.001MF	10%	50V
C720	1-102-074-00	CERAMIC	0.001MF	10%	50V
C801	1-123-306-00	ELECT	47MF	20%	10V
C802	1-123-306-00	ELECT	47MF	20%	10V
C803	1-161-327-00	CERAMIC	0.0033MF	30%	50V
C804	1-161-327-00	CERAMIC	0.0033MF	30%	50V
C805	1-123-320-00	ELECT	100MF	20%	16V
C806	1-123-306-00	ELECT	47MF	20%	10V
C901	1-123-364-00	ELECT	1000MF	20%	50V
C902	1-123-358-00	ELECT	33MF	20%	50V
C903	1-123-341-00	ELECT	10MF	20%	35V
C905 ⚠	1-123-338-00	ELECT	2200MF	20%	25V
C906	1-123-306-00	ELECT	47MF	20%	10V
C907	1-123-308-00	ELECT	220MF	20%	10V
C908	1-123-306-00	ELECT	47MF	20%	10V
C909	1-123-312-00	ELECT	2200MF	20%	10V
C911	1-123-310-00	ELECT	470MF	20%	10V
C951	1-121-657-00	ELECT	1000MF		25V
C952	1-121-657-00	ELECT	1000MF		25V
♦CNP001	1-508-878-00	BASE POST			
♦CNP002	1-560-060-00	PIN, CONNECTOR 2P			
♦CNP501	1-560-063-00	PIN, CONNECTOR 5P			

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CAPACITORS:
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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

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

GENERAL SECTION

No.	Part No.	Description
1	2-259-121-00	SCREW, TR
2	3-304-418-00	BUTTON, REC CONTROL
3	3-304-419-00	BUTTON, EJECT
4 ♣	3-304-423-00	PLATE, SIDE, LEFT
5 ♣	3-304-429-00	PLATE, RELAY
6 ♣	3-304-422-31	(US,Canadian)...PLATE, JACK
6 ♣	3-304-446-11	(AEP,UK).....PLATE, JACK
6 ♣	3-304-447-11	(E).....PLATE, JACK
7 ♣	3-309-902-00	BASE (A), CONTROL BUTTON
8 ♣	3-309-903-00	BASE (B), CONTROL BUTTON
9 ♣	3-309-904-00	BASE, AMS BUTTON
10 ♣	3-309-905-00	BASE, CLEAR BUTTON
11 ♣	3-309-907-00	BRACKET (LEFT), CONTROL
12 ♣	3-309-908-00	BRACKET (RIGHT), CONTROL
13	3-309-912-01	KNOB, PUSH
14	3-309-912-11	KNOB, PUSH
15 ♣	3-309-914-00	CASE, SHIELD
16 ♣	3-309-919-00	JOINT
17 ♣	3-309-920-00	CHASSIS, AMPLIFIER
18	3-309-925-00	(US,Canadian)...LABEL, MODEL NUMBER
18	3-309-926-00	(AEP).....LABEL, MODEL NUMBER
18	3-309-927-00	(G-AEP).....LABEL, MODEL NUMBER
18	3-309-928-00	(UK).....LABEL, MODEL NUMBER
18	3-309-929-00	(E).....LABEL, MODEL NUMBER
19	3-534-238-XX	SPRING, TENSION
20	3-544-028-01	SPACER (t=0.3)
21	3-544-028-11	SPACER (t=0.5)
22	3-544-028-21	SPACER (t=1.0)
23 ♣	3-567-242-00	HEAT SINK
24 ♣	3-575-501-00	SLIDER, EJECT
25 ♣	3-575-502-00	BRACKET, EJECT
26	3-575-515-00	KNOB, SLIDE SWITCH
27	3-575-524-00	(US,Canadian)...COVER, POWER SWITCH
28 ♣	3-575-529-11	PLATE, SIDE, RIGHT
29	3-575-538-00	PLATE, BOTTOM
30	3-575-539-00	CASE
31	3-576-731-00	FELT (H)
32	3-703-037-00	INSULATOR, TO-220
33	3-701-682-00	(US,Canadian,E)...STOPPER, CORD
33	3-703-244-00	(AEP,UK).....BUSHING, CORD
34	3-703-486-00	+PTTWH 3X5
35 ♣	3-703-677-00	(US,Canadian)..LABEL, CAUTION, MAIN, NEW UL
36 ♣	3-703-680-00	(US).....LABEL, CAUTION, SUB, NEW UL

GENERAL SECTION

No.	Part No.	Description
37	3-703-710-01	STICKER, SONY SYMBOL (12)
38	3-831-441-XX	CUSHION
39	4-820-330-21	SCREW, BW, PLUS MINUS
40	4-875-455-21	(AEP,UK,E)...COVER (DIA.20), CAPASITOR
41	7-628-253-95	SCREW +PS 2.6X4
42	7-682-147-20	SCREW +P 3X6
43	7-682-247-13	SCREW +K 3X6
44	7-682-546-09	SCREW +B 3X5
45	7-682-646-01	SCREW +PS 3X5
46	7-685-104-14	TOTSU PTPWH 2X6 NON-SLIT, TYPE2
47	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S
48	7-685-647-79	SCREW +BVTP 3X10 TYPE2 SLIT
49	7-685-871-01	SCREW +BVTT 3X6 (S)
50	7-685-871-09	SCREW +BVTT 3X6 (S)
51	9-911-837-XX	CUSHION, FILTER
52	9-911-846-XX	CUSHION
53	A-2310-208-A	PANEL ASSY, FRONT
54	A-2315-022-A	WINDOW ASSY, CASSETTE
55	X-3304-405-0	KNOB ASSY, POWER
56	X-3309-901-1	PLATE ASSY, ORNAMENTAL
57	X-3309-903-1	ESCUTCHEON ASSY
58	7-687-204-11	PTPWH 2X6

ACCESSORY & PACKING MATERIAL

No.	Part No.	Description
101	1-551-734-11	CORD, CONNECTION (RK- 74A)
102	3-701-630-00	BAG, POLYETHYLENE
103	3-773-166-21	(US,Canadian)...MANUAL, INSTRUCTION
104	3-773-166-41	(AEP).....MANUAL, INSTRUCTION
105	3-773-166-11	(AEP,UK,E).....MANUAL, INSTRUCTION
106	3-793-828-11	QUESTIONNAIRE
107	3-573-625-00	SHEET, POLYETHYLENE
108	X-3701-105-0	ROD ASSY, CLEANING, HEAD

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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 (RIGHT)
304	3-555-114-00	SPRING (LEFT)
305	3-558-708-11	WASHER, STOPPER
306	3-558-708-21	WASHER, STOPPER
307	3-564-027-11	FELT, LIMITER
308	3-564-319-00	BELT, CAPSTAN
309 ♦	3-575-302-00	RETAINER, THRUST
310	3-575-304-00	SHAFT, GEAR, FR
311 ♦	3-575-307-00	LEVER, FWD
312 ♦	3-575-312-00	SPRING
313	3-575-318-00	LEVER, LOCK, TUNING
314	3-575-321-00	RETAINER, THRUST, CAPSTAN
315	3-575-324-00	GEAR, LIMITER
316	3-575-327-00	STOPPER
317	3-575-328-00	HOLDER, LAMP
318	3-575-330-00	BRACKET, HEAD
319 ♦	3-575-331-00	LEVER, DETECTION, HALF
320	3-575-332-00	GEAR, FR
321	3-575-333-00	PISTON
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	3-575-353-11	TABLE, REEL
328	3-575-354-00	LEVER, LOCK
329	3-575-356-00	SPRING
330	3-575-357-00	SPRING, TENSION
331	3-575-358-00	SPRING, TENSION
332	3-575-359-00	SPRING, TENSION
333	3-575-364-00	SPRING, TENSION
334	3-575-365-00	SPRING, COMPRESSION
335	3-575-368-00	SPRING, COMPRESSION
336	.....	
337	3-575-392-00	RING, PISTON
338	3-575-414-00	SPRING, COMPRESSION
339	3-575-415-11	ARBOR, MOVABLE
340	3-575-416-11	ARBOR, FIXED
341	3-575-457-00	PLATE (B), SHIELD, MOTOR
342	3-575-458-00	SPRING
343	3-575-460-00	LEVER, SELECT TUNE
344	3-575-469-00	SHOE, BRAKE
345 ♦	3-575-470-00	LEVER, HOLDER FULCRUM

MECHANISM SECTION

No.	Part No.	Description
346	3-575-471-00	TABLE, ADJUSTMANT, HEAD
347	3-575-472-00	HOLDER, CASSETTE
348	.....	
349	3-652-612-11	CUSHION (B)
350	3-701-438-21	WASHER
351	3-701-439-21	WASHER
352	3-701-444-11	WASHER, 6
353	3-703-496-00	SCREW + PWH2X14
354	7-621-259-15	SCREW +P 2.6X3
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	1-507-761-00	JACK, PIN 4P
502 ⚠	1-526-576-31	(E).....SELECTOR, POWER VOLTAGE
503 ♦	1-535-116-00	TERMINAL
504 ⚠	1-534-817-XX	(AEP).....CORD, POWER
504 ⚠	1-551-472-00	(E2).....CORD, POWER
504 ⚠	1-551-628-00	(US,Canadian)...CORD, POWER
504 ⚠	1-551-884-00	(UK).....CORD, POWER
504 ⚠	1-555-734-00	(E1).....CORD, POWER
506	1-561-598-00	SOCKET 4P
507 ♦	1-603-823-00	PC BOARD, PHOTO
508 ♦	1-606-086-00	PC BOARD, SWITCH
509 ♦	1-606-824-00	PC BOARD, SYSTEM CONTROL
510 ♦	1-606-825-00	PC BOARD, TIMER SW
511 ♦	1-606-826-00	PC BOARD, TRANSISTOR (A)

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ELECTRICAL PARTS

Ref.No.	Part No.	Description
♦CNP502	1-560-064-00	PIN, CONNECTOR 6P
♦CNP503	1-560-338-00	PIN, CONNECTOR 7P
♦CNP504	1-560-066-00	PIN, CONNECTOR 10P
♦CNP505	1-560-062-00	PIN, CONNECTOR 4P
♦CNP506	1-560-063-00	PIN, CONNECTOR 5P
♦CNP507	1-560-065-00	PIN, CONNECTOR 8P
♦CNP509	1-560-063-00	PIN, CONNECTOR 5P
♦CNP510	1-560-338-00	PIN, CONNECTOR 7P
♦CNP511	1-560-064-00	PIN, CONNECTOR 6P
♦CNP701	1-560-070-00	BASE POST
CP001	1-464-110-00	OSCILLATOR UNIT, BIAS
CP901⚠	1-161-744-00	(AEP,UK,E)..... CAP, CERAMIC 10000PF
CP901⚠	1-161-749-00	(US,Canadian)... CAP, CERAMIC 10000PF
CT001	1-141-225-00	CAP, TUNING, TRIMAR
D001	8-719-910-64	DIODE HZ6B1L
D002	8-719-910-64	DIODE HZ6B1L
D003	8-719-910-74	DIODE HZ7B1L
D004	8-719-815-55	DIODE 1S1555
D005	8-719-815-55	DIODE 1S1555
D008	8-719-815-55	DIODE 1S1555
D501	8-719-200-02	DIODE 10E-2
D502	8-719-815-55	DIODE 1S1555
D503	8-719-934-05	DIODE SLR-34URC5
D504	8-719-902-77	DIODE SLR-34PC5
D505	8-719-902-78	DIODE SLR-34DC5
D506	8-719-815-55	DIODE 1S1555
D507	8-719-815-55	DIODE 1S1555
D508	8-719-815-55	DIODE 1S1555
D509	8-719-815-55	DIODE 1S1555
D510	8-719-815-55	DIODE 1S1555
D511	8-719-815-55	DIODE 1S1555
D512	8-719-815-55	DIODE 1S1555
D513	8-719-815-55	DIODE 1S1555
D514	8-719-815-55	DIODE 1S1555
D515	8-719-815-55	DIODE 1S1555
D601	8-719-815-55	DIODE 1S1555
D701	8-719-815-55	DIODE 1S1555
D702	8-719-910-01	DIODE HZ20-1L
D703	8-719-815-55	DIODE 1S1555
D704	8-719-815-55	DIODE 1S1555
D705	8-719-815-55	DIODE 1S1555
D706	8-719-815-55	DIODE 1S1555
D707	8-719-815-55	DIODE 1S1555
D708	8-719-317-10	DIODE SEL1710K

ELECTRICAL PARTS

Ref.No.	Part No.	Description
D709	8-719-317-10	DIODE SEL1710K
D801	8-719-200-02	DIODE 10E-2
D802	8-719-200-02	DIODE 10E-2
D803	8-719-200-02	DIODE 10E-2
D804	8-719-200-02	DIODE 10E-2
D901⚠	8-719-200-02	DIODE 10E-2
D902⚠	8-719-200-02	DIODE 10E-2
D903⚠	8-719-200-02	DIODE 10E-2
D904⚠	8-719-200-02	DIODE 10E-2
D905	8-719-200-02	DIODE 10E-2
D906	8-719-922-71	DIODE HZ27-1L
D907	8-719-910-14	DIODE HZ11B1L
D908	8-719-910-69	DIODE HZ6C3L
D909⚠	8-719-931-07	DIODE EQB01-07
D951⚠	8-719-200-02	DIODE 10E-2
D952⚠	8-719-200-02	DIODE 10E-2
D953⚠	8-719-200-02	DIODE 10E-2
D954⚠	8-719-200-02	DIODE 10E-2
FL701	1-519-248-00	INDICATOR TUBE, FLUORESCENT
HE001	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	8-759-300-76	IC CX-174A-2
IC302	8-759-300-76	IC CX-174A-2
IC401	8-759-300-76	IC CX-174A-2
IC402	8-759-300-76	IC CX-174A-2
IC501	8-759-900-80	IC MB8843-590K
IC502	8-759-900-81	IC MB8843-594J
IC503	8-759-984-49	IC MB84049UB
IC504	8-759-220-04	IC TC40H004P
IC505	8-759-133-90	IC UPC339C
IC506	8-759-729-03	IC NJM2903D
IC507	8-759-984-69	IC MB84069UB
IC701	8-759-904-72	IC MSL9359RS
J002	1-507-796-21	JACK
J101	1-507-797-21	JACK, LARGE TYPE
J201	1-507-797-21	JACK, LARGE TYPE
L001	1-407-177-XX	MICRO INDUCTOR 470UH
L002	1-407-177-XX	MICRO INDUCTOR 470UH
L101	1-408-262-00	MICRO INDUCTOR 27MMH
L201	1-408-262-00	MICRO INDUCTOR 27MMH
L301	1-408-259-00	MICRO INDUCTOR 15MMH
L401	1-408-259-00	MICRO INDUCTOR 15MMH

NOTE:
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- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.

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 ⚠ 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···: μA···, UPA···: μPA···, UPC···: μPC, UPD···: μPD···

ELECTRICAL PARTS

Ref.No.	Part No.	Description
LPF101	1-231-388-00	FILTER, LOWPASS
LPF101	1-231-388-00	FILTER, LOWPASS
LPF201	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
PM801	1-454-301-00	SOLENOID, PLUNGER (HEAD)
PM802	1-454-291-00	SOLENOID, PLUNGER (AMS)
PL801	1-518-340-71	LAMP, PILOT
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	8-729-384-48	TRANSISTOR 2SA844
Q011	8-729-612-77	TRANSISTOR 2SA1027R
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

ELECTRICAL PARTS

Ref.No.	Part No.	Description
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	8-729-177-43	TRANSISTOR 2SD774
Q502	8-729-177-43	TRANSISTOR 2SD774
Q503	8-729-663-47	TRANSISTOR 2SC1364
Q504	8-729-103-43	TRANSISTOR 2SB734-4
Q505	8-729-664-47	TRANSISTOR 2SC1364
Q506	8-729-103-43	TRANSISTOR 2SB734-4
Q507	8-729-612-77	TRANSISTOR 2SA1027R
Q508	8-729-612-77	TRANSISTOR 2SA1027R
Q509	8-729-100-13	TRANSISTOR 2SC2001
Q510	8-729-195-23	TRANSISTOR 2SA952
Q511	8-729-195-23	TRANSISTOR 2SA952
Q512	8-729-100-13	TRANSISTOR 2SC2001
Q513	8-729-663-47	TRANSISTOR 2SC1364
Q514	8-729-180-93	TRANSISTOR 2SD809
Q601	8-729-663-47	TRANSISTOR 2SC1364
Q602	8-729-663-47	TRANSISTOR 2SC1364
Q603	8-729-663-47	TRANSISTOR 2SC1364
Q604	8-729-602-68	TRANSISTOR 2SA1026-8
Q701	8-729-612-77	TRANSISTOR 2SA1027R
Q702	8-729-612-77	TRANSISTOR 2SA1027R
Q703	8-729-612-77	TRANSISTOR 2SA1027R
Q704	8-729-612-77	TRANSISTOR 2SA1027R
Q705	8-729-612-77	TRANSISTOR 2SA1027R
Q706	8-729-612-77	TRANSISTOR 2SA1027R
Q707	8-729-612-77	TRANSISTOR 2SA1027R
Q708	8-729-612-77	TRANSISTOR 2SA1027R
Q709	8-729-612-77	TRANSISTOR 2SA1027R
Q710	8-729-612-77	TRANSISTOR 2SA1027R
Q711	8-729-612-77	TRANSISTOR 2SA1027R
Q712	8-729-612-77	TRANSISTOR 2SA1027R
Q713	8-729-612-77	TRANSISTOR 2SA1027R
Q714	8-729-612-77	TRANSISTOR 2SA1027R
Q715	8-729-612-77	TRANSISTOR 2SA1027R
Q716	8-729-612-77	TRANSISTOR 2SA1027R
Q717	8-729-612-77	TRANSISTOR 2SA1027R
Q718	8-729-612-77	TRANSISTOR 2SA1027R
Q719	8-729-612-77	TRANSISTOR 2SA1027R
Q720	8-729-612-77	TRANSISTOR 2SA1027R
Q721	8-729-612-77	TRANSISTOR 2SA1027R

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

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···: μA···, UPA···: μPA···, UPC···: μPC, UPD···: μPD···

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
Q722	8-729-612-77	TRANSISTOR 2SA1027R			
Q803	8-729-110-21	TRANSISTOR PH102			
Q804	8-729-110-21	TRANSISTOR PH102			
Q901	8-729-288-02	TRANSISTOR 2SD880			
Q902	8-729-663-47	TRANSISTOR 2SC1364			
Q903	8-729-663-47	TRANSISTOR 2SC1364			
Q904	8-729-288-02	TRANSISTOR 2SD880			
Q905	8-729-663-47	TRANSISTOR 2SC1364			
Q907	8-729-663-47	TRANSISTOR 2SC1364			
R003	1-246-497-00	CARBON	10K	5%	1/4W
R004	1-246-497-00	CARBON	10K	5%	1/4W
R005	1-246-469-00	CARBON	680	5%	1/4W
R006	1-246-474-00	CARBON	1.1K	5%	1/4W
R007	1-246-474-00	CARBON	1.1K	5%	1/4W
R008	1-246-469-00	CARBON	680	5%	1/4W
R010	1-247-879-00	CARBON	100K	5%	1/6W
R011	1-247-855-00	CARBON	10K	5%	1/6W
R012	1-247-831-00	CARBON	1K	5%	1/6W
R014	1-247-831-00	CARBON	1K	5%	1/6W
R015	1-247-831-00	CARBON	1K	5%	1/6W
R016	1-247-879-00	CARBON	100K	5%	1/6W
R017	1-247-879-00	CARBON	100K	5%	1/6W
R018	1-247-879-00	CARBON	100K	5%	1/6W
R020	1-246-468-00	CARBON	620	5%	1/4W
R021	1-247-855-00	CARBON	10K	5%	1/6W
R022	1-246-498-00	CARBON	11K	5%	1/4W
R023	1-246-509-00	CARBON	33K	5%	1/4W
R024	1-246-477-00	CARBON	1.5K	5%	1/4W
R025	1-246-498-00	CARBON	11K	5%	1/4W
R026	1-246-497-00	CARBON	10K	5%	1/4W
R027	1-247-855-00	CARBON	10K	5%	1/6W
R028	1-247-847-00	CARBON	4.7K	5%	1/6W
R029	1-247-867-00	CARBON	33K	5%	1/6W
R030	1-247-807-00	CARBON	100	5%	1/6W
R031	1-247-867-00	CARBON	33K	5%	1/6W
R032	1-246-487-00	CARBON	3.9K	5%	1/4W
R033	1-247-871-00	CARBON	47K	5%	1/6W
R034	1-247-871-00	CARBON	47K	5%	1/6W
R035	1-246-457-00	CARBON	220	5%	1/4W
R036	1-246-457-00	CARBON	220	5%	1/4W
R037 ⚠	1-212-857-00	FUSIBLE	10	5%	1/4W F
R038 ⚠	1-212-857-00	FUSIBLE	10	5%	1/4W F
R101	1-246-497-00	CARBON	10K	5%	1/4W
R102	1-246-518-00	CARBON	75K	5%	1/4W
R103	1-246-535-00	CARBON	390K	5%	1/4W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R104	1-246-497-00	CARBON	10K	5%	1/4W
R105	1-246-441-00	CARBON	47	5%	1/4W
R106	1-246-529-00	CARBON	220K	5%	1/4W
R107	1-246-473-00	CARBON	1K	5%	1/4W
R108	1-246-473-00	CARBON	1K	5%	1/4W
R109	1-246-473-00	CARBON	1K	5%	1/4W
R110	1-246-529-00	CARBON	220K	5%	1/4W
R111	1-246-489-00	CARBON	4.7K	5%	1/4W
R112	1-246-473-00	CARBON	1K	5%	1/4W
R113	1-246-485-00	CARBON	3.3K	5%	1/4W
R114	1-246-521-00	CARBON	100K	5%	1/4W
R115	1-246-495-00	CARBON	8.2K	5%	1/4W
R116	1-244-909-00	CARBON	33K	5%	1/2W
R117	1-244-881-00	CARBON	2.2K	5%	1/2W
R118	1-246-501-00	CARBON	15K	5%	1/4W
R119	1-246-479-00	CARBON	1.8K	5%	1/4W
R120	1-246-508-00	CARBON	30K	5%	1/4W
R121	1-246-509-00	CARBON	33K	5%	1/4W
R122	1-246-493-00	CARBON	6.8K	5%	1/4W
R123	1-246-504-00	CARBON	20K	5%	1/4W
R124	1-246-505-00	CARBON	22K	5%	1/4W
R125	1-246-497-00	CARBON	10K	5%	1/4W
R126	1-246-515-00	CARBON	56K	5%	1/4W
R128	1-246-499-00	CARBON	12K	5%	1/4W
R129	1-247-891-00	CARBON	330K	5%	1/6W
R130	1-247-831-00	CARBON	1K	5%	1/6W
R132	1-246-497-00	CARBON	10K	5%	1/4W
R133	1-246-509-00	CARBON	33K	5%	1/4W
R134	1-246-508-00	CARBON	30K	5%	1/4W
R135	1-246-457-00	CARBON	220	5%	1/4W
R136	1-246-506-00	CARBON	24K	5%	1/4W
R137	1-246-451-00	CARBON	120	5%	1/4W
R138	1-244-890-00	CARBON	5.1K	5%	1/2W
R139	1-246-524-00	CARBON	130K	5%	1/4W
R140	1-246-485-00	CARBON	3.3K	5%	1/4W
R141	1-244-899-00	CARBON	12K	5%	1/2W
R142	1-246-529-00	CARBON	220K	5%	1/4W
R143	1-246-503-00	CARBON	18K	5%	1/4W
R144	1-246-497-00	CARBON	10K	5%	1/4W
R145	1-247-855-00	CARBON	10K	5%	1/6W
R146	1-246-528-00	CARBON	200K	5%	1/4W
R147	1-246-503-00	CARBON	18K	5%	1/4W
R148	1-246-503-00	CARBON	18K	5%	1/4W
R149	1-246-493-00	CARBON	6.8K	5%	1/4W
R150	1-246-521-00	CARBON	100K	5%	1/4W

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

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···: μA···, UPA···: μPA···, UPC···: μPC, UPD···: μPD···

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R151	1-246-473-00	CARBON	1K	5%	1/4W
R152	1-246-513-00	CARBON	47K	5%	1/4W
R153	1-246-513-00	CARBON	47K	5%	1/4W
R154	1-247-887-00	CARBON	220K	5%	1/6W
R155	1-246-515-00	CARBON	56K	5%	1/4W
R301	1-247-855-00	CARBON	10K	5%	1/6W
R302	1-246-545-00	CARBON	1M	5%	1/4W
R303	1-246-530-00	CARBON	240K	5%	1/4W
R304	1-247-855-00	CARBON	10K	5%	1/6W
R305	1-246-545-00	CARBON	1M	5%	1/4W
R306	1-246-501-00	CARBON	15K	5%	1/4W
R307	1-246-530-00	CARBON	240K	5%	1/4W
R308	1-246-507-00	CARBON	27K	5%	1/4W
R309	1-247-855-00	CARBON	10K	5%	1/6W
R310	1-246-499-00	CARBON	12K	5%	1/4W
R311	1-246-545-00	CARBON	1M	5%	1/4W
R312	1-246-528-00	CARBON	200K	5%	1/4W
R313	1-246-436-00	CARBON	30	5%	1/4W
R314	1-246-445-00	CARBON	68	5%	1/4W
R315	1-246-502-00	CARBON	16K	5%	1/4W
R316	1-246-497-00	CARBON	10K	5%	1/4W
R317	1-247-838-00	CARBON	2K	5%	1/6W
R318	1-247-855-00	CARBON	10K	5%	1/6W
R319	1-246-492-00	CARBON	6.2K	5%	1/4W
R320	1-246-508-00	CARBON	30K	5%	1/4W
R321	1-246-509-00	CARBON	33K	5%	1/4W
R322	1-247-871-00	CARBON	47K	5%	1/6W
R323	1-246-545-00	CARBON	1M	5%	1/4W
R324	1-246-453-00	CARBON	150	5%	1/4W
R325	1-246-455-00	CARBON	180	5%	1/4W
R326	1-246-475-00	CARBON	1.2K	5%	1/4W
R327	1-246-459-00	CARBON	270	5%	1/4W
R328	1-246-533-00	CARBON	330K	5%	1/4W
R329	1-246-497-00	CARBON	10K	5%	1/4W
R330	1-246-485-00	CARBON	3.3K	5%	1/4W
R331	1-246-529-00	CARBON	220K	5%	1/4W
R332	1-246-530-00	CARBON	240K	5%	1/4W
R333	1-246-530-00	CARBON	240K	5%	1/4W
R334	1-246-463-00	CARBON	390	5%	1/4W
R335	1-246-513-00	CARBON	47K	5%	1/4W
R336	1-214-966-00	METAL	1.2M	1%	1/4W
R337	1-247-848-00	CARBON	5.1K	5%	1/6W
R338	1-246-467-00	CARBON	560	5%	1/4W
R339	1-246-475-00	CARBON	1.2K	5%	1/4W
R340	1-246-502-00	CARBON	16K	5%	1/4W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R341	1-246-473-00	CARBON	1K	5%	1/4W
R342	1-246-510-00	CARBON	36K	5%	1/4W
R343	1-246-477-00	CARBON	1.5K	5%	1/4W
R344	1-246-490-00	CARBON	5.1K	5%	1/4W
R345	1-246-484-00	CARBON	3K	5%	1/4W
R346	1-246-533-00	CARBON	330K	5%	1/4W
R347	1-246-513-00	CARBON	47K	5%	1/4W
R348	1-246-457-00	CARBON	220	5%	1/4W
R349	1-246-472-00	CARBON	910	5%	1/4W
R350	1-246-485-00	CARBON	3.3K	5%	1/4W
R351	1-246-481-00	CARBON	2.2K	5%	1/4W
R352	1-246-507-00	CARBON	27K	5%	1/4W
R353	1-246-493-00	CARBON	6.8K	5%	1/4W
R354	1-246-473-00	CARBON	1K	5%	1/4W
R355	1-246-529-00	CARBON	220K	5%	1/4W
R356	1-246-473-00	CARBON	1K	5%	1/4W
R357	1-247-845-00	CARBON	3.9K	5%	1/6W
R358	1-246-505-00	CARBON	22K	5%	1/4W
R359	1-247-869-00	CARBON	39K	5%	1/6W
R436	1-214-966-00	METAL	1.2M	1%	1/4W
R501	1-246-473-00	CARBON	1K	5%	1/4W
R502	1-246-473-00	CARBON	1K	5%	1/4W
R503	1-246-497-00	CARBON	10K	5%	1/4W
R504	1-246-473-00	CARBON	1K	5%	1/4W
R505 ⚠	1-206-477-00	METAL OXIDE	39	5%	2W F
R506	1-246-497-00	CARBON	10K	5%	1/4W
R507	1-246-473-00	CARBON	1K	5%	1/4W
R508 ⚠	1-206-482-00	METAL OXIDE	62	5%	2W F
R509	1-246-505-00	CARBON	22K	5%	1/4W
R510	1-246-505-00	CARBON	22K	5%	1/4W
R511	1-246-473-00	CARBON	1K	5%	1/4W
R512	1-246-481-00	CARBON	2.2K	5%	1/4W
R513	1-246-449-00	CARBON	100	5%	1/4W
R514	1-246-505-00	CARBON	22K	5%	1/4W
R515	1-246-497-00	CARBON	10K	5%	1/4W
R516	1-246-449-00	CARBON	100	5%	1/4W
R517	1-246-505-00	CARBON	22K	5%	1/4W
R518	1-246-505-00	CARBON	22K	5%	1/4W
R519	1-246-473-00	CARBON	1K	5%	1/4W
R520	1-246-505-00	CARBON	22K	5%	1/4W
R521	1-246-473-00	CARBON	1K	5%	1/4W
R522	1-246-473-00	CARBON	1K	5%	1/4W
R523	1-246-505-00	CARBON	22K	5%	1/4W
R524	1-246-473-00	CARBON	1K	5%	1/4W
R525	1-246-505-00	CARBON	22K	5%	1/4W

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

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···: μA···, UPA···: μPA···, UPC···: μPC, UPD···: μPD···

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R526	1-246-505-00	CARBON	22K	5%	1/4W
R527	1-246-505-00	CARBON	22K	5%	1/4W
R528	1-246-473-00	CARBON	1K	5%	1/4W
R529	1-246-473-00	CARBON	1K	5%	1/4W
R531	1-246-464-00	CARBON	430	5%	1/4W
R532 ⚠	1-212-849-00	FUSIBLE	4.7	5%	1/4W F
R533	1-246-468-00	CARBON	620	5%	1/4W
R534	1-246-473-00	CARBON	1K	5%	1/4W
R535	1-246-457-00	CARBON	220	5%	1/4W
R536	1-246-465-00	CARBON	470	5%	1/4W
R537	1-246-457-00	CARBON	220	5%	1/4W
R538	1-246-505-00	CARBON	22K	5%	1/4W
R539	1-246-505-00	CARBON	22K	5%	1/4W
R540	1-246-505-00	CARBON	22K	5%	1/4W
R541	1-246-505-00	CARBON	22K	5%	1/4W
R542	1-246-505-00	CARBON	22K	5%	1/4W
R543	1-246-505-00	CARBON	22K	5%	1/4W
R544	1-246-505-00	CARBON	22K	5%	1/4W
R545	1-246-505-00	CARBON	22K	5%	1/4W
R546	1-246-505-00	CARBON	22K	5%	1/4W
R547	1-246-505-00	CARBON	22K	5%	1/4W
R548	1-246-497-00	CARBON	10K	5%	1/4W
R549	1-246-473-00	CARBON	1K	5%	1/4W
R550	1-246-504-00	CARBON	20K	5%	1/4W
R551	1-246-473-00	CARBON	1K	5%	1/4W
R552	1-246-497-00	CARBON	10K	5%	1/4W
R553	1-246-481-00	CARBON	2.2K	5%	1/4W
R554	1-246-497-00	CARBON	10K	5%	1/4W
R555	1-246-473-00	CARBON	1K	5%	1/4W
R556	1-246-516-00	CARBON	62K	5%	1/4W
R557	1-246-477-00	CARBON	1.5K	5%	1/4W
R558	1-246-524-00	CARBON	130K	5%	1/4W
R559	1-246-473-00	CARBON	1K	5%	1/4W
R560	1-246-531-00	CARBON	270K	5%	1/4W
R561	1-246-466-00	CARBON	510	5%	1/4W
R562	1-246-497-00	CARBON	10K	5%	1/4W
R563	1-246-509-00	CARBON	33K	5%	1/4W
R564	1-246-505-00	CARBON	22K	5%	1/4W
R565	1-246-505-00	CARBON	22K	5%	1/4W
R566	1-246-505-00	CARBON	22K	5%	1/4W
R567	1-246-497-00	CARBON	10K	5%	1/4W
R568	1-246-489-00	CARBON	4.7K	5%	1/4W
R569	1-246-510-00	CARBON	36K	5%	1/4W
R570	1-246-517-00	CARBON	68K	5%	1/4W
R571	1-246-499-00	CARBON	12K	5%	1/4W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R572	1-246-511-00	CARBON	39K	5%	1/4W
R573	1-246-505-00	CARBON	22K	5%	1/4W
R574	1-246-505-00	CARBON	22K	5%	1/4W
R575	1-246-545-00	CARBON	1M	5%	1/4W
R576	1-246-505-00	CARBON	22K	5%	1/4W
R577	1-246-505-00	CARBON	22K	5%	1/4W
R578	1-246-505-00	CARBON	22K	5%	1/4W
R579	1-246-505-00	CARBON	22K	5%	1/4W
R580	1-246-541-00	CARBON	680K	5%	1/4W
R581	1-246-521-00	CARBON	100K	5%	1/4W
R582	1-246-531-00	CARBON	270K	5%	1/4W
R583	1-246-513-00	CARBON	47K	5%	1/4W
R584	1-246-531-00	CARBON	270K	5%	1/4W
R585	1-246-513-00	CARBON	47K	5%	1/4W
R586	1-246-519-00	CARBON	82K	5%	1/4W
R587	1-246-477-00	CARBON	1.5K	5%	1/4W
R588	1-246-471-00	CARBON	820	5%	1/4W
R589	1-246-471-00	CARBON	820	5%	1/4W
R590	1-246-505-00	CARBON	22K	5%	1/4W
R591	1-246-505-00	CARBON	22K	5%	1/4W
R601	1-246-513-00	CARBON	47K	5%	1/4W
R602	1-246-513-00	CARBON	47K	5%	1/4W
R603	1-246-485-00	CARBON	3.3K	5%	1/4W
R604	1-244-906-00	CARBON	24K	5%	1/2W
R605	1-244-906-00	CARBON	24K	5%	1/2W
R606	1-244-925-00	CARBON	150K	5%	1/2W
R607	1-246-505-00	CARBON	22K	5%	1/4W
R608	1-246-496-00	CARBON	9.1K	5%	1/4W
R609	1-246-519-00	CARBON	82K	5%	1/4W
R610	1-246-465-00	CARBON	470	5%	1/4W
R611	1-246-529-00	CARBON	220K	5%	1/4W
R612	1-246-529-00	CARBON	220K	5%	1/4W
R613	1-246-489-00	CARBON	4.7K	5%	1/4W
R614	1-246-469-00	CARBON	680	5%	1/4W
R615	1-246-505-00	CARBON	22K	5%	1/4W
R616	1-246-531-00	CARBON	270K	5%	1/4W
R617	1-246-489-00	CARBON	4.7K	5%	1/4W
R618	1-246-510-00	CARBON	36K	5%	1/4W
R619	1-246-510-00	CARBON	36K	5%	1/4W
R701	1-247-875-00	CARBON	68K	5%	1/6W
R702	1-247-875-00	CARBON	68K	5%	1/6W
R703	1-247-875-00	CARBON	68K	5%	1/6W
R704	1-247-875-00	CARBON	68K	5%	1/6W
R705	1-247-875-00	CARBON	68K	5%	1/6W
R706	1-247-875-00	CARBON	68K	5%	1/6W

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

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···: μA···, UPA···: μPA···, UPC···: μPC, UPD···: μPD···

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R707	1-247-875-00	CARBON	68K	5%	1/6W
R708	1-247-875-00	CARBON	68K	5%	1/6W
R709	1-247-875-00	CARBON	68K	5%	1/6W
R710	1-247-875-00	CARBON	68K	5%	1/6W
R711	1-247-875-00	CARBON	68K	5%	1/6W
R712	1-247-875-00	CARBON	68K	5%	1/6W
R713	1-247-875-00	CARBON	68K	5%	1/6W
R714	1-247-875-00	CARBON	68K	5%	1/6W
R715	1-247-875-00	CARBON	68K	5%	1/6W
R716	1-247-875-00	CARBON	68K	5%	1/6W
R717	1-247-875-00	CARBON	68K	5%	1/6W
R718	1-247-875-00	CARBON	68K	5%	1/6W
R719	1-247-875-00	CARBON	68K	5%	1/6W
R720	1-247-875-00	CARBON	68K	5%	1/6W
R721	1-247-875-00	CARBON	68K	5%	1/6W
R722	1-247-875-00	CARBON	68K	5%	1/6W
R723	1-247-875-00	CARBON	68K	5%	1/6W
R724	1-247-875-00	CARBON	68K	5%	1/6W
R725	1-247-875-00	CARBON	68K	5%	1/6W
R726	1-247-875-00	CARBON	68K	5%	1/6W
R727	1-247-875-00	CARBON	68K	5%	1/6W
R728	1-247-875-00	CARBON	68K	5%	1/6W
R729	1-247-875-00	CARBON	68K	5%	1/6W
R730	1-247-875-00	CARBON	68K	5%	1/6W
R731	1-247-875-00	CARBON	68K	5%	1/6W
R732	1-247-875-00	CARBON	68K	5%	1/6W
R733	1-244-861-00	CARBON	330	5%	1/2W
R734	1-247-895-00	CARBON	470K	5%	1/6W
R735	1-247-872-00	CARBON	51K	5%	1/6W
R736	1-247-872-00	CARBON	51K	5%	1/6W
R737	1-247-861-00	CARBON	18K	5%	1/6W
R738	1-247-867-00	CARBON	33K	5%	1/6W
R739	1-247-875-00	CARBON	68K	5%	1/6W
R740	1-247-875-00	CARBON	68K	5%	1/6W
R741	1-247-875-00	CARBON	68K	5%	1/6W
R742	1-247-875-00	CARBON	68K	5%	1/6W
R743	1-247-875-00	CARBON	68K	5%	1/6W
R744	1-247-875-00	CARBON	68K	5%	1/6W
R745	1-247-875-00	CARBON	68K	5%	1/6W
R746	1-247-875-00	CARBON	68K	5%	1/6W
R747	1-247-875-00	CARBON	68K	5%	1/6W
R748	1-247-875-00	CARBON	68K	5%	1/6W
R749	1-247-875-00	CARBON	68K	5%	1/6W
R750	1-247-875-00	CARBON	68K	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R902	1-246-489-00	CARBON	4.7K	5%	1/4W
R904	1-246-473-00	CARBON	1K	5%	1/4W
R905	1-246-473-00	CARBON	1K	5%	1/4W
R906	1-246-489-00	CARBON	4.7K	5%	1/4W
R908	1-244-853-00	CARBON	150	5%	1/2W
R910	1-246-497-00	CARBON	10K	5%	1/4W
RV101	1-226-991-00	RES, VAR, SLIDE 20K/20K			
RV102	1-226-236-00	RES, ADJ, CARBON 10K			
RV103	1-226-236-00	RES, ADJ, CARBON 10K			
RV201	1-226-991-00	RES, VAR, SLIDE 20K/20K			
RV202	1-226-236-00	RES, ADJ, CARBON 10K			
RV203	1-226-236-00	RES, ADJ, CARBON 10K			
RV301	1-226-237-00	RES, ADJ, CARBON 20K			
RV401	1-226-237-00	RES, ADJ, CARBON 20K			
RY001	1-515-473-00	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)			
S501	1-554-303-00	SWITCH, KEY BOARD			
S502	1-554-303-00	SWITCH, KEY BOARD			
S503	1-554-303-00	SWITCH, KEY BOARD			
S504	1-554-303-00	SWITCH, KEY BOARD			
S505	1-554-303-00	SWITCH, KEY BOARD			
S506	1-554-303-00	SWITCH, KEY BOARD			
S507	1-554-303-00	SWITCH, KEY BOARD			
S508	1-553-206-00	SWITCH, SLIDE			
S509	1-554-303-00	SWITCH, KEY BOARD			
S510	1-554-303-00	SWITCH, KEY BOARD			
S511	1-554-303-00	SWITCH, KEY BOARD			
S512	1-554-303-00	SWITCH, KEY BOARD			
S801	1-552-532-00	SWITCH, PUSH			
S802	1-552-532-00	SWITCH, PUSH			
X501	1-527-802-21	OSCILLATOR, CERAMIC			

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

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.
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COILS
- MMH : mH, UH : μH

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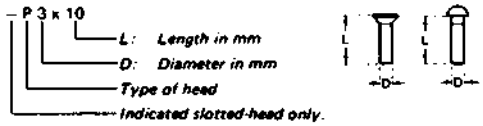
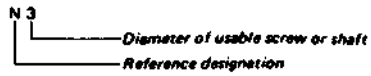
SEMICONDUCTORS
In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC, UPD···: μPD···

HARDWARE NOMENCLATURE

Screw:



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	