

# JVC SERVICE MANUAL

No. 4077  
April 1972



## MODEL 4ED-1205 TAPE RECORDER

Dimensions: 117 (H) x 420 (W) x 278 (D) mm  
(4-7/8" x 15-3/4" x 10-15/16")  
Weight: 7.5 kg  
(16.5 lbs.)

### SPECIFICATION

|                            |                                                                                       |                            |                                                                                                                               |
|----------------------------|---------------------------------------------------------------------------------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| <b>Power source:</b>       | AC 117V, 60Hz                                                                         | <b>Motor:</b>              | Hysteresis synchronous motor                                                                                                  |
| <b>Power consumption:</b>  | 35W                                                                                   | <b>Fast forward speed:</b> | Threefold                                                                                                                     |
| <b>Track system:</b>       | 8-track, 4-channel stereo, or 8-track,<br>2-channel stereo                            | <b>Head:</b>               | 3 in 1 head                                                                                                                   |
| <b>Cartridge:</b>          | 4-channel, 8-cartridge, or 2-channel,<br>8-cartridge<br>(Rear jet type or equivalent) | <b>Input jacks:</b>        | MIC jack x 2      0.8mV 10k $\Omega$<br>AUX. IN jack x 2    80mV 100k $\Omega$                                                |
| <b>Tape speed:</b>         | 9.5 cm/sec. (3-3/4 ips)                                                               | <b>DIN jack:</b>           | Input sensitivity    15mV<br>Input impedance    8.2k $\Omega$<br>Output level        0.5V<br>Output impedance   6.6k $\Omega$ |
| <b>Wow &amp; flutter:</b>  | 0.18% (WRMS) or less                                                                  | <b>Output jacks:</b>       | LINE OUT jack x 4   0 ~ 1.0V<br>Output impedance    6.6k $\Omega$<br>Headphone jack output level<br>0 ~ 0.1mW 8 $\Omega$      |
| <b>Frequency response:</b> | 30 ~ 15,000Hz                                                                         | <b>Transistors:</b>        | 26 pcs.                                                                                                                       |
| <b>S/N ratio:</b>          | 50dB or more (refer to peak level)                                                    | <b>Diodes:</b>             | 9 pcs.                                                                                                                        |
| <b>Crosstalk:</b>          | 50dB or more                                                                          |                            |                                                                                                                               |
| <b>Distortion ratio:</b>   | 2.5% or less at reference level re-<br>cording or playback                            |                            |                                                                                                                               |
| <b>Bias system:</b>        | AC bias (57kHz)                                                                       |                            |                                                                                                                               |

# 1. FEATURES

- 2-channel 8-cartridge tape for both recording, and also 4-channel 8-cartridge tape for playback.
- Automatic stop device (AUTO STOP)
  1. Stop for each program
  2. Stop at the end of the second (4-channel 8) program, and stop at the end of the fourth (2-channel stereo 8)
- Fast forward device (F. FORWARD)
- Locating the beginning of recorded portion
- Automatic change from 2-channel to 4-channel and vice versa.
- Time counter
- 4-channel headphone jack
- Long-life synchronous motor
- Parallel head shift mechanism
- 3-in-1 head system
- Auto-stop device

# 2. DESCRIPTION OF PARTS

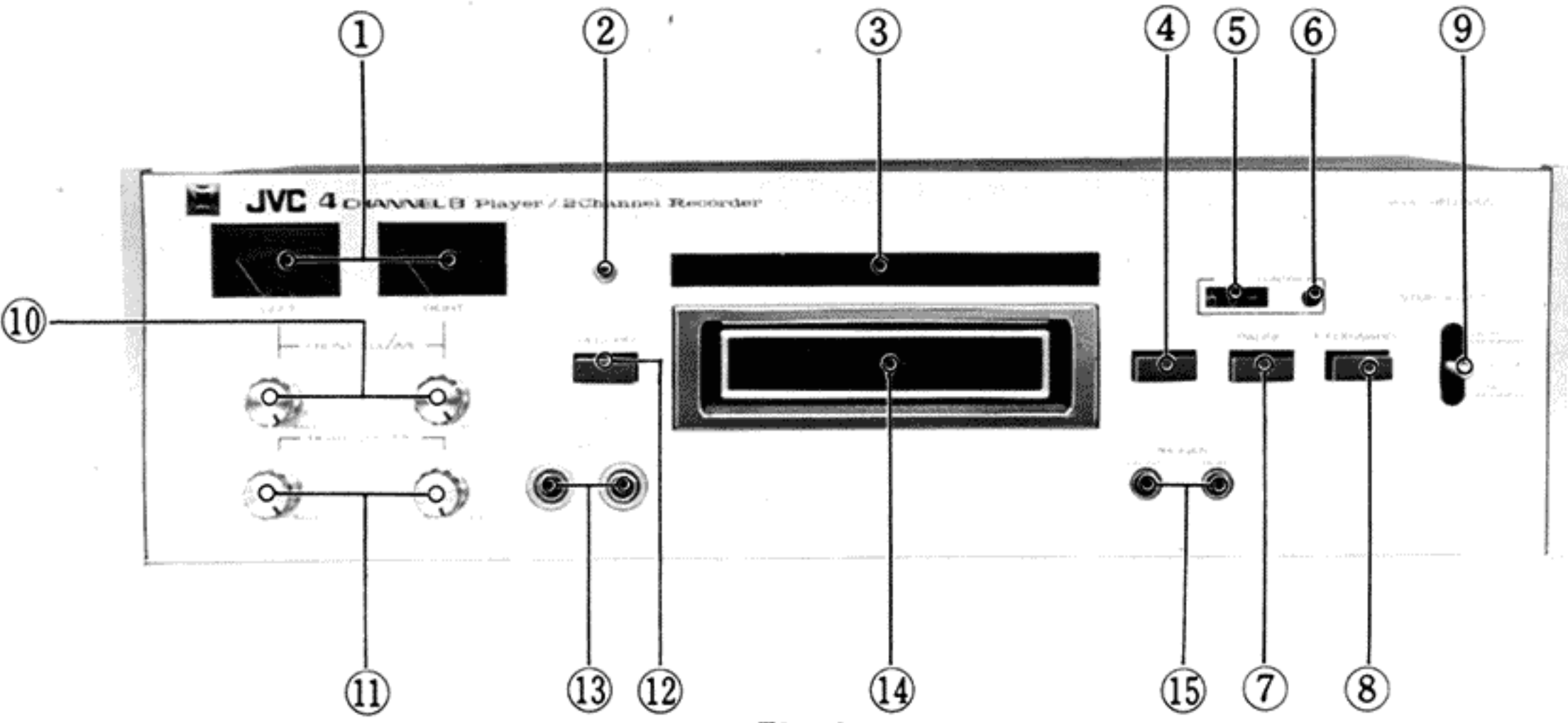


Fig. 1

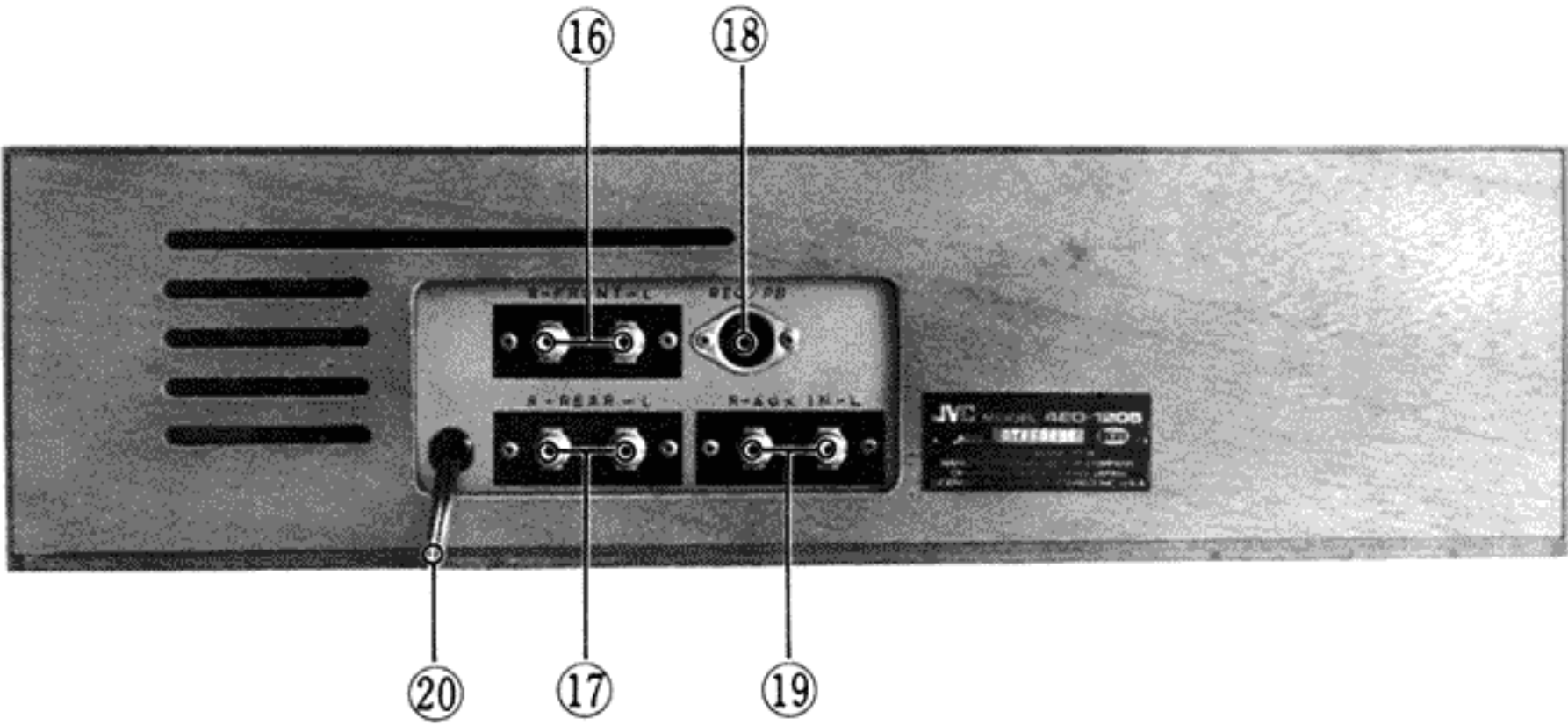


Fig. 2



1. **Level Meter (LEVEL)**  
The volume control should be so adjusted that when the recording output is at maximum, the level meter needle swings to OVU.
2. **Recording Indicator Lamp**  
When the recording button is depressed, the recording indicator lamp lights up.
3. **Indicator**  
The indicator shows the program, channel and stopping of the tape in figures or in letters.
4. **Program Selector Button (SELECT)**  
Depressing the program selector button changes the program from one to another.
5. **Time Counter**
6. **Reset Button**  
The counter indicates the recording time. When the reset button is depressed, the counter is reset to "0000".
7. **Pause Button (PAUSE)**  
When the pause button is depressed, the cartridge is pushed outward, and the tape stops running. When it is pressed again, the cartridge returns to its original position, and the tape starts travelling.
8. **Fast Forward Button (F. FORWARD)**  
When the fast forward button is depressed, the tape speed increases three fold. When it is freed, the tape speed becomes normal.
9. **Stop Selector Switch (STOP SELECT)**  
When the switch lever is set to EACH PROGRAM, the tape automatically stops at the end of each program.  
With the switch lever in NON STOP, the playback operation continues without stopping from program to program.  
On a 2-channel 8-cartridge tape, the tape automatically stops at the end of the second program.  
On a 4-channel 8-cartridge tape, the tape automatically stops at the end of the second program.  
The fast forward button can be used to locate the beginning of each program.
10. **Volume Control Knobs VOLUME (FRONT)**  
To record on a 2-channel 8-cartridge tape, the volume can be controlled with these two knobs.
11. **Volume Control Knobs VOLUME (REAR)**  
To playback a 4-channel 8-cartridge tape, the volume can be controlled with the four knobs, both front and rear.
12. **Record Button (RECORD)**  
To start recording, depress this record button until stopped, and insert the cartridge tape. With this operation, the 2-channel indicator lamp will light up.  
If only the button is depressed, the recording level can be adjusted and the program can be changed, without inserting the cartridge tape.
13. **Microphone Jacks (R and L)**  
To record through two microphones, just insert the microphone plugs into their respective jacks.  
When making recording through the AUX IN jack and REC/PB connector, the microphone cord plugs must be pulled off the jacks.
14. **Cartridge Insertion Door**  
As the cartridge tape is loaded with its label facing upward, the power switch is automatically turned on.  
The cartridge should be inserted with the record button being depressed for the recording operation.



15. Headphone Jacks PHONES (FRONT, REAR)

The headphones are designed for the 4-channel system. When the headphones are used for 2-channel cartridges, the FRONT jack alone should be used.

16. LINE OUT FRONT (R AND L)

17. LINE OUT REAR (R AND L)

18. REC/PB Connector Jack

19. AUX IN Jack

20. Power Cord

3. FUNCTION OF MAIN PARTS

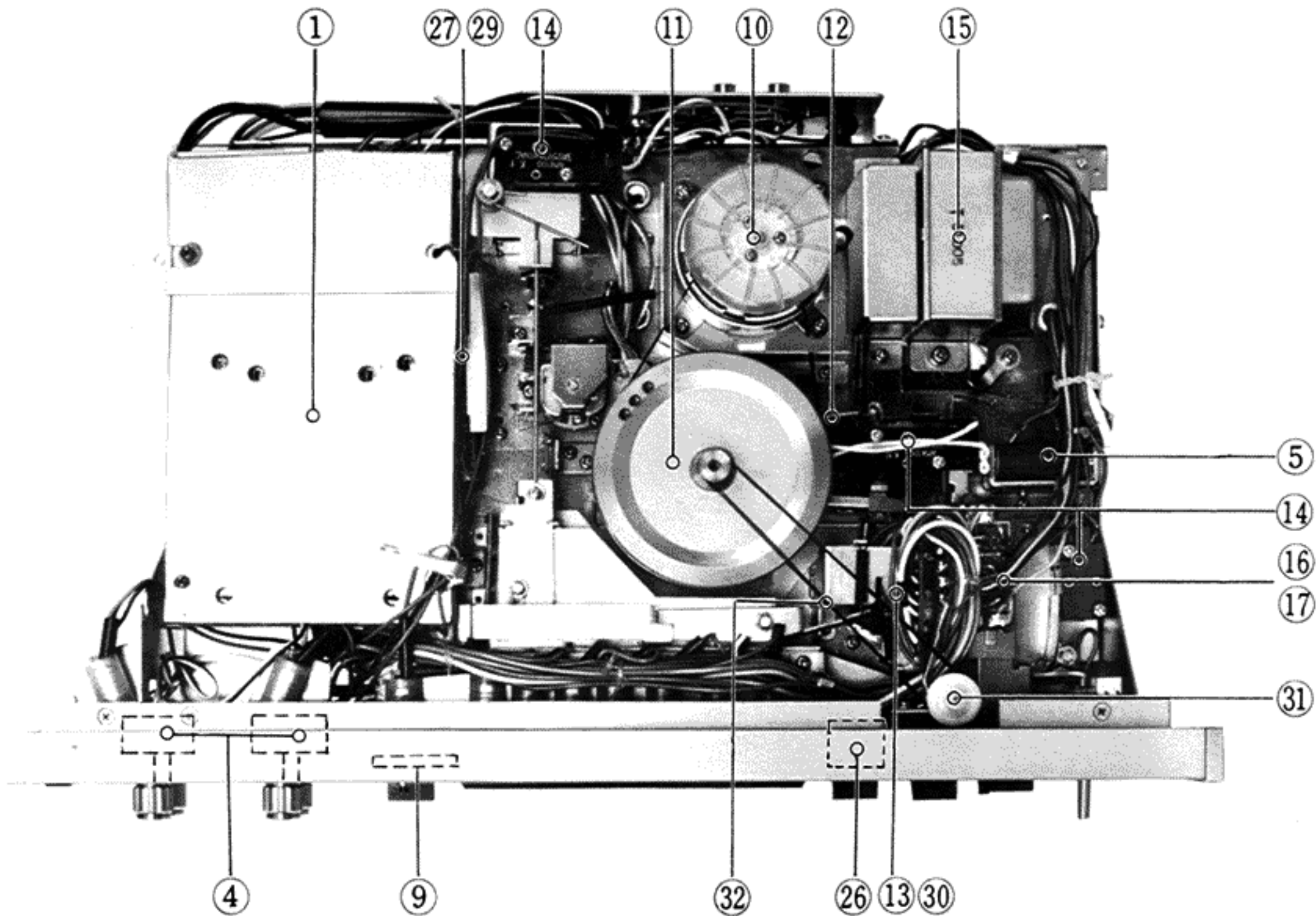


Fig. 3

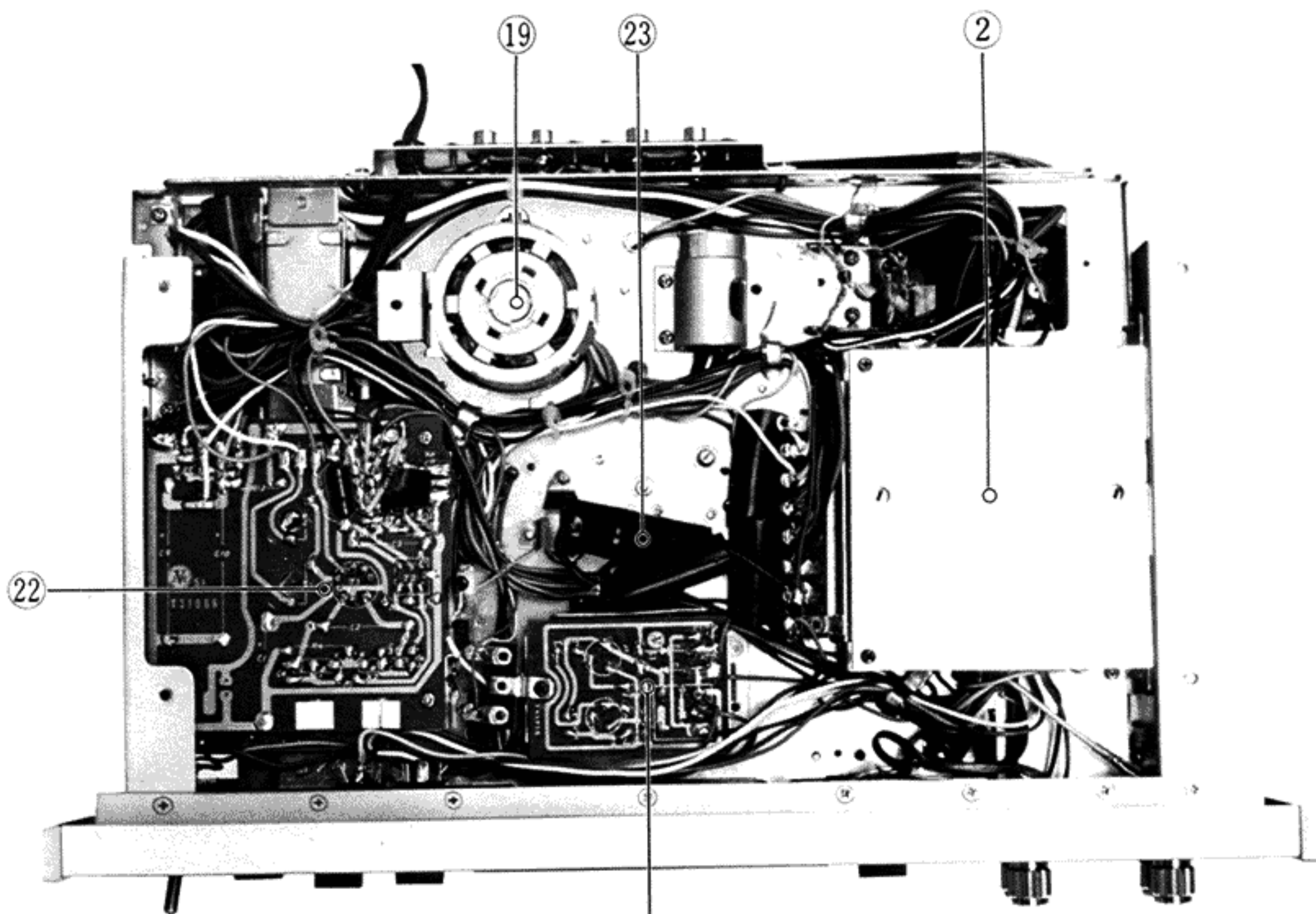


Fig. 4 28

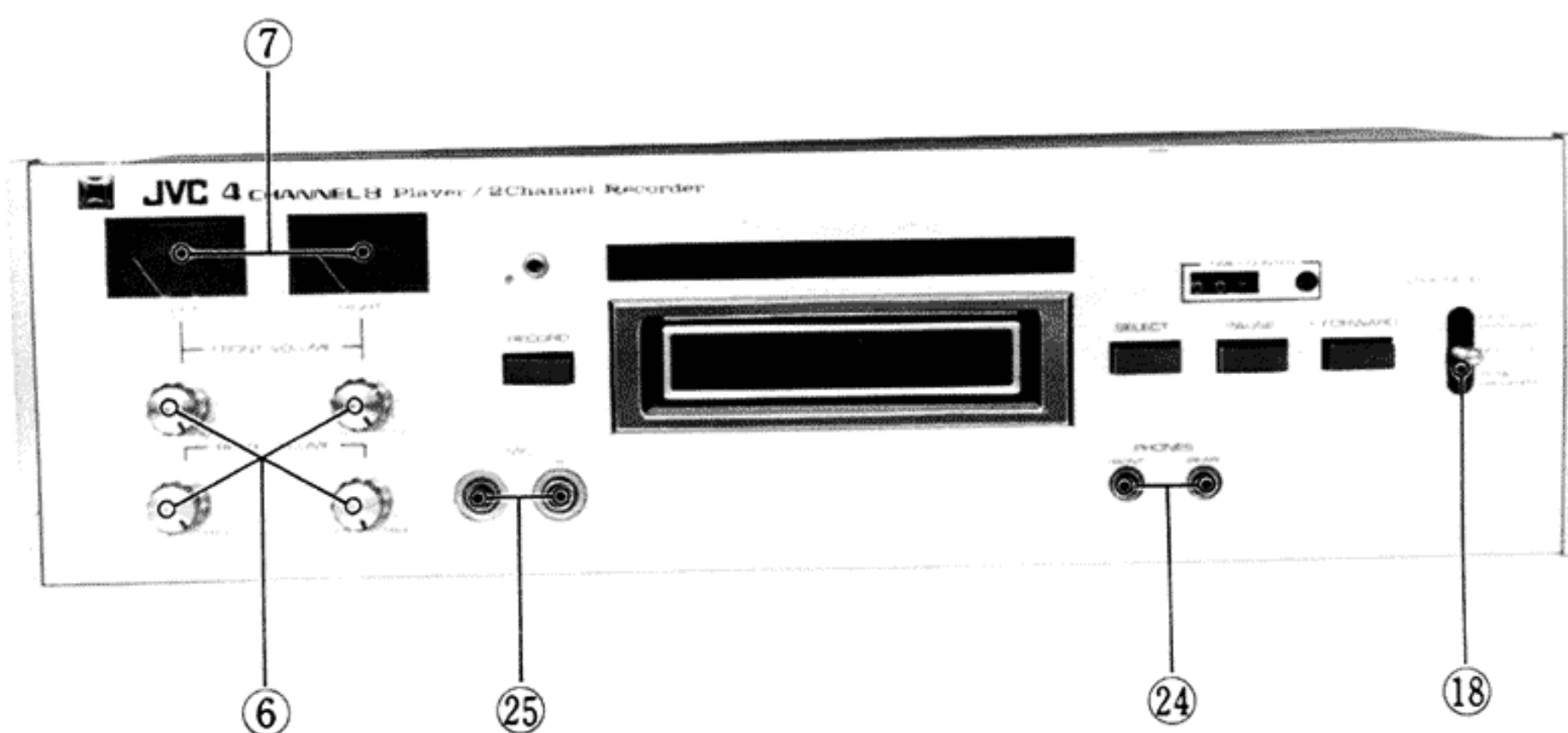


Fig. 5

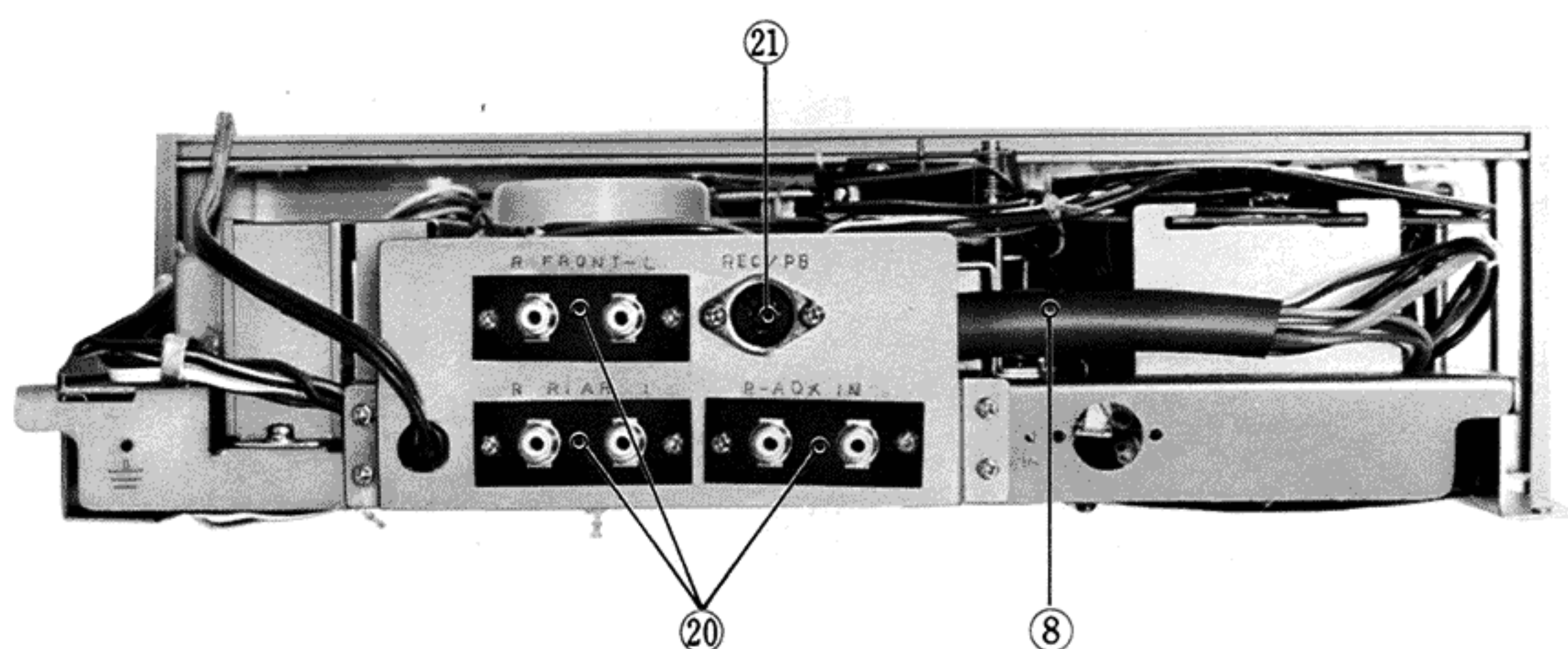


Fig. 6

|    | PART NO.   | PART NAME                                   |    | PART NO.    | PART NAME                         |
|----|------------|---------------------------------------------|----|-------------|-----------------------------------|
| 1  | T22735-001 | Front amplifier circuit board               | 17 | QSP0008-002 | Push switch (F.F)                 |
| 2  | T31065-001 | Rear amplifier circuit board                | 18 | Q30186-001  | Lever switch (Auto-stop)          |
| 3  | T45002-001 | Shield board                                | 19 | m-872-00B   | Motor                             |
| 4  | Q04834-002 | Variable resistor                           | 20 | F4653-001   | 2P, PIN jack                      |
| 5  | T30837-001 | Solenoid (Auto-stop)                        | 21 | Q03967-001  | DIN jack                          |
| 6  | E46025-001 | Knob (Volume)                               | 22 | T31239-001  | Power supply vibration board      |
| 7  | T31208-001 | Level meter                                 | 23 | F4896-005   | MP capacitor                      |
| 8  | T30543-001 | Solenoid (Head shifting)                    | 24 | Q03958-001  | Headphone jack                    |
| 9  | T45932-001 | Microphone jack board                       | 25 | Q03961-001  | Jack (Mic)                        |
| 10 | T44991-001 | Microphone jack board (60Hz)                | 26 | T31236-00A  | Program switch (SELECT)           |
| 11 | T45939-00A | Flywheel assembly                           | 27 | Q30482-001  | Slide switch (Muting)             |
| 12 | T45147-001 | Belt                                        | 28 | T45920-001  | Flip-flop circuit board           |
| 13 | T38001-001 | Slide switch assembly (2ch-4ch change-over) | 29 | T45922-001  | Muting circuit board              |
| 14 | T30422-003 | Microswitch                                 | 30 | T45921-001  | 2ch-4ch change-over circuit board |
| 15 | T31142-001 | Power supply transformer                    | 31 | T31080-00A  | Counter assembly                  |
| 16 | T45923-001 | F.F. circuit board                          | 32 | T46105-001  | Counter belt                      |



# 4. REMOVING AND REPLACEMENT OF MAJOR PARTS

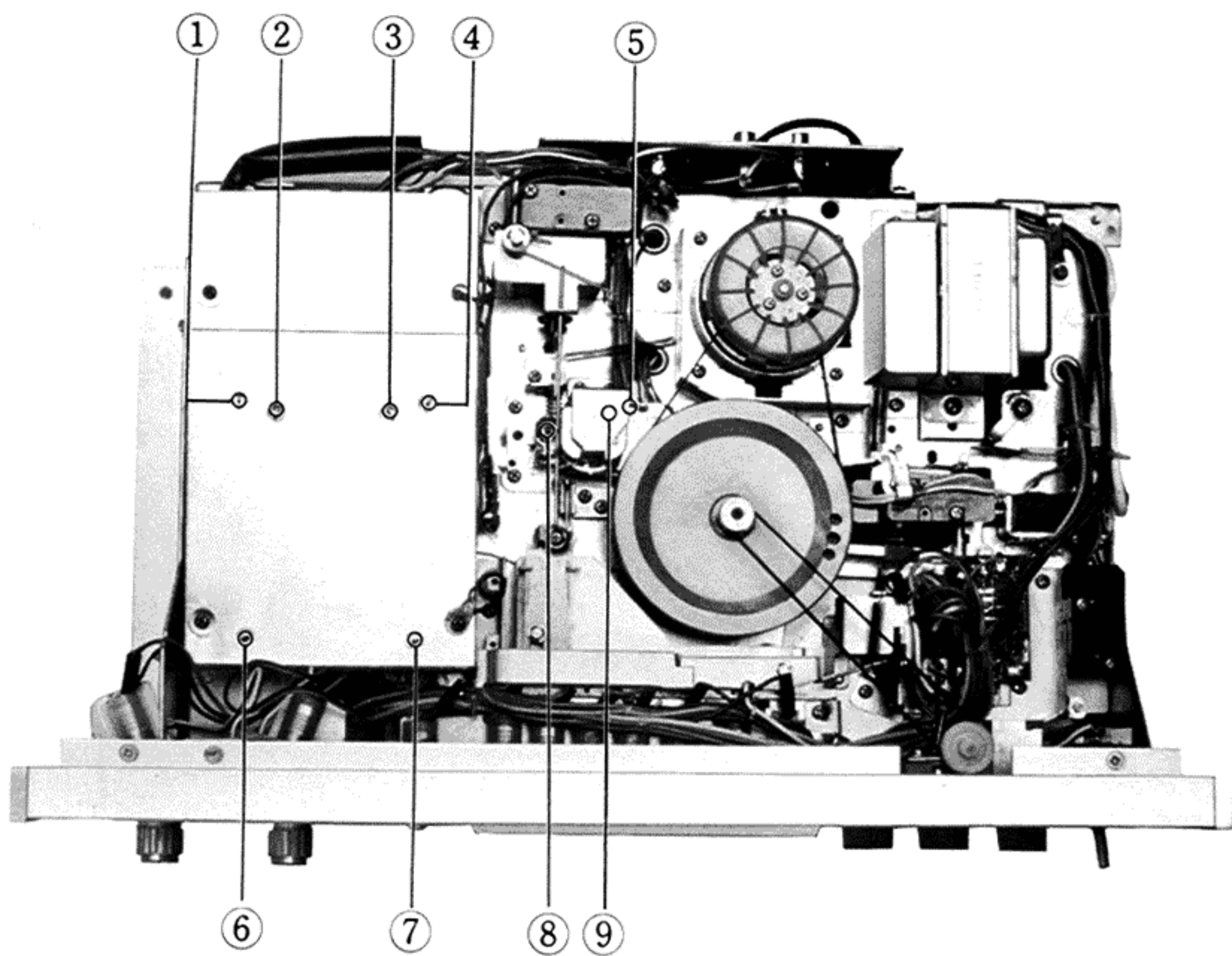


Fig. 7

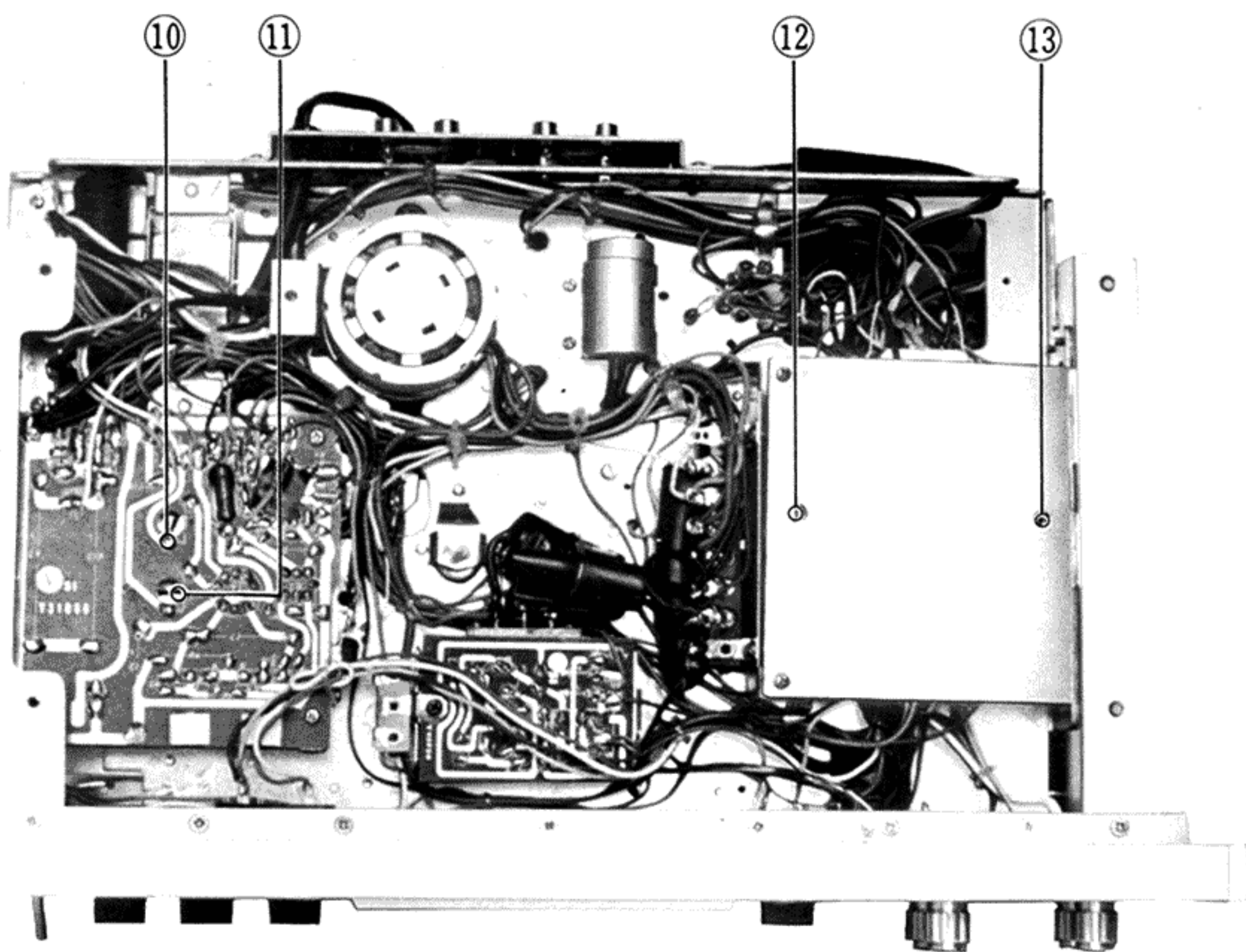


Fig. 8

- |                                                             |                                                            |
|-------------------------------------------------------------|------------------------------------------------------------|
| 1. Playback amplifier sensitivity adjustment (left front)   | 7. Level meter adjustment (right front)                    |
| 2. Recording amplifier sensitivity adjustment (left front)  | 8. Head azimuth adjustment                                 |
| 3. Recording amplifier sensitivity adjustment (right front) | 9. Head height adjustment                                  |
| 4. Playback amplifier sensitivity adjustment (right front)  | 10. Erasing current adjustment                             |
| 5. Head inclination adjustment                              | 11. Erasing current adjustment                             |
| 6. Level meter adjustment (left front)                      | 12. Playback amplifier sensitivity adjustment (right rear) |
|                                                             | 13. Playback amplifier sensitivity adjustment (left rear)  |

## 5. ADJUSTMENTS

### 1. Head Height Adjustment

Head height can be varied by turning the head height adjusting shaft. Turning the shaft clockwise lowers the head, while turning counterclockwise raises the head.

The shaft protrudes from the chassis bottom. By turning it with a screwdriver through the adjustment hole provided on the cabinet bottom, the head height can be adjusted with the head installed in the cabinet. Before starting the adjustment, the first program should be selected, and the head track upper end should be set almost on a level with the tape guide upper end. It makes the adjustment easier.

### 2. Recording Gain Adjustment

Apply a signal (1,000 Hz) from the MIC jack, and make adjustment so that the input may be  $-62$  dBs (0.65 mV) when the level meter points zero.

Note that this adjustment must be made after "3. Level Meter Sensitivity Adjustment."

### 3. Level Meter Sensitivity Adjustment

Set the level meter sensitivity on the basis of the recording signal current at the time of recording. In this case, the erasing oscillator must be stopped before measurement. To adjust, insert a 100-ohm resistor between the recording head and earth. Apply a sine wave signal of 1 kHz to the the INPUT jack, and adjust the input so that the voltage across the 100-ohm resistor will be 5 mV ( $50 \mu\text{A}$ ). At the same time, set the level meter sensitivity adjustor so that the level meter points OVU.

### 4. Head Inclination Adjustment

By turning the setting screw at the head arm center, the head inclination can be adjusted. Turn the setting screw so that the head front may be at right angles to the chassis.

### 5. Head Azimuth Adjustment

By turning the screw on the left end of the head arm, the head azimuth can be adjusted. If the head is set parallel to the base, it can correctly be adjusted by turning in or out the adjusting screw about one turn.

### 6. Playback Gain Adjustment

Set the volume at maximum, and play the test tape (VTT-907, or VTT-918); then adjust so that the output at LINE OUT is 1 V.

### 7. Erasing Current Adjustment

The head erasing current is adjusted by the semi-fixed volume control for adjustment. Adjust each of the head right and left channels by use of this semi-fixed volume control. The bias current should be adjusted by varying the erasing current.

To adjust the bias current, insert a 100-ohm resistor between the head record/playback winding (blue) and earth. Then, connect a vacuum tube voltmeter across the 100-ohm resistor to measure the bias current. Adjust the semi-fixed volume controls ( $R_2$  and  $R_3$ ) so that the voltmeter points  $55 \text{ mV} \pm 5$  ( $550 \mu\text{A} \pm 50$ ) when the recording input is zero. Be sure to make this adjustment when the head has been replaced.

### 8. Hum Backing Coil

Set the hum backing coil so that the hum during the playback operation is at minimum. Position the coil by changing its direction, distance from the motor, and angles to the motor, and when the hum becomes the minimum, set it. This adjustment must be made when the head has been replaced.



# 6. REPLACING THE MAJOR COMPONENTS

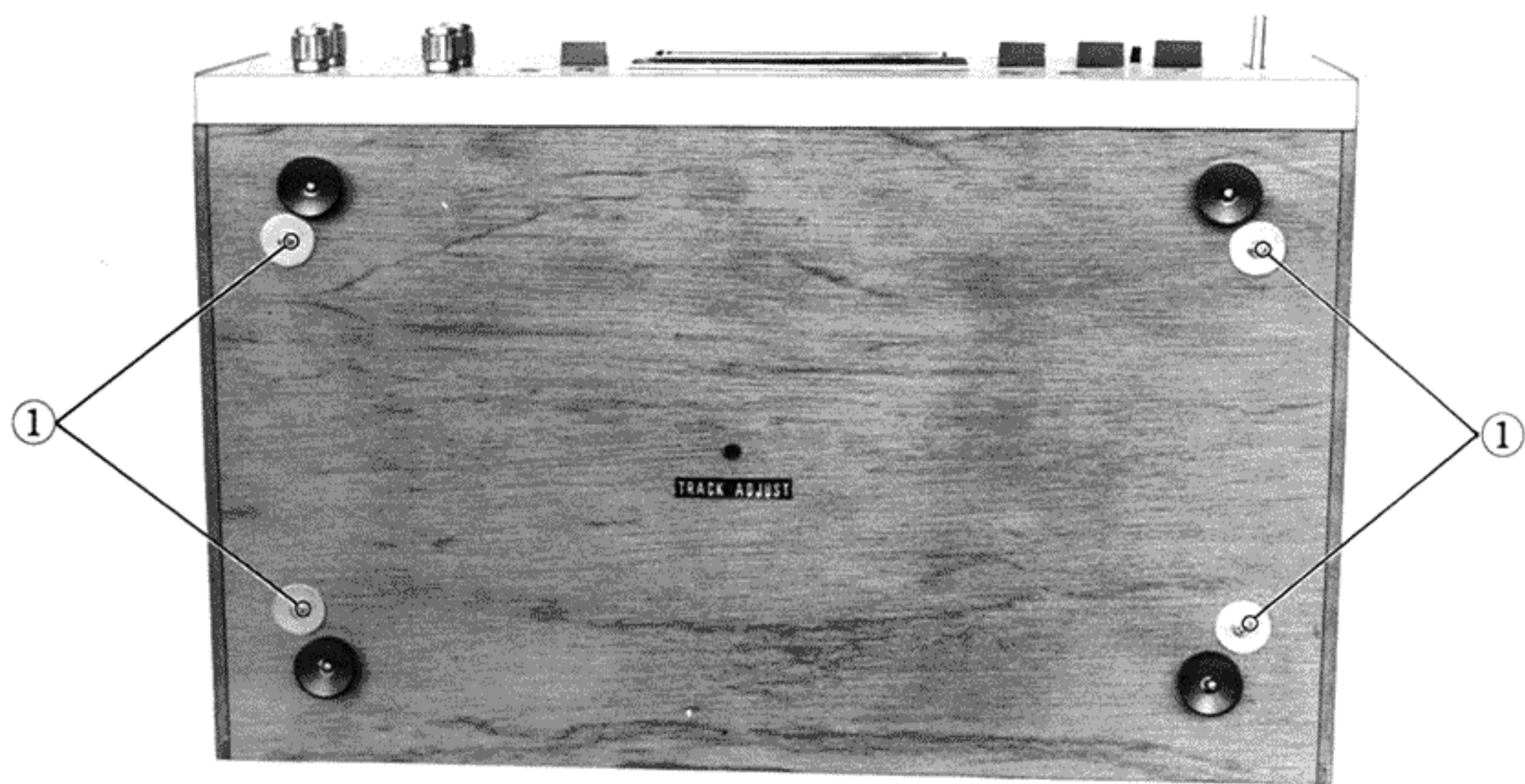


Fig. 9

Note that the specified screws (SPSP4014ZS) must be used at the positions ① shown in the photograph in order to secure the cabinet bottom plate.  
If any other screws longer than specified are used, they may touch circuits inside.

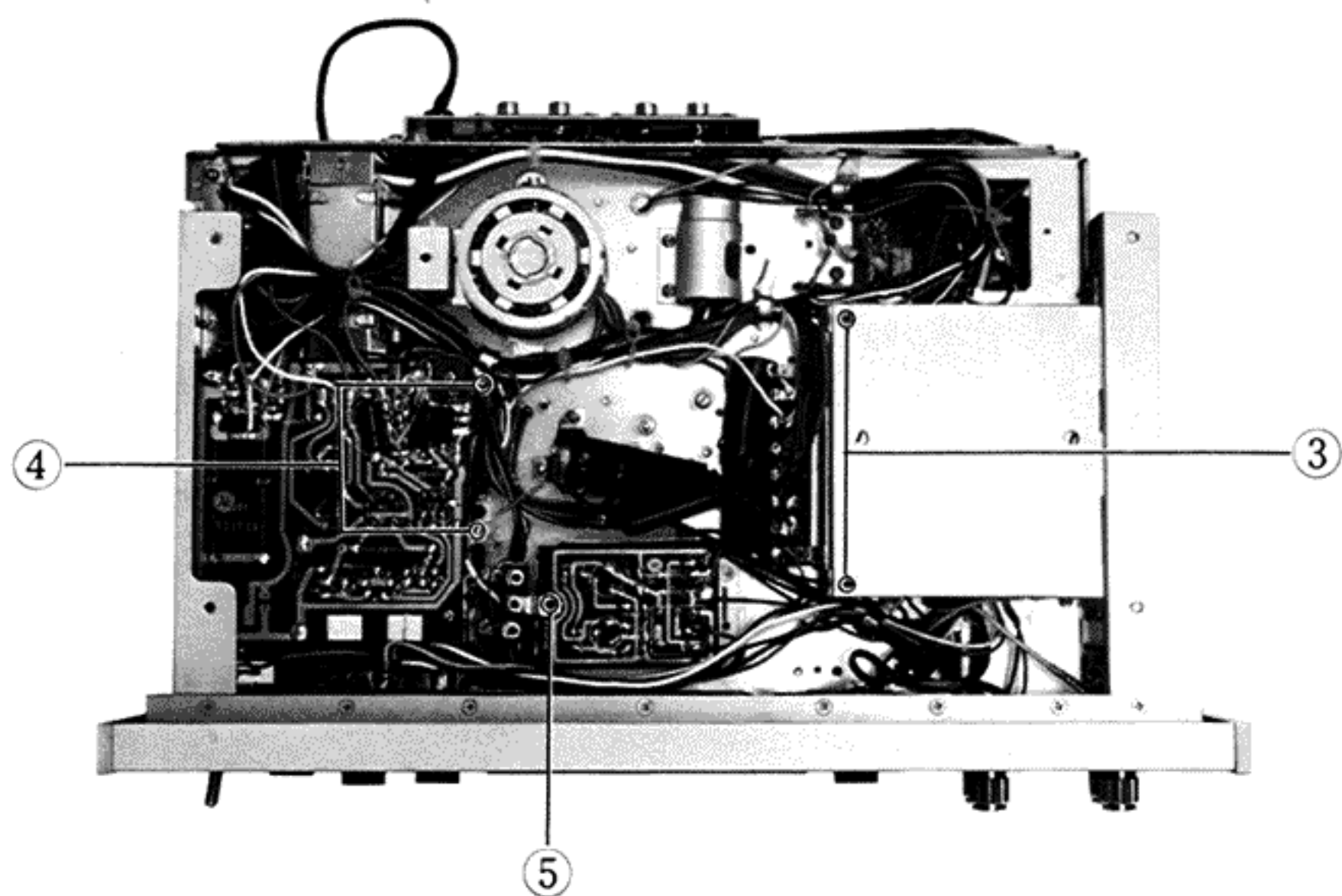


Fig. 10

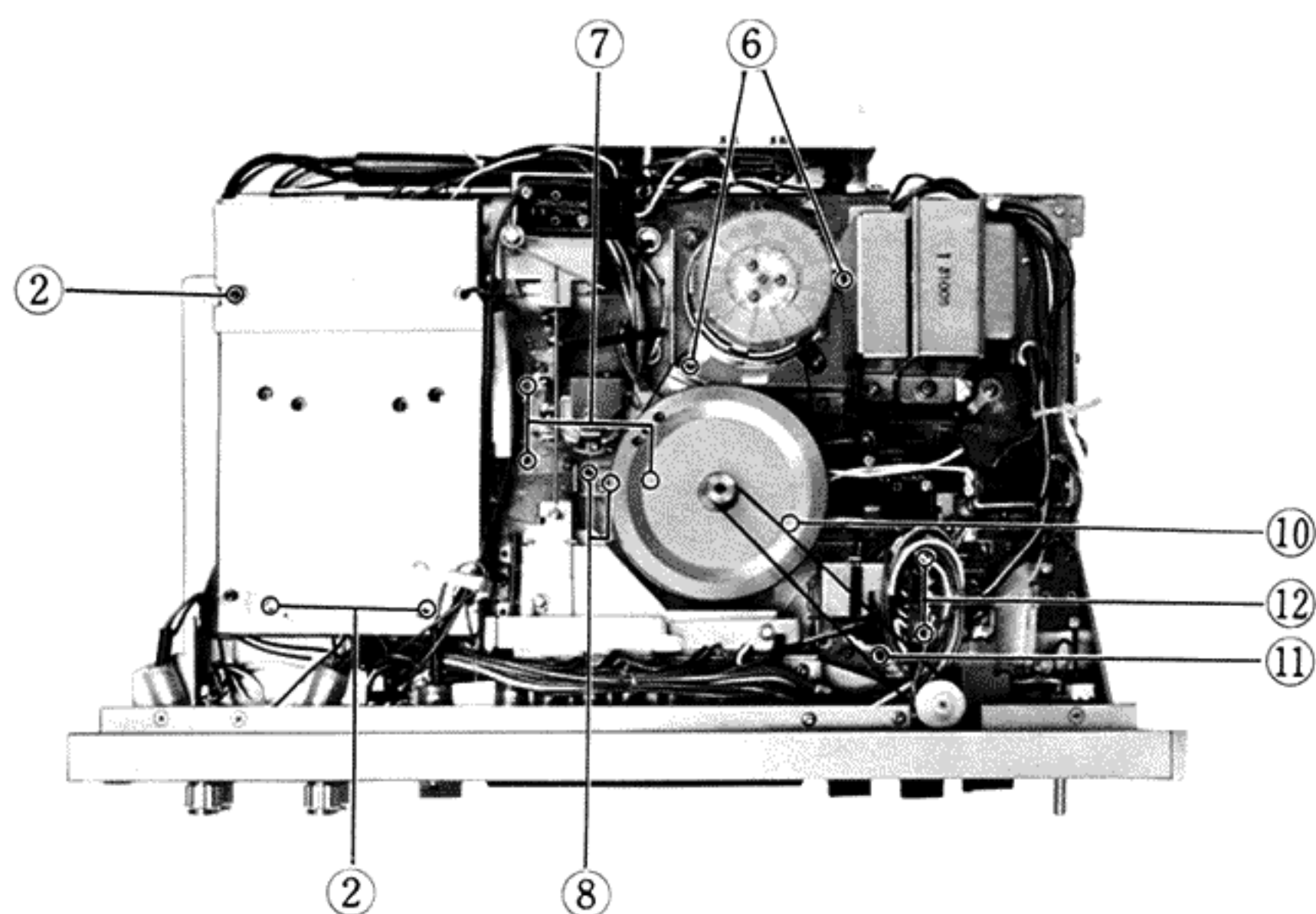


Fig. 11



## **1. Removing the Cabinet**

Remove the four screws ① securing the cabinet bottom plate, and pull forward the main body. When installing the cabinet, there is a clearance between the chassis and the cabinet. For easier installation, place the cabinet upside down, and tighten the screws by holding the power cord.

## **2. Removing the Rear Amplifier Circuit Board**

### **1) Removing the front amplifier circuit board**

Remove the three screws ② securing the amplifier circuit board, and lift up the circuit board. When installing the amplifier circuit board or making adjustment on the circuit board, avoid operating the record/playback slide switch with the power switch turned on. If a cartridge tape is loaded, it will be erased.

### **2) Removing the rear amplifier circuit board**

Remove the two screws ③ securing the amplifier circuit board, and lift up the circuit board.

### **3) Removing the power, oscillator circuit board**

Remove the two screws ④ securing the circuit board, and it can be lifted up.

### **4) Removing the flip-flop circuit board**

Remove the one screw ⑤ holding the circuit board, and it can be lifted up.

## **3. Removing the Motor**

### **1) Desolder the motor wires.**

### **2) Remove the capstan belt.**

### **3) Remove the two screws ⑥ securing the motor, and remove the motor.**

## **4. Removing the Magnetic Head**

### **1) Remove the flywheel.**

### **2) Remove the three screws ⑦ securing the head base to the chassis.**

### **3) Remove the two screws ⑧ holding the sensor.**

### **4) Lifting up the head base toward you, remove it from the chassis.**

### **5) Remove the one screw ⑨ holding the head arm head, and lift up the head forward to remove it.**

## **5. Removing the Time Counter**

### **1) Remove the counter belt ⑩ .**

### **2) Remove the two screws ⑪ holding the 2-ch—4-ch change-over circuit board, and remove the circuit board.**

### **3) Remove the three screws ⑫ securing the counter bracket, and remove the counter.**

# 7. CIRCUIT BOARD PARTS DIAGRAM

## A. Front Amplifier Circuit Board Parts Diagram

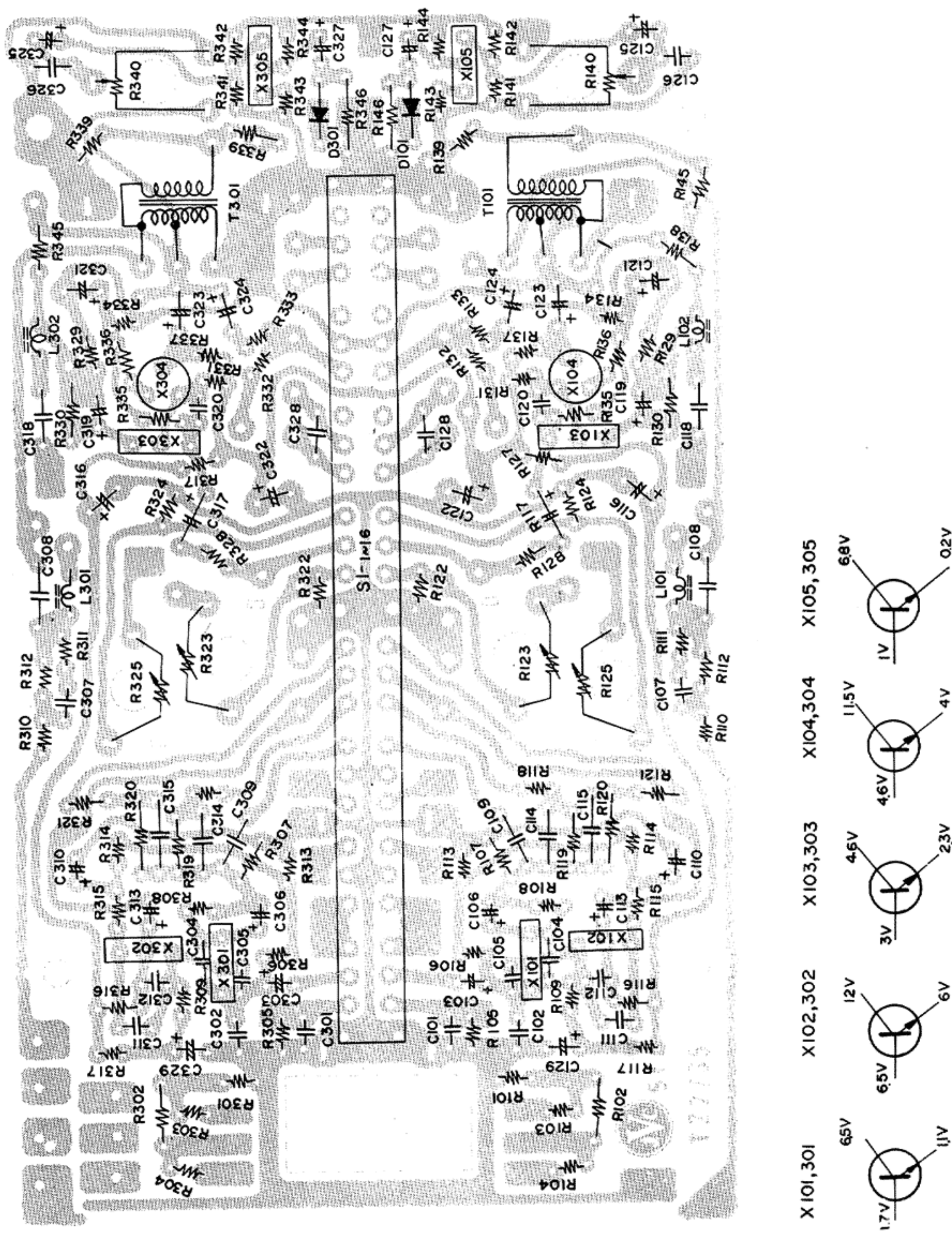


Fig. 12



B. Rear Amplifier Circuit Board Parts Diagram

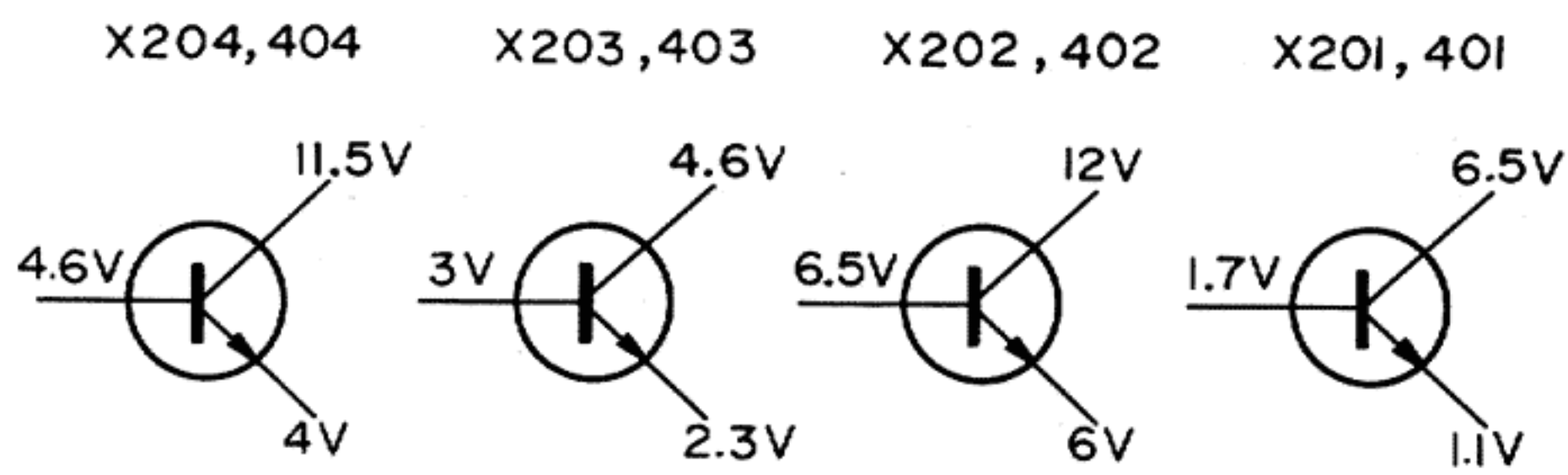
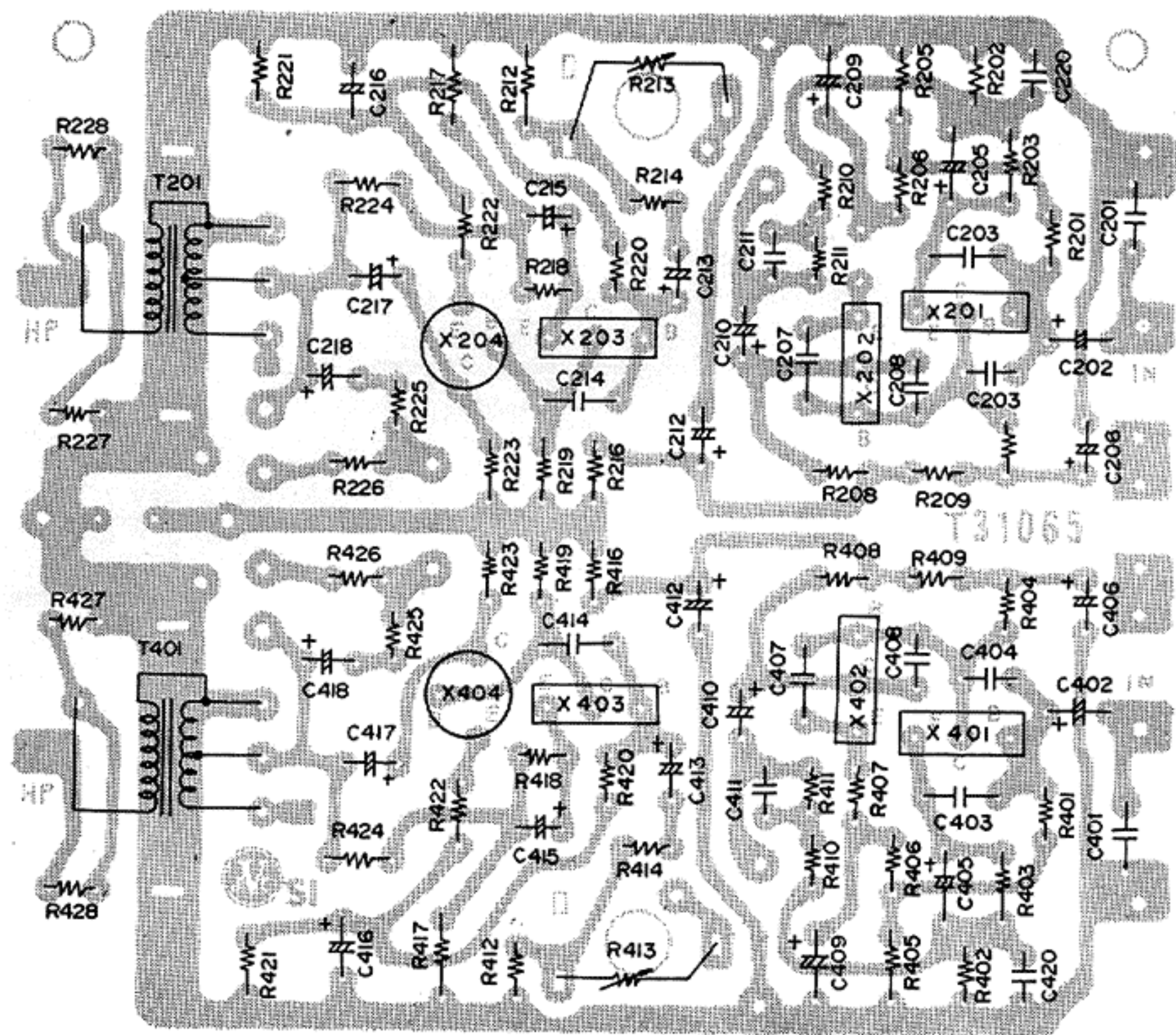


Fig. 13

C. Power, Oscillator Circuit Board Parts Diagram

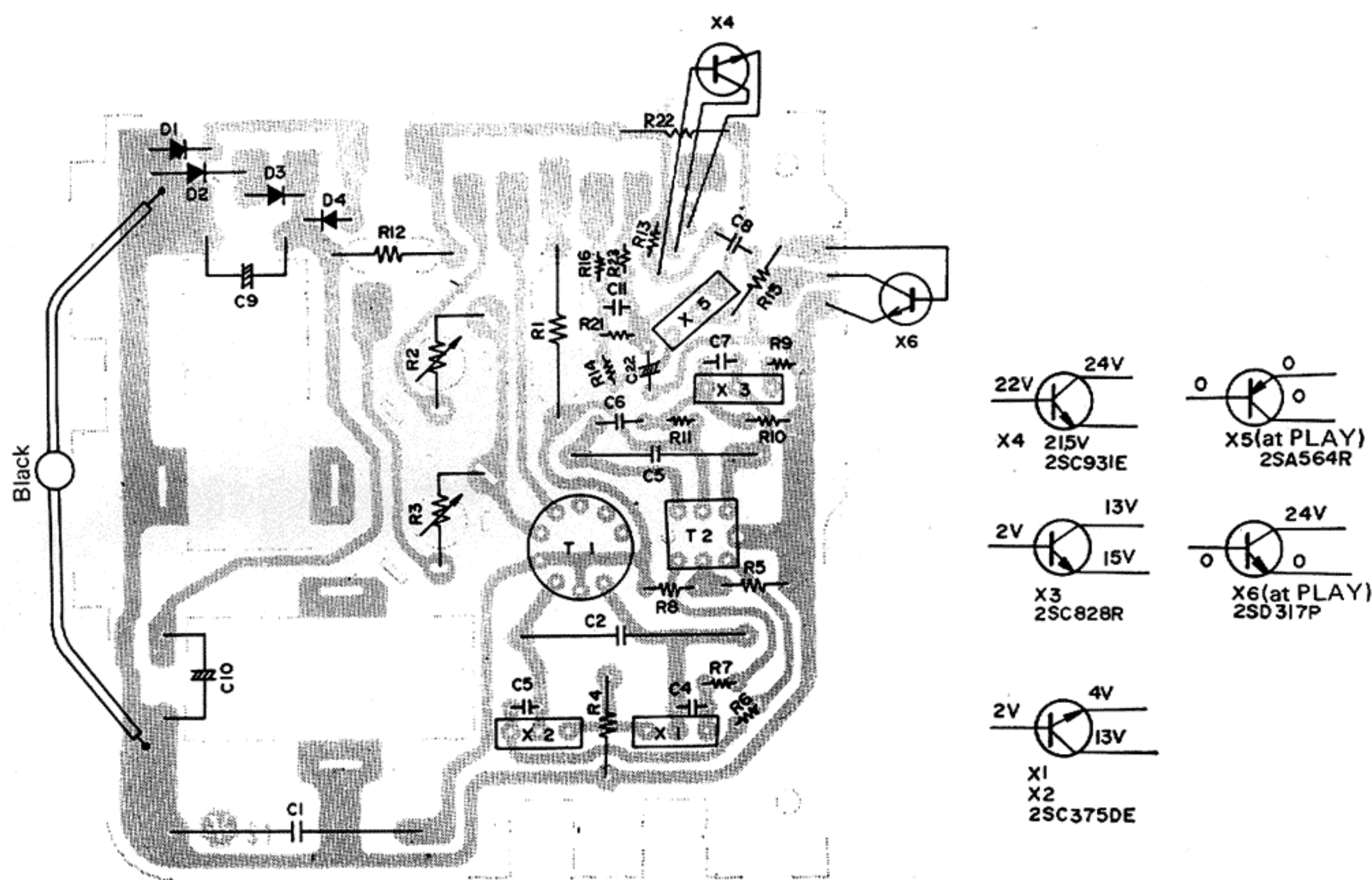


Fig. 14

D. Flip-flop Circuit Board Parts Diagram

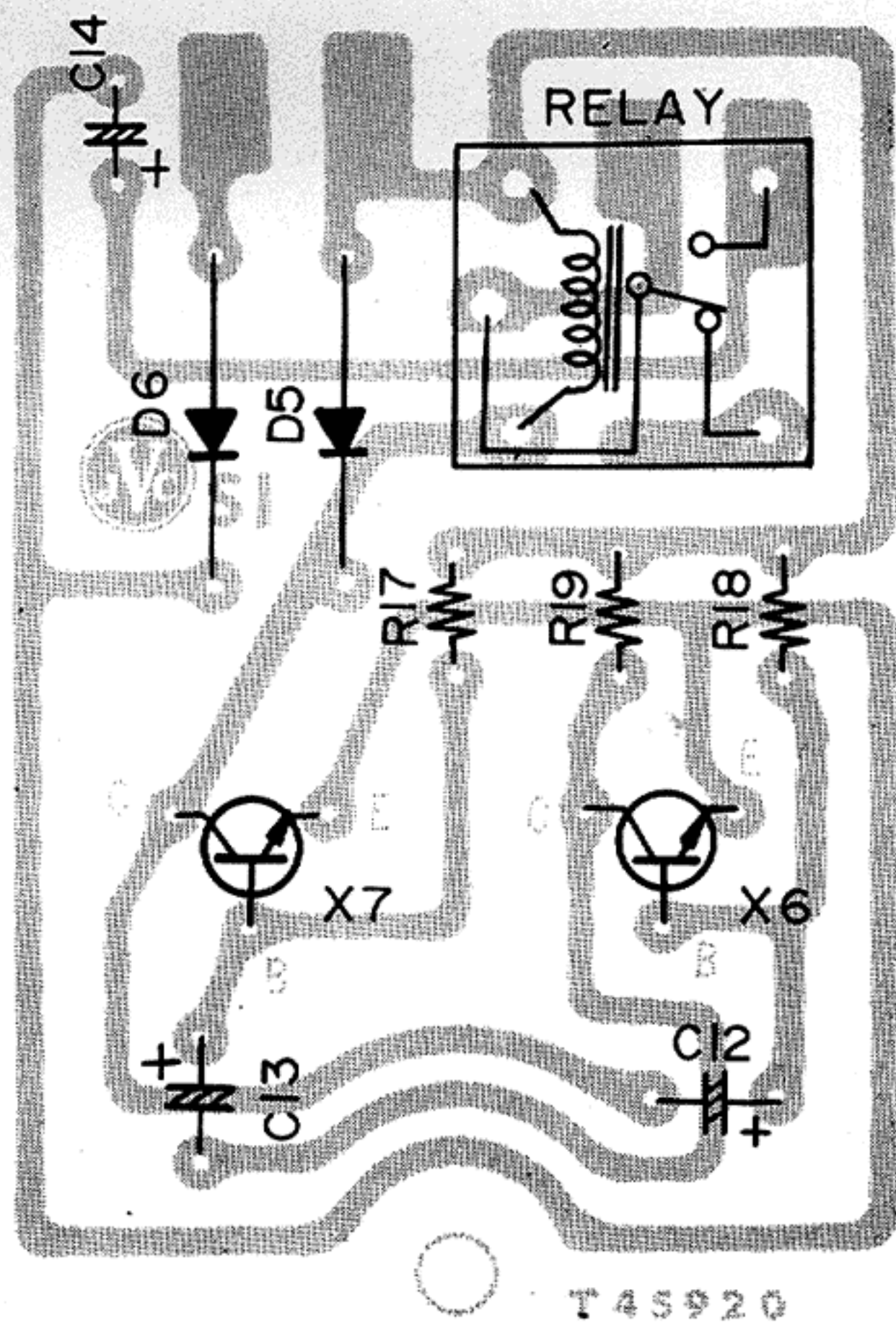


Fig. 15



# 8. WIRING DIAGRAM

## A. Front Amplifier Circuit Board Wiring Diagram

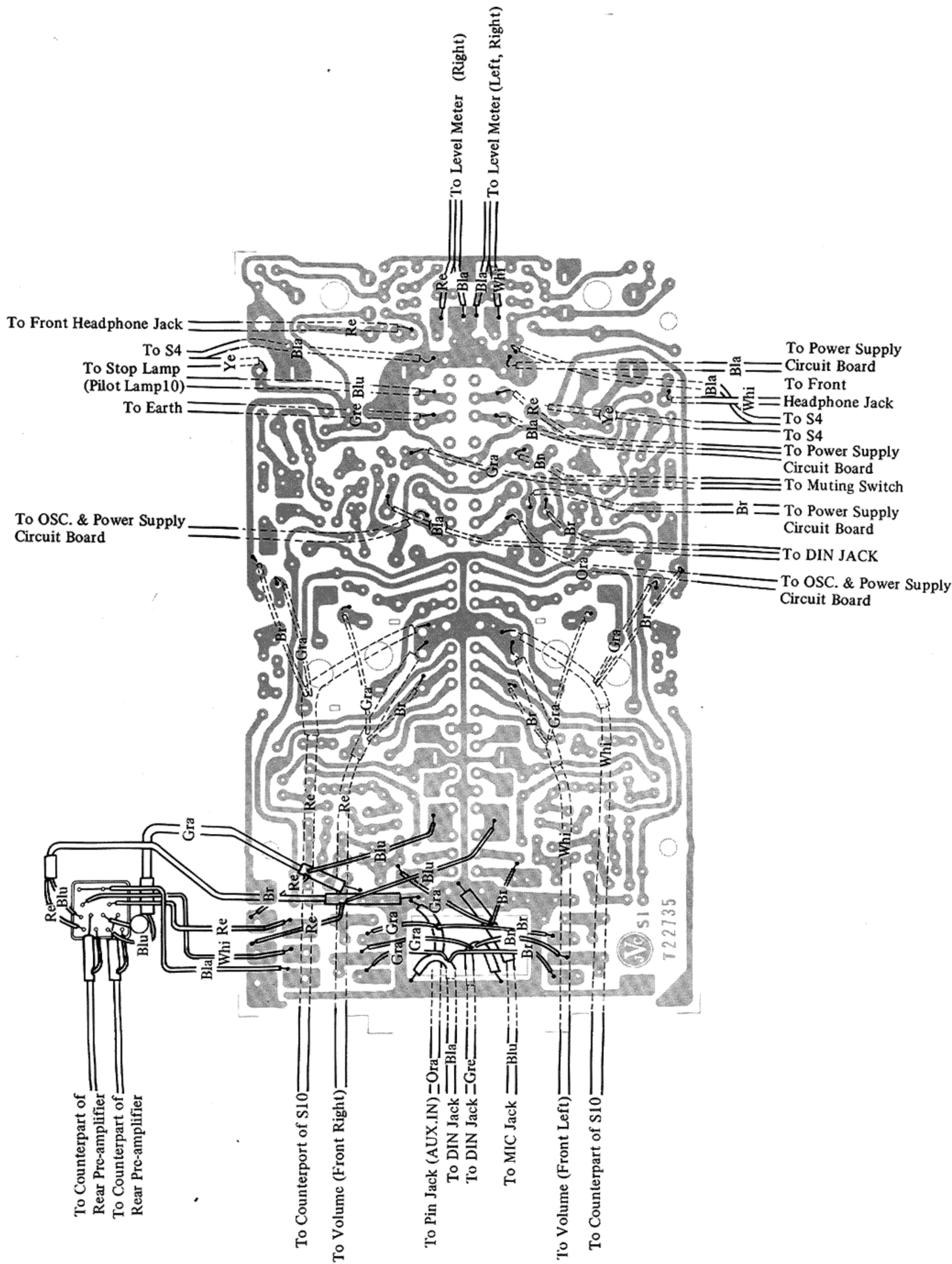


Fig. 16

B. Rear Amplifier Circuit Board Wiring Diagram

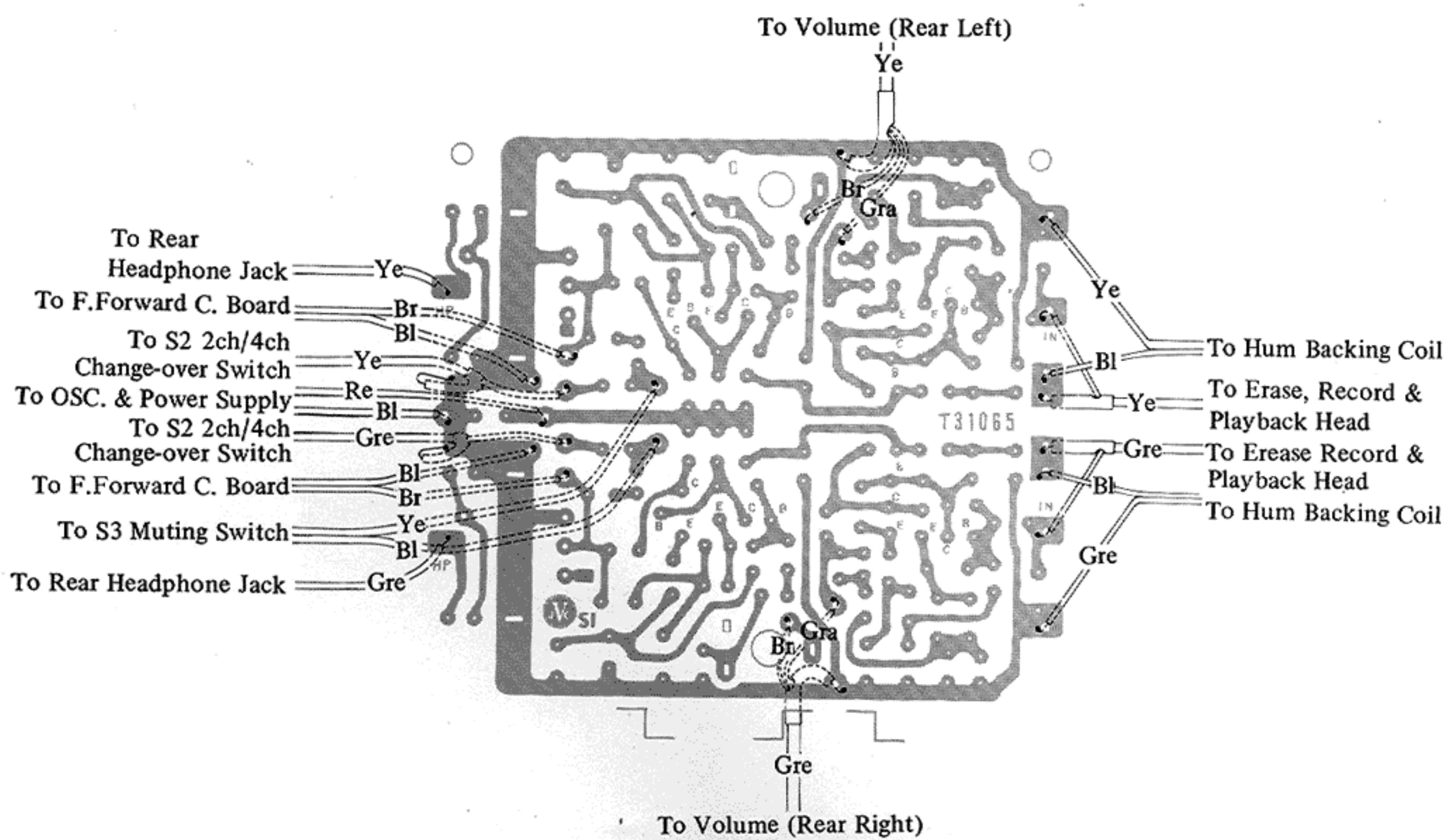


Fig. 17

C. Flip-flop Circuit Board Wiring Diagram

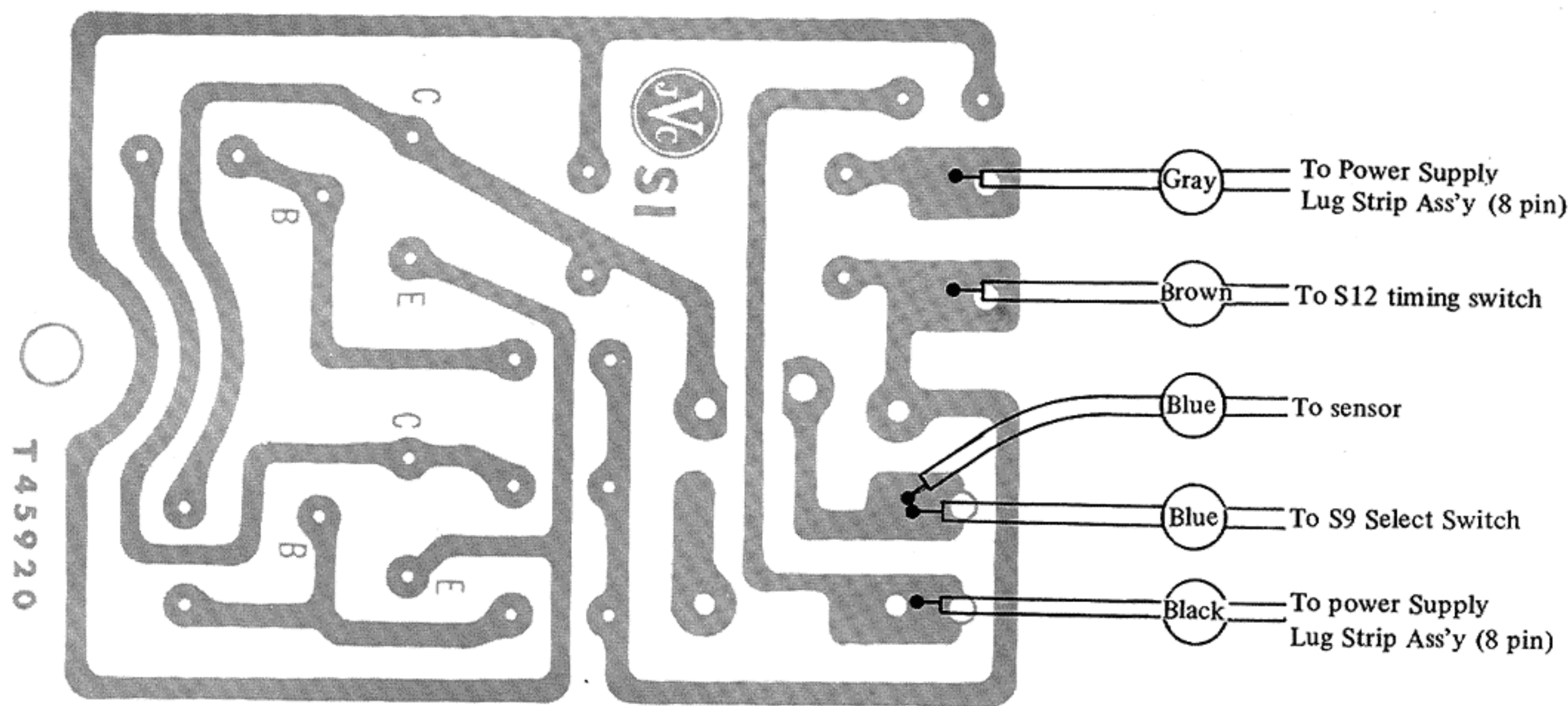


Fig. 18



D. Power, Oscillator Circuit Board Wiring Diagram

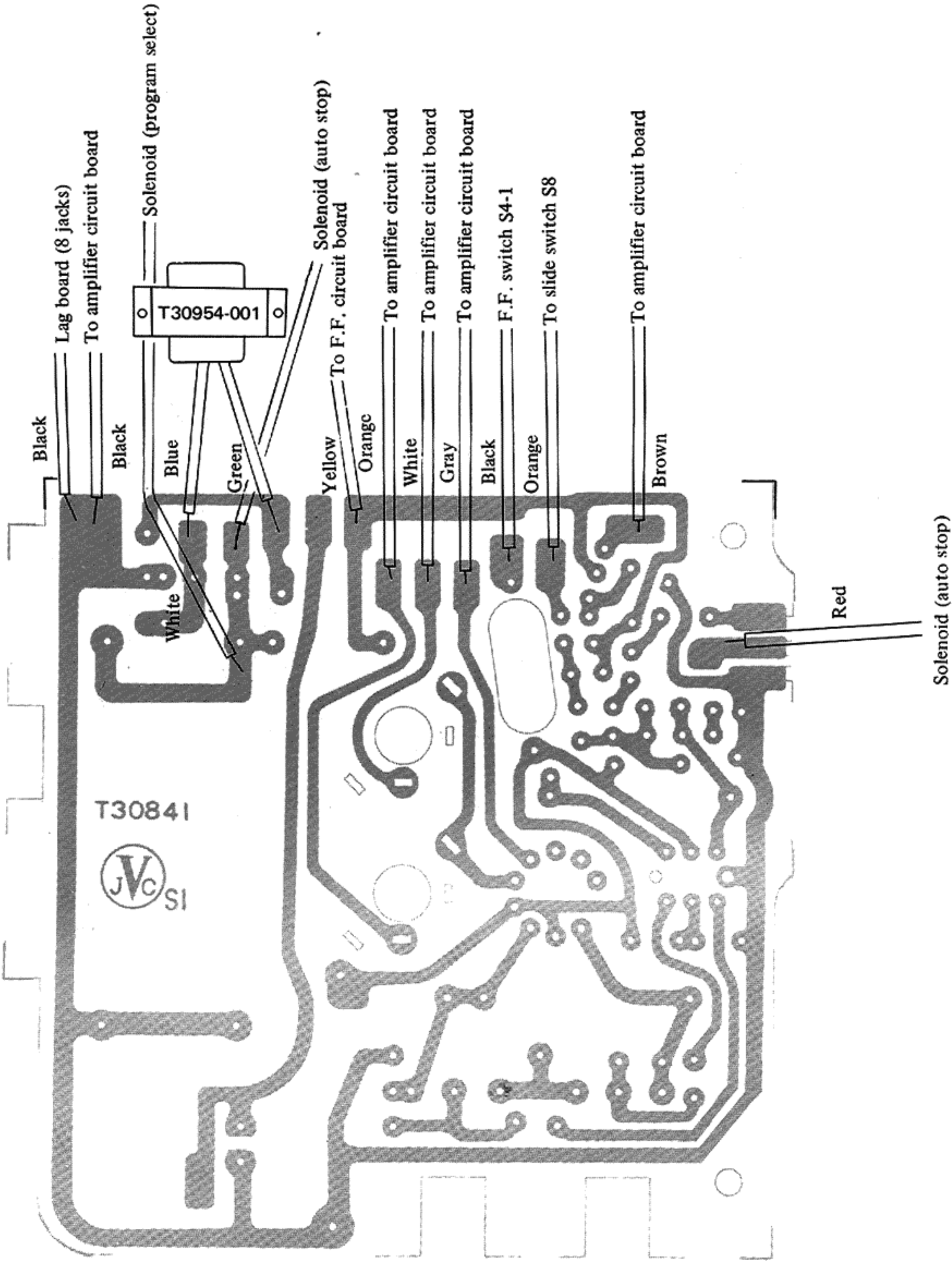


Fig. 19

# 9. BLOCK DIAGRAM

## A. Recording System Block Diagram

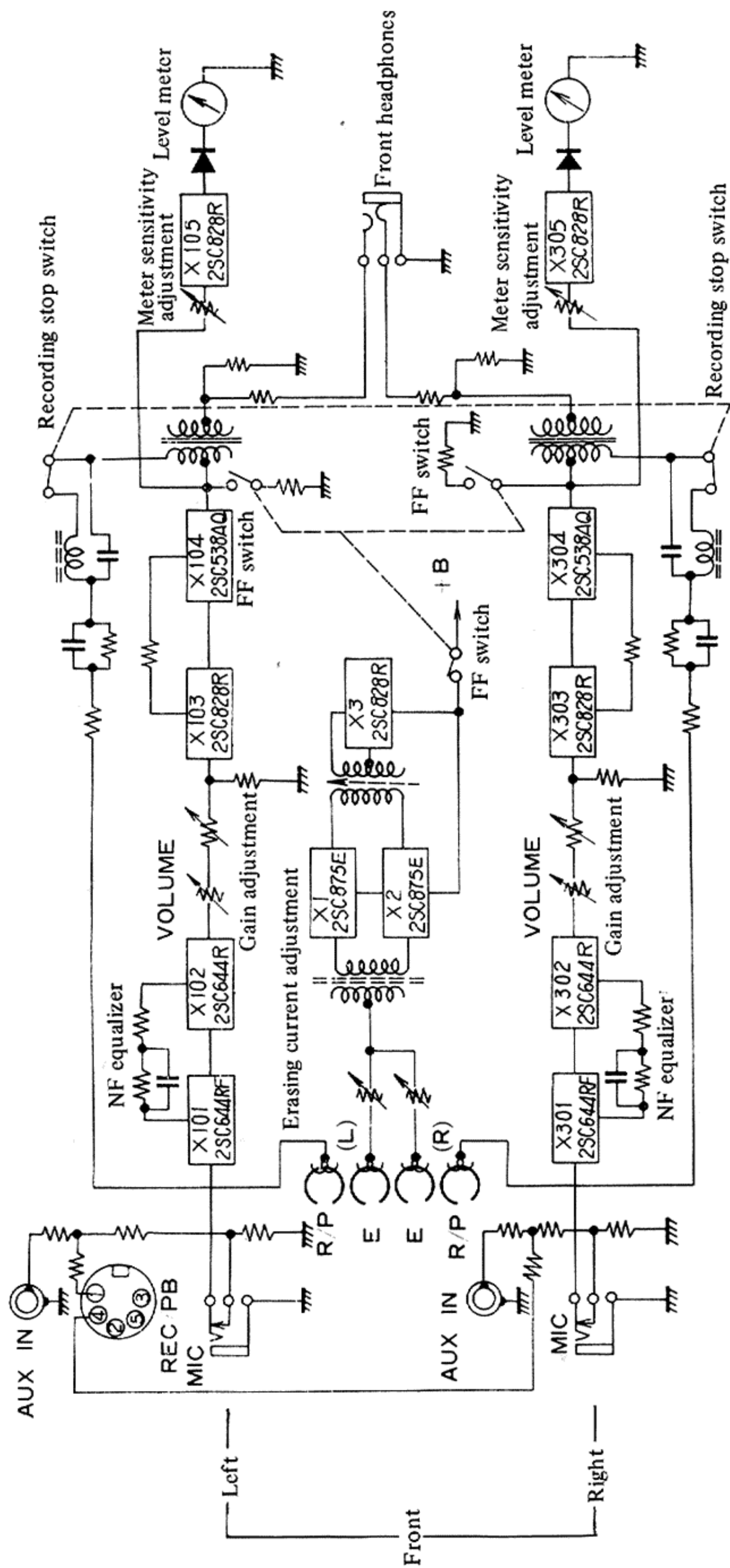


Fig. 20

NOTE: 1. During the recording operation, the 2-channel system on the front side alone is in operation. Therefore, the diagram of the rear side (exclusively for playback) is omitted.  
2. FF switches, both front and rear, are coupled.



B. Playback System Block Diagram

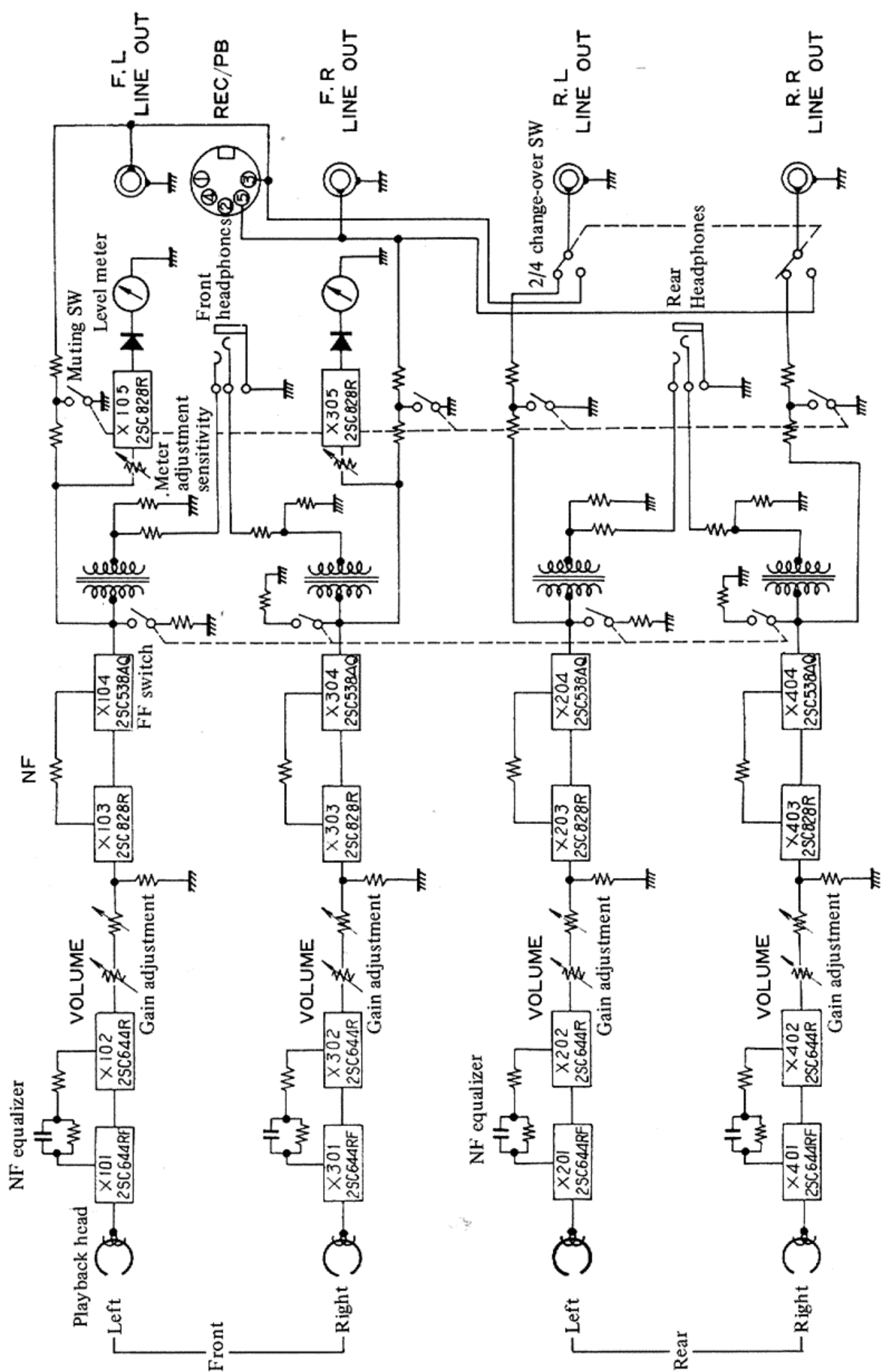


Fig. 21

# 10. TROUBLE SHOOTING

| Symptom                                                                    | Cause                                                                                                                                                     | Remedy                                                                                                      |
|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| No power is on.                                                            | <ul style="list-style-type: none"><li>• Microswitch is faulty.</li></ul>                                                                                  | Replace microswitch.                                                                                        |
| Indicator lamp will not light up.                                          | <ul style="list-style-type: none"><li>• Pilot lamp is burned out.</li><li>• Pilot lamp is loose.</li></ul>                                                | Replace pilot lamp.<br>Screw in pilot lamp.                                                                 |
|                                                                            | <ul style="list-style-type: none"><li>• Both ratchet cam and disc contact points fail to contact.</li></ul>                                               | Clean both points with a cleaner.                                                                           |
| 2ch-4ch change-over is impossible.                                         | <ul style="list-style-type: none"><li>• 2ch-4ch change-over switch is faulty.</li></ul>                                                                   | Adjust the angle of arm pushing the slide switch by bending it.                                             |
| Program changes when inserting 2-channel cartridge or when pulling it out. | <ul style="list-style-type: none"><li>• 2ch-4ch change-over slide switch is faulty.</li></ul>                                                             | Adjust by bending the arm pushing the slide switch.                                                         |
| No sound is produced.                                                      | <ul style="list-style-type: none"><li>• Microswitch for flip-flop circuit is faulty.</li></ul>                                                            | Apply a silicon grease (Toshiba #500) to contact area of wire with stud, because the wire returns too fast. |
|                                                                            | <ul style="list-style-type: none"><li>• Motor is faulty.</li><li>• Cartridge is defective.</li><li>• Signal wire is broken.</li></ul>                     | Replace motor.<br>Test by use of a new cartridge.                                                           |
|                                                                            |                                                                                                                                                           | Check head leads.<br>Check soldered joints.<br>Check connector and jack.                                    |
| Channel will not change.                                                   | <ul style="list-style-type: none"><li>• Amplifier is faulty.</li><li>• Solenoid is faulty.</li></ul>                                                      | Check amplifier. Measure voltage with a tester.                                                             |
|                                                                            |                                                                                                                                                           | Clean solenoid plunger with alcohol, and oil it sparingly.                                                  |
|                                                                            |                                                                                                                                                           | Straighten any bend of lever.                                                                               |
|                                                                            |                                                                                                                                                           | Correct inclination of solenoid.                                                                            |
|                                                                            | <ul style="list-style-type: none"><li>• Ratchet cam is faulty.</li></ul>                                                                                  | Clean ratchet cam surfaces with alcohol, and coat with silicon grease.                                      |
|                                                                            | <ul style="list-style-type: none"><li>• Stop cam back "L" spring is faulty.</li></ul>                                                                     | Adjust angle of stop cam back "L" spring.                                                                   |
| Speed is incorrect, with undue wow.                                        | <ul style="list-style-type: none"><li>• Motor is faulty.</li><li>• Belt is faulty.</li><li>• Cartridge is defective.</li><li>• Pressure is low.</li></ul> | Replace motor.<br>Replace belt, or clean it with trichloroethylene.                                         |
|                                                                            | <ul style="list-style-type: none"><li>• Head height is incorrect.</li></ul>                                                                               | Test with a new cartridge.                                                                                  |
|                                                                            | <ul style="list-style-type: none"><li>• Head is dirty.</li></ul>                                                                                          | Measure pressure, and readjust.                                                                             |
|                                                                            | <ul style="list-style-type: none"><li>• Head azimuth is incorrect.</li></ul>                                                                              | Adjust with adjust screw.                                                                                   |
| Crosstalk is heard.                                                        | <ul style="list-style-type: none"><li>• Recording change-over slide switch stroke is incorrect.</li></ul>                                                 | Clean head                                                                                                  |
| Treble loss is noticeable.                                                 | <ul style="list-style-type: none"><li>• Head is faulty.</li></ul>                                                                                         | Adjust with adjust screw.                                                                                   |
| Neither recording nor playback is impossible.                              | <ul style="list-style-type: none"><li>• Bias current is incorrect.</li></ul>                                                                              | Adjust record spring position.                                                                              |
| Treble loss is noticeable during recording and playback.                   |                                                                                                                                                           | Replace head.                                                                                               |
| Erasing is incomplete.                                                     | <ul style="list-style-type: none"><li>• Erasing current is insufficient.</li></ul>                                                                        | Adjust erasing current.                                                                                     |

# 11. REPAIR NOTE

1. The level meter wires should be connected as follows:  
White and black leads to the left side.  
Red and black leads to the right side.
2. Take care not to install the stop selector switch upside down.



12. EXTERIOR PARTS

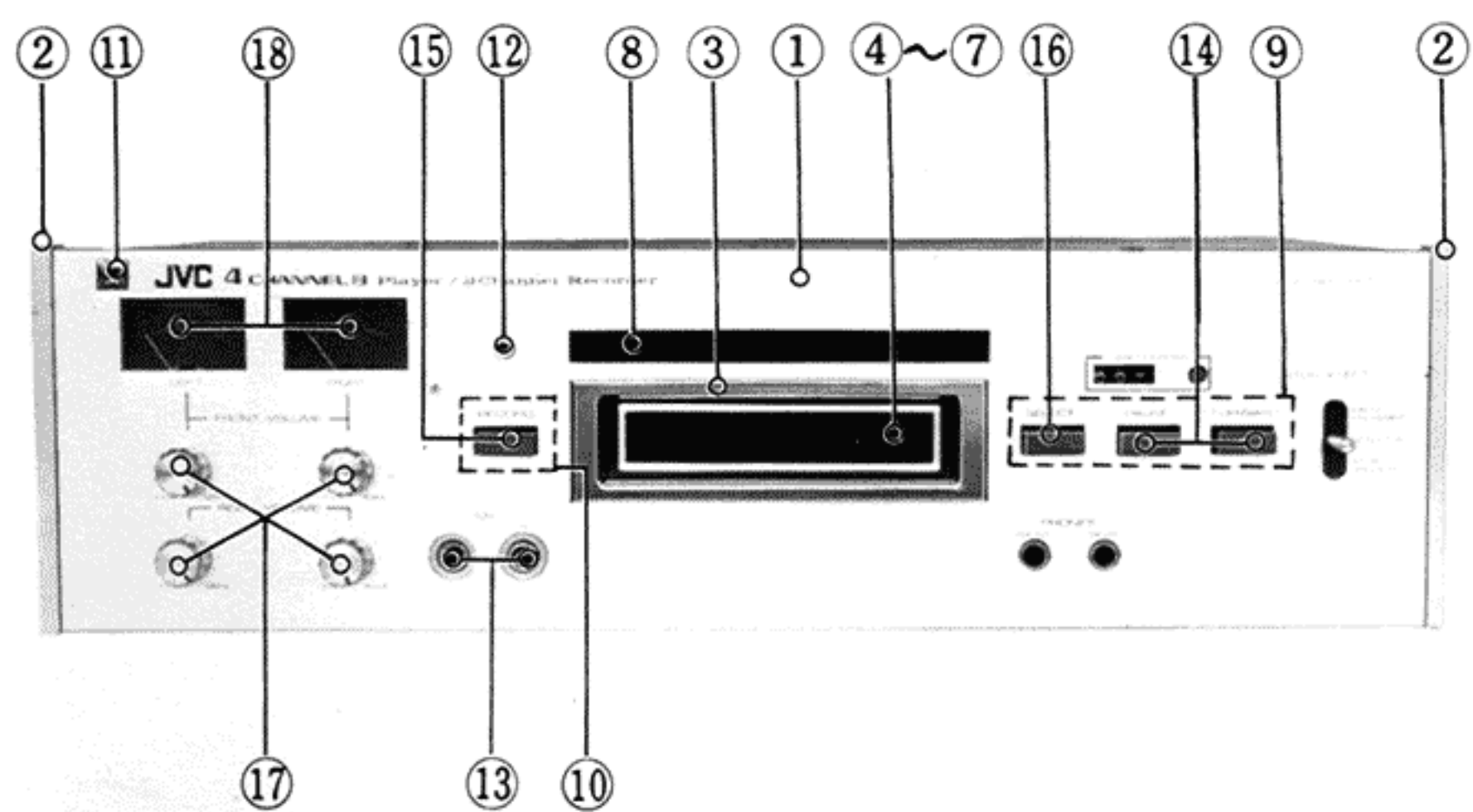


Fig. 22

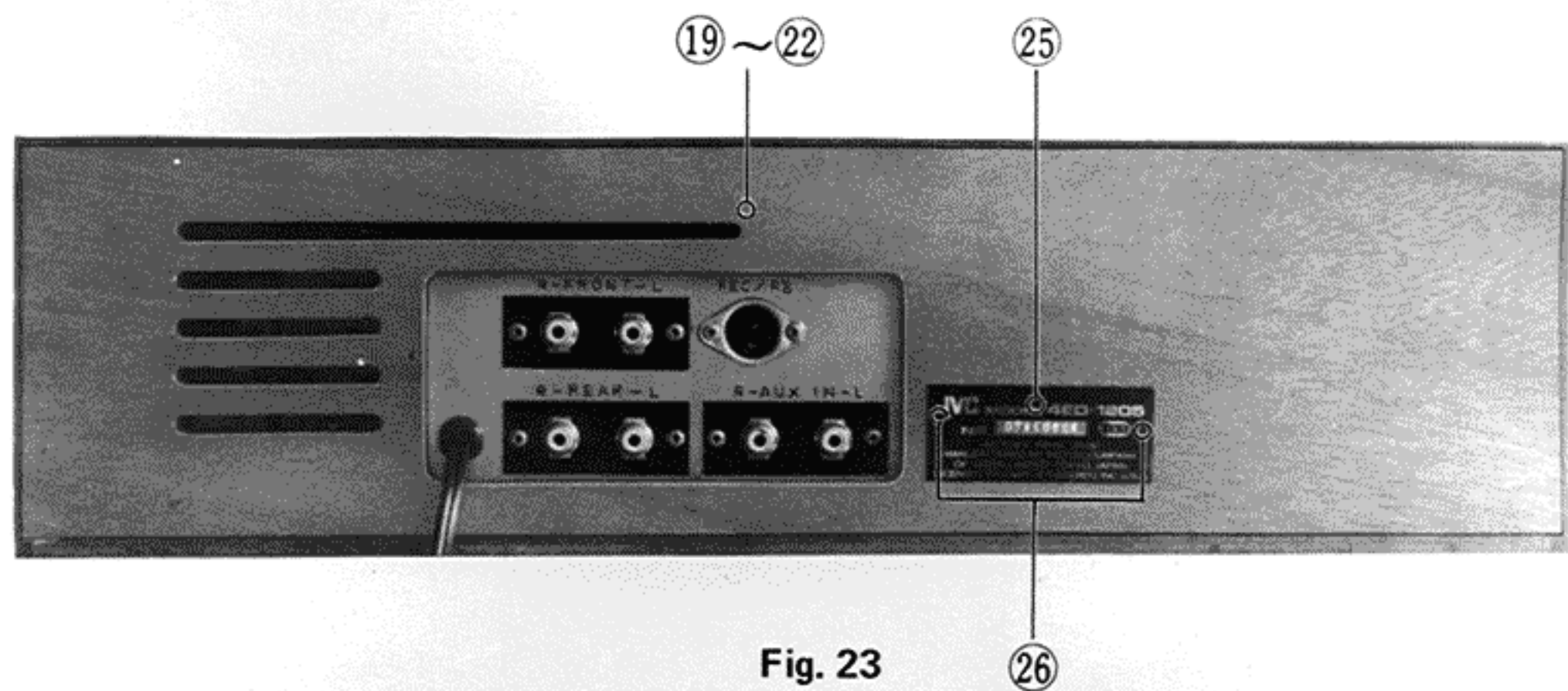


Fig. 23

| REF. NO. | PART NO.    | PART NAME           | REMARKS                         | Q'TY |
|----------|-------------|---------------------|---------------------------------|------|
| 1        | *T22762-001 | Front panel         |                                 | 1    |
| 2        | *T45927-002 | Side panel          |                                 | 2    |
| 3        | E32630-002  | Window escutcheon   |                                 | 1    |
| 4        | E32628-001  | Window plate        |                                 | 1    |
| 5        | *T46353-001 | Window spring       |                                 | 1    |
| 6        | F4643-001   | Wire                |                                 | 1    |
| 7        | EYB1605     | Eyelet              |                                 | 1    |
| 8        | *T31048-002 | Indicator           |                                 | 1    |
| 9        | *T45928-001 | Button guide        |                                 | 1    |
| 10       | *T45929-001 | Button guide        |                                 | 1    |
| 11       | E46116-001  | 4CH mark            |                                 | 1    |
| 12       | T42244-00A  | Lamp cover assembly |                                 | 1    |
| 13       | T44585-001  | Spacer              |                                 | 2    |
| 14       | *T45849-003 | Button              | Instant stop, F.F.<br>Recording | 2    |
| 15       | *T45849-002 | Button              |                                 | 1    |
| 16       | *T45930-002 | Select button       |                                 | 1    |
| 17       | E46025-002  | Knob                |                                 | 4    |
| 18       | *T31208-001 | Level meter         |                                 | 2    |
| 19       | *T22738-002 | Cabinet             |                                 | 1    |
| 20       | F4651-001   | Foot                |                                 | 4    |
| 21       | MRBP2713N   | Wooden screw        |                                 | 4    |
| 22       | WNS3000N    | Washer              |                                 | 4    |
| 23       | SPSP4014ZS  | Screw               |                                 | 4    |
| 24       | Q03091-114  | Washer              |                                 | 4    |
| 25       | T46140-001  | Name plate          |                                 | 1    |
| 26       | #18-7B      | Nail                |                                 | 2    |
| 27       | T44389-001  | Label               |                                 | 1    |

13. ELECTRICAL COMPONENTS OTHER THAN CIRCUIT BOARD

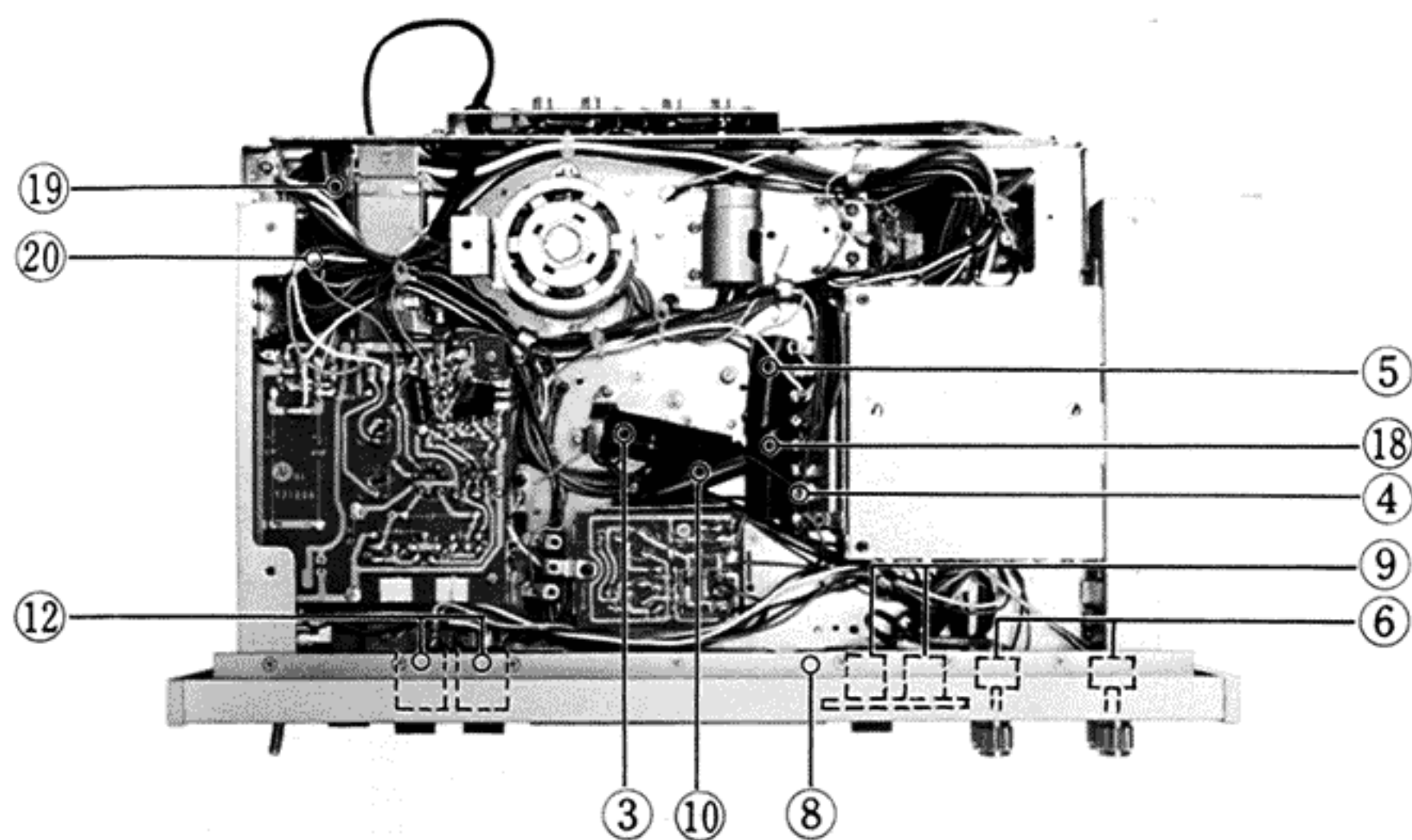


Fig. 24

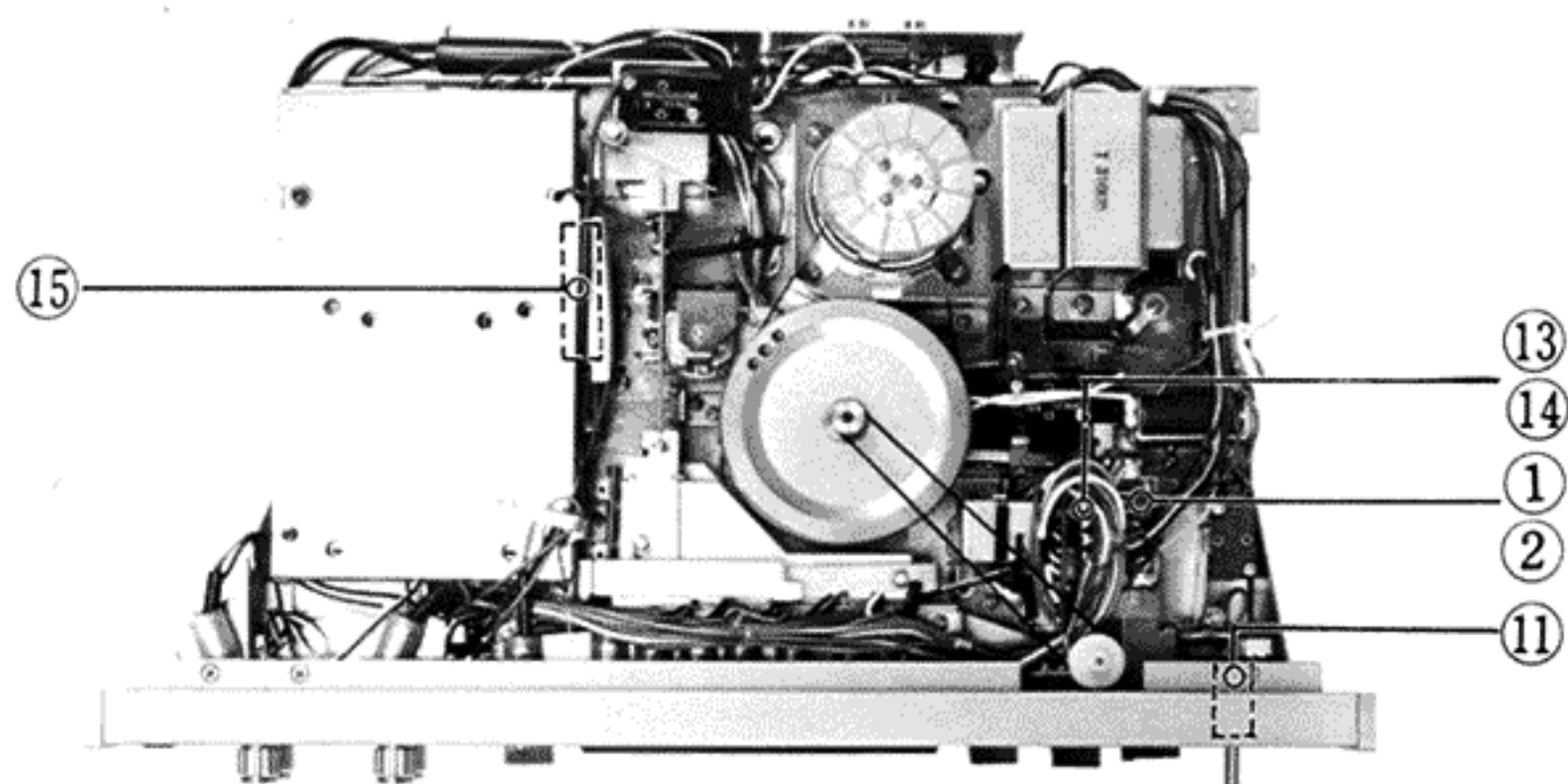


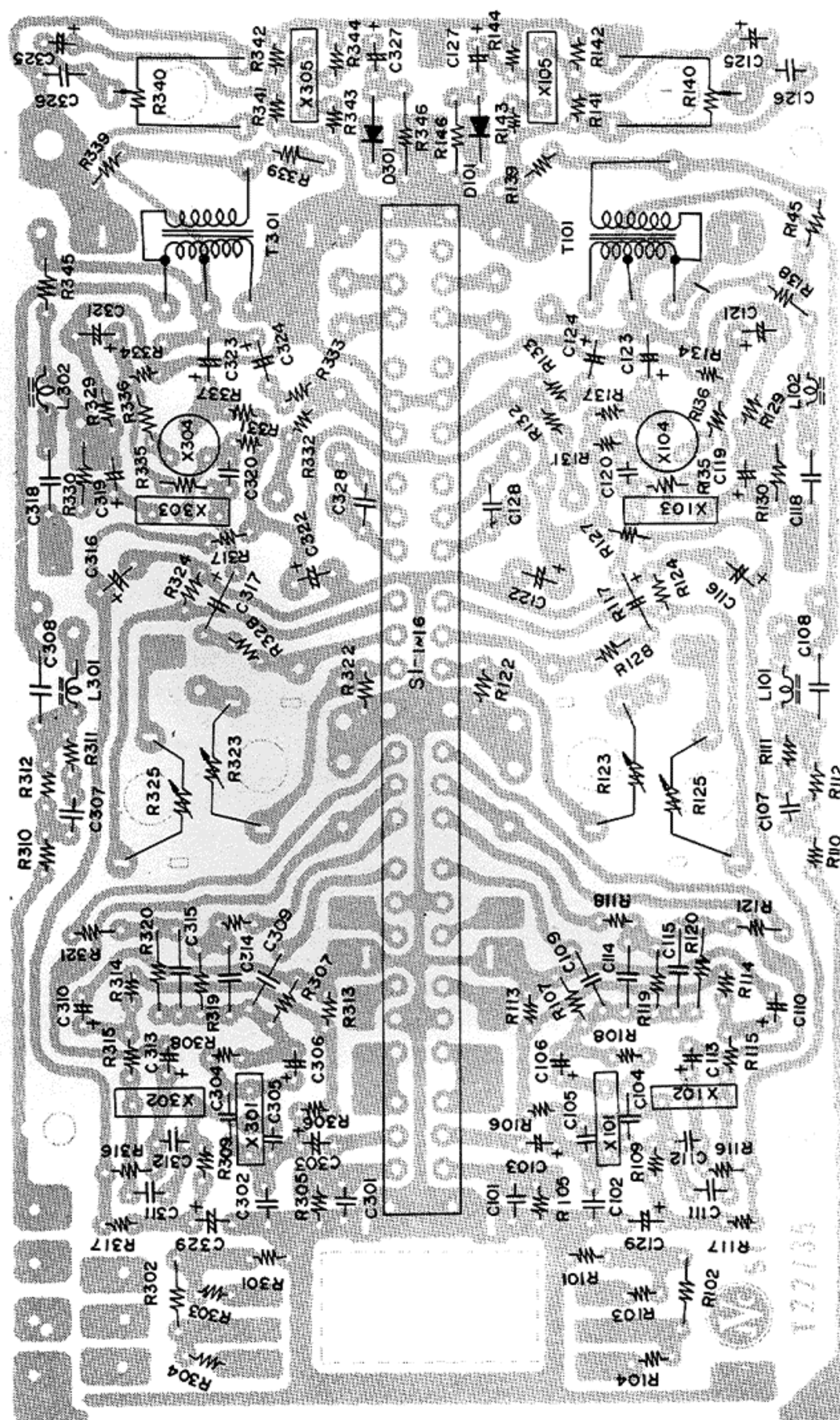
Fig. 25

| REF. NO. | PART NO.    | PART NAME          | REMARKS                               | Q'TY |
|----------|-------------|--------------------|---------------------------------------|------|
| 1        | *T45923-001 | Circuit board      | For fast forward                      | 1    |
| 2        | Q04800-4.7  | Carbon resistor    | R147, 347, 229, 429                   | 4    |
| 3        | QF20003-504 | MP capacitor       | C19                                   | 1    |
| 4        | Q03012-81   | Lug strip assembly |                                       | 2    |
| 5        | Q03212-473  | OFT capacitor      | C17                                   | 1    |
| 6        | Q04834-002  | Variable resistor  | R126, 326, 215, 415                   | 4    |
| 7        | *T45932-001 | Circuit board      | For microphone jack                   | 1    |
| 8        | Q44353-470  | Ceramic capacitor  | C130, 330                             | 2    |
| 9        | Q03961-001  | Jack assembly      | For microphone jack                   | 2    |
| 10       | Q04782-33T  | Wound resistor     | R20 2 watts                           | 1    |
| 11       | Q30186-001  | Lever switch       | For stop select switch S8             | 1    |
| 12       | Q03958-001  | Jack assembly      | For headphones                        | 2    |
| 13       | *T45921-001 | Circuit board      | For 2-4CH change-over switch          | 1    |
| 14       | T38001-001  | Slide switch       | For 2-4CH change-over switch S2 -1 ~5 | 1    |
| 15       | Q30482-001  | Slide switch       | For muting S3 -1 ~ 4                  | 1    |
| 16       | Q30110-00B  | Lamp socket        |                                       | 10   |
| 17       | Q04968-001  | Lamp               |                                       | 10   |
| 18       | Q03212-223  | OFT capacitor      | C18, 20, 21                           | 3    |
| 19       | Q03203-103  | OFT capacitor      | C15                                   | 1    |
| 20       | Q03212-223  | OFT capacitor      | C16                                   | 1    |



## 14. CIRCUIT BOARD PARTS

### A-1 FRONT AMPLIFIER CIRCUIT BOARD



**Fig. 26**

## A-2 FRONT AMPLIFIER CIRCUIT BOARD PARTS LIST

| REF. NO.            | PART NO.    | PART NAME       | REMARKS | Q'TY |
|---------------------|-------------|-----------------|---------|------|
|                     | *T22735-001 | Circuit board   |         | 1    |
| R139, 339, 145, 345 | Q04802-15   | Carbon resistor |         | 4    |
| R136, 336           | Q04802-33   | Carbon resistor |         | 2    |
| R115, 315           | Q04802-100  | Carbon resistor |         | 2    |
| R129, 329           | Q04802-120  | Carbon resistor |         | 2    |
| R134, 334           | Q04802-330  | Carbon resistor |         | 2    |
| R107, 307, 127, 327 | Q04802-470  | Carbon resistor |         | 4    |
| R101, 301, 130, 330 | Q04802-1K   | Carbon resistor |         | 4    |
| R113, 313           | Q04802-1.2K | Carbon resistor |         | 2    |
| R114, 314, 128, 328 | Q04802-2.2K | Carbon resistor |         | 4    |



A-2 FRONT AMPLIFIER CIRCUIT BOARD PARTS LIST (cont.)

| REF. NO.                                  | PART NO.    | PART NAME                    | REMARKS                       | Q'TY |
|-------------------------------------------|-------------|------------------------------|-------------------------------|------|
| R102, 302, 110, 310<br>132, 332, 133, 333 | Q04802-3.3K | Carbon resistor              |                               | 8    |
| R108, 308, 111, 311<br>122, 322           | Q04802-4.7K | Carbon resistor              |                               | 6    |
| R116, 316, 104, 304                       | Q04802-5.6K | Carbon resistor              |                               | 2    |
| R117, 317, 131, 331                       | Q04802-8.2K | Carbon resistor              |                               | 6    |
| R124, 324                                 | Q04802-10K  | Carbon resistor              |                               | 2    |
| R121, 321, 138, 338                       | Q04802-12K  | Carbon resistor              |                               | 4    |
| R118, 318, 135, 335                       | Q04802-33K  | Carbon resistor              |                               | 4    |
| R119, 319                                 | Q04802-47K  | Carbon resistor              |                               | 2    |
| R109, 309                                 | Q04802-56K  | Carbon resistor              |                               | 2    |
| R105, 305, 112, 312                       | Q04802-68K  | Carbon resistor              |                               | 4    |
| R103, 303                                 | Q04802-100K | Carbon resistor              |                               | 2    |
| R106, 306                                 | Q04802-220K | Carbon resistor              |                               | 2    |
| R120, 320                                 | Q04802-330K | Carbon resistor              |                               | 2    |
| R137, 337                                 | Q04804-1K   | Carbon resistor              |                               | 2    |
| R146, 346                                 | Q04800-2.2K | Carbon resistor              |                               | 2    |
| R143, 343                                 | 04090-68    | Composition resistor         |                               | 2    |
| R144, 344                                 | 04090-3.3K  | Composition resistor         |                               | 2    |
| R141, 341                                 | 04090-12K   | Composition resistor         |                               | 2    |
| R142, 342                                 | 04090-220K  | Composition resistor         |                               | 2    |
| R121, 321                                 | Q03104-200  | Electrolytic capacitor       | 6V/220 $\mu$ F                | 2    |
| C119, 319                                 | Q03106-50   | Electrolytic capacitor       | 10V/47 $\mu$ F                | 2    |
| C106, 306, 110, 310                       | Q03108-30   | Electrolytic capacitor       | 16V/33 $\mu$ F                | 4    |
| C125, 325, 127, 327                       | Q03110-1    | Electrolytic capacitor       | 25V/1 $\mu$ F                 | 4    |
| C103, 303                                 | Q03110-3    | Electrolytic capacitor       | 25V/3 $\mu$ F                 | 2    |
| C124, 324                                 | Q03110-4.7  | Electrolytic capacitor       | 25V/4.7 $\mu$ F               | 2    |
| C117, 313, 117, 317                       | Q03110-10   | Electrolytic capacitor       | 25V/10 $\mu$ F                | 4    |
| C129, 329                                 | Q03110-30   | Electrolytic capacitor       | 25V/33 $\mu$ F                | 2    |
| C123, 323                                 | Q03110-50   | Electrolytic capacitor       | 25V/47 $\mu$ F                | 2    |
| C116, 316, 122, 322                       | Q03110-200  | Electrolytic capacitor       | 25V/220 $\mu$ F               | 4    |
| C105, 305, 111, 311                       | Q04305-33   | Ceramic capacitor            |                               | 4    |
| C112, 312                                 | Q04305-47   | Ceramic capacitor            |                               | 2    |
| C104, 304                                 | Q04305-100  | Ceramic capacitor            |                               | 2    |
| C101, 301                                 | Q44353-270  | Ceramic capacitor            |                               | 2    |
| C103, 302                                 | Q44353-470  | Ceramic capacitor            |                               | 2    |
| C107, 307                                 | Q44353-680  | Ceramic capacitor            |                               | 2    |
| C128, 328                                 | Q46962-04   | Ceramic capacitor            |                               | 2    |
| C120, 320                                 | Q03286-151  | FM capacitor                 |                               | 2    |
| C108, 308                                 | Q03286-431  | FM capacitor                 |                               | 2    |
| C115, 315, 126, 326                       | Q03244-682  | Mylar capacitor              |                               | 4    |
| C109, 309                                 | Q03244-153  | Mylar capacitor              |                               | 2    |
| C118, 318                                 | Q03244-104  | Mylar capacitor              |                               | 2    |
| C114, 314                                 | Q03190-0.1  | Aluminum solid capacitor     |                               | 2    |
| L101, 301                                 | T40442-1    | Inductor                     |                               | 2    |
| L102, 302                                 | T40442-3    | Inductor                     |                               | 2    |
| R123, 323                                 | Q04848-7    | Semi-fixed variable resistor |                               | 2    |
| R125, 325, 140, 340                       | Q04847-5    | Semi-fixed variable resistor |                               | 4    |
| T101, 301                                 | *T46501-001 | Output transformer           |                               | 2    |
| S1 -1 ~ 16                                | T30490-001  | Slide switch                 |                               | 1    |
| X101, 301                                 | 2SC644RF    | Transistor                   | h <sub>FE</sub> R (low-noise) | 2    |
| X102, 302                                 | 2SC644R     | Transistor                   | h <sub>FE</sub> R (low-noise) | 2    |
| X103, 303, 105, 305                       | 2SC828R     | Transistor                   | h <sub>FE</sub> R (low-noise) | 4    |
| X104, 304                                 | 2SC538AQ    | Transistor                   | h <sub>FE</sub> Q (low-noise) | 2    |
| D101, 301                                 | M8489       | Diode                        |                               | 2    |



B-1 REAR AMPLIFIER CIRCUIT BOARD

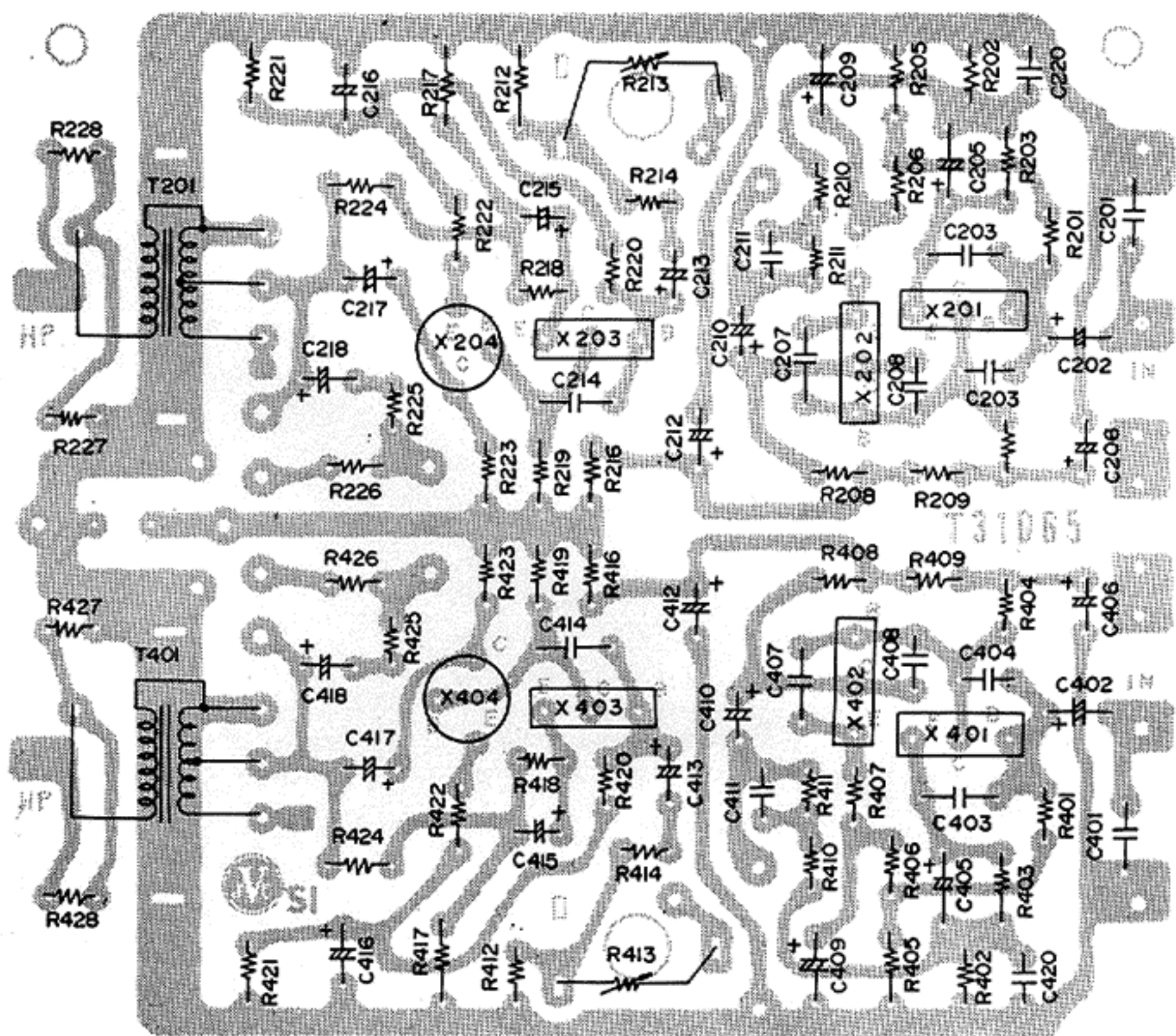


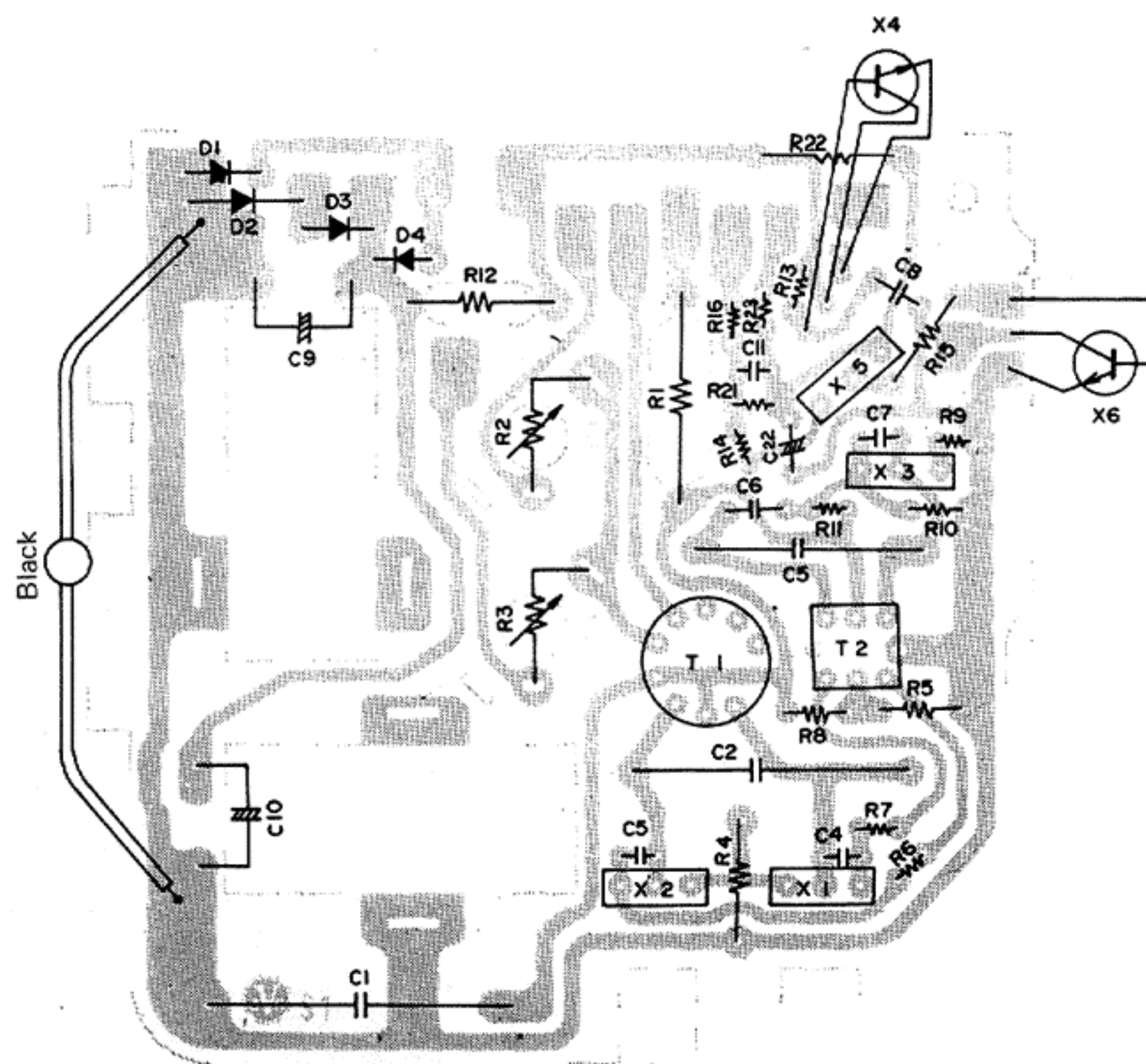
Fig. 27

B-2 REAR AMPLIFIER CIRCUIT BOARD PARTS LIST

| REF. NO.                                                                          | PART NO.    | PART NAME                    | REMARKS                       | Q'TY |
|-----------------------------------------------------------------------------------|-------------|------------------------------|-------------------------------|------|
| R227, 427, 227, 428<br>R222, 422,<br>R207, 407<br>R217, 417                       | *T31065-001 | Circuit board                |                               | 1    |
|                                                                                   | Q04802-15   | Carbon resistor              |                               | 4    |
|                                                                                   | Q04802-33   | Carbon resistor              |                               | 2    |
|                                                                                   | Q04802-100  | Carbon resistor              |                               | 2    |
|                                                                                   | Q04802-120  | Carbon resistor              |                               | 2    |
| R221, 421<br>R202, 402, 216, 416<br>R218, 418<br>R205, 405<br>R206, 406, 214, 414 | Q04802-330  | Carbon resistor              |                               | 2    |
|                                                                                   | Q04802-470  | Carbon resistor              |                               | 4    |
|                                                                                   | Q04802-1K   | Carbon resistor              |                               | 2    |
|                                                                                   | Q04802-1.2K | Carbon resistor              |                               | 2    |
|                                                                                   | Q04802-2.2K | Carbon resistor              |                               | 4    |
| R225, 425, 226, 426<br>R203, 403<br>R208, 408<br>R209, 409, 219, 419<br>R212, 412 | Q04802-3.3K | Carbon resistor              |                               | 4    |
|                                                                                   | Q04802-4.7K | Carbon resistor              |                               | 2    |
|                                                                                   | Q04802-5.6K | Carbon resistor              |                               | 2    |
|                                                                                   | Q04802-8.2K | Carbon resistor              |                               | 4    |
|                                                                                   | Q04802-10K  | Carbon resistor              |                               | 2    |
| R210, 410, 224, 424<br>R220, 420<br>R201, 401<br>R204, 404<br>R211, 411           | Q04802-12K  | Carbon resistor              |                               | 4    |
|                                                                                   | Q04802-33K  | Carbon resistor              |                               | 2    |
|                                                                                   | Q04802-47K  | Carbon resistor              |                               | 2    |
|                                                                                   | Q04802-56K  | Carbon resistor              |                               | 2    |
|                                                                                   | Q04802-330K | Carbon resistor              |                               | 2    |
| R224, 423<br>R216, 416<br>C215, 415<br>C205, 405, 209, 409<br>C202, 402           | Q04804-1K   | Carbon resistor              |                               | 2    |
|                                                                                   | Q03104-200  | Electrolytic capacitor       |                               | 2    |
|                                                                                   | Q03106-50   | Electrolytic capacitor       |                               | 2    |
|                                                                                   | Q03108-30   | Electrolytic capacitor       |                               | 2    |
|                                                                                   | Q03110-3    | Electrolytic capacitor       |                               | 2    |
| C218, 418<br>C210, 410, 213, 413<br>C206, 406<br>C217, 417<br>C212, 412, 219, 419 | Q03110-4.7  | Electrolytic capacitor       |                               | 2    |
|                                                                                   | Q03110-10   | Electrolytic capacitor       |                               | 4    |
|                                                                                   | Q03110-30   | Electrolytic capacitor       |                               | 2    |
|                                                                                   | Q03110-50   | Electrolytic capacitor       |                               | 2    |
|                                                                                   | Q03110-200  | Electrolytic capacitor       |                               | 4    |
| C204, 404, 207, 407<br>C208, 408<br>C203, 403<br>C201, 401<br>C214, 414           | Q04305-33   | Ceramic capacitor            |                               | 4    |
|                                                                                   | Q04305-47   | Ceramic capacitor            |                               | 2    |
|                                                                                   | Q04305-100  | Ceramic capacitor            |                               | 2    |
|                                                                                   | Q44353-680  | Ceramic capacitor            |                               | 2    |
|                                                                                   | Q03286-151  | FM capacitor                 |                               | 2    |
| C211, 411<br>C220, 420<br>R213, 413<br>T201, 401<br>X201, 401                     | Q03244-682  | Mylar capacitor              |                               | 2    |
|                                                                                   | Q03244-153  | Mylar capacitor              |                               | 2    |
|                                                                                   | Q04847-5    | Semi-fixed variable resistor |                               | 2    |
|                                                                                   | *T46501-001 | Output transformer           |                               | 2    |
|                                                                                   | 2SC644RF    | Transistor                   | h <sub>FE</sub> R (low-noise) | 2    |
| X202, 402<br>X203, 403<br>X204, 404                                               | 2SC644R     | Transistor                   | h <sub>FE</sub> R (low-noise) | 2    |
|                                                                                   | 2SC828R     | Transistor                   | h <sub>FE</sub> R (low-noise) | 2    |
|                                                                                   | 2SC538AQ    | Transistor                   | h <sub>FE</sub> Q (low-noise) | 2    |

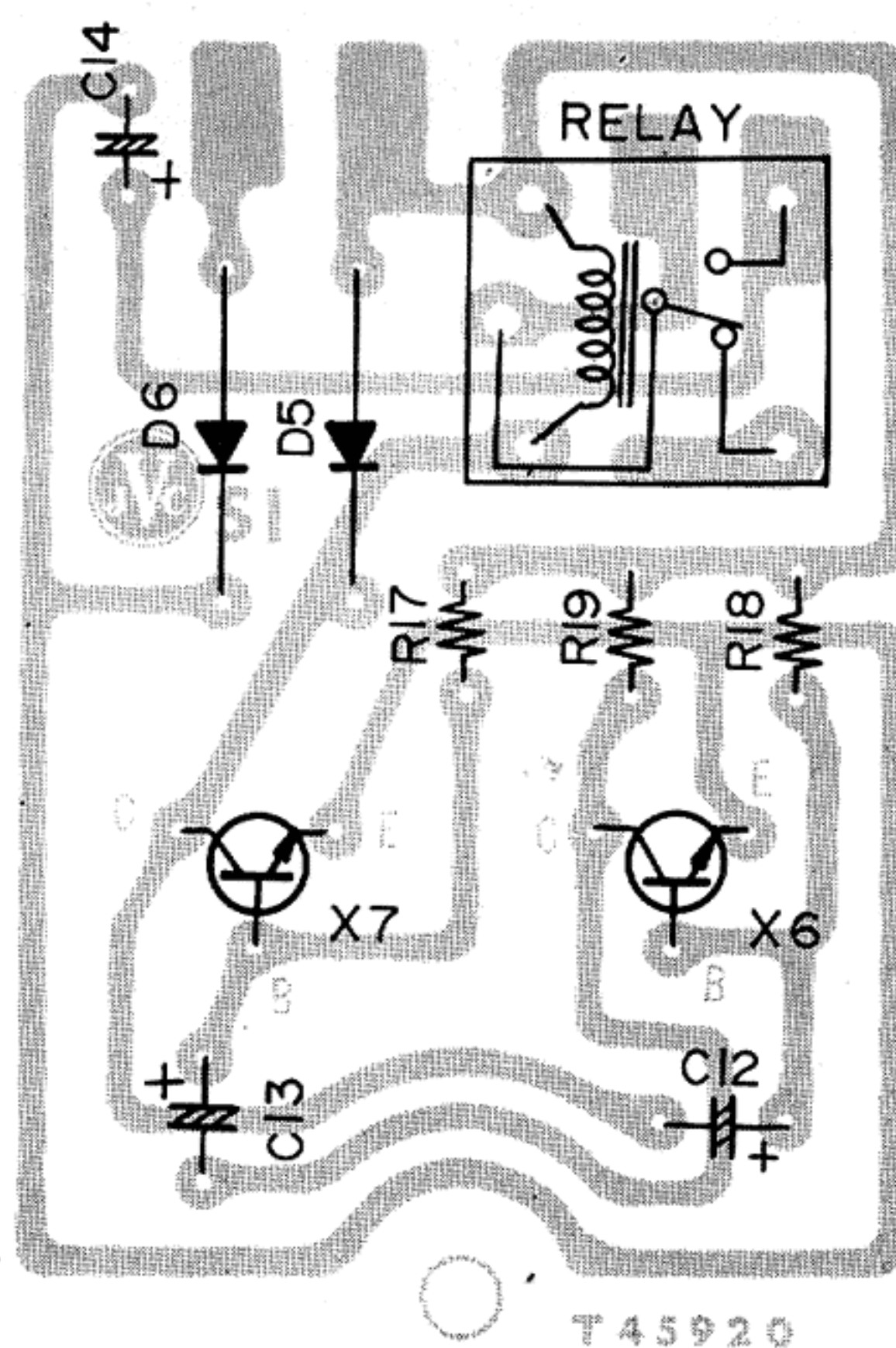


### C-1 OSCILLATOR, POWER CIRCUIT BOARD DIAGRAM



**Fig. 28**

### D-1 FLIP-FLOP CIRCUIT BOARD DIAGRAM



**Fig. 29**

C-2 OSCILLATOR, POWER CIRCUIT BOARD PARTS LIST

| REF. NO.                | PART NO.    | PART NAME                    | REMARKS               | Q'TY |
|-------------------------|-------------|------------------------------|-----------------------|------|
| R <sub>5</sub>          | *T31239-001 | Circuit board                |                       | 1    |
| R <sub>9</sub>          | Q04802-47   | Carbon resistor              |                       | 1    |
| R <sub>6, 7</sub>       | Q04802-68   | Carbon resistor              |                       | 1    |
| R <sub>10</sub>         | Q04802-220  | Carbon resistor              |                       | 2    |
|                         | Q04802-1.5K | Carbon resistor              |                       | 1    |
| R <sub>15</sub>         | Q04802-2.2K | Carbon resistor              |                       | 1    |
| R <sub>8</sub>          | Q04802-4.7K | Carbon resistor              |                       | 1    |
| R <sub>13</sub>         | Q04802-1K   | Carbon resistor              |                       | 1    |
| R <sub>11</sub>         | Q04802-33K  | Carbon resistor              |                       | 1    |
| R <sub>14</sub>         | Q04802-47K  | Carbon resistor              |                       | 1    |
| R <sub>21</sub>         | Q04802-10K  | Carbon resistor              |                       | 1    |
| R <sub>4</sub>          | Q04804-15   | Carbon resistor              |                       | 1    |
| R <sub>16</sub>         | Q04804-1K   | Carbon resistor              |                       | 1    |
| R <sub>1</sub>          | Q04772-82   | Wound resistor               |                       | 1    |
| R <sub>12</sub>         | Q04804-4.7  | Carbon resistor              |                       | 1    |
| R <sub>22</sub>         | Q04802-56K  | Carbon resistor              |                       | 1    |
| R <sub>23</sub>         | Q04802-2.2K | Carbon resistor              |                       | 1    |
| C <sub>3, 4</sub>       | Q03258-152  | Mylar capacitor              |                       | 2    |
| C <sub>6</sub>          | Q03258-682  | Mylar capacitor              |                       | 1    |
| C <sub>7</sub>          | Q44353-220  | Ceramic capacitor            |                       | 1    |
| C <sub>11</sub>         | Q03110-1    | Electrolytic capacitor       |                       | 1    |
| C <sub>8</sub>          | Q03110-200  | Electrolytic capacitor       |                       | 1    |
| C <sub>22</sub>         | Q03110-10   | Electrolytic capacitor       |                       | 1    |
| C <sub>1</sub>          | Q03109-220  | Electrolytic capacitor       |                       | 1    |
| C <sub>5</sub>          | Q03205-153  | OFT capacitor                |                       | 1    |
| C <sub>2</sub>          | Q03205-333  | OFT capacitor                |                       | 1    |
| C <sub>9, 10</sub>      | Q03138-1000 | Electrolytic capacitor       |                       | 2    |
| R <sub>2, 3</sub>       | Q04875-002  | Semi-fixed variable resistor |                       | 2    |
| T <sub>1</sub>          | F3227-003   | Oscillator coil              |                       | 1    |
| T <sub>2</sub>          | T44137-001  | Oscillator coil              |                       | 1    |
| D <sub>1, 2, 3, 4</sub> | T30155-001  | Diode                        |                       | 4    |
| X <sub>5</sub>          | 2SA564R     | Transistor                   | h <sub>FE</sub> R     | 1    |
| X <sub>1, 2</sub>       | 2SC875DE    | Transistor                   | h <sub>FE</sub> DorE  | 2    |
| X <sub>3</sub>          | 2SC828R     | Transistor                   | h <sub>FE</sub> R     | 1    |
| X <sub>6</sub>          | 2SD317P     | Transistor                   | h <sub>FE</sub> P     | 1    |
| X <sub>4</sub>          | 2SC931E     | Transistor                   | h <sub>FE</sub> E     | 1    |
|                         | 203D820     | Heat sink                    | For X <sub>1, 2</sub> | 2    |
|                         | *T45948-001 | Bracket                      |                       | 1    |

D-2 FLIP-FLOP CIRCUIT BOARD PARTS LIST

| REF. NO.            | PART NO.    | PART NAME              | REMARKS                | Q'TY |
|---------------------|-------------|------------------------|------------------------|------|
| D <sub>5, 6</sub>   | *T45920-001 | Circuit board          |                        | 1    |
|                     | T30155-001  | Silicon diode          |                        | 2    |
|                     | T30646-001  | Relay                  |                        | 2    |
| C <sub>12, 13</sub> | Q03108-100  | Electrolytic capacitor |                        | 1    |
| C <sub>14</sub>     | Q03110-100  | Electrolytic capacitor |                        | 1    |
| R <sub>19</sub>     | Q04802-1.5K | Carbon resistor        |                        | 1    |
| R <sub>17, 18</sub> | Q04802-3.9K | Carbon resistor        |                        | 2    |
| X <sub>6, 7</sub>   | 2SB324      | Transistor             | h <sub>FE</sub> G or H | 2    |



15. MECHANISM PARTS

A-1 EXPLOSION DIAGRAM OF MECHANISM PARTS (1)

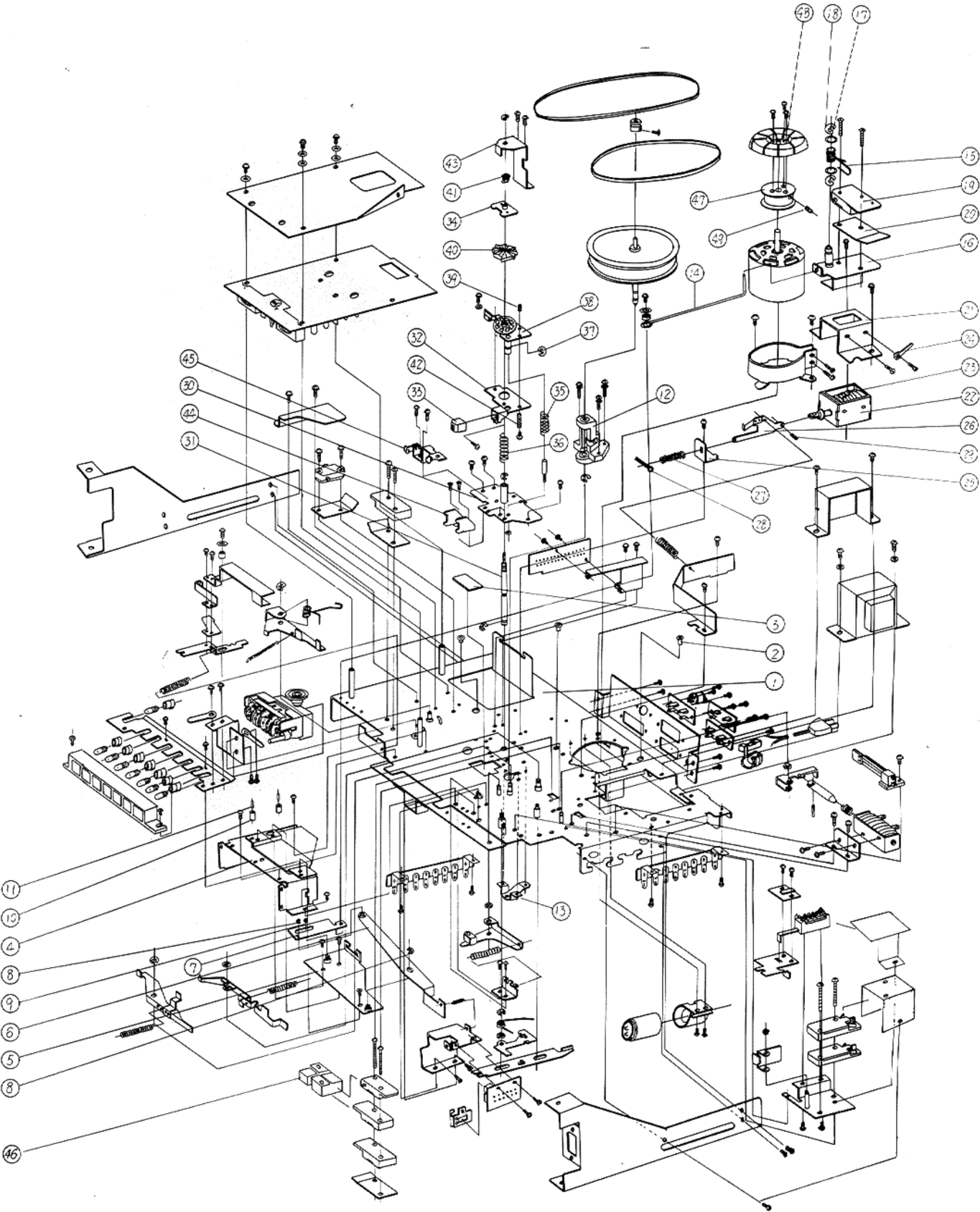


Fig. 30

## A-2 MECHANISM PARTS LIST (1)

| REF. NO. | PART NO.     | PART NAME                     | REMARKS                                     | Q'TY |
|----------|--------------|-------------------------------|---------------------------------------------|------|
| 1        | *T22741-00A  | Chassis base assembly         |                                             | 1    |
| 2        | 52190        | Eyelet                        |                                             | 3    |
| 3        | F4788-001    | Plate                         |                                             | 1    |
| 4        | *T31074-00A  | Guide bracket assembly        |                                             | 1    |
| 5        | *T45943-00A  | Bracket assembly              |                                             | 1    |
| 6        | *T45944-00A  | Arm assembly                  |                                             | 1    |
| 7        | *T45758-001  | Slide arm                     |                                             | 1    |
| 8        | REE3000      | "E" washer                    |                                             | 9    |
| 9        | REE2000      | "E" washer                    |                                             | 1    |
| 10       | F4609-001    | Roller                        |                                             | 1    |
| 11       | PSE2018      | Spring pin                    |                                             | 2    |
| 12       | T43786-00A   | Bearing stand assembly        |                                             | 1    |
| 13       | F4629-00BS   | Bearing bracket assembly      |                                             | 1    |
| 14       | *T46076-001  | Rod                           |                                             | 1    |
| 15       | *T46073-001  | Wire                          |                                             | 1    |
| 16       | *T46104-00A  | SW bracket assembly           |                                             | 1    |
| 17       | Q03093-504   | Nylon washer                  |                                             | 1    |
| 18       | REE4000      | "E" washer                    |                                             | 2    |
| 19       | T30422-003   | Microswitch                   |                                             | 2    |
| 20       | T42819-001   | Insulator                     |                                             | 2    |
| 21       | T43714-001   | Bracket                       | For head shifting                           | 1    |
| 22       | T30543-002   | Solenoid                      |                                             | 1    |
| 23       | T30155-001   | Silicon diode                 |                                             | 1    |
| 24       | S4709-002    | Wire clamp                    |                                             | 1    |
| 25       | T43311-001   | Guide                         |                                             | 1    |
| 26       | T43349-00A   | Lever assembly                |                                             | 1    |
| 27       | F6032-001    | Spring                        |                                             | 1    |
| 28       | F6033-001    | Wire                          |                                             | 1    |
| 29       | PSE-1608     | Spring pin                    |                                             | 1    |
| 30       | T43351-00B   | Head base assembly            |                                             | 1    |
| 31       | T43315-001   | Shaft (1)                     | For head height adjustment                  | 1    |
| 32       | T43350-00B   | Head arm assembly             |                                             | 1    |
| 33       | *T400151-00A | Playback/erase head           |                                             | 1    |
| 34       | T43352-00A   | Point bracket assembly        |                                             | 1    |
| 35       | T30301-041   | Spring                        | For head shifting                           | 1    |
| 36       | T30301-042   | Spring                        | For head shifting                           | 1    |
| 37       | REE6000      | "E" washer                    |                                             | 1    |
| 38       | T43354-00A   | Disc contact bracket assembly |                                             | 1    |
| 39       | TFS3008ZS    | Set screw                     |                                             | 1    |
| 40       | F6019-00A    | Ratchet cam assembly          |                                             | 1    |
| 41       | T30301-050   | Spring                        | For point bracket<br>For azimuth adjustment | 1    |
| 42       | T30301-045   | Spring                        |                                             | 1    |
| 43       | T43309-001   | Bracket                       |                                             | 1    |
| 44       | T31274-001   | Tape guide                    |                                             | 1    |
| 45       | T43369-00A   | Pressure roller assembly      | For sensor installation                     | 1    |
| 46       | T46818-001   | Insulator                     | For 60 Hz                                   | 1    |
| 47       | T44991-001   | Insulator                     |                                             | 1    |
| 48       | T45376-001   | Fan                           |                                             | 1    |
| 49       | YRS3008ZS    | Set screw                     |                                             | 1    |



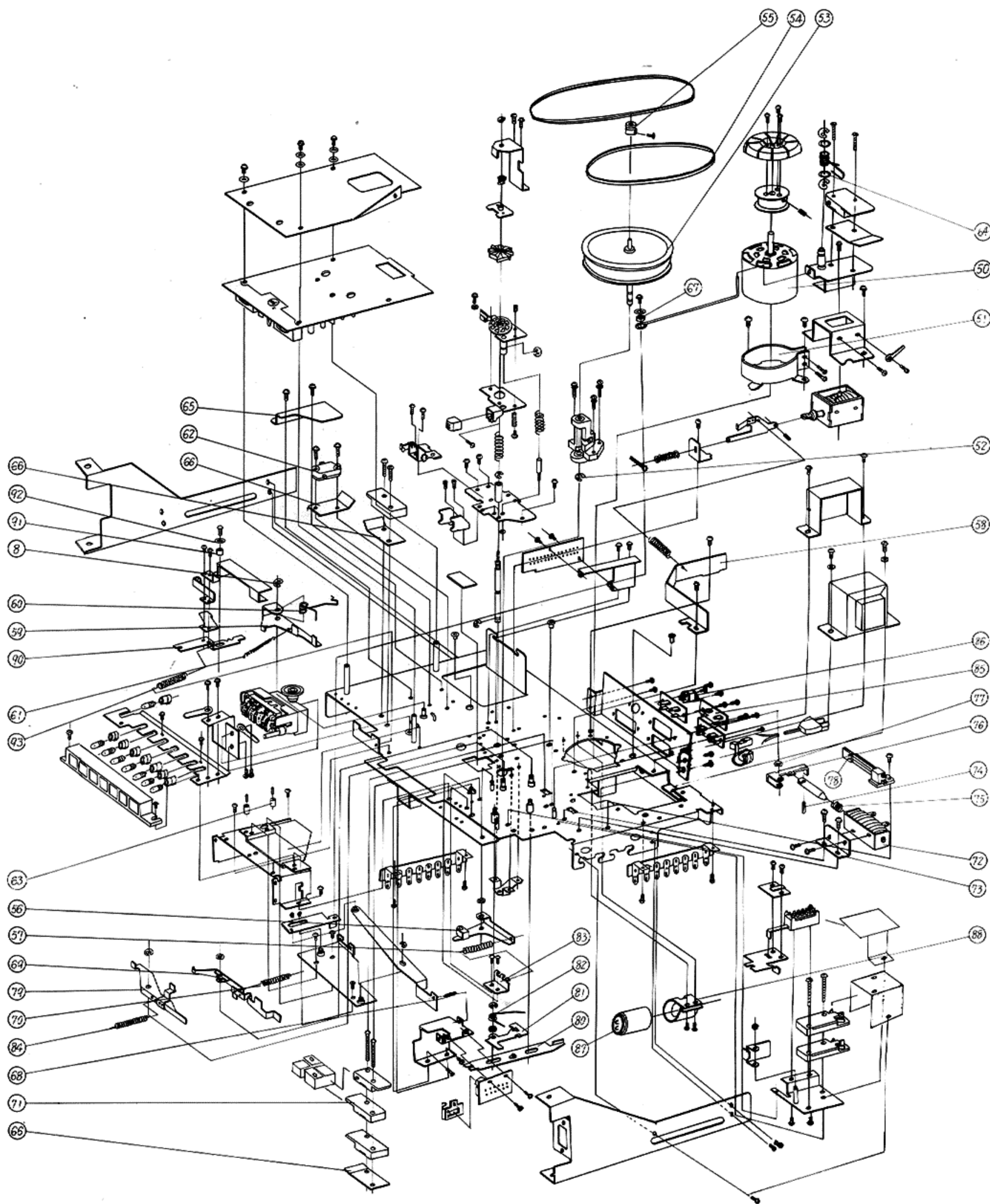


Fig. 31

## B-2 MECHANISM PARTS LIST (2)

| REF. NO. | PART NO.    | PART NAME               | REMARKS                  | Q'TY |
|----------|-------------|-------------------------|--------------------------|------|
| 50       | m-872-00B   | Motor assembly          |                          | 1    |
| 51       | T46558-001  | Motor band              |                          | 1    |
| 52       | REE5000     | "E" washer              |                          | 1    |
| 53       | *T45939-00A | Flywheel assembly       |                          | 1    |
| 54       | T45938-001  | Belt                    |                          | 1    |
| 55       | *T45938-001 | Counter pulley          | For pressure lever       | 1    |
| 56       | T45005-00A  | Pressure lever assembly |                          | 1    |
| 57       | T30300-032  | Spring                  |                          | 1    |
| 58       | T44118-002  | Sealed bracket          |                          | 1    |
| 59       | T46509-00A  | Lock lever assembly     |                          | 1    |
| 60       | T43326-003  | Rod                     |                          | 1    |
| 61       | T30300-039  | Spring                  |                          | 1    |
| 62       | T3428-007   | Microswitch             |                          | 1    |
| 63       | T46465-001  | Roller                  |                          | 1    |
| 64       | Q03093-505  | Nylon washer            |                          | 1    |
| 65       | T43339-001  | Sealed bracket          | For auto stop lever      | 1    |
| 66       | T42819-001  | Insulator               |                          | 1    |
| 67       | T30302-039  | Collar                  |                          | 1    |
| 68       | *T30300-087 | Spring                  |                          | 1    |
| 69       | T45001-00A  | Arm assembly            |                          | 1    |
| 70       | T30300-007  | Spring                  |                          | 1    |
| 71       | T30422-003  | Microswitch             |                          | 5    |
| 72       | T30837-001  | Solenoid                |                          | 1    |
| 73       | T44986-001  | Bracket                 |                          | 1    |
| 74       | PSE2010     | Spring pin              |                          | 1    |
| 75       | T30301-056  | Spring                  |                          | 1    |
| 76       | T44977-001  | Lock arm                |                          | 1    |
| 77       | REE3000     | "E" washer              |                          | 7    |
| 78       | T30838-00A  | Switch assembly         |                          | 1    |
| 79       | *T45946-00A | Lever assembly          |                          | 1    |
| 80       | T44981-00A  | Slide plate assembly    |                          | 1    |
| 81       | T44984-001  | Lock plate              |                          | 1    |
| 82       | T44985-001  | Spring                  |                          | 1    |
| 83       | T44982-001  | Spring holder           |                          | 1    |
| 84       | T30300-037  | Spring                  |                          | 1    |
| 85       | F4653-001   | 2P pin jack             | For phase advancer motor | 3    |
| 86       | Q03967-001  | DIN jack                |                          | 1    |
| 87       | F4896-005   | M.P. capacitor          |                          | 1    |
| 88       | T46351-001  | Band                    | For phase advancer motor | 1    |
| 89       | QF20003-504 | M.P. capacitor          |                          | 1    |
| 90       | T43341-002  | Recording lever         |                          | 1    |
| 91       | T30302-004  | Collar                  |                          | 1    |
| 92       | Q03091-105  | Washer                  |                          | 1    |
| 93       | T30300-007  | Spring                  |                          | 1    |



C-1 EXPLOSION DIAGRAM OF MECHANISM PARTS (3)

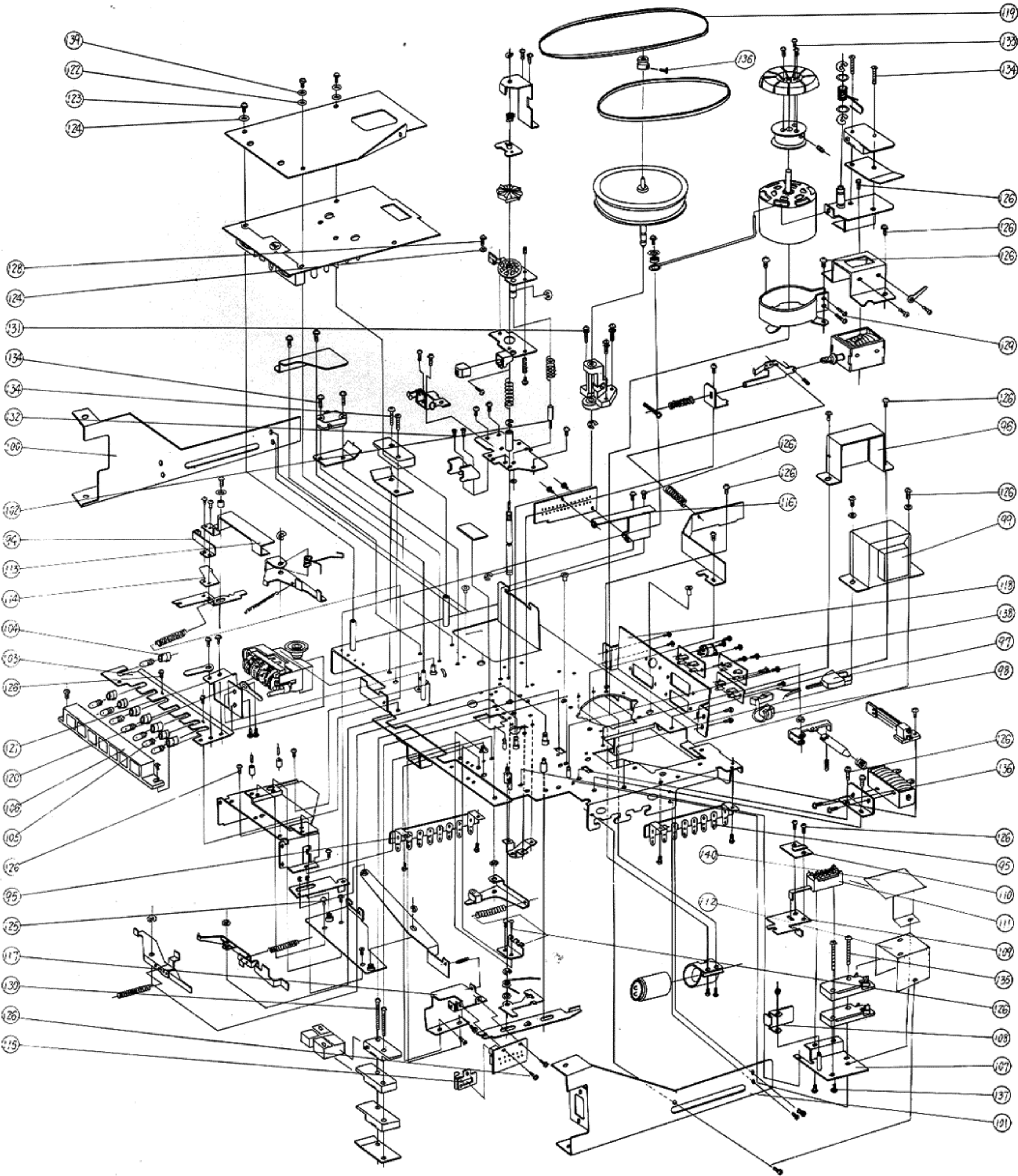


Fig. 32

C-2 MECHANISM PARTS LIST (3)

| REF. NO. | PART NO.    | PART NAME               | REMARKS                                      | Q'TY |
|----------|-------------|-------------------------|----------------------------------------------|------|
| 94       | T43325-001  | Recording spring        | For recording                                | 1    |
| 95       | Q03001-33   | Lug strip assembly      |                                              | 2    |
| 96       | T43345-002  | Sealed cover            |                                              | 1    |
| 97       | F3147-004   | Power cord              |                                              | 1    |
| 98       | T41336-001  | Cord stopper            |                                              | 1    |
| 99       | *T31142-001 | Power transformer       |                                              | 1    |
| 100      | *T31075-001 | Side bracket            |                                              | 1    |
| 101      | *T31076-001 | Side bracket            |                                              | 1    |
| 102      | T43316-001  | Shaft (2)               |                                              | 1    |
| 103      | T31072-001  | Lamp bracket            |                                              | 1    |
| 104      | Q30110-00B  | Lamp socket             |                                              | 10   |
| 105      | Q04968-001  | Lamp                    |                                              | 8    |
| 106      | *T45850-001 | Lamp shadow             |                                              | 1    |
| 107      | *T46123-00A | Switch bracket assembly |                                              | 1    |
| 108      | *T46125-001 | Actuator                |                                              | 1    |
| 109      | *T46126-001 | Push lever              |                                              | 1    |
| 110      | T43932-001  | Bracket                 |                                              | 1    |
| 111      | *QSP008-002 | Push switch assembly    |                                              | 1    |
| 112      | T46670-001  | Insulator               |                                              | 1    |
| 113      | *T46075-001 | Recording arm           |                                              | 1    |
| 114      | *T45997-001 | Actuator                | For muting<br>For 2ch-4ch change-over switch | 1    |
| 115      | *T46685-00A | Switch holder assembly  |                                              | 1    |
| 116      | *T45757-001 | Switch bracket          |                                              | 1    |
| 117      | *T45753-001 | Switch bracket          |                                              | 1    |
| 118      | *T45913-001 | Jack board bracket      |                                              | 1    |
| 119      | *T46105-001 | Counter belt            | For counter                                  | 1    |
| 120      | *T31080-00A | Counter                 |                                              | 1    |
| 121      | *T45950-001 | Bracket                 |                                              | 1    |
| 122      | WAS3000     | Toothed lock washer     |                                              | 1    |
| 123      | LPSP3006VS  | Screw                   |                                              | 8    |
| 124      | WNS3000N    | Washer                  |                                              | 5    |
| 125      | LPSP3005ZS  | Screw                   |                                              | 6    |
| 126      | LPSP3006ZS  | Screw                   |                                              | 52   |
| 127      | LPSP3008ZS  | Screw                   |                                              | 2    |
| 128      | LPSP3006ZS  | Screw                   |                                              | 1    |
| 129      | SPSP3014ZS  | Screw                   |                                              | 1    |
| 130      | SPSP3035ZS  | Screw                   |                                              | 2    |
| 131      | LPSP3012ZS  | Screw                   |                                              | 3    |
| 132      | SSSP3006ZS  | Screw                   |                                              | 2    |
| 133      | SPSP2006Z   | Screw                   |                                              | 3    |
| 134      | LPSP3014ZS  | Screw                   |                                              | 6    |
| 135      | LPSP3024ZS  | Screw                   |                                              | 2    |
| 136      | LPSP2605Z   | Screw                   |                                              | 4    |
| 137      | SPSP2603Z   | Screw                   |                                              | 2    |
| 138      | SBSB3006Z   | Tapping screw           |                                              | 8    |
| 139      | Q03091-201  | Washer                  |                                              | 2    |
| 140      | T46819-001  | Insulator               |                                              | 1    |



16. PACKING MATERIALS

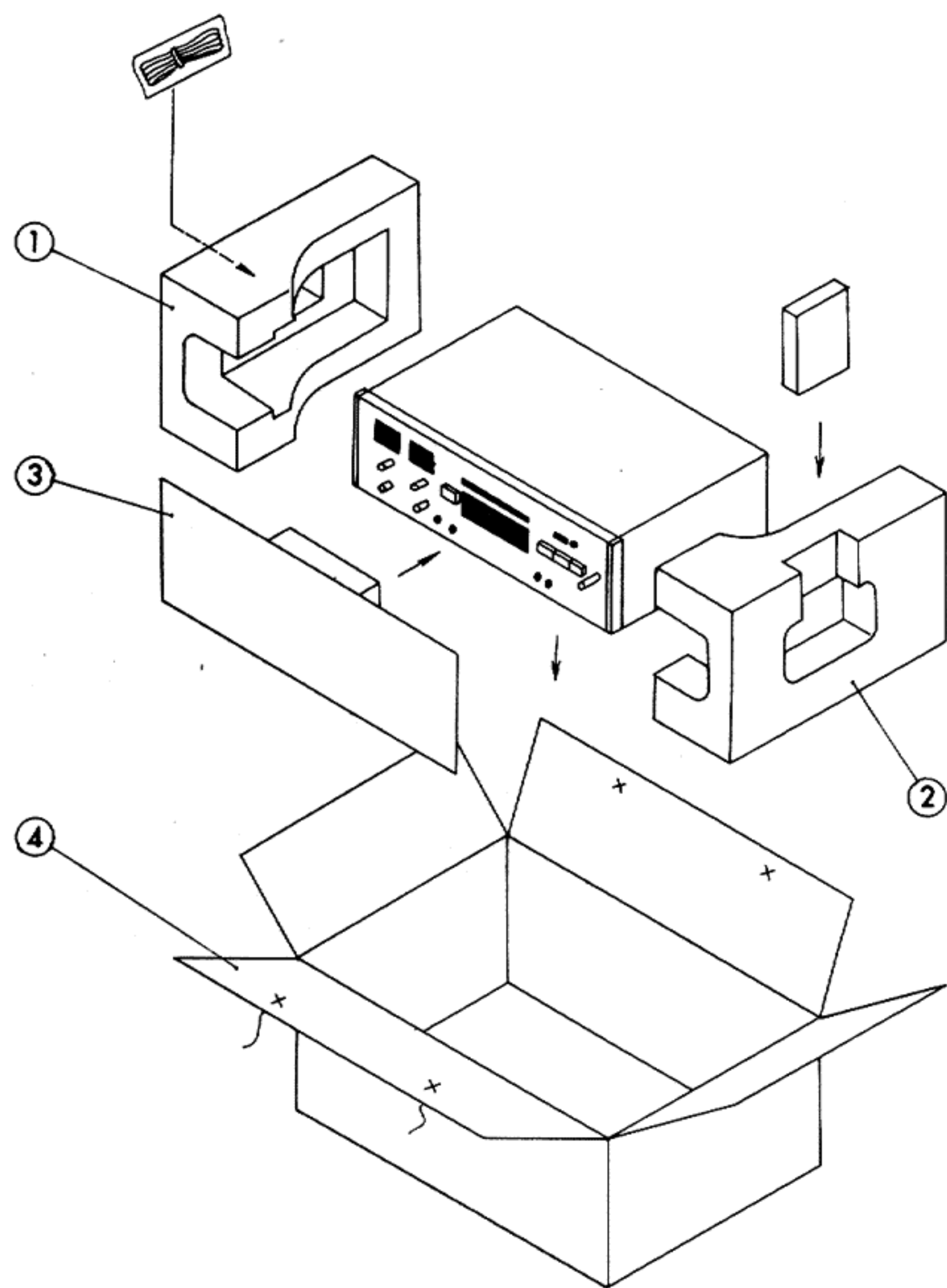


Fig. 33

| REF. NO. | PART NO.    | PART NAME        | REMARKS          | Q'TY |
|----------|-------------|------------------|------------------|------|
| 1        | T11405-001  | Cushion (Left)   |                  | 1    |
| 2        | T11437-001  | Cushion (Right)  |                  | 1    |
| 3        | T30969-009  | Front cushion    |                  | 1    |
| 4        | T30969-010  | Case             |                  | 1    |
| 1 ~ 4    | T30969-00E  | Packing assembly | Set              | 1    |
|          | T6800-00L   | Envelope         | For main body    | 1    |
|          | AP4056A-025 | Envelope         | For power cord   | 1    |
|          | AP4056A-066 | Envelope         | For manual, etc. | 1    |

## 17. ATTACHMENTS AND ACCESSORIES

| REF. NO. | PART NO.    | PART NAME            | REMARKS    | Q'TY |
|----------|-------------|----------------------|------------|------|
|          | DT-903      | Demo. tape           | 4CH. Demo. | 1    |
|          | T30815-00A  | Pin cord assembly    |            | 2    |
|          | 4ED-1205-IB | Instruction book     |            | 1    |
|          | T22715-001  | Warranty card        |            | 1    |
|          | T22457-001  | Service station list |            | 1    |
|          | T30994-003  | Features tag         |            | 1    |

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16. PACKING MATERIALS

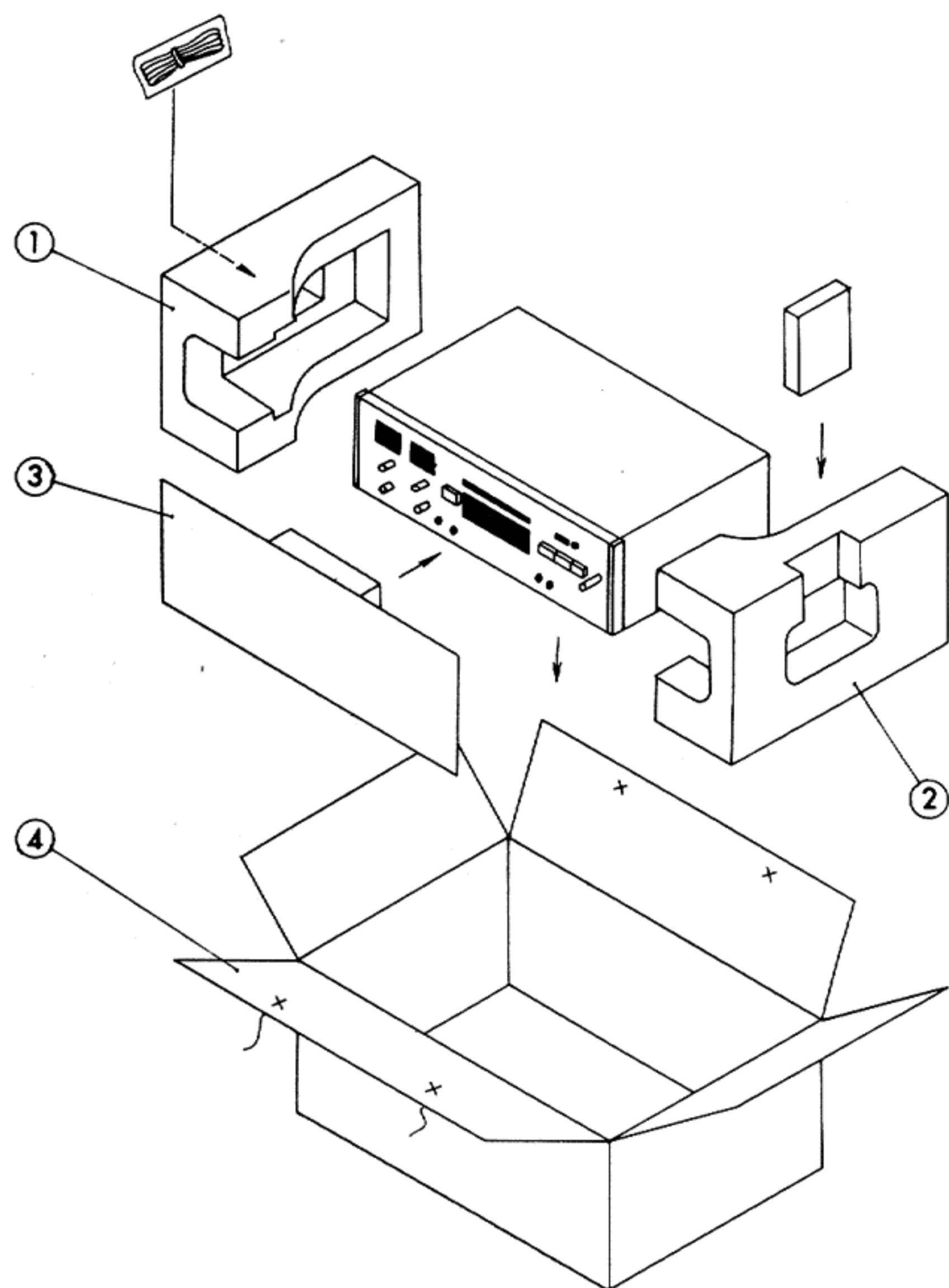


Fig. 33

| REF. NO. | PART NO.    | PART NAME        | REMARKS          | Q'TY |
|----------|-------------|------------------|------------------|------|
| 1        | T11405-001  | Cushion (Left)   |                  | 1    |
| 2        | T11437-001  | Cushion (Right)  |                  | 1    |
| 3        | T30969-009  | Front cushion    |                  | 1    |
| 4        | T30969-010  | Case             |                  | 1    |
| 1 ~ 4    | T30969-00E  | Packing assembly | Set              | 1    |
|          | T6800-00L   | Envelope         | For main body    | 1    |
|          | AP4056A-025 | Envelope         | For power cord   | 1    |
|          | AP4056A-066 | Envelope         | For manual, etc. | 1    |



# 4ED-1205 SCHEMATIC DIAGRAM

