



Deze download wordt u aangeboden door **Pick-upnaalden.nl**

Fazantendreef 17-19

8251 JR Dronten

T: 0321 769022

E: [info@pick-upnaalden.nl](mailto:info@pick-upnaalden.nl)

W: [www.pickupnaalden.com](http://www.pickupnaalden.com)

W: [www.pickupnaald.com](http://www.pickupnaald.com)

Facebook: [www.facebook.com/pickupnaalden](http://www.facebook.com/pickupnaalden)

Twitter: [twitter.com/Pickupnaalden](https://twitter.com/Pickupnaalden)

Google+ : [plus.google.com/114738445546162436900](https://plus.google.com/114738445546162436900)

# SERVICE MANUAL

## PARTS LIST

**MODEL** AP-001C



ALSO APPLICABLE TO MODEL AP-001



## TURNTABLE

### MODEL **AP-001C**

ALSO APPLICABLE TO MODEL AP-001

|           |                      |    |
|-----------|----------------------|----|
| SECTION 1 | SERVICE MANUAL ..... | 1  |
| SECTION 2 | PARTS LIST .....     | 21 |

---

SECTION 1

**SERVICE MANUAL**

TABLE OF CONTENTS

|       |                                               |    |
|-------|-----------------------------------------------|----|
| I.    | TECHNICAL DATA .....                          | 2  |
| II.   | DISMANTLING OF UNIT .....                     | 3  |
| III.  | ARRANGEMENT OF PRINCIPAL PARTS.....           | 4  |
| IV.   | AUTO STOP POSITION ADJUSTMENT .....           | 5  |
| V.    | CYCLE CHANGE (MOTOR PULLEY REPLACEMENT) ..... | 6  |
| VI.   | PLAYER CARE .....                             | 7  |
|       | 1. LIFE OF STYLUS .....                       | 7  |
|       | 2. STYLUS CHANGE .....                        | 7  |
|       | 3. LUBRICATION .....                          | 7  |
| VII.  | BLOCK DIAGRAM.....                            | 8  |
| VIII. | TROUBLE SHOOTING CHART .....                  | 14 |

# I. TECHNICAL DATA

## 1. TURNTABLE SECTION

|                       |                                 |
|-----------------------|---------------------------------|
| TURNTABLE             | 300 mm aluminium alloy die cast |
| DRIVE SYSTEM          | Belt drive                      |
| MOTOR                 | 4-pole synchronous motor        |
| SPEED                 | 33-1/3 and 45 rpm               |
| WOW & FLUTTER         | 0.06% WRMS                      |
| SIGNAL TO NOISE RATIO | Better than 50 dB               |

## 2. TONE ARM SECTION

|                                  |                                                                                                        |
|----------------------------------|--------------------------------------------------------------------------------------------------------|
| TONE ARM                         | Static-balanced type stainless steel tubular arm with inside force canceler and lateral balance weight |
| ARM LENGTH                       | 220 mm                                                                                                 |
| STYLUS PRESSURE ADJUSTMENT RANGE | 0 to 4 grams                                                                                           |
| APPLICABLE CARTRIDGE WEIGHT      | 4 to 10 grams (10 to 15 grams using sub-weight)                                                        |
| ARM LIFTER                       | Oil damped                                                                                             |
| OVERHANG                         | 15 mm                                                                                                  |
| SHELL WEIGHT                     | 8.0 grams                                                                                              |

## 3. CARTRIDGE SECTION

|                         |                                                                                                                                                          |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| CARTRIDGE               | VM (dual magnet type) Audio Technica Model AT-11 with 0.7 mil spherical diamond stylus.<br>Model AP-001C only. (Model AP-001 does not include cartridge) |
| FREQUENCY RESPONSE      | 15 Hz to 25,000 Hz                                                                                                                                       |
| OUTPUT VOLTAGE          | 4 mV (1,000 Hz 50 mm/sec)                                                                                                                                |
| CHANNEL SEPARATION      | 20 dB (1,000 Hz)                                                                                                                                         |
| OPTIMUM STYLUS PRESSURE | 2.5 grams                                                                                                                                                |
| REQUIRED LOAD IMPEDANCE | 47k to 100 k ohms                                                                                                                                        |
| WEIGHT                  | 5.5 grams                                                                                                                                                |

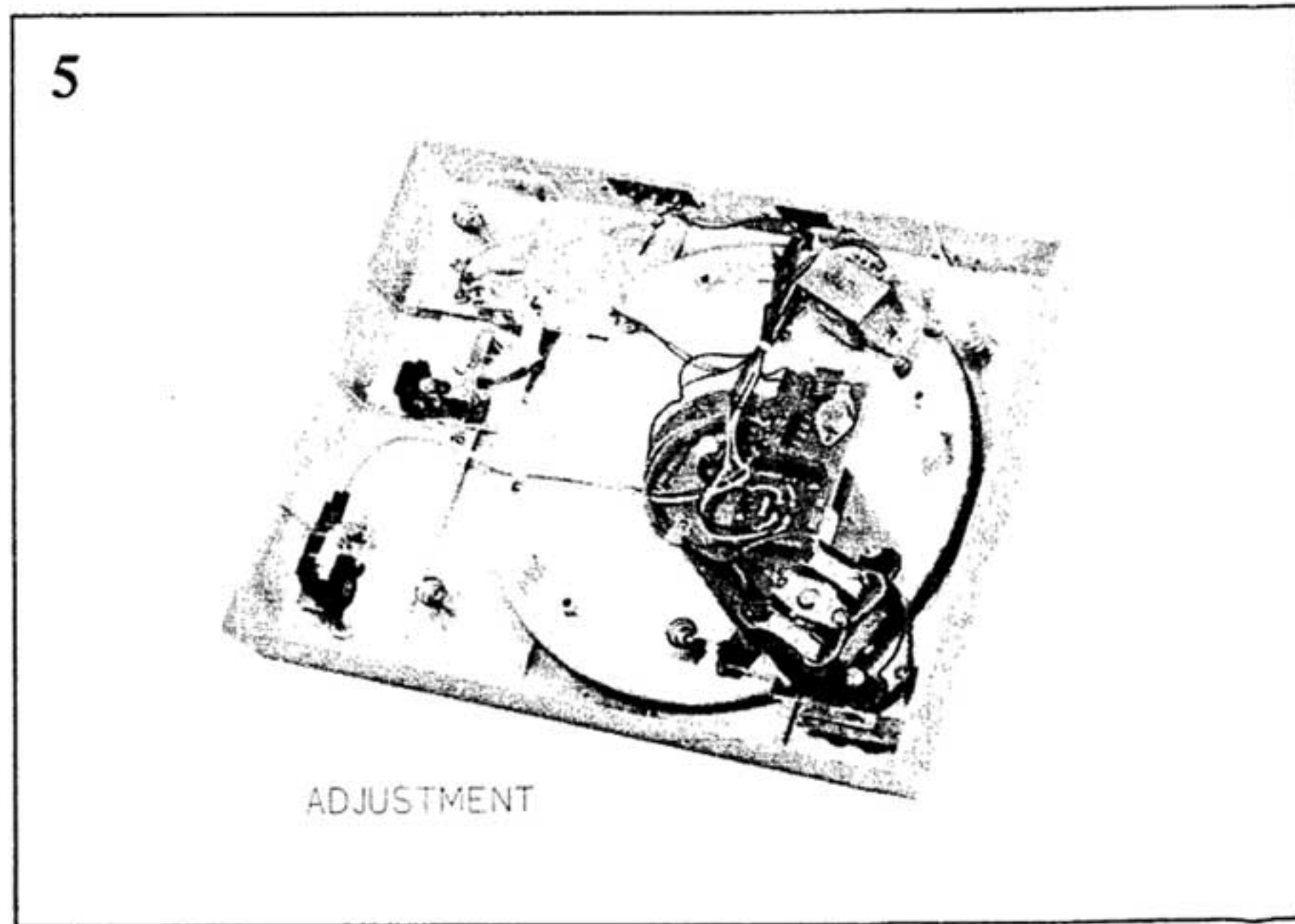
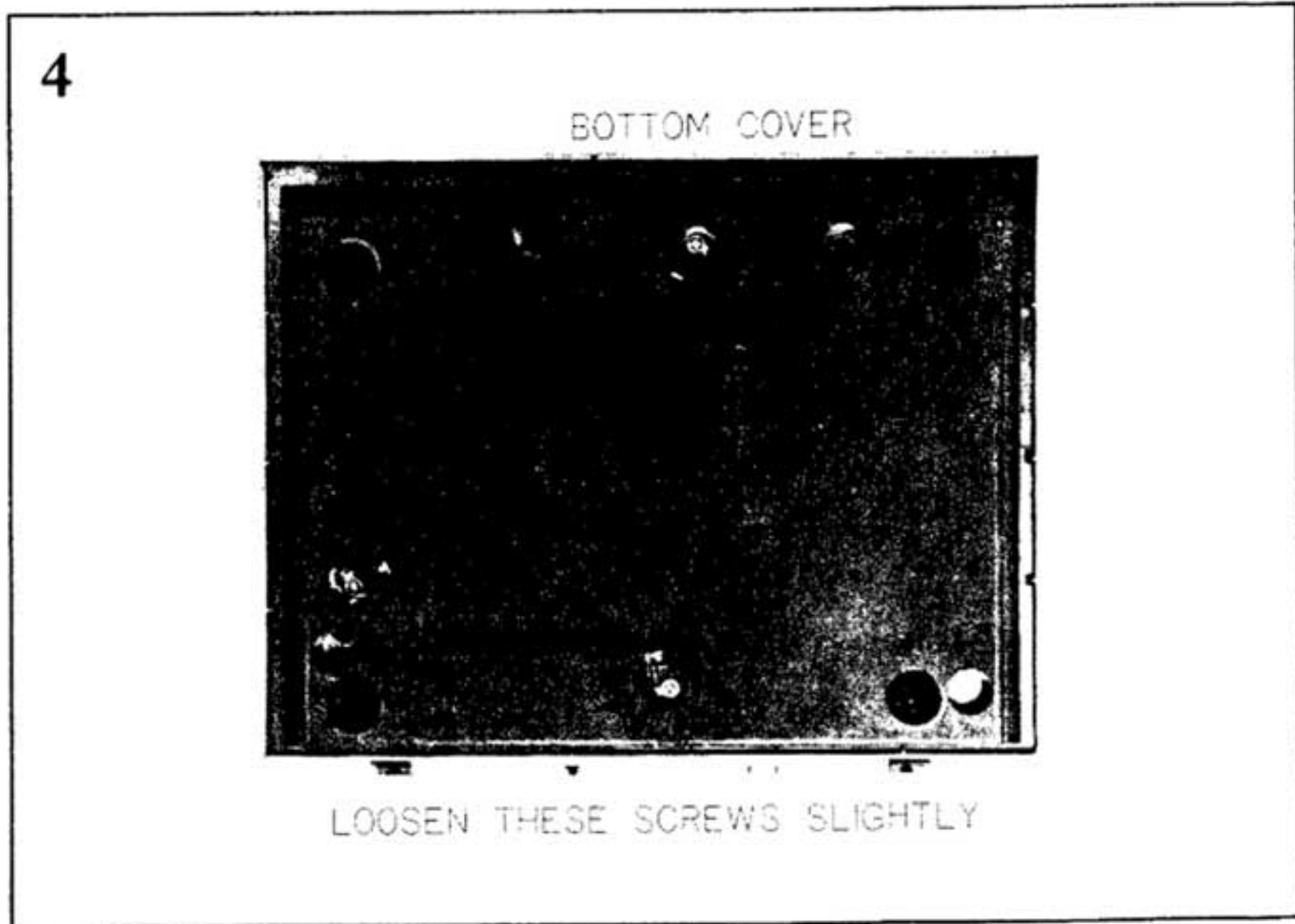
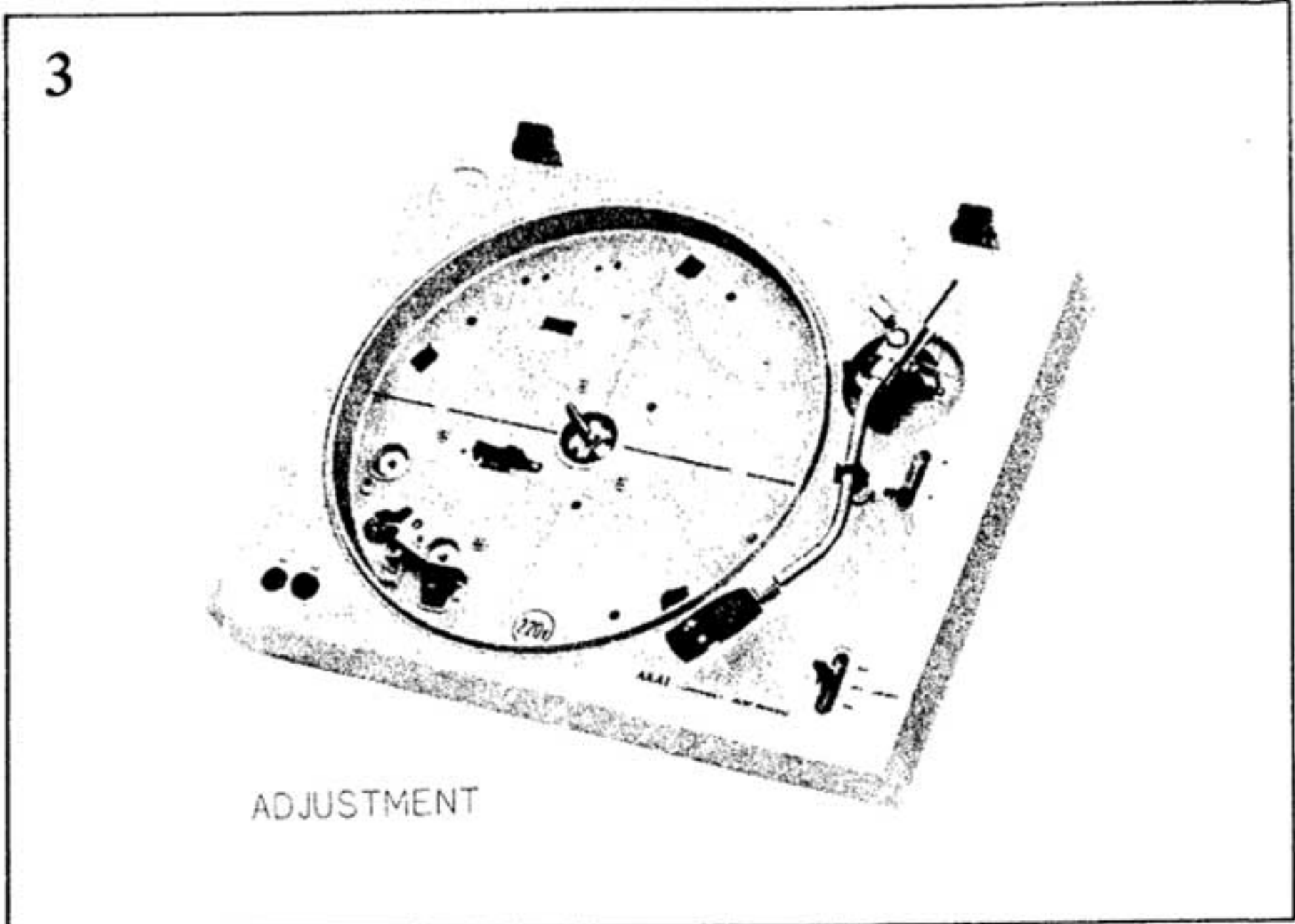
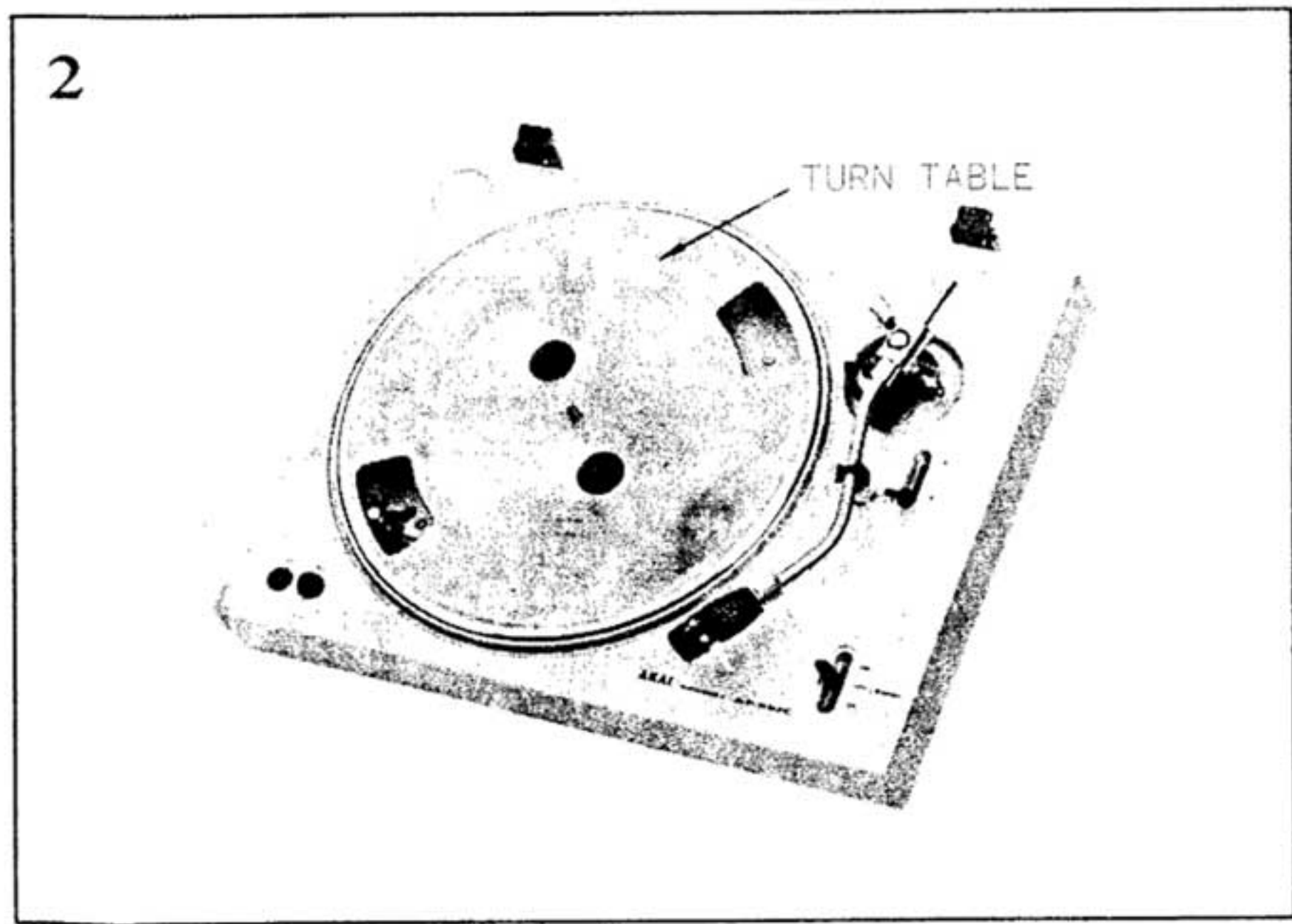
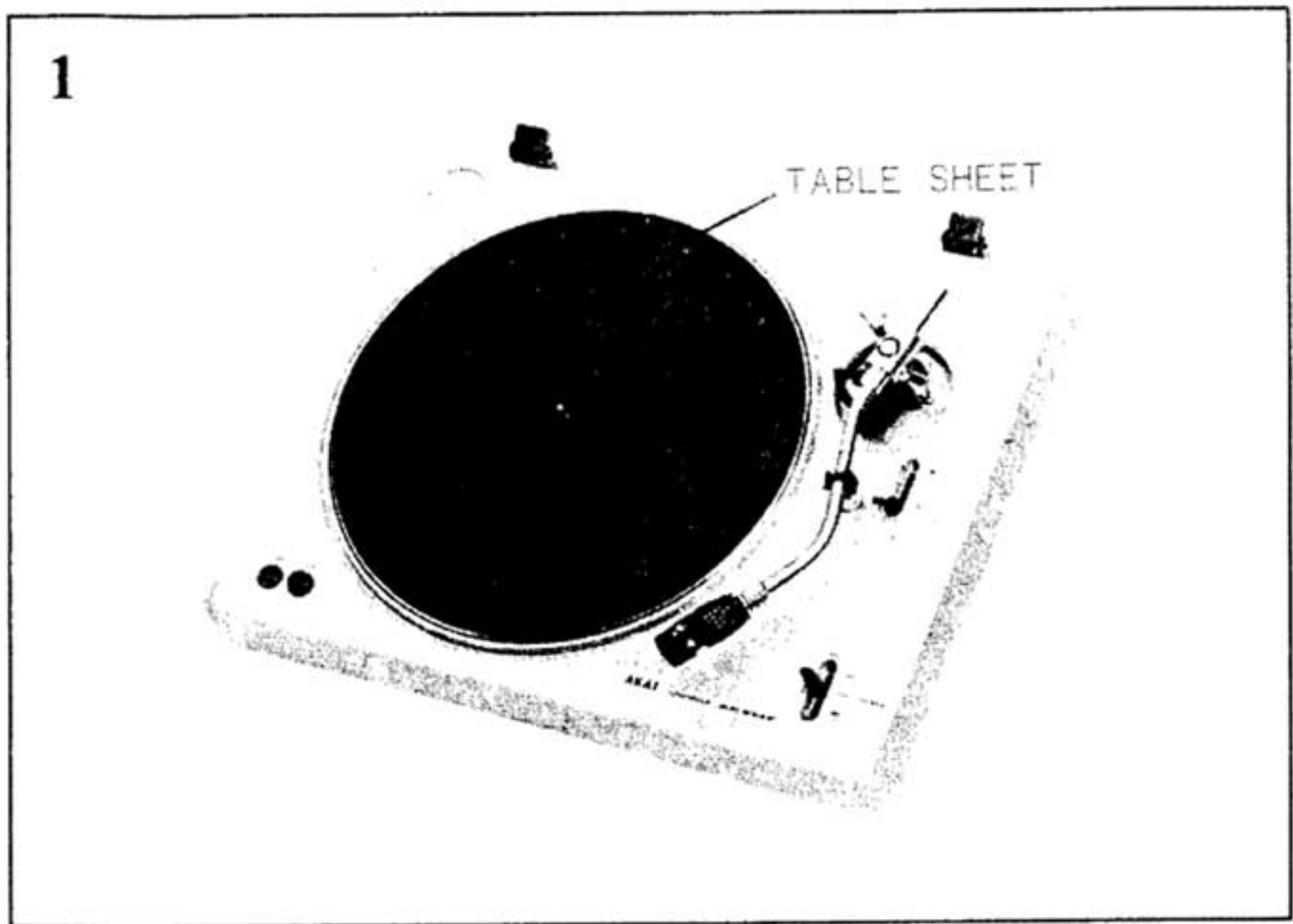
## 4. GENERAL SPECIFICATIONS

|                   |                                                                                                                        |
|-------------------|------------------------------------------------------------------------------------------------------------------------|
| POWER REQUIREMENT | CSA Models ..... 120V, 60 Hz<br>CEE Models ..... 220V, 50 Hz<br>Other Models ..... 110V/220V, 50/60 Hz and 240V, 50 Hz |
| DIMENSIONS        | 440(W) x 140(H) x 350(D) mm<br>(17.3" x 5.5" x 13.8")                                                                  |
| WEIGHT            | 6.3 kg (13.9 lbs.)                                                                                                     |

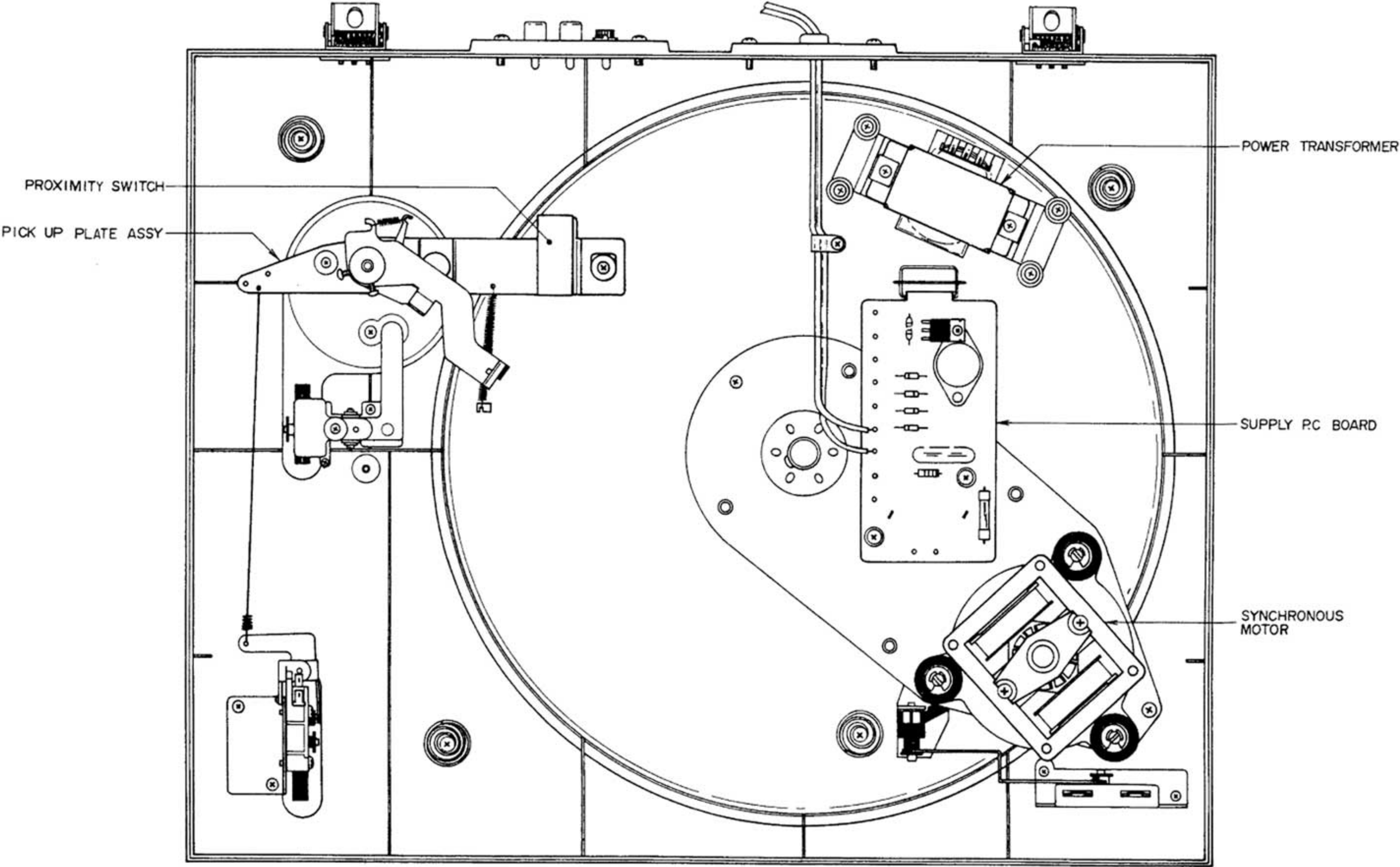
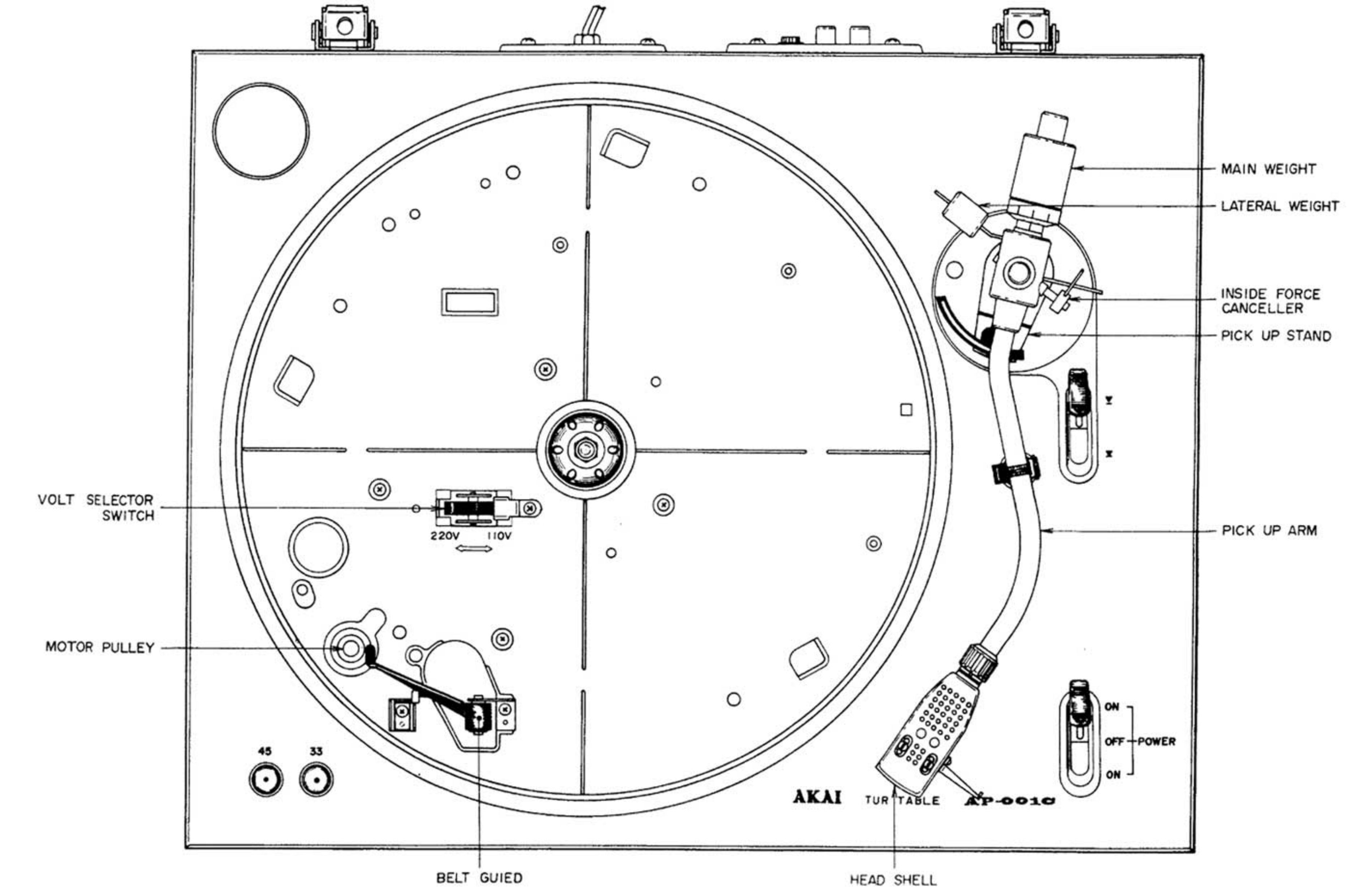
NOTE: For improvement purposes, specifications and design are subject to change without notice.

# II. DISMANTLING OF UNIT

In case of trouble, etc. necessitating disassembly, please disassemble in the order shown in photographs. Reassemble in reverse order.



III. ARRANGEMENT OF PRINCIPAL PARTS



## IV. AUTO STOP POSITION ADJUSTMENT

---

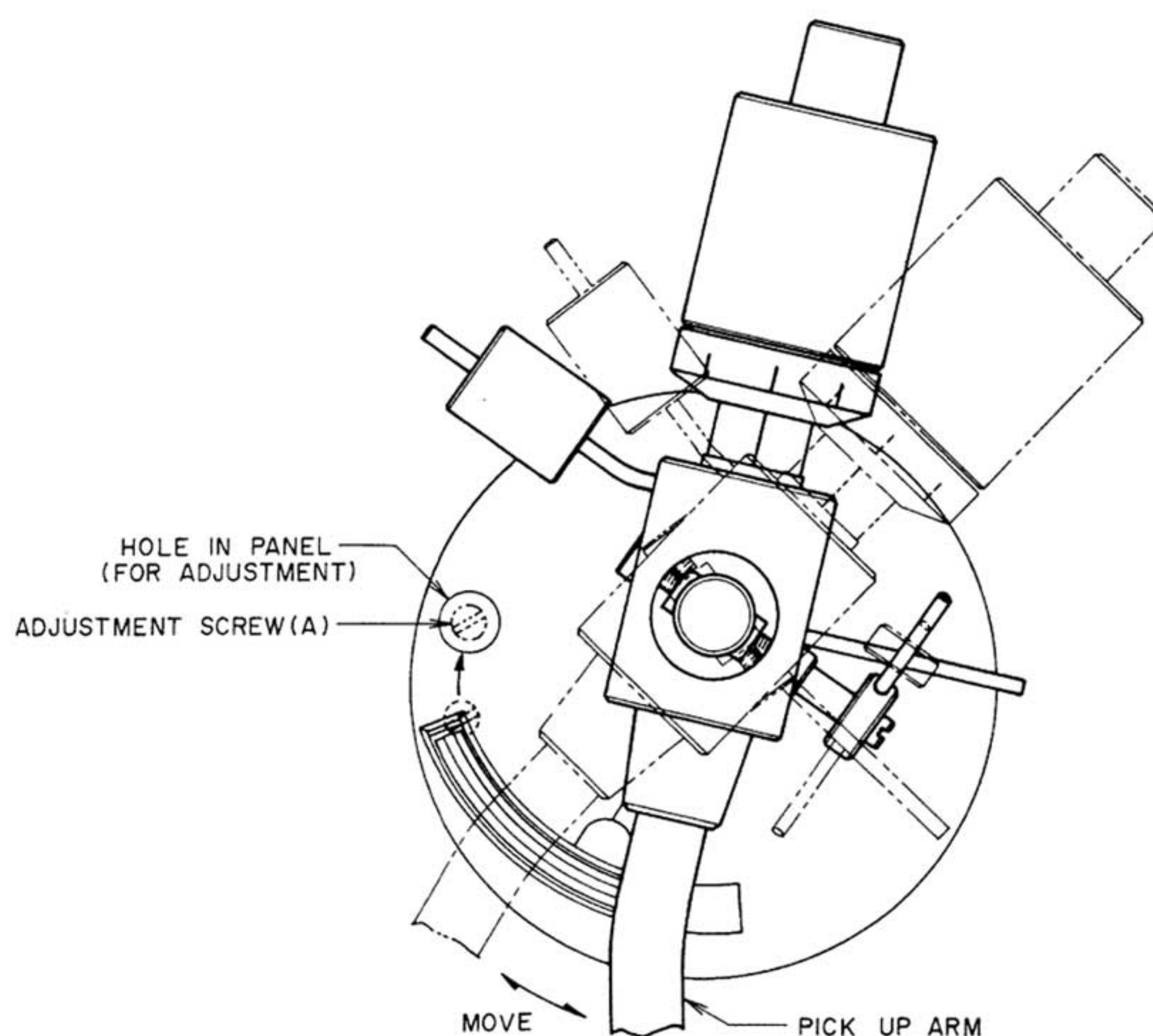


Fig. 1

Remove the rubber plug on panel toward the rear part of the pick up arm. When the pick up arm is moved as shown in Fig.1, Adjustment Screw (A) becomes accessible through the hole from which the rubber plug has been removed. When Adjustment Screw (A) is turned clockwise, stop position will be advanced and when turned counter-clockwise, stop position will be delayed.

Use a 30 cm record as standard and adjust stop position as follows with Adjustment Screw (A).

For adjusting toward outer circumference turn clockwise.

For adjusting toward inner circumference turn counter-clockwise.

If only proper inner or outer adjustment can be attained, this means that adjustment at some other place is necessary. After source of trouble has been located and corrected, re-adjust adjustment screw (A).

NOTE: 1. Because of one adjustment screw only, stop position of 30 cm 17 cm record will be the same.  
2. After adjustment, be sure to re-install rubber plug.

# V. CYCLE CHANGE (MOTOR PULLEY REPLACEMENT)

---

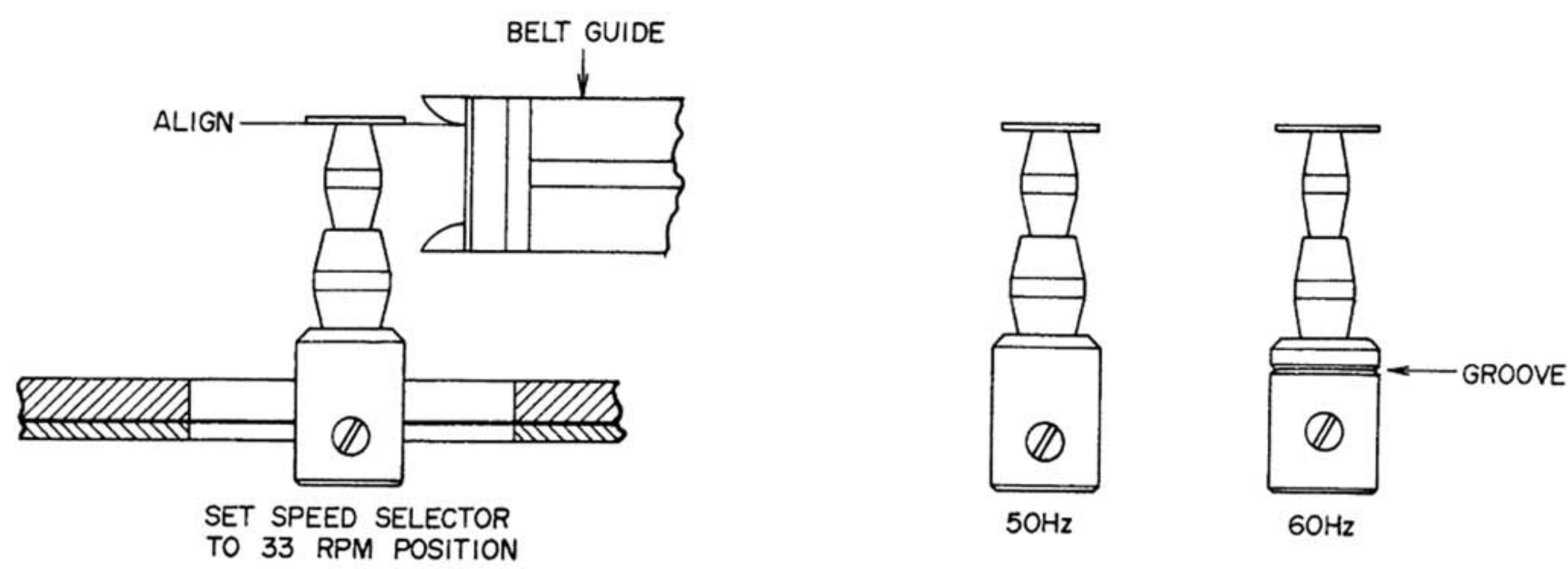


Fig. 2

50 Hz and 60 Hz cycle change is effected by changing the motor pulley. 50 Hz and 60 Hz differentiation can be determined by the groove on the 60 Hz pulley. While viewing horizontally as shown in Fig. 2, install so that the lower part of the motor pulley brim and the lower part of the belt guide are lined up. Set speed selector to 33 rpm position, install the belt and switch on power. If a rumbling noise from the belt can be heard and speed changing is not smooth, adjust installation position of motor pulley.

## VI. PLAYER CARE

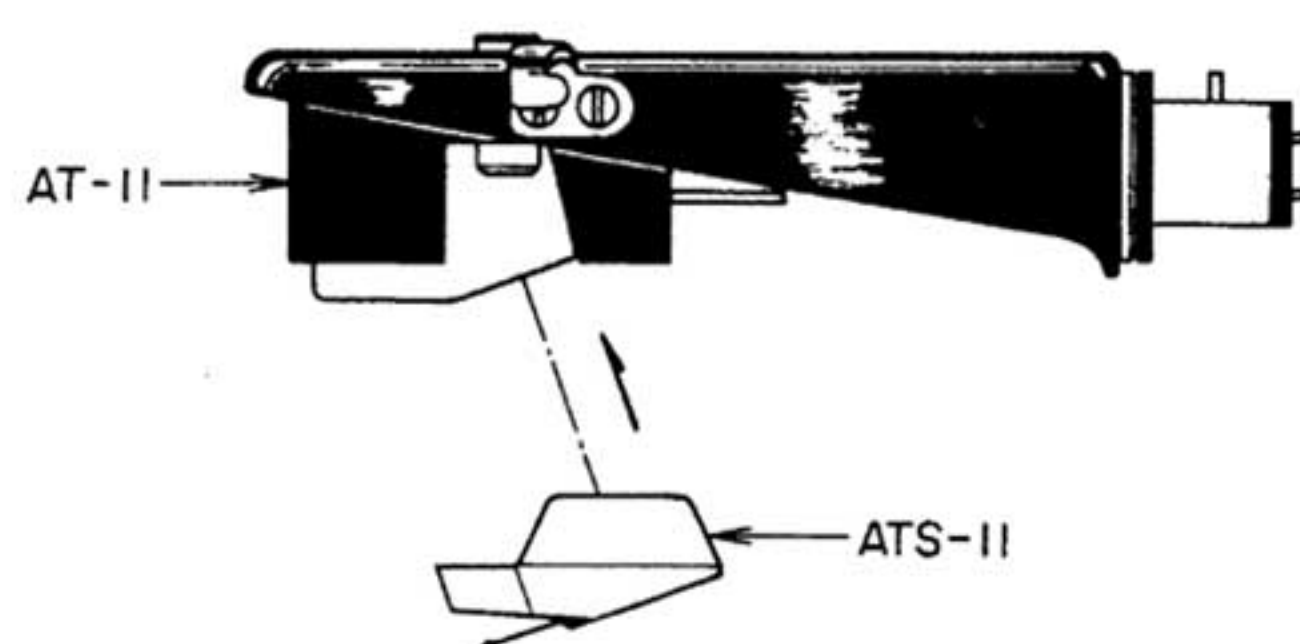


Fig. 3

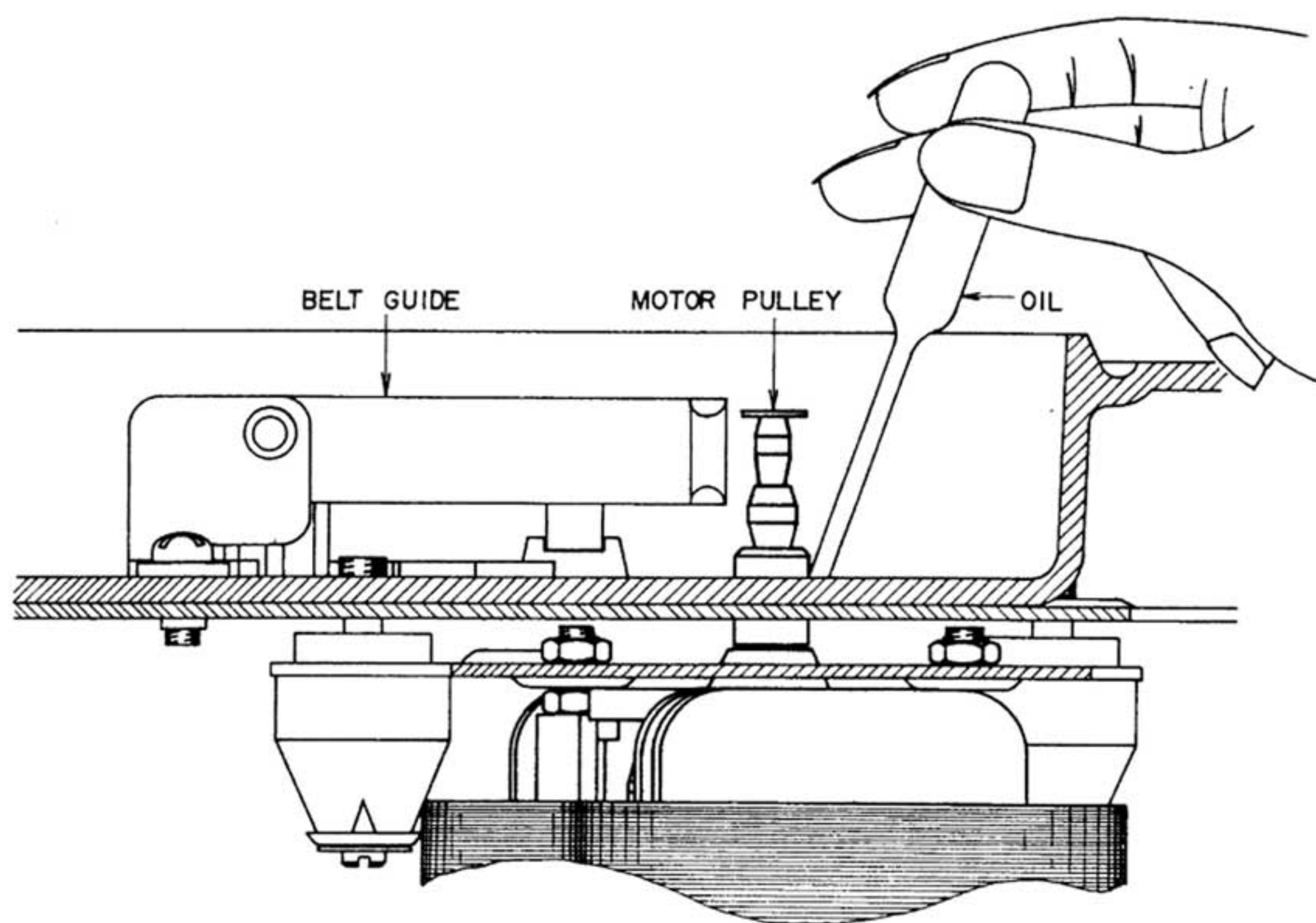


Fig. 4

### 1. LIFE OF STYLUS

The lifetime of stylus is about 500 hrs. of use (both sides of about 500 30 cm LP records). If the stylus becomes old, because the record will be damaged and tone quality will become inferior, be sure to replace as soon as is needed. If records on which dust is allowed to accumulate are played, the stylus will wear especially fast and the record surface will be scratched. Therefore, please be sure to keep record clean by wiping and cleaning the record grooves with water soaked gauze. Also if dust adheres to the turntable mat, as this will cause the record to become dirty easily, the mat should also be kept clean.

### 2. STYLUS CHANGE

When replacing stylus, be sure that the stylus (ATS-11) is inserted properly in the direction of the arrow mark shown in Fig. 3 and fits into cartridge firmly. Use only model ATS-11 stylus which is for use in model AT-11 cartridge.

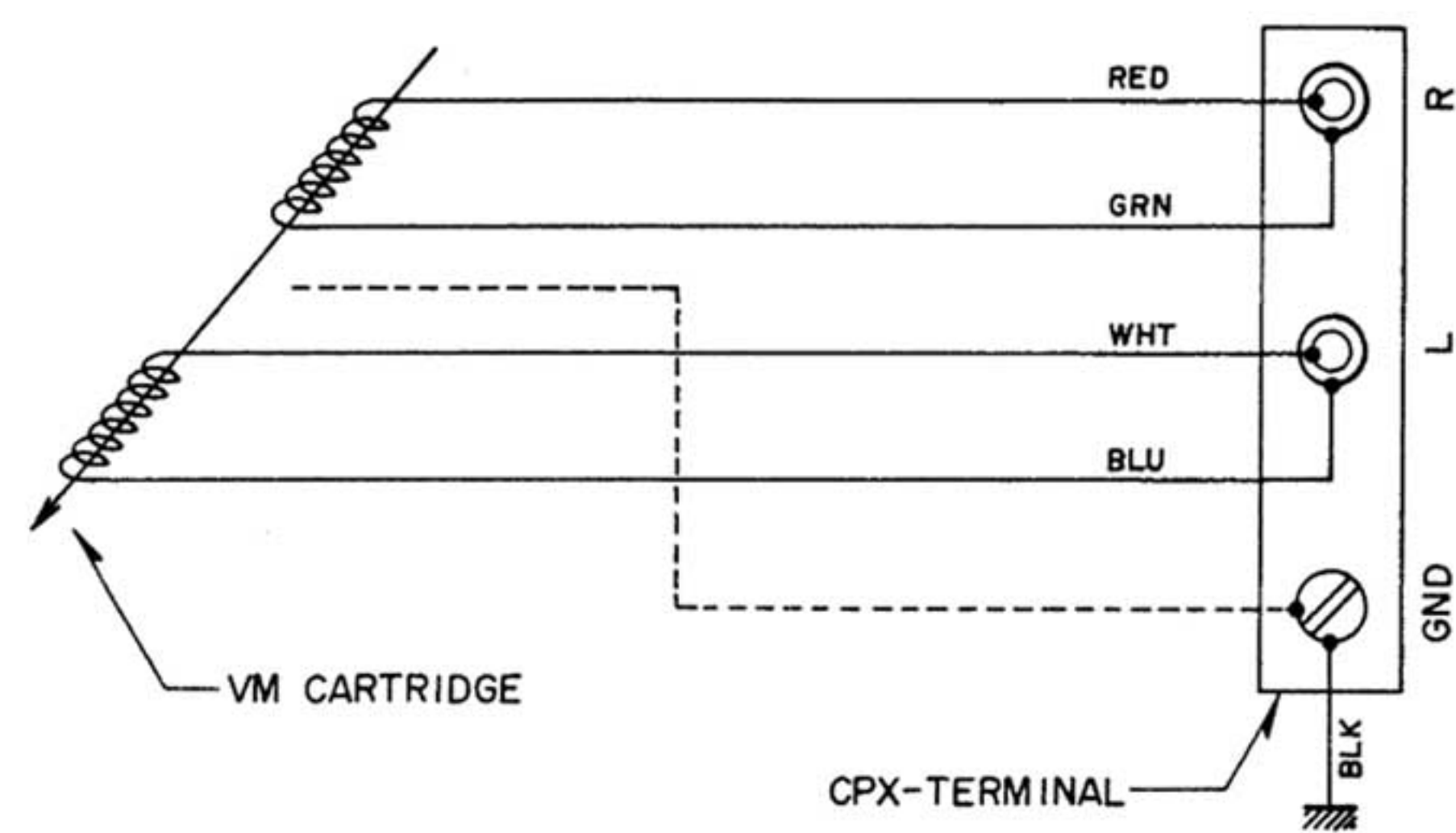
### 3. LUBRICATION

Because for rotating parts and parts which rub together during operation, oilless metal and the best grease or oil is used, your machine will not need lubrication for some time. About once per year, use standard accessory player oil, and apply one or two drops to the motor shaft as shown in Fig. 4. In case you do not have player oil, use #60 spindle oil or a high grade machine oil. If used continually for business purposes, etc., oil about once or twice per month.

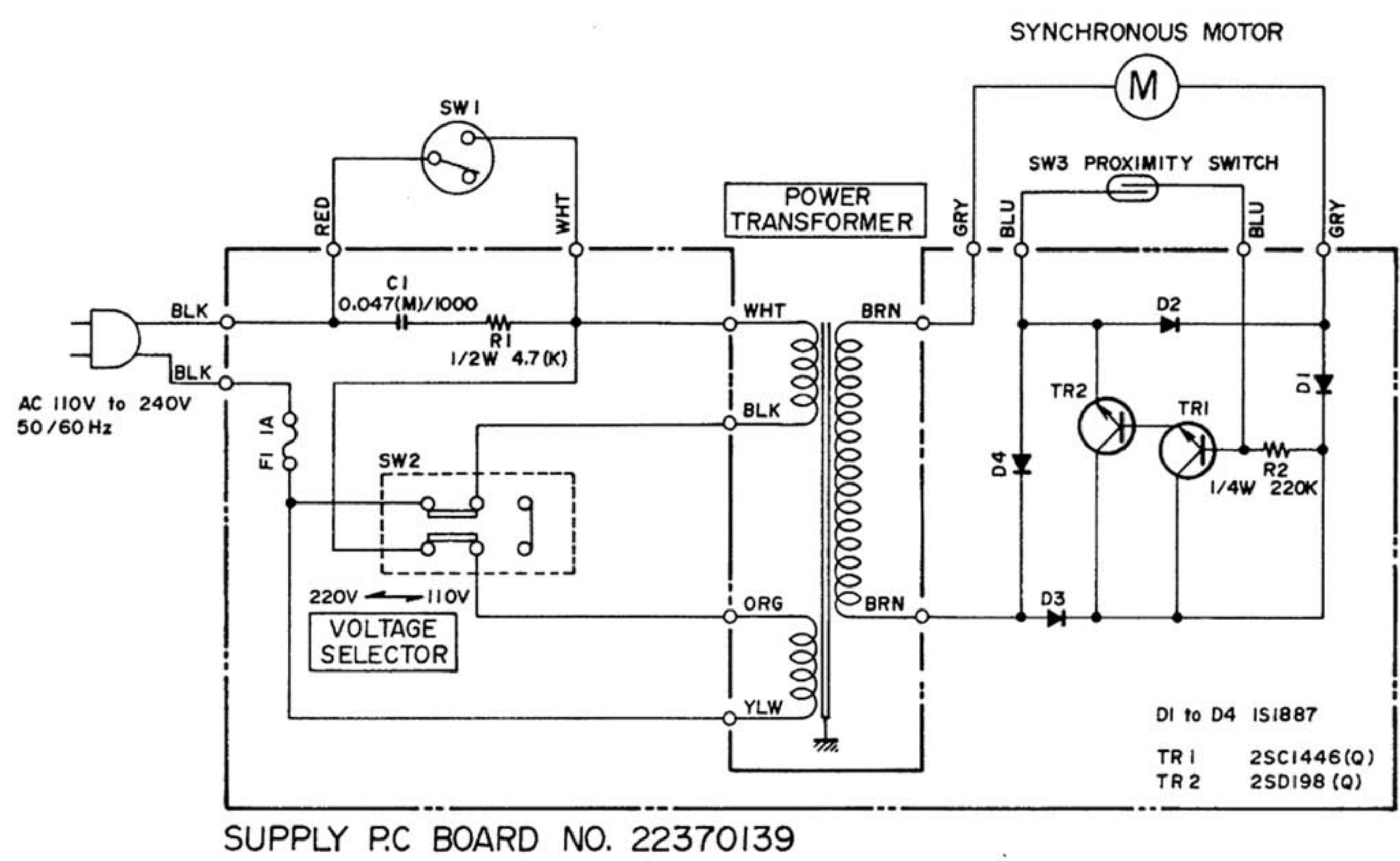
**CAUTION:** Following lubrication, because oil will adhere to the drive belt and pulley and to the turntable etc., wipe the oil off of these parts with a cloth to which a little carbon tetrachloride or thinner (benzine can be also be used) has been applied.

# VII. BLOCK DIAGRAM

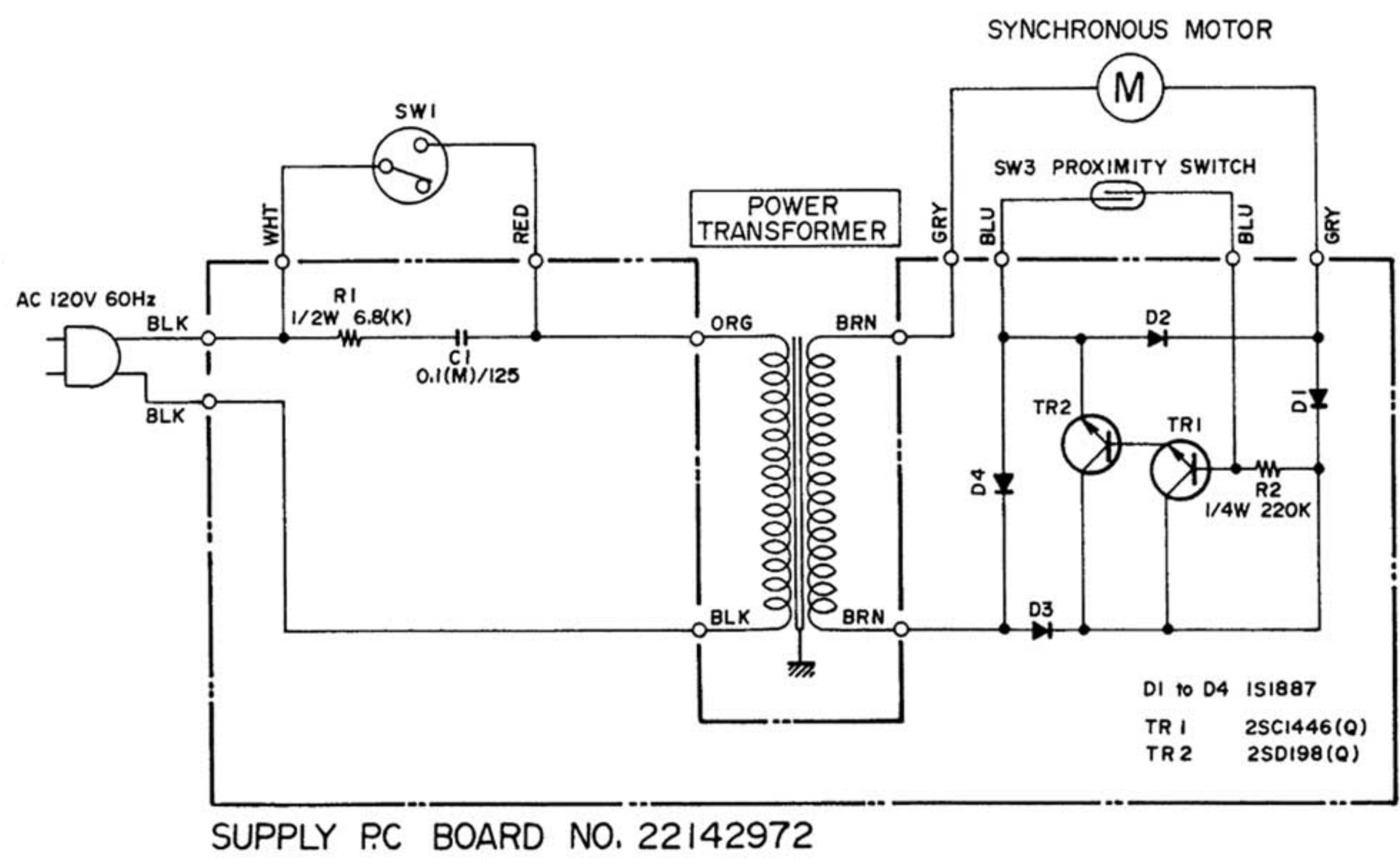
## 1. CARTRIDGE

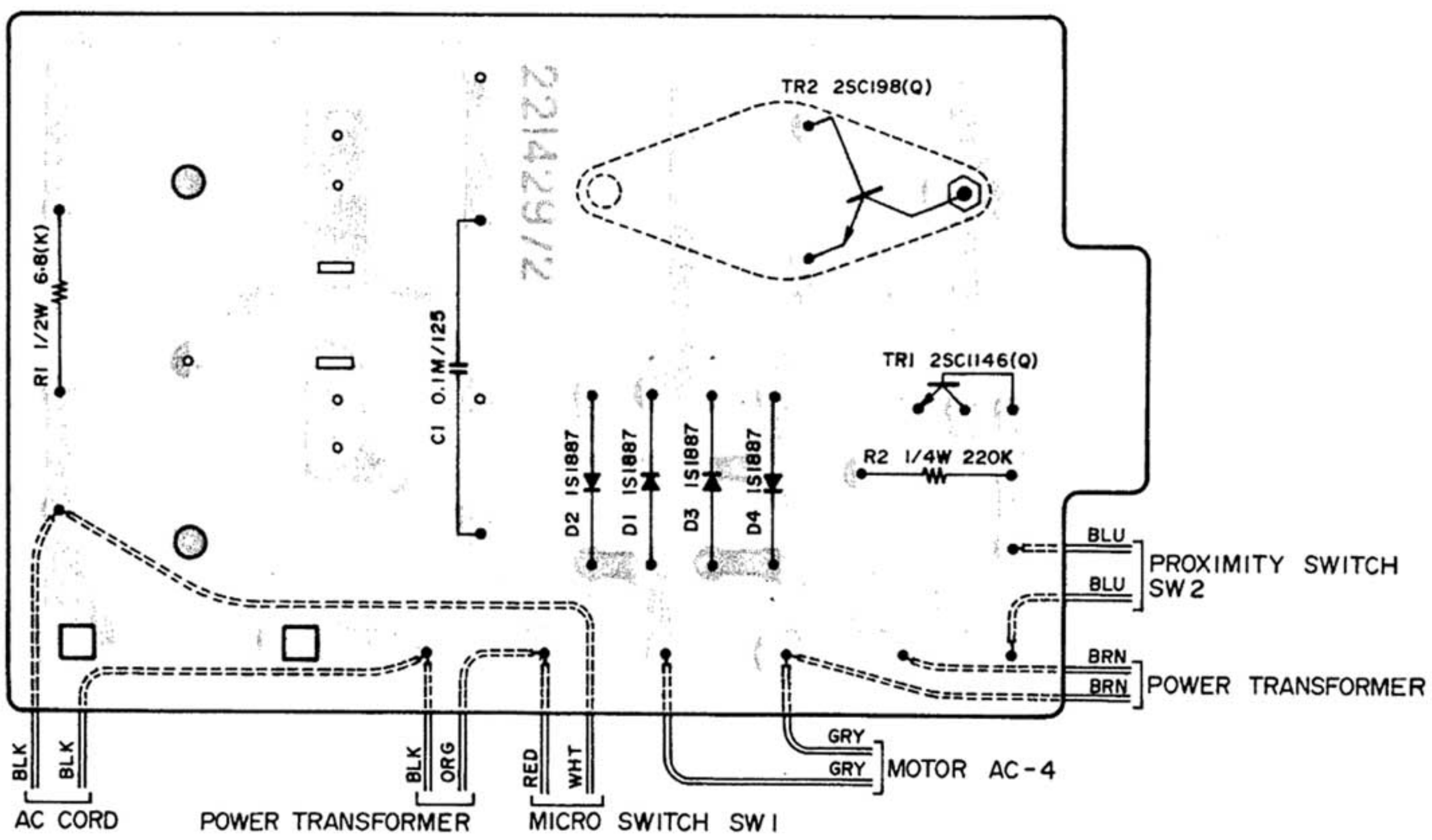
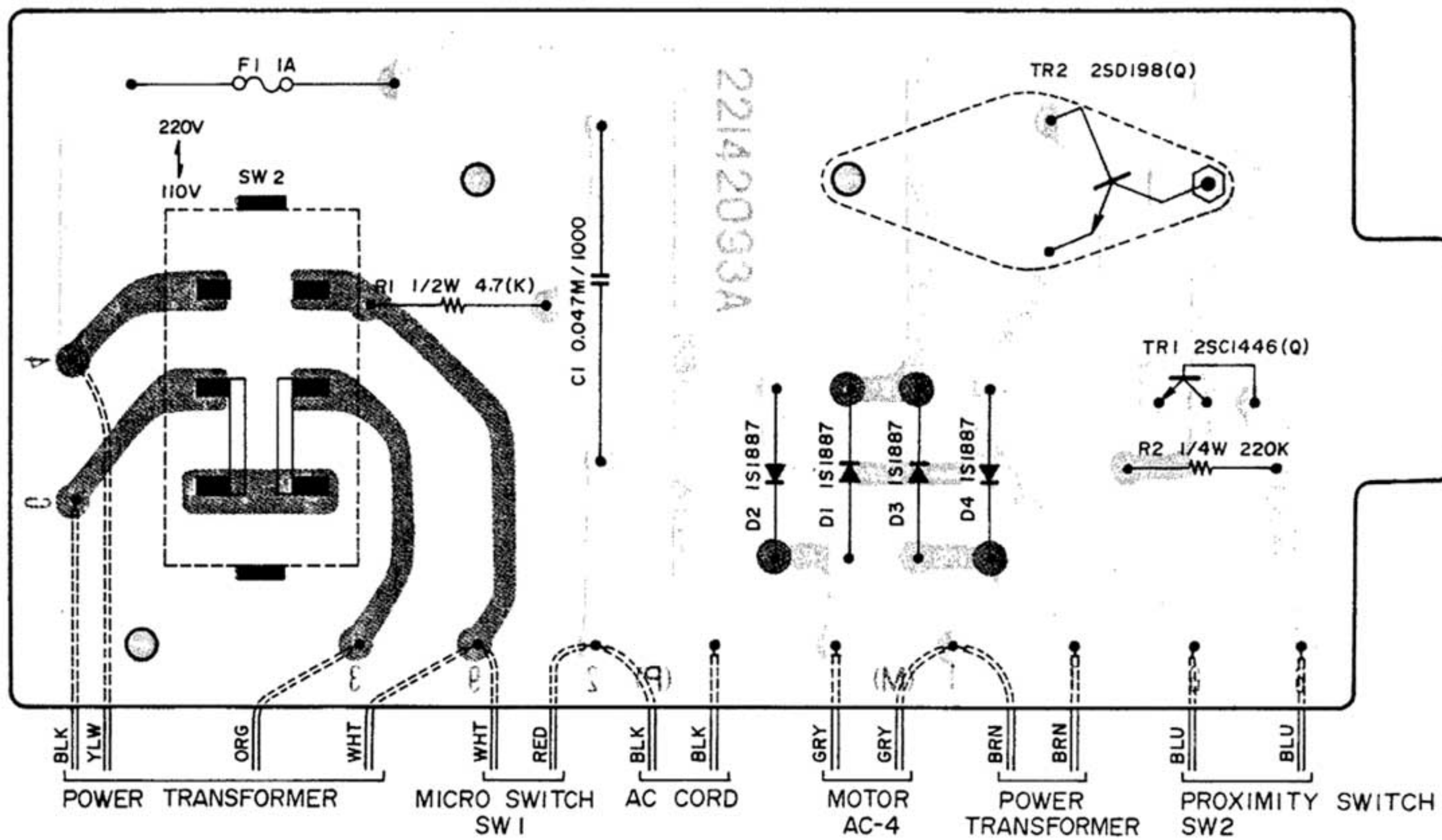


## 2. SWITCHABLE MODELS

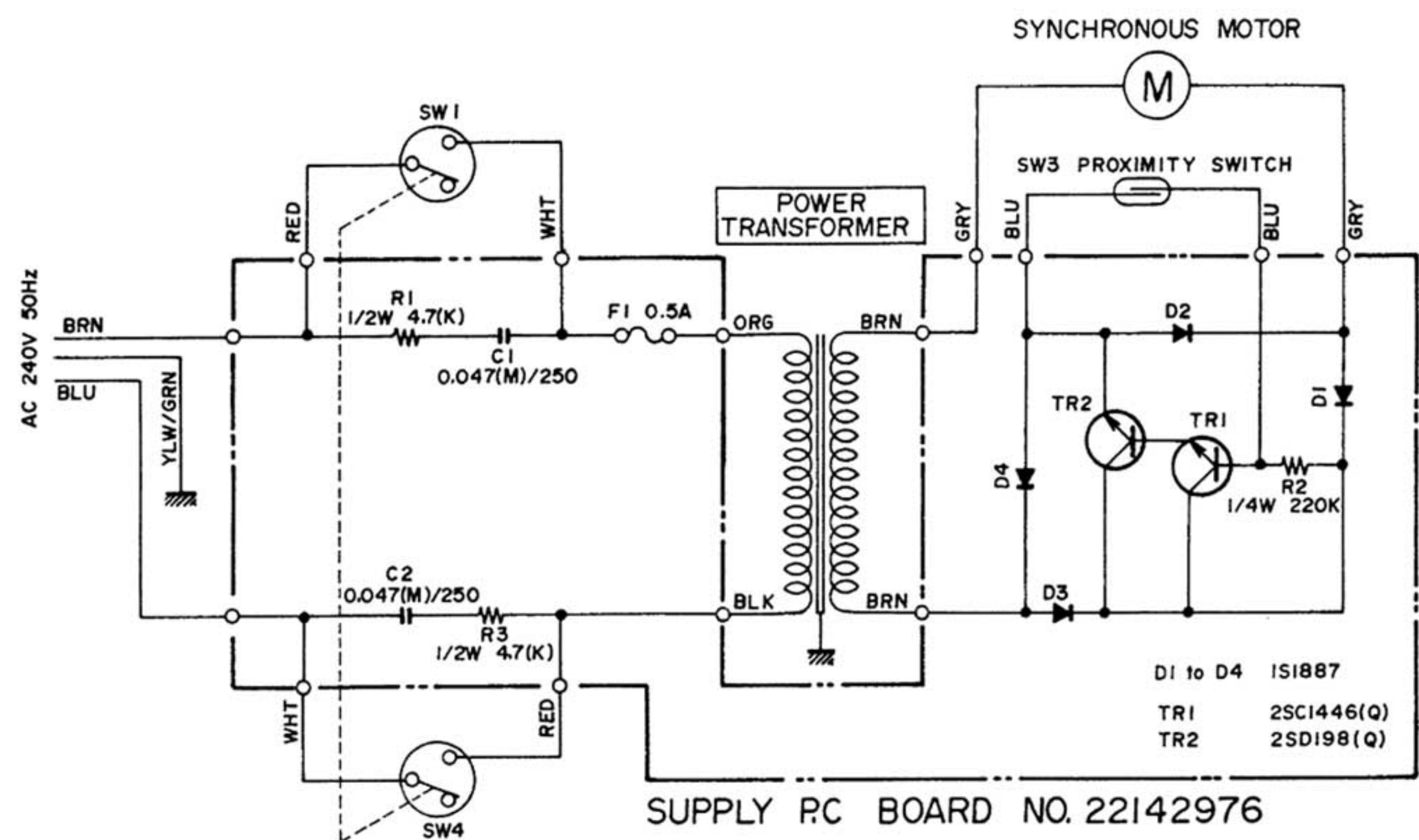


## 3. CSA MODELS

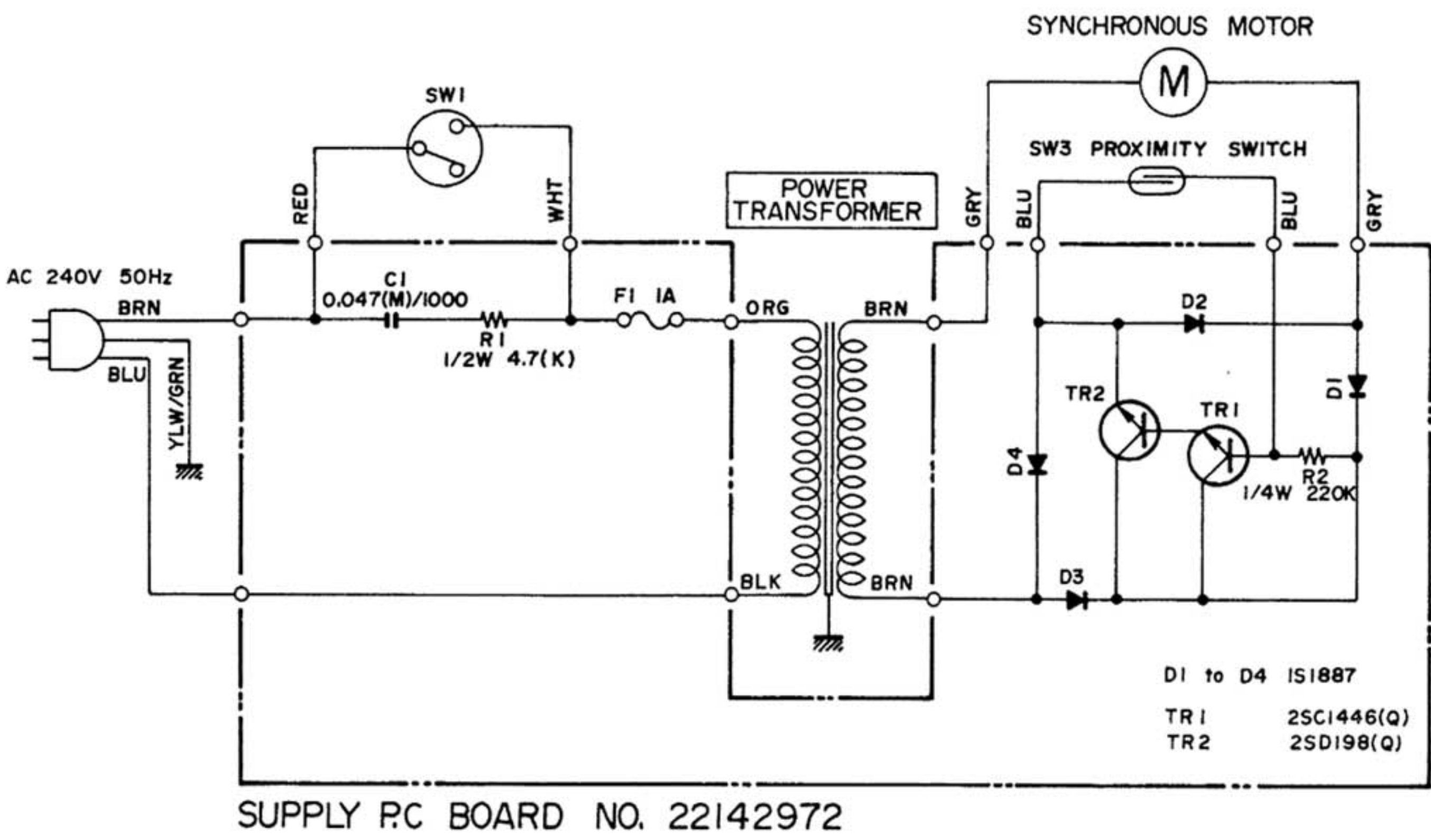




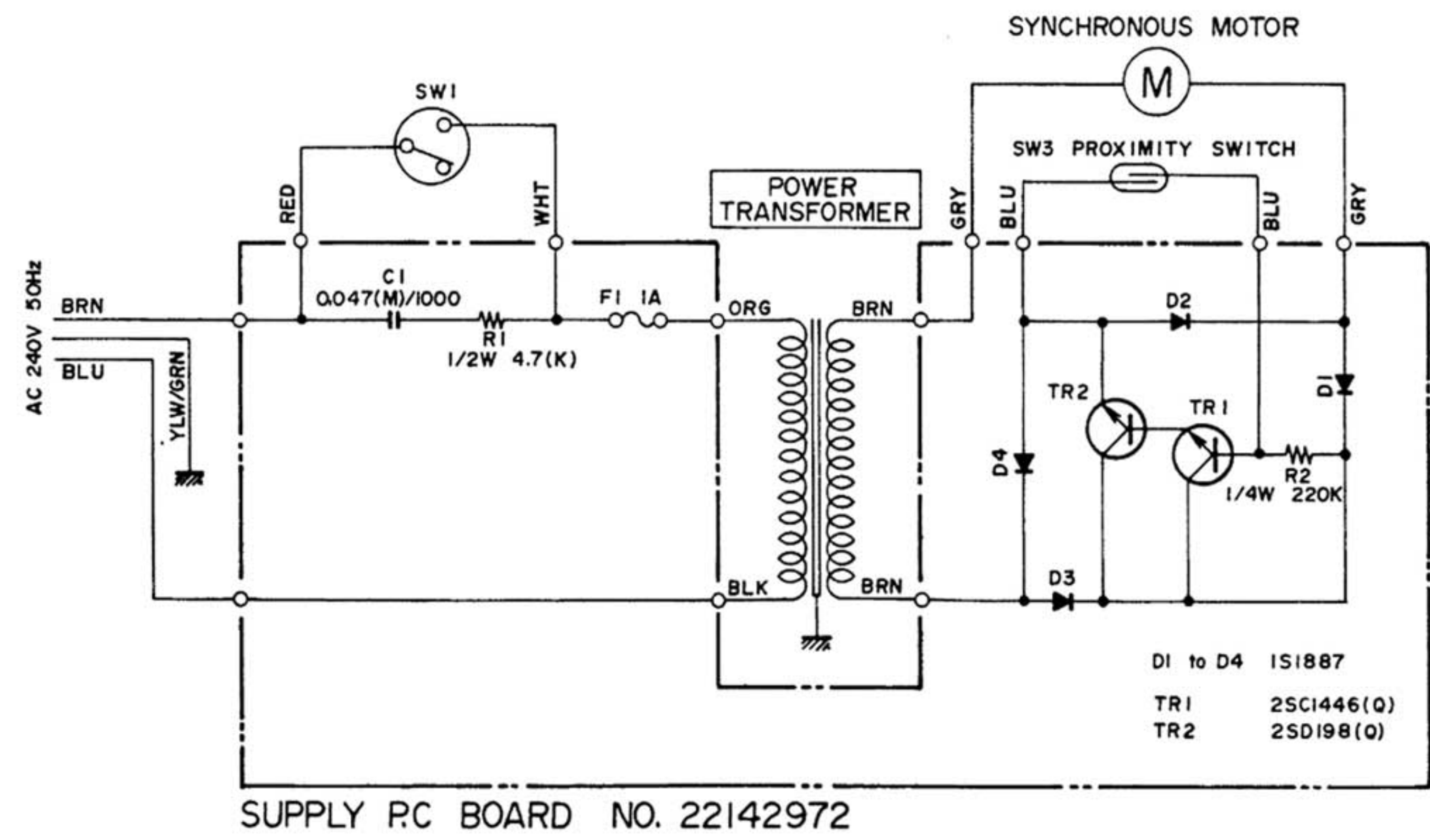
4. BSI MODELS



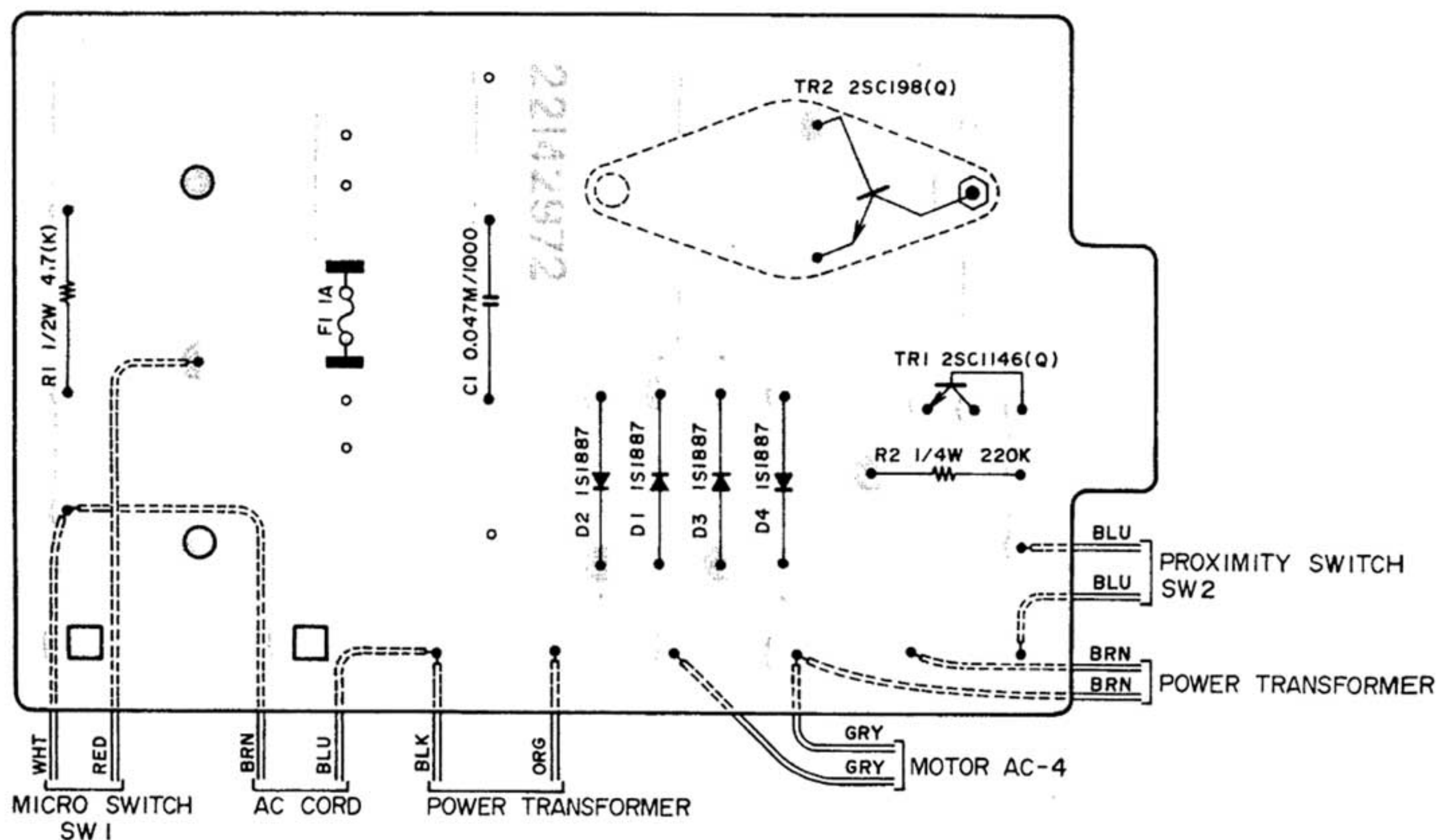
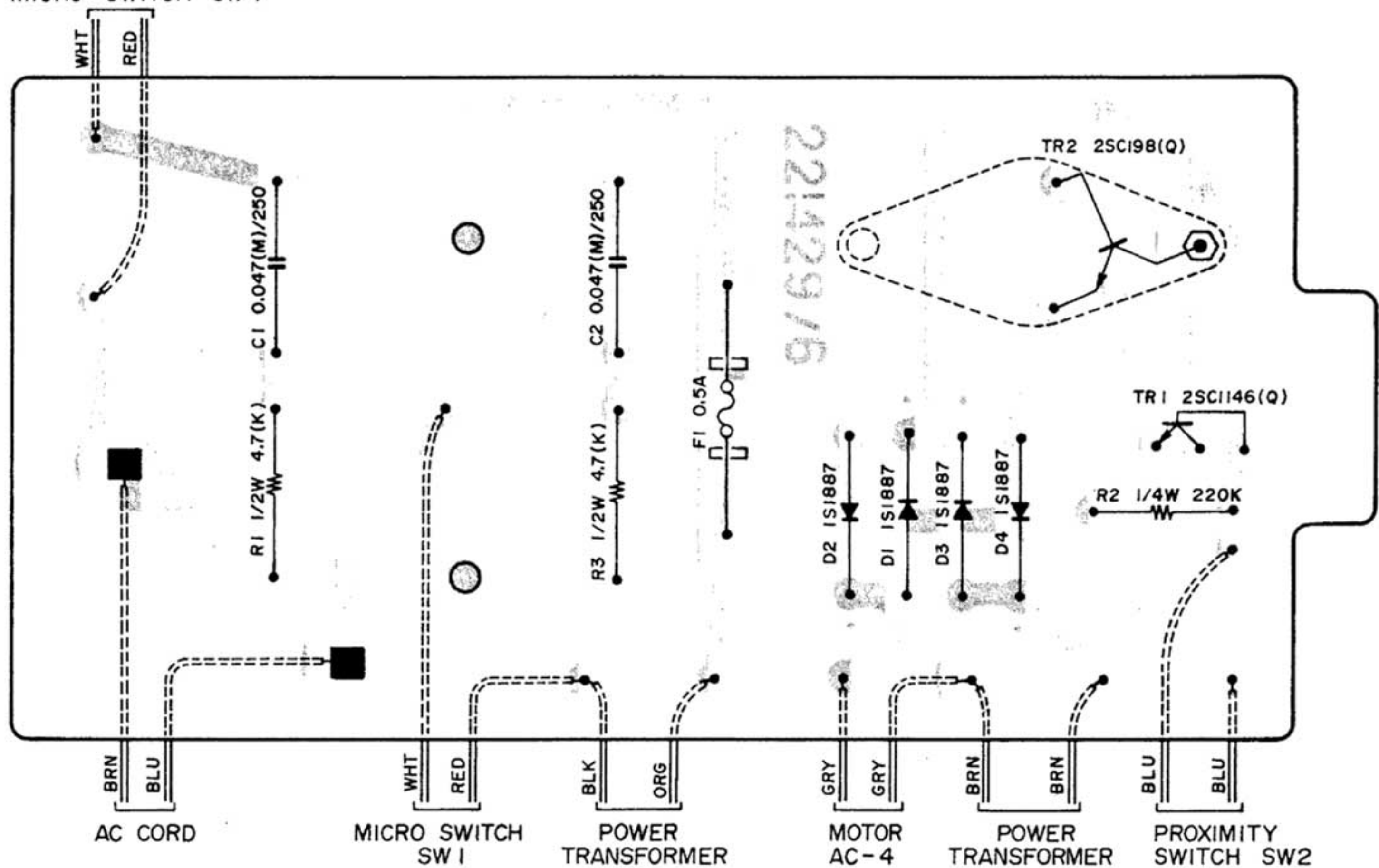
5. AST MODELS



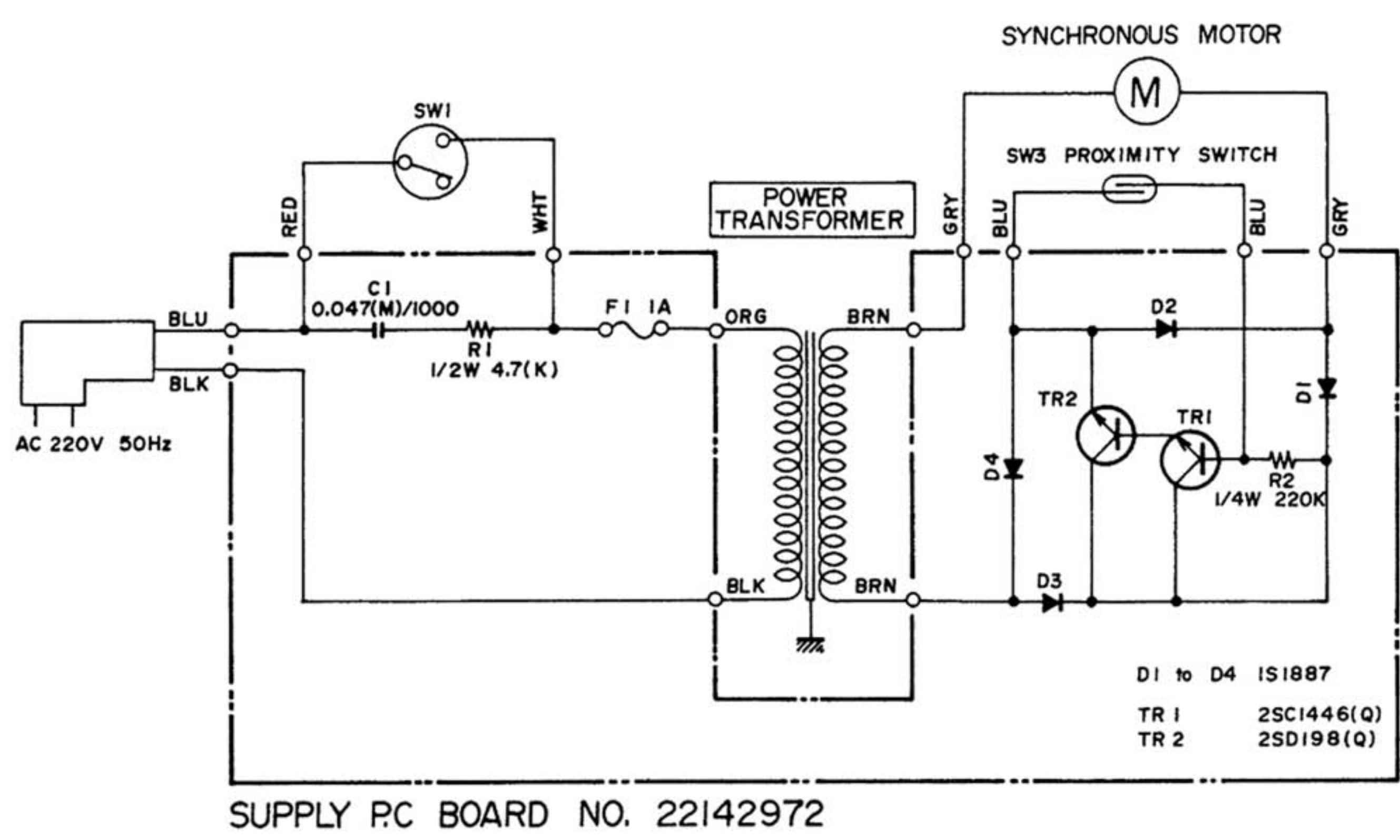
6. OTHER MODELS

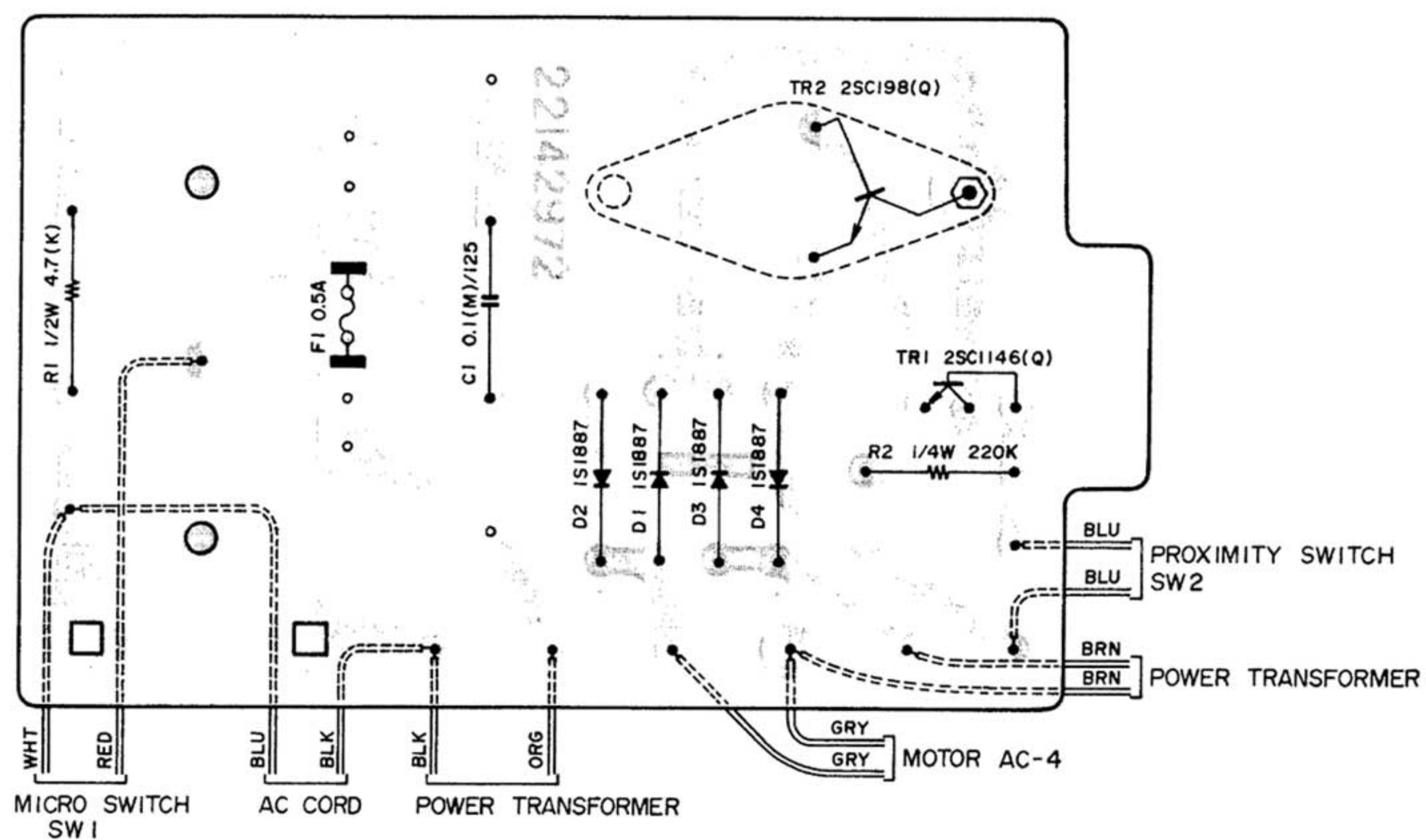


MICRO SWITCH SW4



7. CEE MODELS





VIII. TROUBLE SHOOTING CHART

| Condition         | Explanation                              | Confirmation                                                                                                                           | Source                                                                                                                       | Countermeasure                                                |
|-------------------|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|
| Poor tone quality | 1. Distortion<br>(When using new record) | 1. Distortion persists after changing stylus and confirming normal pick-up arm operation. (Amp. Speaker normal)                        | Faulty cartridge.                                                                                                            | Replace cartridge                                             |
|                   |                                          | 2. Crackling sound even when playing new record. Especially vague at high range.                                                       | Worn stylus.                                                                                                                 | Replace stylus.                                               |
|                   |                                          | 3. A crunching sound exists and there is a sudden change in sound level. Also the level of right and left differs greatly.             | Bent stylus.                                                                                                                 |                                                               |
|                   |                                          | 4. Sound is vague or distortion exists.                                                                                                | Dust adhering to stylus.                                                                                                     | Clean stylus.                                                 |
|                   |                                          | 5. Stylus jumps.                                                                                                                       | Insufficient pressure.                                                                                                       | Readjust stylus pressure.                                     |
|                   |                                          | 6. Stylus sinks to far into cartridge body during record playback.                                                                     | Too much pressure.                                                                                                           |                                                               |
|                   | 2. Hum noise.                            | 1. When pick up arm or player body is touched with your hand, hum noise increases.                                                     | Faulty grounding between cartridge and amp. input or turntable and amp.                                                      | Replace or repair ground wire.                                |
|                   |                                          | 2. A hum is emitted from one channel (or both channels).                                                                               | Faulty pin plug Connection.                                                                                                  | Connect perfectly                                             |
|                   |                                          | 3. Hum is altered by changing position of lead wire from pick-up.                                                                      | Lead wire from pick-up and source wiring is too close together.                                                              | Move lead wire to obtain minimum hum.                         |
|                   | 3. Left/right sound separation poor.     | Using a monaural record, left/right sound scatters and is not emitted from the center.                                                 | The plus and minus terminals are reversed on one side at cartridge out-put pin and shell pin connection or faulty cartridge. | Connect plus and minus correctly.<br>Replace cartridge.       |
|                   | 4. Distortion at one channel only.       | 1. Observe pick-up arm head during record performance.                                                                                 | Bent pick-up head.                                                                                                           | Replace pick-up arm.                                          |
|                   |                                          | 2. After pick-up arm side pressure and zero balance adjustment, pick-up arm does not move smoothly by means of inside force canceller. | Pick-up arm rotating shaft faulty.                                                                                           | Replace pick-up arm assy.                                     |
|                   |                                          | 3. Pick-up arm heavy or catches when moved to left and right by hand.                                                                  | Installation of pick-up plate assy faulty.                                                                                   | Correct pick-up plate installation height as specified.       |
|                   | 5. No sound                              | 1. Check pin plug cord lead-through with tester.                                                                                       | Disconnected or broken wire.                                                                                                 | Replace pin plug cord.                                        |
|                   |                                          | 2. Check cartridge terminal DC resistance with tester. (L ch, R ch)                                                                    | Broken or shorted wire inside cartridge.                                                                                     | Replace cartridge.                                            |
| Unusual noise     | 1. Mechanical noise (direct noise)       | 1. Belt contacting belt guide.                                                                                                         | Faulty motor pulley height.                                                                                                  | Adjust height of motor pulley.                                |
|                   |                                          | 2. Observe motor pulley during revolutions.                                                                                            | Variation in motor pulley.                                                                                                   | Replace motor pulley.                                         |
|                   |                                          | 3. During revolutions, vibration exists or noise is audible.                                                                           | Faulty motor.                                                                                                                | Replace motor.                                                |
|                   |                                          | 4. During motor rotation, if arm or table mount is touched with your hand, vibration is evident.                                       | Faulty installation of motor or variation in motor cushions.                                                                 | Adjust motor installation position.<br>Replace motor cushion. |

| Condition                                                  | Explanation                                                                        | Confirmation                                                                                                   | Source                                                                                     | Countermeasure                                                                               |
|------------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
|                                                            | 2. Electrical noise.<br>(from speaker)                                             | 1. Sometimes shock noise and hum is emitted.<br>Interference when lead wire is moved or no sound periodically. | Lead wire leak or lead wire is broken or disconnected.<br>Faulty pin plug cord connection. | Repair or replace lead wire.<br>Make proper pin plug cord connection.                        |
|                                                            |                                                                                    | 2. Interference when upper part of shell is lightly tapped.                                                    | Defective cartridge.<br>Faulty cartridge terminal connection.                              | Replace cartridge.<br>Make proper lead wire connection.                                      |
|                                                            |                                                                                    | 3. Vibration and noise from motor during revolutions.                                                          | Faulty motor.                                                                              | Replace motor.                                                                               |
| Turntable does not rotate.<br>(or rotation is unstable)    | 1. Electrical circuit problem.                                                     | 1. Check Supply P.C Board fuse with tester.                                                                    | Fuse blown.                                                                                | Replace with proper fuse.                                                                    |
|                                                            |                                                                                    | 2. Check Proximity switch lead-through with tester.                                                            | Shorted.                                                                                   | Replace Proximity switch.                                                                    |
|                                                            |                                                                                    | 3. Check power switch lead-through with tester.                                                                | Open.                                                                                      | Replace micro switch.                                                                        |
|                                                            |                                                                                    | 4. Check main lead wires with tester.                                                                          | Disconnected or broken lead wire.                                                          | Replace or repair lead wire.                                                                 |
|                                                            |                                                                                    | 5. Check motor coils with tester.                                                                              | Disconnected or broken wire.                                                               | Replace motor.                                                                               |
|                                                            |                                                                                    | 6. When rotor is rotated by hand, it catches or rotation is not light and smooth.                              | Insufficient oil.                                                                          | Lubricate rotor shaft and clean.                                                             |
|                                                            | 2. Table shaft out of order.                                                       | When turntable is rotated by hand it seems heavy.<br>Unusual noise and too much rattle (with belt removed).    | Insufficient oil.                                                                          | Lubricate table shaft and bearing.<br>Replace table shaft.                                   |
|                                                            | 3. Speed change mechanism defective.                                               | 1. Slippage between belt, motor pulley and turntable.                                                          | Worn out belt.<br>Oil adhering to belt.                                                    | Replace belt.<br>Clean with carbon tetrachloride or alcohol.                                 |
|                                                            |                                                                                    | 2. Belt does not run on middle of motor pulley (drum-like part).                                               | Faulty motor pulley height.                                                                | Adjust motor pulley height and motor slant.                                                  |
|                                                            |                                                                                    | 3. Belt rubbing noise.                                                                                         |                                                                                            |                                                                                              |
|                                                            | 4. Revolutions too slow. (or uneven)                                               | Check for variation in shape of belt and whether dust is adhering to belt, motor pulley and turntable.         | Variation of belt.<br>Dust.                                                                | Replace belt.<br>Clean with carbon tetrachloride or alcohol.                                 |
| Operation of manual lifter faulty. (at record performance) | 1. Lifting or lowering takes place too fast when manipulating the lifter manually. | 1. Observe plate spring.                                                                                       | Variation in shape or bent.                                                                | Repair or replace.                                                                           |
|                                                            |                                                                                    | 2. Check lifter shaft silicon oil.                                                                             | Insufficient silicon oil.                                                                  | Apply silicon oil (200000CS).                                                                |
|                                                            | 2. Lifting or lowering is too slow when manipulating the lifter manually.          | 1. Check strength of pressure coil spring.                                                                     | Pressure coil spring has lost strength.                                                    | Replace pressure coil spring.                                                                |
|                                                            |                                                                                    | 2. Check lifter silicon oil.                                                                                   | Too much oil.                                                                              | Wipe off oil.                                                                                |
| Position of arm auto stop faulty.                          | 1. Too soon.                                                                       | Auto stop takes place too soon (17 cm, 30 cm record).                                                          | Faulty adjustment.                                                                         | Use a 30 cm record as standard and adjust by turning adjustment screw (A) counter-clockwise. |
|                                                            | 2. Too late.                                                                       | Auto stop takes place too late (17 cm, 30 cm record).                                                          | Faulty adjustment                                                                          | Use a 30 cm record as standard and adjust by turning adjustment screw (A) clockwise.         |

| Condition | Explanation                                                                         | Confirmation                                                                                                                                                                                                                                                                              | Source                                | Countermeasure                                                                                                                                          |
|-----------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
|           | 3. Auto stop of either 17 cm or 30 cm record sooner or later than normal auto stop. | When the bottom panel is removed and the movement of the aluminum plate (switch holder plate) on which the Proximity Switch is installed is changed by manipulating the change lever, the stopper screw sticks to part of the square hole in the aluminum plate and does not move freely. | Faulty connection pole or adjustment. | Replace connection pole and also change holes (choose the most suitable of the 3 holes) at tip of aluminum plate to which connection pole is connected. |
|           | 4. Specified stop position.                                                         | 30 cm, 25 record operation begins between 115φ and 109φ (center 56R).<br>17 cm record operation begins between 106φ and 98φ (center 51R).                                                                                                                                                 |                                       |                                                                                                                                                         |

## MEMO

---

## MEMO

---



## MEMO

---

---

SECTION 2

**PARTS LIST**

TABLE OF CONTENTS

1. ASSEMBLY BLOCK (1) ..... 23

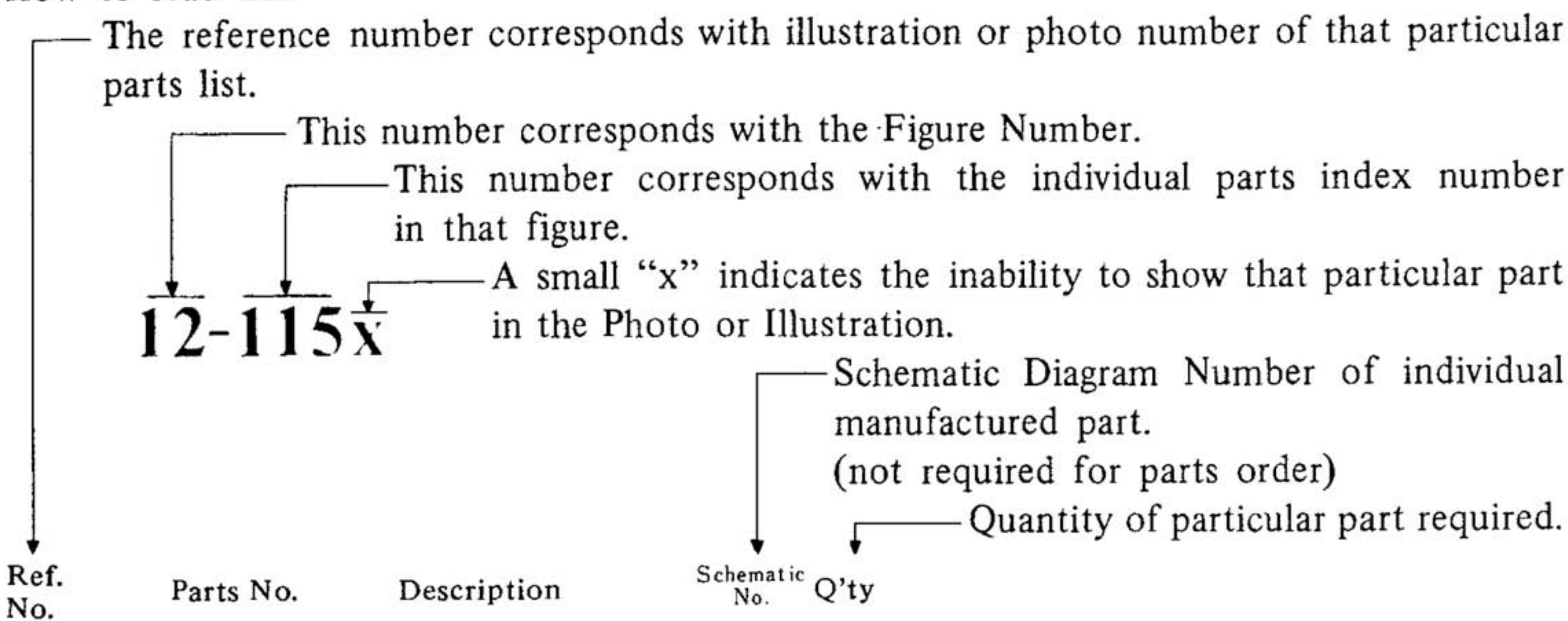
2. ASSEMBLY BLOCK (2) ..... 24

3. CABINET BLOCK ..... 27

INDEX ..... 28

HOW TO USE THIS PARTS LIST

- 1. This parts list is compiled by various individual blocks based on assembly process.
- 2. When ordering parts, please describe parts number, serial number, and model number in detail.
- 3. How to read List



|                    |        |                            |         |   |
|--------------------|--------|----------------------------|---------|---|
| FLYWHEEL BLOCK #13 |        |                            |         |   |
| 12-115x            | 800425 | Flywheel Block Assy. Comp. | RDG #13 | 1 |
| 12-116             | 244506 | Flywheel Only              | RD-233  | 1 |
| 12-117x            | 244754 | Felt, Flywheel             | RD-275  | 1 |
| 12-118             | 251324 | Main Metal Case            | RD-236  | 1 |
| 12-119             | 253080 | Main Metal                 | RD-237  | 1 |

- 4. The symbol numbers shown on the P.C. Board list can be matched with the Composite Views of Components of the Schematic Diagram or Service Manual.
- 5. Please utilize separate "Common List for Service Parts" for Resistor Parts orders.
- 6. The shape of the parts and parts name, etc. can be confirmed by comparing them with the parts shown on the Electrical Parts Table of P.C. Board.
- 7. Both the kind of part and installation position can be determined by the Parts Number. To determine where a parts number is listed, utilize Parts Index at end of Parts List.  
It is necessary first of all to find the Parts Number. This can be accomplished by using the Reference Number listed at right of parts number in the Parts Index. (meaning of ref. no. outlined in Item 3 above).
- 8. Utilize separate "Price List for Parts" to determine unit price. The most simple method of finding parts Price is to utilize the reference number.

1) ASSEMBLY BLOCK (1)

| Ref. No.                          | Parts No. | Description                 | Schematic No. | Q'ty |
|-----------------------------------|-----------|-----------------------------|---------------|------|
| <b>CABINET BLOCK</b>              |           |                             |               |      |
| 1-1                               | TP710021  | Rubber Cap                  | 2088176800    | 1    |
| 1-2                               | TP720257  | Rubber Cushion              | 2275683000    | 2    |
| <b>SPEED CHANGE BRACKET BLOCK</b> |           |                             |               |      |
| 1-3                               | BZ709323  | Belt Guide Boock Comp.      |               |      |
|                                   |           | AP-001/C                    | 2074690800    | 1    |
| 1-4                               | TP709334  | Guard AP-001/C              | 2074051900    | 1    |
| 1-5                               | MB719008  | Belt AP-003                 | 2072861100    | 1    |
| 1-6                               | BM709356  | AC Motor Block Comp.        |               |      |
|                                   |           | AP-001/C                    | 2212547500    | 1    |
| 1-7                               | MB709391  | Cushion Rubber AP-001/C     | 2088172200    | 3    |
| 1-8                               | MR709402  | Motor Pulley 50 Hz AP-001/C | 2071675000    | 1    |
| 1-9x                              | MR709413  | Motor Pulley 60 Hz AP-001/C | 2071675100    | 1    |
| 1-10                              | MS709424  | Motor Hang Shaft (A)        |               |      |
|                                   |           | AP-001/C                    | 2076463000    | 1    |
| 1-11                              | MS709435  | Motor Hang Shaft (B)        |               |      |
|                                   |           | AP-001/C                    | 2076463100    | 2    |
| 1-12                              | TP709446  | Cushion Holder AP-001/C     | 2074672100    | 3    |
| 1-13                              | ZW712236  | 'E' Ring 4M                 |               | 3    |
| <b>PU ARM BLOCK</b>               |           |                             |               |      |
| 1-14                              | TP709457  | PU Arm AP-001/C             | 2073174600    | 1    |
| 1-15                              | BL719381  | Lifter Bar Block Comp.      |               |      |
|                                   |           | AP-003                      | 2076165700    | 1    |
| 1-16                              | MS709468  | Lifter Shaft AP-001/C       | 2076469000    | 1    |
| 1-17x                             | ZG709470  | Cramp Coil Spring AP-001/C  | 2070381800    | 1    |
| 1-18x                             | ZW712361  | 'E' Ring 3M                 |               | 1    |
| 1-19                              | BZ709481  | PU Rest Block Comp.         |               |      |
|                                   |           | AP-001/C                    | 2073871100    | 1    |
| 1-20                              | TP719594  | Pick-up Stand AP-003        | 2073563700    | 1    |
| 1-21x                             | ZS712372  | Screw, cone point           |               |      |
|                                   |           | Flat Socket 40x10           |               | 1    |
| 1-22x                             | ZS712653  | Tapping Screw Pan head      |               |      |
|                                   |           | 30x10                       |               | 3    |
| <b>TURN TABLE BLOCK</b>           |           |                             |               |      |
| 1-23                              | TP709492  | Turn Table AP-001/C         | 2072365300    | 1    |
| 1-24                              | TP709503  | Table Sheet AP-001/C        | 2072368600    | 1    |
| 1-25                              | MV709514  | Table Shaft Holder AP-001/C | 2072568300    | 1    |
| 1-26                              | ZW719043  | Special Nut AP-003          | 2079663100    | 1    |
| 1-27                              | ZW712697  | Special Washer 101x170x10   |               | 1    |
| 1-28                              | ZS712765  | Screw, pan head 30x4x4      |               | 1    |
| 1-29                              | MS709525  | Table shaft AP-001/C        | 2076468900    | 1    |
| <b>LIFTER LEVER BLOCK</b>         |           |                             |               |      |
| 1-30                              | BL709536  | Lifter Lever Block Comp.    |               |      |
|                                   |           | AP-001/C                    | 2075179400    | 1    |
| 1-31                              | SK715533  | Knob                        | 2283540100    | 2    |
| <b>RECORD SELECT CAM BLOCK</b>    |           |                             |               |      |
| 1-32                              | BZ709547  | Record Select Cam Block     |               |      |
|                                   |           | Comp. AP-001/C              | 2075772200    | 1    |
| <b>ELECTRICAL PARTS BLOCK</b>     |           |                             |               |      |
| 1-33                              | ES718648  | Micro SW. AP-003            | 2214633500    | 1    |
| 1-34x                             | ES709806  | Micro SW. 5A 250V(SEMKO)    | 2214033600    | 1    |
| 1-35x                             | ES709817  | Micro SW. 5A 250V (BSI)     | 2214035100    | 2    |

2) ASSEMBLY BLOCK (2)

| Ref. No.                          | Parts No. | Description                | Schematic No. | Q'ty |
|-----------------------------------|-----------|----------------------------|---------------|------|
| <b>CABINET BLOCK</b>              |           |                            |               |      |
| 2-1                               | ZG709132  | Panel Spring (A)           |               |      |
|                                   |           | (Cone Type) AP-001/C       | 2070382700    | 1    |
| 2-2                               | ZG709143  | Panel Spring (B) BLUE      |               |      |
|                                   |           | (Cone Type) AP-001/C       | 2070382800    | 1    |
| 2-3                               | ZG709154  | Panel Spring (C) BLACK     |               |      |
|                                   |           | (Cone Type) AP-001/C       | 2070382900    | 1    |
| 2-4                               | ZG709165  | Panel Spring (D) RED       |               |      |
|                                   |           | (Cone Type) AP-001/C       | 2070383000    | 1    |
| 2-5                               | ZS712135  | Tapping Screw, pan head    |               |      |
|                                   |           | 40x8                       |               | 4    |
| 2-6                               | TP720314  | Cushion                    | 2088180700    | 4    |
| 2-7                               | TP720268  | Holder Plate               | 2074690000    | 1    |
| 2-8                               | ZS720281  | Screw, w/washer 3x10       |               |      |
|                                   |           | (Special)                  | 2079477900    | 1    |
| 2-9                               | TP720270  | Rubber Pad A               | 2088180400    | 2    |
| 2-10                              | TP720292  | Rubber Pad B               | 2088180500    | 1    |
| 2-11                              | TP720303  | Rubber Pad C               | 2088180600    | 1    |
| <b>SPEED CHANGE BRACKET BLOCK</b> |           |                            |               |      |
| 2-12                              | BZ709312  | Speed Changing Bracket     |               |      |
|                                   |           | Block Comp. AP-001/C       | 2073564800    | 1    |
| 2-13                              | ZG718918  | Turn-over Spring AP-003    | 2277172000    | 1    |
| 2-14                              | ZS712225  | Tapping Screw, pan head    |               |      |
|                                   |           | 30x8                       |               | 2    |
| 2-15                              | SB631157  | Push Button E              | CW-2014       | 2    |
| <b>RECORD SELECT CAM BLOCK</b>    |           |                            |               |      |
| 2-16                              | TP709558  | Connecting Pole AP-001/C   | 2076468800    | 1    |
| 2-17                              | TP709560  | SW. Holder AP-001/C        | 2074687000    | 1    |
| 2-18                              | ZG709571  | Pull Coil Spring AP-001/C  | 227178200     | 1    |
| 2-19                              | ZW713586  | Special Washer, 32x100x5   | 2270351000    | 2    |
| 2-20                              | ZS715228  | Tapping Screw, pan head    |               |      |
|                                   |           | 30x10                      |               | 1    |
| 2-21                              | ES711786  | Reed SW.                   | 2214632200    | 1    |
| 2-22                              | BD709582  | PU Plate Block Comp.       |               |      |
|                                   |           | AP-001/C                   | 2075179500    | 1    |
| 2-23                              | ZS715230  | Screw, countersunk head    |               |      |
|                                   |           | 26x8 (PC)                  |               | 1    |
| <b>ELECTRICAL PARTS BLOCK</b>     |           |                            |               |      |
| 2-24                              | EJ709593  | Output Terminal Plate      |               |      |
|                                   |           | AP-001/C                   | 2216235000    | 1    |
| 2-25x                             | EW709604  | PU Cord AP-001/C           | 2216434700    | 1    |
| 2-26                              | TP709727  | Spacer AP-001/C            | 2275289400    | 4    |
| 2-27                              | ZS715241  | Tapping Screw 3x16 BR      |               | 4    |
| 2-28                              | MB718885  | Cushion Rubber AP-003      | 2088161000    | 4    |
| 2-29                              | BT709751  | Power Trans.               |               |      |
|                                   |           | (U/T, 110/220)/KMA         | 2222332800    | 1    |
| 2-30x                             | BT709762  | Power Trans.               |               |      |
|                                   |           | (U/T, 240/50)/AST, BSI     | 2222334100    | 1    |
| 2-31x                             | BT709773  | Power Trans. CEE (SEMKO)   | 2222334300    | 1    |
| 2-32x                             | BT709784  | Power Trans. CSA           | 2222334400    | 1    |
| 2-33                              | TP711011  | Cord Retainer              | 2074679000    | 1    |
| 2-34x                             | TP711022  | Cord Retainer              | 2074682600    | 1    |
| 2-35                              | TP712001  | Cord Stopper UL            | 2088167600    | 1    |
| 2-36x                             | TP712012  | Cord Stopper 3 Core        | 2218512600    | 1    |
| 2-37x                             | TP709795  | Cord Stopper KMA, CEE      |               |      |
|                                   |           | (SEMKO)                    | 2218512900    | 1    |
| 2-38                              | BA709828  | P.C Board Comp. (U/T,      |               |      |
|                                   |           | 110/220)/KMA AP-001/C      | R-030207      | 1    |
| 2-39x                             | BA709830  | P.C Board Comp. (U/T,      |               |      |
|                                   |           | 240/50)/AST AP-001/C       | R-030227      | 1    |
| 2-40x                             | BA709841  | P.C Board Comp. CSA        |               |      |
|                                   |           | AP-001/C                   | R-030226      | 1    |
| 2-41x                             | BA709852  | P.C Board Comp. CEE        |               |      |
|                                   |           | (SEMKO)                    | R-030225      | 1    |
| 2-42x                             | BA709863  | P.C Board Comp. BSI        |               |      |
|                                   |           | AP-001/C                   | R-030228      | 1    |
| 2-43                              | ET709874  | Transistor 2SD198 (Q)      | 2211444000    | 1    |
| 2-44                              | ET709885  | Transistor 2SC1446 (Q)     | 2211444100    | 1    |
| 2-45                              | ED709896  | Diode 1S1887               | 3756870000    | 4    |
| 2-46                              | EC709907  | Metalized/C. 0.047μF 1000V | 22370139900   | 1    |
| 2-47                              | EC709918  | Metalized/C. 0.1μF AC125V  | 22370147000A  | 1    |

When ordering parts, Please describe Parts Number, Serial Number, and Model Number in detail.

| Ref.<br>No. | Parts No. | Description                        | Schematic<br>No. | Q'ty |
|-------------|-----------|------------------------------------|------------------|------|
| 2-48x       | EC709920  | Metalized/C. 0.047μF<br>AC250V     | 2233011400       | 1    |
| 2-49        | EF711966  | Fuse 1A 250V                       | 2214422400       | 1    |
| 2-50x       | EF709931  | Fuse 0.5A(T)                       | 2214419200       | 1    |
| 2-51x       | EJ709942  | Fuse Holder AP-001/C               | 2216504700       | 2    |
| 2-52        | ES712078  | Seesaw SW.                         | 2214649400       | 1    |
| 2-53x       | ZW709953  | Nut 3M (AP-001/C)                  |                  | 1    |
| 2-54x       | ZW709964  | Spring Washer 3M Small<br>AP-001/C |                  | 1    |
| 2-55x       | ZW709975  | Spring Washer 3M Large<br>AP-001/C |                  | 1    |
| 2-56        | EW711955  | AC Cord 2.5M UL                    | 2217619900       | 1    |
| 2-57x       | EW711990  | AC Cord 2.5M 3 Core, SAA           | 2217705100       | 1    |
| 2-58x       | EW709986  | AC Cord KMA AP-001/C               | 2217652400       | 1    |
| 2-59x       | EW709997  | AC Cord BSI AP-001/C               | 2217706900       | 1    |
| 2-60x       | EW710065  | AC Cord CEE (SEMKO)<br>AP-001/C    | 2217652500       | 1    |
| 2-61x       | EW710741  | AC Cord AST                        | 2217653100       | 1    |

When ordering parts, Please describe Parts Number, Serial Number, and Model Number in detail.

3. PHOTO OF CABINET BLOCK



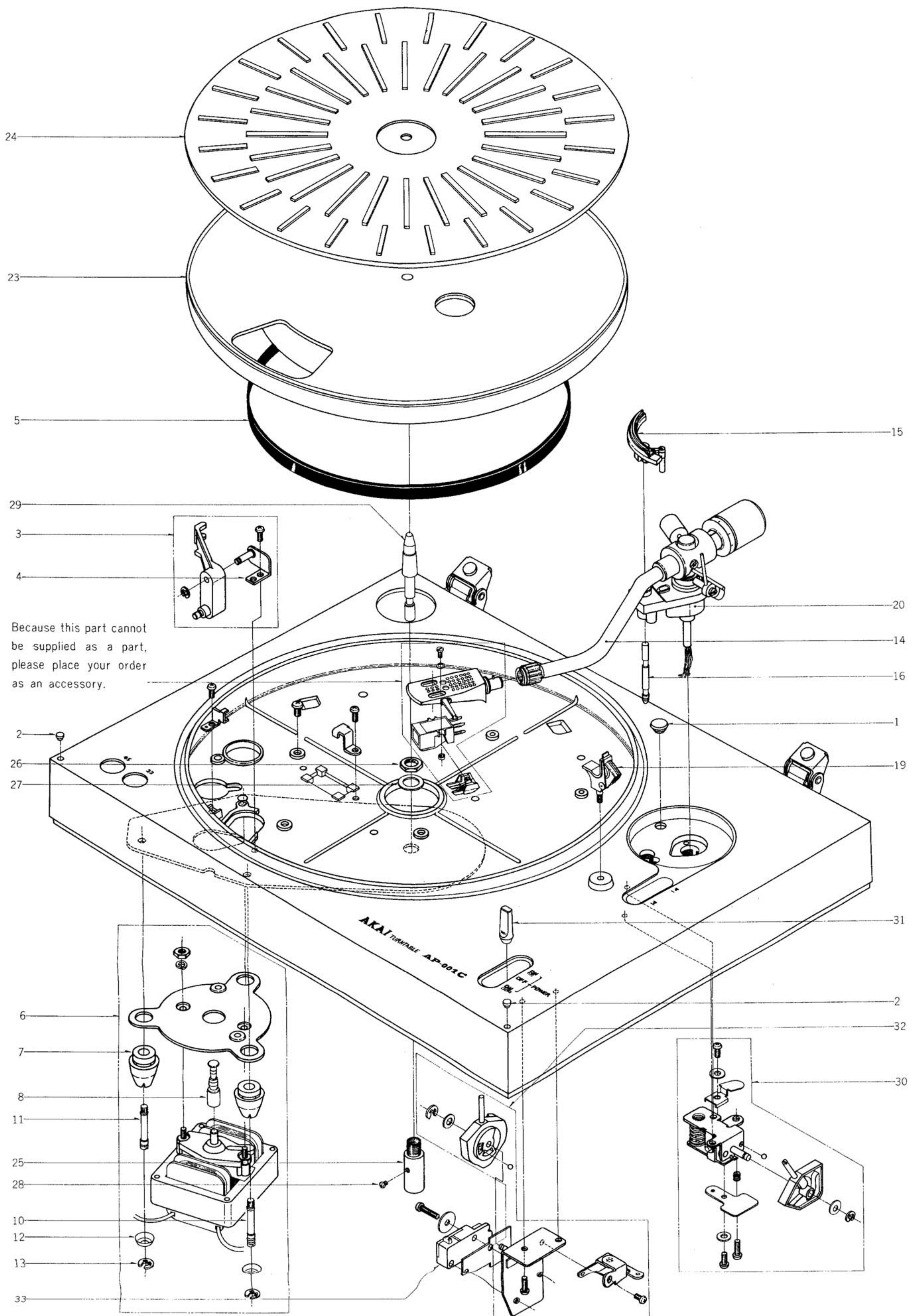
3) CABINET BLOCK

| Ref. No. | Parts No. | Description                           | Schematic No. | Q'ty |
|----------|-----------|---------------------------------------|---------------|------|
| 3-1      | BC709007  | Cabinet AP-001                        | 208477510     | 1    |
| 3-2x     | BC709121  | Cabinet AP-001C                       | 208477690     | 1    |
| 3-3      | TP719853  | Hinge A AP-003                        | 208616870     | 2    |
| 3-4x     | ZS711808  | Tapping Screw, pan head<br>30x10      |               | 6    |
| 3-5      | BC709233  | Dust Cover Block Comp.<br>AP-001/C    | 208478210     | 1    |
| 3-6      | TP719897  | Hinge B AP-003                        | 208616880     | 2    |
| 3-7      | ZS712214  | Screw, oval countersunk<br>head 40x10 |               | 4    |
| 3-8      | SP709244  | Bottom Case AP-001/C                  | 208466110     | 1    |
| 3-9x     | SA718762  | Foot (Rubber) AP-003                  | 228745120     | 4    |
| 3-10x    | TP709266  | Lock Plate AP-001/C                   | 207546020     | 3    |
| 3-11x    | ZS718637  | Screw (Special), w/washer<br>4x12     | 207959270     | 3    |
| 3-12x    | TP720246  | Vinyl Sheet                           | 209436780     | 3    |

# INDEX

| Parts No. | Ref. No. | Parts No. | Ref. No. | Parts No. | Ref. No. | Parts No. | Ref. No. | Parts No. | Ref. No. |
|-----------|----------|-----------|----------|-----------|----------|-----------|----------|-----------|----------|
| BA709828  | 2-38     | TP720314  | 2-6      |           |          |           |          |           |          |
| BA709830  | 2-39x    | ZG709132  | 2-1      |           |          |           |          |           |          |
| BA709841  | 2-40x    | ZG709143  | 2-2      |           |          |           |          |           |          |
| BA709852  | 2-41x    | ZG709154  | 2-3      |           |          |           |          |           |          |
| BA709863  | 2-42x    | ZG709165  | 2-4      |           |          |           |          |           |          |
| BC709007  | 3-1      | ZG709470  | 1-17x    |           |          |           |          |           |          |
| BC709121  | 3-2x     | ZG709571  | 2-18     |           |          |           |          |           |          |
| BC709233  | 3-5      | ZG718918  | 2-13     |           |          |           |          |           |          |
| BD709582  | 2-22     | ZS711808  | 3-4x     |           |          |           |          |           |          |
| BL709536  | 1-30     | ZS712135  | 2-5      |           |          |           |          |           |          |
| BL719381  | 1-15     | ZS712214  | 3-7      |           |          |           |          |           |          |
| BM709356  | 1-6      | ZS712225  | 2-14     |           |          |           |          |           |          |
| BT709751  | 2-29     | ZS712372  | 1-21x    |           |          |           |          |           |          |
| BT709762  | 2-30x    | ZS712653  | 1-22x    |           |          |           |          |           |          |
| BT709773  | 2-31x    | ZS712765  | 1-28     |           |          |           |          |           |          |
| BT709784  | 2-32x    | ZS715228  | 2-20     |           |          |           |          |           |          |
| BZ709312  | 2-12     | ZS715230  | 2-23     |           |          |           |          |           |          |
| BZ709323  | 1-3      | ZS715241  | 2-27     |           |          |           |          |           |          |
| BZ709481  | 1-19     | ZS718637  | 3-11x    |           |          |           |          |           |          |
| BZ709547  | 1-32     | ZS720281  | 2-8      |           |          |           |          |           |          |
| EC709907  | 2-46     | ZW709953  | 2-53x    |           |          |           |          |           |          |
| EC709918  | 2-47x    | ZW709964  | 2-54x    |           |          |           |          |           |          |
| EC709920  | 2-48x    | ZW709975  | 2-55x    |           |          |           |          |           |          |
| ED709896  | 2-45     | ZW712236  | 1-13     |           |          |           |          |           |          |
| EF709931  | 2-50x    | ZW712361  | 1-18x    |           |          |           |          |           |          |
| EF711966  | 2-49     | ZW712697  | 1-27     |           |          |           |          |           |          |
| EJ709593  | 2-24     | ZW713586  | 2-19     |           |          |           |          |           |          |
| EJ709942  | 2-51x    | ZW719043  | 1-26     |           |          |           |          |           |          |
| ES709806  | 1-34x    |           |          |           |          |           |          |           |          |
| ES709817  | 1-35x    |           |          |           |          |           |          |           |          |
| ES711786  | 2-21     |           |          |           |          |           |          |           |          |
| ES712078  | 2-52     |           |          |           |          |           |          |           |          |
| ES718648  | 1-33     |           |          |           |          |           |          |           |          |
| ET709874  | 2-43     |           |          |           |          |           |          |           |          |
| ET709885  | 2-44     |           |          |           |          |           |          |           |          |
| EW709604  | 2-25x    |           |          |           |          |           |          |           |          |
| EW709986  | 2-58x    |           |          |           |          |           |          |           |          |
| EW709997  | 2-59x    |           |          |           |          |           |          |           |          |
| EW710065  | 2-60x    |           |          |           |          |           |          |           |          |
| EW710741  | 2-61x    |           |          |           |          |           |          |           |          |
| EW711955  | 2-56     |           |          |           |          |           |          |           |          |
| EW711990  | 2-57x    |           |          |           |          |           |          |           |          |
| MB709391  | 1-7      |           |          |           |          |           |          |           |          |
| MB718885  | 2-28     |           |          |           |          |           |          |           |          |
| MB719008  | 1-5      |           |          |           |          |           |          |           |          |
| MR709402  | 1-8      |           |          |           |          |           |          |           |          |
| MR709413  | 1-9x     |           |          |           |          |           |          |           |          |
| MS709424  | 1-10     |           |          |           |          |           |          |           |          |
| MS709435  | 1-11     |           |          |           |          |           |          |           |          |
| MS709468  | 1-16     |           |          |           |          |           |          |           |          |
| MS709525  | 1-29     |           |          |           |          |           |          |           |          |
| MV709514  | 1-25     |           |          |           |          |           |          |           |          |
| SA718762  | 3-9x     |           |          |           |          |           |          |           |          |
| SB631157  | 2-15     |           |          |           |          |           |          |           |          |
| SK715533  | 1-31     |           |          |           |          |           |          |           |          |
| SP709244  | 3-8      |           |          |           |          |           |          |           |          |
| TP709266  | 3-10x    |           |          |           |          |           |          |           |          |
| TP709334  | 1-4      |           |          |           |          |           |          |           |          |
| TP709446  | 1-12     |           |          |           |          |           |          |           |          |
| TP709457  | 1-14     |           |          |           |          |           |          |           |          |
| TP709492  | 1-23     |           |          |           |          |           |          |           |          |
| TP709503  | 1-24     |           |          |           |          |           |          |           |          |
| TP709558  | 2-16     |           |          |           |          |           |          |           |          |
| TP709560  | 2-17     |           |          |           |          |           |          |           |          |
| TP709727  | 2-26     |           |          |           |          |           |          |           |          |
| TP709795  | 2-37x    |           |          |           |          |           |          |           |          |
| TP710021  | 1-1      |           |          |           |          |           |          |           |          |
| TP711011  | 2-33     |           |          |           |          |           |          |           |          |
| TP711022  | 2-34x    |           |          |           |          |           |          |           |          |
| TP712001  | 2-35     |           |          |           |          |           |          |           |          |
| TP712012  | 2-36x    |           |          |           |          |           |          |           |          |
| TP719594  | 1-20     |           |          |           |          |           |          |           |          |
| TP719853  | 3-3      |           |          |           |          |           |          |           |          |
| TP719897  | 3-6      |           |          |           |          |           |          |           |          |
| TP720246  | 3-12x    |           |          |           |          |           |          |           |          |
| TP720257  | 1-2      |           |          |           |          |           |          |           |          |
| TP720268  | 2-7      |           |          |           |          |           |          |           |          |
| TP720270  | 2-9      |           |          |           |          |           |          |           |          |
| TP720292  | 2-10     |           |          |           |          |           |          |           |          |
| TP720303  | 2-11     |           |          |           |          |           |          |           |          |

# 1. ILLUSTRATION OF ASSEMBLY BLOCK (1)



2. ILLUSTRATION OF ASSEMBLY BLOCK (2)

