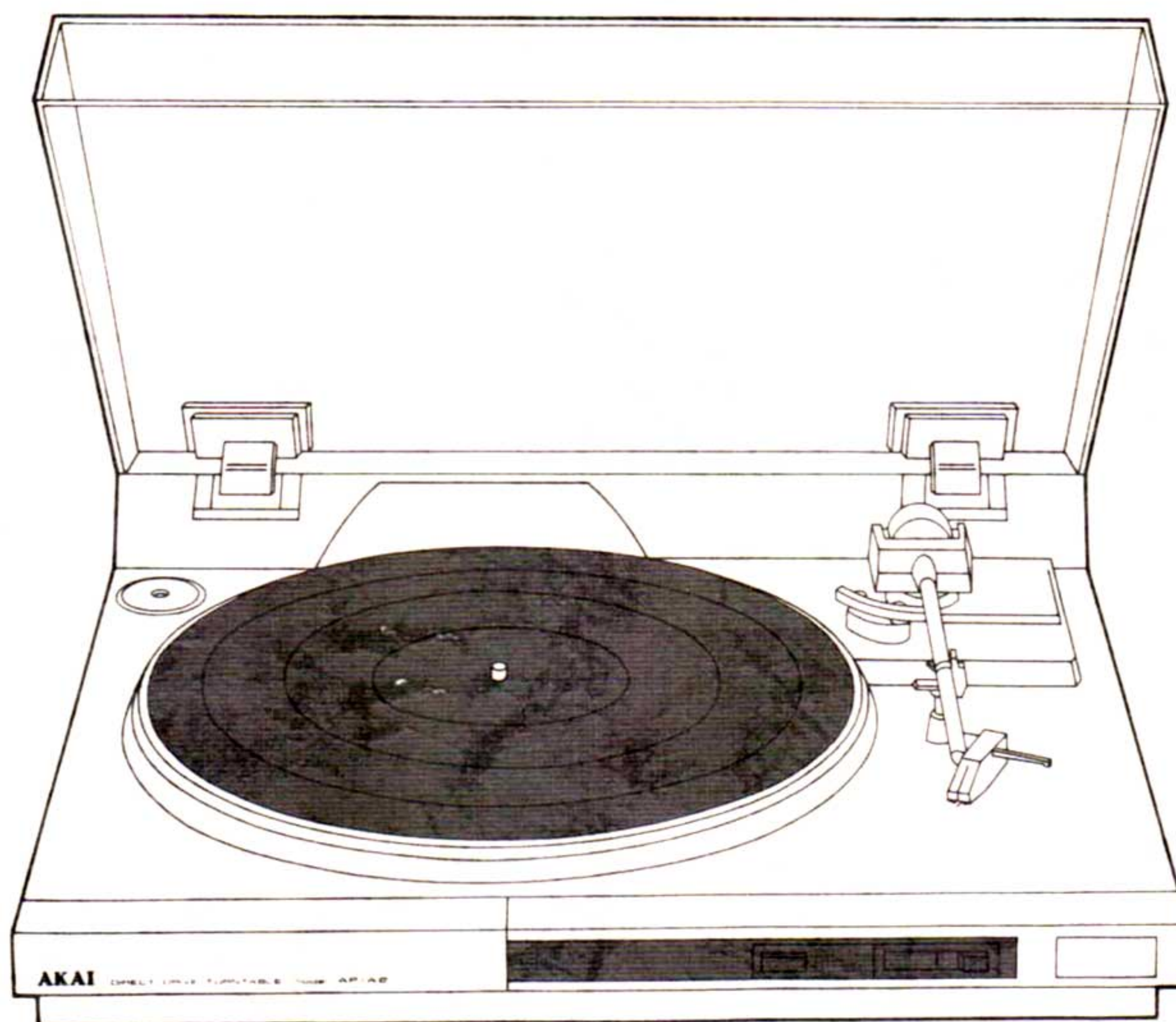


# **AKAI** SERVICE MANUAL



**DIRECT DRIVE TURNTABLE**

**MODEL AP-A2/C**

## ABBREVIATIONS FOR SERVICE MANUAL MODEL AP-A2/C

ABBREVIATION	EXPLANATION
AC	Alternating Current
ADJ	ADJustment
DC	Direct Current
D.D. motor	Direct Drive motor
FG	Frequency Generator
H (level)	High
HE.	Hall Element
L (level)	Low
LIM	LIMiter
SHC	Sample & Hold with Capacitor
SHCR	Sample & Hold with Capacitor and Resistor
SW	SWitch
TPG	Timing Pulse Generator
V REF.	Voltage REFerence





## DIRECT DRIVE TURNTABLE

### MODEL **AP-A2/C**

SECTION 1	SERVICE MANUAL .....	3
SECTION 2	PARTS LIST .....	13



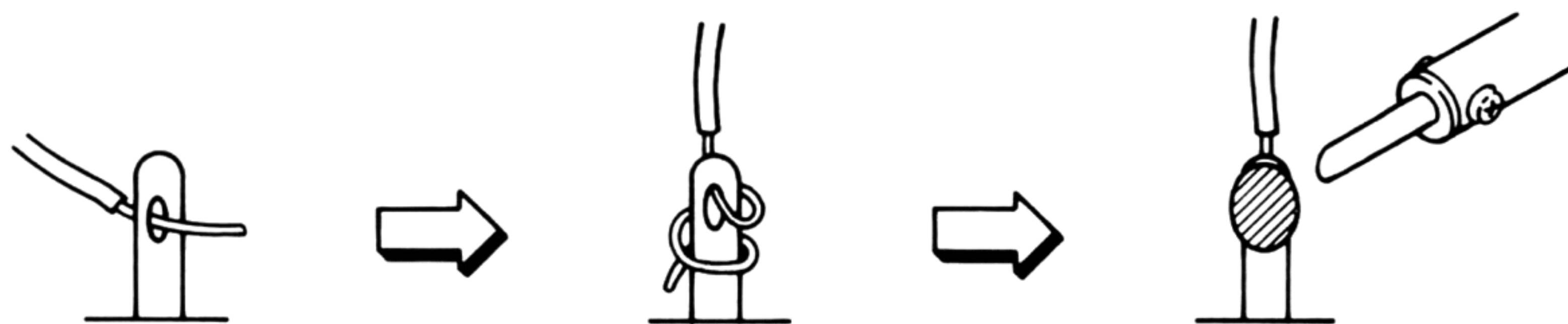
# SAFETY INSTRUCTIONS

## SAFETY CHECK AFTER SERVICING

Confirm the specified insulation resistance between power cord plug prongs and externally exposed parts of the set is greater than 10 Mohms, but for equipment with external antenna terminals (tuner, receiver, etc.) and is intended for **C** or **A**, specified insulation resistance should be more than 2.2 Mohms (ground terminals, microphone jacks, headphone jacks, line-in-out jacks etc.)

## PRECAUTIONS DURING SERVICING

1. Parts identified by the  $\triangle$  symbol parts are critical for safety.  
Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation. These must also be replaced only with specified replacements.  
Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
  - 1) Wires covered with PVC tubing
  - 2) Double insulated wires
  - 3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
  - 1) Insulation Tape
  - 2) PVC tubing
  - 3) Spacers (Insulating Barriers)
  - 4) Insulation sheets for transistors
  - 5) Plastic screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.

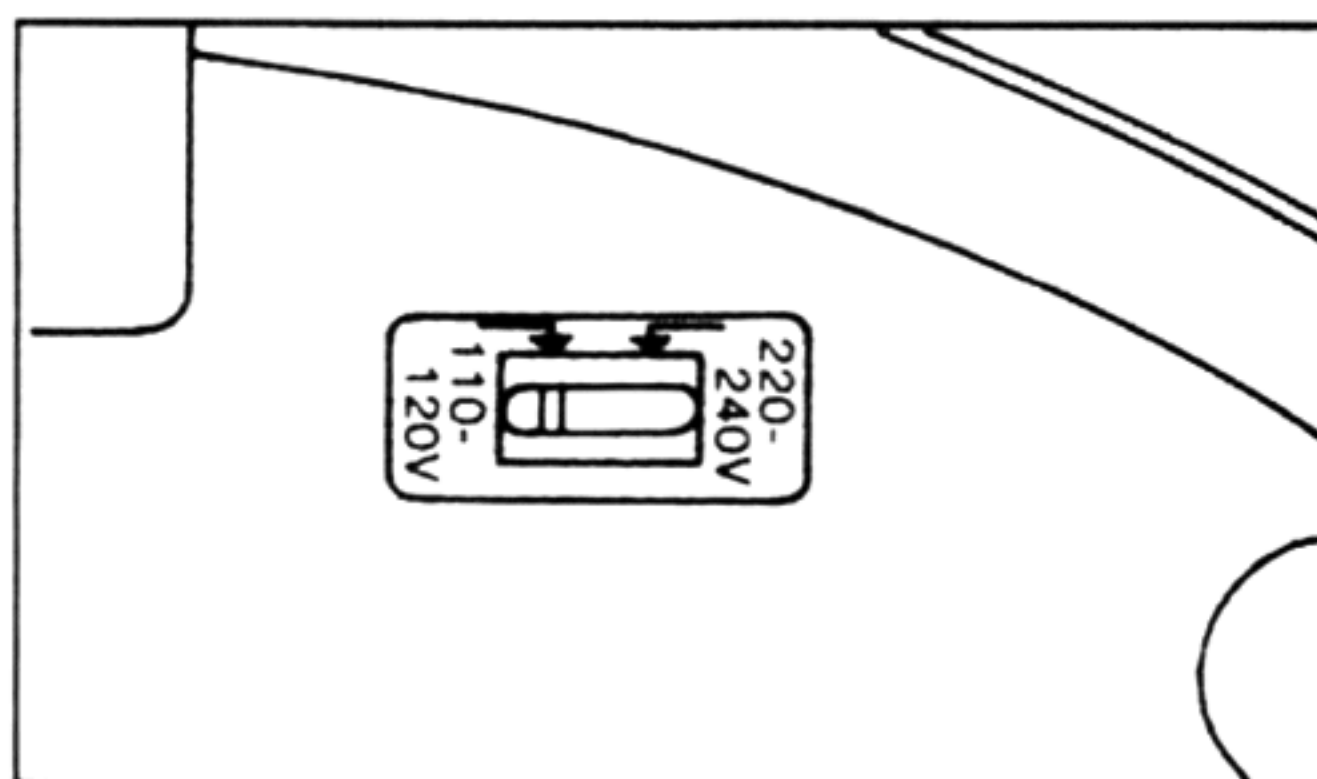


6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

## VOLTAGE CONVERSION

Each machine is preset at the factory according to its destination, but some machines can be set to 110V–120V or 220V–240V as required. If your machine's voltage can be converted:

Before connecting the power cord or assembling the platter, move the voltage selector located on the top of the cabinet with a screwdriver until the correct voltage is indicated. Models for USA, Canada, Europe, UK and Australia are not equipped with this facility.



## CYCLE CONVERSION

Cycle conversion is not necessary since AP-A2/C/CP use a DC MOTOR.

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SECTION 1

**SERVICE MANUAL**

TABLE OF CONTENTS

<b>I. SPECIFICATIONS</b> .....	<b>4</b>
<b>II. DISMANTLING OF UNIT</b> .....	<b>4</b>
<b>III. CONTROLS</b> .....	<b>5</b>
<b>IV. PRINCIPAL PARTS LOCATION</b> .....	<b>6</b>
<b>V. DESCRIPTION OF MOTOR DRIVE CIRCUIT</b> .....	<b>7</b>
5-1 IN A START-UP MODE .....	7
5-2 IN A NORMAL SPEED MODE .....	7
5-3 ROTATING METHOD .....	8
<b>VI. HOW TO CHANGE OR INSTALL THE CARTRIDGE</b> .....	<b>9</b>
<b>VII. MECHANICAL ADJUSTMENT</b> .....	<b>9</b>
7-1 TONE ARM HEIGHT ADJUSTMENT .....	9
7-2 AUTO-RETURN ADJUSTMENT .....	10
7-3 RETURN ARM POSITION ADJUSTMENT .....	10
<b>VIII. ELECTRICAL ADJUSTMENT</b> .....	<b>11</b>
<b>IX. PC BOARD TITLES AND IDENTIFICATION NUMBERS</b> .....	<b>11</b>

For basic adjustments, measuring methods, and operating principles, refer to GENERAL TECHNICAL MANUAL.



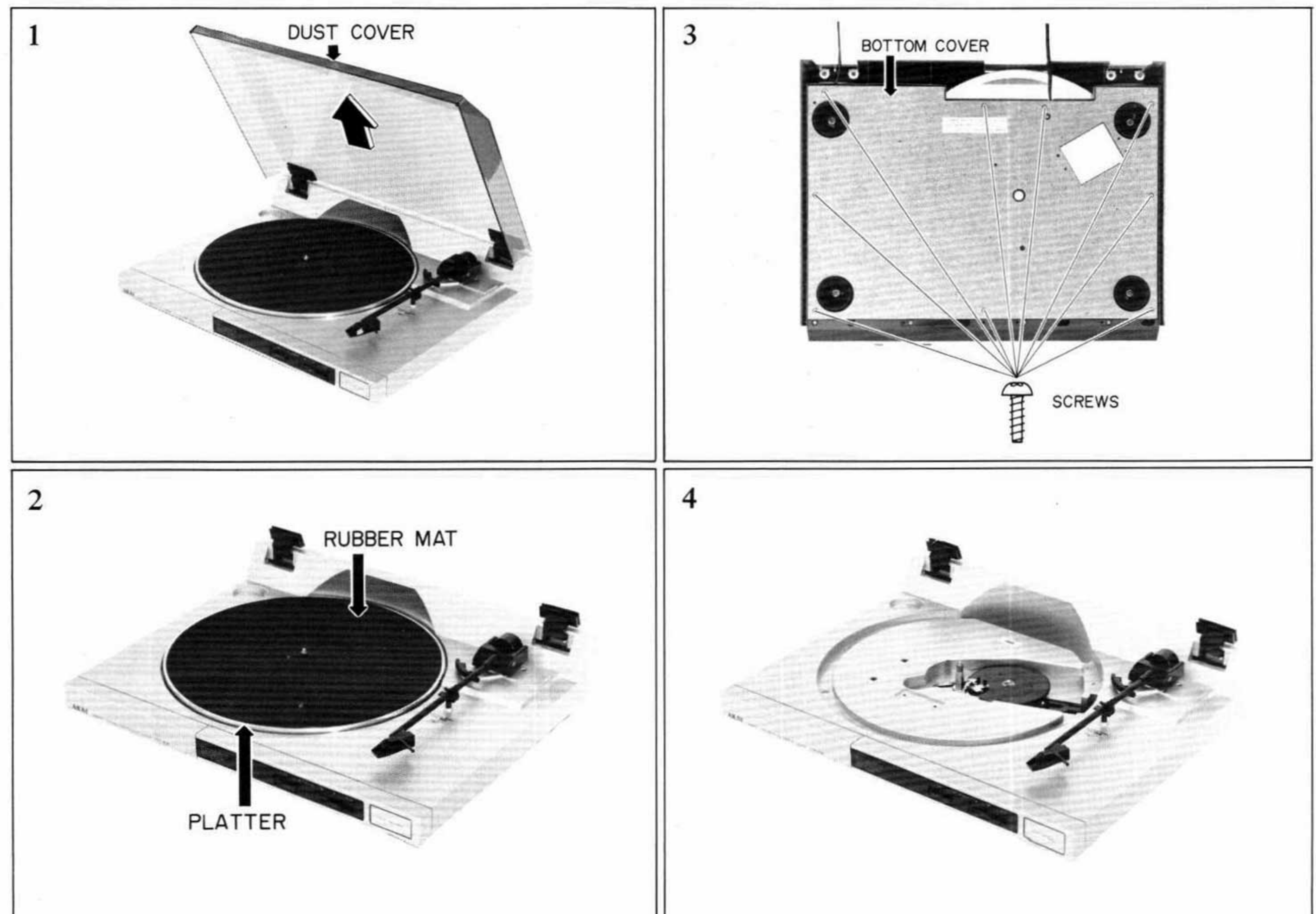
# I. SPECIFICATIONS

TURNTABLE (PLATTER)	Aluminum alloy diecast
DRIVE SYSTEM	Direct Drive Semi-automatic
MOTOR	DC Servo motor
SPEED	33-1/3 & 45 rpm
WOW & FLUTTER	0.03% (WRMS)
RUMBLE	73 dB (DIN-B)
TONE ARM	Static balanced straight type
EFFECTIVE ARM LENGTH	220 mm
ARM LIFTER	Oil damped
OVER HANG	15 mm
APPLICABLE CARTRIDGE	T4P ( <b>T4P</b> ) Plug-in Type
CARTRIDGE	VM type (PC-35)
OUTPUT VOLTAGE	2.5 mV
CHANNEL SEPARATION	More than 20 dB
OPTIMAL STYLUS PRESSURE	1.25 g
WEIGHT	5.9 g
POWER REQUIREMENTS	120V, 60 Hz for USA & Canada 220V, 50 Hz for Europe except UK 240V, 50 Hz for UK & Australia 110-120V/220-240V, 50/60 Hz switchable for other countries
DIMENSIONS	440 (W) × 346.5 (D) × 94 (H) mm (17.3 × 13.6 × 3.7 inches)
WEIGHT	3.8 kg (8.4 lbs)

\* For improvement purposes, specifications and design are subject to change without notice.

# II. DISMANTLING OF UNIT

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





### III. CONTROLS

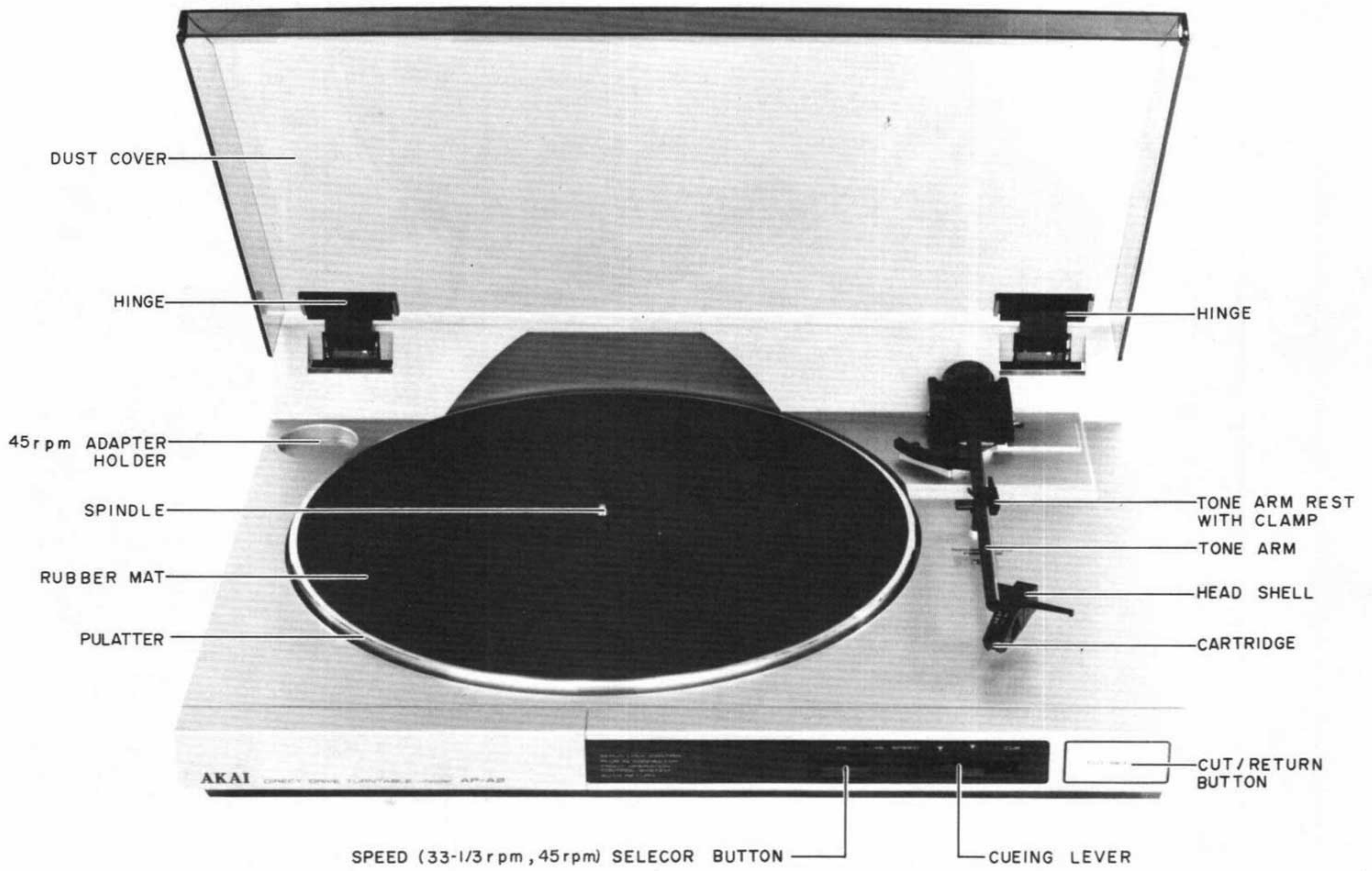


Fig. 3-1

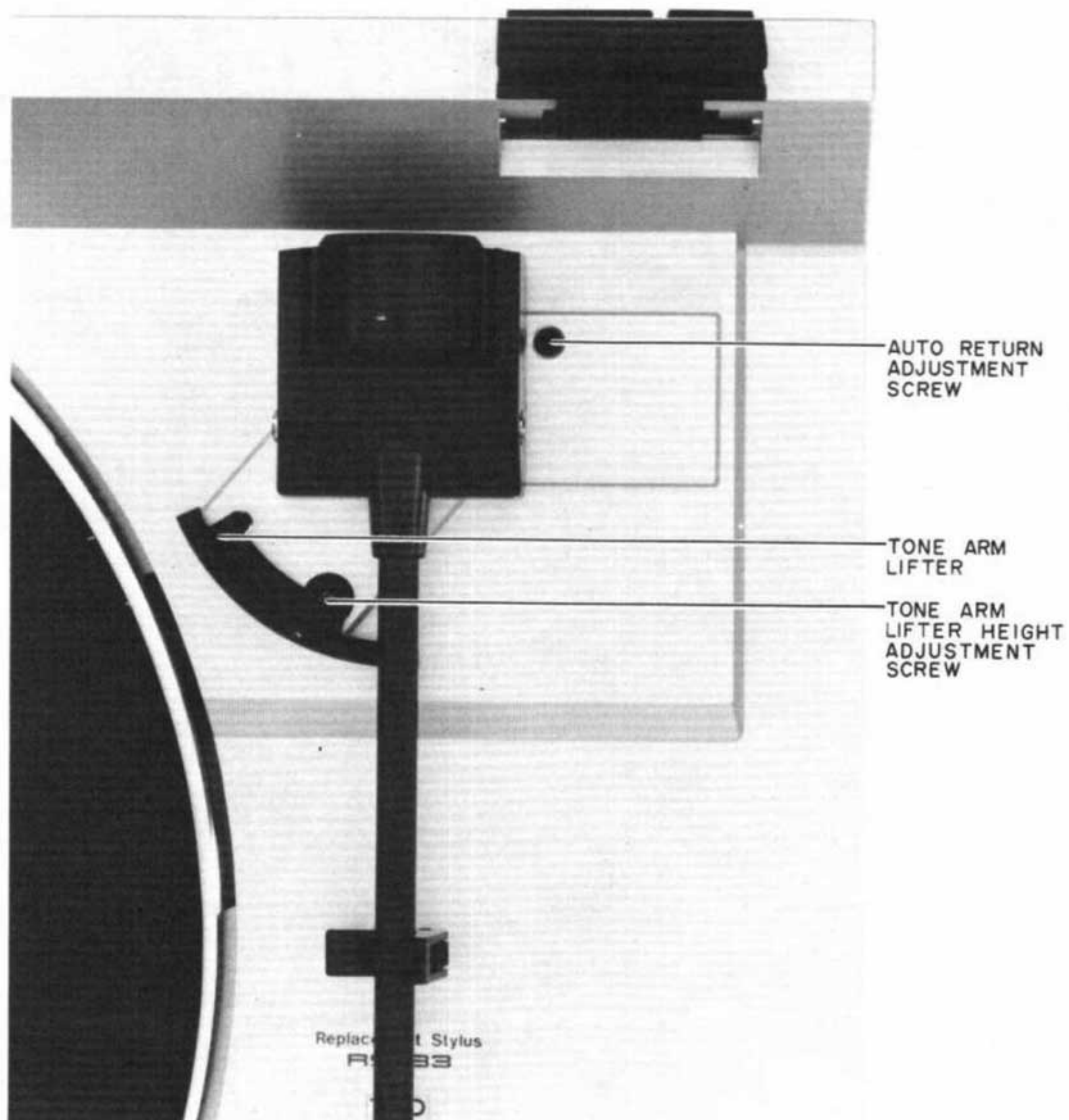


Fig. 3-2



# IV. PRINCIPAL PARTS LOCATION

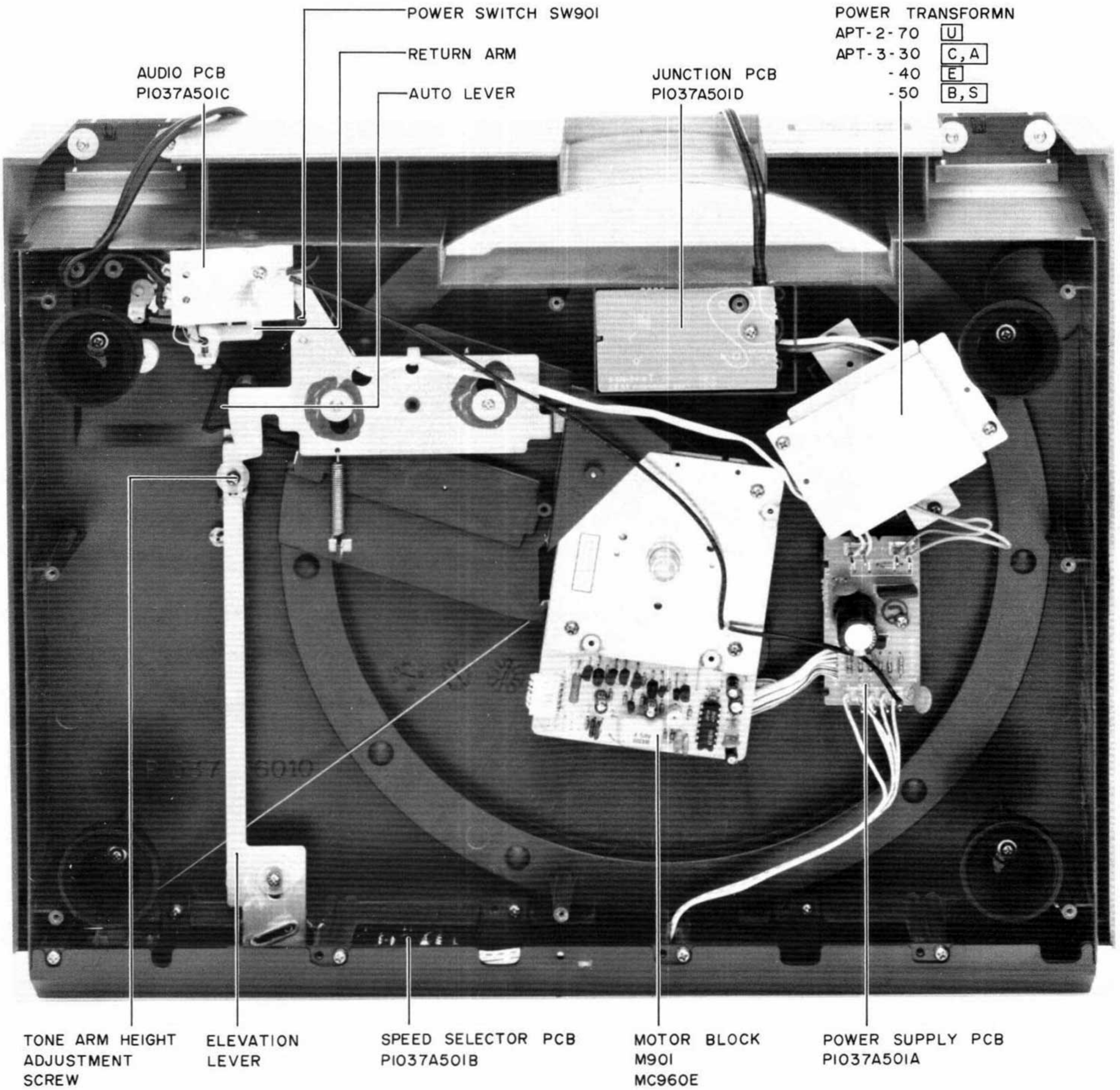


Fig. 4-1 Bottom View



## V. DESCRIPTION OF MOTOR DRIVE CIRCUIT

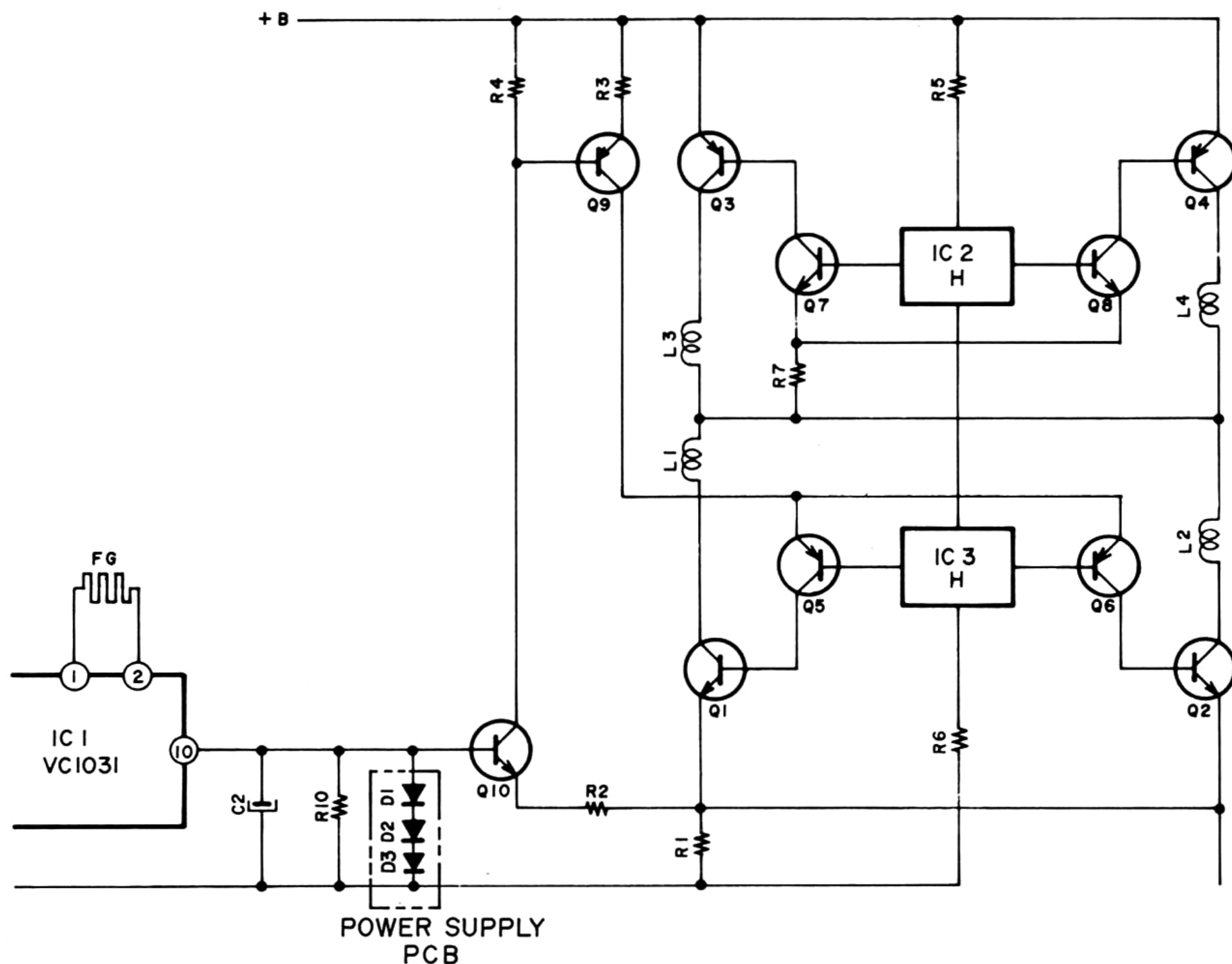


Fig. 5-1 Motor Drive Circuit

### 5-1 IN A START-UP MODE (Refer to Fig. 5-1)

Since the IC1 pin 10 output voltage attains a level close to that of pin 8 (at a higher voltage than in a normal rotational speed mode), the Q10 base voltage will also attain a higher level than in a normal speed mode, and a larger current will flow between the emitter and collector of Q10. The current flowing through Q9 will then be increased by Q10, due to a greater voltage drop across R4 than in a normal speed mode which consequently lowers the voltage applied to the Q9 base, and as a result, increases the current flowing between the Q9 emitter and collector.

Since due to the above situation, a larger current will flow from Q1 to the Q4 emitter and collector, the current flowing through coils L1 to L4 will also increase, the force to rotate the flywheel, in turn, will be made greater, and a start-up will be effected.

### 5-2 IN A NORMAL SPEED MODE

(Refer to Fig. 5-1)

Fine S and N poles are provided on the flywheel outer periphery. The S or N pole of the flywheel at FG of the printed circuit board alternates due to rotation, S to N and N to S, and the FG output will be made a sinusoidal wave by their magnetic fluxes. The sinusoidal wave FG output will then be input to IC1 pins ① and ②, and the IC output will appear at pin 10 as a DC voltage.

As the motor revolution slows down, the sinusoidal FG wavelength will become longer, and the DC voltage at IC10 pin 10 will become higher. As the motor revolution speeds up, the DC voltage at the IC pin 10 will become lower.



### 5-3 ROTATING METHOD (Refer to Fig. 5-1 to Fig. 5-3)

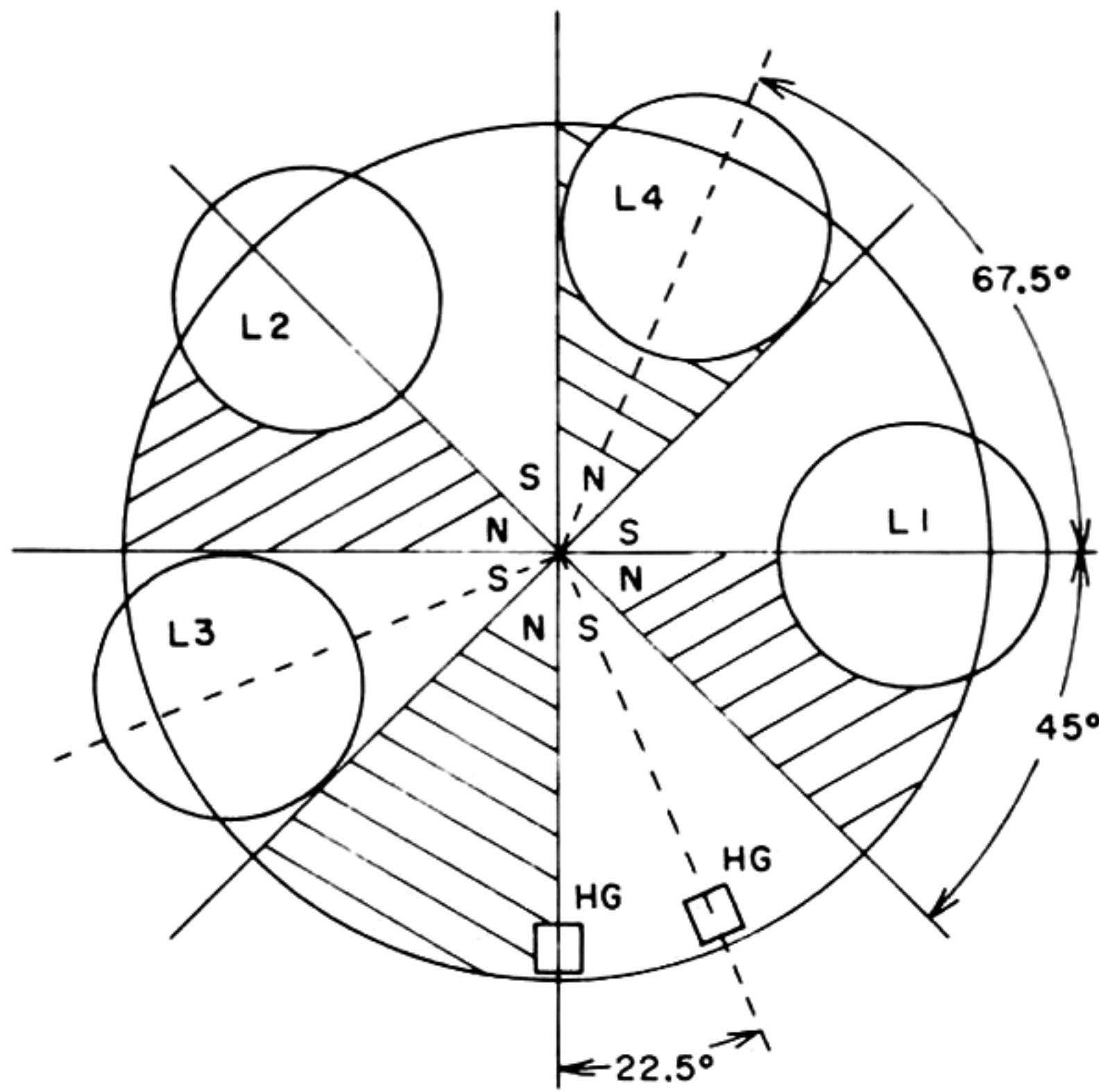


Fig. 5-2 Located of Various Parts

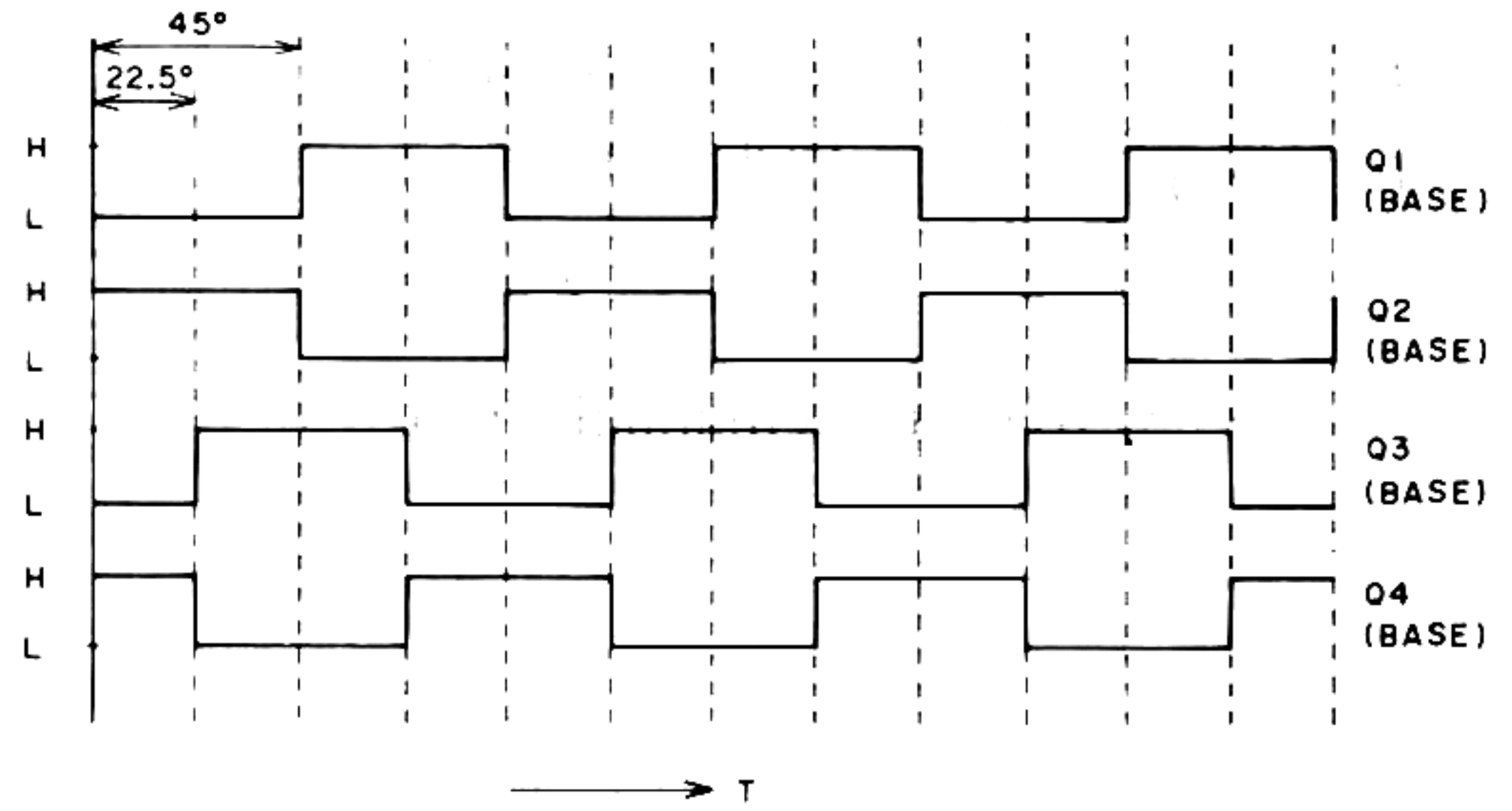


Fig. 5-3 Input Waveform of Q1 to Q4

As a voltage is applied to the Q10 base, turning it on, the Q10 collector will become L, and Q9 will turn on, flowing a current between its emitter and collector.

When due to rotation, the S and N poles provided on the motor alternate, S to N and N to S, outputs of the Hall ICs (IC2 and IC3) will also vary, H to L and L to H. Each Hall IC has two outputs, one becoming H when the other is L and vice versa, without fail. The Hall IC output variation drives the transistors that flow currents through coils.

For instance, when the IC2 outputs make the Q7 base H and the Q8 base L, Q7 will turn on, making its collector L and also the Q3 base L, and Q3 will turn on. At that point, a current will flow between the Q3 emitter and collector, and consequently through L3 as well. Since the other transistor, Q8, turns off due to its base at L, and its collector will become H, Q4 will also turn off, and due to no current flow between the Q4 emitter and collector, no current will flow through L4 either.

The IC3 block also operates similarly to the IC2 block described above.

Magnetic poles provided on the flywheel are octosectorial (at 45° sectorial angles individually) and equally

divided into S and N poles. (These magnets differ from those for FG.) Hall ICs (IC2 and IC3), on the other hand, are mounted at 22.5° individual sectorial angles. (See Fig. 5-2)

Accordingly, the Q1 to Q4 base voltages will vary in accordance with the flywheel angular position as shown in Fig. 5-3, where a 180° phase difference exists between Q1 and Q2, as well as between Q3 and Q4, all of which are inverted in 45° cyclic periods. Further, a 22.5° phase difference has been provided between Q1 and Q3 as well as between Q2 and Q4.

Because of the above arrangement, currents flow through coils L3 and L1 first, followed by L4 and L1, L4 and L2, and L3 and L2, in that order to form the sequence of a cycle. (Refer to Figs. 1 and 5-2)

The force driving the flywheel is varied by the currents following through coils. The larger the current flowing through a coil, the greater will its flywheel driving force become, and the faster will the flywheel tend to revolve. The smaller the current flowing through a coil, the small will its flywheel driving force become, and the slower will the flywheel tend to revolve toward halting ultimately.



## VI. HOW TO CHANGE OR INSTALL THE CARTRIDGE

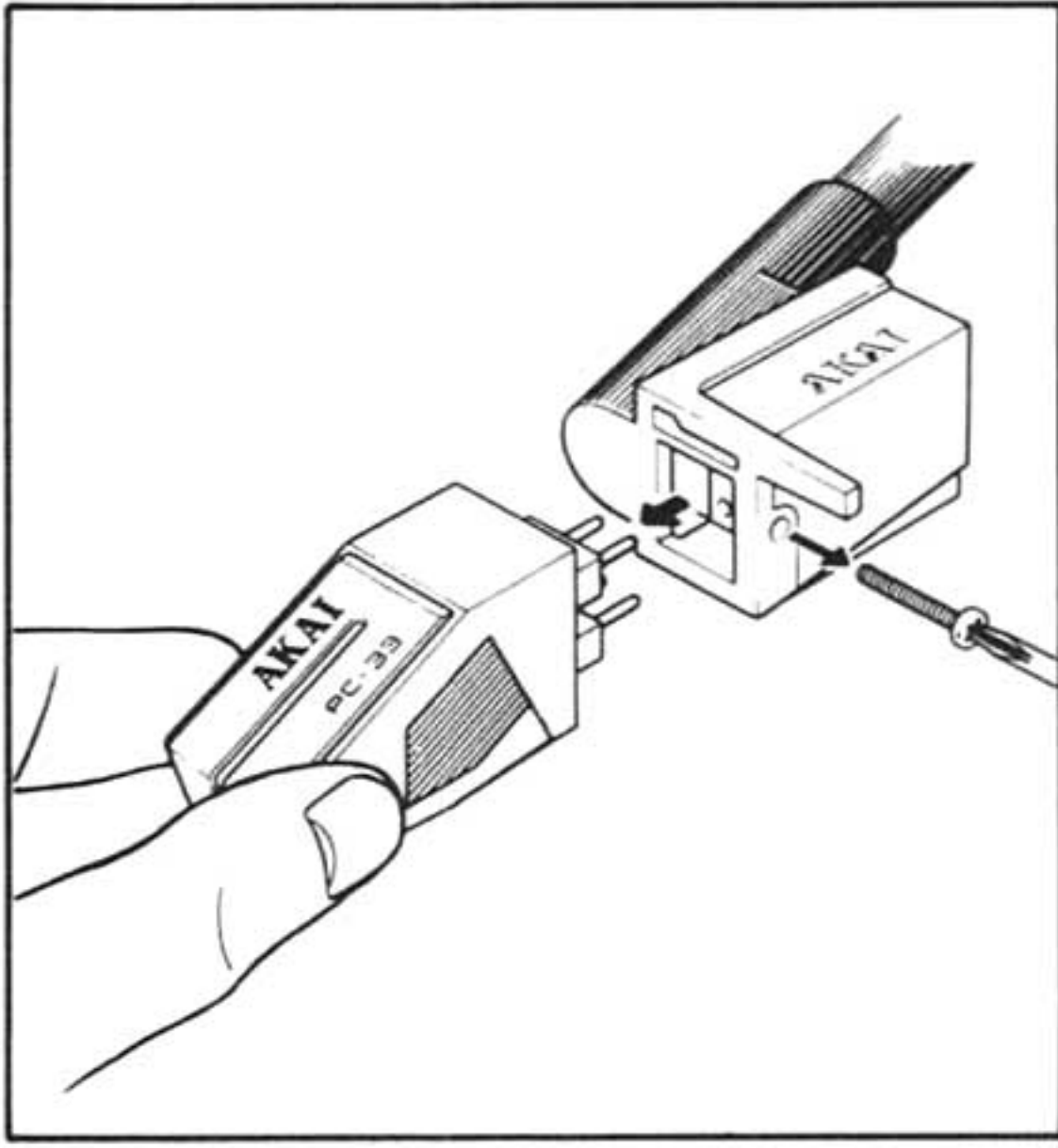


Fig. 6-1

With the tone arm on the tone arm rest and clamped, remove the screw on the side of the tone arm (directly behind the cartridge), using a Phillips head screwdriver. After removing the screw, grasp the cartridge firmly and pull it forward, away from the tone arm, until it is free. Replace the new cartridge by reversing the above operation.

## VII. MECHANICAL ADJUSTMENT

### 7-1 TONE ARM HEIGHT ADJUSTMENT

#### a) WHEN AUTO-CUT (AUTO-RETURN) MODE (Refer to Figs. 7-1 & 7-2)

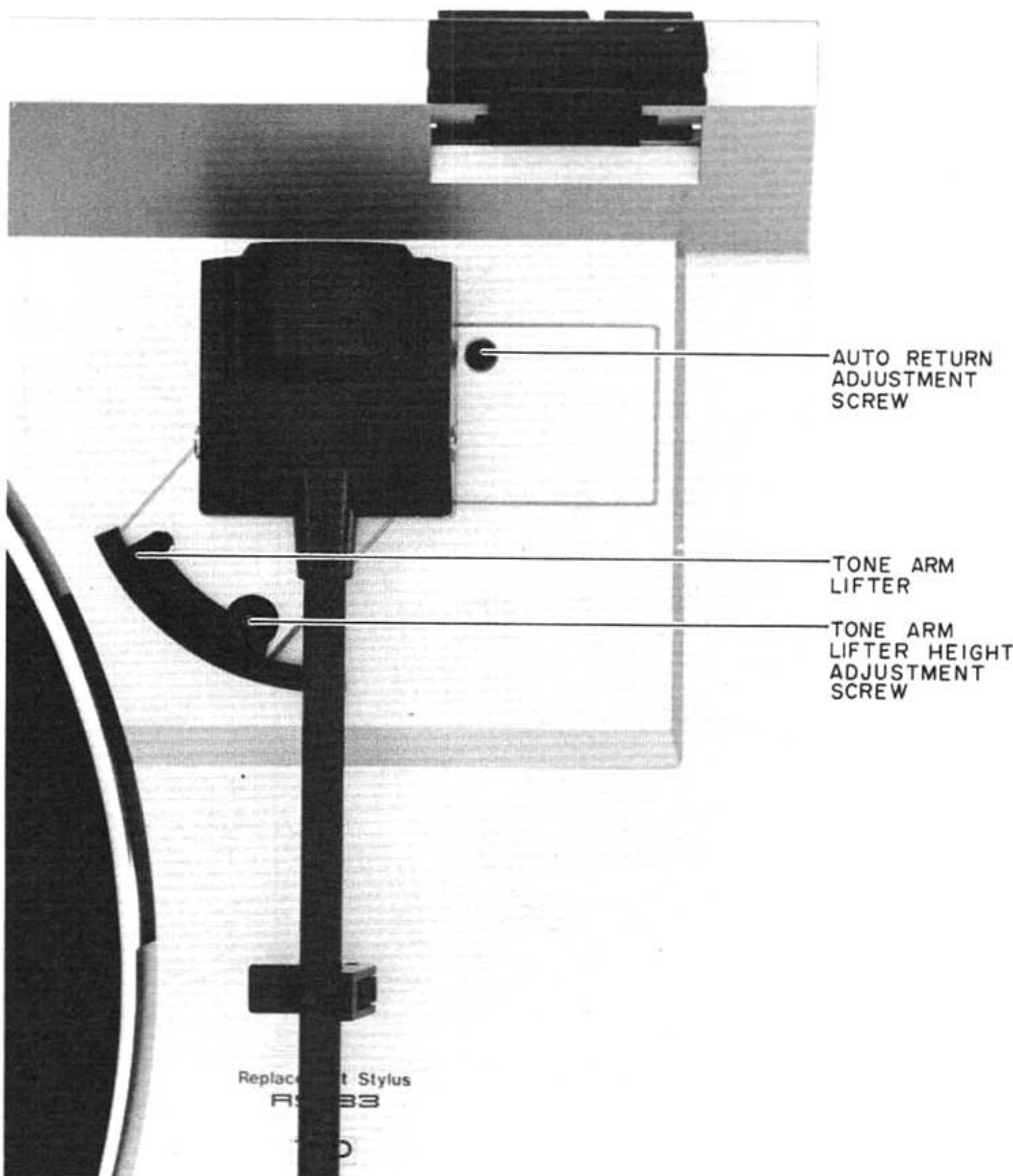


Fig. 7-1

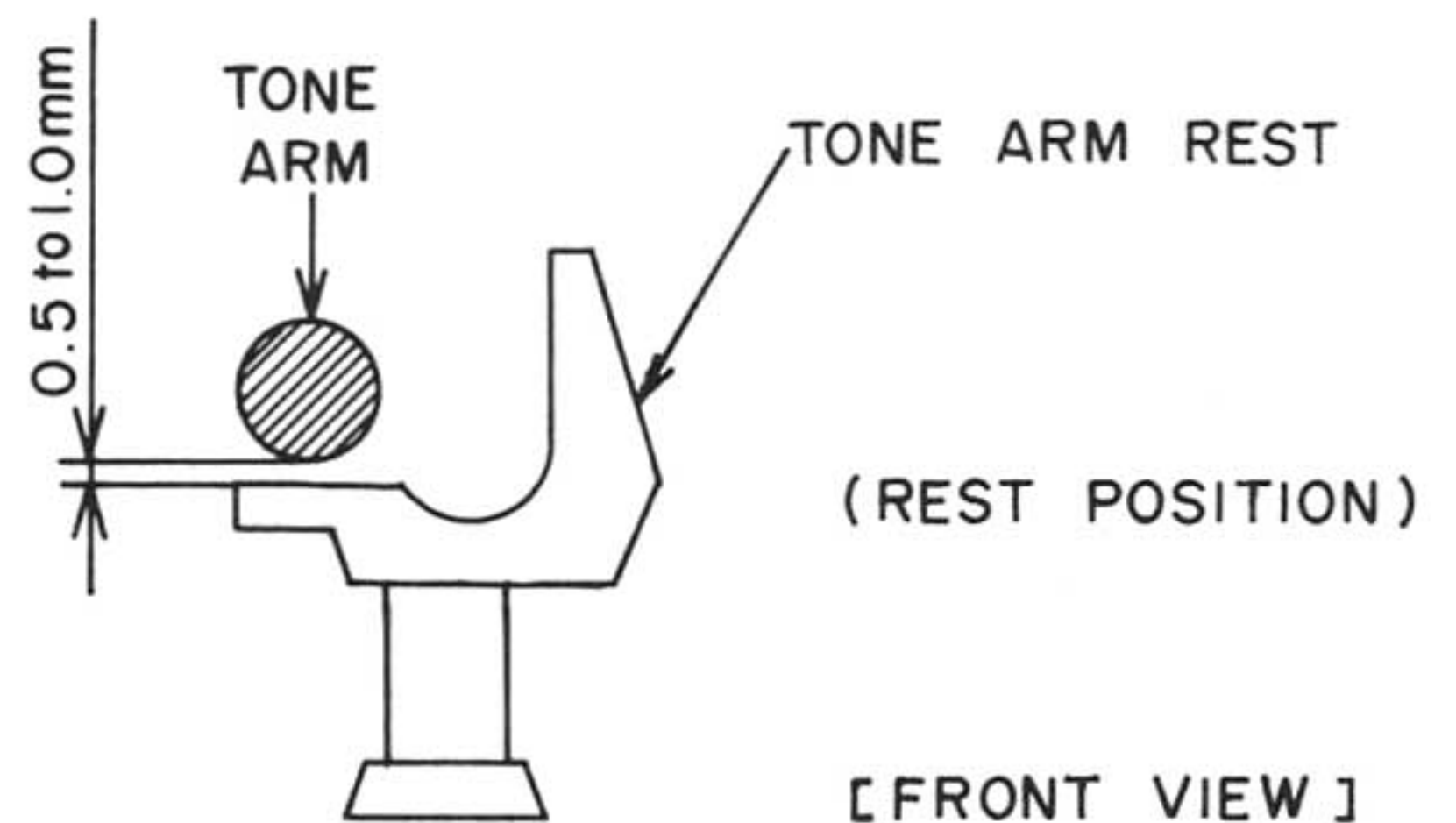


Fig. 7-2

Set the play mode, and push the Cut Button. While returning the Tone Arm, confirm the height of the Tone Arm, so that the height are 0.5 to 1.0 mm from flat face of Tone Arm Rest.

If the height is without 0.5 to 1.0 mm, adjust Tone Arm Lifter Height Adjustment screw.

Counterclockwise: Up

Clockwise : Down



## b) WHEN MANUAL (CUEING) MODE

(Refer to Figs. 7-2 & 7-3)

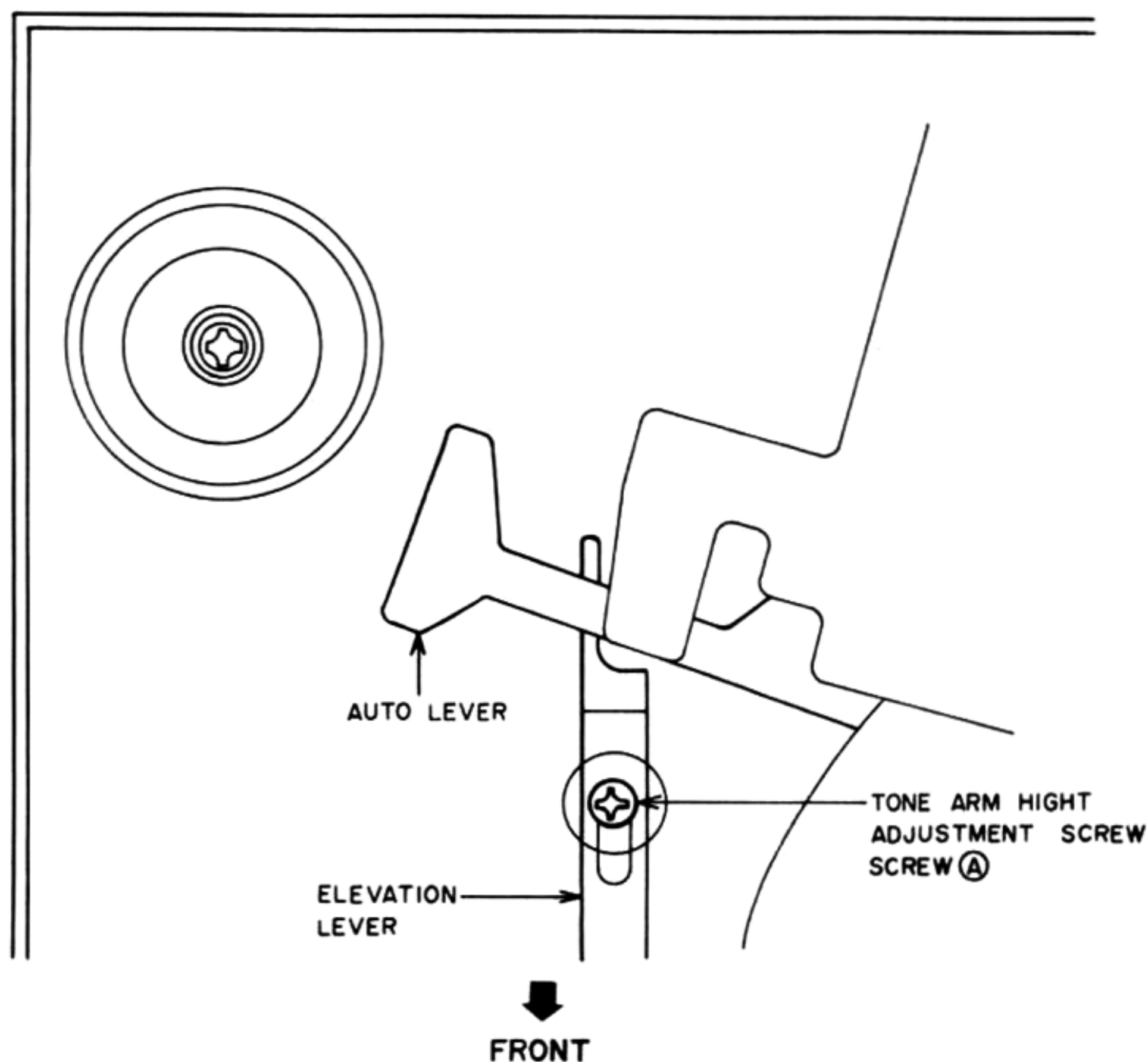


Fig. 7-3

- 1) Set the CUEING switch to up (▼) position.
- 2) Adjust Screw (A) of Elevation Lever so that the height are 0.5 to 1.0 mm from flat face of Tone Arm Rest. (Refer to Fig. 7-2)
- 3) Confirm the height difference of stylus between Auto-Cut mode and Manual (Cueing) Cut mode is within  $\pm 2.0$  mm.
- 4) If the height difference of Stylus is more than  $\pm 2.0$  mm, repeat item 1) to 3).  
Clockwise : Up  
Counterclockwise: Down

## 7-2 AUTO-RETURN ADJUSTMENT

(Refer to Fig. 7-1)

If the Tone Arm does not return automatically to the Tone Arm Rest at the end of the playback or does so during playback:

- 1) Leave the Power Cord connected:
- 2) Adjust the Auto-Return adjustment screw.  
Turn clockwise: If the Tone Arm returns before the end of record.  
Turn counterclockwise: If the Tone Arm does not return at the end of record.

\* Do not turn the screw counterclockwise too much.

## 7-3 RETURN ARM POSITION

ADJUSTMENT (Refer to Figs. 7-4 & 7-5)

After, replaced the Tone Arm, PU LEVER position Adjustment is necessary as follow.

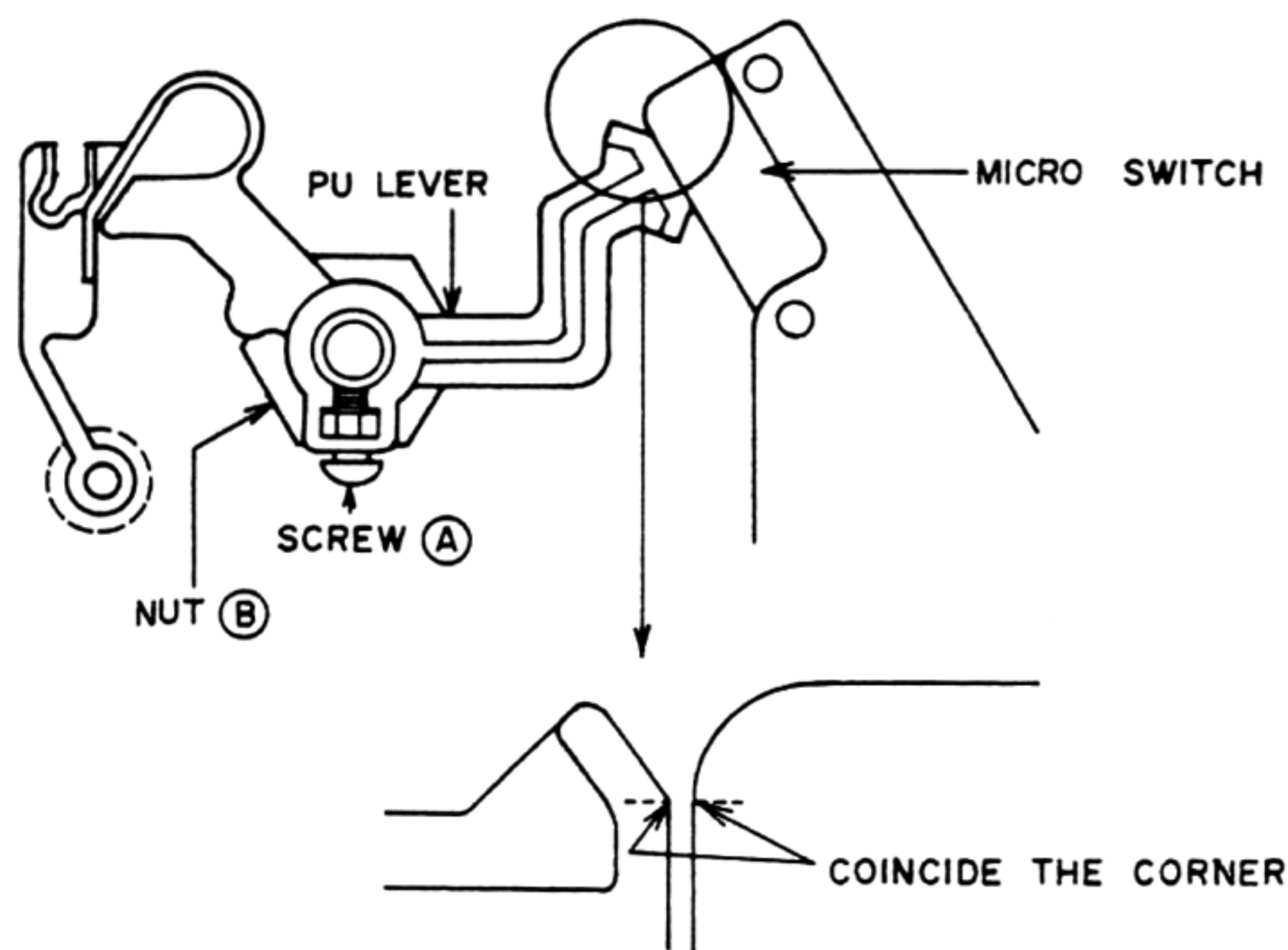


Fig. 7-4

- 1) Lock the Tone Arm on the ARM REST.
- 2) Loosen the Screw (A), and confirm that the PU LEVER is installed all the way in the Nut (B).
- 3) Turn the PU LEVER so that the corner of those PU LEVER and Micro switch are coincide as shown in Fig. 7-4.
- 4) Tighten the Screw (A).
- 5) Move the Tone Arm to the spindle side, and confirm that micro switch is switched "ON" at about center between Tone Arm Rest position and plater as shown in Fig. 7-5.

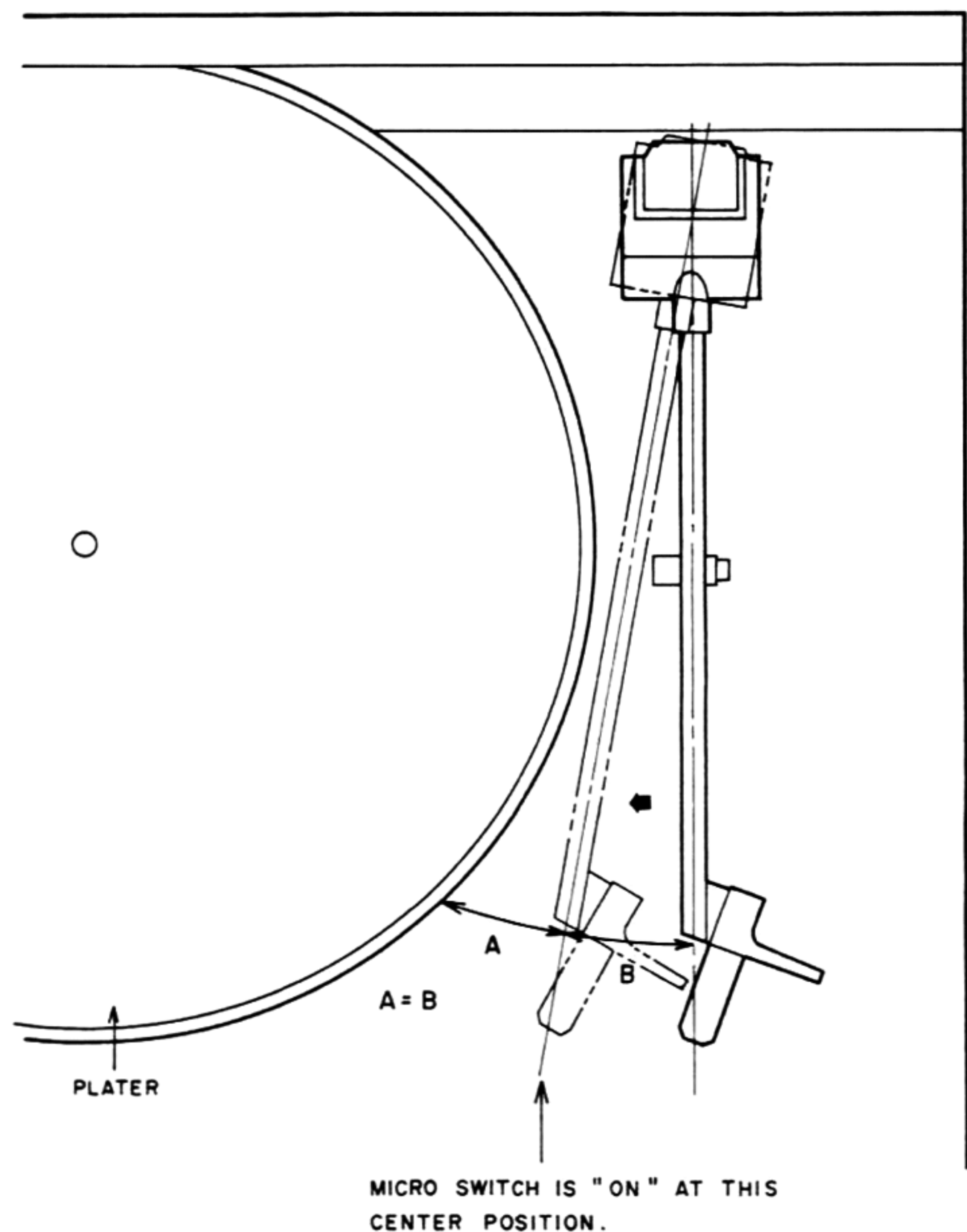
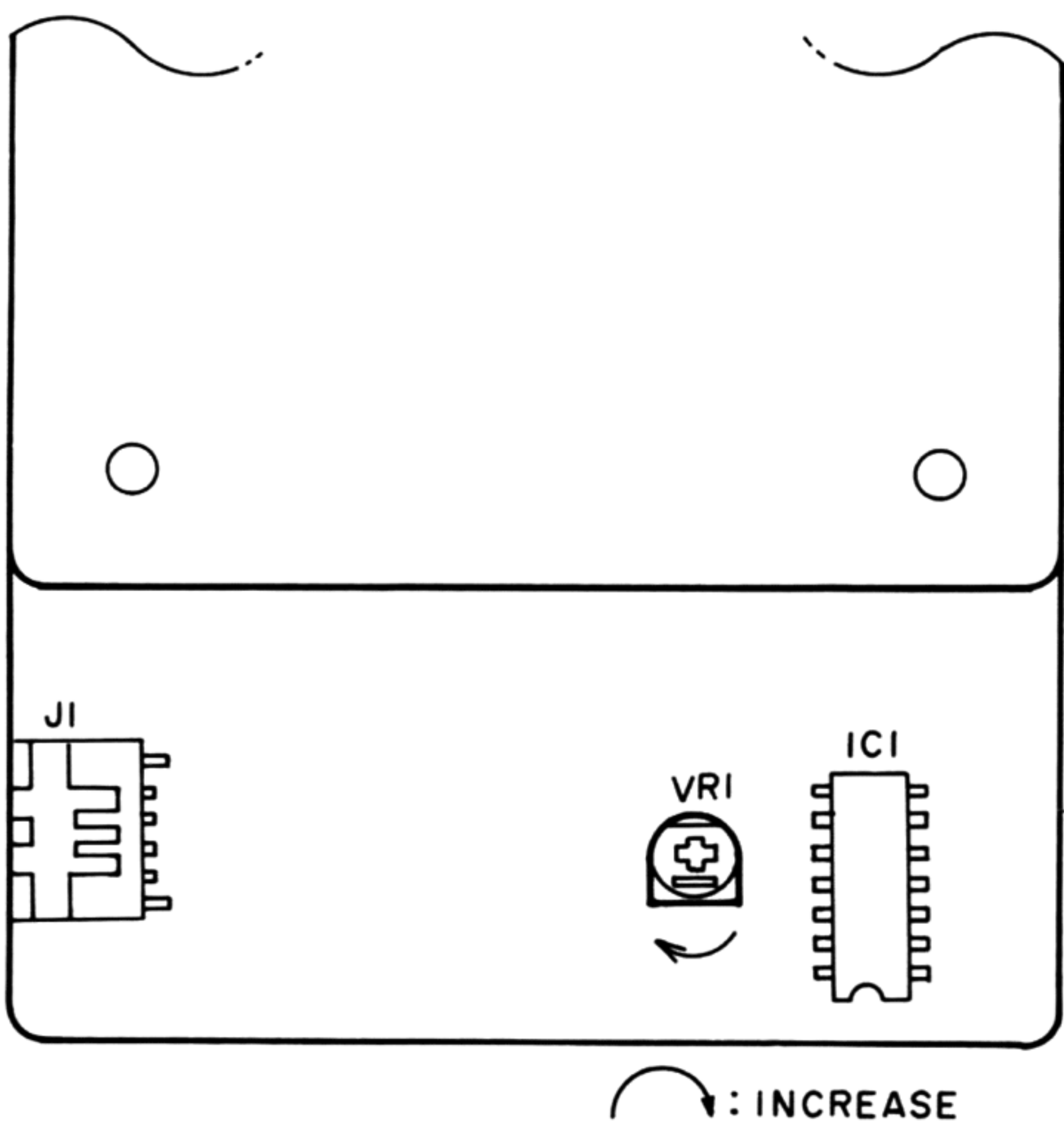


Fig. 7-5



## VIII. ELECTRICAL ADJUSTMENT

### SPEED ADJUSTMENT (Refer to Fig. 8-1)



- 1) Set the Speed Selector to 33-1/3 rpm.
- 2) Playback the Test Record (33-1/3 rpm, 1000 Hz).
- 3) Adjust VR1 (10 kohms) so that the speed is  $1000 \pm 5$  Hz.
- 4) Set the Speed Selector to 45 rpm.
- 5) Playback the Test Record (33 rpm, 1000 Hz).
- 6) Confirm that the Speed is  $1350 \pm 6$  Hz.

Fig. 8-1

## IX. PC BOARD TITLES AND IDENTIFICATION NUMBERS

PC Board Title	PC Board Number	Remarks
POWER SUPPLY PC BOARD	P1037A501A	
SPEED SELECTOR PC BOARD	P1037A501B	
AUDIO PC BOARD	P1037A501C	
JUNCTION PC BOARD	P1037A501D	
MOTOR PC BOARD	MC960E	MOTOR BLOCK







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SECTION 2

**PARTS LIST**

TABLE OF CONTENTS

RECOMMENDED SPARE PARTS .....	15
1. MOTOR MC960E PC BOARD .....	15
2. POWER SUPPLY PC BOARD .....	15
3. SPEED SELECTOR PC BOARD .....	15
4. JUNCTION PC BOARD (U ONLY) .....	15
5. FINAL ASSEMBLY BLOCK .....	16
INDEX .....	16

Resistors and Capacitors which are not listed in this parts list, please refer to COMMON LIST FOR SERVICE PARTS.



## ATTENTION

1. When placing an order for parts, be sure to list the parts no. model no., and description. There are instances in which if any of this information is omitted, parts cannot be shipped or the wrong parts will be delivered.
2. Please be careful not to make a mistake in the parts no. If the parts no. is in error, a part different from the one ordered may be delivered.
3. Because parts number and parts unit supply in the Preliminary Parts List may be partially changed, please use this parts list for all future reference.

## HOW TO USE THIS PARTS LIST

1. This Parts List shows the parts that are considered necessary for repairs. Other parts, such as resistors and capacitors, are shown in the "Common List for Service Parts". Select and order such parts from the "Common List for Service Parts".
2. The Recommended Spare Parts shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not be supplied in principle.
4. How to read list
  - a) Mechanism Block
  - b) P.C Board Block

### 2. HEAD BASE BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
2-1x	BH-T2023A320A	HEAD BASE BLOCK GX-F66R
2-2	HP-H2206A010A	HEAD R/P PR4-8FU C
2-3	ZS-477876	PAN20x03STL CMT
2-4	ZS-536488	BID20x08STL CMT
2-5	ZG-402895	CS ANGLE ADJUST SPRING

- SP (Service Parts) Classification
- A small "x" indicates the inability to show that particular part in the Photo or Illustration.
- This number corresponds with the individual parts index number in that figure
- This number corresponds with the Figure Number

### 6. SYS. CON. P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
6-1	BA-T2034A070A	PC SYS CON BLK GX-F44R
6-IC1	EI-324536	IC HD14049BP
6-IC2	EI-336801	IC MB8841-564M
6-IC3	EI-331661	IC SN7405N
6-IC4	EI-336725	IC M54527P
6-TR1to4	ET-200985	TR 2SC2603 F,G
6-TR5to28	ET-554657	TR 2SA733A P,Q
6-D1	ED-318292	D SILICON H 1S2473T-77 T26
6-D2to4	ED-308952	D GERMA V 1K34A-LR F07
6-D5to10	ED-318292	D SILICON H 1S2473T-77 T26
6-X1	EI-318384	OSC X'TAL NC-18C 3.579545MHZ

- SP (Service Parts) Classification
- This reference numbers corresponds with symbol numbers of Schematic Diagrams.

5. 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.

## WARNING

⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

## AVERTISSEMENT

⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SURETE. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT.



## RECOMMENDED SPARE PARTS

Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

NO.	PARTS NO.	DESCRIPTION
1	BT-348283	△ TRANS POWER APT-3-30 (C,A)
2	BT-348284	△ TRANS POWER APT-3-40 (E,V)
3	BT-348285	△ TRANS POWER APT-3-50 (B,S)
4	N BT-354369	△ TRANS POWER APT2-70 (U)
5	ED-322247	D LED SLP151D RED
6	ED-322215	D LED SLP251D GRN
7	ED-330319	D SILICON DBA10B 100/1.0A
8	N ED-321115	D SILICON H 1S1588LB-5 F10
9	N EF-300601	FUSE FST3100 T 250V 0.50A (E,B,S)
10	EI-780137	IC VC1031
11	ES-337898	△ SW SLIDE 00120163 01-2 (U)
12	ES-325488	SW MICRO K1
13	ES-337843	SW PUSH ESB-64501 02-2
14	ET-308867	TR 2SA1015 O,Y,GR
15	ET-742510	TR 2SA950 O,Y
16	N ET-308976	TR 2SC1815 BL,GR
17	N ET-330162	TR 2SC1959 O,Y
18	ET-328844	TR 2SC2120 O,Y
19	EV-780138	R S-FIX 103

"NOTE" N: New Parts

### SYMBOL FOR DESTINATION

- A: AAL (U.S.A)
- B: UK (England)
- C: CSA (Canada)
- E: CEE (Europe)
- S: SAA (Australia)
- U: U/T (Universal Area)

### OPTIONAL ACCESSORIES

- STYLUS . . . . . RS-33
- CARTRIDGE . . . PC-35

## 1. MOTOR MC960E PC BOARD

REF. NO.	PARTS NO.	DESCRIPTION
1-IC1	EI-780137	IC VC1031
1-Q1,2	ET-328844	TR 2SC2120 O,Y
1-Q3,4	ET-742510	TR 2SA950 O,Y
1-Q5,6	ET-308867	TR 2SA1015 O,Y,GR
1-Q7,8	ET-308976	TR 2SC1815 BL,GR
1-Q9	ET-308867	TR 2SA1015 O,Y,GR
1-Q10	ET-308976	TR 2SC1815 BL,GR
1-VR1	EV-780138	R S-FIX 103

## 2. POWER SUPPLY PC BOARD

REF. NO.	PARTS NO.	DESCRIPTION
2-TR1	ET-330162	TR 2SC1959 O,Y
2-D1to3	ED-321115	D SILICON H 1S1588LB-5 F10
2-D4	ED-303036	D ZENER H 05Z5.6 X
2-D5	ED-330319	D SILICON DBA10B 100/1.0A
2-F1	EF-300601	△ FUSE FST3100 T 250V 0.50A(E,B,S)
2-R1	ER-348407	R MF H F10 1/4W 5101F

## 3. SPEED SELECTOR PC BOARD

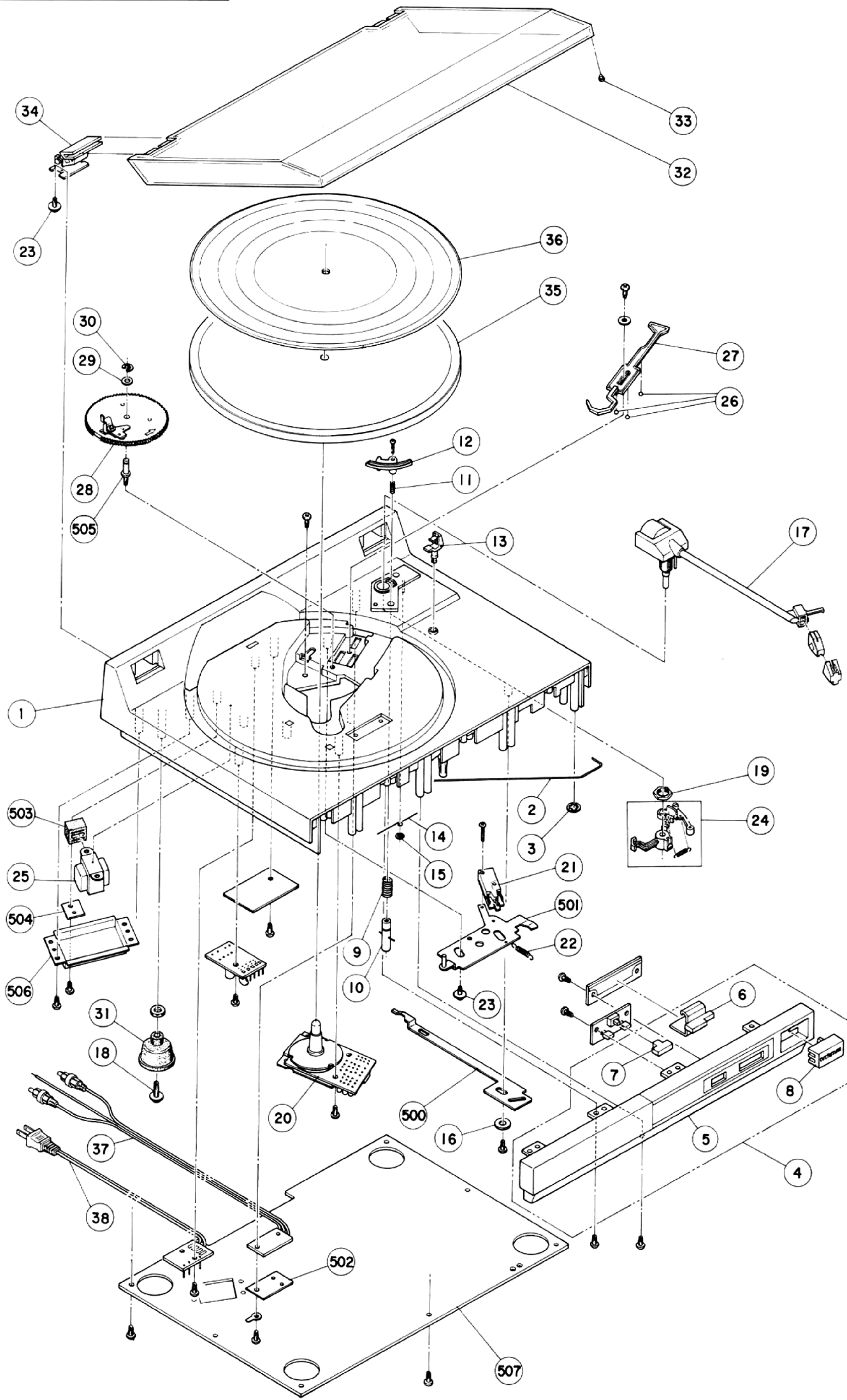
REF. NO.	PARTS NO.	DESCRIPTION
3-D1	ED-322215	D LED SLP251D GRN
3-D2	ED-322247	D LED SLP151D RED
3-SW1	ES-337843	SW PUSH ESB-64501 02-2

## 4. JUNCTION PC BOARD (U ONLY)

REF. NO.	PARTS NO.	DESCRIPTION
4-SW1	ES-337898	△ SW SLIDE 00120163 01-2



**FINAL ASSEMBLY BLOCK**



**5. FINAL ASSEMBLY BLOCK**

REF. NO.	PARTS NO.	DESCRIPTION
5-1	BC-353231A	CABINET
5-1P	BC-353231B	CABINET-P
5-1B	BC-353231C	CABINET-B
5-2	TP-353242	LEVER REJECT
5-3	ZW-354900	RING CS580STL PKR
5-4	BD-P1037A020A	PANEL FRONT BLK AP-A2
5-4P	BD-P1037A020B	PANEL FRONT BLK AP-A2-CP
5-4B	BD-P1037A020C	PANEL FRONT BLK AP-A2-B
5-5	SP-353230A	PANEL FRONT
5-5P	SP-353230B	PANEL FRONT-P
5-5B	SP-353230C	PANEL FRONT-B
5-6	SK-348258E	KNOB (A-2) (EXCEPT BL)
5-6B	SK-348258F	KNOB-B (BL)
5-7	SK-353249	KNOB SPEED SELECTOR (EXCEPT BL)
5-7B	SK-353249B	KNOB SPEED SELECTOR-B (BL)
5-8	SK-353233A	KNOB CUT
5-8P	SK-353233B	KNOB CUT-P
5-8B	SK-353233C	KNOB CUT-B
5-9	ZG-325402	SP ELEVATION
5-10	MS-353238	SHAFT ELEVATION
5-11	ZG-332548	SP PUSH (A)
5-12	TP-B332568	ARM ELEVATION PART
5-13	TP-B332571	CLAMPER ARM PART
5-14	ZG-353257	SP TORSION CANCELER
5-15	ZW-340648	RING CS190STL PKR
5-16	ZW-324147	PW31x130x100NYL
5-17	TP-353252	TONE ARM ARM-A2
5-18	ZS-353104	BT PAN30x18STL CMT C
5-19	ZW-325521	N120x170x30STL CMT P100
5-20	BM-348286	MOTOR MC960E
5-21	ES-325488	SW MICRO K1

**SYMBOL FOR COLOR VARIATION**

NON: STANDARD COLOR  
 P: PEARL SHADOW  
 B or BL: BLACK

REF. NO.	PARTS NO.	DESCRIPTION
5-22	ZG-313073	SP T1-6.3/0.5-28.0 T1-185
5-23	ZS-349118	SCREW W/FRANGE
5-24	TP-P1037A040A	LEVER PU PLATE BLK AP-A2
5-25A	BT-348283	Δ TRANS POWER APT-3-30 (C,A)
5-25B	BT-354369	Δ TRANS POWER APT2-70 (U)
5-25C	BT-348284	Δ TRANS POWER APT-3-40 (E,V)
5-25D	BT-348285	Δ TRANS POWER APT-3-50 (B,S)
5-26	MV-269965	BALL 400STL
5-27	ML-345348	LEVER AUTO
5-28	TP-P1034A080A	MAIN GEAR BLK AP-B1
5-29	ZW-315515	PW41x130x030NYL
5-30	ZW-290283	RING U 285SUP CMT
5-31	SA-336281B	INSULATOR (B)
5-32	BC-B353247	DUST COVER PART
5-33	MB-343057	COVER CUSHION
5-34	TP-353712	HINGE ASSY AP-A2-C
5-35	TP-B348264X2	PLATTER (B) PART
5-36	TP-348266B	TABLE SHEET B
5-37A	EW-344164	CORD 2P AUDIO PINx2 (A)
5-37B	EW-325492	CORD 2P AUDIO (EXCEPT A)
5-38A	EW-207742	Δ AC CORD 2 CORES VM-0238, SPT-1 UC (C,A)
5-38B	EW-374894	Δ AC CORD 2 CORES VM-0129A, VFF U/T (U)
5-38C	EW-336923	Δ AC CORD 2 CORES KP-419C, LTCE-2F EV (E)
5-38D	EW-347023	Δ AC CORAD LTBS-2F 42/0.15x2 B (B)
5-38E	EW-336924	Δ AC CORD 2 CORES KP-560, LTSA-2F S (S)
5-39x	ZW-345338	RV POP 32x76

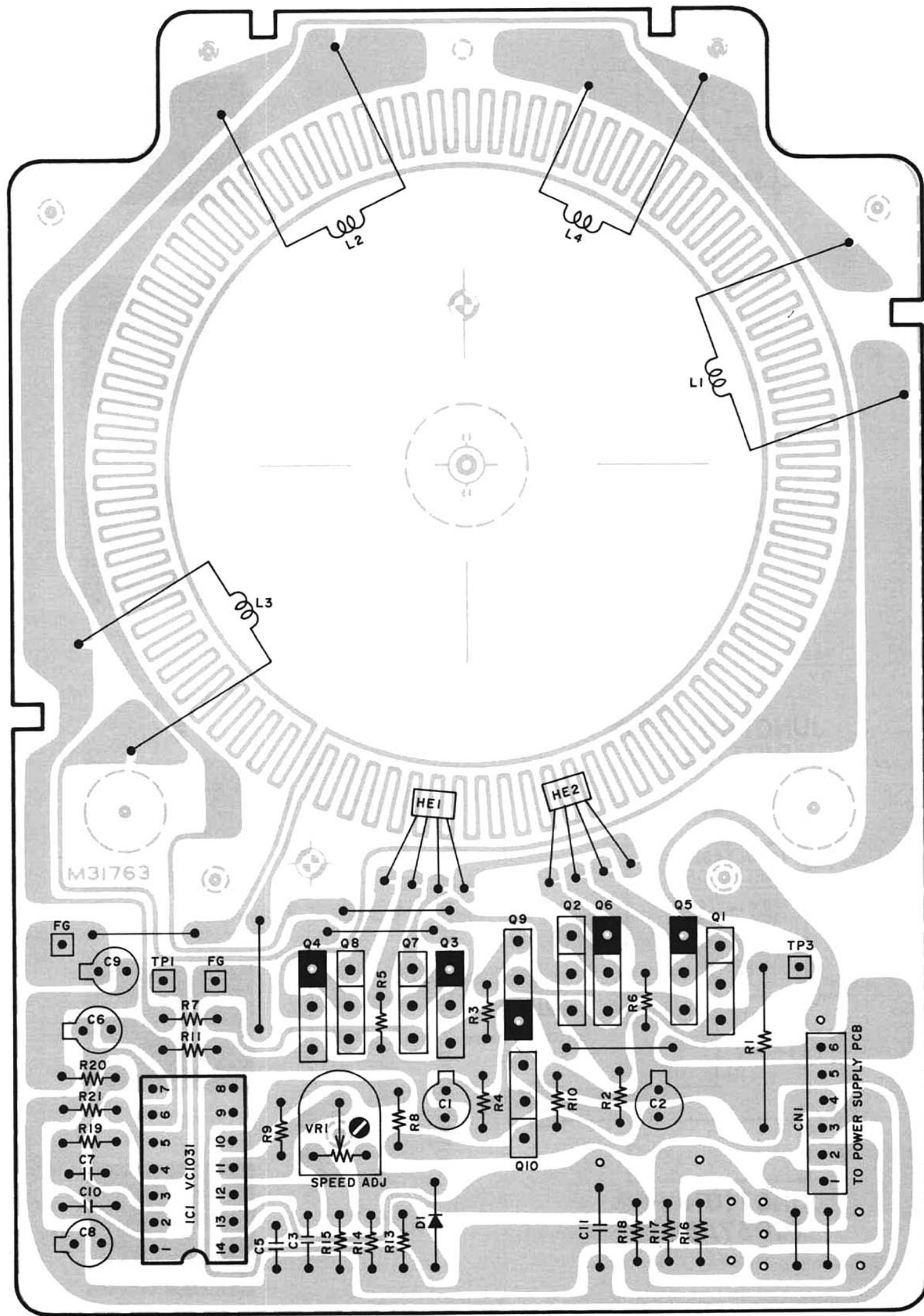
**NOTE:** Parts listed in 1 to 39 on the exploded view and list are normally stocked for replacement purpose. The remaining parts shown in this manual are not normally stocked, because they are not seldom required for routine service.

**INDEX**

PARTS NO.	REF. NO.	PARTS NO.	REF. NO.	PARTS NO.	REF. NO.	PARTS NO.	REF. NO.
BC-B353247	5-32	ET-308976	1-Q10	TP-B332571	5-13		
BC-353231A	5-1	ET-328844	1-Q1	TP-B348264X2	5-35		
BC-353231B	5-1P	ET-328844	1-Q2	TP-P1034A080A	5-28		
BC-353231C	5-1B	ET-330162	2-TR1	TP-P1037A040A	5-24		
BD-P1037A020A	5-4	ET-742510	1-Q3	TP-348266B	5-36		
BD-P1037A020B	5-4P	ET-742510	1-Q4	TP-353242	5-2		
BD-P1037A020C	5-4B	EV-780138	1-VR1	TP-353252	5-17		
BM-348286	5-20	EW-207742	5-38A	TP-353712	5-34		
BT-348283	5-25A	EW-325492	5-37B	ZG-313073	5-22		
BT-348284	5-25C	EW-336923	5-38C	ZG-325402	5-9		
BT-348285	5-25D	EW-336924	5-38E	ZG-332548	5-11		
BT-354369	5-25B	EW-344164	5-37A	ZG-353257	5-14		
ED-303036	2-D4	EW-347023	5-38D	ZS-349118	5-23		
ED-321115	2-D1	EW-374894	5-38B	ZS-353104	5-18		
ED-321115	2-D2	MB-343057	5-33	ZW-290283	5-30		
ED-321115	2-D3	ML-345348	5-27	ZW-315515	5-29		
ED-322215	3-D1	MS-353238	5-10	ZW-324147	5-16		
ED-322247	3-D2	MV-269965	5-26	ZW-325521	5-19		
ED-330319	2-D5	SA-336281B	5-31	ZW-340648	5-15		
EF-300601	2-F1	SK-348258E	5-6	ZW-345358	5-39x		
EI-780137	1-IC1	SK-348258F	5-6B	ZW-354900	5-3		
ER-348407	2-R1	SK-353233A	5-8				
ES-325488	5-21	SK-353233B	5-8P				
ES-337843	3-SW1	SK-353233C	5-8B				
ES-337898	4-SW1	SK-353249	5-7				
ET-308867	1-Q5	SK-353249B	5-7B				
ET-308867	1-Q6	SP-353230A	5-5				
ET-308867	1-Q9	SP-353230B	5-5P				
ET-308976	1-Q7	SP-353230C	5-5B				
ET-308976	1-Q8	TP-B332568	5-12				

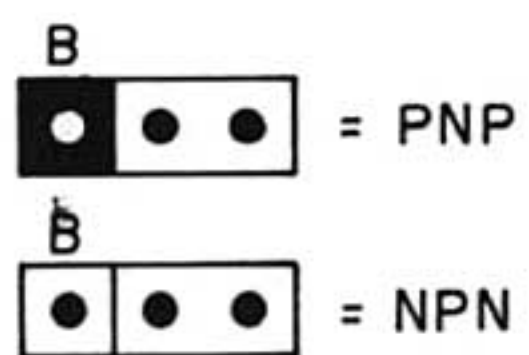


# AKAI MODEL AP-A2/C PC BOARD SCHEMATIC DIAGRAM



HALL D.D. MOTOR M901 MC960E

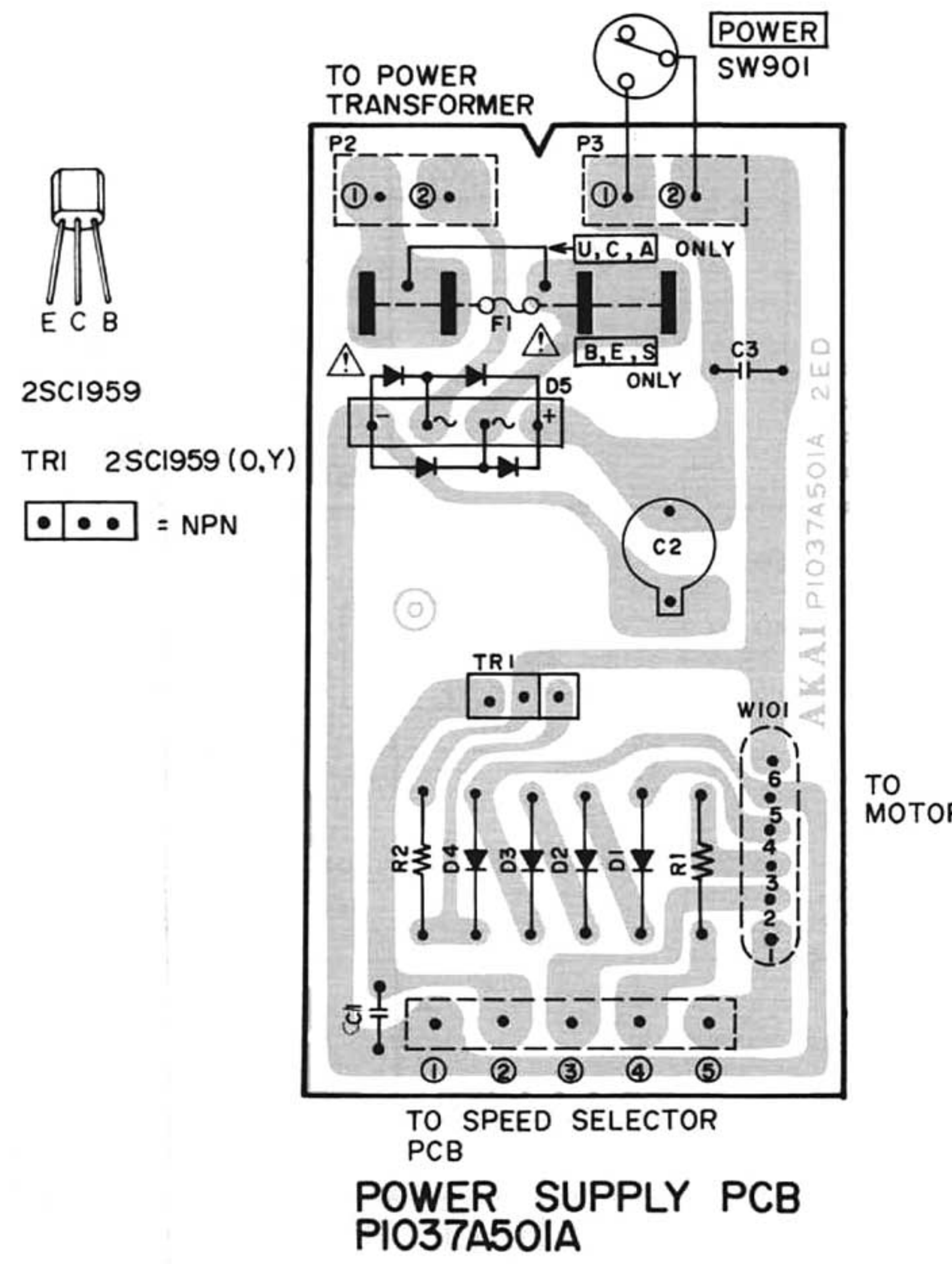
- Q1, 2 ---- 2SC2120 (O,Y)
- Q3, 4 ---- 2SB926 (R,S) or 2SA950 (O,Y)
- Q5, 6 ---- 2SA933 (Q,R) or 2SA1015 (Y,GR)
- Q7, 8 ---- 2SC2458 (Y,GR), 2SC1740 (Q,R) or 2SC1815 (Y,GR)
- Q9 ---- 2SA933 (R) or 2SA1015 (GR)
- Q10 ---- 2SC2458 (GR) or 2SC1740 (R)



- 2SA933
- 2SA950
- 2SA1015
- 2SB926
- 2SC1740
- 2SC1815
- 2SC2120



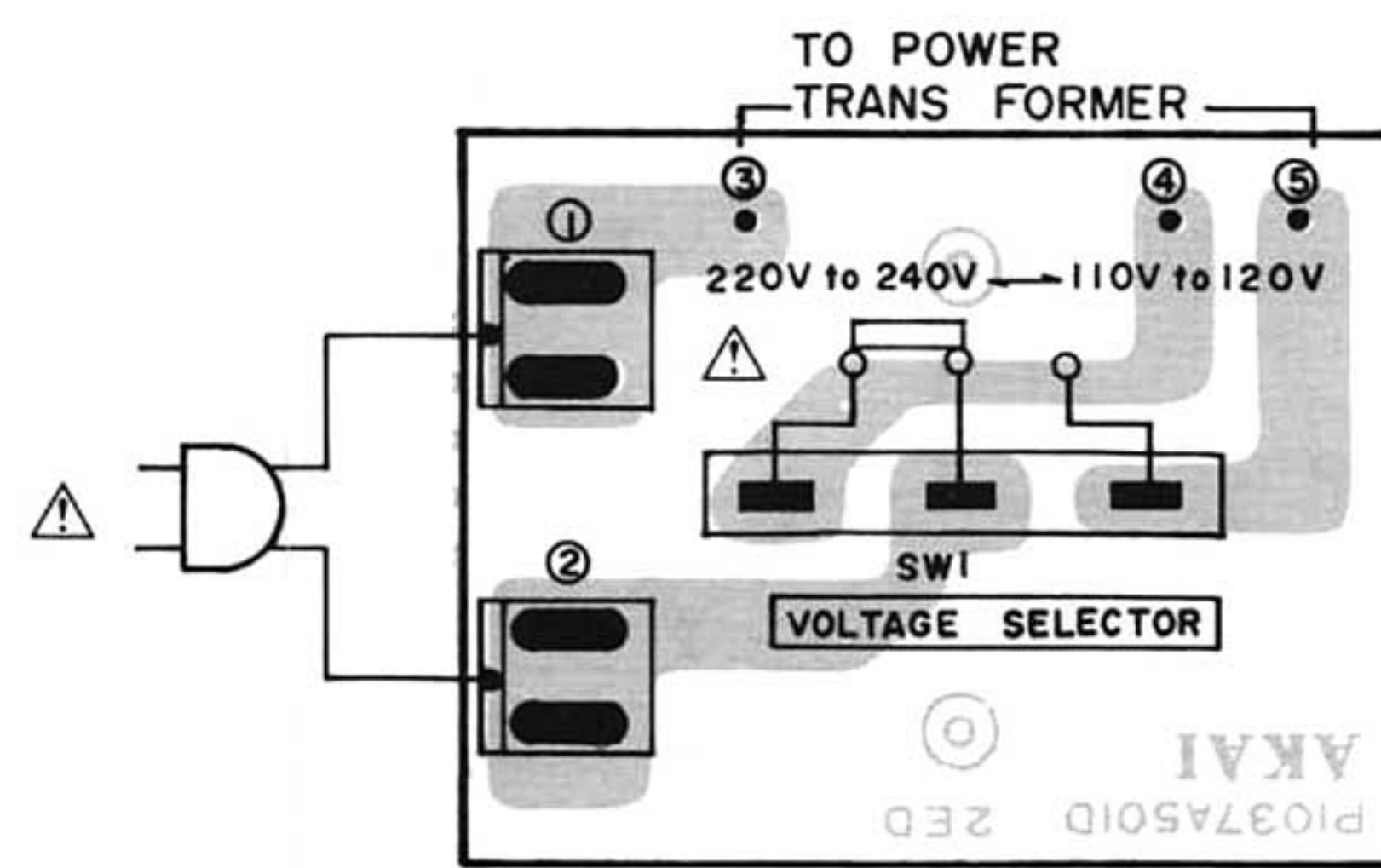
- 2SC2458



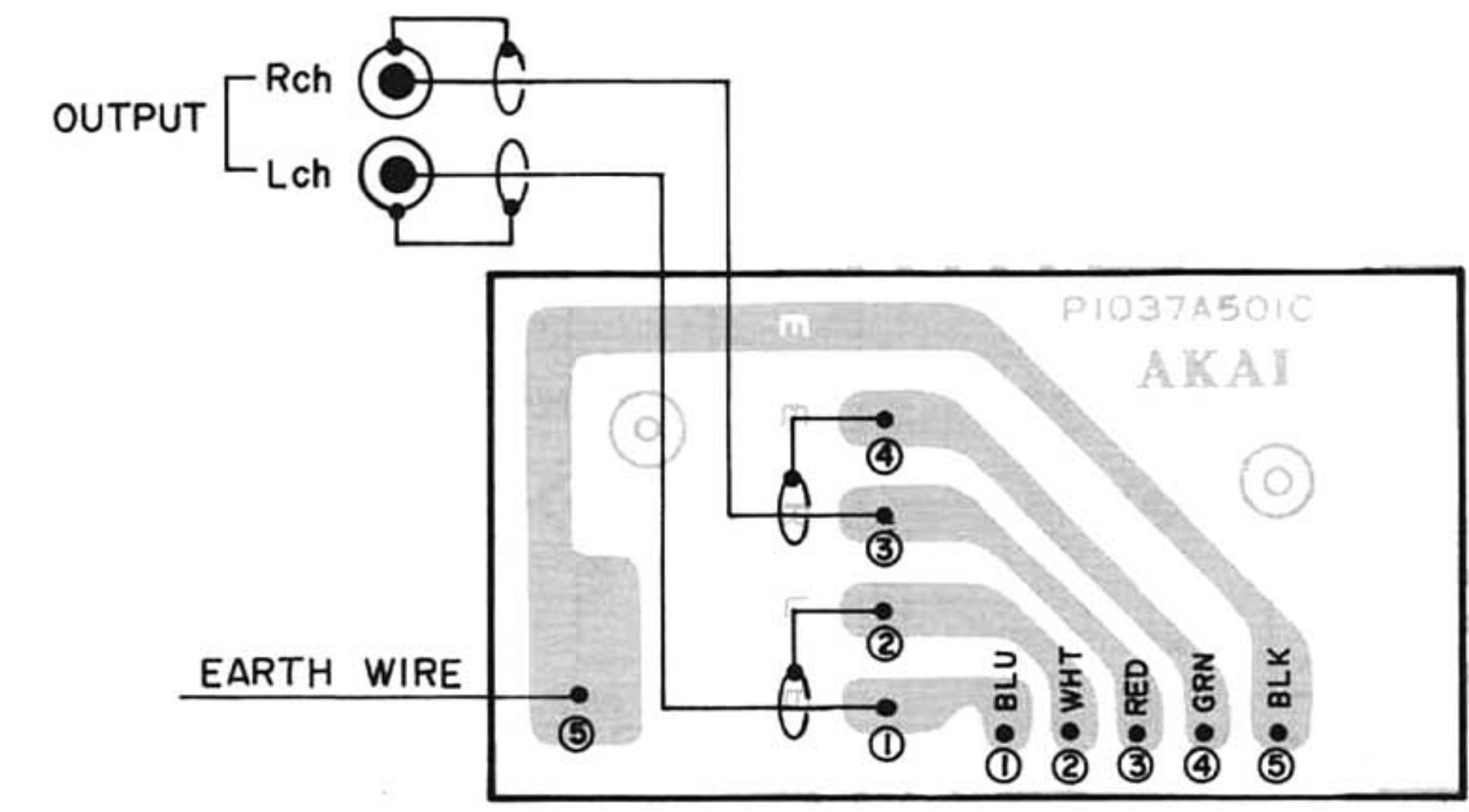
- 2SC1959

- TRI 2SC1959 (O,Y)

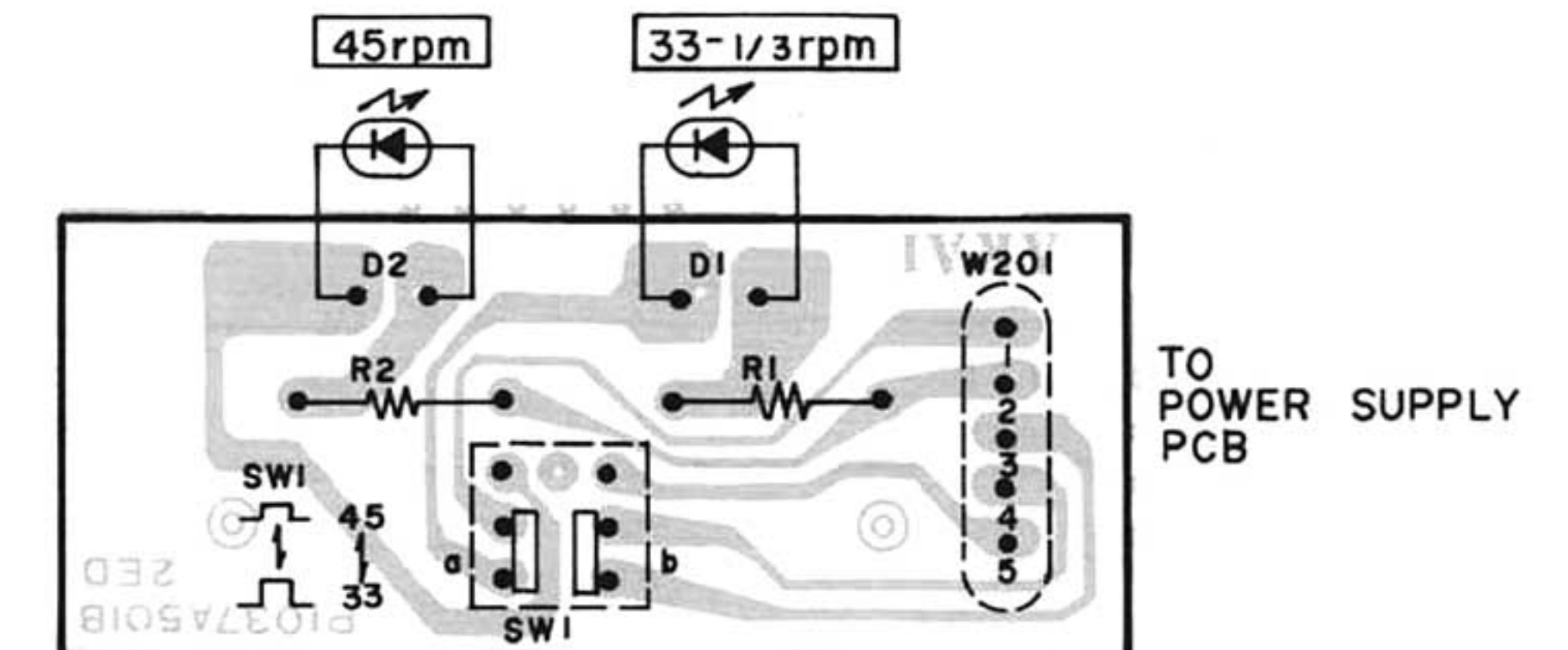
- = NPN



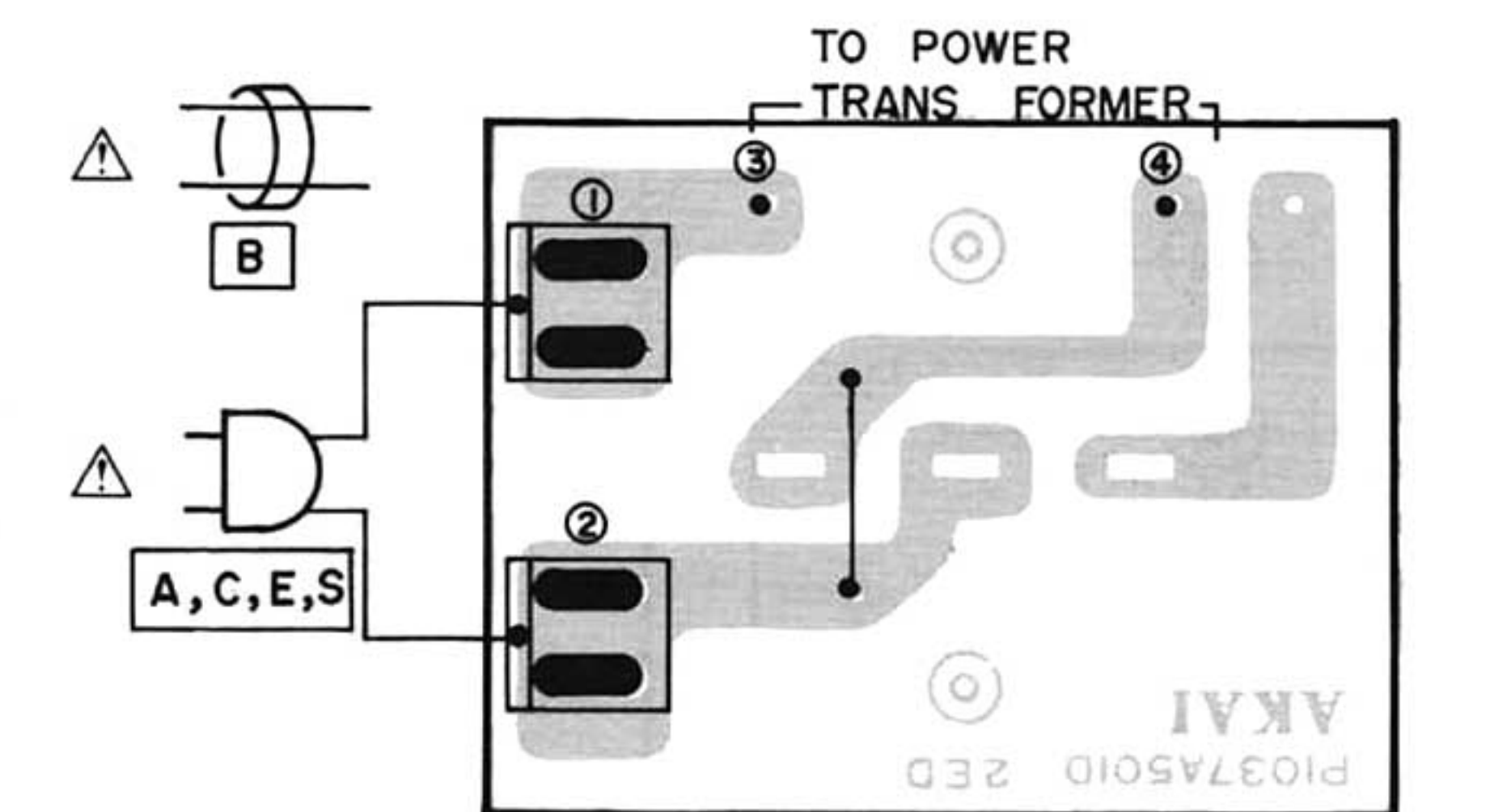
JUNCTION PCB PI037A501D U



AUDIO PCB PI037A501C



SPEED SELECTOR PCB PI037A501B

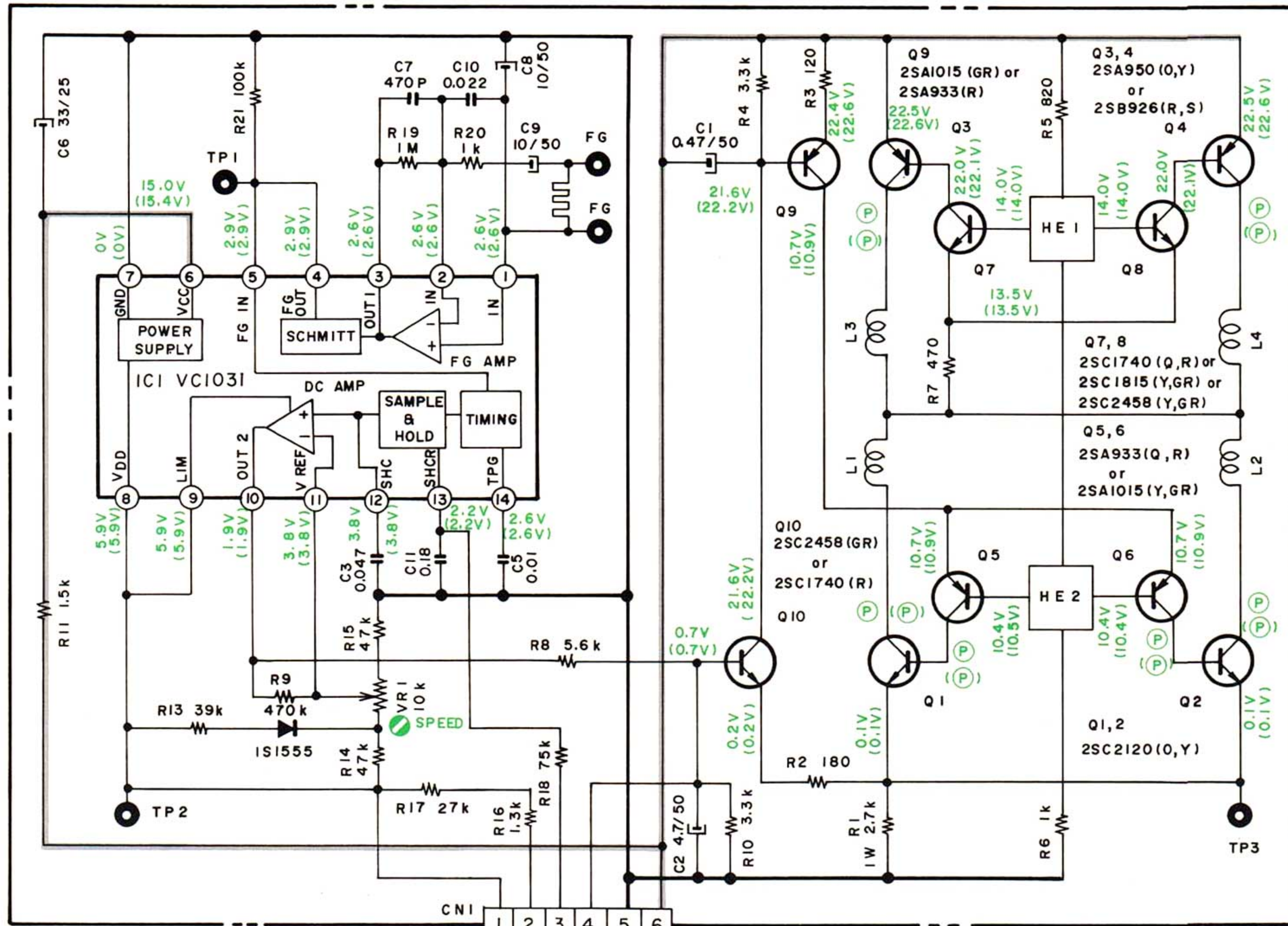


JUNCTION PCB PI037A501D A,C,E,B,S

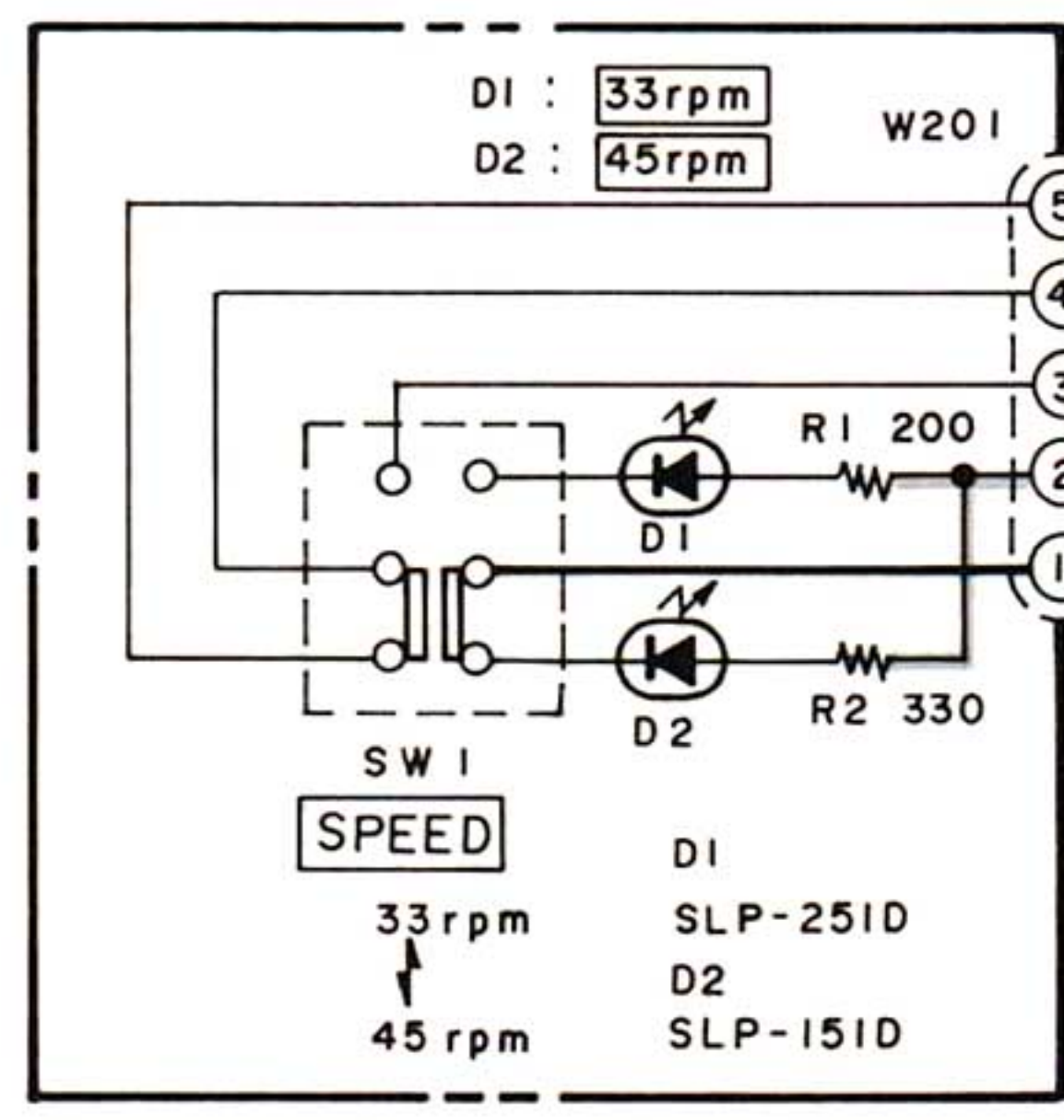
WARNING: Δ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSEMENT: Δ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.

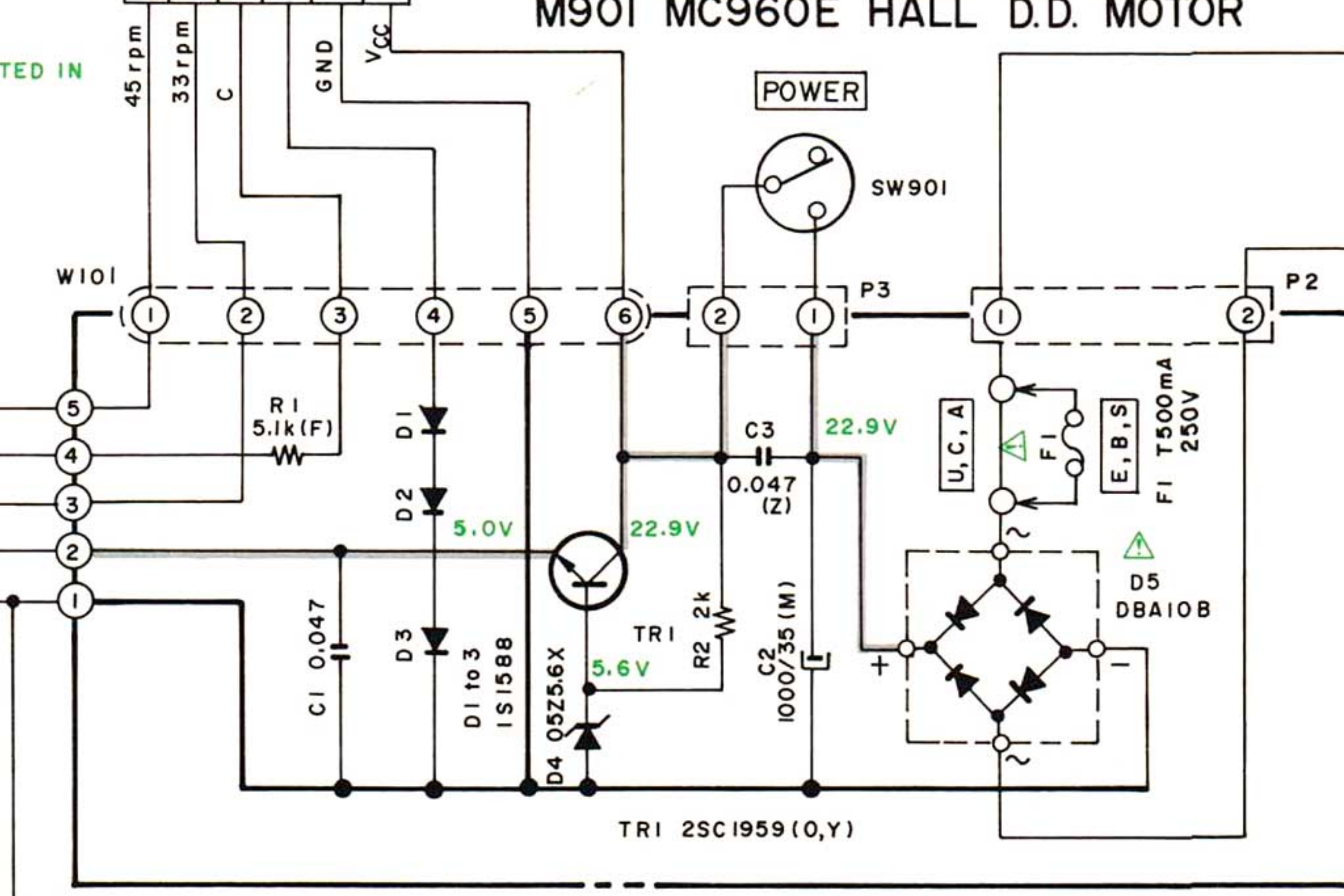




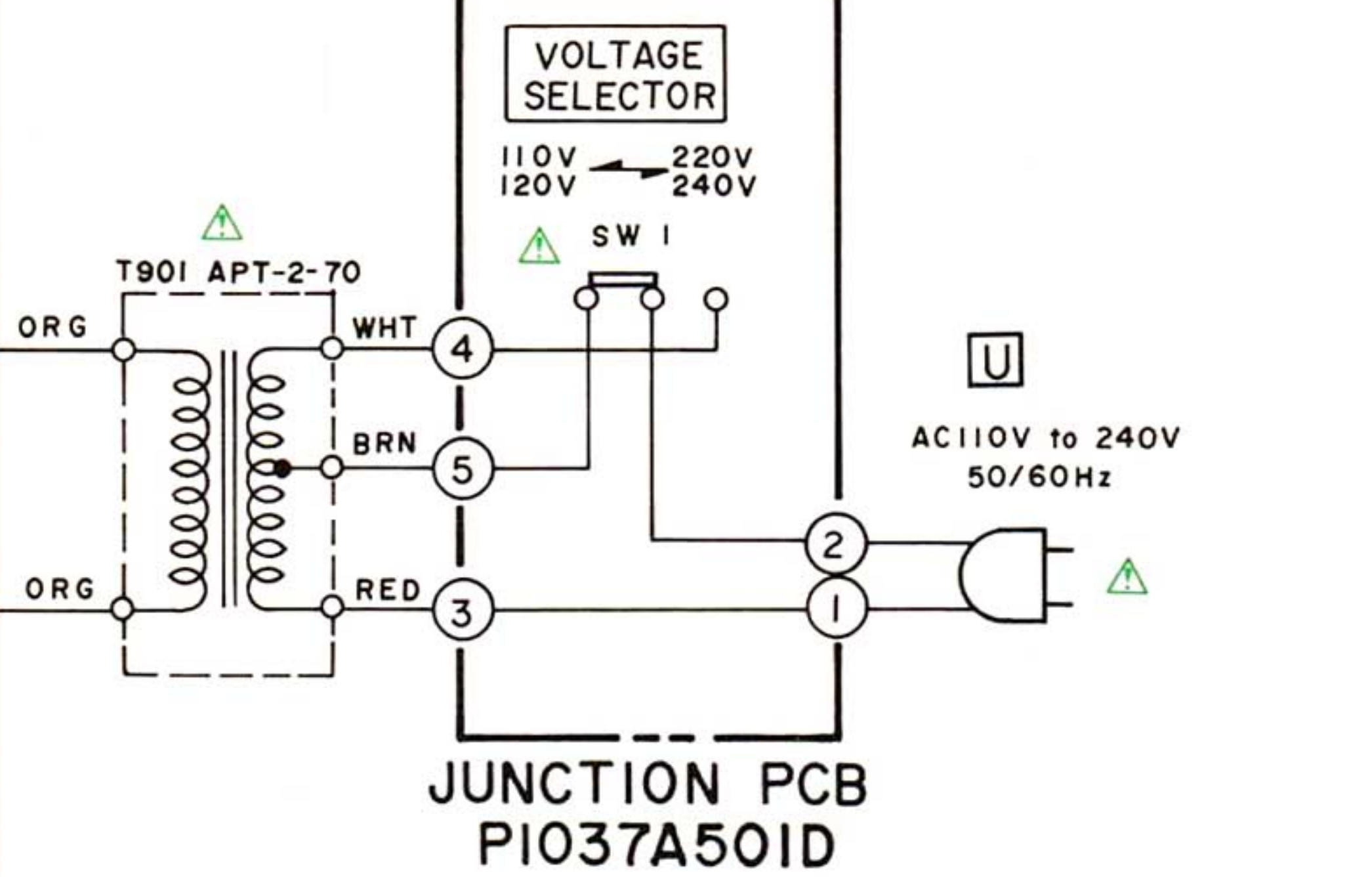
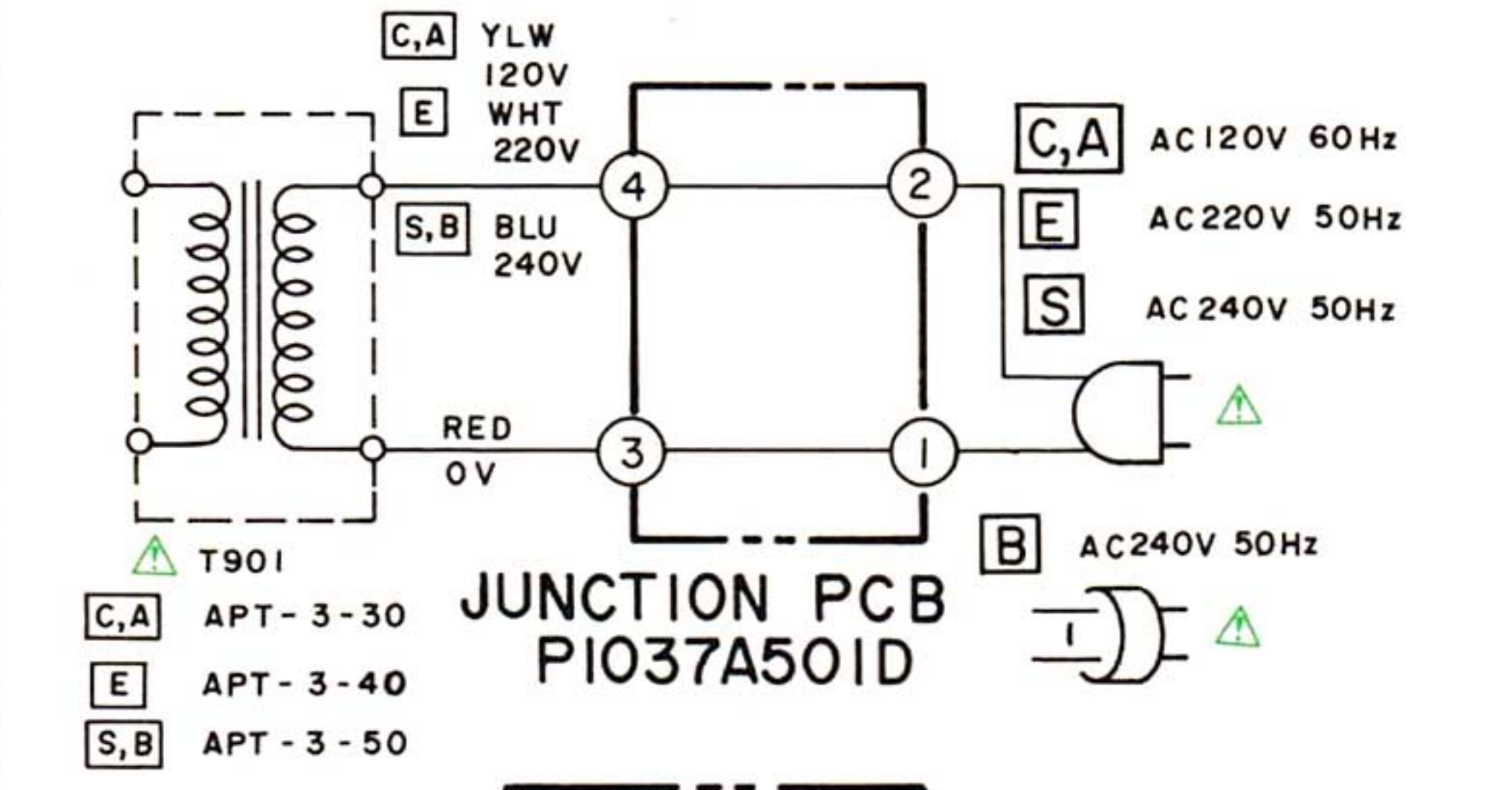
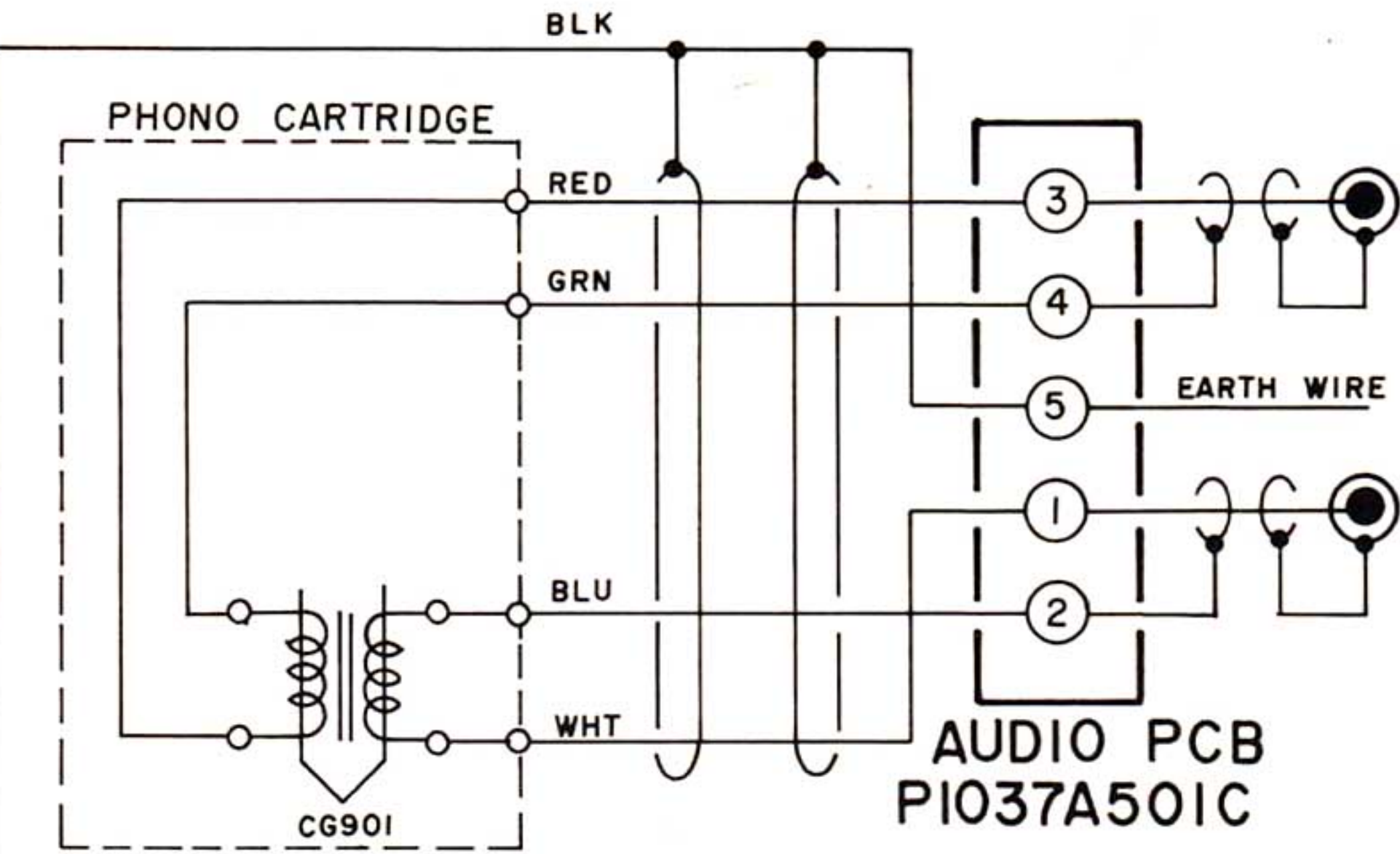
INDICATED VOLTAGES ARE AT  
33 rpm PLAY MODE AND INDICATED IN  
( ) AT 45 rpm PLAY MODE



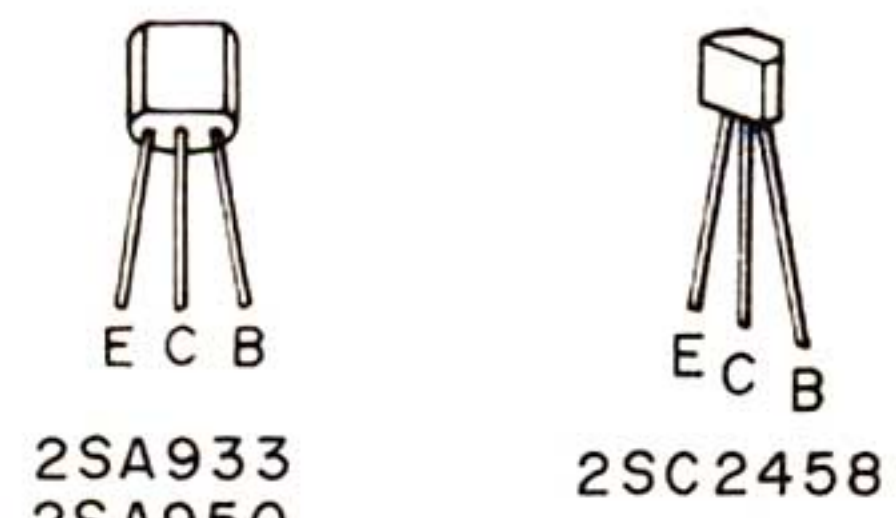
SPEED SELECTOR PCB  
PI037A501B



POWER SUPPLY PCB PI037A501A

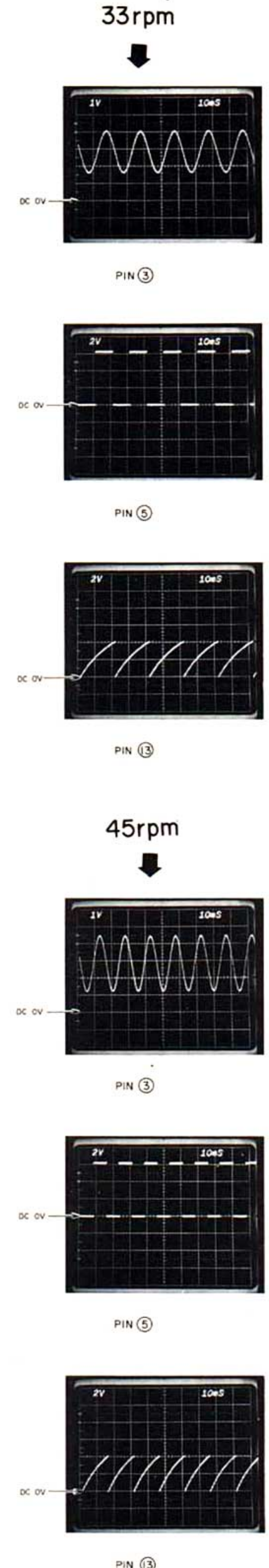


= B (POWER SUPPLY) LINE



- 2SA933
- 2SA950
- 2SA1015
- 2SB926
- 2SC1740
- 2SC1815
- 2SC2120

NOTE  
UNLESS OTHERWISE SPECIFIED  
ALL RESISTORS IN OHMS 1/4W(J)  
ALL CAPACITORS IN µF 50WV(J)  
POWER TRANSFORMER IS DIFFERENT  
ACCORDING TO AREA



WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY.  
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S  
RECOMMENDED PARTS  
AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.  
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL,  
NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

# AP-A2 SCHEMATIC DIAGRAM No. 540810A<sup>(A3)</sup>



# **AKAI ELECTRIC CO., LTD.**

12-14, 2-Chome, Higashi-Kojiya, Ohta-Ku, Tokyo, Japan

TEL: Tokyo (742) 5111 CABLE: HIFIAKAI TOKYO TELEX: J26261

Printed No. 840808-I1-2600

Printed Date: August 31, 1984

Printed in Japan