

237

# NEC

## COMPACT DISC PLAYER SERVICE MANUAL

MODELS: CD-803E (BG)  
CD-803EU

ORDER No. 499910209



Better Service  
Better Reputation  
Better Profit



T.C. Corp  
10 North Main St  
Wharton NJ 07885  
[www.servicemanuals.net](http://www.servicemanuals.net)

### SPECIFICATION

System	: Optical Principle (Compact Disc Digital Audio System)	Output Level	: FIXED ..... 1.5 V (470Ω)
Pickup Type	: GaAlAs Semiconductor Laser	VARIABLE .....	0 - 1.5 V (2.5 kΩ)
Sampling Frequency	: 44.1 kHz	Program Search Function	: By program number or sub number
Quantization	: 16 bits linear	Memory Function	: Random access memory for up to 99 selections by program number or sub number
Number of Channels	: 2	Access Time	: 3 seconds average
Frequency Response	: 5 Hz - 20 kHz (within ± 5 dB)	Power Source	: 100/120/220/240 V AC, 50/60 Hz (Model CD-803E (BG) only) 120V 60Hz (Model CD-803EU only)
Dynamic Range	: Better than 90 dB	Power Consumption	: 58 W
Signal-to-Noise Ratio	: Better than 90 dB	Dimensions	: 430 (W) × 150 (H) × 360(D) mm
Total Harmonic Distortion	: Below 0.01% (5 Hz - 20 kHz)	Weight	: 12 kg
Channel Separation	: Better than 70 dB (5 Hz - 20 kHz)	Standard Accessories	: RCA Pin Cord Remote Control Unit (with Alkaline-Manganese Batteries: LR44 x 2)
Wow-and Flutter	: Below measurable limits (Quartz crystal precision)		

# NEC Corporation

TOKYO JAPAN

CD-803E(BG)/803EU

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# 1. SAFETY PRECAUTIONS

- (1) The service precautions are indicated or printed on the cabinet, chassis or components. When servicing, follow the printed or indicated service precautions and service materials.
- (2) The Components used in the unit has a specified non-flammability and dielectric strength. When replacing any components, use components which has the same ratings. Components marked  $\Delta$  or (\*) in the circuit diagram are important for safety or for the characteristics of the unit. Always replace with the appointed components.
- (3) An insulation tube or tape is sometimes used and some components are raised above the printed wiring board for safety. The internal wiring is sometimes clamped to prevent contact with heating components. Install them as they were.
- (4) After servicing, always check that the removed screws, components and wiring have been installed correctly and that the portion around the serviced part have not been damaged and so on. Further check the insulation between the blades of attachment plug and accessible conductive parts.

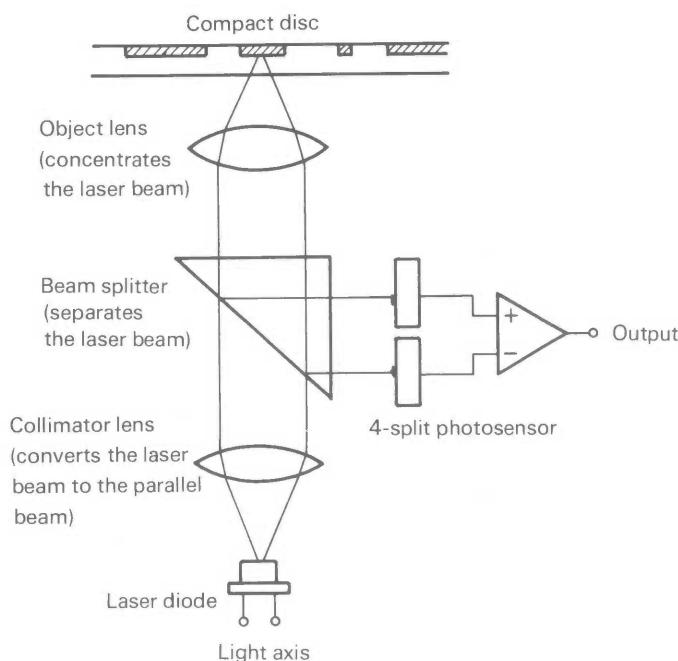
## 2. INTRODUCTION IN SERVICE MANUAL

This unit uses unvisible semiconductor laser to pick up the digital signal on the disc. Since the laser can takes the signal without contact, there's no anxiety of rubbing down the disc and the pick up assembly.

But you must treat laser with the greatest care. In servicing, please keep the following items.

- 1) Avoid direct exposure to beam.  
Laser can be radiated when the interlocks are defeated or failed.
- 2) Do not break up the pick up assembly.
- 3) Refer to "Checking the laser section".

### LASER PICK UP ASSEMBLY



### Insulation Checking Procedure

Disconnect the attachment plug from the AC outlet and turn the power on. Connect the insulation resistance meter (500V) to the blades of the attachment plug. The insulation resistance between the each blade of the attachment plug and accessible conductive parts (Note 1) should be more than 1M-ohm.

**Note 1:** Accessible Conductive Parts including Metal panels. Input terminals, Earphone jacks, etc.

### LASER SPECIFICATION

The laser provided in the unit is GaAlAs semiconductor laser. The theory of the laser emitting is the same as the light emitting of LEDs. The difference is that the laser has only one wavelength and is coherent.

One of the characteristics of laser diodes is that the threshold level can be changed accordance with the surrounding temperature. To correct this characteristic, the laser diode used in this unit provides monitor photo diode and controls the output power level of the laser to be constant.

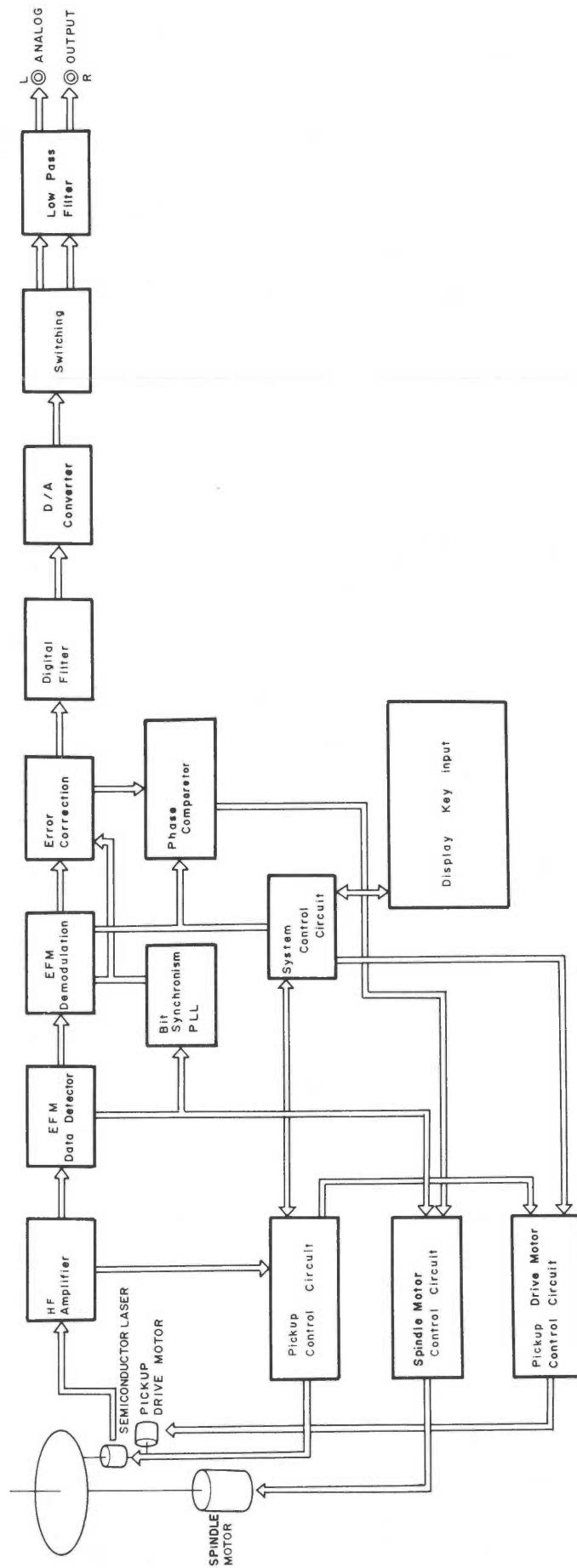
#### Specifications

Wavelength	:	810 mm
Waveform	:	Continuous Wave (CW)
Output Level	:	2.5 mW

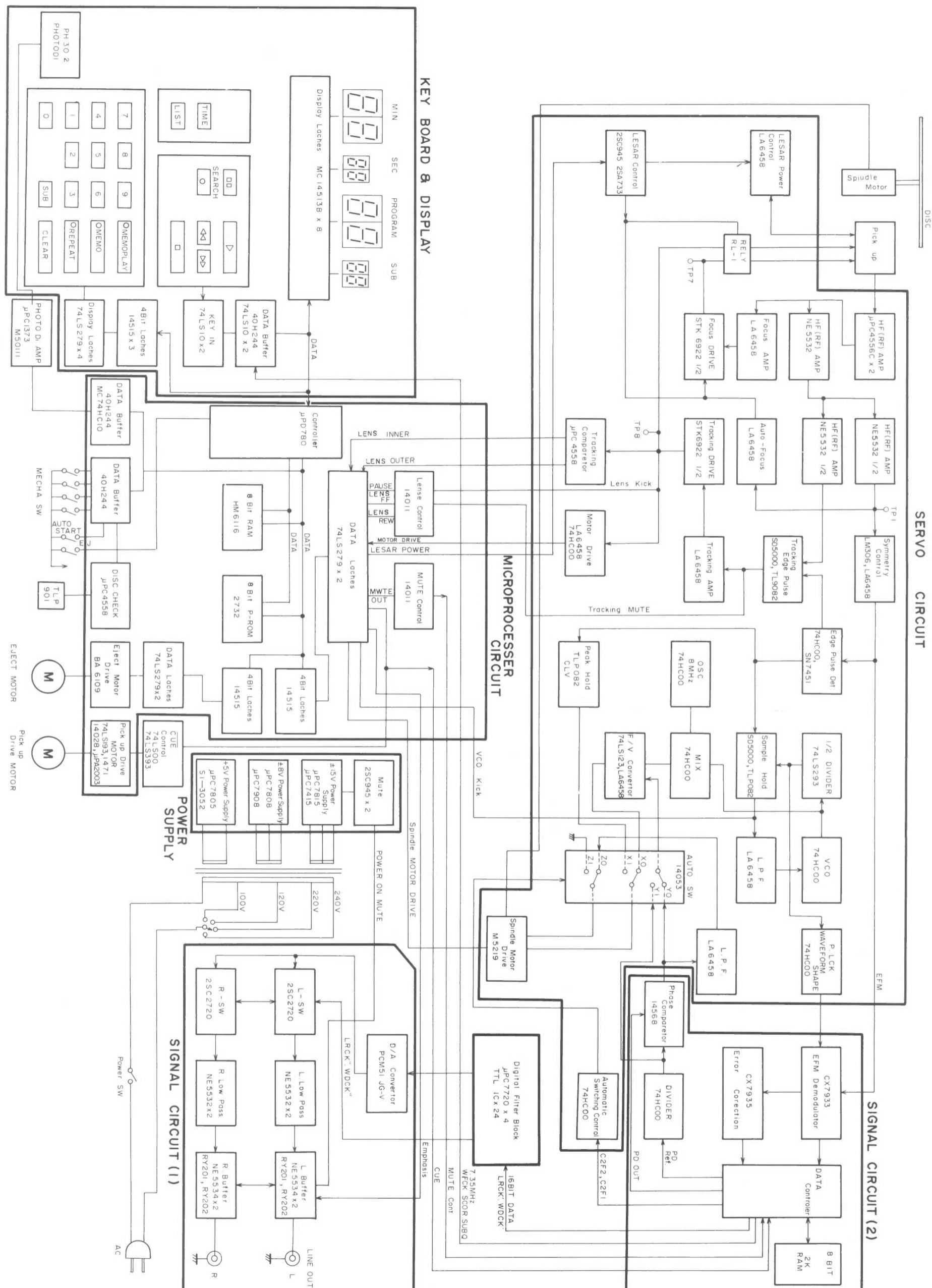
The pick up assembly consist of laser diode, 4-devided assembly consist of laser diode, 4-devided photo diode, object lens, prisms and coils. The object lens moves fore or back by focus servo coil and also moves left or right by radial servo coil.

The laser passes through the prisms and the lenses and is emitted through the object lens. The power of it is decreased to 0.3 mW by passing through these optical instruments. The laser reflected by the disc passes through the optical instruments again and is detected by the 4-devided photo diode.

### 3. OVERALL BLOCK DIAGRAM



#### 4. BLOCK DIAGRAM



## 5. LOCATION OF CONTROLS

## 6. OPERATIONS

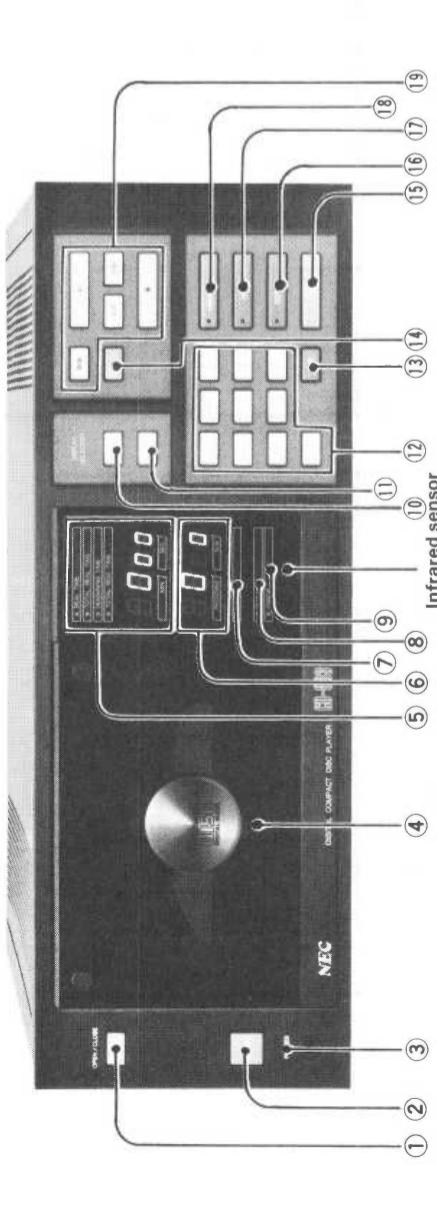
(When using the remote control unit, operate the switches on the remote control in the same way.)

### DISC INSERTION

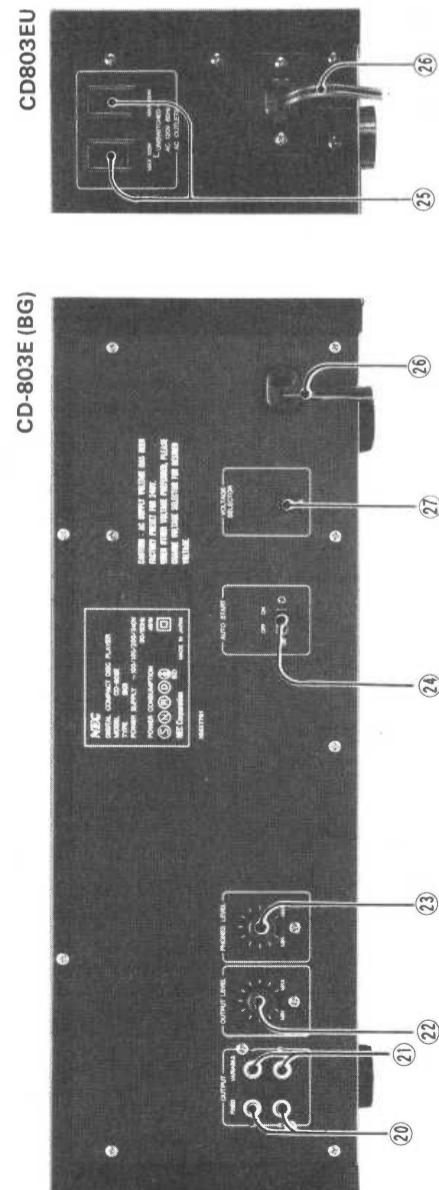
1. Press the Disc Holder Switch to open the disc holder compartment.
2. Insert the compact disc into the disc holder with the label facing outwards. At this time, the disc edge protrudes somewhat from the disc holder.
3. Press the Disc Holder Switch once more. The disc is automatically loaded into the disc holder and the disc holder closes.
4. After the disc holder is closed completely, the disc automatically starts to rotate. The Ready Indicator flashes and the information stored on the disc is retrieved.
5. When the information is completely read, the Ready Indicator goes out and disc rotation stops. The preparations for playback are now completed.

6. If a disc recorded with emphasis is used, the Emphasis Indicator lights up when the player is set to the playback mode, and playback is automatically carried out in the emphasis mode.

If the disc was inserted by mistake in a slanted position and the disc holder closed, the holder may become locked. In such a case, switch off the power to the unit, then switch it on again and press the Disc Holder Switch.

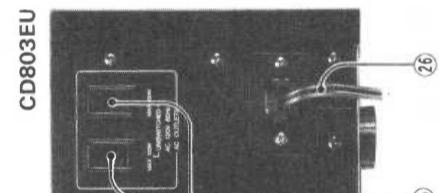


**Front Panel**



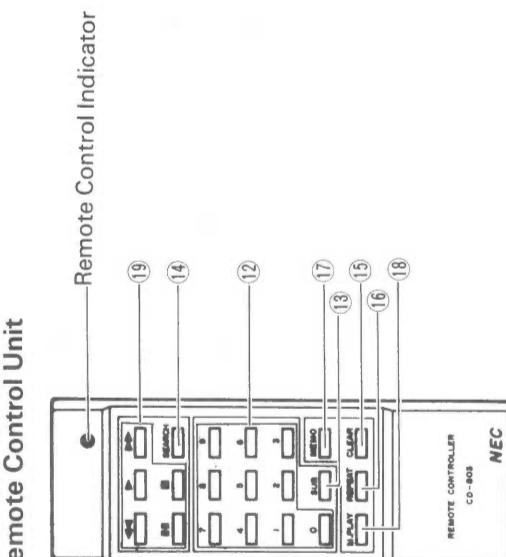
**Front Panel**

1. Disc Holder Switch (OPEN/CLOSE)
2. Power Switch (POWER)
3. Headphone Jack (PHONES)
4. Disc Holder
5. Display Counter
6. Program Indicator
7. Ready Indicator (READY)
8. Emphasis Indicator (EMPHASIS)
9. Error Indicator (ERROR)
10. Time Selector (TIME)
11. Memory List Key (M.LIST)
12. Numerals Keys (0, 1, 2, 3, ..., 9)
13. Sub Program Key (SUB)
14. Search Key (SEARCH)
15. Clear Key (CLEAR)
16. Repeat Key (REPEAT)
17. Memory Key (MEMO)
18. Memory Play Key (MEMO PLAY)
19. Disc Transport Buttons (▷, △, ▲, ▼, □)

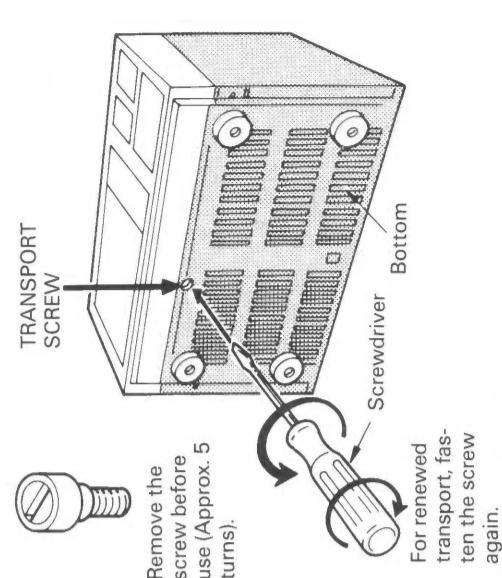
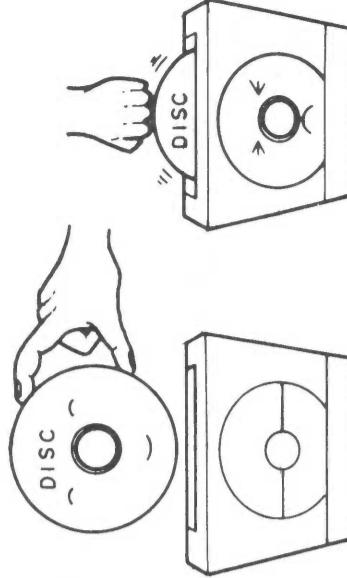
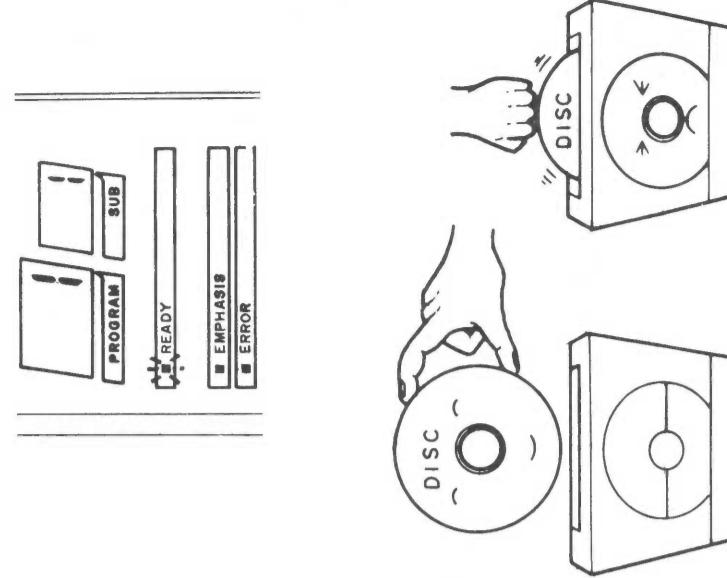
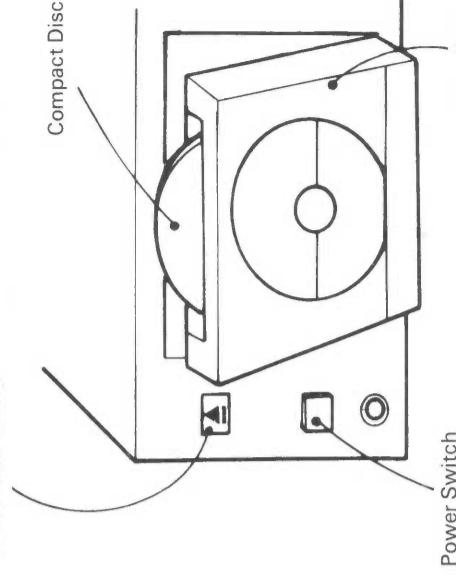


**Rear Panel**

20. Fixed output jacks (FIXED)
21. Variable output jacks (VARIABLE)
22. Output Level Control (OUTPUT LEVEL)
23. Phones Level Control (PHONES LEVEL)
24. Auto Start Switch (AUTO START)
25. AC Outlet (AC OUTLET) ..... EU only
26. Power Cord
27. Voltage Selector ..... BG only



**Remote Control Unit**

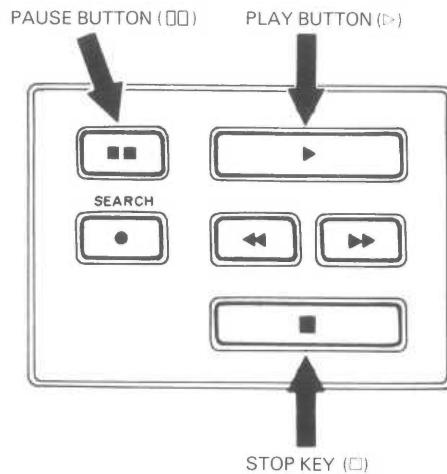


Remove the screw before use (approx. 5 turns).

For renewed transport, fasten the screw again.

## PLAYBACK

- When the Play Button is pressed, the Play Indicator ( $\triangleright$ ) lights up, the Display Counter reads 0:00, the Program Counter reads 1:1, and playback starts from the first selection on the disc.
- To temporarily interrupt playback, press the Pause Button ( $\square\square$ ). The Pause Indicator ( $\square\square$ ) lights up and playback stops.
- To resume playback, press the Pause Button ( $\square\square$ ) once more.
- To completely stop playback, press the Stop Button ( $\square$ ). Playback is terminated and disc rotation ceases.



## USE OF THE DISPLAY COUNTER

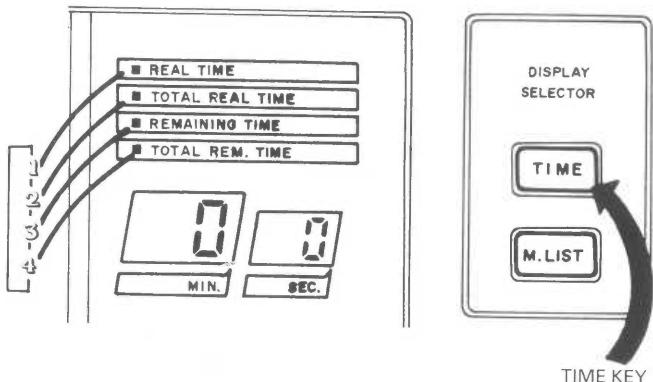
The display counter has the following 4 time display modes, which can be selected by pressing the Time Key. Time is displayed in minutes and seconds. Select the desired mode according to your requirements.

**REAL TIME:** Playing time of the present selection.

**TOTAL REAL TIME:** Playing time of the whole disc.

**REMAINING TIME:** Remaining time of the present selection.

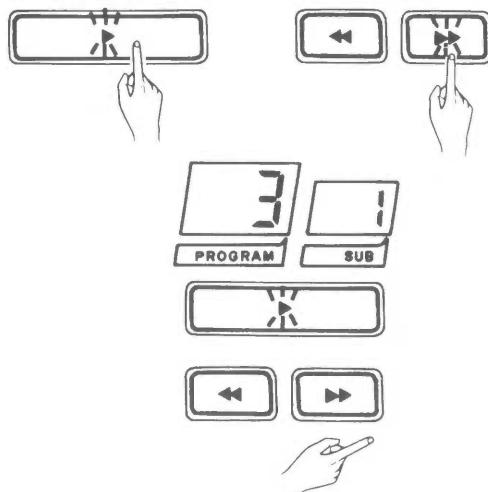
**TOTAL REMAINING TIME:** Remaining time of the whole disc.



## CHOOSING A SELECTION

### Cue and Review Function

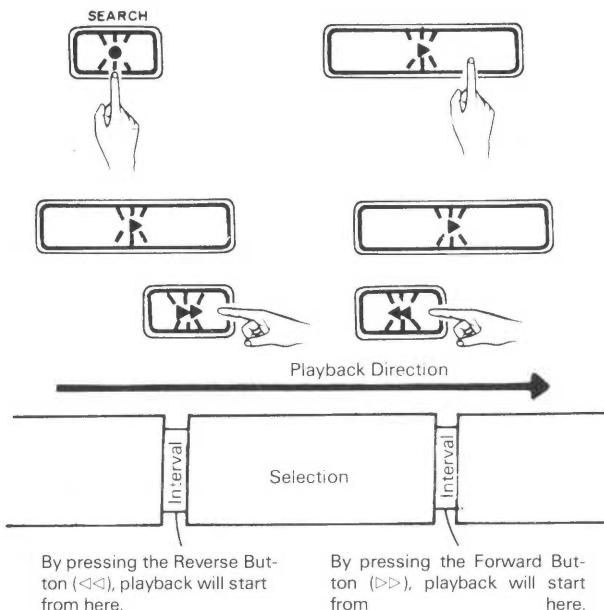
- Press the Play Button ( $\triangleright$ ) to set the unit to the playback mode.
- For cuing, press the Forward Button ( $\triangleright\triangleright$ ). For reviewing, press the Reverse Button ( $\triangleleft\triangleleft$ ).
- While listening to the high-pitched sound and watching the Display Counter, proceed to the desired selection. When the desired spot is reached, release the Forward ( $\triangleright\triangleright$ ) or Reverse ( $\triangleleft\triangleleft$ ) Button.
- Playback is automatically resumed from this point.



## Search Function

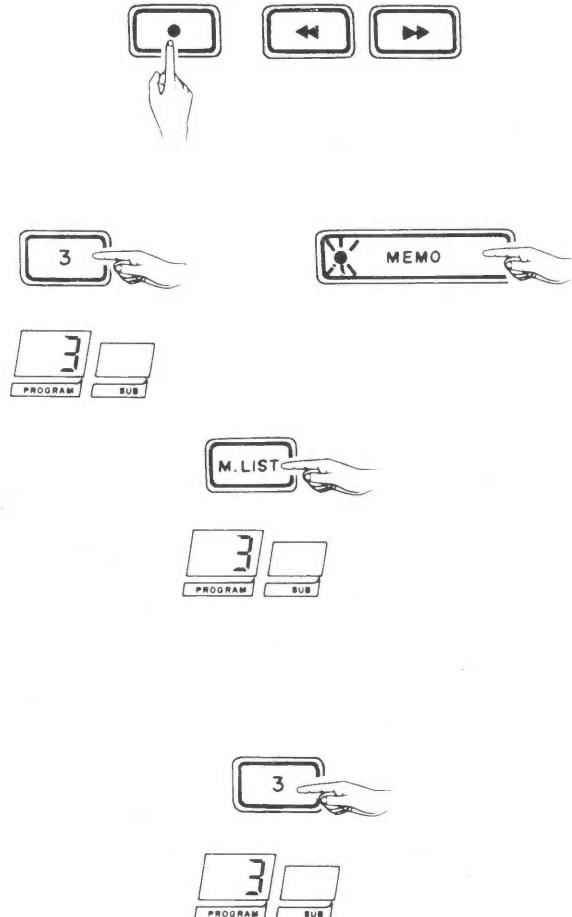
By automatically storing the program distribution of selections on a disc, the Search Function permits easy location of the beginning of one selection.

1. Press the Search Key. The Search Indicator (○) lights up.
  2. Press the Play Button (▷) to set the unit to the playback mode.
  3. If playback from the following selection is desired, press the Forward Button (▷▷).
  4. If playback from the beginning of the present selection is desired, press the Reverse Button (◁◁).
  5. When the beginning of the selection is reached, playback starts automatically.
  6. By repeating the search operation, the beginnings of further selections can be easily found.
  7. To release the search mode, press the Search Key once more.
- The unit returns to the ordinary playback mode.



## PROGRAMMING THE MEMORY

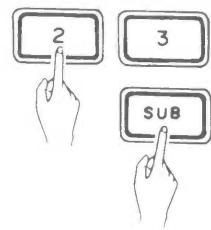
1. Press the Numeral Keys (0, 1, 2, ..., 9) to enter the program number of the desired selection. This number is displayed on the Program Indicator. The Memory Indicator lights up.
2. If a wrong key was pushed and the number on the Program Indicator is not the desired one, press the Numeral Key (0) twice, and then once more enter the correct number with the Numeral Keys (0, 1, 2, ..., 9). (Pressing the (0) Key twice works as an erasing key.)
3. While the Memory Indicator is lit (for approx. 5 seconds), press the Memory Key to store the number displayed by the Program Indicator in the memory.
4. In the same way, further program numbers can be stored. A total of up to 99 program numbers can be stored in the memory.
5. By pressing the Memory List Key, the stored program numbers are displayed in the memorized order on the Program Indicator.
6. If the disc used for playback possesses index numbers, enter the index numbers as follows.
7. Enter the program number to be displayed on the Program Indicator, and then press the Sub Program key.
8. Use the Numeral Keys (0, 1, 2, ..., 9) to enter the index number, which is displayed on the Program Indicator. The Memory Indicator lights up.
9. If a wrong key was pushed and the number on the Program Indicator is not the desired index number, press the Numeral Key (0) twice, and then repeat the procedure from the beginning.



10. While the Memory Indicator is lit (for approx. 5 seconds), press the Memory Key. The program number and sub program number displayed on the Program Indicator are now stored in the memory.
11. If you want to erase the selection numbers (program number/index number) stored in the memory, press the Clear Key.
12. If a selection number (program number/index number) not contained on the disc is entered, the Error Indicator lights up. In such a case, repeat the procedure from the beginning.
13. If the Memory List Key, Memory Play Key, Memory Key or Sub Program Key are Pressed inappropriately, the Error Indicator lights up. In such a case, repeat the operation with the correct steps.

#### **NOTE:**

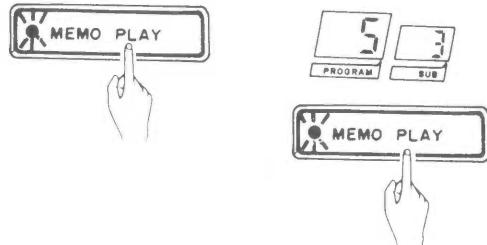
- One single push of the Clear Key will erase the complete contents of the memory and make renewed programming necessary. Be careful not to push the key by mistake.
- When an index number not contained on the disc was entered, the disc rotation stops and the Error Indicator comes on after completion of the search operation. In such a case the contents of the memory are erased.
- If the Memory Key is not pushed within 5 seconds or another key is pushed, the number displayed on the Program Indicator disappears and is not stored in the memory.



- The subprogram search feature of this unit operates on a step search system, and therefore may cause some operational errors according to the compact disc being played.

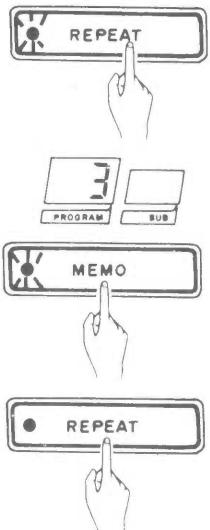
## **MEMORY PLAYBACK**

1. Press the Memory Play Key. The Memory Play Indicator and the Play Indicator ( $\triangleright$ ) light up. Playback starts from the first memorized selection and continues in the programmed order.
2. The search function can also be used during memory playback.
3. To release the memory playback mode, press the Clear Key. The unit returns to the ordinary playback mode.



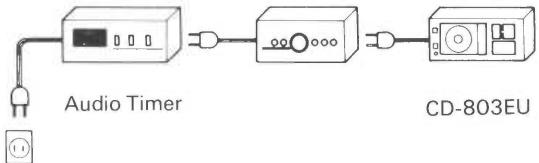
## **REPEAT PLAYBACK**

1. In order to listen to the complete disc in repetition, press the Repeat Key. The Repeat Indicator lights up. When the unit is set to the playback mode, the complete disc will be played back repeatedly.
2. To play only one selection or a few selections in repetition, enter the respective program number(s) in the memory, set the unit to the memory playback mode and then press the Repeat Key. The Repeat Indicator lights up and the memorized selection(s) are played back repeatedly.
3. To release the repeat mode, press the Repeat Key once more. The Repeat Indicator goes out.



## **TIMER PLAYBACK**

For timer playback, use a separately available audio timer.  
Please refer to the audio timer's instruction manual for detailed instructions.

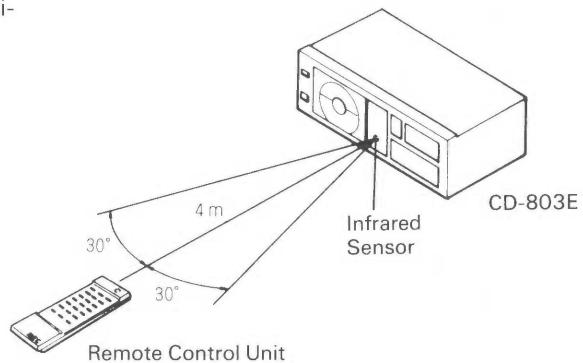


### **NOTE:**

For timer playback, be sure to set Auto Start switch on the rear panel of the CD-803EU to ON.

## **7. OPERATION RANGE OF REMOTE CONTROL**

Direct the remote control unit towards the infrared sensor section on the CD-803E, and use it in the specified operation range.

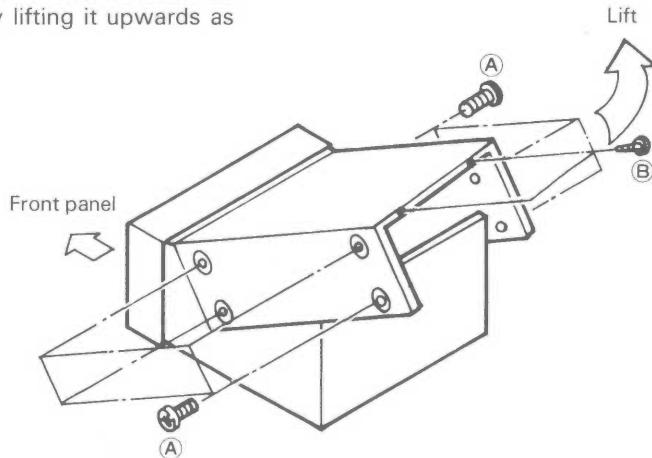


## 8. DISASSEMBLY PROCEDURES

### How to remove the cabinet

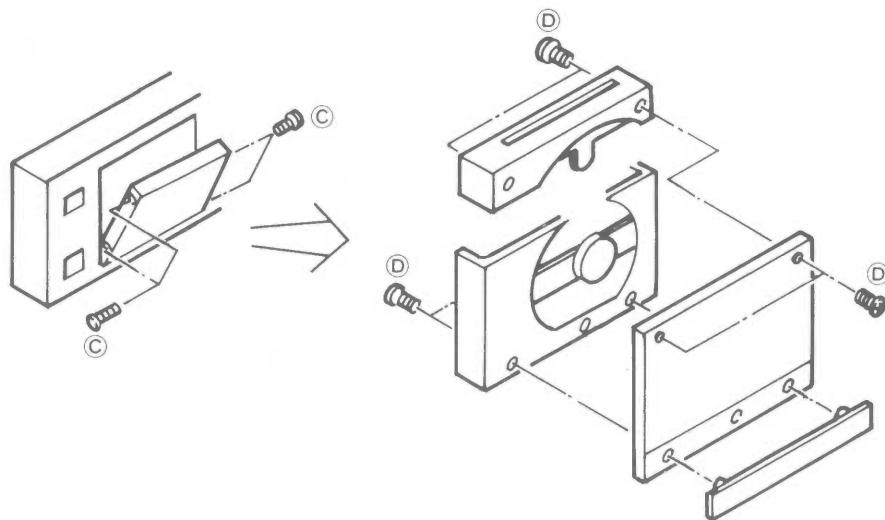
#### 1. How to remove the cover

Unscrew eight screws Ⓐ and two screws Ⓑ securing the cabinet, then remove the cabinet by lifting it upwards as shown.



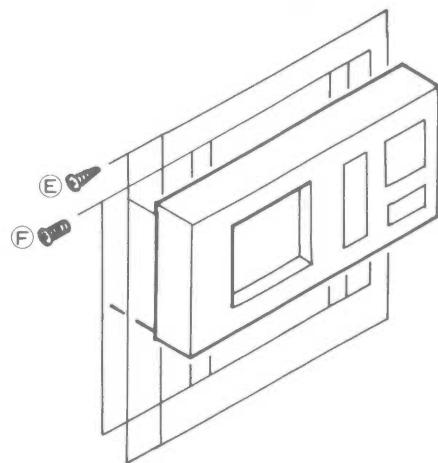
#### 2. How to disengage the mechanism cover

- (1) With the mechanism cover open, remove four screws Ⓒ .
- (2) For the removal of the mechanism cosmetic board, unthread four screws Ⓓ .



#### 3. How to remove the front panel

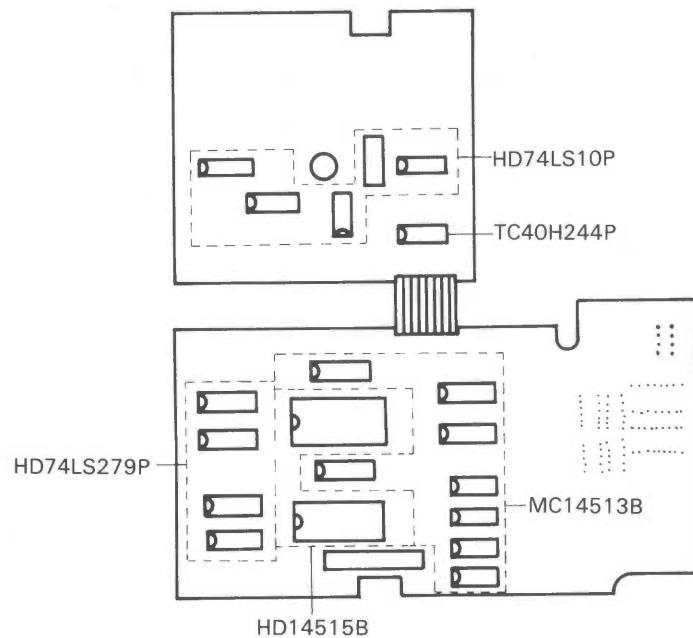
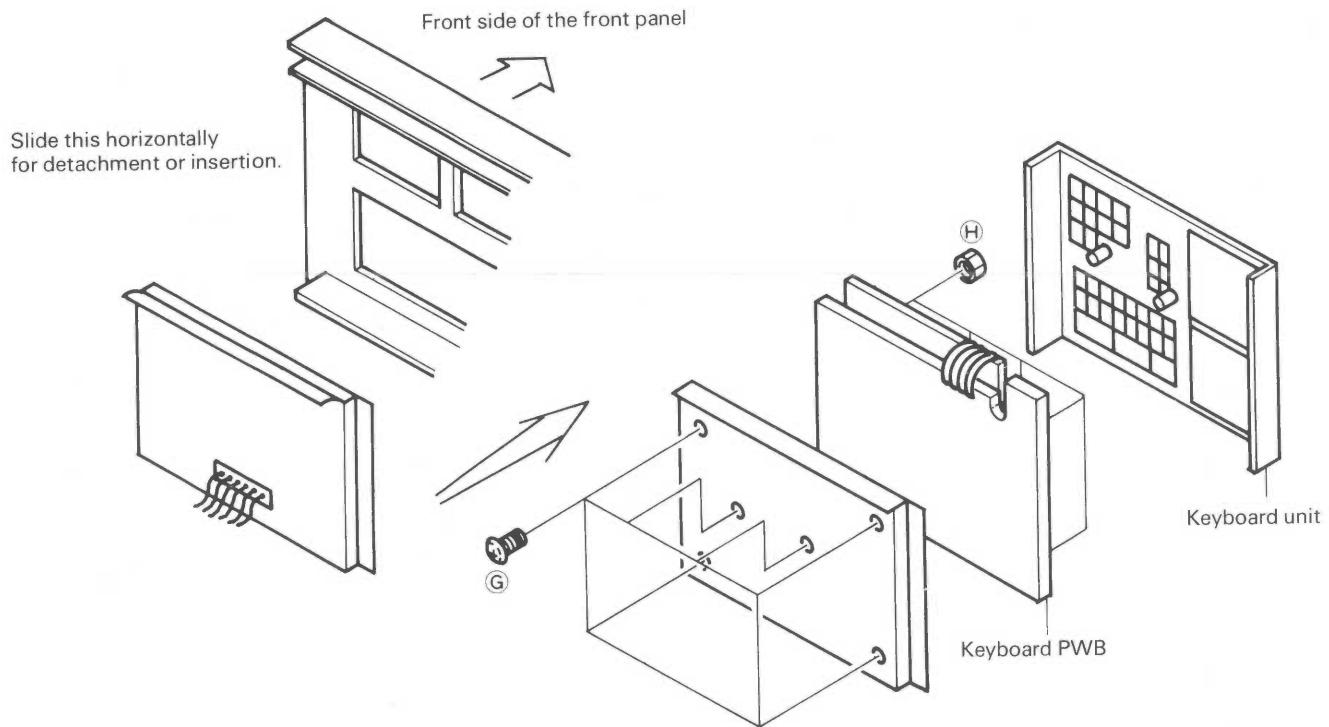
- (1) Unscrew fourteen screws Ⓔ and Ⓕ securing the front panel.
- (2) Disengage the wire connector of the Servo PWB to separate the front panel from the chassis.



#### 4. How to remove the keyboard

- (1) Remove six screws  $\textcircled{G}$  securing the keyboard unit to separate it from the Keyboard PWB.

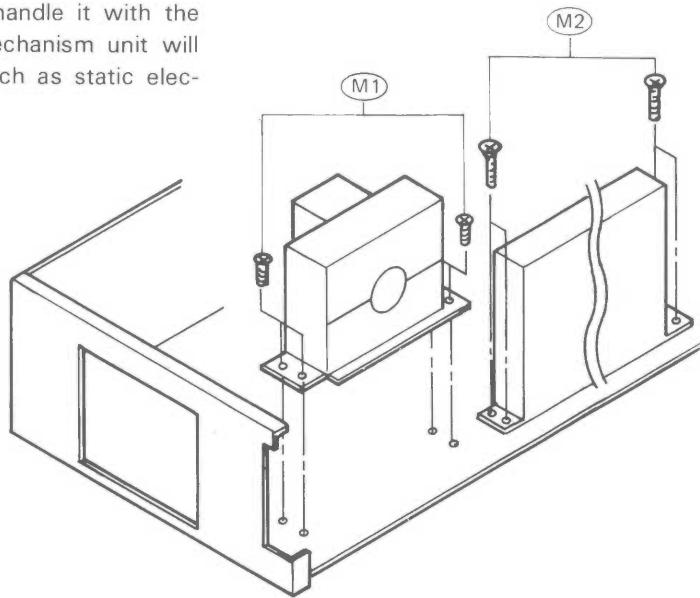
- (2) For the removal of the Keyboard PWB, disengage nut  $\textcircled{H}$  which secures the PWB, to separate it.



## 5. How to remove the mechanism unit

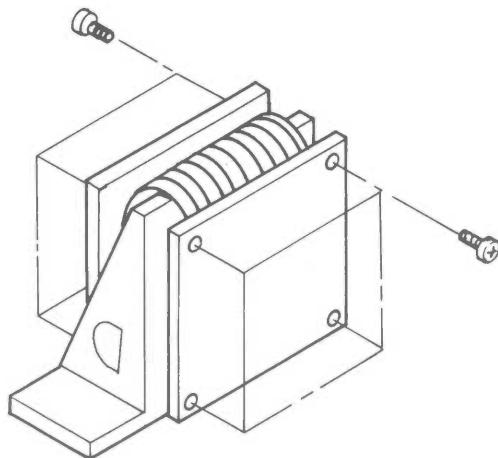
Unscrew four screws securing the mechanism unit, to disengage it (M1).

**Caution:** Since the pickup section of the mechanism unit is extremely sensitive, handle it with the utmost care so that the mechanism unit will suffer no adverse effects such as static electricity, etc.



## 6. How to remove the Microprocessor PWB

- (1) Unthread four screws which hold the Microprocessor PWB metal fixture in place. (M2)
- (2) Disengage the Microprocessor PWB metal fixture and the eight screws which secure the Microprocessor PWB, to separate it from the chassis.



# How to Remove the Mechanism Unit

## REMARKS:

The numbers in the exploded view are identical to the numbers in the parts list. When ordering parts, refer to the parts list.

### 1. How to disengage the Mechanism Replay PWB (See Fig. 1)

Remove two screws ① to disengage Mechanism Replay PWB (PA14).

### 2. How to disengage the gear box ass'y A (See Fig. 1)

Unscrew four screws ② to disengage gear box ass'y A ③.

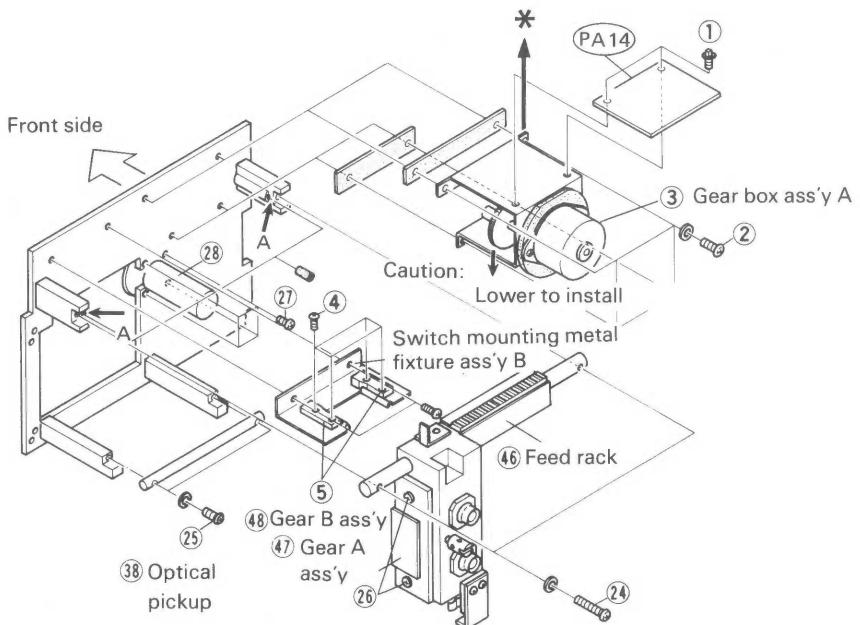
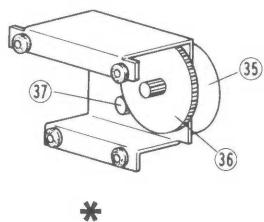


Fig. 1

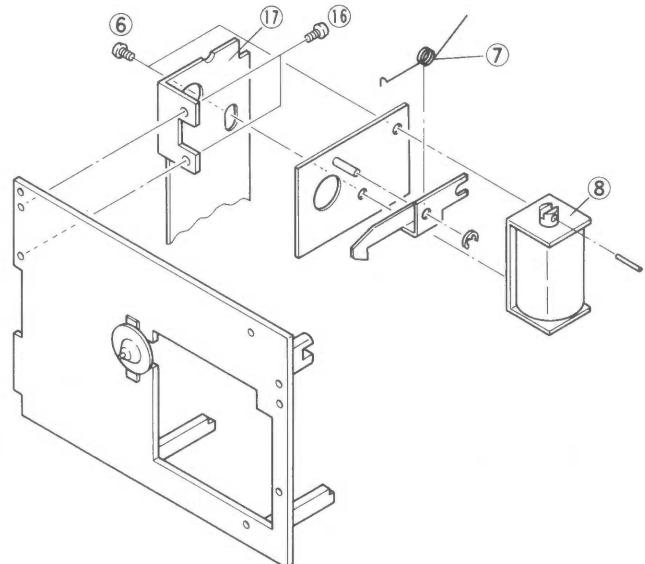
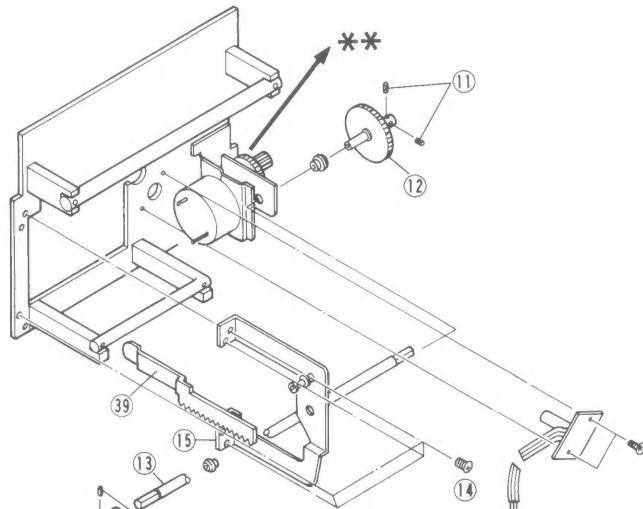


Fig. 2

**5. How to disengage gear box ass'y (B) (See Figs. 2, 3 and 4)**

- 5-1.** Loosen special screws ⑨ to remove gear ass'y (C) ⑩ (See Fig. 3).
  - 5-2.** Loosen special screws ⑪ to remove gear ass'y (D) ⑫ and connecting shaft ⑬ (See Fig. 3).
  - 5-3.** Unscrew screws ⑭ to remove gear metal fixture ass'y ⑮ (See Fig. 3).

- 5-4. Remove screws ⑯ to disengage mechanism bracket L ⑰ (See Fig. 2.).
  - 5-5. If three screws ⑯, E ring ⑯ and loading bracket ⑳ are disengaged, gear box ass'y (B) can be separated (See Fig. 4 and the Threading Procedure).



**Fig. 3**

#### **6. How to remove micro-switch (A) (See Fig. 4)**

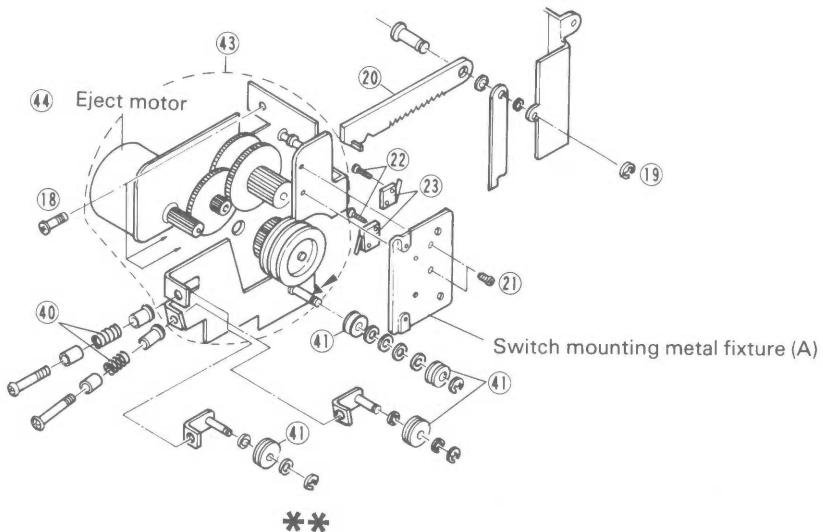
Unthread screws ⑯ to disengage the switch mounting metal fixture. Next, if screws ⑰ are removed, micro-switches ⑱ can be disengaged.

## **7. How to disengage the optical pickup (See Fig. 1)**

Unscrew two screws ⑨ and two screws ⑩, then disengage the optical pickup ass'y. Next, if two screws ⑪ are removed, optical pickup ⑫ can be separated.

**8. How to disengage the spindle motor ass'y  
(See Fig. 1)**

Unthread four screws ②7 to disengage spindle motor ②8.



## 9. How to disengage the holder connecting plate (See Fig. 6)

Unscrew screws ②9 to disengage disc holder L ③1 and disc holder R ③2 from the disc holder rail. Next, if screw ③3 is disengaged, holder connecting plate ③4 can be disengaged.

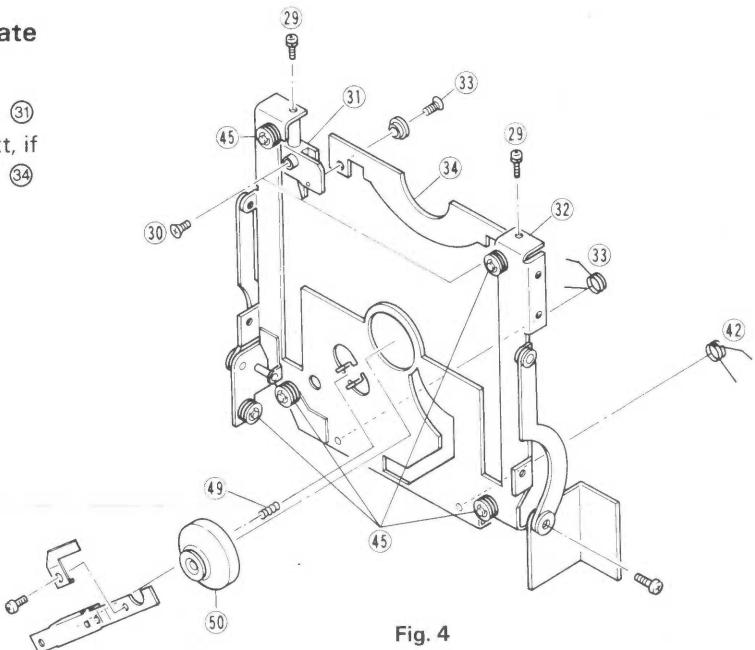


Fig. 4

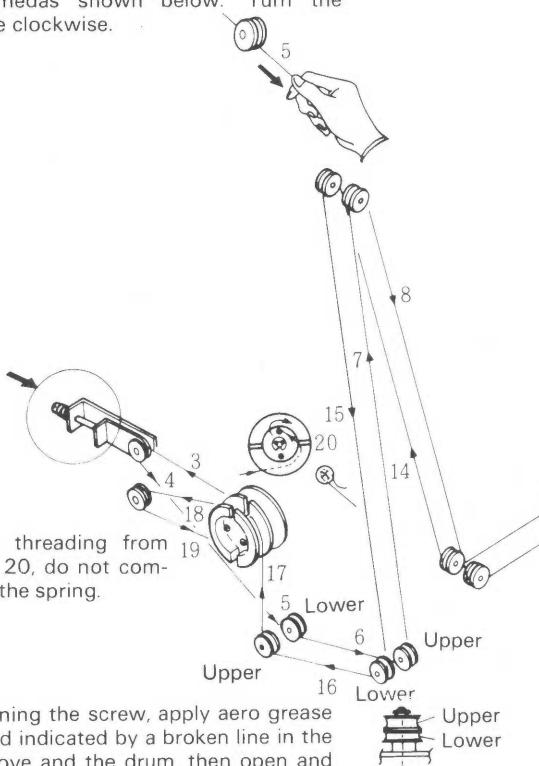
## 10. Threading Procedure

F. Next, thread in the order of 1 through 20. However, at procedure 5, close the disc lid as follows.

F-1. Hold the thread with fingers, then pull it slightly (in the direction of the arrow) and close the lid.

F-2. After the lid is closed, pull the thread so that the spring as indicated by arrow S is compressed up to the height of the collar before proceeding to threading procedure 6. Note that the subsequent procedure should be performed with the lid closed and the spring compressed.

G. Threading of the drum from order 19 should be performed as shown below. Turn the screw once clockwise.

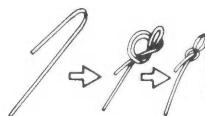


Caution: When threading from 19 to 20, do not compress the spring.

H. After tightening the screw, apply aero grease to the thread indicated by a broken line in the diagram above and the drum, then open and close the lid manually 4 to 5 times.

### Threading Procedure

How to tie a knot (loop) in the end of thread.



The loop should be large enough to accommodate 2.6 mm dia. screws.

A. Temporarily thread two screws ① in the tapped hole of the drum (2 – 3 threads).

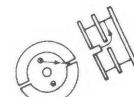
B. Tie a knot in one end of thread ② as shown in Fig. 1.

C. With the disc lid closed, determine the positioning of the drum as shown below.



D. Open the disc lid fully (as far as the stroke permits).

E. Hook the loop of the thread over the screw head of the drum shown below, then tighten the screw.



Preventing the screw from loosening (screw lock)

(1) After threading is completed, apply bond to the screw head which secures the thread.

Tighten this screw



Apply screw lock

(2) After threading is completed, as the special screw indicated by arrow S is temporarily (loosely) secured, tighten it fully before applying the screw lock on the screw head (2 screws).

## 9. ADJUSTMENT PROCEDURE

### ● Checking the laser section

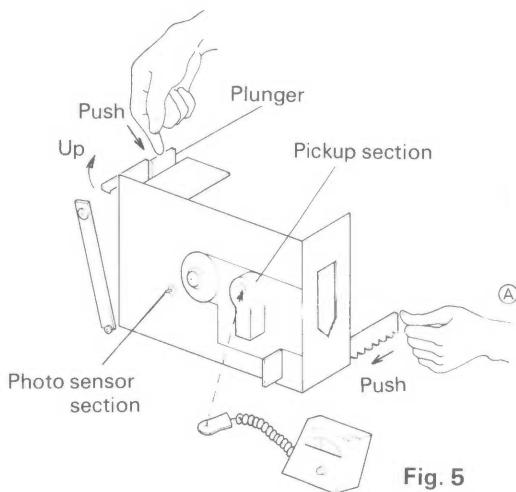


Fig. 5

#### NOTE:

Set the unit to playback mode, disengage the plunger stopper by pressing it with the finger and press part Ⓐ at the front to open the door. Attach the sensor to the pickup and measure the output.

Set mode : PLAY (without disc)

Measuring instrument : Light power meter

Measuring point : Pickup section

- (1) Remove the front panel and mechanism cover.
- (2) Cover the photosensor section with a reflecting object (to simulate disc-loaded condition), and press the OPEN/CLOSE button to close the mechanism cover.
- (3) When the laser pick-up starts leading in, measure the power at the laser pick-up with a light intensity meter and gradually adjust VR405 so that the light intensity meter reads 0.3mW.

#### NOTES:

- ★ Laser light is harmful to the eyes. Avoid direct eye contact with the light.
- ★ Before adjusting VR405, set it to the mechanical center, then gradually turn.
- ★ Always adjust the laser light so that the pickup power does not exceed 0.5 mW.

### ● Mechanism unit

#### 1. Focusing adjustment

Mode of the CD-803 : PLAY (Philips test disc 4A.)

Measuring instrument : Oscilloscope

Measuring point : Between TP7 and ground

- (1) Connect an oscilloscope between TP7 and ground, then adjust mechanism adjustment screw A so that the center noise voltage reads -0.3 V below the ground level (Fig. 6) (Loosen screw A, then shift focus. After adjustment, lock the screw.)
- (2) Connect the oscilloscope between TP1 and the center value of the noise, adjust Focus Set VR403 so that the voltage level when the CD-803 is in the STOP mode comes to the center value of the noise (Fig. 7).

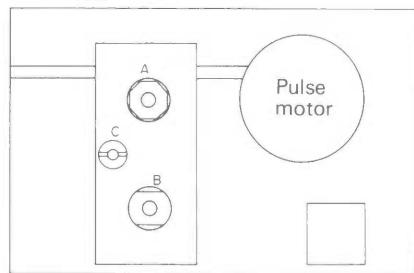


Fig. 6 Adjustment screw A

### 2. Eye pattern adjustment

Mode of the CD-803 : PLAY (Philips test disc 4A.)

Measuring instrument : Oscilloscope

Measuring points : Between TP8 and ground  
Between TP 1 and ground

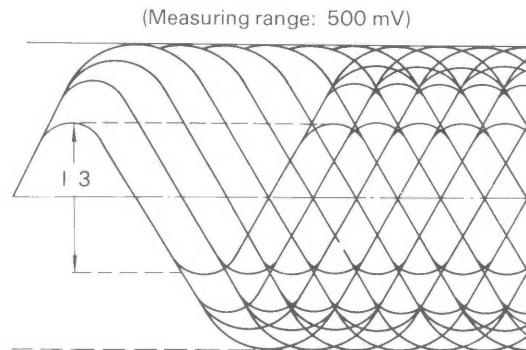
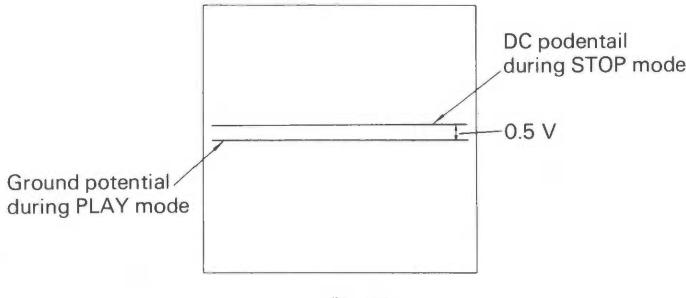
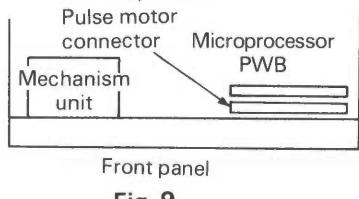


Fig. 7 Eye pattern standard diagram

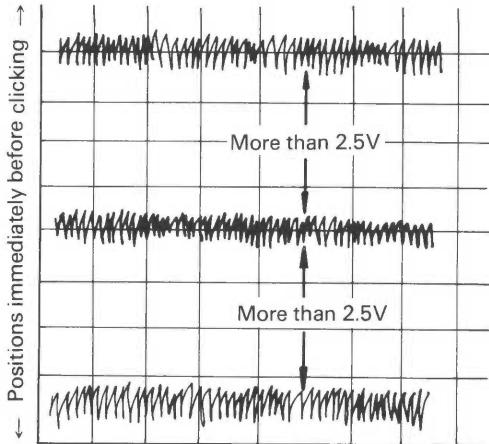
- (1) Connect an oscilloscope between TP8 and ground, then adjust VR404 so that the oscilloscope reads +5 V when the mode is changed from PLAY to STOP. (Fig. 8)
- (2) Connect the Oscilloscope between TP1 and ground, then adjust mechanism adjstment screws B, C and VR403 so that the eye pattern is free from distortion. (Fig. 6, Fig. 7)
- (3) Remove the fourth connector (pulse motor connector) counted from the left edge of the Microprocessor PWB (See Fig. 9), then connect the oscilloscope between TP8 and ground. When the pickup is manually moved to the right or left, confirm that the center of the noise voltage deviates  $\pm 2.5$  V or more and that it is reduced in the proximity of 0 V. (Fig. 10)  
(After confirmation, be sure to reconnect the connector.)



**Fig. 8**



**Fig. 9**



**Fig. 10**

## ● Adjustment of the set

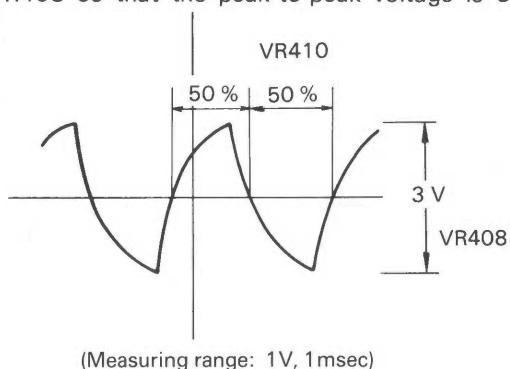
### 1. Adjustment of the spindle motor

Mode of the CD-803 : PLAY (Philips test disc 4A)  
(410056-2).

Measuring instrument : Oscilloscope

Measuring point : Between TP14 and ground

Connect the oscilloscope between TP14 and ground, then adjust VR408 so that the peak-to-peak voltage is 3 V.  
(Fig. 11)



(Measuring range: 1V, 1msec)

**Fig. 11**

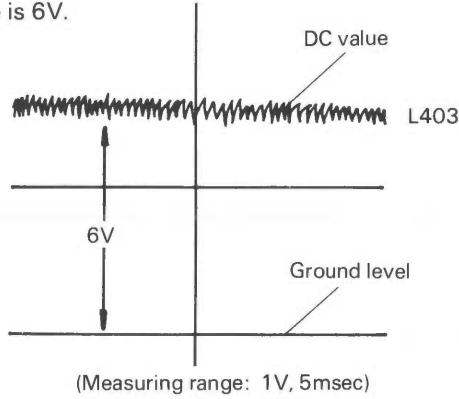
## 2. Adjustment of the VCO coil

Mode of the CD803 : PLAY (Philips test disc 4A)  
(410056-2).

Measuring instrument : Oscilloscope

Measuring point : Between TP13 and ground

Connect the oscilloscope between TP13 and ground, then adjust L403 so that the potential across ground and the DC value is 6V.



## 3. Adjustment of the tracking gain

Mode of the CD-803 : PLAY (Philips test disc 4A)  
(410056-2).

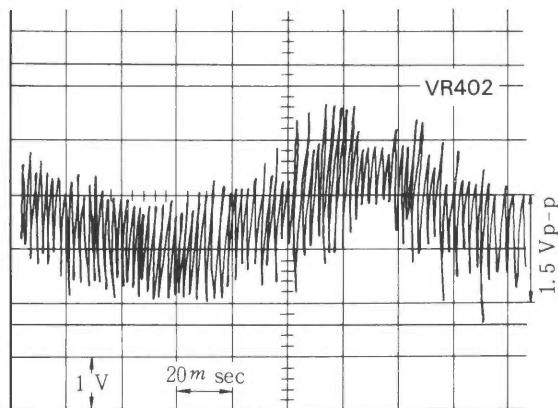
Measuring instrument : Oscilloscope

Measuring points : Between TP8 and ground

SW1: OFF (VCO kick)  
SW2: EFM (EFM/VCO selector)  
SW3: OFF  
SW4: OFF (MUTE)

**Fig. 12**

Set the switches on the Servo PWB as indicated in Fig. 12, then connect the oscilloscope between TP8 and ground and adjust VR402 so that the average peak level of the noise is 1.5 Vp-p. (Fig. 13)



**Fig. 13**

#### 4. Adjustment of the automatic selection of the spindle motor

Mode of the CD-803 : PLAY (Philips test disc 4A)  
(410056-2)

Measuring instrument : Oscilloscope

Measuring point : Between TP16 and ground

SW1: OFF  
SW2: Center position  
SW3: ON  
SW4: OFF

\* Set the switches to the positions shown below after adjustment.

SW1. VCO	: ON
SW2. EFM	: Center position
SW3. PD	: ON
SW4. MVTE	: ON

Fig. 14

Set the switches on the Servo PWB as described in Fig. 14.

Connect the oscilloscope between TP16 and ground, then read the voltage in the STOP mode (= 0 V) after letting the disc turn for about 2 minutes. Next, set the CD-803 to PLAY mode and adjust VR406 so that the oscilloscope reads the same voltage level as during STOP mode (= 0 V). (At this time, measure the voltage with the oscilloscope set the 0.5 mV range.)

At this time, the potential is 0 V in stop mode after the mode is changed from play mode and the potential is raised once (about 10 seconds).

#### 5. Adjustment of the phases of the clock pulse and the data signal

Mode of the CD-803 : PLAY (Philips test disc 4A)  
(410056-2).

Measuring instrument : Oscilloscope

Measuring point : Between TP11 and ground  
Between TP10 and ground

SW1: OFF  
SW2: EFM  
SW3: ON  
SW4: OFF

Fig. 15

Set the switches on the Servo PWB as shown in Fig. 15.

Connect the oscilloscope between TP10 and ground (Ch. 1) and between TP11 and ground (Ch. 2), then adjust VR409 so that the rising edge of the clock pulse is in step with the center of the data signal. (Fig. 16)

(Measuring range 5V, 0.1  $\mu$ sec.)

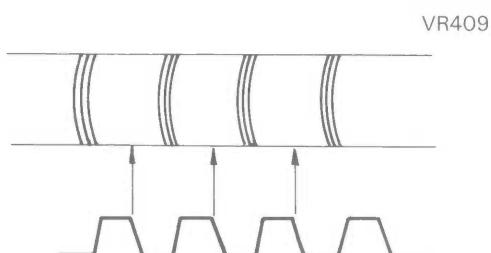
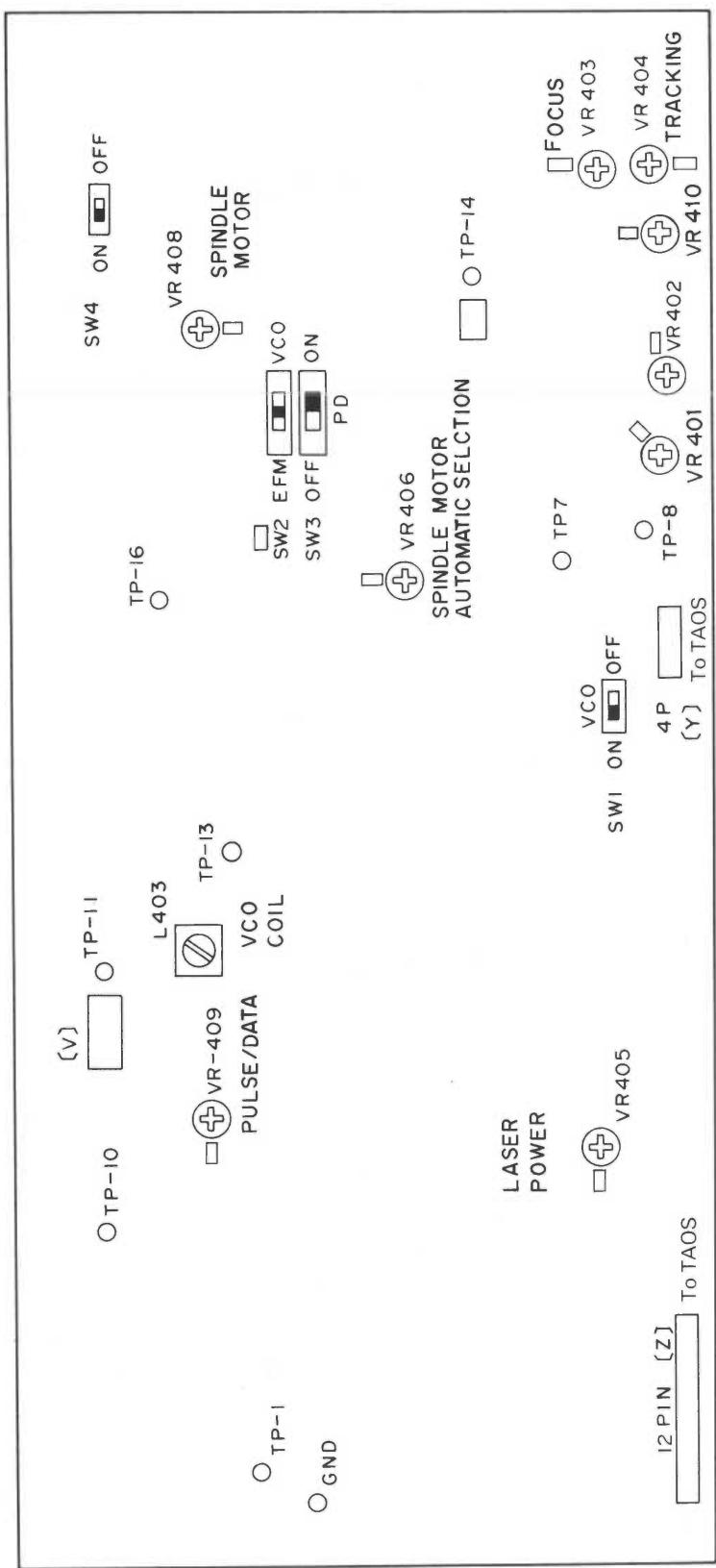


Fig. 16



Configuration of the controls on the Servo PWB

Fig. 17

(Front side)

## 10. MOTOR SPECIFICATIONS

### ● Spindle motor

Rated Voltage	: 4 V
Operating voltage	: 1 V – 10 V DC
Rated load	: 2 g-cm
Rated speed	: 1450 rpm $\pm$ 15% (at 4 V, 2 g-m)
Radial load	: Less than 200 g (load applied to a point 7 mm away from the bearing edge)
Thrust load	: Less than 300 g
Speed range	: 200 – 500 rpm (with servo circuit)
Shaft height adjustable range	: Within $\pm$ 0.5 mm
Service life	: 2,000 hours plus

### ● Pulse motor

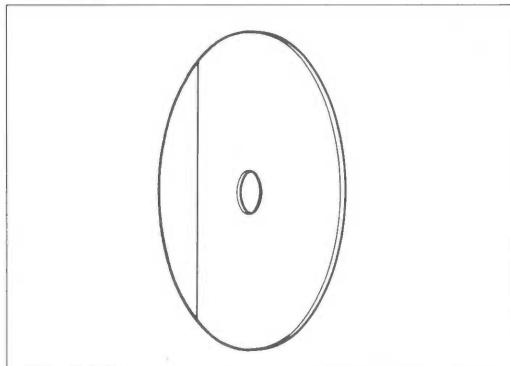
Type	: Permanent magnet type stepping motor
Rated voltage	: DC 5 V
Current/phase	: Less than 186 mA (at 0 PPS initial)
Power/phase	: 0.93 W (at 0 PPS initial)
Winding resistance/Phase	: 27 $\Omega$
Phase	: 4
Pole	: 24
Induction system	: 2 phases
Step angle	: 7.5°
Step number for one rotation	: 48
Synchro release torque	: More than 40 g-cm (at 150 PPS)

Max. start frequency	: More than 380 PPS (no-load)
Temperature rise	: More than 30°C (at 150 PPS)
Insulation resistance	: More than 100 M $\Omega$ (at DC 500 V)
Insulation durability	: AC 500V, for 1 minute
Operational temperature	: -10°C – +55°C
Weight	: 75 g
Max. continuous frequency	: 500 PPS (no-load)
Strength against thrust load for rotor shaft	: More than 5 kg
Service life	: 20,000 strokes puls

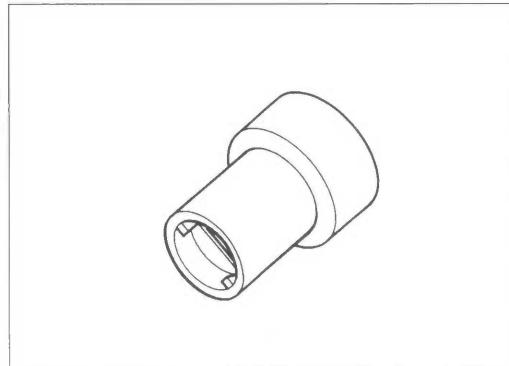
### ● Eject motor

No-load current	: Less than 30 mA
No-load speed	: 2,700 $\pm$ 279 rpm
Rated load current	: Less than 250 mA
Rated load speed	: 900 $\pm$ 150 rpm
Start torque	: More than 42 g-cm
Start current	: More than 360 mA (2/3 R)
Start voltage	: Less than 1.2 V (no-load)
Rotation lock time	: Less than 600 seconds (2/3 R, less than 120°C, ambient temperature; less than 30°C)
Voltage difference speed	: Less than 470 rpm/V (6 V – 12 V, 40 g-cm)
Insulation resistance	: More than 1 M $\Omega$ (DC 100 V (between motor terminal and case))
Service life	: 200,000 strokes puls

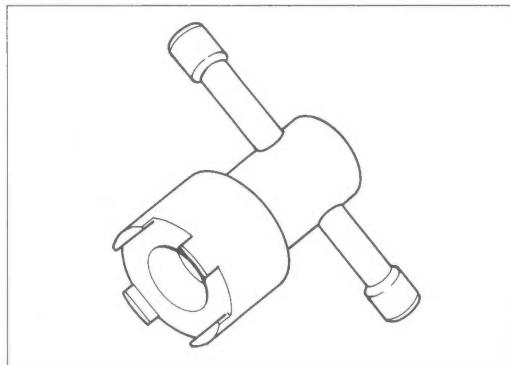
## 11. ADJUSTMENT JIGS



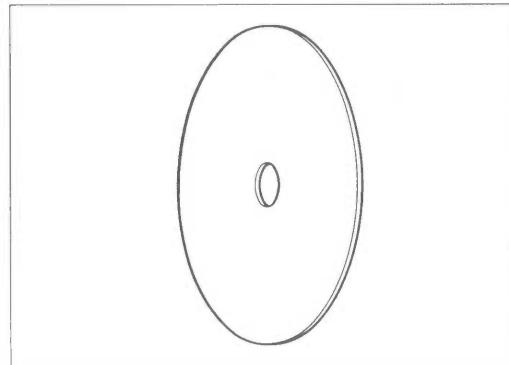
(1) CD DISC PLATE  
PARTS No. 18530411



(2) ADJUSTMENT DRIVER (A)  
PARTS No. 18530391



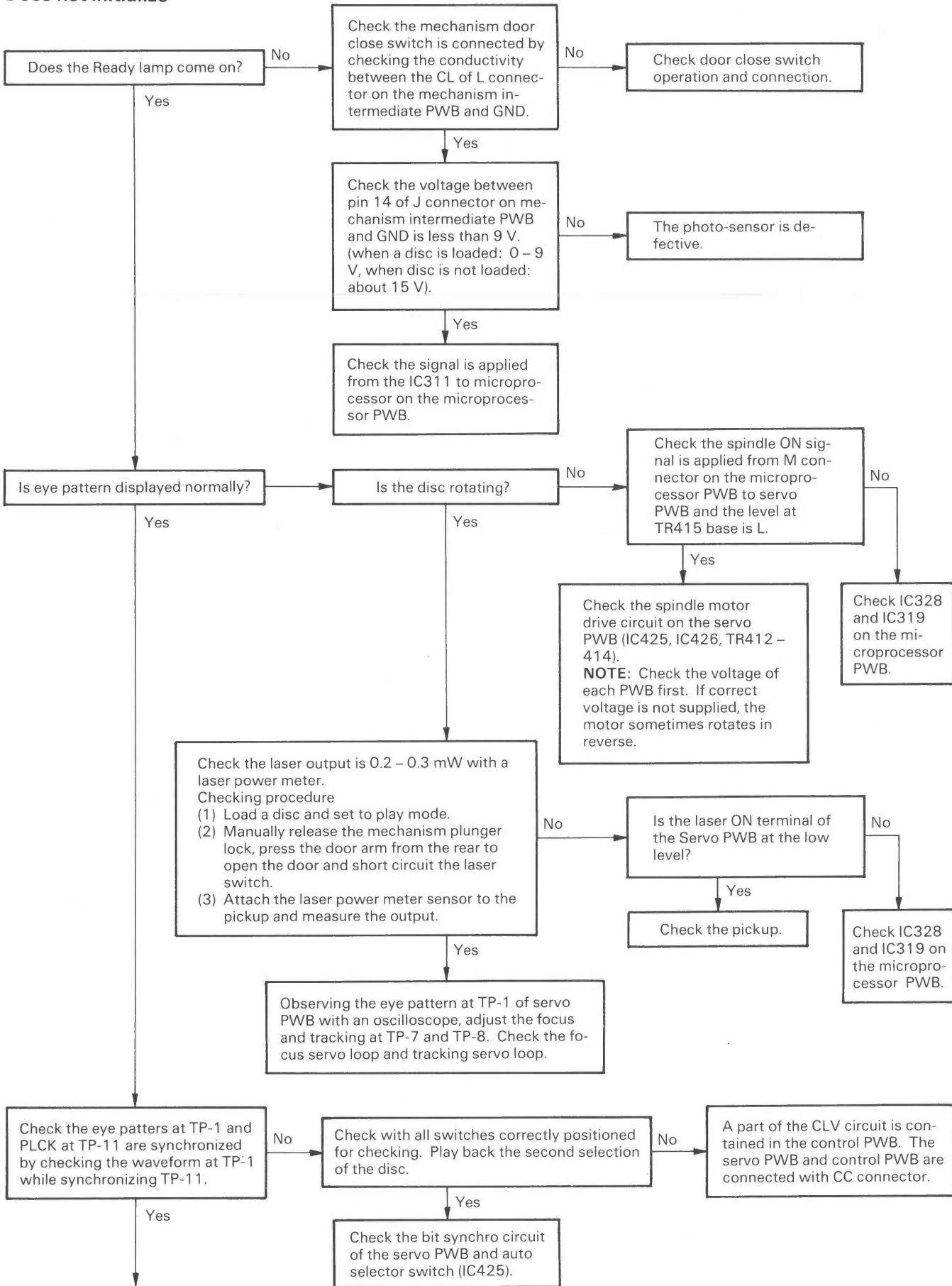
(3) ADJUSTMENT DRIVER (B)  
PARTS No. 18530401

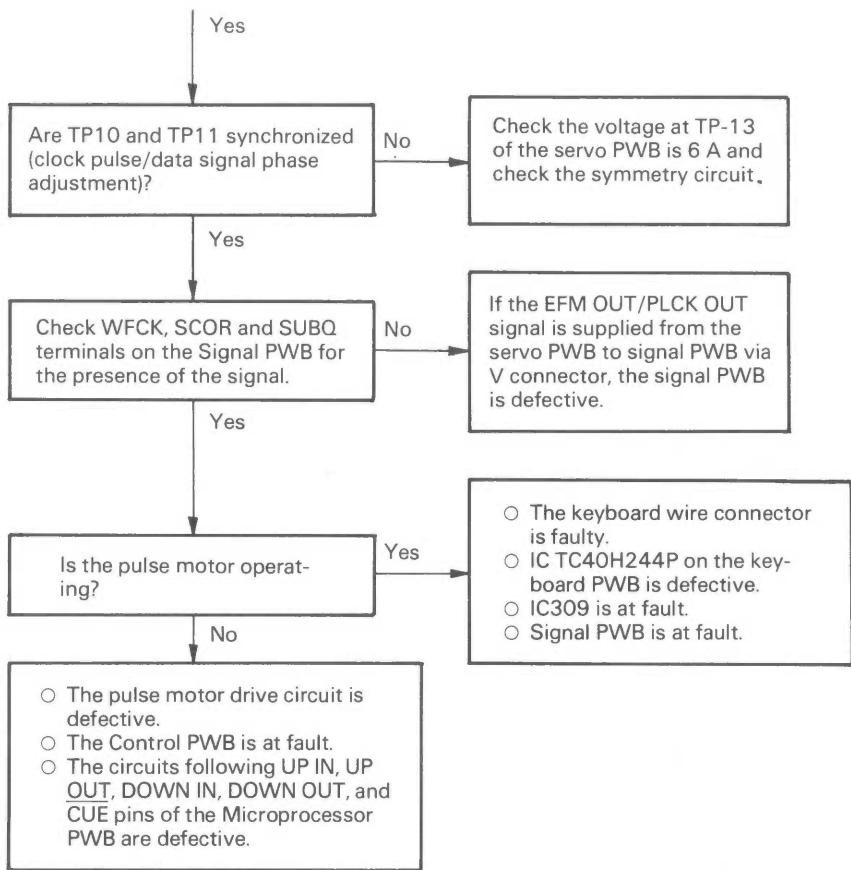


(4) PHILIPS TEST DISC  
TYPE 4A (410056-2)

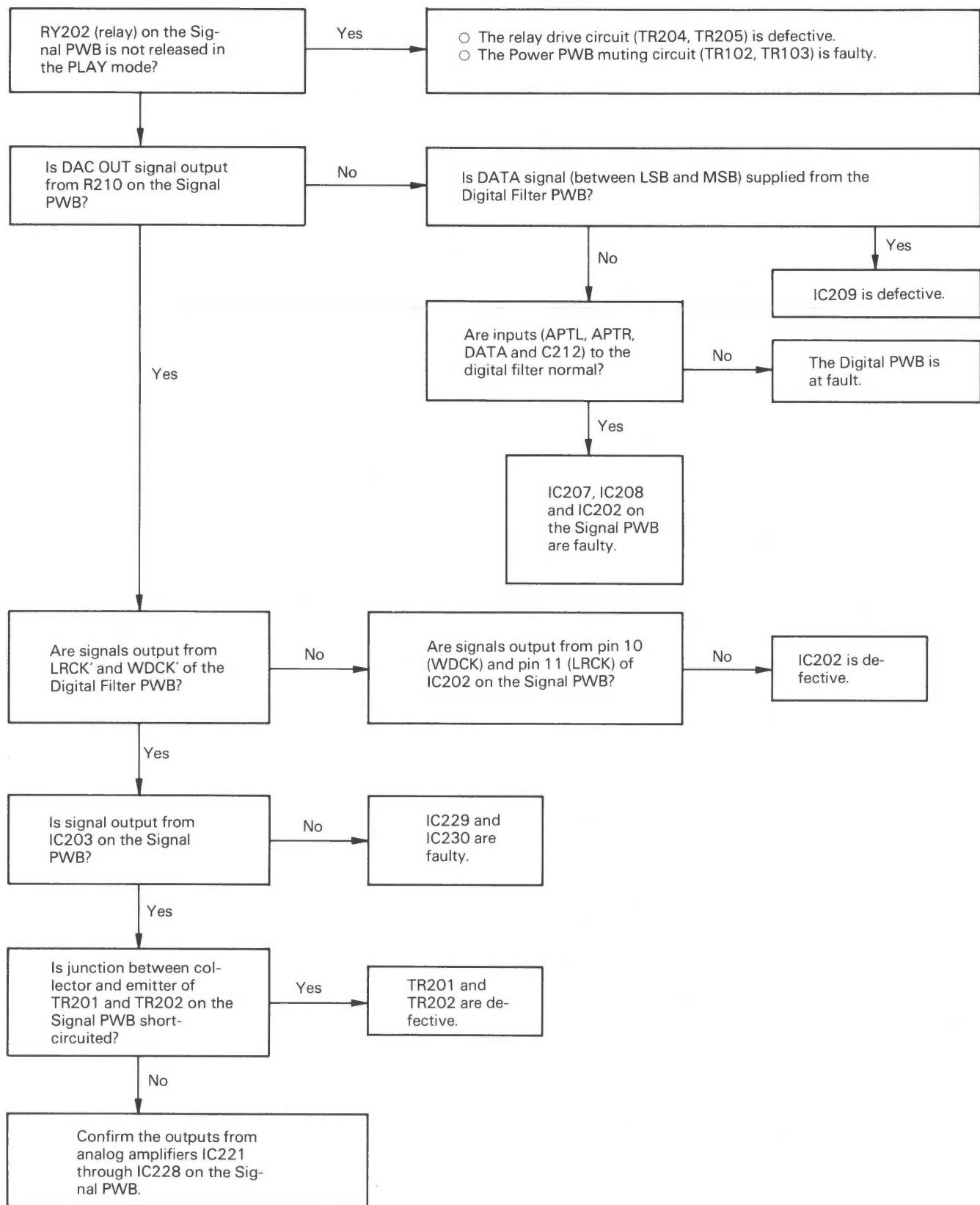
## 12. TROUBLESHOOTING

### Does not initialize

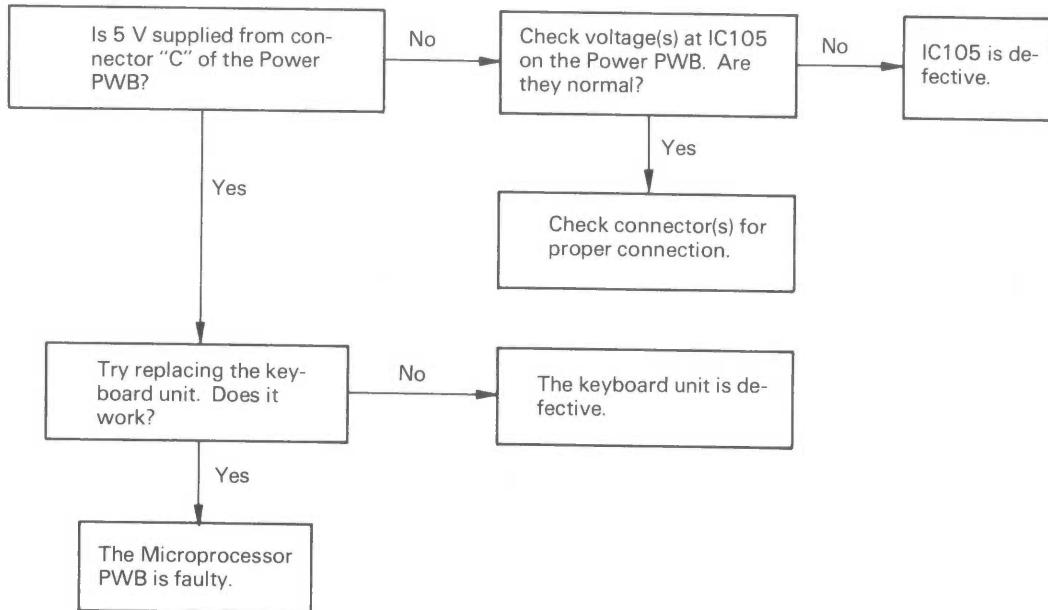




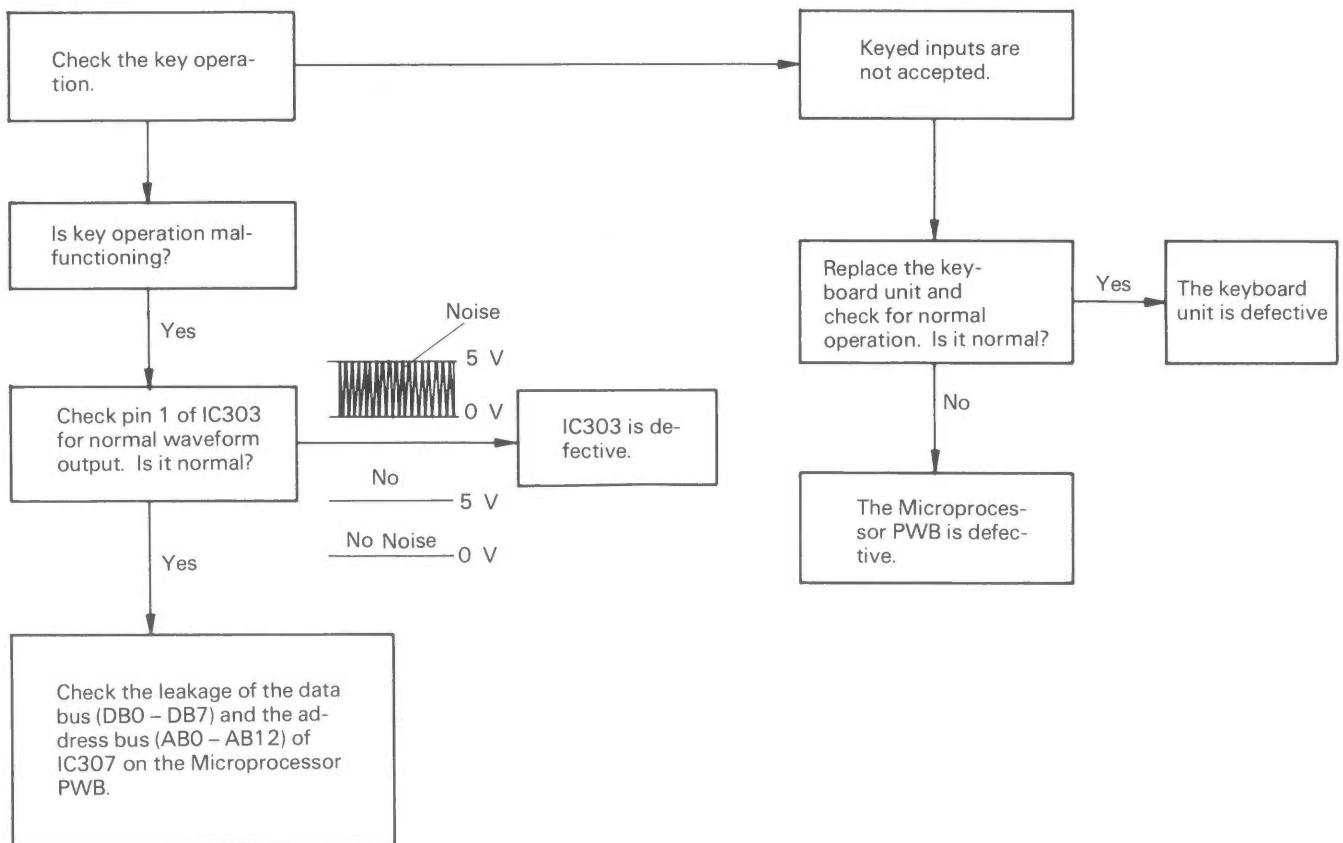
## No audio is available.



**Time is not displayed.**

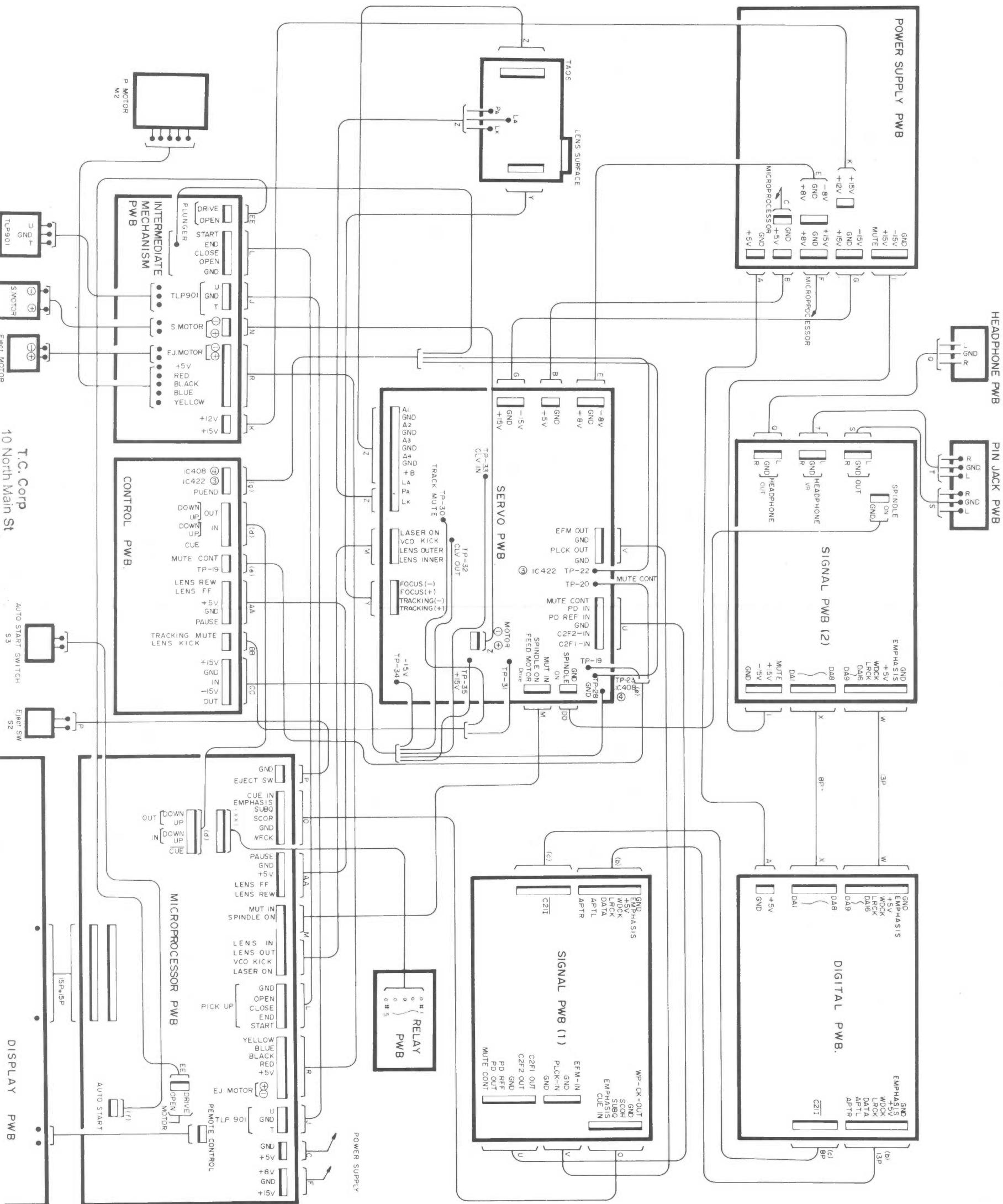


**Key operation is not possible.**

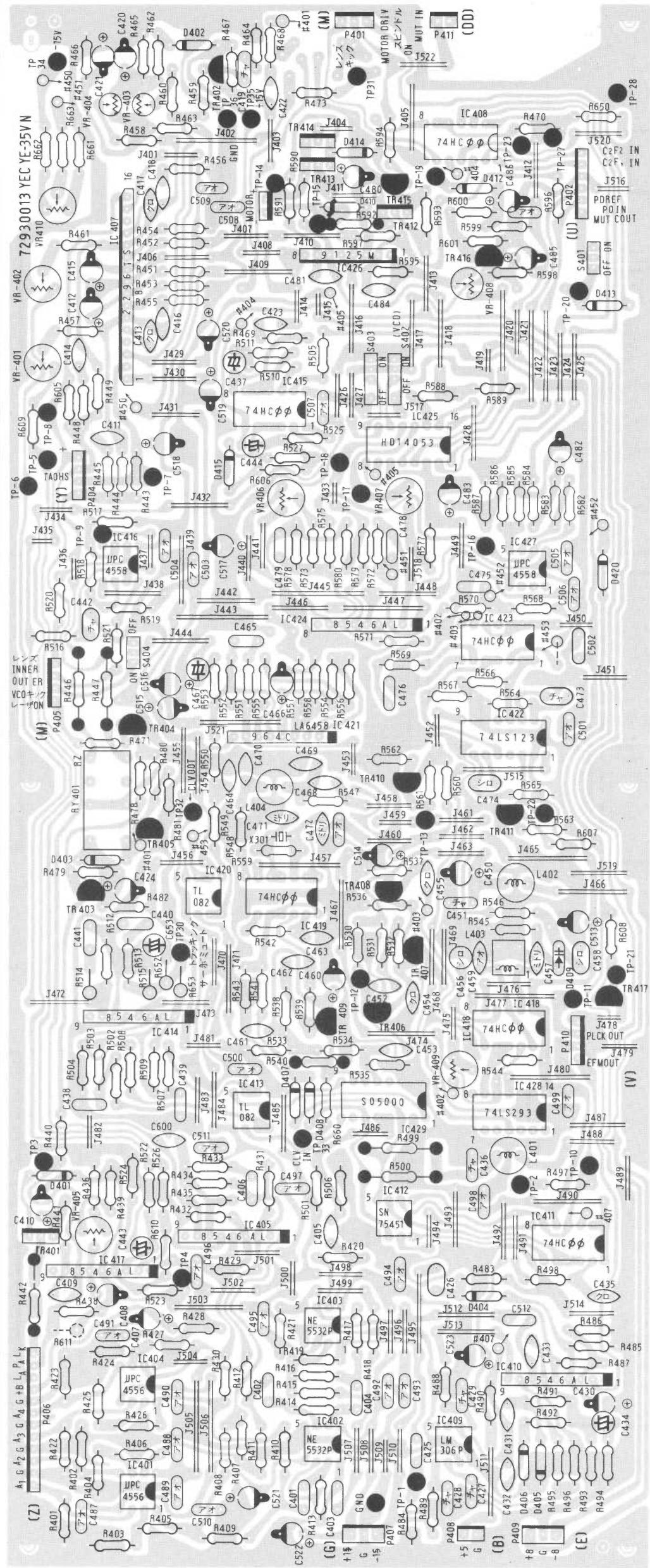


**- MEMO -**

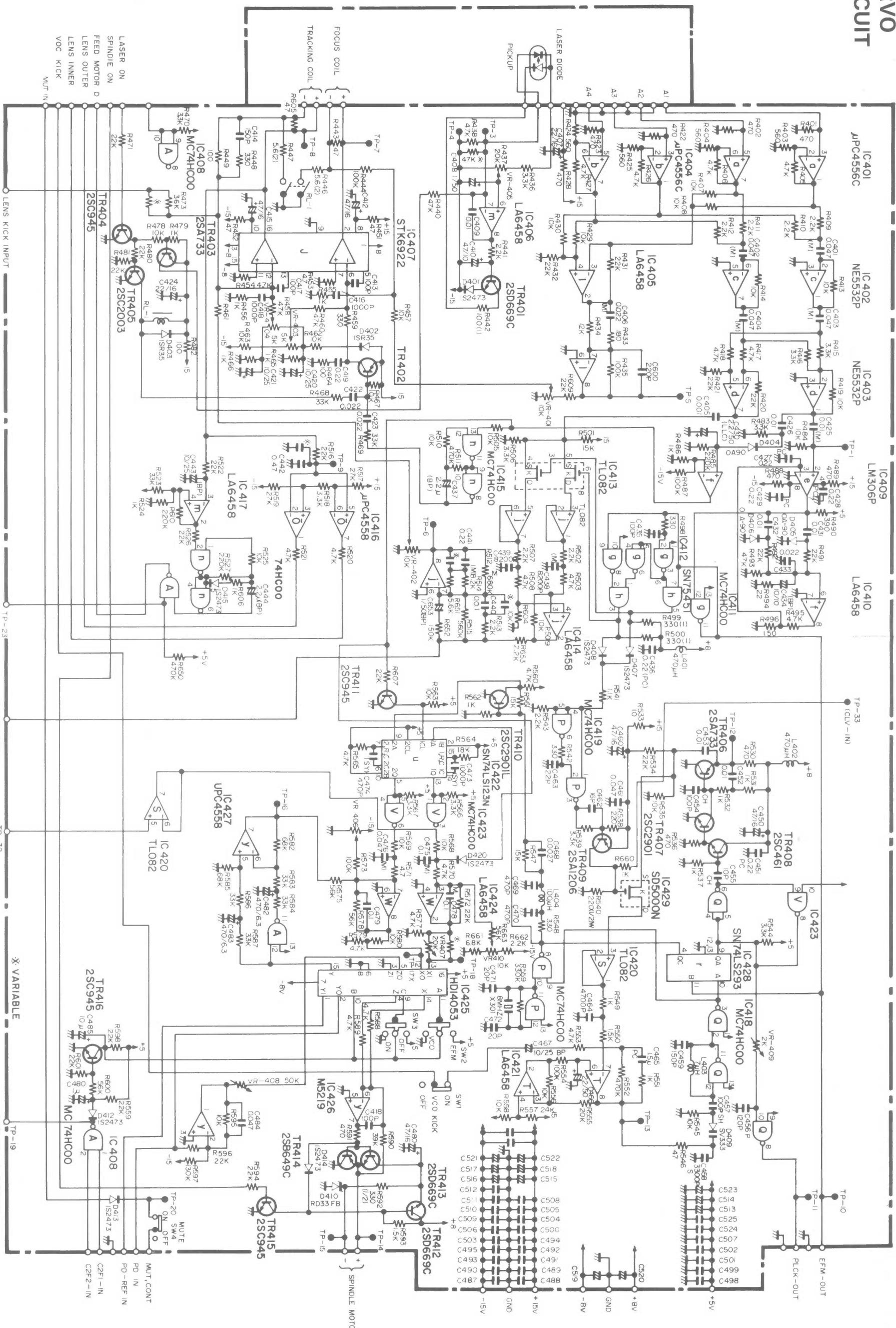
## 13. WIRING DIAGRAM



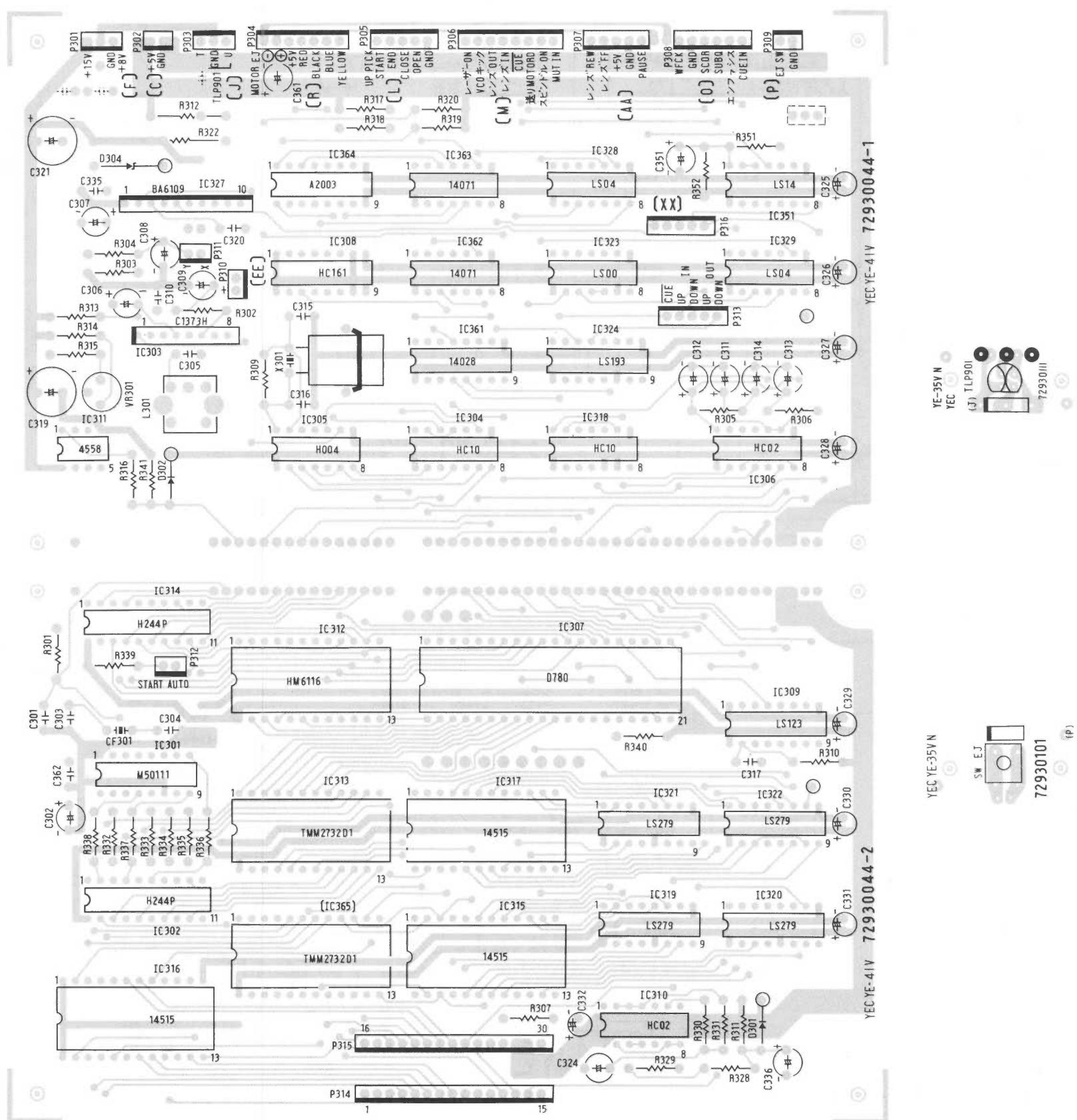
14. SERVO PWB ASS'Y



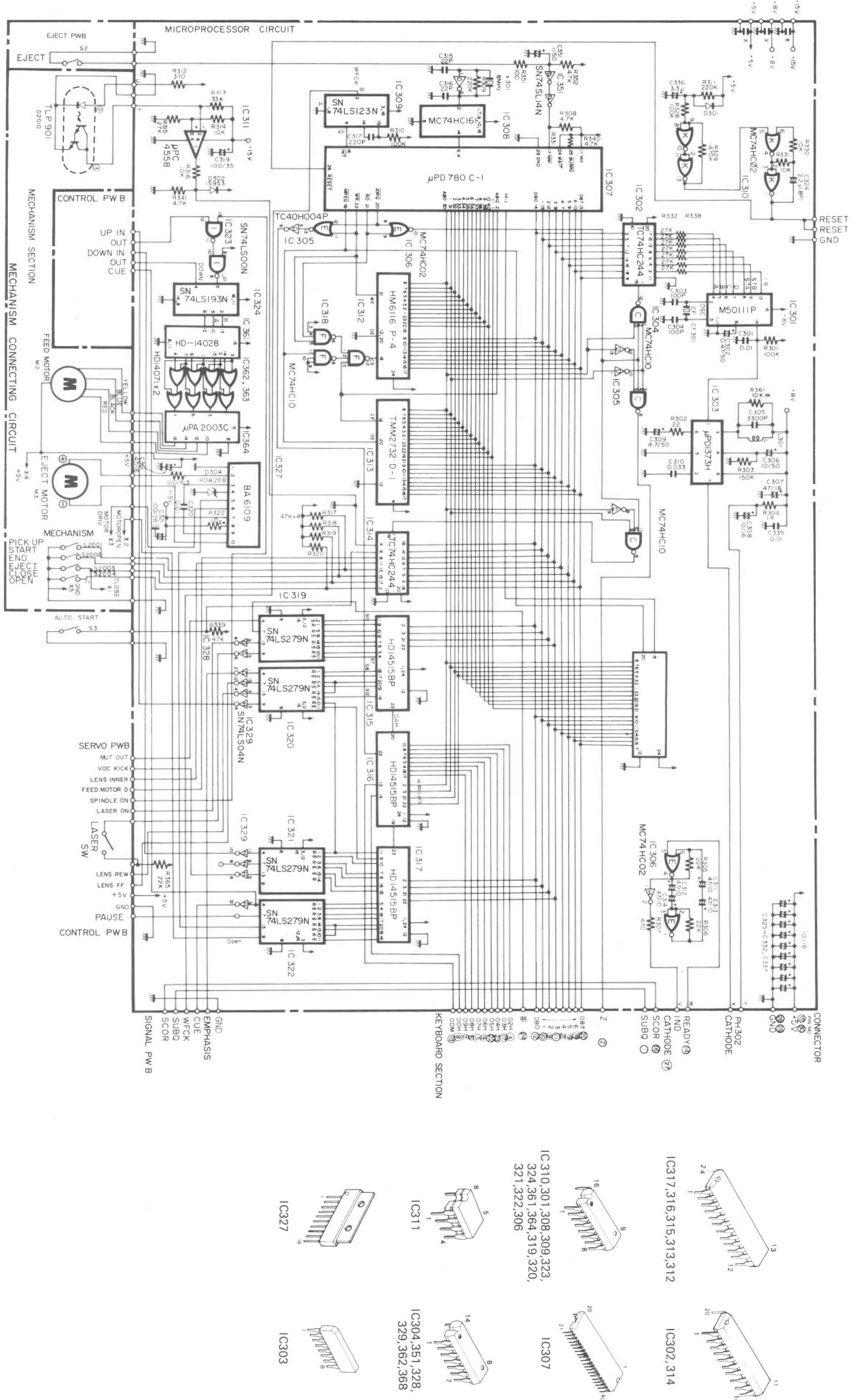
15. SERVO



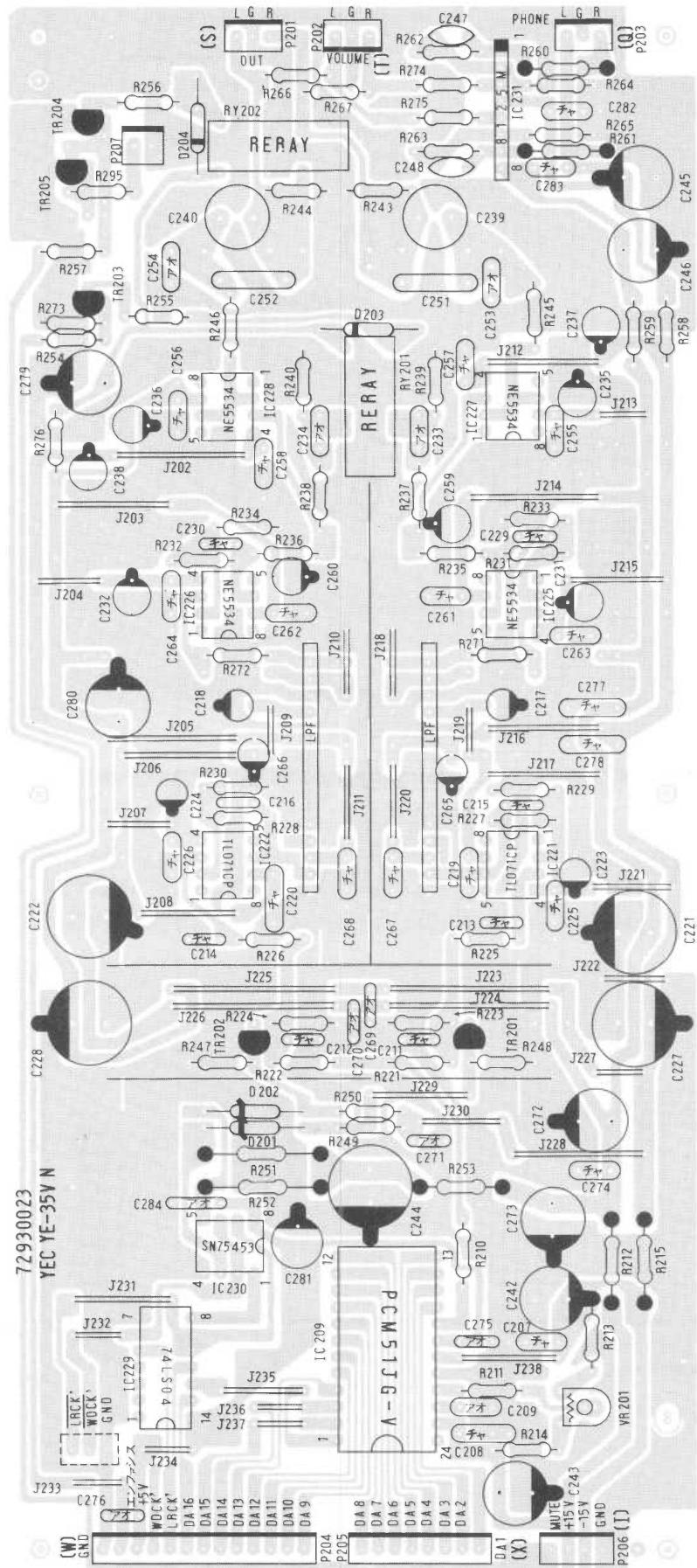
## 16. MICROPROCESSOR PWB ASS'Y



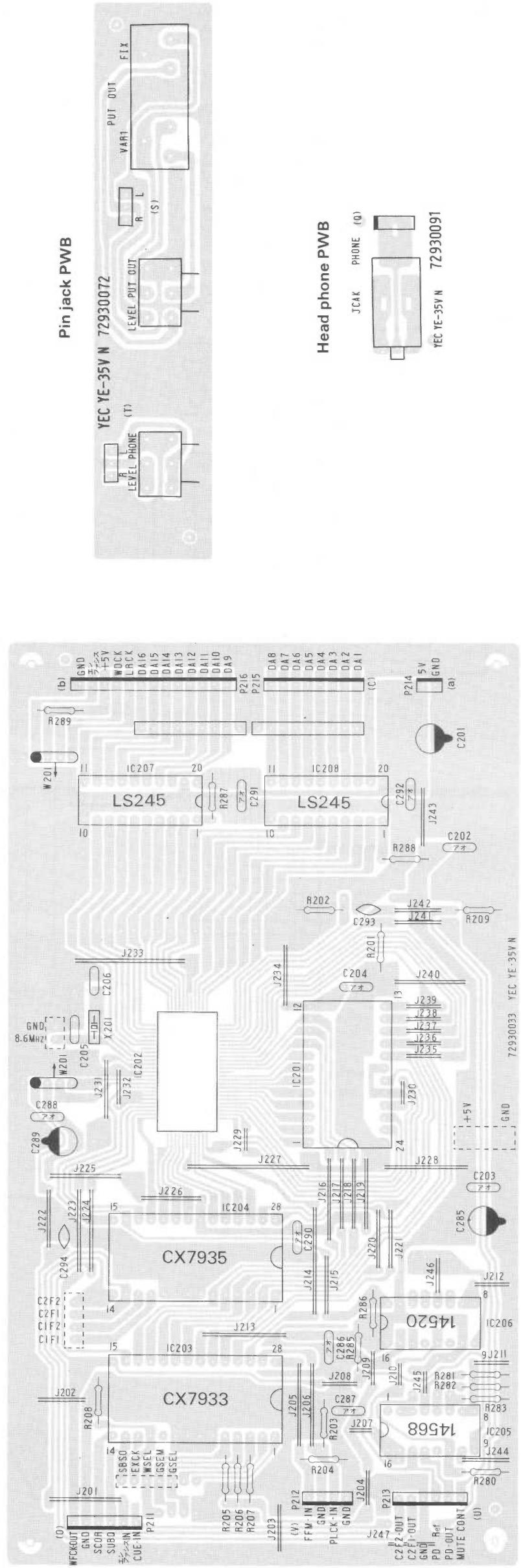
17. MICROPROCESSOR CIRCUIT



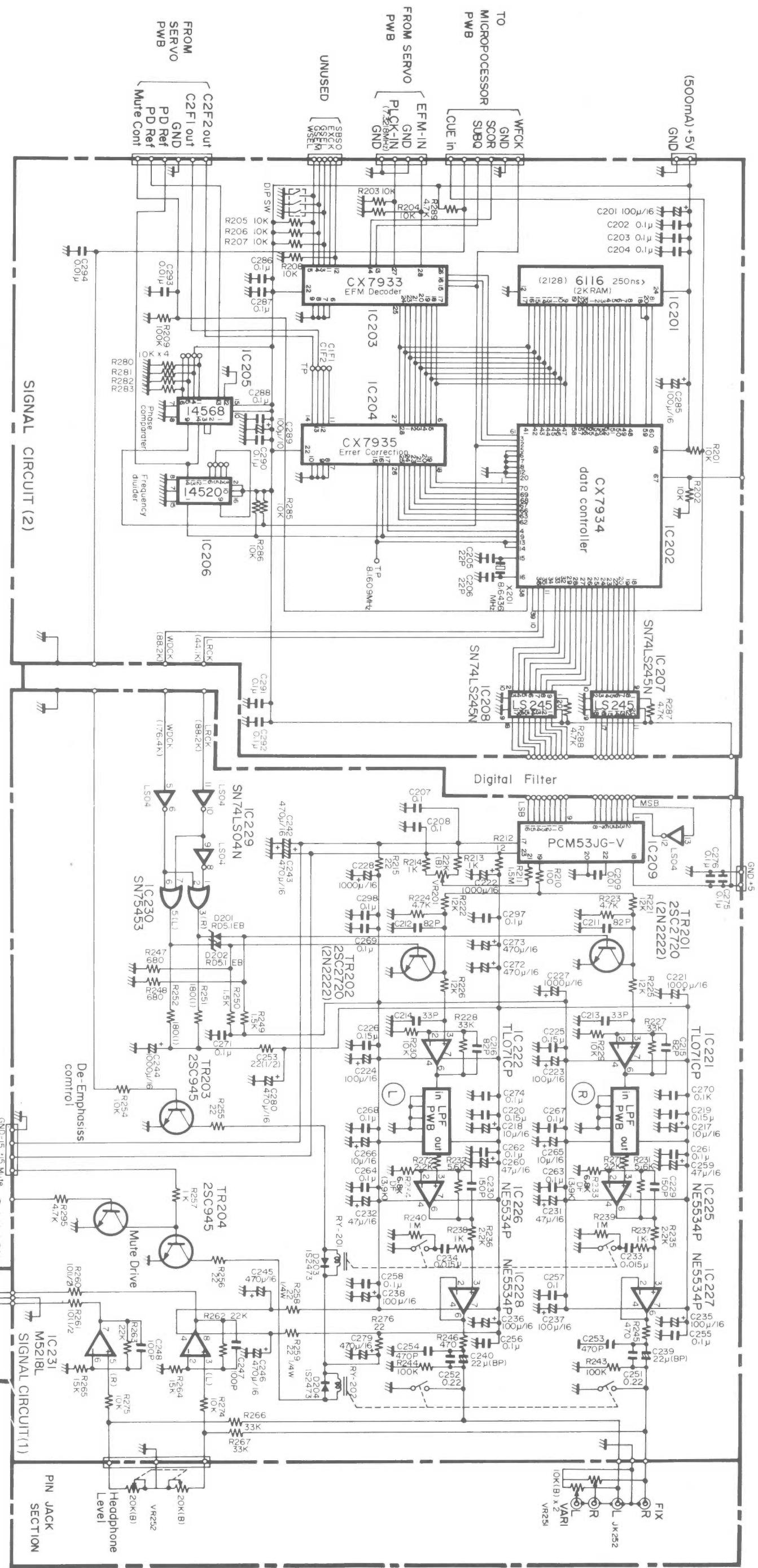
## 18. SIGNAL PWB (1) ASS'Y



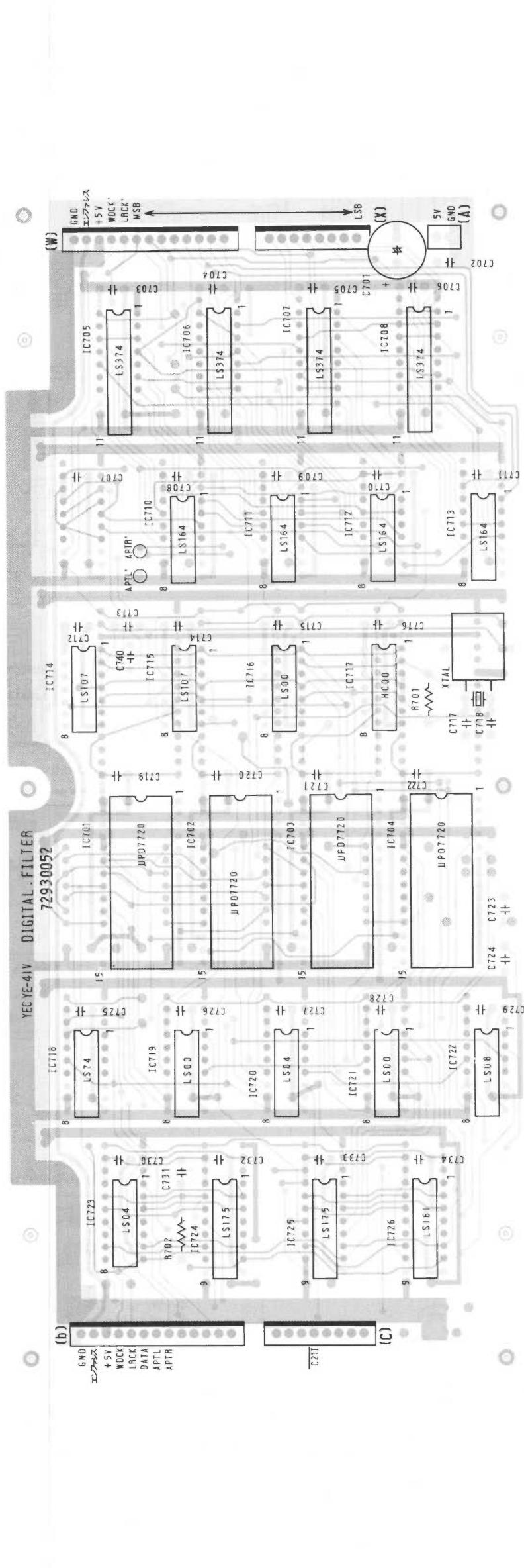
SIGNAL PWB (2) ASS'Y



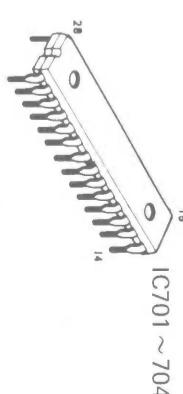
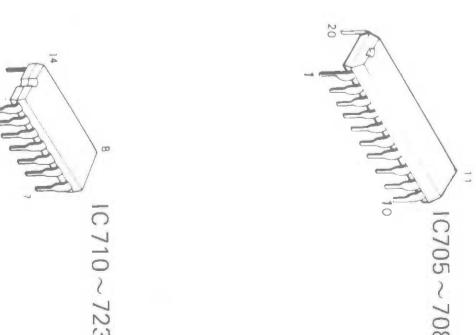
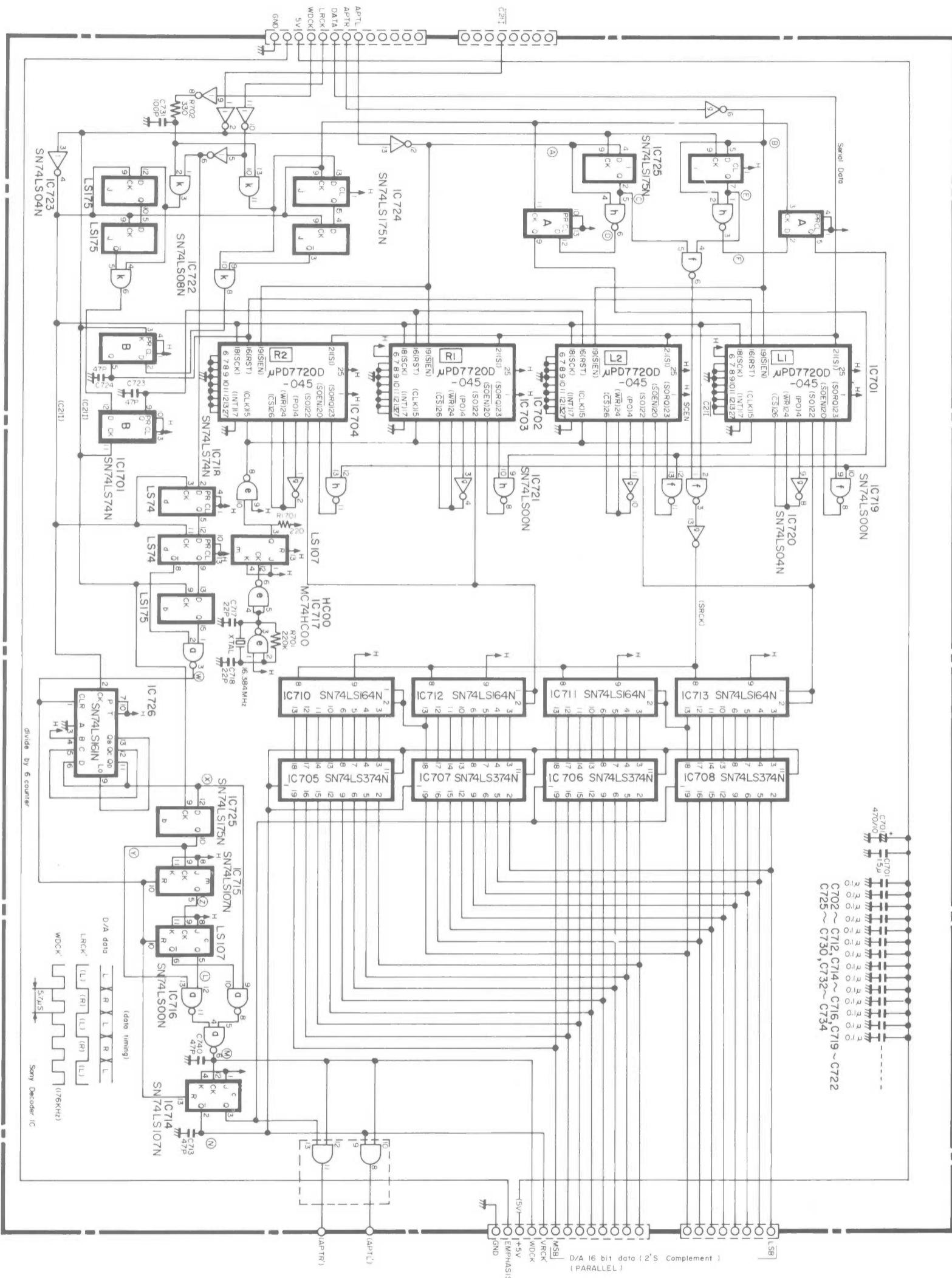
# 19. SIGNAL CIRCUIT (Decoder & D/A Convertor)



## 20. DIGITAL FILTER PWB ASS'Y

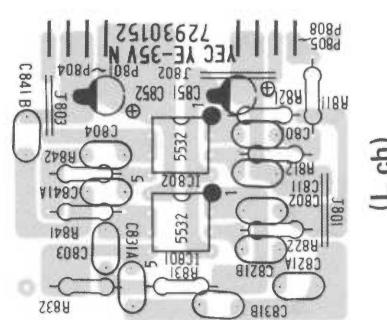


21. DIGITAL FILTER CIRCUIT

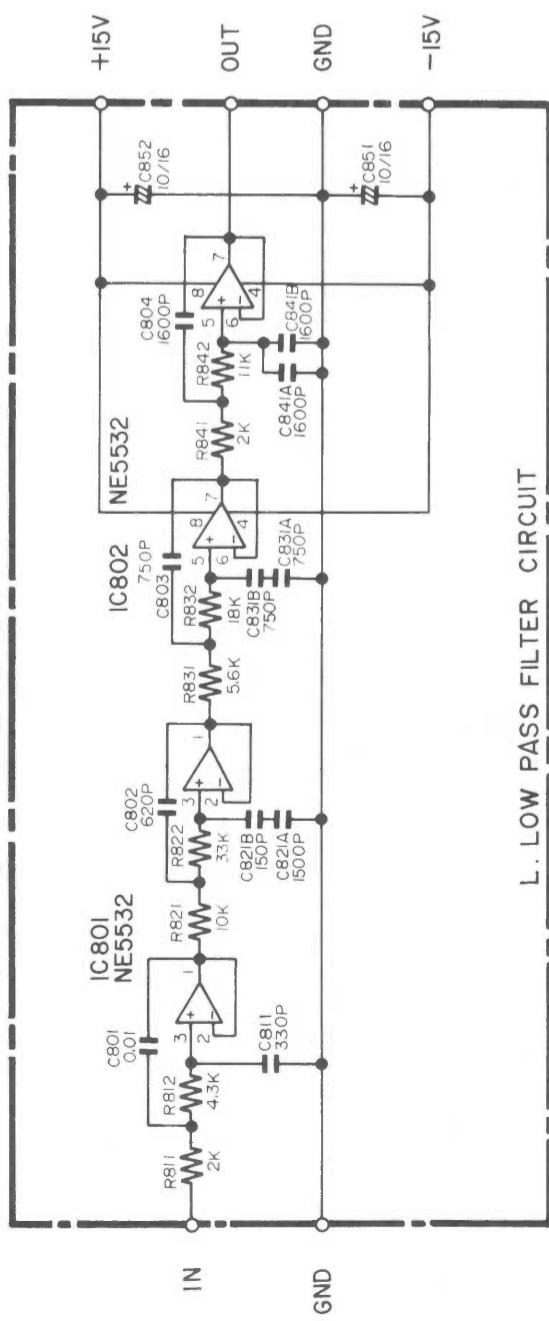


**T.C. Corp**  
10 North Main St  
Wharton NJ 07885  
[www.servicemanuals.net](http://www.servicemanuals.net)

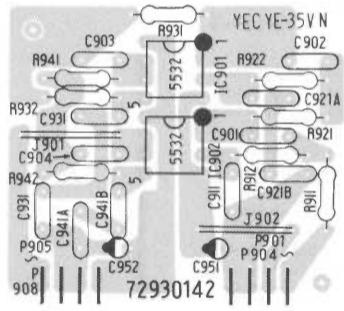
## 22. L/R LOW PASS PWB ASS'Y/CIRCUIT



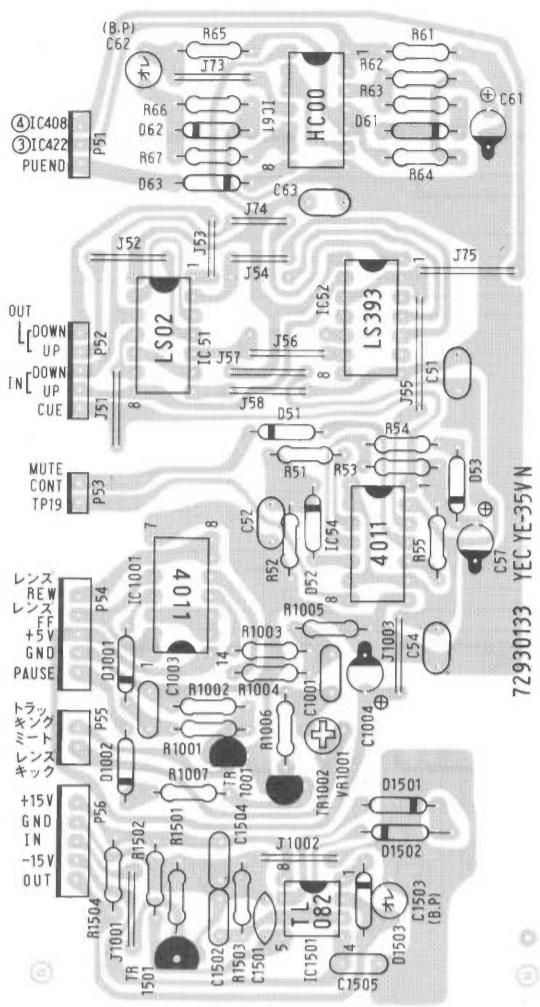
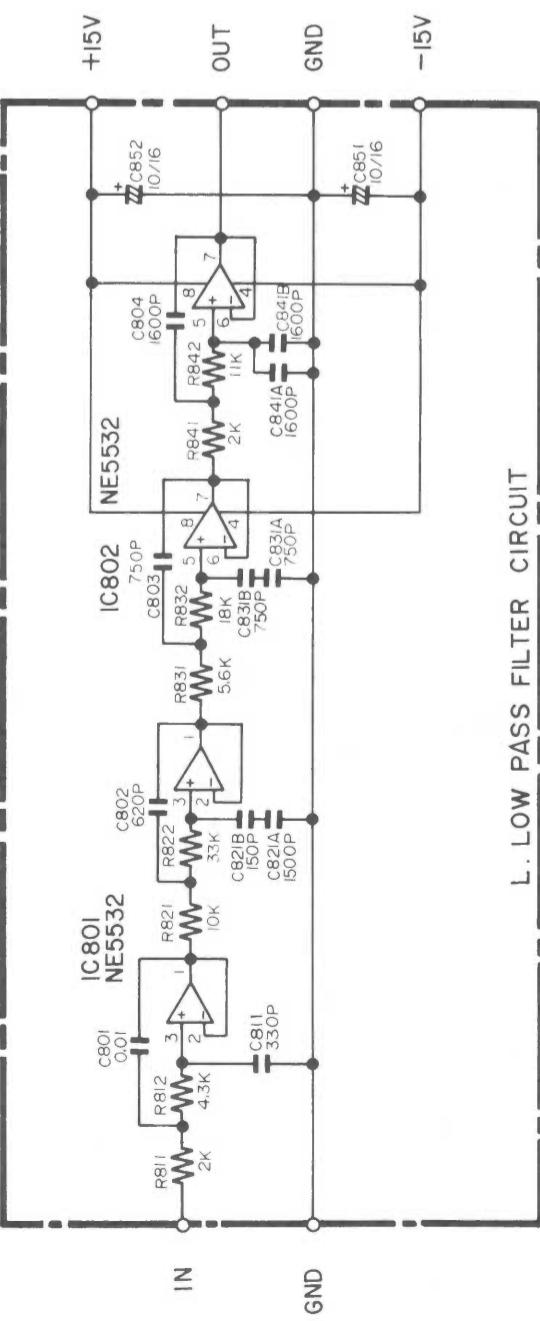
(L ch)



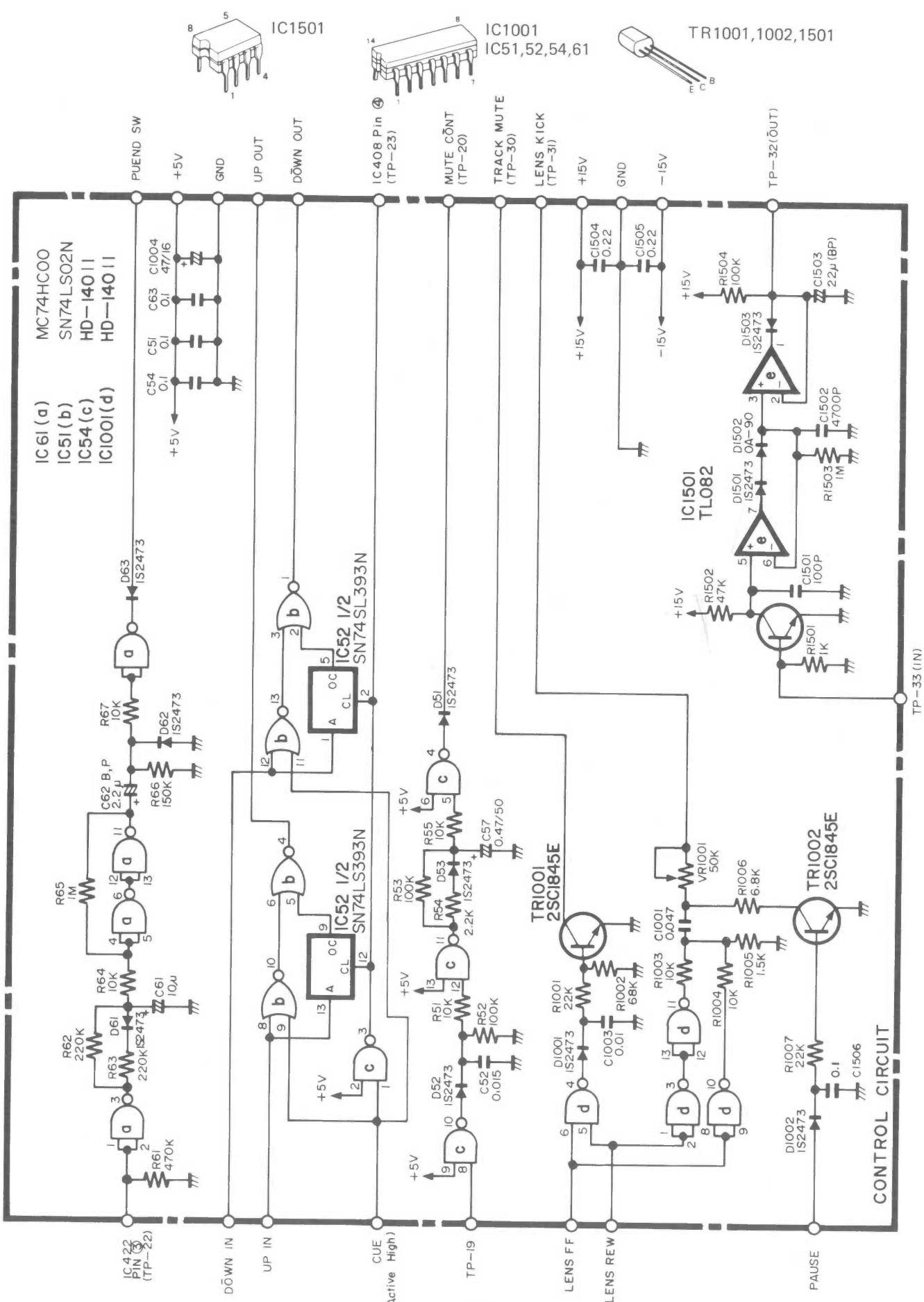
## 23. CONTROL PWB ASS'Y



(R ch)

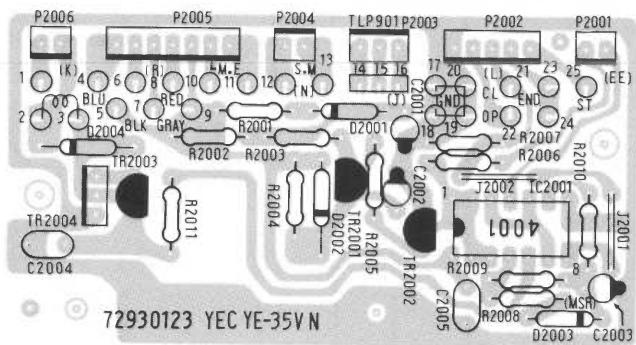


## 24. CONTROL CIRCUIT

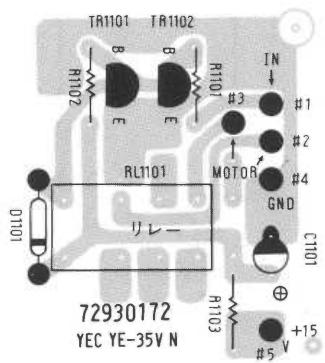


## 25. INTERMEDIATE MECHANISM PWB ASS'Y

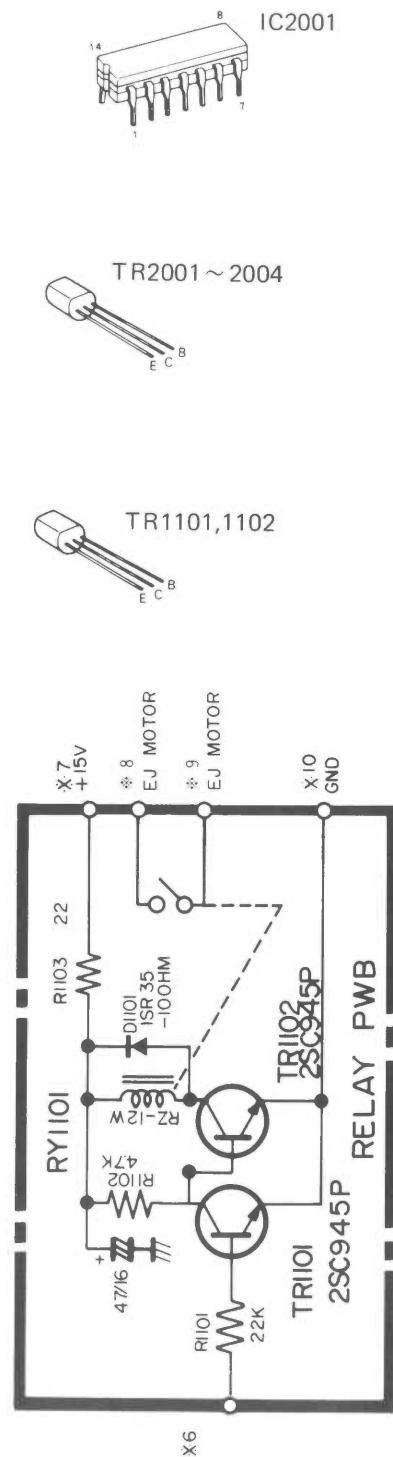
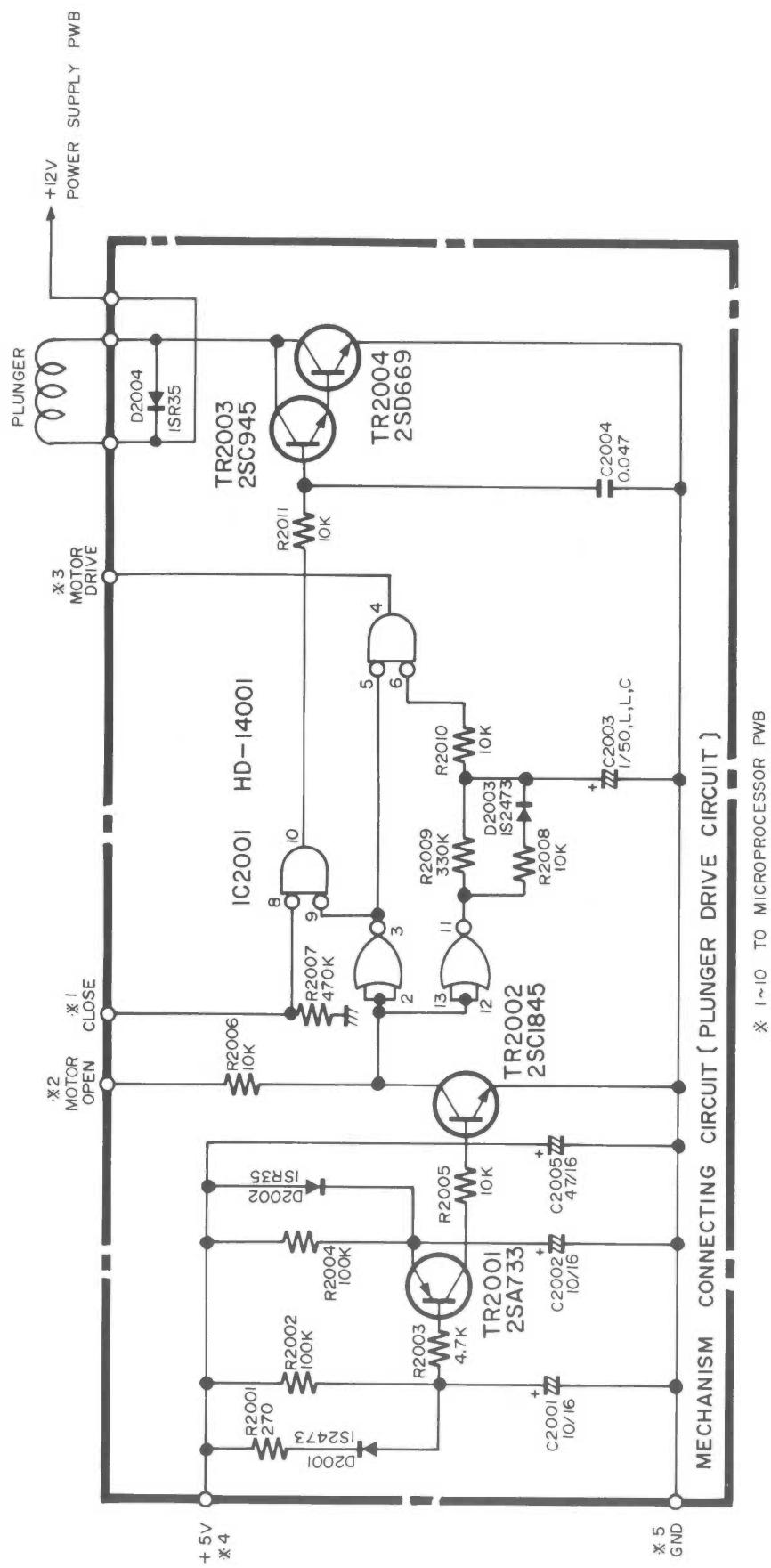
Mechanism connecting PWB



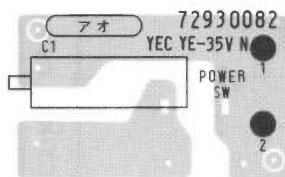
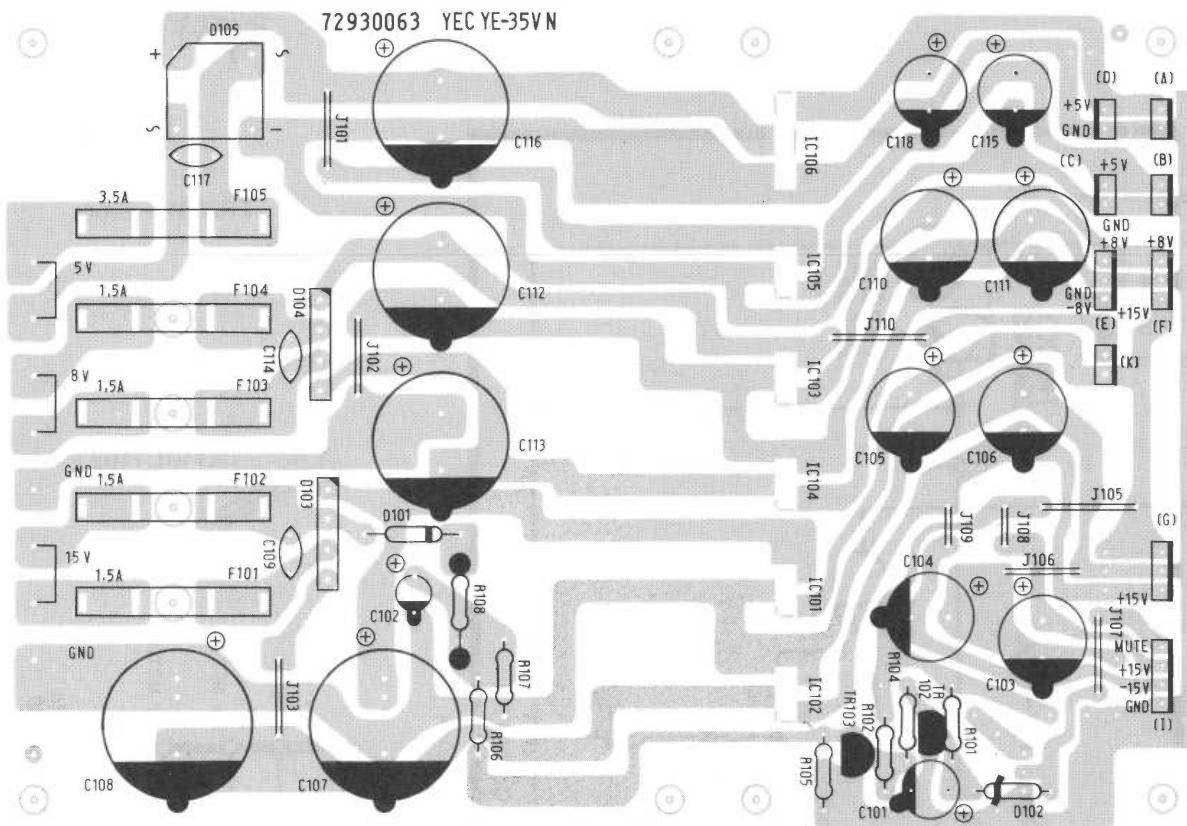
Replay PWB



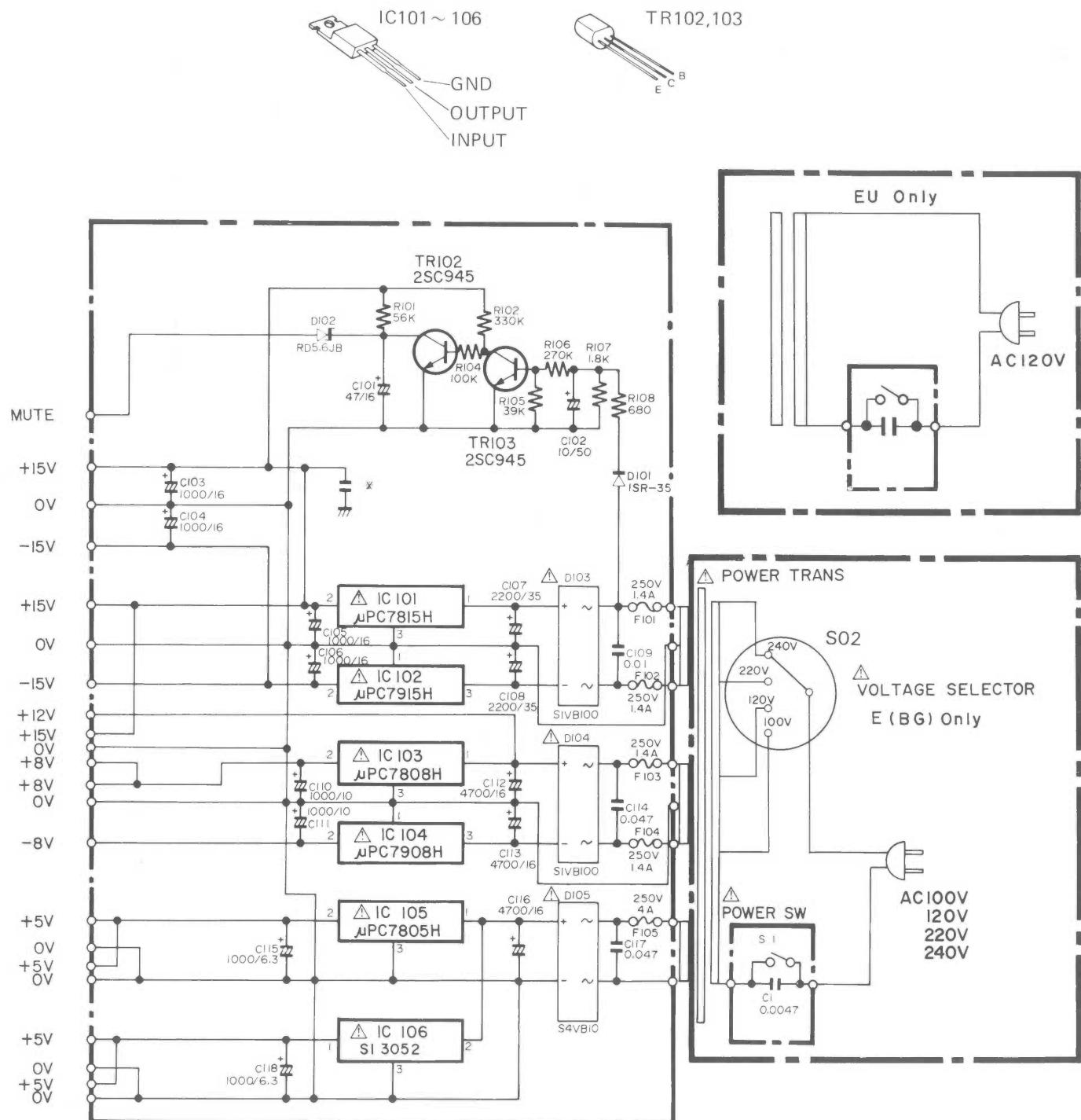
## 26. INTERMEDIATE MECHANISM CIRCUIT



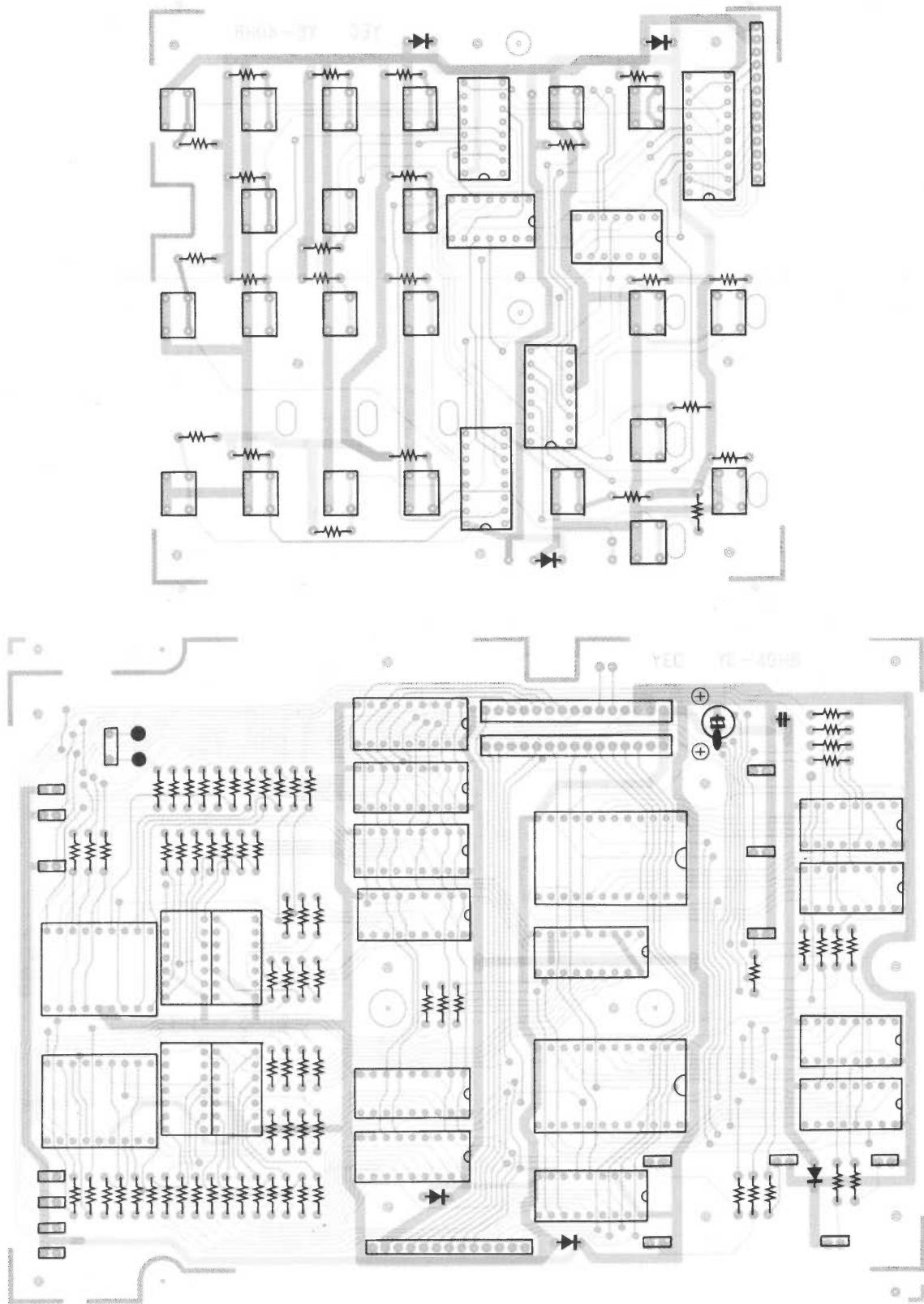
## 27. POWER SUPPLY PWB ASS'Y



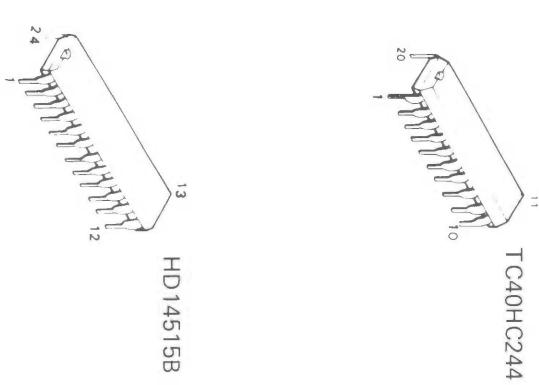
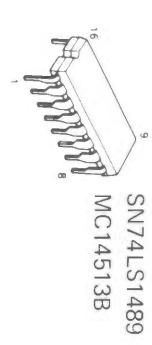
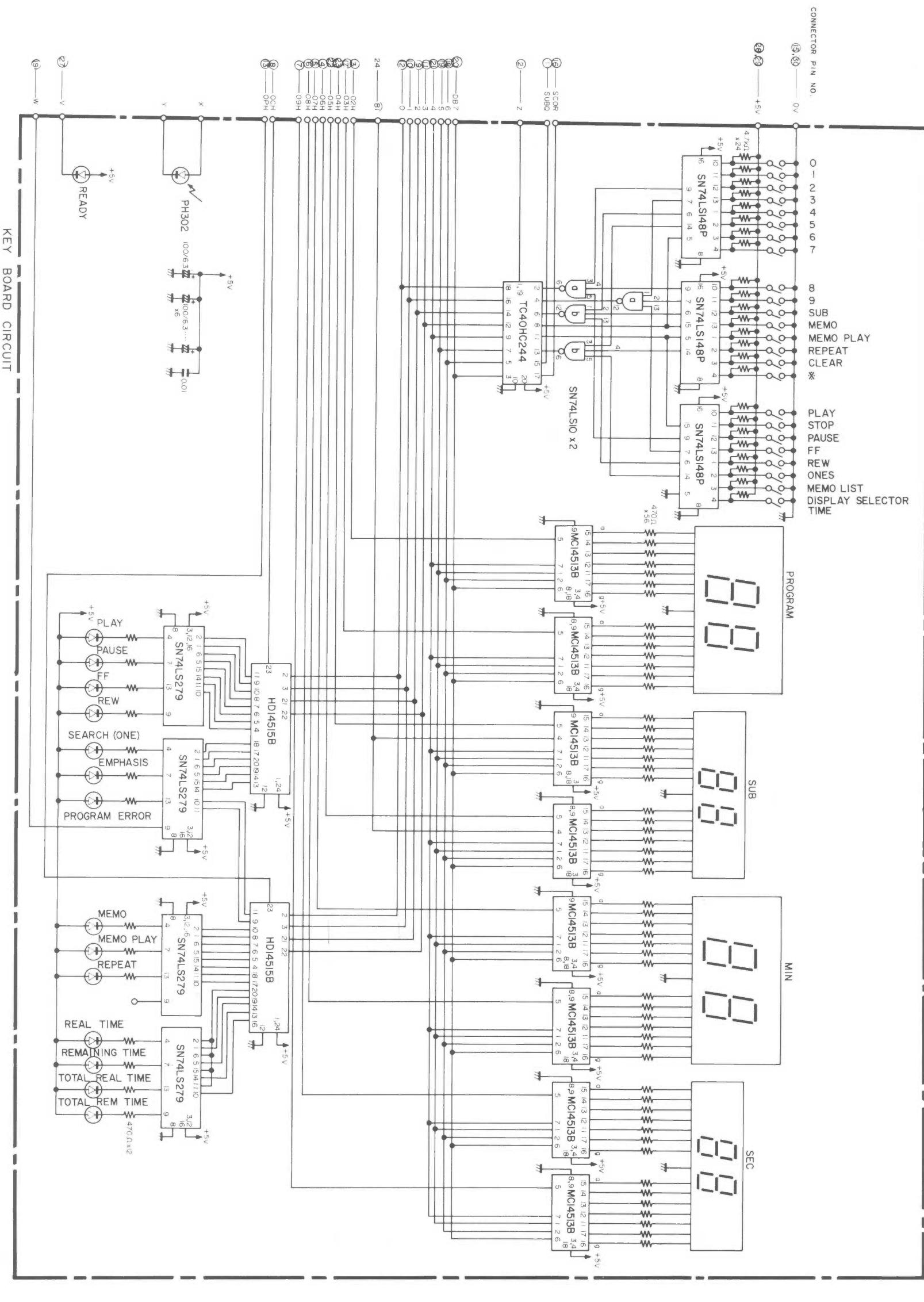
## 28. POWER SUPPLY CIRCUIT



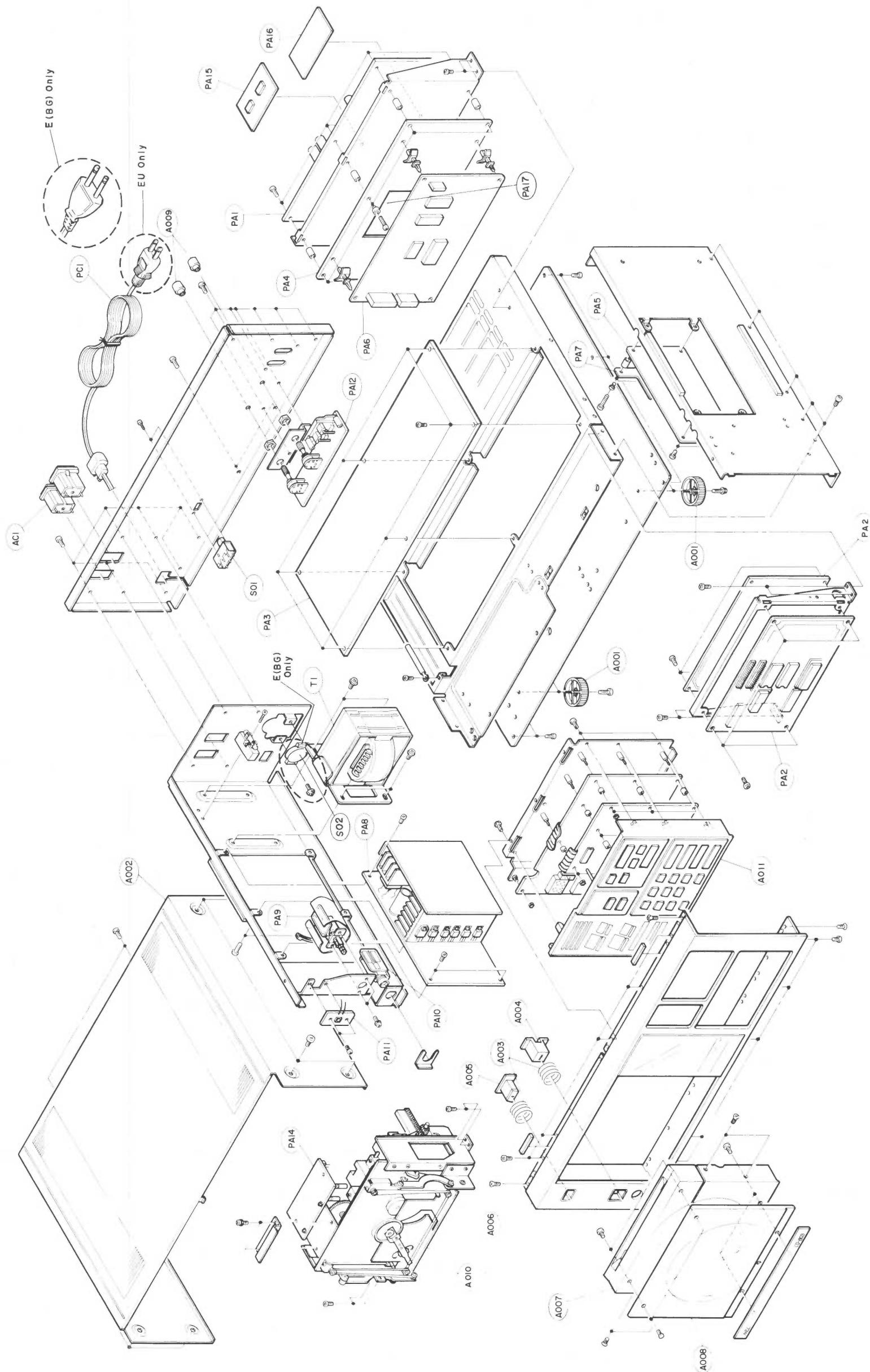
## 29. KEYBOARD PWB ASS'Y



### 30. KEYBOARD PWB CIRCUIT



### **31. EXPLODED VIEW OF SET**



## REPLACEMENT PARTS LIST

CD803E (BG)

**Note:** The components identified by  $\Delta$ , mark or with the symbol Nos. shaded are critical for safety. Replace only with parts Number specified.

DESCRIPTION	PARTS NO	QTY
3 YM-10L		

SYMBOL	PARTS NO	DESCRIPTION	QTY
--------	----------	-------------	-----

IC1501	IC413	IC420	37011008	IC TL082	3
IC323	IC716	IC719	37051074	IC SN74LS00N (NAND)	4
IC721			37051075	IC SN74LS04N (INVERT)	5
IC229	IC326	IC329	37051076	IC SN74LS08N (AND)	1
IC720	IC725		37051078	IC SN74LS14N (S-TKIG)	1
IC722			37051090	IC SN74LS161AN (COUNT)	1
IC351			37051093	IC SN74LS175N (D-F-F)	2
IC726			37051098	IC SN74LS393N (COUNT)	1
IC724	IC725		37051101	MOS UPD780C-1 (CPU)	1
IC52			37051130	IC SN74LS245N (H-TACV)	2
IC307			37051176	IC SN74LS02N (WOR)	1
IC207	IC211	IC712	37051179	IC SN74LS123N (MONO MLT)	2
IC51			37051181	IC SN74LS164N (S-REG1)	4
IC309	IC422		37051206	IC SN75451BP (DRIV)	1
IC710	IC711		37051275	IC SN74LS279N (LATCH)	4
IC713			37051324	IC SN74LS293N (COUNTER)	1
IC412			3711D1034	IC UPC4558	3
IC319	IC324	IC321	37901081	IC M5218L	1
IC322			37901106	IC TL071CP	2
IC428			37901108	IC LM306P	1
IC311	IC416	IC427	37901109	IC NE5534P	4
IC231			37901110	IC NE5532P	6
IC221	IC222		37901111	IC UPC4556C	2
IC409			37901112	IC BA6109	1
IC225	IC226	IC227	37901113	IC M5219	1
IC228			37901123	IC UPC7815H ACCESSORIES	1
IC402	IC403	IC801	37901124	IC UPC7915H ACCESSORIES	1
IC802	IC901	IC902	37901125	IC UPC7808H ACCESSORIES	1
IC401			37901126	IC UPC7908H ACCESSORIES	1
IC327			37901127	IC UPC7805H ACCESSORIES	1
IC426			37903055	IC UPAP2003C	1
IC101			37903125	MOS IC M50111P	1
IC102			37903131	IC HD14515BP MOS	3
IC103			37903132	IC UPD1373H	1
IC104			37903154	IC LA6458SS	6
IC105					
IC364					
IC301					
IC315	IC316	IC317			
IC303					
IC405	IC410	IC414			
IC407	IC421	IC424			

IC		Part Number		Description		Quantity	
IC106		37903172		IC S1-3052P		1	
IC407		37903173		IC STK922		1	
IC1001	1C54	37904024		MOS-HD4011		2	
IC2001		37904025		MOS-HD4001		1	
IC361		37904026		MOS-HD4028		1	
IC362	1C363	37904030		MOS-HD4071		2	
IC324		37950002		IC SN74LS193N		1	
IC230		37950004		IC SN75453		1	
IC714	IC715	37950005		IC SN74LS107N		2	
IC705	IC706	IC707		IC SN74LS374N		4	
IC708		37950006					
IC1701	IC1702	IC718		37950007		1	
IC203		37951001		IC SN74LS74N		1	
IC202		37951002		IC CX7933		1	
IC204		37951003		IC CX7934		1	
IC312		37951005		IC CX7935		1	
IC429		37951007		IC SD5000N		1	
IC201		37951008		IC MSM 2128-20Rb		1	
IC701	1C702	IC703		IC UPD7720B-045		4	
IC704		37951009					
IC209		37951015		IC PCMS3JGV		1	
IC313		37951020		IC 2732 ROM 1U=02		1	
IC305		37951101		IC TC40H004P		1	
IC408	IC411	IC415		IC MC74HC00		1	
IC418	IC419	IC423		IC MC74HC00		8	
IC61	IC717						
IC306	IC310	37951103		IC MC74HC02		2	
IC304	IC318	37951104		IC MC74HC10		2	
IC308		37951106		IC MC74HC161		1	
IC302	IC314	37951107		IC TC74HC244		2	
IC425		37951109		IC HD14053BP		1	
IC205		37951110		IC HD14568BP		1	
IC206		37951111		IC HD14520BP		1	
*** TRANSISTORS ***							
TR2001	TR402	TR403	35003516	TR2SA733/733A P		4	
TR406			350047216	TR2SC945 P		10	
TR1101	TR1102	TR2003					
TR204	TR205	TR404					
TR411	TR415	TR416					

SYMBOL	PARTS NO	DESCRIPTION	QTY
<b>** TRANSISTORS **</b>			
TR417	35047216	TR2SC945 P	1
TR102 TR103	35047217	TR2SC945Q	1
TR409	35905711	TRANSISTOR 2SA1200K	1
TR414	35922403	TRANSISTOR 2SB669C	1
TR408	35944402	TR2SC461B	1
TR1001 TR1002	35947405	TR2SC1845E	1
TR405	35948012	TR2SC-2003L	1
TR1501 TR202	35953812	TRANSISTOR 2SC2720L	1
TR407 TR410	35953912	TRANSISTOR 2SC2901L	1
TR2004 TR412	35963203	TR2SD 669 C	4
TR413			

<b>** DIODES **</b>			
D1001 D1502	36001001 D1502	DIODE SI-1S-2473	14
D2003 D420	36001002 D2003		
D52 D53	36001003 D52		
D62	36001004 D62		
D301 D302	36001005 D301	DIODE 1S-953	2
D404 D405	36001006 D404	DIODE 0A-90	3
D409 D401	36001007 D409	DIODE BARICAP SVC-3333	1
D407 D408	36001008 D407	DIODE SI-1S2473	7
D412 D413	36001009 D412		
D415	36001010 D415		
D105 D101	36803005 D105	SENCER PH TLP901	1
D2002 D2004	36902048 D2002	DIODE S4VB10	1
D1101 D2004	36902087 D1101	DIODE 1SR35-100	2
D203 D403	36902088 D203	DIODE 1SR35100HM	6
D103 D104	36902089 D103	RECTIFIER BLOCK S1VB10	2

<b>** TRANSFORMERS **</b>			
L403	45019180	TRANS. POWER CD-803F	1
L301			
L401			
L404			

SYMBOL	PARTS NO	DESCRIPTION	QTY
<b>** RESISTORS **</b>			
VR401 VR410	VR402 VR405	VOLUME 10KB	1
VR201 VR1001	VR405 VR408	VOLUME 20KB	1
VR403 VR404	VR407 VR409	R VARIABLE 20KU-T-1	1
VR405 VR406	VR407 VR409	R VARIABLE 50KH-T-1	1

<b>** VARIABLE RESISTORS **</b>			
VR401 VR410	VR402 VR405	VOLUME 10KB	1
VR201 VR1001	VR405 VR408	VOLUME 20KB	1
VR403 VR404	VR407 VR409	R VARIABLE 20KU-T-1	1
VR405 VR406	VR407 VR409	R VARIABLE 50KH-T-1	1

<b>** PWB ASSY **</b>			
PA1 PA3	PA2 PA4	SIGNAL PWB FULL ASSY	1
PA12 PA11	PA10 PA13	SURBO PWB FULL ASSY	1
PA11 PA13	PA12 PA14	PIN JACK PWB FULL ASSY	1
PA10 PA14	PA11 PA15	HEAD PHONE PWB FULL ASSY	1
PA12 PA13	PA11 PA16	EJECT SWITCH PWB FULL ASSY	1
PA11 PA16	PA10 PA17	PH SENCER PWB FULL ASSY	1
PA10 PA17	PA9 PA18	DIGITAL PWB FULL ASSY	1
PA11 PA18	PA10 PA19	CONTROL PWB FULL ASSY	1
PA10 PA19	PA9 PA20	LOWPASS PWB FULL ASSY	1
PA11 PA20	PA8 PA21	R-LOWPASS PWB FULL ASSY	1
PA10 PA21	PA7 PA22	SIGNAL (2)PWB FULL ASSY	1
PA11 PA22	PA6 PA23	RELAY PWB FULL ASSY	1
PA12 PA23	PA5 PA24	SUB PWB FULL ASSY	1
PA13 PA24	PA4 PA25	POWER PWB FULL ASSY	1
PA14 PA25	PA3 PA26	MICROPROCESSOR PWB FULL ASSY	1
PA15 PA26	PA2 PA27	878852301 POWER SW PWB FULL ASSY	1

<b>** MISCELLANEOUS PARTS **</b>			
B040	B041	SPRING, BACK TENSION	2
L403 L301	L402	VCO OSC COIL	1
L401	L404	COIL, INDUCTOR 5F-1	1
		INDUCTOR RC-471J	2
		INDUCTOR QC-111J	1

** MISCELLANEOUS PARTS **		PARTS NO	DESCRIPTION	QTY
CF301 X201 X301 X701 SO2		61919065 64920175 64920176 64920178 65901065	CERAMIC FILTER 455A XTAL 8.6436MHZ XTAL 8.00 MHZ XTAL 16.384MHZ VOLTAGE SELECTOR	1 1 1 1 1
		65902068	SLIDE SW 22N	1
		65902106	SWITCH, SLIDE	2
		65902108	SWITCH, SLIDE 1-3 SSS315	2
		65904332	SW	1
		65904341	POWER SWITCH SCL01P	1
B023 B005		65906010 65906011 65907072	SWITCH, MICRO SCL101U MICRO SWITCH SS-5GL11 SWITCH MSW-1290	2 2 1
RL1101 RY401	Y201 F102 F103	RY202 66901055	RELAY RZ-12W FUSE, 1.4A T	4 4
F105		66901060 70599056 70905441 70905516 70905528	FUSE 4A T POWER ADAPTER S-16115 JACK, HEADPHONE JACK PIN 4PIN GOLD IC SOCKET 24P	1 1 1 1 2
		70905529 70905531 71901023 71905169	IC SOCKET 40PIN IC SOCKET 28PIN TERMINAL BOARD TERMINAL 2P	1 1 1 2
B035		79752070	MOTOR	1
		79752072 79759093 79759155 79762046	SPINDLE MOTOR ASSY LINE CORD SEMKO PIN PLUG CORD GOLD SOLENOID COIL	1 1 1 1
** APPEARANCE PARTS **				
B036 B046		18291091 18292851 18406941 18406951 18407041	CLAMPER, WIRE L94 WHITE FOOT GEAR RACK RACK	6 4 1 1 1
B008		18407301	GEAR A	1

SYMBOL	PARTS NO	DESCRIPTION	QTY
** APPEARANCE PARTS **			
B048	18407311 18407681 18407692 18407711 18407721	GEAR B ASSY MECHANISM COVER A MECHANISM COVER B DISC HOLDER L DISC HOLDER R	
B031	18407731	PULLY	
B032	18407741 18407751 18407761 18407791	DISC CLUMPER BUSHING GEAR C ASSY GEAR D ASSY	
B045	18457041 18469721 18469731 18470311 88851631	VR KNOB/CONTROLS BUTTON POWER EJECT BUTTON ASSY SPRING COIL B FRONT PANEL S. ASSY	
A004	18811431	CARTON BOX	
A005	78915602 78915971	INSTRUCTION HOOKLET INSTRUCTION BOOKLET	
A006			
** PACKING MATERIALS **			
** RESISTORS **			
R251	40351155	R•METAL 180H 5% 1w	2
R322	40352125	R•METAL 10H 5% 2w	1
R260	40912125	R•CARBON 10H 5% 1/2w	2
R212	40912127	R•CARBON 12H 5% 1/2w	1
R215	40912133	R•CARBON 22H 5% 1/2w	2
R540	40912157	R•CARBON 220H 5% 1/2w	1
R592	40912161	R•CARBON 330H 5% 1/2w	1
R108	40912169	R•CARBON 680H 5% 1/2w	1
R533	40913125	R•CARBON 10H 5% 1/4w	1
R1103	R255	40913133 R•CARBON 22H 5% 1/4w	6
R258	R259	R•CARBON 276	
R451	40913141	R•CARBON 47H 5% 1/4w	2
R482	40913149	R•CARBON 100H 5% 1/4w	1
R442	40932066	R•METAL 100H 5% 1w	1
R499	40932078	R•METAL 330H 5% 1w	2
R446	409333036	R•METAL 5•6H 5% 2w	2

SYMBOL	PARTS NO	DESCRIPTION	QTY
** RESISTORS **			
R302	R494	40982133 R•CARBON 22H 5% 1/4W	1
R602		40982141 R•CARBON 47H 5% 1/4W	1
R351		40982149 R•CARBON 100H 5% 1/4W	1
R496		40982153 R•CARBON 150H 5% 1/4W	1
R1701		40982157 R•CARBON 220H 5% 1/4W	1
R2001		40982159 R•CARBON 270H 5% 1/4W	1
R702		40982161 R•CARBON 330H 5% 1/4W	1
R312		40982163 R•CARBON 390H 5% 1/4W	1
R307	R401	40982165 R•CARBON 470H 5% 1/4W	2
R1501	R304	40982173 R•CARBON 1•0K 5% 1/4W	4
R660		40982177 R•CARBON 1•5K 5% 1/4W	1
R1005		40982179 R•CARBON 1•8K 5% 1/4W	1
R811	R911	40982180 R•CARBON 2•0K 5% 1/4W	4
R941		40982181 R•CARBON 2•2K 5% 1/4W	2
R54	R662	40982185 R•CARBON 3•3K 5% 1/4W	1
R470		40982188 R•CARBON 4•3K 5% 1/4W	2
R812	R912	40982189 R•CARBON 4•7K 5% 1/4W	7
R1102	R2003	R339 R352	
R34	R341	40982191 R•CARBON 5•6K 5% 1/4W	2
R520		40982193 R•CARBON 6•8K 5% 1/4W	2
R831	R931	40982195 R•CARBON 10K 5% 1/4W	19
R1006	R661	R2005 R2010	
R1003	R1004	R2008 R316	
R2006	R2011	R331 R361	
R330	R331	R604 R64	
R51	R55	R821	
R64	R67		
R921			
R842	R942	40982198 R•CARBON 11K 5% 1/4W	2
R670		40982199 R•CARBON 12K5% 1/4W	1
R264		40982201 R•CARBON 15K 5% 1/4W	1
R832	R932	40982203 R•CARBON 18K 5% 1/4W	2
R1001	R1101	40982205 R•CARBON 22K 5% 1/4W	7
R305	R306	R362	
R603			
R557			
R315	R332	R333 R335	
R334	R335	R336	
R337	R338	R922	
R313	R822	40982209 R•CARBON 33K 5% 1/4W	3
R473		40982210 R•CARBON 36K 5% 1/4W	1

SYMBOL	PARTS NO	DESCRIPTION	QTY	** RESISTORS **	** RESISTORS **
R302	R494	40982133 R•CARBON 22H 5% 1/4W	1	R105 R1502	R317 R318 R493
R602		40982141 R•CARBON 47H 5% 1/4W	1	R319 R101 R1002	R603 R104 R2002
R351		40982149 R•CARBON 100H 5% 1/4W	1	R104 R2004	R310 R328 R328
R496		40982153 R•CARBON 150H 5% 1/4W	1	R317 R319 R319 R319 R319 R319	R317 R319 R319 R319 R319 R319
R1701		40982157 R•CARBON 220H 5% 1/4W	1	R319 R319 R319 R319 R319 R319	R319 R319 R319 R319 R319 R319
R2001		40982159 R•CARBON 270H 5% 1/4W	1	R319 R319 R319 R319 R319 R319	R319 R319 R319 R319 R319 R319
R702		40982161 R•CARBON 330H 5% 1/4W	1	R319 R319 R319 R319 R319 R319	R319 R319 R319 R319 R319 R319
R312		40982163 R•CARBON 390H 5% 1/4W	1	R319 R319 R319 R319 R319 R319	R319 R319 R319 R319 R319 R319
R307	R401	40982165 R•CARBON 470H 5% 1/4W	2	R319 R319 R319 R319 R319 R319	R319 R319 R319 R319 R319 R319
R1501	R304	40982173 R•CARBON 1•0K 5% 1/4W	4	R319 R319 R319 R319 R319 R319	R319 R319 R319 R319 R319 R319
R660		40982177 R•CARBON 1•5K 5% 1/4W	1	R319 R319 R319 R319 R319 R319	R319 R319 R319 R319 R319 R319
R1005		40982179 R•CARBON 1•8K 5% 1/4W	1	R319 R319 R319 R319 R319 R319	R319 R319 R319 R319 R319 R319
R107		40982180 R•CARBON 2•0K 5% 1/4W	4	R319 R319 R319 R319 R319 R319	R319 R319 R319 R319 R319 R319
R811	R911			R329 R61	R329 R61 R61 R61 R61 R61
R941				R329 R61	R329 R61 R61 R61 R61 R61
R54	R662			R65	R65 R65 R65 R65 R65 R65
R470				R653	R653 R653 R653 R653 R653 R653
R812	R912			R514	R514 R514 R514 R514 R514 R514
R1102	R2003			R611	R611 R611 R611 R611 R611 R611
R34	R341			R652	R652 R652 R652 R652 R652 R652
R520				R515	R515 R515 R515 R515 R515 R515
R831	R931			R443	R443 R443 R443 R443 R443 R443
R1006	R661			R210	R210 R210 R210 R210 R210 R210
R1003	R1004			R433	R433 R433 R433 R433 R433 R433
R2006	R2011			R538	R538 R538 R538 R538 R538 R538
R330	R331			R445	R445 R445 R445 R445 R445 R445
R51	R55			R542	R542 R542 R542 R542 R542 R542
R64	R67			R490	R490 R490 R490 R490 R490 R490
R921				R246	R246 R246 R246 R246 R246 R246
R842	R942			R422	R422 R422 R422 R422 R422 R422
R670				R488	R488 R488 R488 R488 R488 R488
R264				R536	R536 R536 R536 R536 R536 R536
R832	R932			R404	R404 R404 R404 R404 R404 R404
R1001	R1101			R425	R425 R425 R425 R425 R425 R425
R305	R306			R247	R247 R247 R247 R247 R247 R247
R603				R213	R213 R213 R213 R213 R213 R213
R557				R238	R238 R238 R238 R238 R238 R238
R315	R332	R333		R237	R237 R237 R237 R237 R237 R237
R334	R335	R336		R455	R455 R455 R455 R455 R455 R455
R337	R338	R922		R479	R479 R479 R479 R479 R479 R479
R313	R822			R486	R486 R486 R486 R486 R486 R486
R473				R531	R531 R531 R531 R531 R531 R531
R332				R532	R532 R532 R532 R532 R532 R532
R335				R549	R549 R549 R549 R549 R549 R549
R336				R551	R551 R551 R551 R551 R551 R551
R337				R606	R606 R606 R606 R606 R606 R606
R313				R541	R541 R541 R541 R541 R541 R541
R473				R249	R249 R249 R249 R249 R249 R249
R315				R550	R550 R550 R550 R550 R550 R550

SYMBOL	PARTS NO	DESCRIPTION	QTY
** RESISTORS **			
R543	409H2677	R+CARBON 1.5K 5% 1/4W	1
R236	R271	R+CARBON 2.2K 5% 1/4W	1
R272	R409	R+CARBON 3.3K 5% 1/4W	1
R410	R410	R+CARBON 4.7K 5% 1/4W	1
R411	R412	R+CARBON 5.6K 5% 1/4W	1
R502	R507	R+CARBON 6.8K 5% 1/4W	1
R543	R513	R+CARBON 10K 5% 1/4W	1
R415	R436	R+CARBON 12K 5% 1/4W	1
R483	R506	R+CARBON 15K 5% 1/4W	1
R539	R544	R+CARBON 18K 5% 1/4W	1
R567	R566	R+CARBON 20K 5% 1/4W	1
R223	R287	R+CARBON 22K 5% 1/4W	24
R288	R295	R+CARBON 27K 5% 1/4W	1
R405	R417	R+CARBON 33K 5% 1/4W	1
R418	R420	R+CARBON 39K 5% 1/4W	1
R453	R454	R+CARBON 47K 5% 1/4W	1
R503	R508	R+CARBON 56K 5% 1/4W	1
R553	R560	R+CARBON 68K 5% 1/4W	1
R570	R571	R+CARBON 100K 5% 1/4W	1
R579	R586	R+CARBON 220K 5% 1/4W	1
R231	R232	R+CARBON 330K 5% 1/4W	1
R497	R497	R+CARBON 470K 5% 1/4W	1
R233	R234	R+CARBON 680K 5% 1/4W	1
R201	R202	R+CARBON 1.0M 5% 1/4W	2
R204	R205	R+CARBON 1.5M 5% 1/4W	1
R207	R208	R+CARBON 2.0M 5% 1/4W	1
R230	R234	R+CARBON 2.5M 5% 1/4W	1
R275	R280	R+CARBON 3.0M 5% 1/4W	1
R282	R283	R+CARBON 3.5M 5% 1/4W	1
R286	R407	R+CARBON 4.0M 5% 1/4W	1
R413	R414	R+CARBON 4.5M 5% 1/4W	1
R429	R430	R+CARBON 5.0M 5% 1/4W	1
R461	R462	R+CARBON 5.5M 5% 1/4W	1
R467	R478	R+CARBON 6.0M 5% 1/4W	1
R504	R505	R+CARBON 6.5M 5% 1/4W	1
R510	R525	R+CARBON 7.0M 5% 1/4W	1
R545	R556	R+CARBON 7.5M 5% 1/4W	1
R563	R568	R+CARBON 8.0M 5% 1/4W	1
R580	R595	R+CARBON 8.5M 5% 1/4W	1
R221	R222	R+CARBON 9.0M 5% 1/4W	1
R226	R434	R+CARBON 9.5M 5% 1/4W	1
R265	R501	R+CARBON 10.0M 5% 1/4W	1
R561	R547	R+CARBON 10.5M 5% 1/4W	1
R564	R497	R+CARBON 11.0M 5% 1/4W	1
R555	R263	R+CARBON 11.5M 5% 1/4W	1
R262	R431	R+CARBON 12.0M 5% 1/4W	1

SYMBOL	PARTS NO	DESCRIPTION	QTY
** RESISTORS **			
R471	R480	R+CARBON 100V 0.01UF	1
R491	R492	R+CARBON 100V 0.01UF	6
R522	R526	R+CARBON 100V 0.022UF	1
R592	R594	R+CARBON 100V 0.047UF	4
R598	R599	R+CARBON 100V 0.10UF	1
R601	R609	R+CARBON 100V 0.20UF	1
R607	R519	R+CARBON 100V 0.47UF	1
R517	R227	R+CARBON 100V 1.0MF	1
R228	R266	R+CARBON 100V 1.0MF	1
R267	R408	R+CARBON 100V 1.0MF	1
R523	R583	R+CARBON 100V 1.0MF	1
R586	R587	R+CARBON 100V 1.0MF	1
R590	R438	R+CARBON 100V 1.0MF	1
R460	R441	R+CARBON 100V 1.0MF	1
R575	R578	R+CARBON 100V 1.0MF	1
R582	R585	R+CARBON 100V 1.0MF	1
R209	R243	R+CARBON 100V 1.0MF	1
R435	R444	R+CARBON 100V 1.0MF	1
R487	R573	R+CARBON 100V 1.0MF	1
R485	R527	R+CARBON 100V 1.0MF	1
R459	R559	R+CARBON 100V 1.0MF	1
R511	R552	R+CARBON 100V 1.0MF	1
R512	R239	R+CARBON 100V 1.0MF	1
R239	R240	R+CARBON 100V 1.0MF	1
R211	R211	R+CARBON 100V 1.0MF	1
** CAPACITORS **			
C109	C293	C+CERAMIC 500V 0.01UF	1
C209	C320	C+CERAMIC 50V 0.01UF	6
C301	C335	C+CERAMIC 50V 0.022UF	1
C433	C114	C+CERAMIC 50V 0.047UF	4
C2007	C2006	C+CERMIC 50V 100UF	2
C416	C418	C+CERMIC 50V 100UF	2
C409	C432	C+CERAMIC 50V 0.01UF	5
C452	C453	C+CERAMIC 50V 0.022UF	2
C422	C423	C+CERAMIC 50V 0.047UF	2
C461	C484	C+CERAMIC 50V 100UF	1
C405	C468	C+CERAMIC 50V 220UF	1
C464	C464	C+CERAMIC 50V 4700PF	1

QTY	PARTS NO	DESCRIPTION	QTY		
CAPACITORS **		SYMBOL		PARTS NO	DESCRIPTION
C303 C731	4231A045	C CERAMIC 50V 100PF	C491	C492	C CERAMIC 25V 1.5UF
C304	4231A049	C CERAMIC 50V 150PF	C495	C498	26
C317 C316	4231A053 4231C031	C CERAMIC 50V 220PF C CERAMIC 50V 22PF	C499	C500	C CERAMIC 25V 1.5UF
C315 C723	4231C039	C CERAMIC 50V 47PF	C502	C503	C CERAMIC 25V 1.5UF
C713 C740			C504	C506	C CERAMIC 25V 1.5UF
C363	42331045	C CERAMIC 50V 100PF	C507	C509	C CERAMIC 25V 1.5UF
C205 C206	42333031	C CERAMIC 50V 22PF	C510	C512	C CERAMIC 25V 1.5UF
C718 C247	423A1045	C CERAMIC 50V 100PF	C213	C214	C CERAMIC 25V 1.5UF
C247 C248	423A1049	C CERAMIC 50V 150PF	C215	C216	C CERAMIC 25V 1.5UF
C414	423A1053	C CERAMIC 50V 220PF	C1501	C1504	C CERAMIC 25V 1.5UF
C600			C229	C230	C CERAMIC 25V 1.5UF
C469 C470	423A1101	C CERAMIC 50V 470PF	C474	C477	C CERAMIC 25V 1.5UF
C455 C462	423A2015 423A2029	C CERAMIC 50V 10PF C CERAMIC 50V 22PF	C458	C459	C CERAMIC 25V 1.5UF
C463	423A2045	C CERAMIC 50V 100PF	C456	C457	C CERAMIC 25V 1.5UF
C413 C435	423A3030	C CERAMIC 50V 20PF	C1001	C2004	C CERAMIC 25V 1.5UF
C454 C471	423A3047	C CERAMIC 50V 100PF	C207	C255	C CERAMIC 25V 1.5UF
C457	423A3051	C CERAMIC 50V 150PF	C257	C258	C CERAMIC 25V 1.5UF
C459	423A3056 42910036	C CERAMIC 400V 4700U	C262	C263	C CERAMIC 25V 1.5UF
C202 C203	42910037	C CERAMIC 50V 100000U	C264	C265	C CERAMIC 25V 1.5UF
C208 C209	42910037	C CERAMIC 50V 100000U	C266	C267	C CERAMIC 25V 1.5UF
C271 C275	42910037	C CERAMIC 50V 100000U	C268	C269	C CERAMIC 25V 1.5UF
C276			C277	C278	C CERAMIC 25V 1.5UF
C284 C286	42910037	C CERAMIC 50V 100000U	C279	C280	C CERAMIC 25V 1.5UF
C288 C290	42910037	C CERAMIC 50V 100000U	C281	C282	C CERAMIC 25V 1.5UF
C292 C362	42910037	C CERAMIC 50V 100000U	C283	C284	C CERAMIC 25V 1.5UF
C54 C63	42910037	C CERAMIC 50V 100000U	C285	C286	C CERAMIC 25V 1.5UF
C703 C704	42910037	C CERAMIC 50V 100000U	C287	C288	C CERAMIC 25V 1.5UF
C706 C707	42910037	C CERAMIC 50V 100000U	C289	C290	C CERAMIC 25V 1.5UF
C709 C710	42910037	C CERAMIC 50V 100000U	C291	C292	C CERAMIC 25V 1.5UF
C712 C714	42910037	C CERAMIC 50V 100000U	C293	C294	C CERAMIC 25V 1.5UF
C716 C719	42910037	C CERAMIC 50V 100000U	C295	C296	C CERAMIC 25V 1.5UF
C721 C722	42910037	C CERAMIC 50V 100000U	C297	C298	C CERAMIC 25V 1.5UF
C726 C727	42910037	C CERAMIC 50V 100000U	C299	C300	C CERAMIC 25V 1.5UF
C729 C730	42910037	C CERAMIC 50V 100000U	C301	C302	C CERAMIC 25V 1.5UF
C733 C734	42910037	C CERAMIC 50V 100000U	C303	C304	C CERAMIC 25V 1.5UF
C1504 C1505	42910038	C CERAMIC 50V 220000U	C305	C306	C CERAMIC 25V 1.5UF
C427 C428	42910038	C CERAMIC 50V 220000U	C307	C308	C CERAMIC 25V 1.5UF
C436 C451	42910038	C CERAMIC 50V 220000U	C309	C310	C CERAMIC 25V 1.5UF
C496 C497	42910039 42910041	C CERAMIC 50V 1.5UF C CERAMIC 50V 0.47UF	C311	C312	C CERAMIC 25V 1.5UF
C442 C1701	42910042	C CERAMIC 25V 1.5UF	C313	C314	C CERAMIC 25V 1.5UF
C488	C489	C CERAMIC 25V 1.5UF	C315	C316	C CERAMIC 25V 1.5UF

QTY	PARTS NO	DESCRIPTION	QTY	CAPACITORS **	
SYMBOL		PARTS NO	DESCRIPTION	SYMBOL	
C491	C492	42910042	C CERAMIC 25V 1.5UF	C493	C494
C495	C498			C501	C502
C499	C500			C503	C504
C500	C501			C505	C507
C503	C504			C506	C508
C505	C507			C509	C510
C506	C508			C511	C512
C507	C510			C213	C214
C508	C512			C215	C216
C509	C512			C217	C218
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C511	C512			C221	C222
C512	C512			C223	C224
C513	C513			C225	C226
C514	C514			C226	C227
C515	C515			C227	C228
C516	C516			C228	C229
C517	C517			C229	C230
C518	C518			C231	C232
C519	C519			C233	C234
C520	C520			C234	C235
C521	C521			C235	C236
C522	C522			C236	C237
C523	C523			C237	C238
C524	C524			C238	C239
C525	C525			C239	C240
C526	C526			C240	C241
C527	C527			C241	C242
C528	C528			C242	C243
C529	C529			C243	C244
C530	C530			C244	C245
C531	C531			C245	C246
C532	C532			C246	C247
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C535	C535			C249	C250
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C539	C539			C253	C254
C540	C540			C254	C255
C541	C541			C255	C256
C542	C542			C256	C257
C543	C543			C257	C258
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C549	C549			C263	C264
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C559	C559			C273	C274
C560	C560			C274	C275
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C563	C563			C277	C278
C564	C564			C278	C279
C565	C565			C279	C280
C566	C566			C280	C281
C567	C567			C281	C282
C568	C568			C282	C283
C569	C569			C283	C284
C570	C570			C284	C285
C571	C571			C285	C286
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C573	C573			C287	C288
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C623	C623			C337	C338
C624	C624			C338	C339
C625	C625			C339	C340
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C660	C660			C374	C375
C661	C661			C375	C376
C662	C662			C376	C377
C663	C663			C377	C378
C664	C664			C378	C379

SYMBOL	PARTS NO	DESCRIPTION	QTY
** CAPACITORS **			
C438	r439	429G64004	1
C425	r426	C440	2
C282	r283	C401	3
C402	i103	C404	7
C476			
C406		429G64065	1
C475	r478	429G6525	1
C351		43515050	1
C336		43515052	1
C309		43515053	1
C306	r308	C325	14
C326	C327	C328	
C329	r330	C331	
C332	C351	C852	
C951	r952		
C302		43515069	1
C434	r443	C467	3
C324	i437	C444	4
C62			
C653		43930021	1
C1503		43930022	1
C239	r240	43940003	2
C2003		43980053	1
C482	r483	C483	2
C115	i118	C118	2
C311	C312	C312	2
C314			4
C701		43993018	1
C110	C111	43993019	1
C2001	C2002	C2002	2
C1004	r101	C1101	2
C2005	C307	C361	8
C412	C515		
C201	r285	C289	3
C242	r243	C245	8
C246	r272	C273	
C279	r280		
C244		43993032	1
C112	r113	C116	3
C420		43993035	1
C319	i321	43993037	2
C57		43993041	1
C102	C61	43993059	1
		43993064	2

SYMBOL	PARTS NO	DESCRIPTION	QTY
** CAPACITORS **			
C107	C108	439A0005	2
C103	C104	439A0006	8
C106	C221		
C227	C228		1
C430			23
C407	C424	439H0055	1
C217	C218	439J3038	2
C224	C231	439J3040	47UF
C259	C260	439J3040	
C415	C450		
C48U	C513		
C516	C517		
C519	C520		
C522	C523		
C235	C236	439J3041	5
C238	C281		
C408	C486	439J3060	2
C265	C266	439J3064	4
C485			
C466		439J3065	1
		C ELEC 50V 220UF	
		C ELEC 1.6V 100C <sub>105</sub>	
		C ELEC 50V 2.2UF	
		C ELEC 25V 22UF	
		C ELEC 25V 4.7UF	
		C ELEC 25V 100UF	
		C ELEC 50V 100UF	
		C ELEC 50V 22UF	

## REPLACEMENT PARTS LIST

## CD803EU

Note: The components identified by  $\Delta$  mark or with the symbol Nos. shaded are critical for safety. Replace only with parts Number specified.

SYMBOL	PARTS NO	DESCRIPTION	QTY
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SYMBOL	PARTS NO	DESCRIPTION	QTY
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** IC 413	IC420	37011008	IC TL082	3	IC106	37903172	IC S1=3052P
IC323	IC716	37051074	IC SN74LS00N (NAND)	4	IC407	37903173	IC STK6922
IC721					IC1001	1C54	IC MOS-HD14011
IC229	IC328	37051075	IC SN74LS04N (INVERT)	5	IC2001	37904024	MOS-HD14001
IC720	IC723	37051076	IC SN74LS08N (AND)	1	IC361	37904025	MOS-HD14028
IC722		37051078	IC SN74LS14N (S-TIG)	1	IC362	37904030	MOS-HD14071
IC351		37051090	IC SN74LS161AN (COUNT)	1	IC324	37950002	IC SN74LS193N
IC726	IC725	37051093	IC SN74LS175N (D-F-F)	2	IC230	37950004	IC SN75453
IC52		37051098	IC SN74LS393N (COUNT)	1	IC714	37950005	IC SN74LS107N
IC307		37051101	MOS UPD780C-1 (CPU)	1	IC705	37950006	IC SN74LS374N
IC207	IC208	37051130	IC SN74LS245N (B-TRCV)	2	IC708	37907	
IC51		37051176	IC SN74LS02N (NOR)	1	IC1701	1C1702	IC 718
IC309	IC422	37051179	IC SN74LS123N (MONO MLT)	2	IC203	37950007	IC SN74LS74N
IC710	IC711	37051181	IC SN74LS164N (S-REGI)	4	IC202	37951001	IC CX7933
IC713					IC204	37951002	IC CX7934
IC412		37051206	IC SN75451BP (DKIV)	1	IC312	37951003	IC CX7935
IC319	IC320	37051275	IC SN74LS279N (LATCH)	4	IC429	37951005	IC HM6116P-4
IC322		37051324	IC SN74LS293N (COUNTER)	1	IC201	37951007	IC SD5000N
IC428		37101034	IC UPC4558	3	IC701	1C703	IC MSM 2128-20RS
IC311	IC416	37901081	IC M5218L	1	IC704	37951009	IC UPD7720B-045
IC231		37901106	IC TL071CP	2	IC209	37951015	IC PCM5316V
IC221	IC222	37901108	IC LM306P	1	IC209	37951020	IC 2732 ROM 1U-02
IC409		37901109	IC NE5534P	4	IC408	37951101	IC TC40H004P
IC225	IC226	37901127	IC IC415	1	IC415	37951102	IC MC74HC00
IC228		37901131	IC M5219	1	IC418	37951103	IC TC74HC244
IC402	IC801	37901110	IC NE5532P	6	IC61	37951104	IC MC74HC02
IC802	IC901	37901124	IC UPC4556C	1	IC717	37951105	IC MC74HC10
IC401	IC404	37901111	IC BA6109	2	IC306	37951106	IC MC74HC161
IC327		37901112	IC UPC7808H ACCESSORIES	1	IC310	37951107	IC HD14053BP
IC426		37901113	IC UPC7815H ACCESSORIES	1	IC304	37951109	IC HD14568BP
IC101		37901123	IC UPC7915H ACCESSORIES	1	IC318	37951110	IC HD14520BP
IC102		37901124	IC UPC7808H ACCESSORIES	1	IC302	37951111	
IC103		37901125	IC UPC7908H ACCESSORIES	1	IC425		
IC104		37901126	IC UPC7805H ACCESSORIES	1	IC205		
IC105		37901127	IC UPC7805H ACCESSORIES	1	IC206		
IC364		37903055	IC UPD2003C	1	** TRANSISTORS **		
IC301		37903125	MOS IC M50111P	1	TR2001	TR4U2	TR403
IC315	IC316	37903131	IC HD14515BP MUS	3	TR406	35003516	Tk, 2SA733/733A P
IC303		37903132	IC UPD1373H	1	TR1101	TR1102	TR2G03
IC405	IC410	37903154	IC LA6458SS	6	TR204	35047216	TR404
IC417	IC421				TR411	TR415	TR416

SYMBOL	PARTS NO	DESCRIPTION	QTY
** TRANSISTORS **			
TR417	35047216	TR2SC945 P	1
TR102	35047217	TR2SC945Q	3
TR409	35905711	TRANSISTOR 2SA1206K	1
TR414	359222403	TRANSISTOR 2SB649C	1
TR408	35944402	TR2SC461H	1
TR1001	35947405	TR2SC1845E	3
TR405	35948012	TR2SC2003L	1
TR1501	35953812	TRANSISTOR 2SC2720L	3
TR407	35953912	TRANSISTOR 2SC2901L	2
TR2004	35963203	TR2SSD 669 C	4
TR413			

** DIODES **		14	
D1001	1002	D1501	36001009
D1502	11503	D2001	DIODE, SI = 2473
D2003	420	D51	
D52	53	D61	
D62	63		
D301	302		
D404	405	D406	36001522
D409			36002511
D401	407	D408	36050024
D412	413	D414	360K1009
D415			
D105		D2002	36803005
D101		D2004	36902048
D1101		D203	36902087
D204	0402	D403	36902088
D103	5104		36902089
D410			RECTIFIER BLOCK S1VH10
D201	202		
D102			
D304			
D105			36905325
D201			36905418
D102			36905421
D304			36905433

TRANSFORMERS	45006158	TRANS POWER CD-03 UL	1
**			

SYMBOL	PARTS NO	DESCRIPTION	QTY
** VARIABLE RESISTORS **			
VR401	VR402	VR406	41950484 41950485
VR410	VR415	VR417	41951044 41951045
VR201	VR1001	VR408	41951047
VR403	VR404		41951094
VR409			41951095
			VOLUME 10KB VOLUME 20KB R=VARIABLE 10KB-T-B R=VARIABLE 20KB-T-B R=VARIABLE 50KB-T-B R=VARIABLE 5KB-T-B R=VARIABLE 2KB-T-B
			1 1 4 5 2 2 1

PA1	87851201	SIGNAL PWB FULL ASSY
PA3	87851401	SURBO PWB FULL ASSY
PA12	87851501	PIN JACK PWB FULL ASSY
PA9	87851601	POWER SWITCH PWB FULL ASSY
PA10	87851701	HEAD PHONE PWB FULL ASSY
PA11	87851801	EJECT SWITCH PWB FULL ASSY
PA13	87851901	PH SENCER PWB FULL ASSY
PA4	87851A01	DIGITAL PWB FULL ASSY
PA5	87851B01	CONTROL PWB FULL ASSY
PA16	87851D01	L=LOWPASS PWB FULL ASSY
PA15	87851E01	R=LOWPASS PWB FULL ASSY
PA6	87851F01	SIGNAL(2)PWB FULL ASSY
PA7	87851H01	RELAY PWB FULL ASSY
PA17	87851J01	SUB PWB FULL ASSY
PA2	87852301	MICROPROCESSOR PWB FULL ASSY
PA9	87853101	POWER PWB FULL ASSY

B041		18608181	PULLY	4
		18608221	DAMPER A	1
		18608231	DAMPER B	1
		18608241	DAMPER C	1
		19533681	SPRING BACK TENSION	2
B042		61904473	VCO OSC COIL	1
	L403	61911153	COIL INDUCTOR 5KH	1
	L301	61911173	INDUCTOR RC=471J	2
	L401	61911174	INDUCTOR RC=101J	1
	L404			
			+ 402	

ITEM NO.	PARTS NO	DESCRIPTION	QTY
** MISCELLANEOUS PARTS **			
CF301	61919065	CERAMIC FILTER 455A	1
X201	64920175	XTAL 8.6436MHz	1
X301	64920176	XTAL 8.00 MHz	1
X701	64920178	XTAL 16.384MHz	1
	65902068	SLIDE SW 22N	1
B023	65902106	SWITCH, SLIDE	2
	65902108	SWITCH, SLIDE 1-3 SSS31	2
	65904332	SWITCH, SW	1
	65904341	POWER SWITCH SDOU1P	1
	65906010	SWITCH, MICRO SCL1U1U	2
B005	65906011	MICRO SWITCH SS-5GL11	?
RL1101	RY201	SWITCH MSW-129U	1
RY401	F102	RELAY RZ-12W	4
F101	F103	FUSE 1.5AT UL 20M	4
F104		FUSE 2A T 125V UL 20M	1
F105		FUSE 4A T 125V UL 20M	1
	70802503	LINE CORD UL/CSA 1.95M	1
	70905266	AC RECEPTACLE	2
	70905441	JACK, HEADPHONE	1
	70905516	JACK PIN 4PIN GOLD	1
	70905528	IC SOCKET 24P	2
	70905529	IC SOCKET 40PIN	1
	70905531	IC SOCKET 28PIN	4
	71901023	TERMINAL BOARD	1
	71905169	TERMINAL 2P	1
B035	79752070	MOTOR	1
	79752072	SPINDLE MOTOR ASSY	1
	79759162	PATCH CORD/PIN PLUG	2
B008	79762046	SOLENOID COIL	1
** APPEARANCE PARTS **			
	18291091	CLAMPERS, WIRE L94 WHIT	6
	18292851	FOOT	4
B036	18406941	GEAR	1
B046	18406951	RACK	1
	18407041	RACK	1
B047	18407301	GEAR A	1

\*\* MISCELLANEOUS PARTS \*\*

\*\* APPEARANCE PARTS \*\*

SYMBOL	PARTS NO	DESCRIPTION	QTY	APPEARANCE PARTS
** APPEARANCE PARTS **				
B048	8048		1	18407311 GEAR ASSY 18407681 MECHANISM COVER A
B031	8031		1	18407692 MECHANISM COVER B
B032	8032		1	18407711 DISC HOLDER L 18407721 DISC HOLDER R
B045		PULLY	1	18407731 PULLY
A004		VR KNOB, CONTROLS	1	18457041 VR KNOB, CONTROLS
A005		BUTTON POWER	1	18469721 BUTTON POWER
A006		EJECT BUTTON ASSY	1	18469731 EJECT BUTTON ASSY
		SPRING COIL H	1	18470311 SPRING COIL H
		FRONT PANEL S. ASSY	1	88851631 FRONT PANEL S. ASSY
		MATERIALS	1	
			1	18811431 CARTON BOX 78915641 INSTRUCTION BOOKLET
** RESISTORS **				
R251	R252		1	40351155 R•METAL 180H 5% 1w
R322			1	40352125 R•METAL 10H 5% 2w
R260	R261		1	40912125 R•CARBON 10H 5% 1/2w
R212			1	40912127 R•CARBON 12H 5% 1/2w
R215	R253		1	40912133 R•CARBON 22H 5% 1/2w
R540			1	40912157 R•CARBON 220H 5% 1/2w
R592			1	40912161 R•CARBON 330H 5% 1/2w
R108			1	40912169 R•CARBON 680H 5% 1/2w
R533	R255		1	40913125 R•CARBON 10H 5% 1/4w
R1103	R255		1	40913133 R•CARBON 22H 5% 1/4w
R258	R259		6	
R451	R452		2	40913141 R•CARBON 47H 5% 1/4w
R482			1	40913149 R•CARBON 100H 5% 1/4w
R442			1	40932066 R•METAL 100H 5% 1w
R499	R511L		1	40932078 R•METAL 330H 5% 1w
R446	R447		2	40933036 R•METAL 5.6H 5% 2w
R302	R304		2	40982133 R•CARBON 22H 5% 1/4w

SYMBOL	PARTS NO	DESCRIPTION	QTY
** RESISTORS **			
R602	40982141	R CARBON 47H 5% 1/4w	1
R351	40982149	R CARBON 100H 5% 1/4w	1
R496	40982153	R CARBON 150H 5% 1/4w	1
R1701	40982157	R CARBON 220H 5% 1/4w	1
R2001	40982159	R CARBON 270H 5% 1/4w	1
R702	40982161	R CARBON 330H 5% 1/4w	1
R312	40982163	R CARBON 390H 5% 1/4w	1
R307	40982165	R CARBON 470H 5% 1/4w	2
R1501	40982173	R CARBON 1.0K 5% 1/4w	4
R660	40982177	R CARBON 1.5K 5% 1/4w	1
R1005	40982179	R CARBON 1.8K 5% 1/4w	1
R107	40982180	R CARBON 2.0K 5% 1/4w	4
R811	R911	R CARBON 2.2K 5% 1/4w	2
R941	R662	R CARBON 2.3K 5% 1/4w	1
R54	R470	R CARBON 3.0K 5% 1/4w	1
R812	R912	R CARBON 4.3K 5% 1/4w	2
R1102	R2003	R CARBON 4.7K 5% 1/4w	7
R340	R341	R CARBON 5.0K 5% 1/4w	2
R520	R831	R CARBON 5.6K 5% 1/4w	2
R1006	R661	R CARBON 6.8K 5% 1/4w	2
R1003	R1004	R CARBON 10K 5% 1/4w	19
R2006	R2008	R CARBON 12K 5% 1/4w	1
R2011	R314	R CARBON 15K 5% 1/4w	1
R330	R331	R CARBON 18K 5% 1/4w	2
R51	R55	R CARBON 22K 5% 1/4w	7
R64	R67	R CARBON 11K 5% 1/4w	2
R921	R942	R CARBON 12K5% 1/4w	1
R670	R932	R CARBON 15K 5% 1/4w	1
R832	R306	R CARBON 18K 5% 1/4w	2
R1001	R1101	R CARBON 22K 5% 1/4w	7
R603	R557	R CARBON 24K 5% 1/4w	1
R315	R333	R CARBON 27K 5% 1/4w	8
R334	R336	R CARBON 33K 5% 1/4w	3
R337	R338	R CARBON 36K 5% 1/4w	1
R313	R822	R CARBON 39K 5% 1/4w	1
R473	R105	R CARBON 40982206	1

## \*\* RESISTORS \*\*

SYMBOL	PARTS NO	DESCRIPTION	QTY
** RESISTORS **			
R1502	R317	R CARBON 47K 5% 1/4w	1
R319	R320	R CARBON 56K 5% 1/4w	1
R101	R663	R CARBON 68K 5% 1/4w	1
R1002	R1504	R CARBON 100K 5% 1/4w	1
R104	R2002	R CARBON 40982211	1
R2004	R301	R CARBON 40982224	1
R328	R52	R CARBON 40982225	1
R597	R66	R CARBON 40982229	2
R303	R311	R CARBON 40982233	5
R309	R62	R CARBON 40982237	3
R701	R106	R CARBON 40982245	1
R102	R2009	R CARBON 4098231	1
R2007	R329	R CARBON 40983185	1
R63	R65	R CARBON 40983213	1
R65	R65	R CARBON 40983225	1
R515	R443	R CARBON 40983239	1
R605	R446	R CARBON 40983641	3
R210	R464	R CARBON 40982649	2
R433	R538	R CARBON 40982655	1
R514	R445	R CARBON 40982657	1
R611	R448	R CARBON 40982661	5
R652	R498	R CARBON 40982663	1
R515	R442	R CARBON 40982665	11
R605	R530	R CARBON 40982677	4
R433	R536	R CARBON 40982680	2
R538	R542	R CARBON 40982684	1
R490	R490	R CARBON 40982685	1
R245	R246	R CARBON 40982686	1
R422	R423	R CARBON 40982687	1
R488	R489	R CARBON 40982688	2
R536	R591	R CARBON 40982689	5
R403	R404	R CARBON 40982690	1
R425	R248	R CARBON 40982691	18
R247	R213	R CARBON 40982692	18
R238	R237	R CARBON 40982693	1
R456	R455	R CARBON 40982694	1
R465	R479	R CARBON 40982695	4
R486	R531	R CARBON 40982696	1
R532	R537	R CARBON 40982697	4
R551	R562	R CARBON 40982698	1
R541	R250	R CARBON 40982699	4
R550	R551	R CARBON 40982674	1
R593	R550	R CARBON 40982677	4

SYMBOL	PARTS NO	DESCRIPTION	QTY
** RESISTORS **			
R235	R236	R271	409H2681
R272	R409	R410	R•CARMON 2•2K 5% 1/4w
R411	R412	R441	
R502	R507	R513	
R543	R416	R436	409H2685
R506	R483	R518	R•CARMON 3•3K 5% 1/4w
R539	R544	R566	
R567	R224	R287	409H2689
R223	R288	R295	R•CARMON 4•7K 5% 1/4w
R405	R406	R417	
R418	R426	R427	
R453	R454	R495	
R508	R508	R521	
R553	R560	R565	
R570	R571	R577	
R579	R588	R589	409H2691
R231	R232	R273	R•CARMON 5•6K 5% 1/4w
R497	R233	R234	409H2693
R201	R202	R203	R•CARMON 6•8K 5% 1/4w
R204	R205	R206	
R207	R208	R229	
R230	R254	R274	
R275	R280	R281	
R282	R283	R285	
R407	R408	R408	
R413	R414	R419	
R429	R430	R457	
R461	R462	R463	
R467	R478	R484	
R504	R505	R509	
R510	R525	R535	
R545	R556	R558	
R563	R568	R569	
R580	R595	R595	
R221	R222	R225	409H2699
R226	R434	R434	R•CARMON 12K 5% 1/4w
R501	R501	R547	409H2701
R561	R564	R564	R•CARMON 15K 5% 1/4w
R555	R562	R420	409H2703
R421	R431	R432	R•CARMON 18K 5% 1/4w
R471	R480	R481	409H2704
			409H2705

## \*\* RESISTORS \*\*

## RESISTORS \*\*

## \*\* RESISTORS \*\*

## QTY

SYMBOL	PARTS NO	DESCRIPTION	QTY
** RESISTORS **			
R491	R492	R516	409H2705
R522	R526	R534	R•CARMON 22K 5% 1/4w
R572	R594	R596	
R598	R599	R601	
R607	R608	R609	409H2707
R517	R519	R228	R•CARMON 27K 5% 1/4w
R227	R266	R469	
R523	R583	R584	
R586	R587	R440	409H2711
R590	R590	R440	R•CARMON 39K 5% 1/4w
R438	R458	R460	
R575	R578	R600	409H2715
R582	R585	R243	R•CARMON 56K 5% 1/4w
R209	R244	R444	
R435	R444	R449	
R487	R554	R573	409H2717
R485	R527	R610	R•CARMON 68K 5% 1/4w
R459	R559	R490	
R511	R552	R650	409H2729
R512	R239	R240	R•CARMON 220K 5% 1/4w
R239	R240	R211	
R211	R211	R409H2733	R•CARMON 330K 5% 1/4w

## \*\* CAPACITORS \*\*

SYMBOL	PARTS NO	DESCRIPTION	QTY
** CAPACITORS **			
C109	C209	C293	42019575
	C301	C320	C•CERAMIC 50V 0•01UF
	C433	C335	4211K425 C•CERAMIC 50V 0•01UF
	C114	C117	4211K429 C•CERAMIC 50V 0•022UF
	C2007	C2006	4211K433 C•CERAMIC 50V 0•047UF
	C416	C418	4213K213 C•CERAMIC 50V 1000PF
	C409	C431	421A0425 C•CERAMIC 50V 0•01UF
	C452	C453	421A0429 C•CERAMIC 50V 0•022UF
	C422	C423	421A0433 C•CERAMIC 50V 0•047UF
	C461	C484	421C0213 C•CERAMIC 50V 1000PF
	C405	C468	421C0217 C•CERAMIC 50V 2200PF
	C464	C464	421C0221 C•CERAMIC 50V 4700PF
	C303	C731	4231A045 C•CERAMIC 50V 100PF

SYMBOL	PARTS NO	DESCRIPTION	QTY	
** CAPACITORS **				
C304	4231A049	C CERAMIC 50V 150PF	1	
C317	4231A053	C CERAMIC 50V 220PF	1	
C315	4231C031	C CERAMIC 50V 22PF	2	
C713	4231C039	C CERAMIC 50V 47PF	4	
C740	42331045	C CERAMIC 50V 100PF	1	
C563	42333031	C CERAMIC 50V 22PF	4	
C205	C717	423A1045	C CERAMIC 50V 100PF	2
C718	423A1049	C CERAMIC 50V 150PF	1	
C247	C248	423A1053	C CERAMIC 50V 220PF	1
C414	423A1101	C CERAMIC 50V 470PF	2	
C600	423A2015	C CERAMIC 50V 10PF	2	
C469	C470	423A2029	C CERAMIC 50V 22PF	1
C455	C462	423A2045	C CERAMIC 50V 100PF	5
C463	C417	423A3030	C CERAMIC 50V 20PF	2
C454	C481	423A3047	C CERAMIC 50V 100PF	1
C457	-	423A3051	C CERAMIC 50V 150PF	1
C459	42910036	C CERAMIC 400V 4700	1	
C202	C203	42910037	C CERAMIC 50V 100000UF	47
C208	C269	C206	C278	42976815
C271	C270	C270	C225	C FILM 50V 0.15UF
C275	C276	C276	C226	C FILM 100V 2.2UF
C284	C286	C287	C252	C FILM 100V 470PF 5%
C288	C290	C291	C253	C FILM 50V 0.015UF
C292	C362	C51	C234	C FILM 100V 0.15UF
C54	C63	C702	-	-
C703	C704	C705	C921B	C FILM 100V 150PF
C706	C707	C708	C811	C FILM 100V 330PF
C709	C710	C711	C254	C FILM 100V 470PF
C712	C714	C715	C293	C FILM 100V 620PF
C716	C719	C720	C802	C FILM 100V 750PF
C721	C722	C725	C803	C FILM 100V 1500PF
C726	C727	C728	C903	C FILM 100V 1500PF
C729	C730	C732	C931A	C FILM 100V 1500PF
C733	C734	-	C931B	C FILM 100V 1500PF
C1504	C1505	C419	C931A	C FILM 100V 1500PF
C427	C428	C429	C931B	C FILM 100V 1500PF
C456	C451	C660	C804	C FILM 100V 1600PF
C496	C497	C661	C841A	C FILM 100V 1600PF
C442	C465	42910039	C941A	C FILM 100V 0.01UF
C1701	C487	42910041	C941B	C FILM 100V 0.01UF
C488	C489	42910042	C901	C FILM 50V 0.022MF
C491	C493	-	C441	C FILM 50V 0.03300PF
C459	-	42910038	C CERAMIC 50V 220000UF	9
C729	C730	C732	C310	C FILM 50V 0.03300PF
C733	C734	-	C305	C FILM 50V 0.03300PF
C1504	C1505	C419	C442	C FILM 50V 0.03300PF
C427	C428	C429	C42970005	C FILM 50V 0.03300PF
C456	C451	C660	C841B	C FILM 100V 1600PF
C496	C497	C661	C941A	C FILM 100V 0.01UF
C442	C465	42910039	C941B	C FILM 100V 0.01UF
C1701	C487	42910041	C901	C FILM 50V 0.022MF
C488	C489	42910042	C441	C FILM 50V 0.03300PF
C491	C493	-	C310	C FILM 50V 0.03300PF
C459	-	42910038	C CERAMIC 50V 1.5UF	3
C729	C730	C732	C1502	C FILM 50V 4700PF
C733	C734	-	C1003	C FILM 50V 1000PF
C1504	C1505	C419	C52	C FILM 50V 1500PF
C427	C428	C429	C1506	C FILM 50V 0.1MF
C456	C451	C660	C438	C FILM 50V 8200PF 5%
C496	C497	C661	C439	C FILM 50V 8200PF 5%

SYMBOL	PARTS NO	DESCRIPTION	QTY
** CAPACITORS **			
C494	C495	42910042	C CERAMIC 25V 1.5UF
C499	C500	C501	26
C502	C503	C504	
C505	C506	C507	
C508	C509	C510	
C511	C512	C213	C FILM 100V 270PF
C214	C212	C215	C FILM 100V 82PF 5%
C216	C229	C216	C FILM 100V 100PF 5%
C654	C230	C655	C FILM 100V 150PF 5%
C213	C214	42940039	C FILM 100V 270PF
C211	C212	42940049	C FILM 100V 82PF 5%
C215	C229	C215	C FILM 100V 100PF 5%
C216	C230	C654	C FILM 100V 150PF 5%
C217	C229	42970014	C FILM 50V 470PF
C218	C229	42970018	C FILM 50V 100PF
C219	C229	42970024	C FILM 50V 3300PF
C220	C229	42973223	C FILM 50V 130PF 5%
C221	C229	42974022	C FILM 50V 0.047UF 5%
C222	C229	42976813	C FILM 50V 0.1UF
C223	C229	42976815	C FILM 50V 0.15UF
C224	C229	C225	C FILM 100V 2.2UF
C225	C229	C226	C FILM 100V 470PF 5%
C226	C229	C227	C FILM 100V 620PF
C227	C229	C228	C FILM 100V 750PF
C228	C229	C229	C FILM 100V 1500PF
C229	C229	C230	C FILM 100V 1500PF
C230	C229	C231	C FILM 100V 1500PF
C231	C229	C232	C FILM 100V 1500PF
C232	C229	C233	C FILM 100V 1500PF
C233	C229	C234	C FILM 100V 1500PF
C234	C229	C235	C FILM 100V 1500PF
C235	C229	C236	C FILM 100V 1500PF
C236	C229	C237	C FILM 100V 1500PF
C237	C229	C238	C FILM 100V 1500PF
C238	C229	C239	C FILM 100V 1500PF
C239	C229	C240	C FILM 100V 1500PF
C240	C229	C241	C FILM 100V 1500PF
C241	C229	C242	C FILM 100V 1500PF
C242	C229	C243	C FILM 100V 1500PF
C243	C229	C244	C FILM 100V 1500PF
C244	C229	C245	C FILM 100V 1500PF
C245	C229	C246	C FILM 100V 1500PF
C246	C229	C247	C FILM 100V 1500PF
C247	C229	C248	C FILM 100V 1500PF
C248	C229	C249	C FILM 100V 1500PF
C249	C229	C250	C FILM 100V 1500PF
C250	C229	C251	C FILM 100V 1500PF
C251	C229	C252	C FILM 100V 1500PF
C252	C229	C253	C FILM 100V 1500PF
C253	C229	C254	C FILM 100V 1500PF
C254	C229	C255	C FILM 100V 1500PF
C255	C229	C256	C FILM 100V 1500PF
C256	C229	C257	C FILM 100V 1500PF
C257	C229	C258	C FILM 100V 1500PF
C258	C229	C259	C FILM 100V 1500PF
C259	C229	C260	C FILM 100V 1500PF
C260	C229	C261	C FILM 100V 1500PF
C261	C229	C262	C FILM 100V 1500PF
C262	C229	C263	C FILM 100V 1500PF
C263	C229	C264	C FILM 100V 1500PF
C264	C229	C265	C FILM 100V 1500PF
C265	C229	C266	C FILM 100V 1500PF
C266	C229	C267	C FILM 100V 1500PF
C267	C229	C268	C FILM 100V 1500PF
C268	C229	C269	C FILM 100V 1500PF
C269	C229	C270	C FILM 100V 1500PF
C270	C229	C271	C FILM 100V 1500PF
C271	C229	C272	C FILM 100V 1500PF
C272	C229	C273	C FILM 100V 1500PF
C273	C229	C274	C FILM 100V 1500PF
C274	C229	C275	C FILM 100V 1500PF
C275	C229	C276	C FILM 100V 1500PF
C276	C229	C277	C FILM 100V 1500PF
C277	C229	C278	C FILM 100V 1500PF
C278	C229	C279	C FILM 100V 1500PF
C279	C229	C280	C FILM 100V 1500PF
C280	C229	C281	C FILM 100V 1500PF
C281	C229	C282	C FILM 100V 1500PF
C282	C229	C283	C FILM 100V 1500PF
C283	C229	C284	C FILM 100V 1500PF
C284	C229	C285	C FILM 100V 1500PF
C285	C229	C286	C FILM 100V 1500PF
C286	C229	C287	C FILM 100V 1500PF
C287	C229	C288	C FILM 100V 1500PF
C288	C229	C289	C FILM 100V 1500PF
C289	C229	C290	C FILM 100V 1500PF
C290	C229	C291	C FILM 100V 1500PF
C291	C229	C292	C FILM 100V 1500PF
C292	C229	C293	C FILM 100V 1500PF
C293	C229	C294	C FILM 100V 1500PF
C294	C229	C295	C FILM 100V 1500PF
C295	C229	C296	C FILM 100V 1500PF
C296	C229	C297	C FILM 100V 1500PF
C297	C229	C298	C FILM 100V 1500PF
C298	C229	C299	C FILM 100V 1500PF
C299	C229	C300	C FILM 100V 1500PF
C300	C229	C301	C FILM 100V 1500PF
C301	C229	C302	C FILM 100V 1500PF
C302	C229	C303	C FILM 100V 1500PF
C303	C229	C304	C FILM 100V 1500PF
C304	C229	C305	C FILM 100V 1500PF
C305	C229	C306	C FILM 100V 1500PF
C306	C229	C307	C FILM 100V 1500PF
C307	C229	C308	C FILM 100V 1500PF
C308	C229	C309	C FILM 100V 1500PF
C309	C229	C310	C FILM 100V 1500PF
C310	C229	C311	C FILM 100V 1500PF
C311	C229	C312	C FILM 100V 1500PF
C312	C229	C313	C FILM 100V 1500PF
C313	C229	C314	C FILM 100V 1500PF
C314	C229	C315	C FILM 100V 1500PF
C315	C229	C316	C FILM 100V 1500PF
C316	C229	C317	C FILM 100V 1500PF
C317	C229	C318	C FILM 100V 1500PF
C318	C229	C319	C FILM 100V 1500PF
C319	C229	C320	C FILM 100V 1500PF
C320	C229	C321	C FILM 100V 1500PF
C321	C229	C322	C FILM 100V 1500PF
C322	C229	C323	C FILM 100V 1500PF
C323	C229	C324	C FILM 100V 1500PF
C324	C229	C325	C FILM 100V 1500PF
C325	C229	C326	C FILM 100V 1500PF
C326	C229	C327	C FILM 100V 1500PF
C327	C229	C328	C FILM 100V 1500PF
C328	C229	C329	C FILM 100V 1500PF
C329	C229	C330	C FILM 100V 1500PF
C330	C229	C331	C FILM 100V 1500PF
C331	C229	C332	C FILM 100V 1500PF
C332	C229	C333	C FILM 100V 1500PF
C333	C229	C334	C FILM 100V 1500PF
C334	C229	C335	C FILM 100V 1500PF
C335	C229	C336	C FILM 100V 1500PF
C336	C229	C337	C FILM 100V 1500PF
C337	C229	C338	C FILM 100V 1500PF
C338	C229	C339	C FILM 100V 1500PF
C339	C229	C340	C FILM 100V 1500PF
C340	C229	C341	C FILM 100V 1500PF
C341	C229	C342	C FILM 100V 1500PF
C342	C229	C343	C FILM 100V 1500PF
C343	C229	C344	C FILM 100V 1500PF
C344	C229	C345	C FILM 100V 1500PF
C345	C229	C346	C FILM 100V 1500PF
C346	C229	C347	C FILM 100V 1500PF
C347	C229	C348	C FILM 100V 1500PF
C348	C229	C349	C FILM 100V 1500PF
C349	C229	C350	C FILM 100V 1500PF
C350	C229	C351	C FILM 100V 1500PF
C351	C229	C352	C FILM 100V 1500PF
C352	C229	C353	C FILM 100V 1500PF
C353	C229	C354	C FILM 100V 1500PF
C354	C229	C355	C FILM 100V 1500PF
C355	C229	C356	C FILM 100V 1500PF
C356	C229	C357	C FILM 100V 1500PF
C357	C229	C358	C FILM 100V 1500PF
C358	C229	C359	C FILM 100V 1500PF

SYMBOL	PARTS NO	DESCRIPTION	QTY
** CAPACITORS **			
C425	C440	C4 FILM 50V 0.01UF 5%	3
C282	C401	C4 FILM 50V 0.047UF 5%	7
C402	C403		
C476			
C406	C479	C4 FILM 50V 0.022UF 5%	1
C475	C478	C4 FILM 50V 0.1UF 5%	3
C351		C4 TANTALUM 16V 1UF	1
C336			
C309	C325	C4 TANTALUM 16V 3.3UF	1
C306	C327	C4 TANTALUM 16V 4.7UF	1
C326	C328	C4 TANTALUM 16V 10UF	14
C329	C330		
C332	C331		
C951	C851		
C952	C852		
C302		43515069 C4 TANTALUM 35V 0.47UF	1
C434	C467	43515053 C4 TANTALUM 16V 4.7UF	1
C324	C437	43930019 C4 ELEC 2.5V 10UF	3
C62	C444	43930020 C4 ELEC 50V 0.2UF	4
C653			
C1503		43930021 C4 ELEC 50V 1UF	1
C239	C240	43930022 C4 ELEC 2.5V 22UF	1
C2003		43940003 C4 ELEC 25V 22UF	2
C482	C483	43940053 C4 ELEC 50V 1.0UF	1
C115	C118		
C311	C312	43993006 C4 ELEC 6.3V 470UF	2
C314	C313	43993007 C4 ELEC 6.3V 1000UF	2
C701		43993014 C4 ELEC 10V 47UF	4
C110	C111	43993018 C4 ELEC 10V 470UF	1
C2001	C2002	43993019 C4 ELEC 10V 1000UF	2
C1004	C101		
C2005	C361	43993024 C4 ELEC 16V 10UF	2
C412	C515	43993027 C4 ELEC 16V 47UF	8
C201	C285		
C242	C243	43993028 C4 ELEC 16V 100UF	3
C246	C272	43993031 C4 ELEC 16V 470UF	8
C279	C280		
C244		43993032 C4 ELEC 16V 1000UF	1
C112	C113	43993035 C4 ELEC 16V 4700UF	3
C420		43993037 C4 ELEC 25V 10UF	1
C319	C321	43993041 C4 ELEC 25V 100UF	2
C57		43993049 C4 ELEC 50V 0.47UF	1
C102	C61	43993064 C4 ELEC 50V 10UF	2
C107	C108	439A0005 C4 ELEC 50V 2200UF	2

SYMBOL	PARTS NO	DESCRIPTION	QTY
** CAPACITORS **			
C103	C104	C105	439A0006
C106	C221	C222	439H0055
C227	C228	C228	439H0055
C430	C424	C424	439J3038
C407	C218	C223	439J3040
C217	C218	C223	439J3040
C224	C231	C232	C ELEC 25V 22uF
C259	C260	C410	C ELEC 25V 22uF
C415	C450	C460	C ELEC 25V 22uF
C480	C513	C514	C ELEC 25V 22uF
C510	C517	C518	C ELEC 25V 22uF
C519	C520	C521	C ELEC 25V 22uF
C522	C523	C523	C ELEC 25V 22uF
C235	C236	C237	439J3041
C238	r281	C237	C ELEC 25V 100uF
C408	C480	C421	439J3060
C265	C260	C421	C ELEC 50V 1.0uF
C485	C485	C485	439J3064
r406			439J3065
			C ELEC 50V 2.2uF

## REPLACEMENT PARTS LIST FOR MECHANISM

SYMBOL	PARTS NO.	DESCRIPTION	Q'TY	REMARKS
5	65906011	MICRO SWITCH		
7	18527151	DOOR LOCK LEVER SPRING		
8	79762046	SOLENOID COIL		
10	18407761	GEAR C ASS'Y		
12	18407791	GEAR D ASS'Y		
20	18407041	RACK		
23	65906010	MICRO SWITCH		
28	79752072	SPINDLE MOTOR ASS'Y		
31	18407711	DISC HOLDER L		
32	18407721	DISC HOLDER R		
33	18527471	STOPPER RETURN SPLNG L		
34	18719611	HOLDER LINK PLATE		
35	79752070	MOTOR		
36	18406941	FEED GEAR		
37	18406931	FEED PINION		
38	79710001	PHOTO PICK-UP		
39	18407801	RACK B		
40	19533681	BACK TENSION SPRING C		
41	18608181	STRING PULLEY B		
42	18527481	STOPPER RETURN SPRING R		
43	18527351	GEAR BOX B ASS'Y		
44	79752071	EJECT MOTOR		
45	18407731	SPRING PULLEY		
46	18406951	FEED RACK		
47	18407301	GEAR A		
48	18407311	GEAR B ASS'Y		
49	18526492	EJECT SPRING		
50	88851271	DISC S ASS'Y		

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