

# PS-3300

*USA Model  
Canada Model*



## TURNTABLE SYSTEM

### SPECIFICATIONS

#### GENERAL

Power Requirements: 120 V ac, 60 Hz

Power Consumption: 6W

Dimensions: 455 (w) x 153 (h) x 352 (d) mm  
18 (w) x 6 (h) x 13<sup>7</sup>/<sub>8</sub> (d) inches  
including projecting parts and controls

Weight: Approx. 8.0 kg, 17 lb 11 oz (net)  
Approx. 9.7 kg, 21 lb 7 oz (in shipping carton)

#### TURNTABLE

Platter: 30.8 cm (12<sup>1</sup>/<sub>8</sub> inches), Aluminum — alloy diecast

Motor: DC servo-controlled motor (brushless)

Drive System: Direct drive

Speeds: 33<sup>1</sup>/<sub>3</sub>, 45 rpm

Wow and Flutter: 0.04 % (WRMS)

S/N Ratio: 65 dB (DIN-B)

#### TONEARM

Type: Statically balanced, universal

Pivot-to-Stylus Length: 216.5 mm (8<sup>5</sup>/<sub>8</sub> inches)

Overhang: 16.5 mm (2<sup>1</sup>/<sub>32</sub> inches)

Tracking Force Adjustment Range: 0 — 3 g

Shell Weight: 7.5 g

Cartridge Weight Range: 4 — 10 g

Cartridge is not supplied with this turntable system.

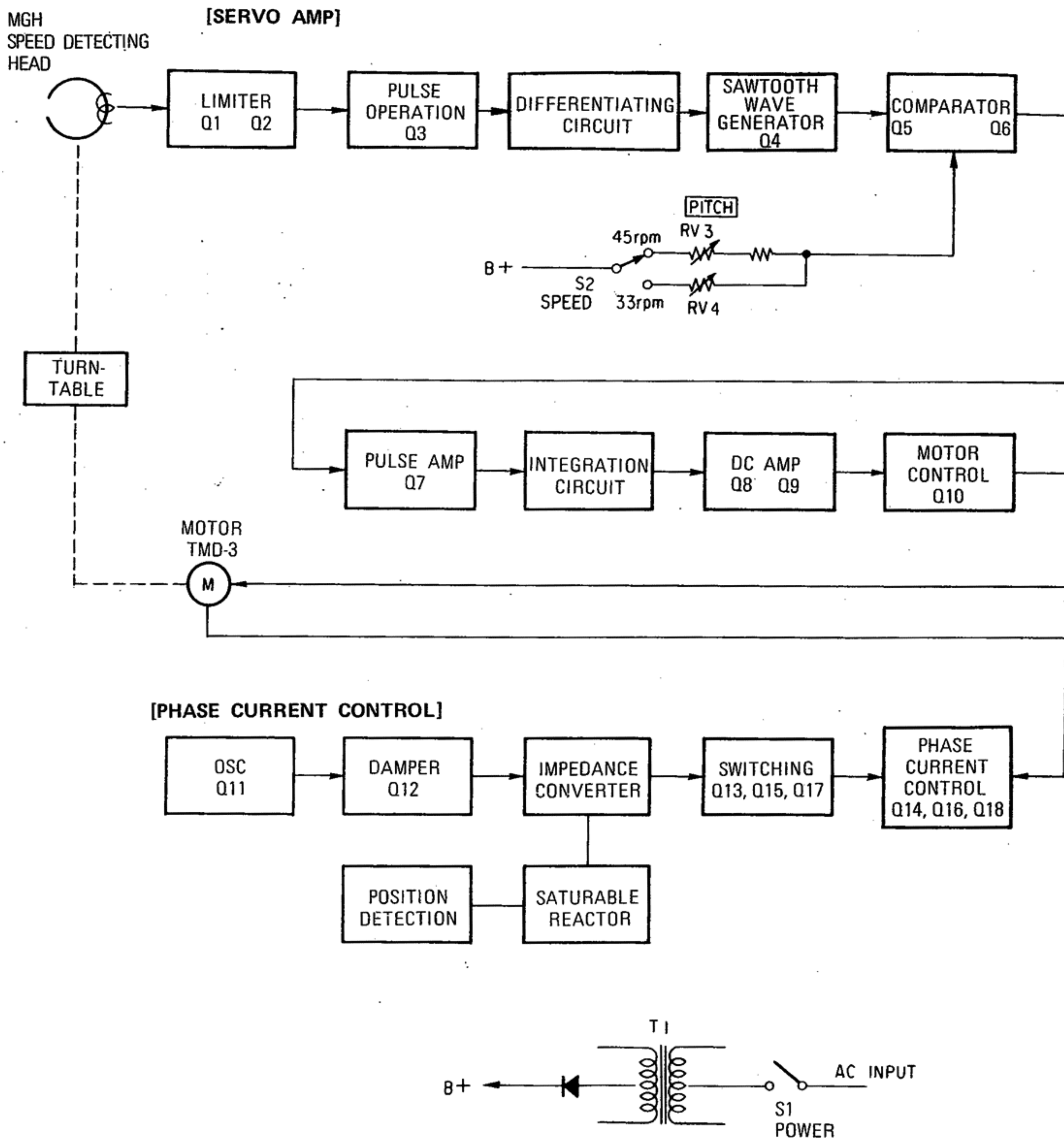
# SONY<sup>®</sup>

---

# SERVICE MANUAL

# SECTION 1

## BLOCK DIAGRAM



SECTION 2

DISASSEMBLY AND REPLACEMENT

### TOP COVER AND CASE REMOVAL

Top cover  
B 4 x 10  
B 4 x 10  
Frame  
Case  
TA, B 3 x 12  
TA, B 3 x 12  
TA, B 3 x 12

### MAIN CIRCUIT BOARD REMOVAL AND CHECKS

1. Removal  
2. Checks

TA, PWH 3 x 8  
main circuit board  
Lift in the arrow direction.  
main circuit board

- 1) Position the main circuit board as shown below.
- 2) Start the turntable and check the board.

### SPEED SELECTOR SWITCH REPLACEMENT

1 switch bracket cap  
2 TA, P 3 x 18  
3 switch bracket  
speed selector switch  
4 Unsolder three lead wires.

### TONEARM BASE REMOVAL

BLK RED GRN  
To the tonearm  
BLU RED  
WHT BLK  
WHT BLK  
ground lead wire  
Phono cord  
1 Unsolder six lead wires.  
4 Bolt 3 x 16, hexagon socket.  
tonearm body  
5 tonearm base  
3 tonearm lever  
2 Loosen SC 3 x 5, hexagon socket.

### DAMPER OIL LUBRICATION

2 arm lifter  
1 Loosen SC 2.6 x 4, hexagon socket  
3 Apply silicon oil (KF96H). Part No. 7-661-012-15  
8 tonearm lifting rod  
4 arm lifter bracket  
7 Loosen SC 3 x 3, hexagon socket.  
6 spring and washer  
3 TA, B 3 x 8  
5 E 3

### TONEARM PIPE CONNECTOR REPLACEMENT

Colors of lead wires  
RED WHT  
GRN BLU  
2 tonearm pipe connector  
locking collar  
3 Unsolder four lead wires.  
1 Loosen head shell adjustment screws.  
W11.5  
screwdriver  
turntable base  
head shell  
cartridge  
stylus  
record surface  
right angle

**Installation**  
Note: Install the head shell and the cartridge as shown below and tighten two head shell adjustment screws (1).

### TONEARM PIPE REPLACEMENT

4 tonearm body  
tonearm pipe  
lead wires  
same as the opposite side  
3 screw, pivot  
2 Nut (A), pivot  
1 Nut (B), pivot (Use pin-face screwdriver) Part No. 7-700-731-21 d = 3.8 mm  
5 Loosen B 2.6 x 6  
tonearm body  
9 connector  
8 washer  
7 tonearm pipe  
6 Loosen SC 2.6 x 4, hexagon socket

**Installation**  
Note: Adjust the balance of the tonearm as shown below and tighten three screws (5, 6).

### COUNTERWEIGHT SHAFT REMOVAL

tonearm body  
slit  
P 3 x 16  
W 3  
damper, rubber  
counterweight shaft

### LATERAL WEIGHT REMOVAL

tonearm body  
3 Loosen SC 2.6 x 4, hexagon socket  
1 nut  
2 lateral bar  
4 lateral weight  
Installation - Side View -  
1 tonearm body  
right angle  
lateral weight  
2 0.5 mm  
lateral bar  
counterweight

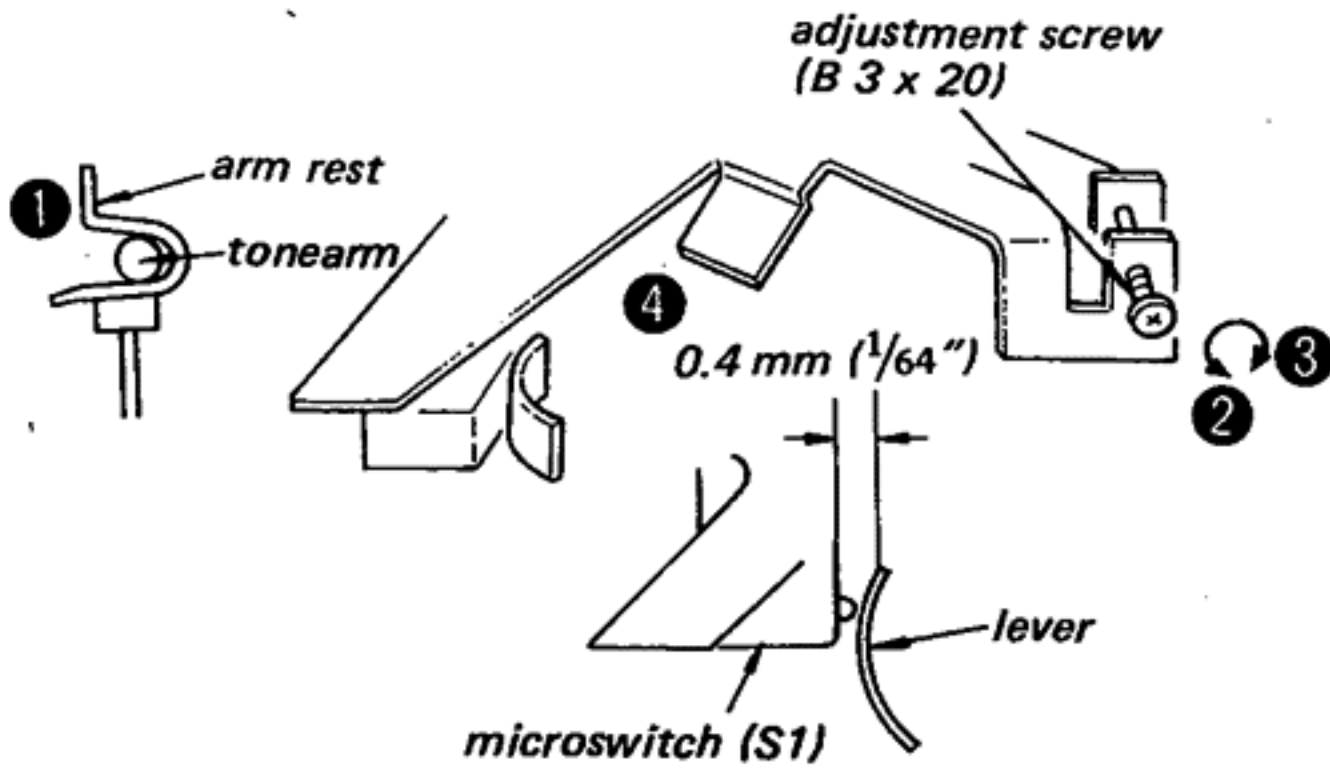
# SECTION 3

## ADJUSTMENTS

### MICROSWITCH (S1) ADJUSTMENT

1. Secure the tonearm to the arm rest ( ① ).
2. Turn the adjustment screw (B 3 x 20) so that the clearance between the microswitch (S1) and the lever is 0.4 mm (1/64") ( ④ ) as shown below.

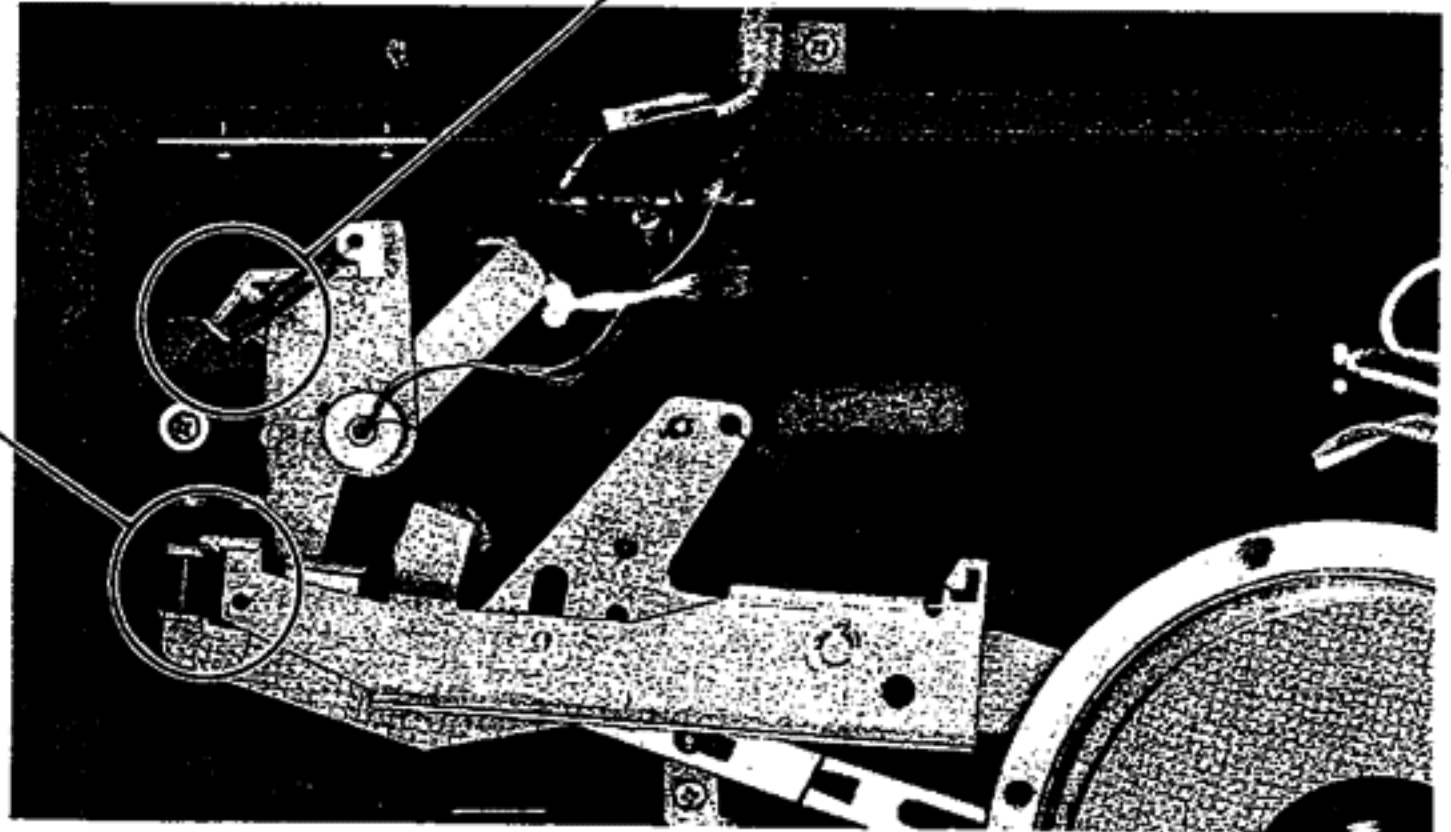
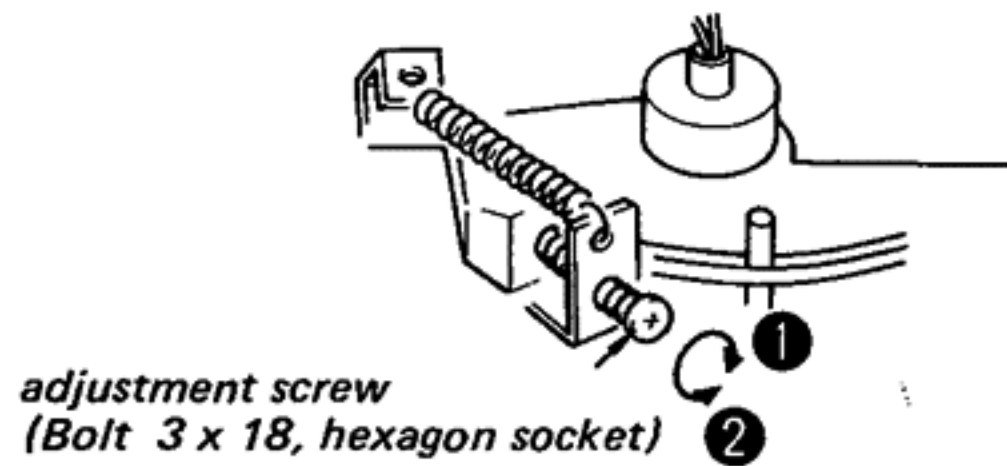
Turning direction	clearance
② ↑ ↓ ③	narrow ↑ ↓ wide



### AUTOMATIC RETURN ADJUSTMENT

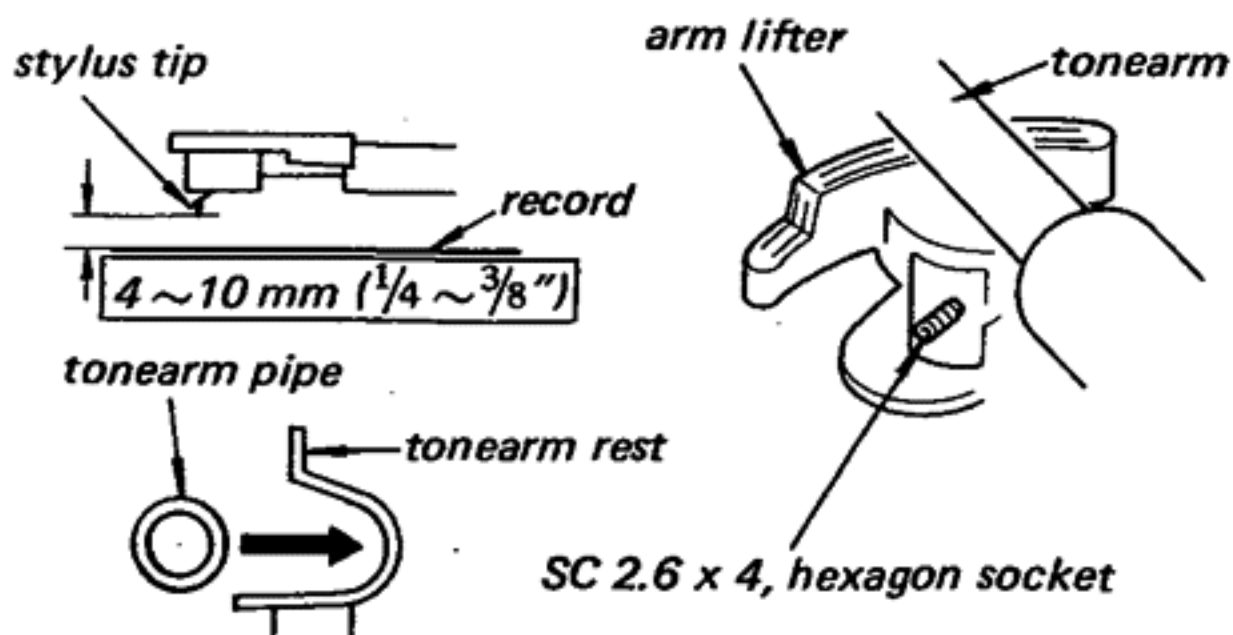
If the automatic return operation does not work properly, adjust by turning the adjustment screw (Bolt 3 x 18, hexagon socket) as shown below.

Turning direction	Automatic return position
① ↓ ↑ ②	slow ↓ ↑ fast



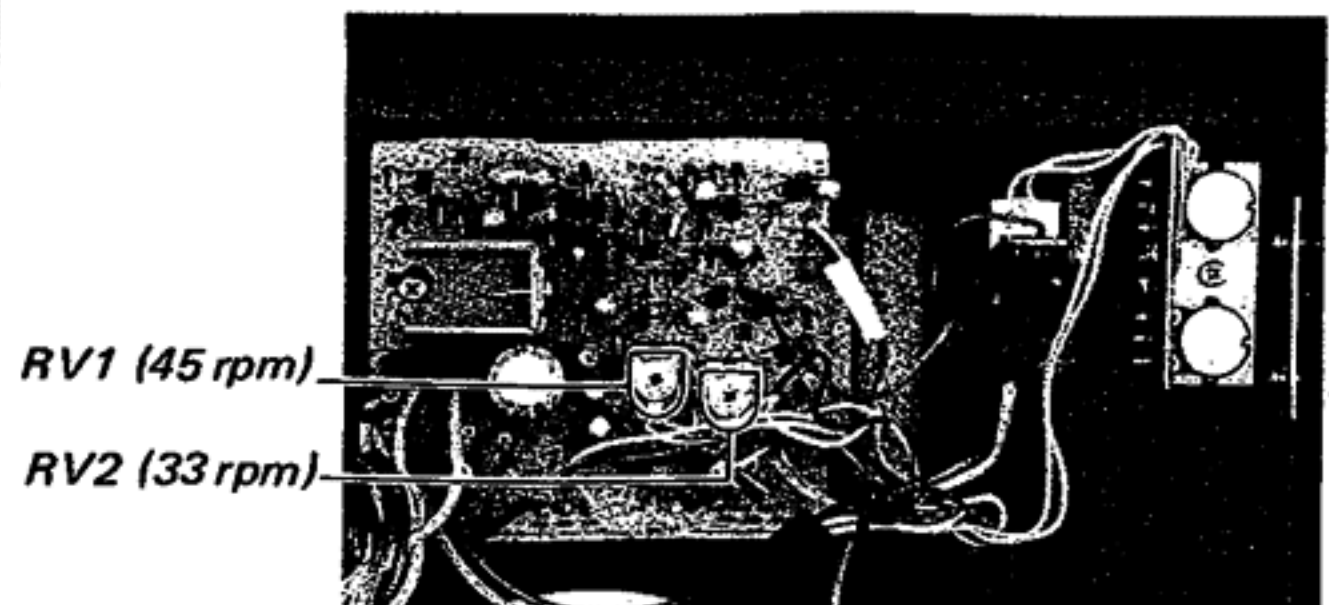
### TONEARM HEIGHT ADJUSTMENT

1. Lift the cueing lever and confirm that the clearance between the stylus tip and the record on the turntable is 4 - 10 mm as shown below. If necessary, adjust the height of the arm lifter by loosening the set screw.
2. After the adjustment, confirm that the tonearm smoothly returns to the tonearm rest as shown below.



### TURNTABLE SPEED ADJUSTMENT

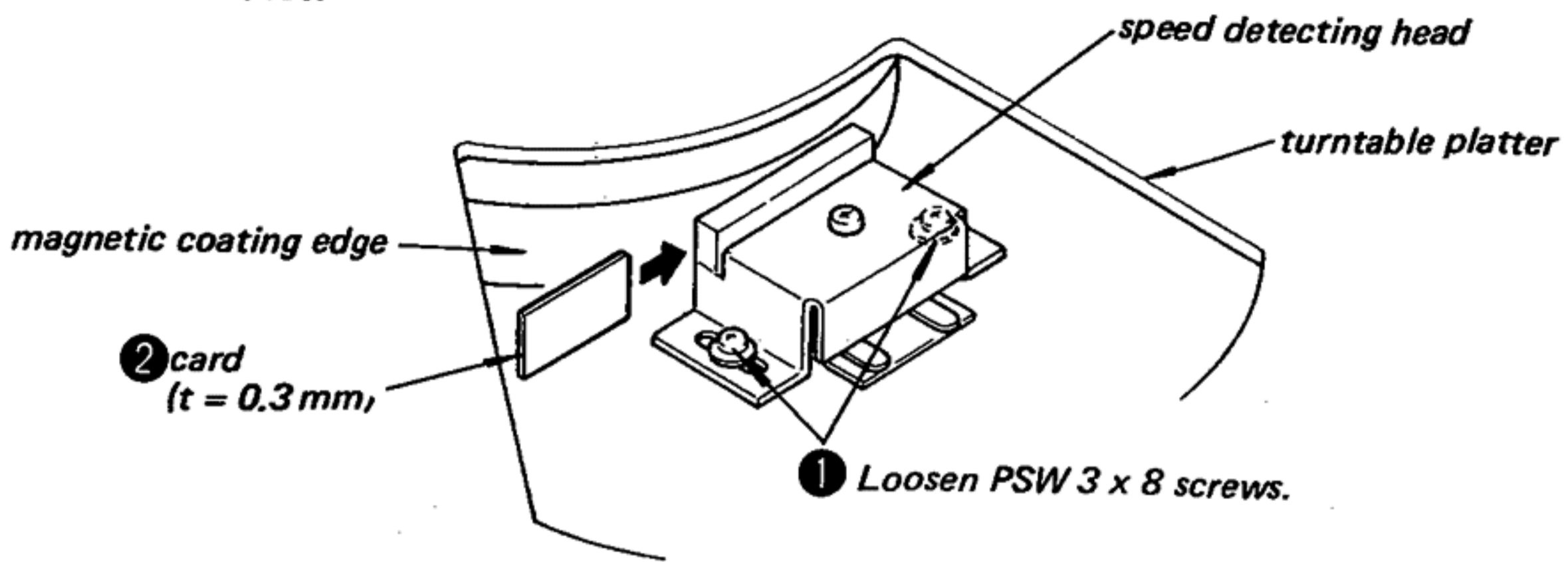
1. Set the two pitch control knobs (33 and 45) to the mechanical-mid position.
2. Adjust RV1 (45 rpm) and RV2 (33 rpm) so that the stroboscope pattern appears stationary.



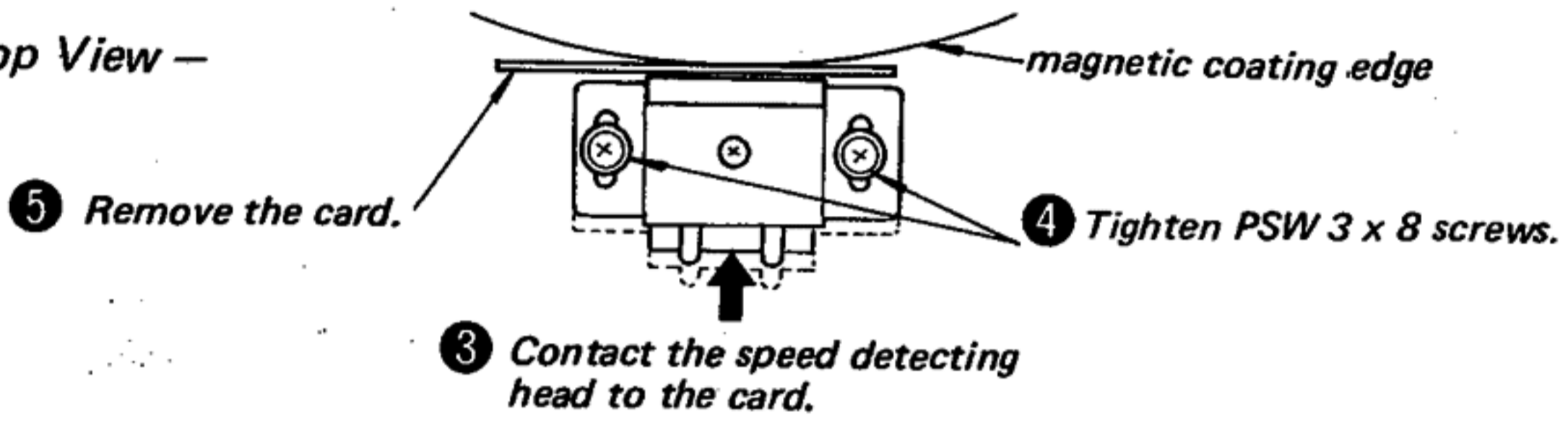
## SPEED DETECTING HEAD ADJUSTMENT

1. Proceed in the numerical order ( ① - ⑤ )

— Side View —



— Top View —



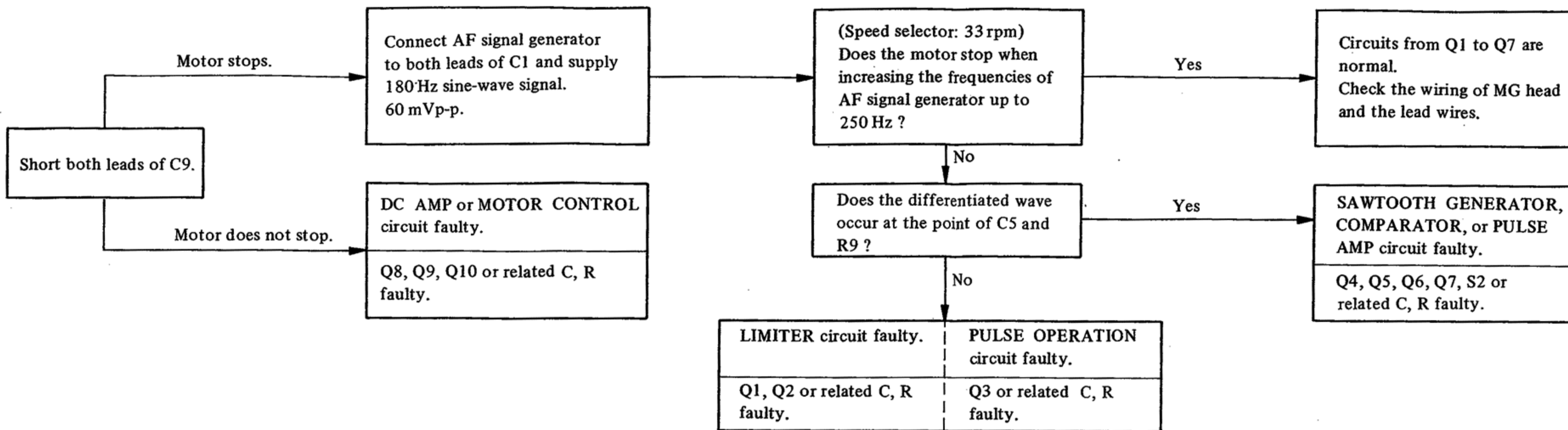
2. By viewing the stroboscope, adjust the speed with the pitch control until the pattern appears stationary.

**Note:** Confirm that the head does not contact the magnetic coating of the platter.

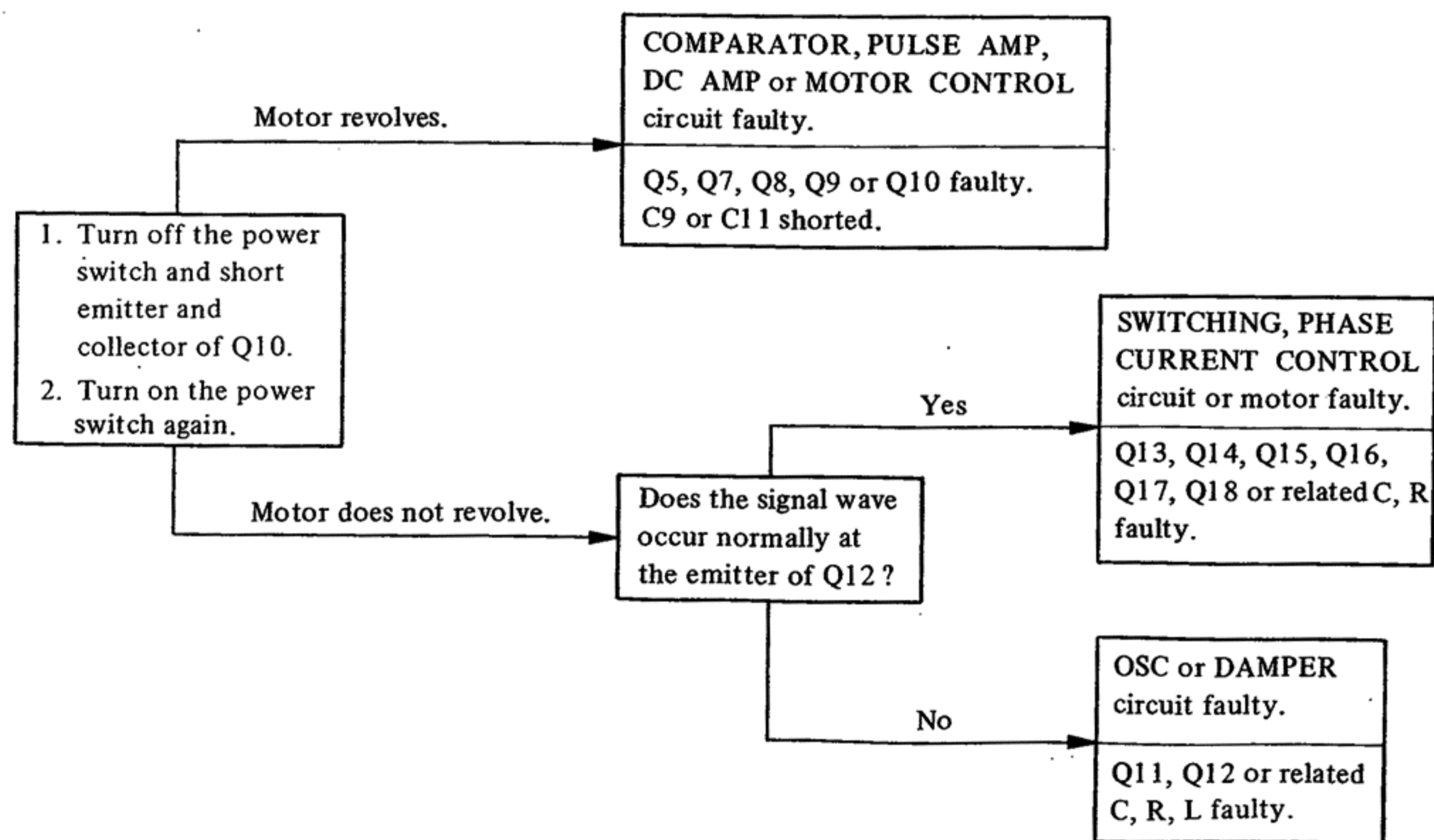
## SECTION 4 TROUBLESHOOTING CHARTS

Remove the turntable platter before performing the following steps.  
Refer to the waveform and dc voltage in the schematic diagram.

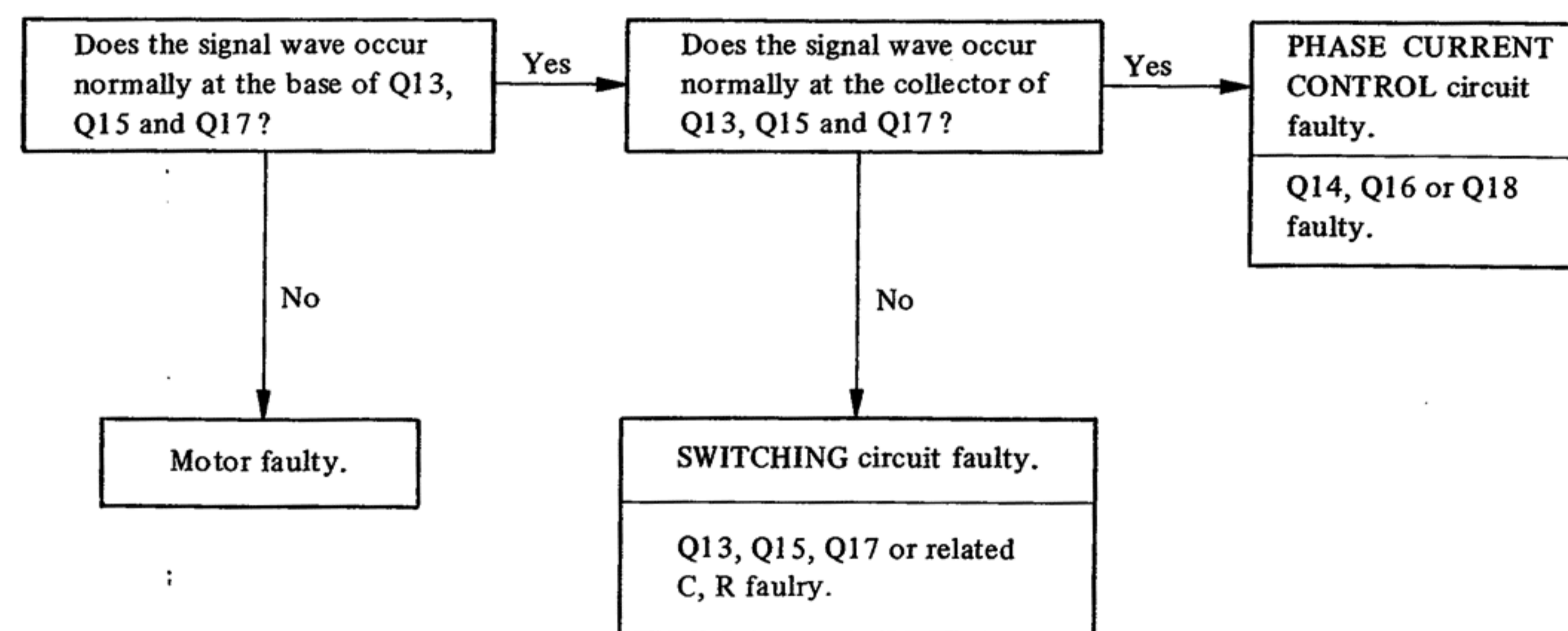
### 1. Turntable runs excessively fast.



### 2. Turntable will not start.

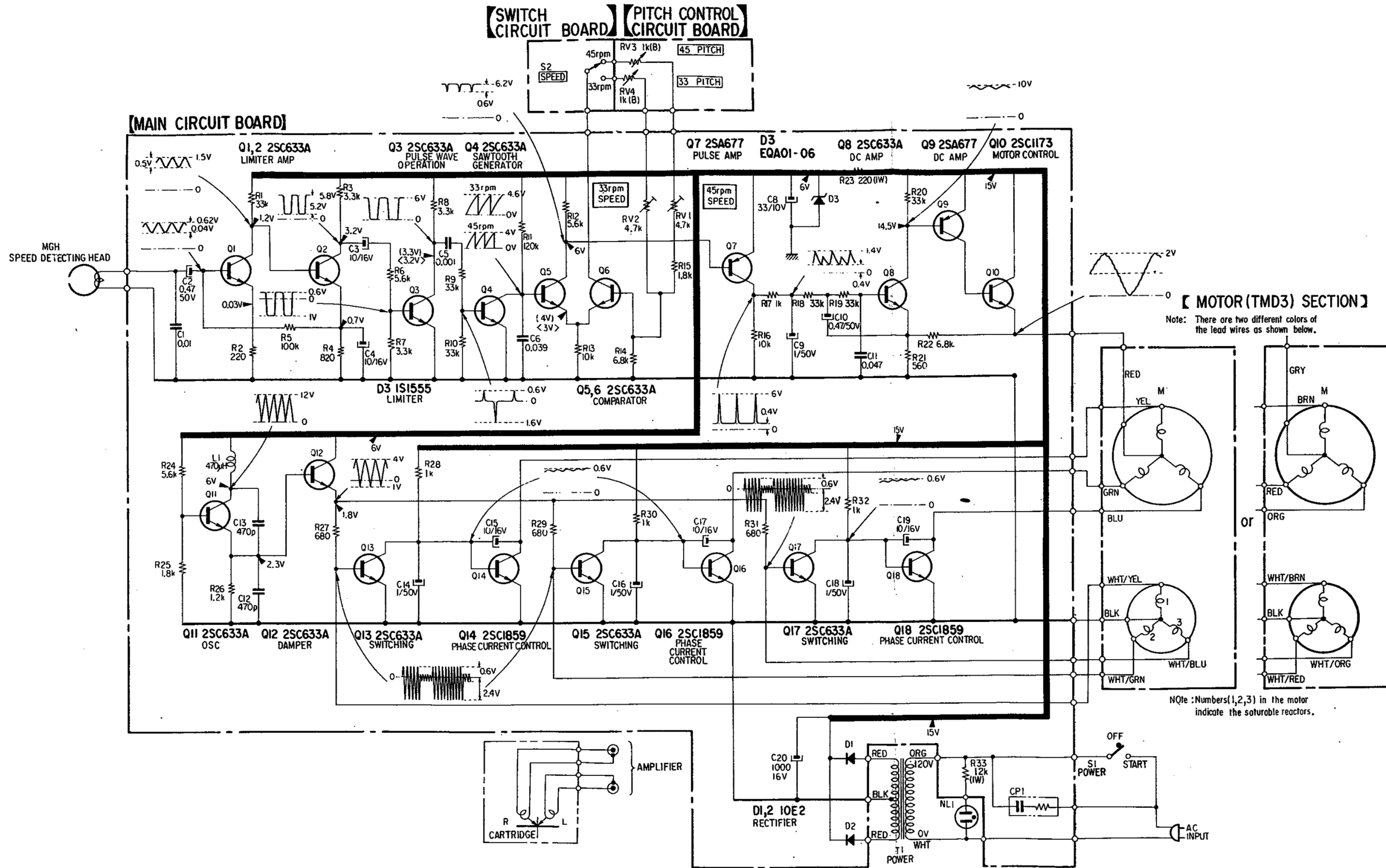


### 3. Turntable runs excessively fast or slow.



# SECTION 5 DIAGRAMS

## 5-1. SCHEMATIC DIAGRAM

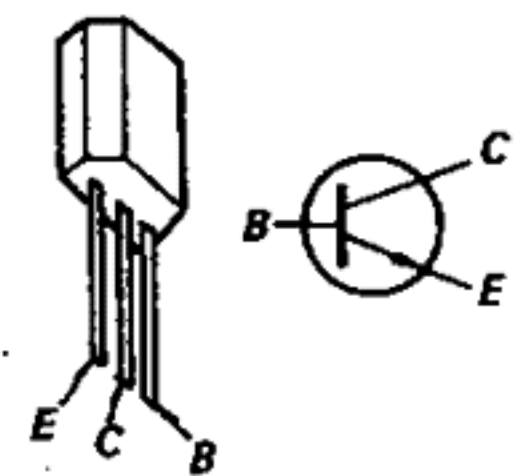


**Note:**

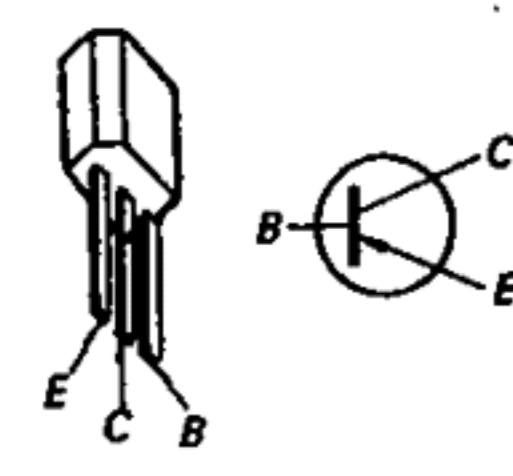
- All capacitors are in  $\mu\text{F}$  unless otherwise noted. 50 or less working voltages are not indicated except for electrolytic type.  $p = \mu\text{F}$
- All resistors are in  $\Omega$ ,  $\frac{1}{2}W$ , unless otherwise noted.  $k = 1,000$   $M = 1,000 k$
- indicates chassis ground.
- indicates B+ circuit.
- Waveforms are measured with oscilloscope.  
Vertical scale: voltage  
Horizontal scale: time
- Voltages are DC with respect to ground unless otherwise noted. Readings are taken under no-signal conditions with a VOM (20  $k\Omega/V$ ).  
no parentheses: common  
( ): 33 rpm  
< >: 45 rpm
- Voltage variations may be noted due to normal production tolerances.
- Voltage between base and emitter are measured with 2.5 V range.
- Switch Mode:

Ref. No.	Switch	Position
S1	POWER	OFF
S2	SPEED	45 rpm

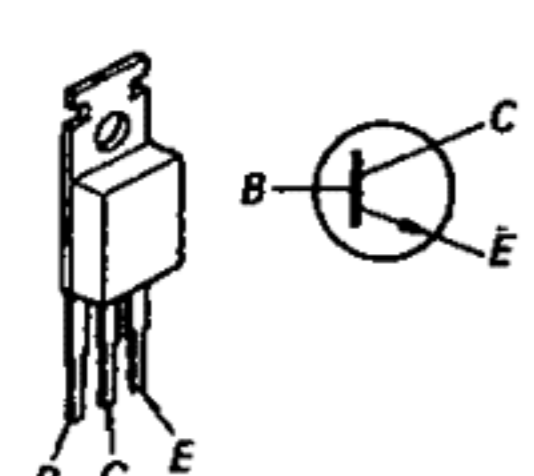
Q1 ~ 6, 8  
Q11 ~ 13: 2SC633A  
Q15, 17



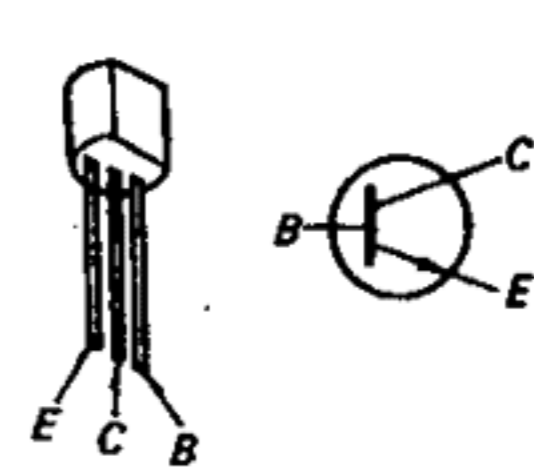
Q7, 9: 2SA677



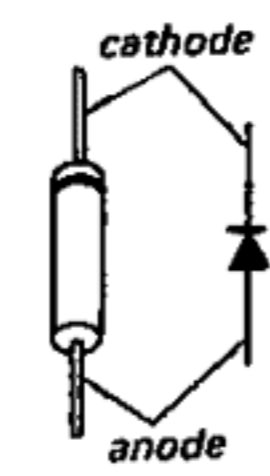
Q10: 2SC1173



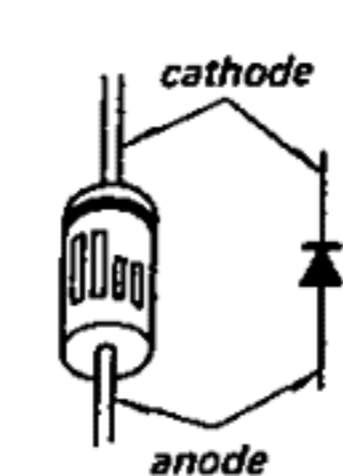
Q14, 16: 2SC1859  
Q18



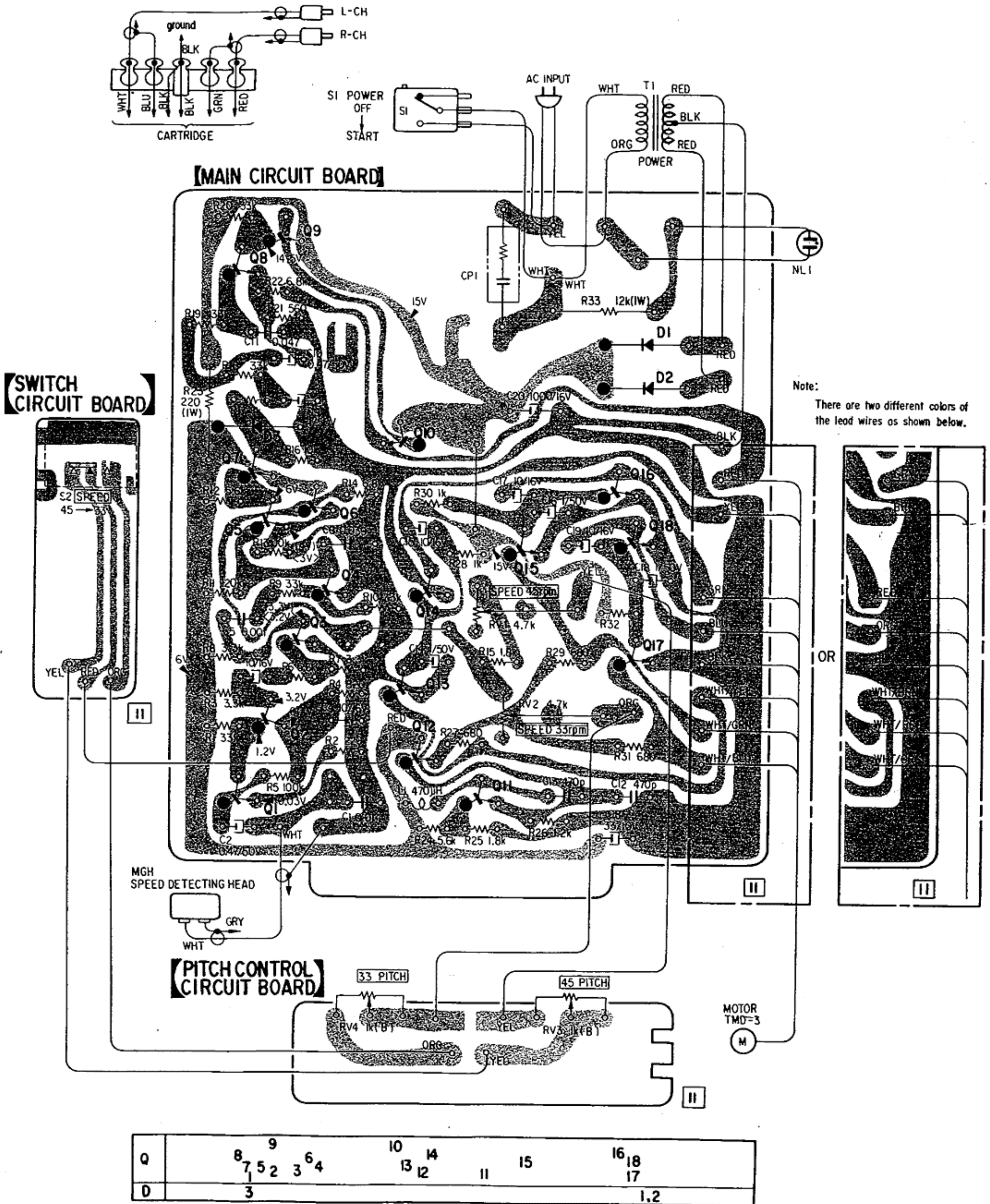
D1, 2: 10E2



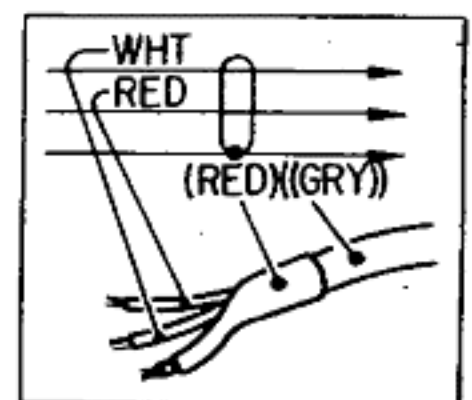
D3: EQA01-06



## 5-2. MOUNTING DIAGRAM — Conductor Side —



Note:  
There are two different colors of the lead wires as shown below.

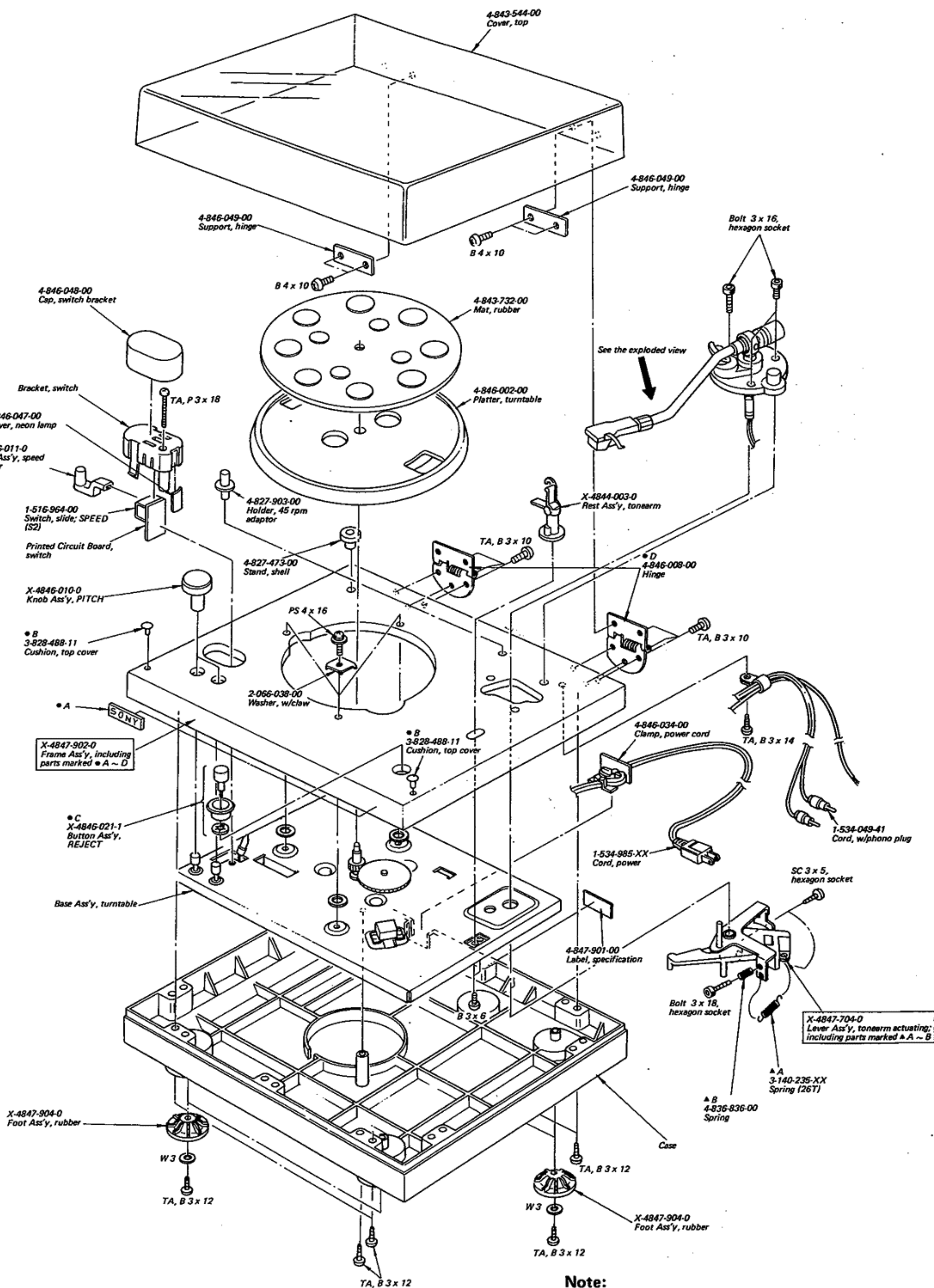


- Note:
- indicates lead wire connection through the component side.
  - indicates B+ pattern.



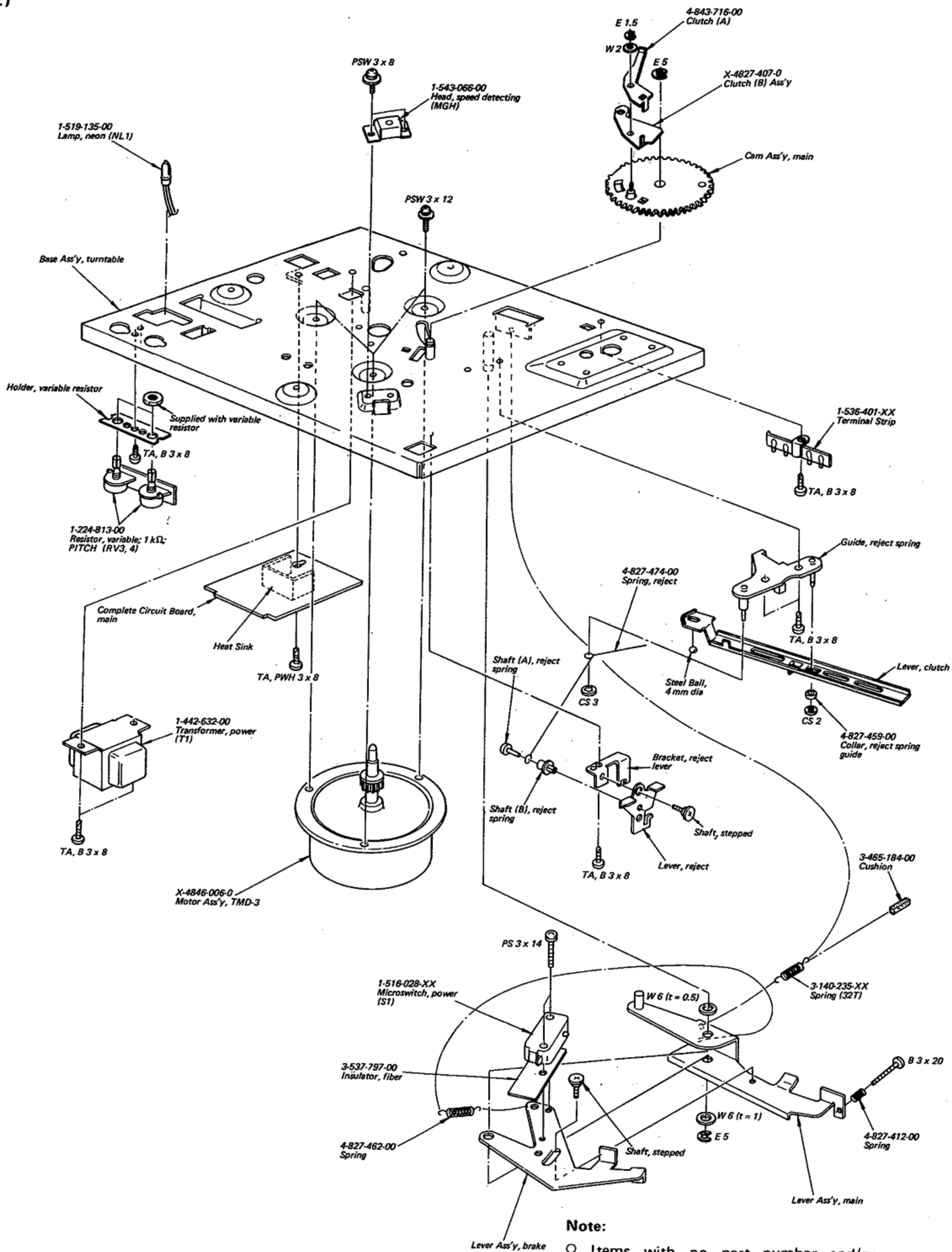
# SECTION 6 EXPLODED VIEWS

(1)



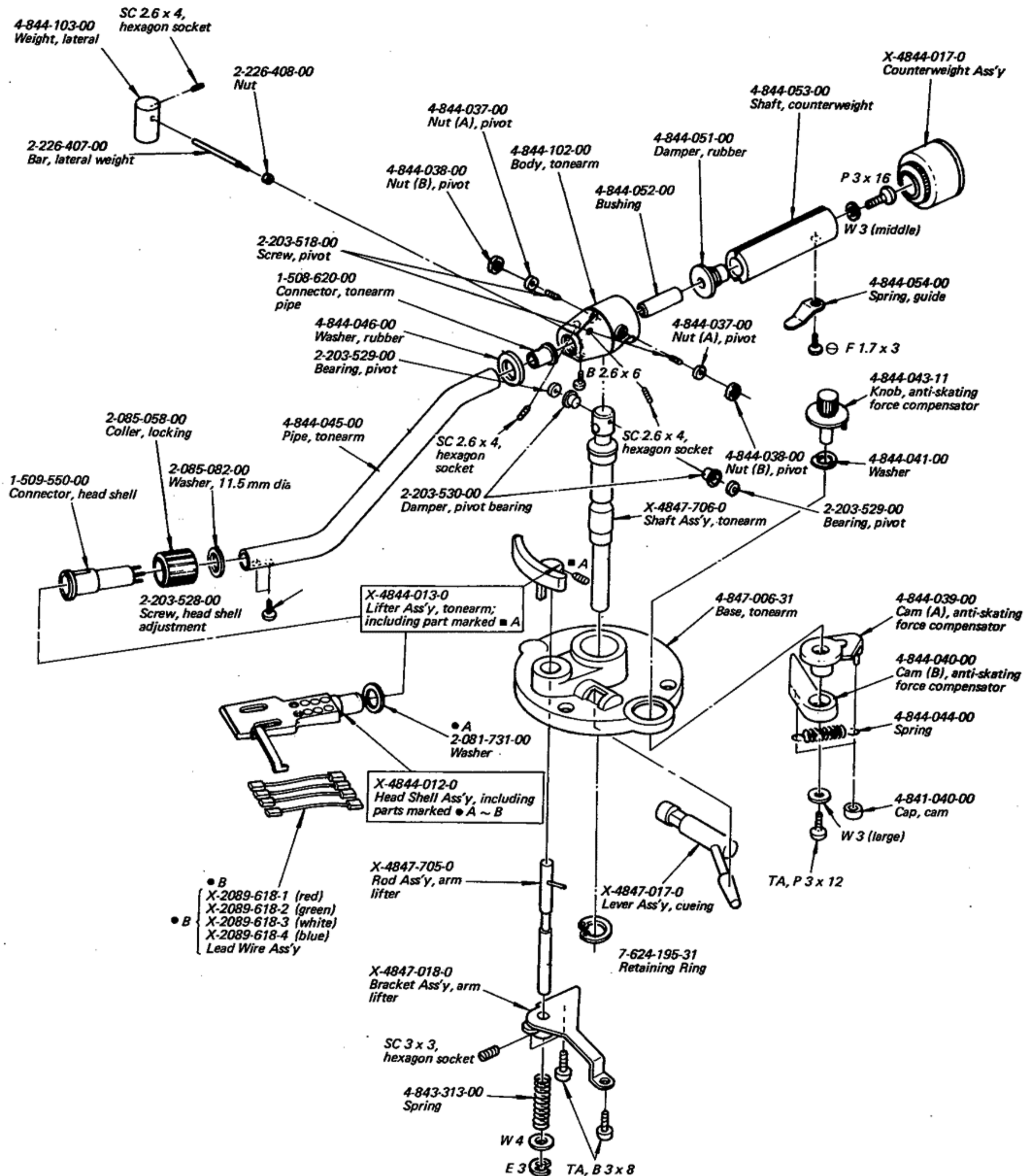
**Note:**

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
- (-) = slotted head



**Note:**

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
- (-) = slotted head

**Note:**

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
- (-) = slotted head

# SECTION 7

## ELECTRICAL PARTS LIST

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
<b>SEMICONDUCTORS</b>		
<b>Transistors</b>		
⇒ Q1 ~ 6		2SC634A
⇒ Q7		2SA678
⇒ Q8		2SC634A
⇒ Q9		2SA678
Q10		2SC1173
⇒ Q11 ~ 13		2SC634A
Q14		2SC1859
⇒ Q15		2SC634A
Q16		2SC1859
⇒ Q17		2SC634A
Q18		2SC1859
<b>Diodes</b>		
⇒ D1, 2		10D2
⇒ D3		10QB01-06
<b>COIL</b>		
L1	1-407-177-00	Microinductor, 470 μH
<b>CAPACITORS</b>		
All capacitors are in μF and of electrolytic unless otherwise noted. (p = μμF) 50 and/or less working voltages are not noted except for electrolytic type.		
C1	1-101-923-11	0.01 ceramic
C2	1-121-726-11	0.47 50 V
C3, 4	1-121-651-11	10 16 V
C5	1-102-074-11	0.001 ceramic
C6	1-108-811-12	0.039 mylar
C8	1-121-402-11	33 10 V
C9	1-121-952-11	1 50 V
C10	1-121-951-11	0.47 50 V
C11	1-161-036-11	0.047 ceramic
C12, 13	1-102-114-11	470 p ceramic

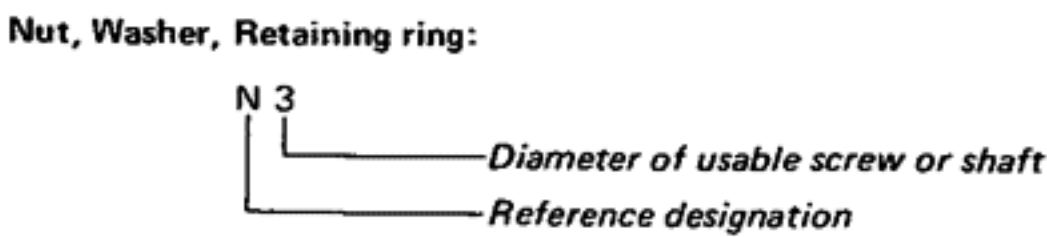
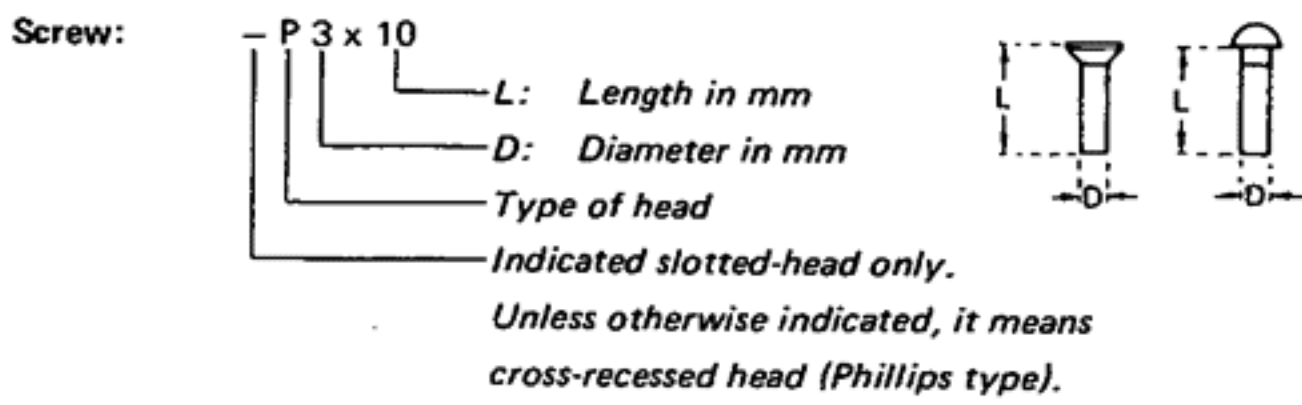
⇒: Due to replacement parts, the descriptions are different from the diagrams.

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
C14	1-121-391-11	1 50 V
C15	1-121-651-11	10 16 V
C16	1-121-391-11	1 50 V
C17	1-121-651-11	10 16 V
C18	1-121-391-11	1 50 V
C19	1-121-651-11	10 16 V
C20	1-121-245-00	1000 16 V
<b>RESISTORS</b>		
All resistors are in ohms. Regular-type ¼ W carbon and composition resistors are omitted. Check the schematic diagram for the resistance values. (k = 1000)		
R23	1-213-135-11	220 1 W metal-oxide (nonflammable)
R33	1-213-156-11	12 k 1 W metal-oxide (nonflammable)
RV1, 2	1-224-644-XX	4.7 k adjustable
RV3, 4	1-224-813-00	1 k variable, PITCH
<b>SWITCHES</b>		
S1	1-516-028-XX	Micro, power
S2	1-516-964-00	Slide, SPEED
<b>MISCELLANEOUS</b>		
CP1	1-231-057-31	Encapsulated Component
M	X-4846-006-0	Motor Ass'y, TMD-3
MGH	1-543-066-00	Head, speed detecting
NL1	1-519-135-00	Lamp, neon
T1	1-442-632-00	Transformer, power
	1-508-620-00	Connector, tonearm pipe
	1-509-550-00	Connector, head shell
	1-534-049-41	Cord, w/phono plug
	1-534-985-XX	Cord, power
	1-536-401-XX	Terminal Strip

## ACCESSORIES AND PACKING MATERIALS

<u>Part No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Description</u>
2-054-619-00	Spacer, cartridge	4-834-105-00	Sheet, plastic; turntable
3-701-806-00	Adaptor, 45 rpm	4-834-720-00	Cover, turntable
3-780-969-21	Manual, instruction	4-843-577-00	Sheet, protection: top cover
4-815-654-00	Screw, cartridge	4-846-054-00	Cushion, side
4-815-655-00	Nut, cartridge	4-847-314-00	Bag, plastic; unit
4-841-044-00	Washer, cartridge	4-847-703-00	Cushion, turntable
		4-847-911-00	Carton

### HARDWARE NOMENCLATURE



Reference Designation	Shape	Description	Remarks
<b>SCREWS</b>			
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		braizer-head screw	

Reference Designation	Shape	Description	Remarks
<b>SELF-TAPPING SCREWS</b>			
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self-tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
<b>SET SCREWS</b>			
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
<b>NUT</b>			
N		nut	
<b>WASHERS</b>			
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
<b>RETAINING RINGS</b>			
E		retaining ring	
G		grip-type retaining ring	

**Sony Corporation**

1976

6F0525-1

Printed in Japan

9-958-346-01

# SONY

# hi-fi Service Bulletin No. 81

**SONY CORPORATION OF AMERICA**  
Technical Publications Department  
47-47 Van Dam Street, Long Island City, New York 11101

Model: PS-3300

Date: May 11, 1979

Subject: Improved tone arm

Several parts in the tone arm have been changed to improve performance and reliability. As the following table shows, the changes may involve a change in the number of parts as well as the shape of the part. Note also that the part number for the new Tonearm Shaft Assembly is the same as that of the old one. The new type will be supplied whenever this item is ordered.

Description	Part Number of Original	Qty.	Part Number of Replacement	Qty.
Shaft ass'y, tonearm	X-484-770-60	1	X-484-770-60	1
Bearing, pivot	2-203-529-00	2	4-847-716-00	1
Screw, pivot	2-203-518-00	2	2-203-518-11	2
Screw, pivot bearing	---	-	3-701-506-01	1
Damper, pivot bearing	2-203-530-00	2	---	-

