PS-LX20

US Model
Canadian Model
AEP Model
UK Model
E Model

STEREO TURNTABLE SYSTEM

SPECIFICATIONS

Turntable

Platter	30 cm (12 in.), aluminum-alloy diecast
Motor	Linear torque BSL (brushless and slotless) motor
Drive system	Direct drive
Control system	FG servo control system
Speed	33¹/₃ rpm, 45 rpm
Wow and flutter	0.03% (WRMS)*, 0.035% (WRMS) ±0.045% (DIN)
Signal-to-noise ratio	75 dB (DIN-B)
Automatic system	Return, reject

Tonearm

Type	Statically balanced
Pivot-to-stylus length	200 mm (7⁷/₈ in.)
Overall arm length	235 mm (9³/₈ in.)
Overhang	18 mm (²³/₃₂ in.)
Tracking error	+3°30', −1°

Cartridge VL-43GS

Type	Moving magnet type
Frequency response	20 Hz to 20 kHz
Channel separation	18 dB at 1 kHz
Output voltage	2.5 mV at 1 kHz, 5 cm/sec., 45°
Load impedance	50 kilohms
Tracking force	2.0 g
Stylus	Sony ND-143G (0.6 mil diamond)

General

Power requirements	AEP model :	220V ac 50/60Hz
	UK model:	240V ac 50/60Hz
	E model:	110 – 120 or 220 – 240V ac adjustable 50/60Hz
	US, Canadian model :	120V ac 60Hz
Power consumption	6 W	

— continued on page 2 —

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SAFETY-RELATED COMPONENT WARNING!!

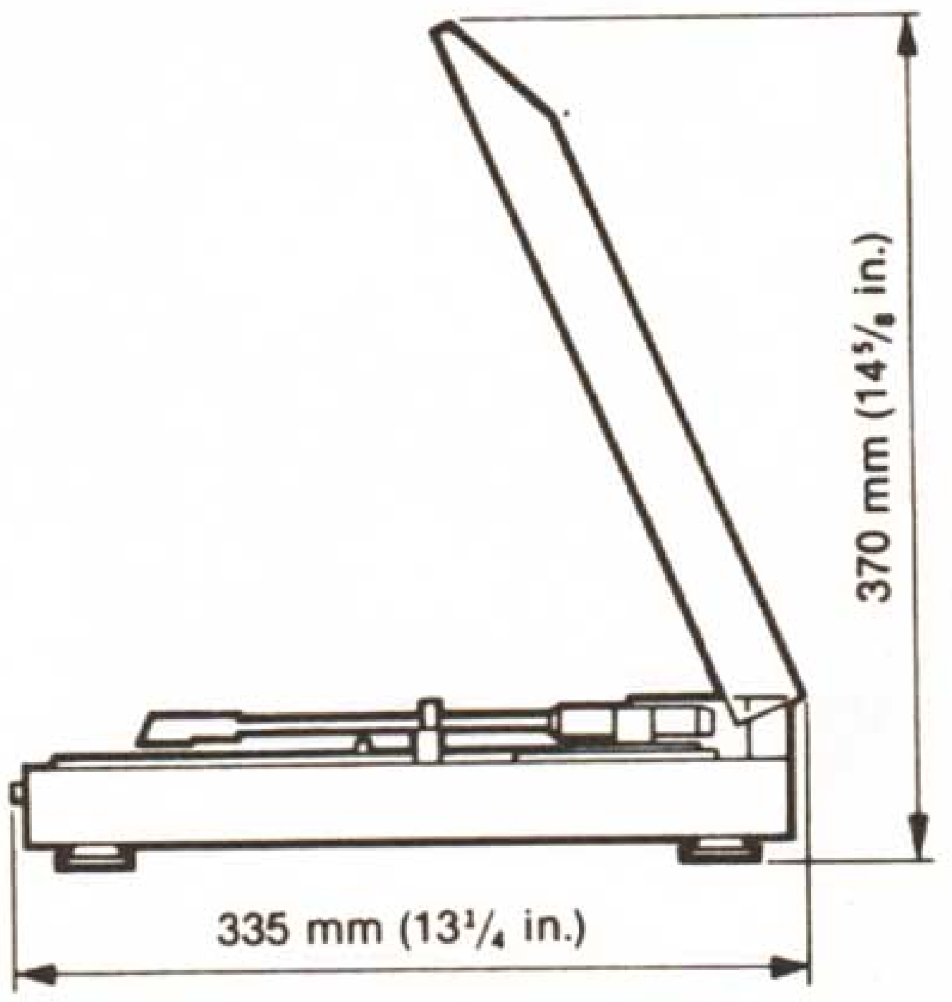
COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

MICROFILM

SONY®

SERVICE MANUAL

Dimensions	Approx. 355 × 80 × 330 mm (w/h/d) (14 × $3^1/_3$ × 13 in.) including projecting parts and controls with the dust cover opened

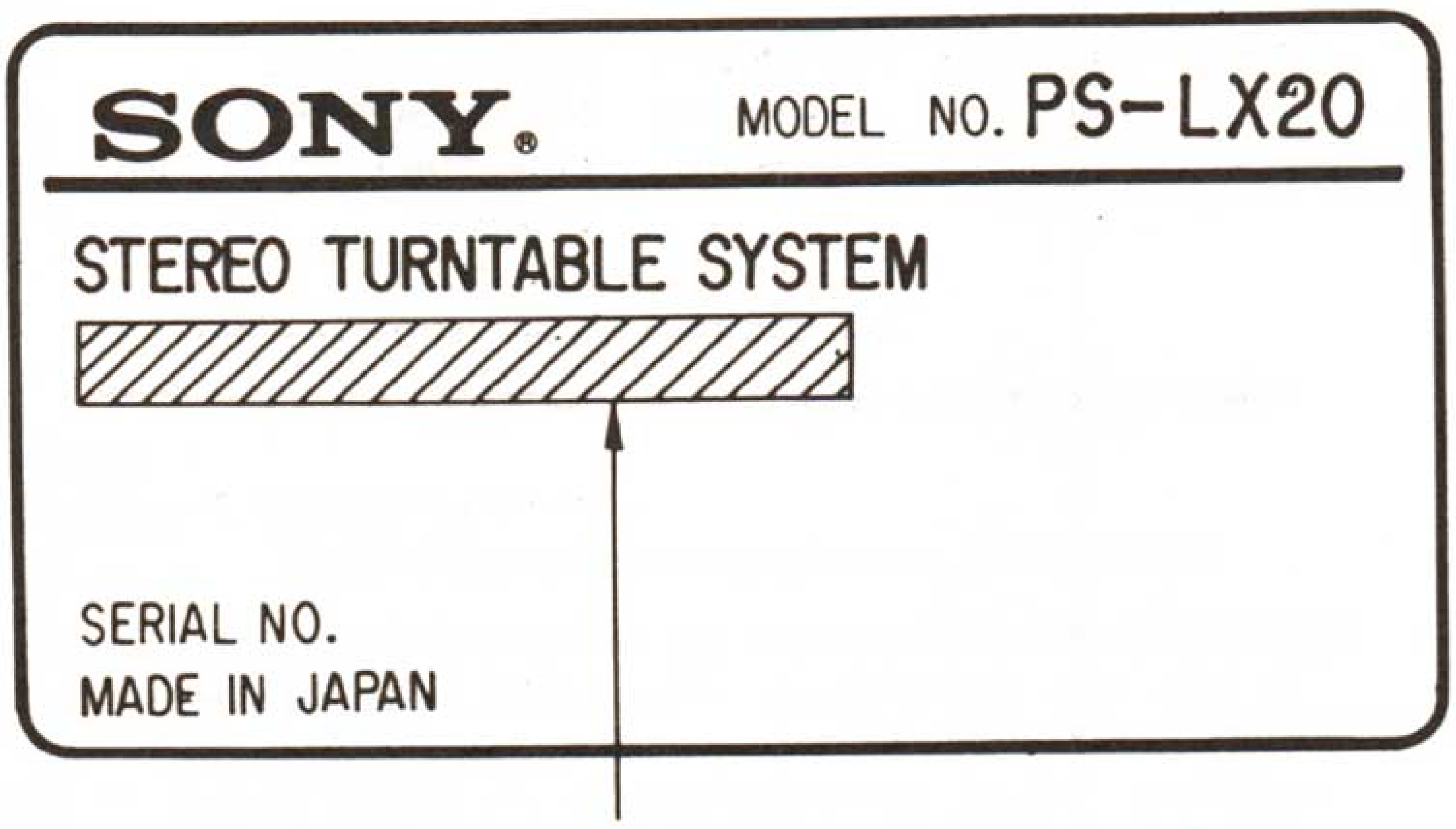


Weight	Approx. 3.5 kg (7 lbs 11 oz) net Approx. 4.5 kg (9 lbs 15 oz), in shipping carton

0 dB=0.775 V

FEATURES

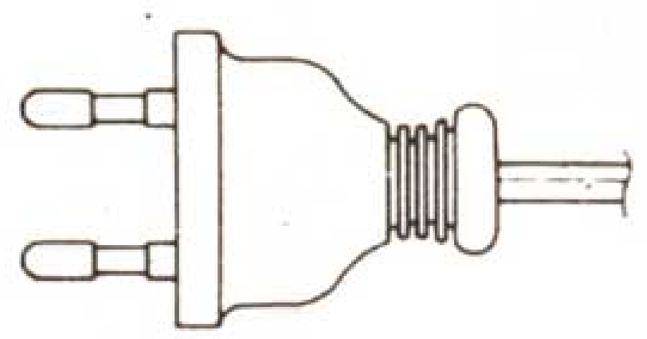
- Two motors are used to drive the turntable and the tonearm independently to obtain high-precision turntable speed and quick tonearm response.
- The movement of the turntable and the tonearm is controlled by a microprocessor.
- FG servo system monitors the speed of the turntable with great precision.
- The linear torque BSL (brushless and slotless) direct drive servo motor has a high signal-to-noise ratio.
- The low-mass tonearm and cartridge allow the stylus to track with greater accuracy.
- START/STOP button to stop during record play at any point.
- The tonearm return mechanism is triggered by luminous sensor.



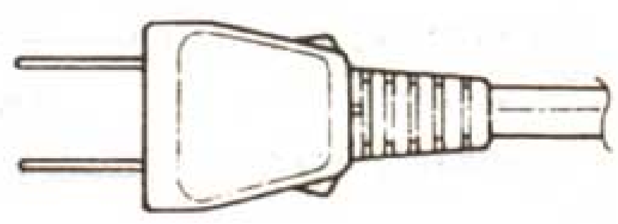
US, Canadian model:	120V	60Hz	6W
AEP model:	220V	50/60Hz	6W
UK model:	240V	50/60Hz	6W
E model:	110-120V, 220-240V	50/60Hz	6W

— Power Cord —

E_1 model: euro-plug 1-555-734-00



E_2 model: parallel-blade plug 1-551-472-31



SAFETY CHECK-OUT (US Model)

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

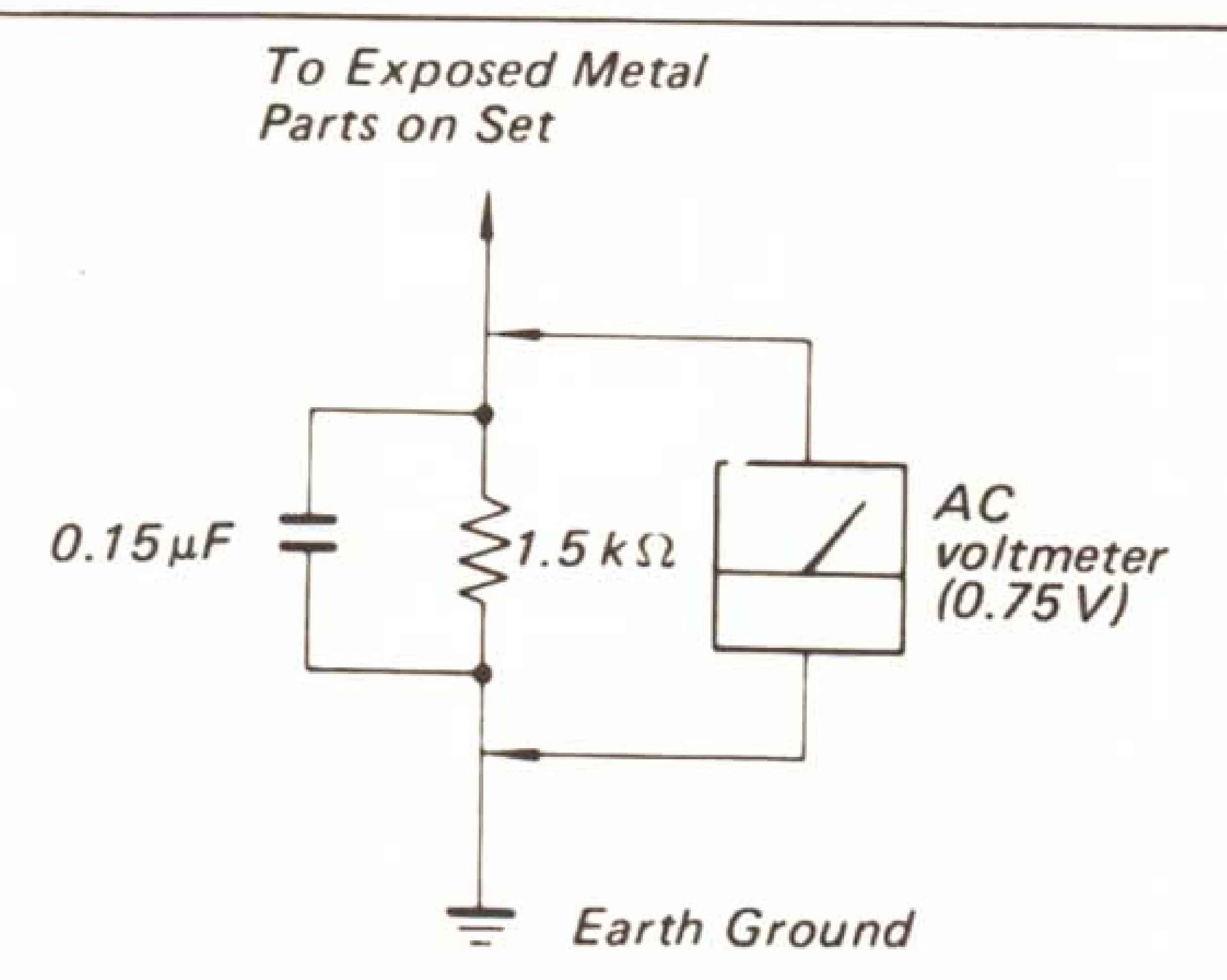
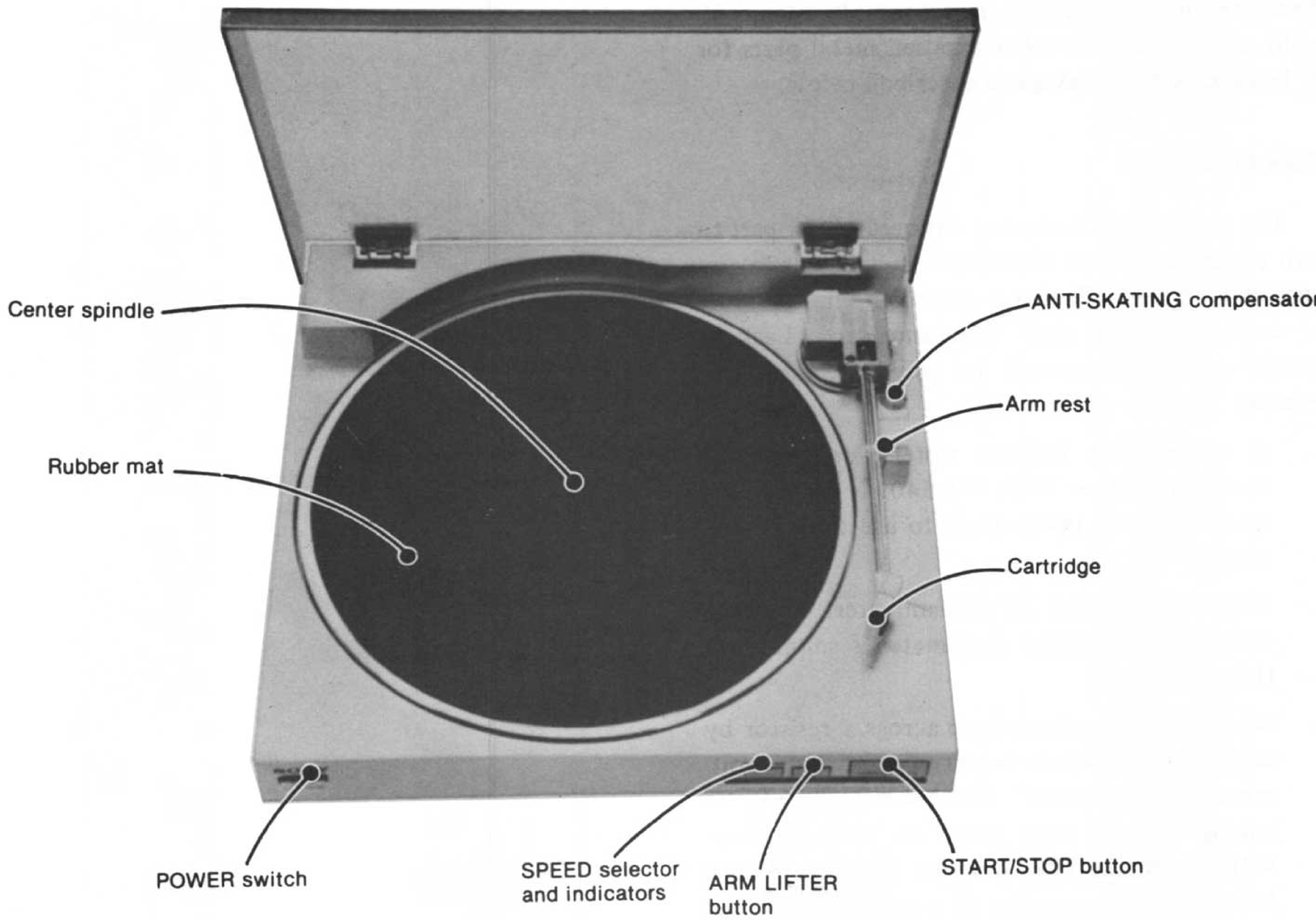


Fig. A. Using an AC voltmeter to check AC leakage.

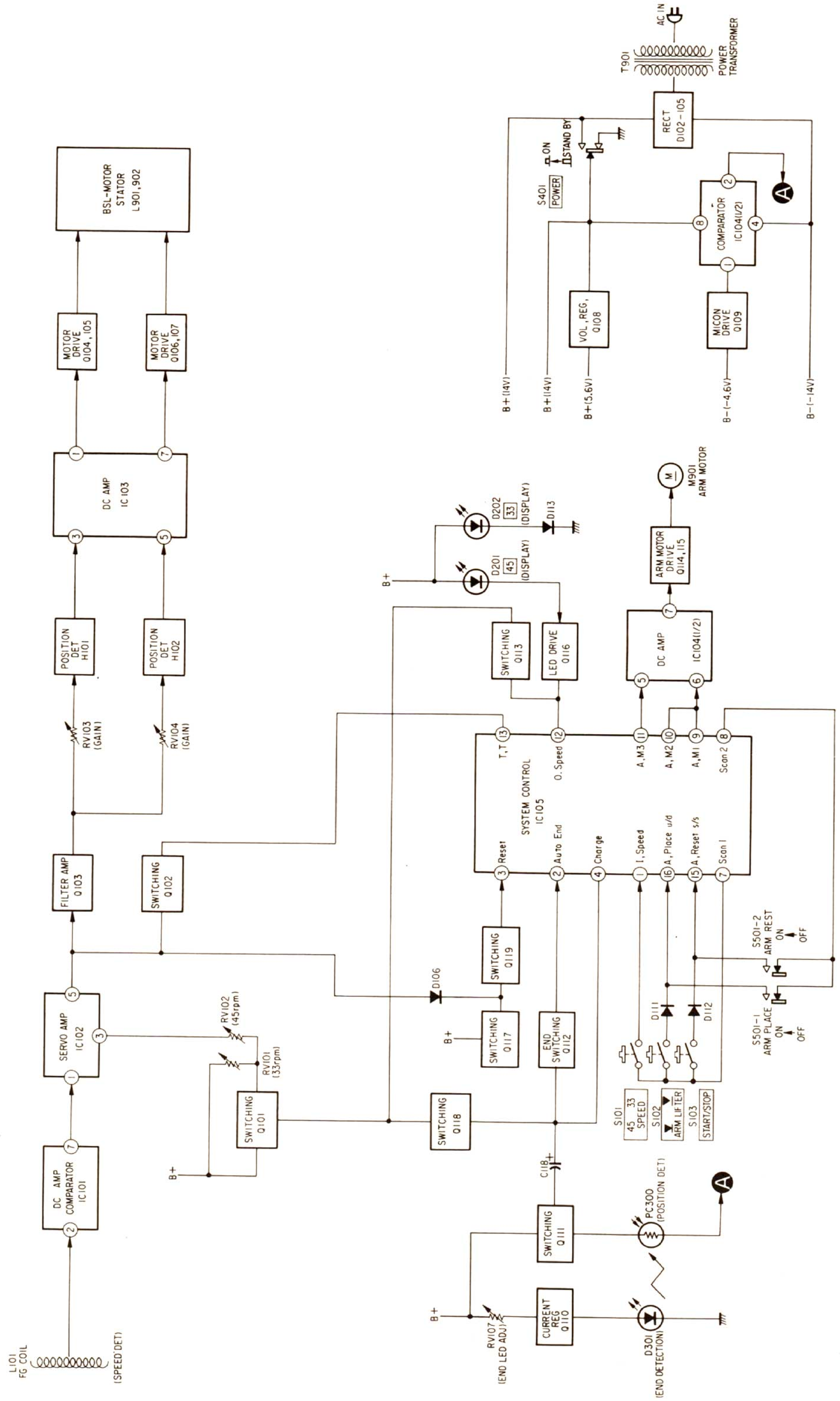
LOCATION OF PARTS AND CONTROLS

The picture below shows the appearance of the assembled turntable.



SECTION 1
OUTLINE

1-1. BLOCK DIAGRAMS

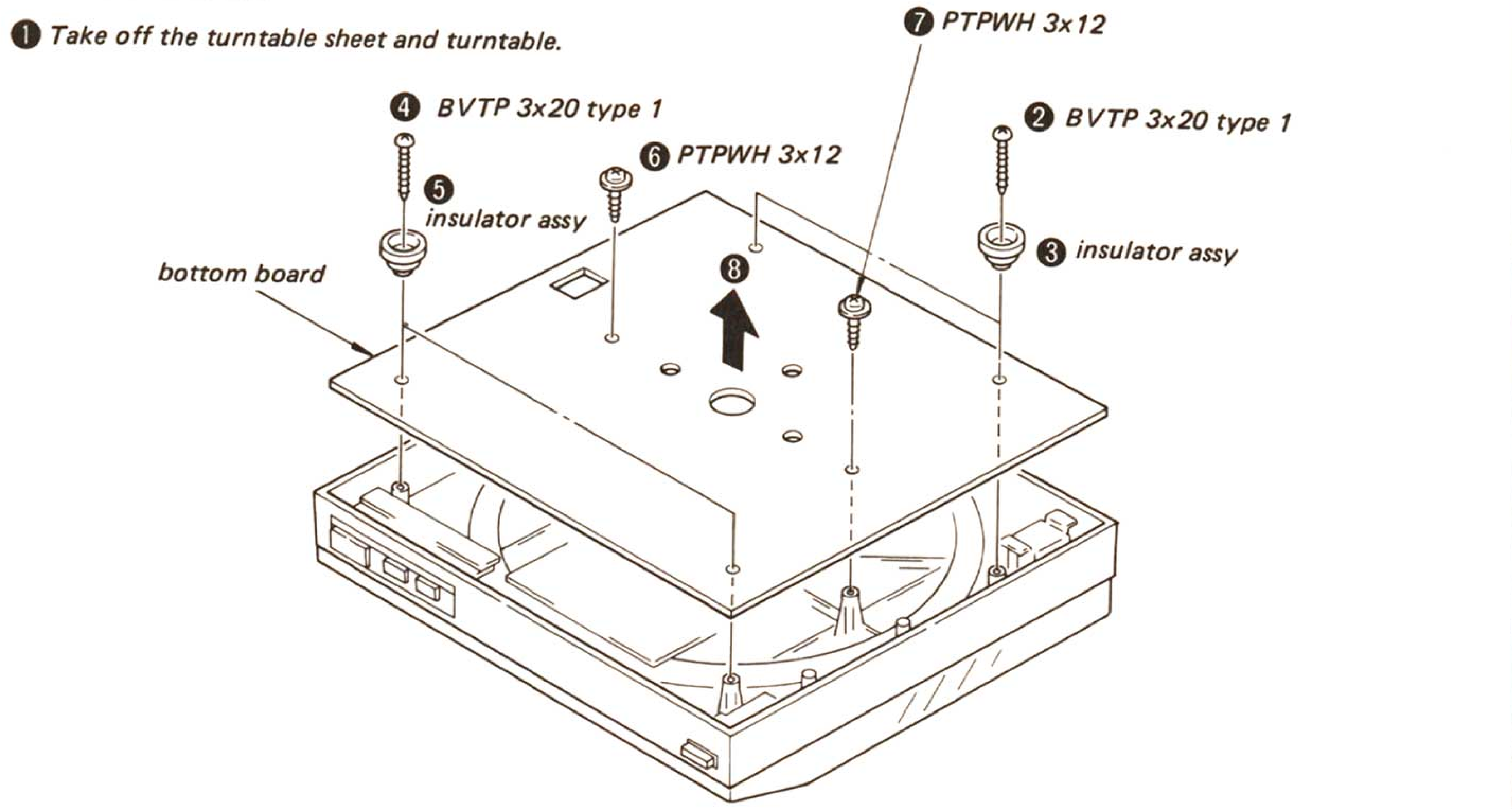


SECTION 2
DISASSEMBLY

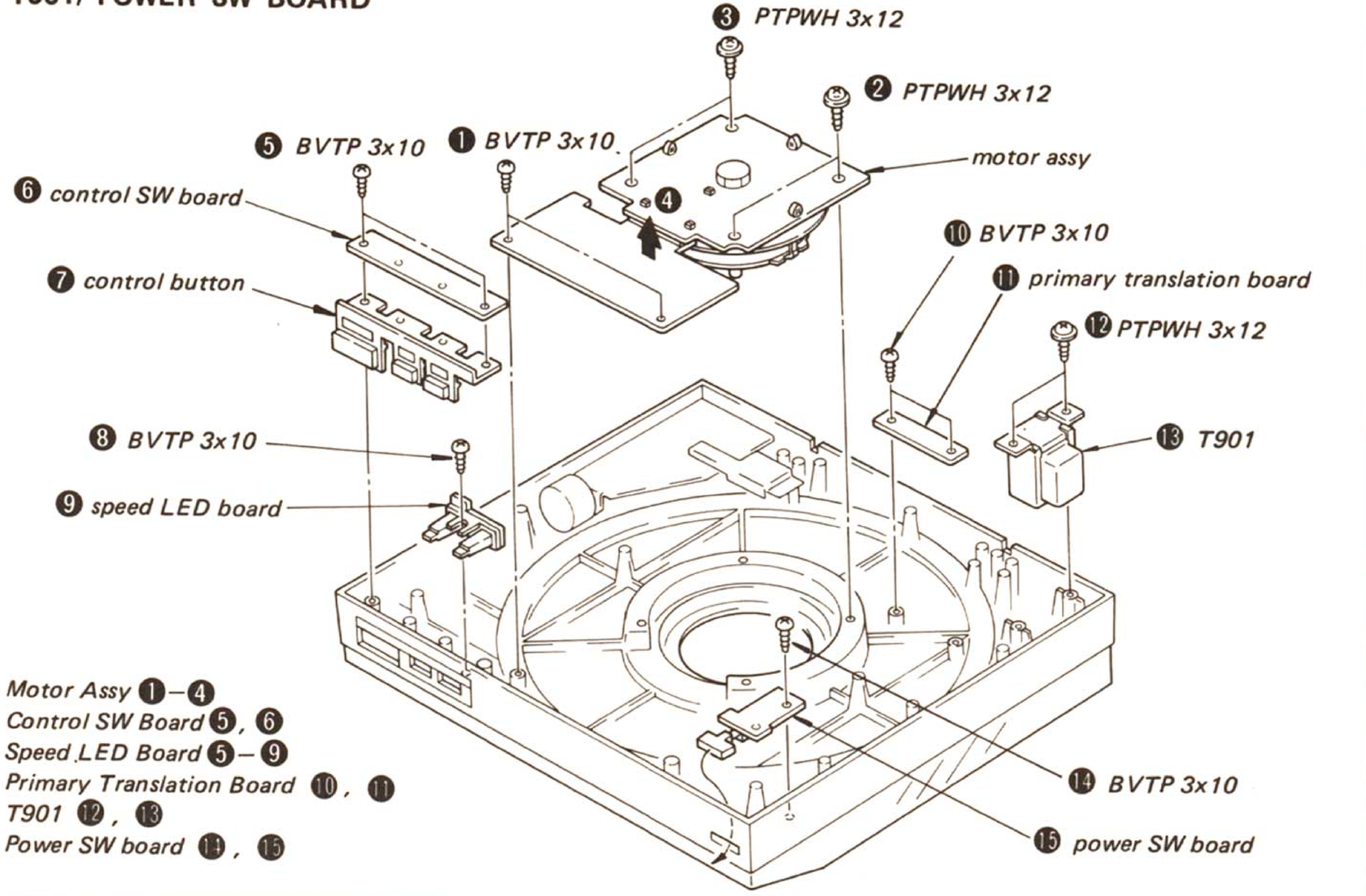
2-1. REMOVAL

- Follow the disassembly procedure in the numerical order given.

BOTTOM BOARD



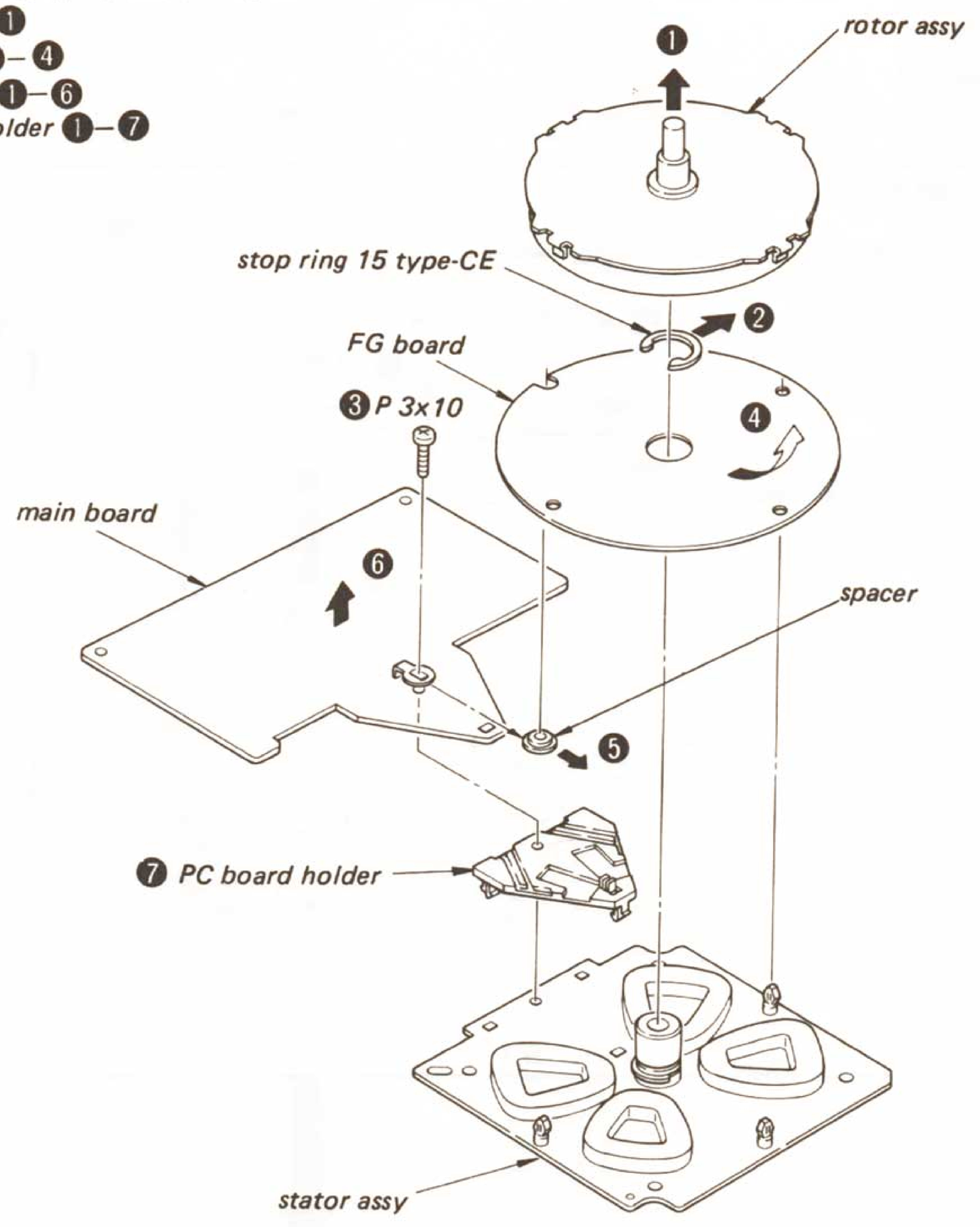
MOTOR ASSY/CONTROL SW BOARD/SPEED LED BOARD/PRIMARY TRANSLATION BOARD/ T901/ POWER SW BOARD



Motor Assy ❶–❹
Control SW Board ❺, ❻
Speed LED Board ❺–❾
Primary Translation Board ❿, ⓫
T901 ⓬, ⓭
Power SW board ⓮, ⓯

ROTOR ASSY/FG BOARD/MAIN BOARD/PC BOARD HOLDER

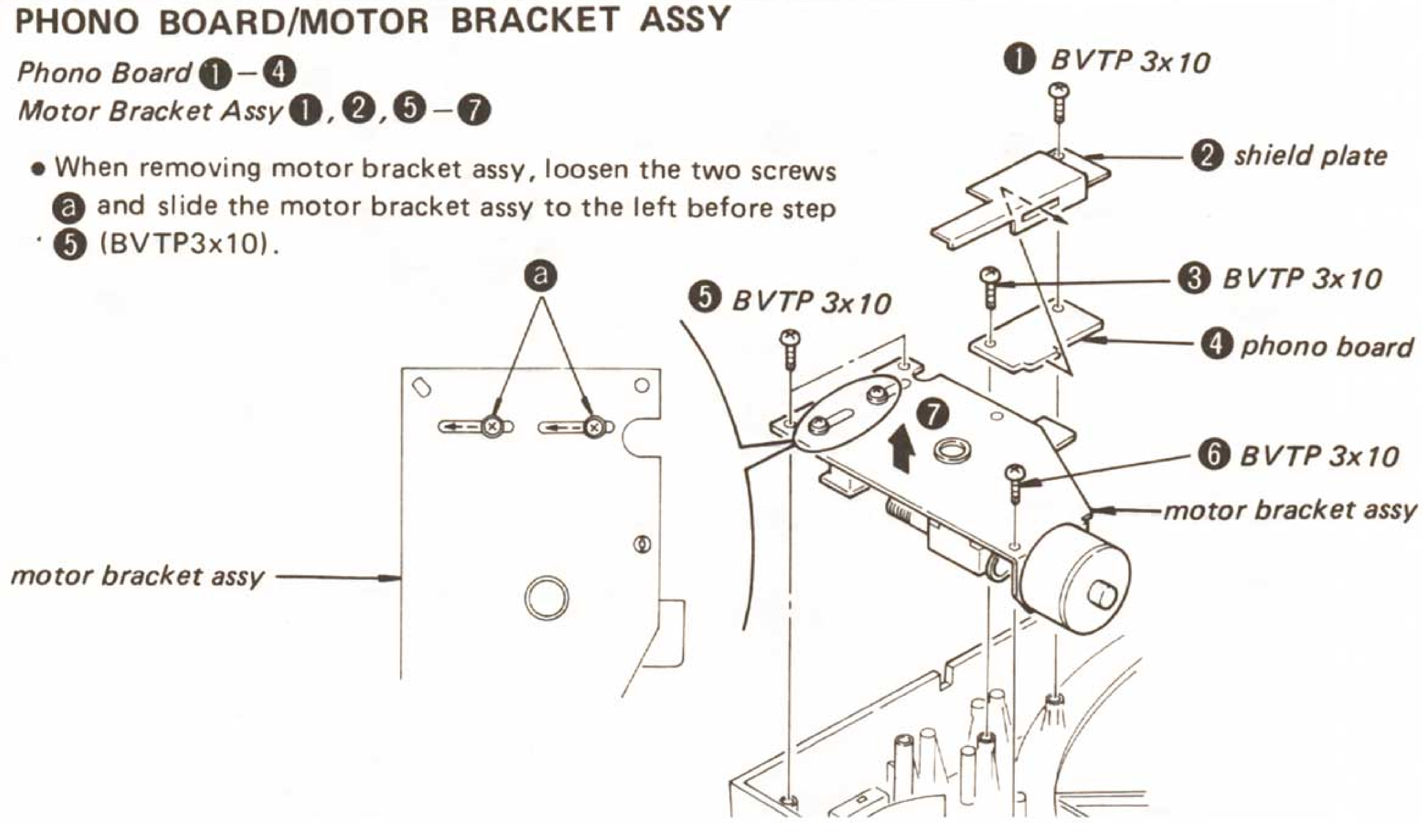
Rotor Assy ❶
FG Board ❶–❹
Main Board ❶–❻
PC Board Holder ❶–❼



PHONO BOARD/MOTOR BRACKET ASSY

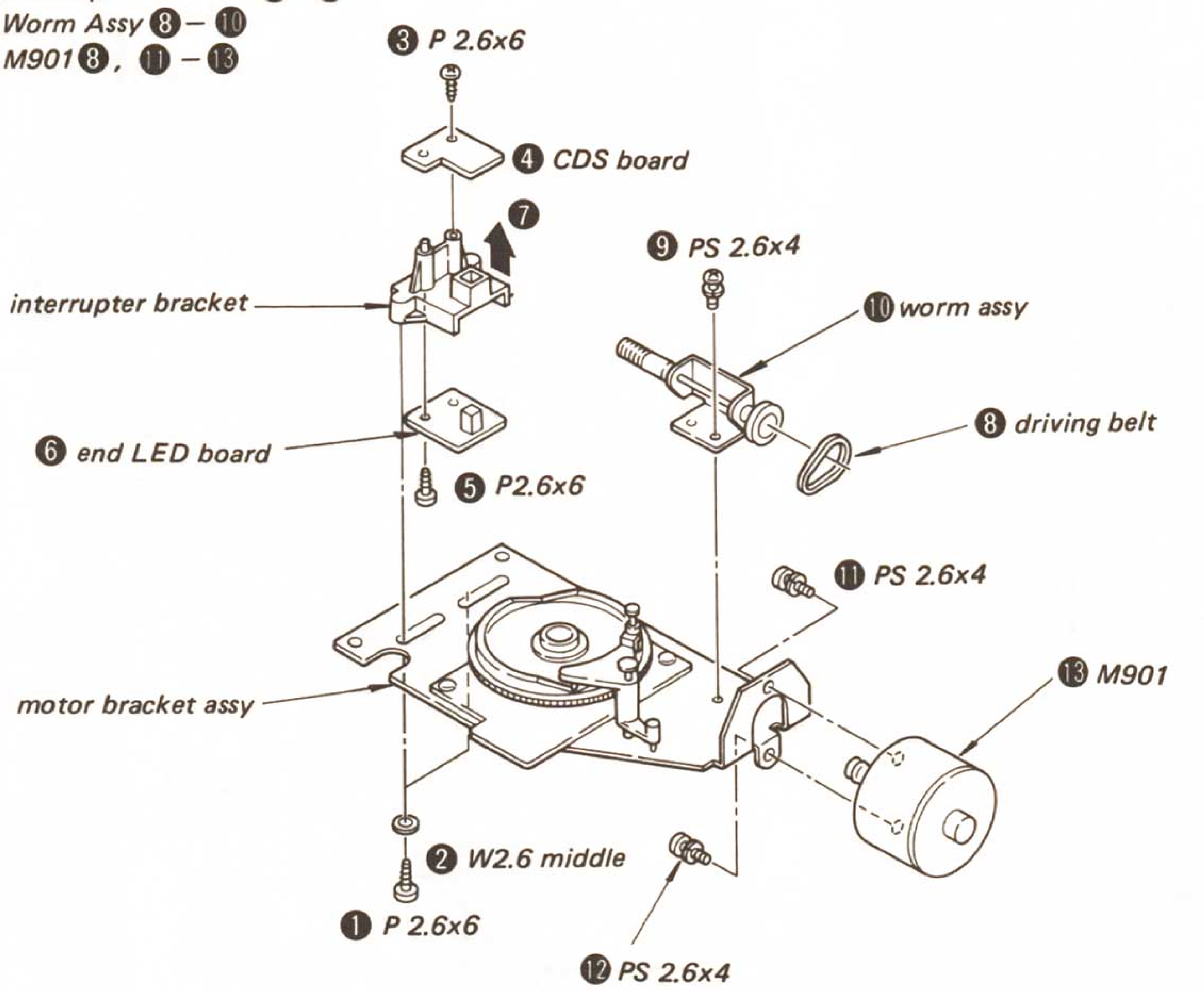
Phono Board ❶–❹
Motor Bracket Assy ❶, ❷, ❺–❼

- When removing motor bracket assy, loosen the two screws ⓐ and slide the motor bracket assy to the left before step ❺ (BVTP3x10).



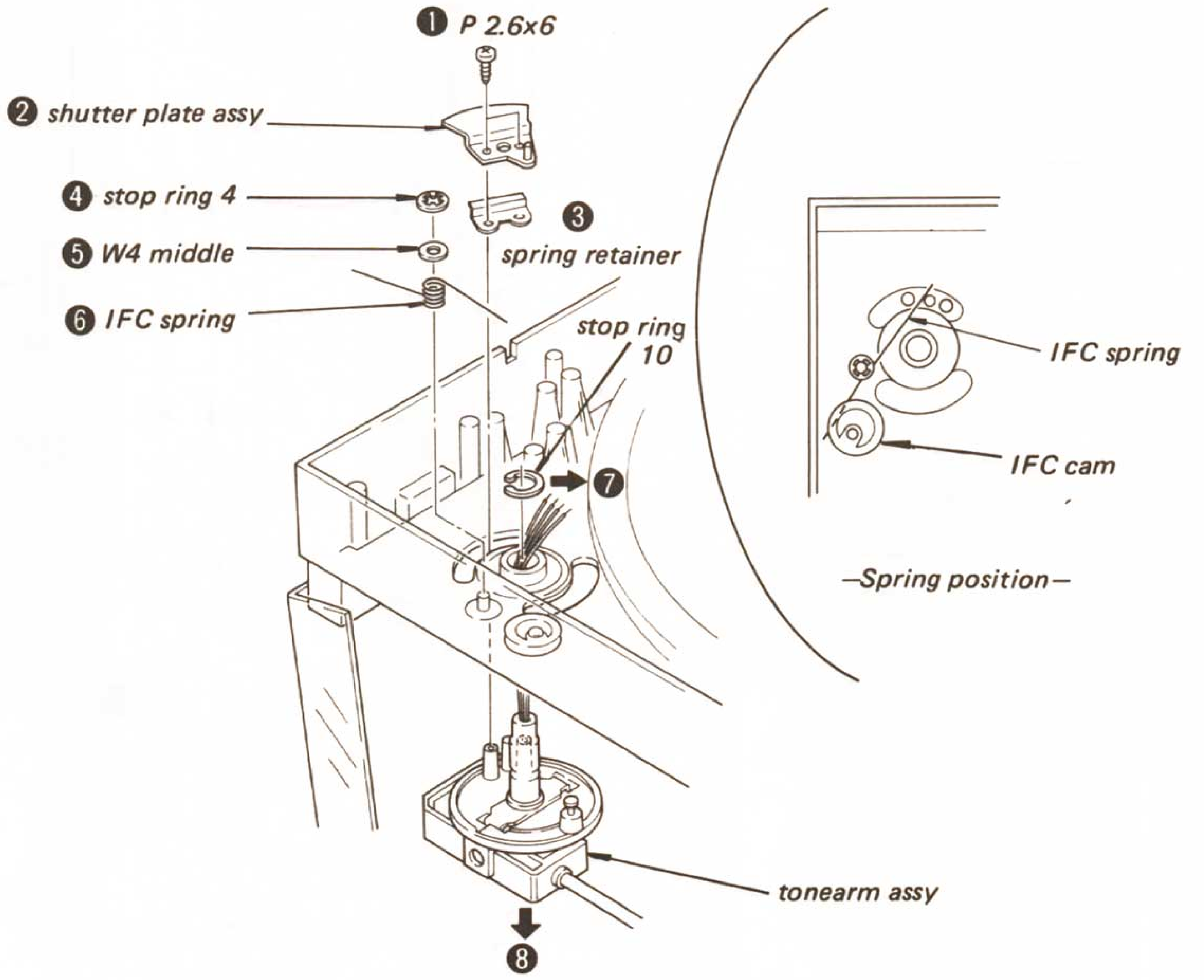
CDS BOARD/END LED BOARD/INTERRUPTER BRACKET/WORM ASSY/M901

CDS Board ❸, ❹
End LED Board ❶–❻
Interrupter bracket ❶–❼
Worm Assy ❽–❿
M901 ❽, ⓫–⓭

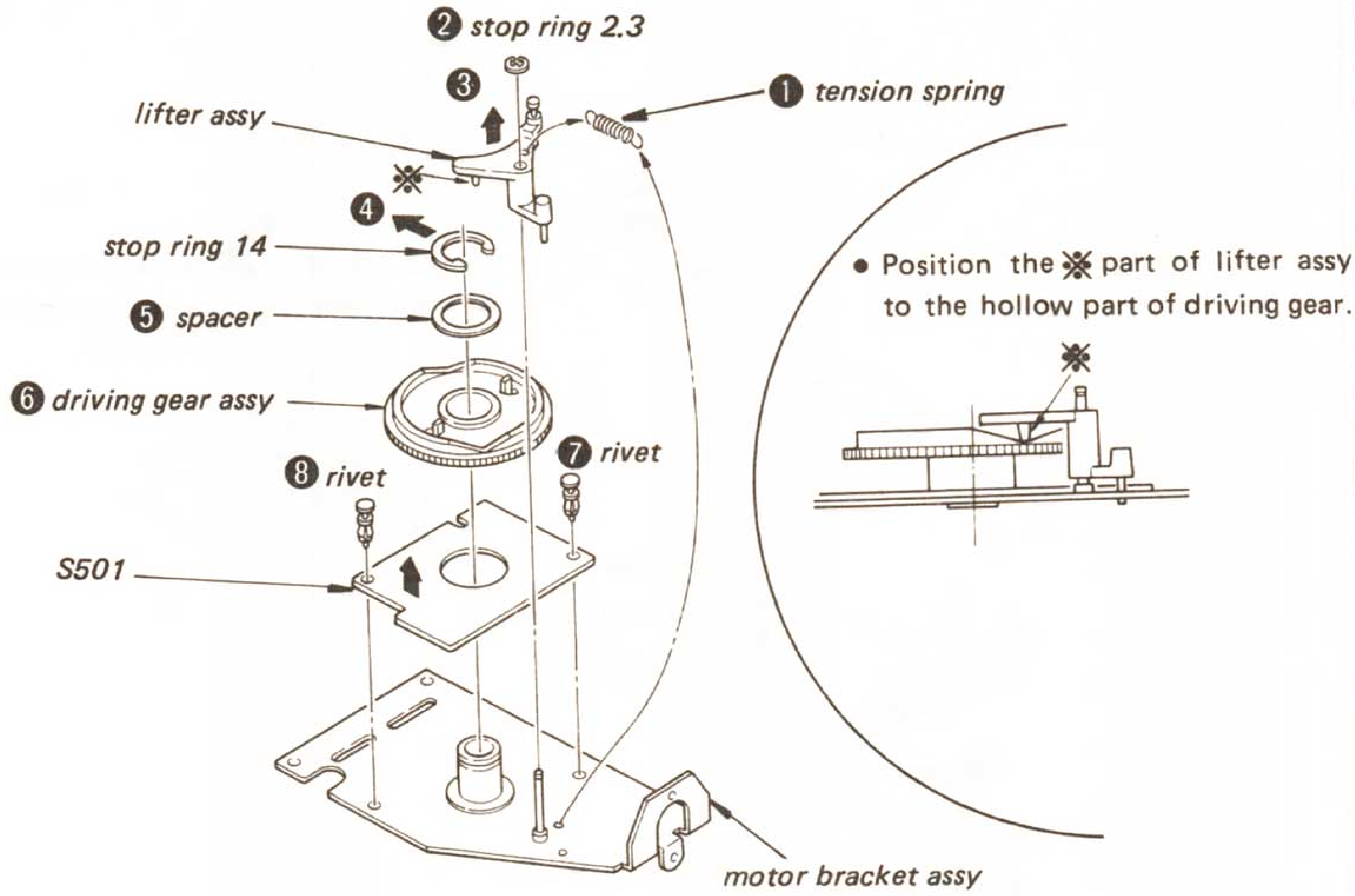


IFC SPRING/TONEARM ASSY

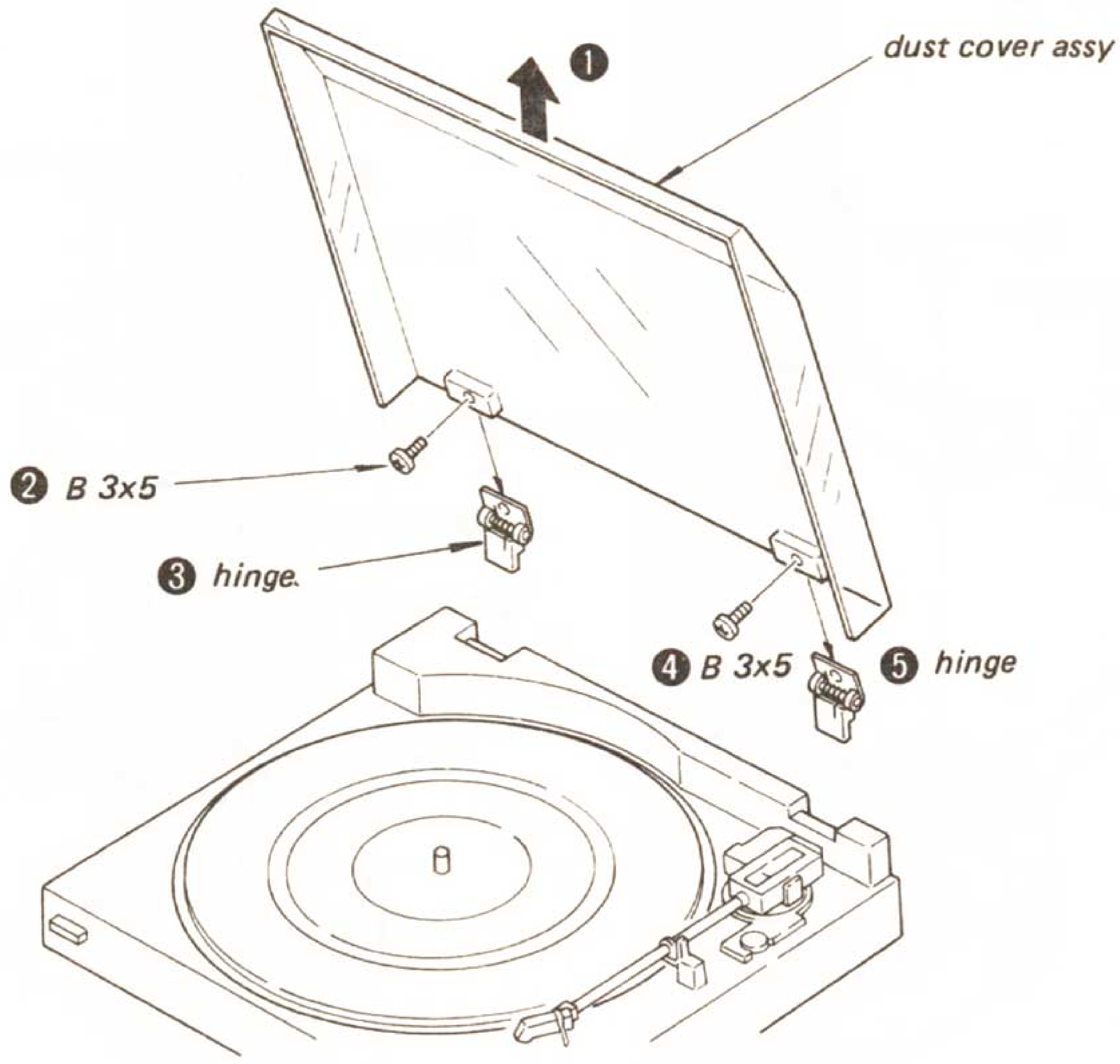
IFC Spring ❶–❻
Tonearm Ass'y ❶–❸, ❼, ❽



S501



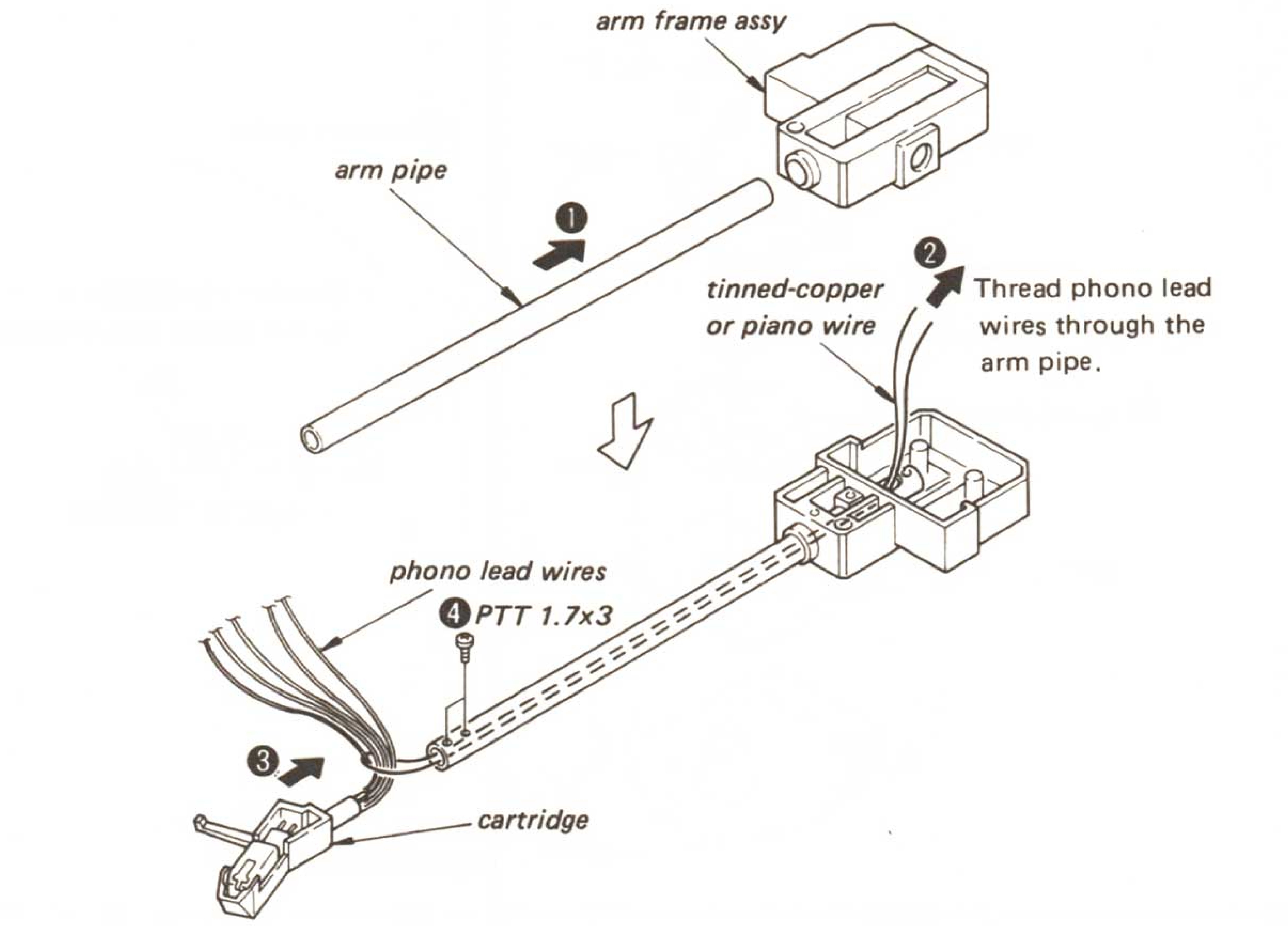
DUST COVER ASSY



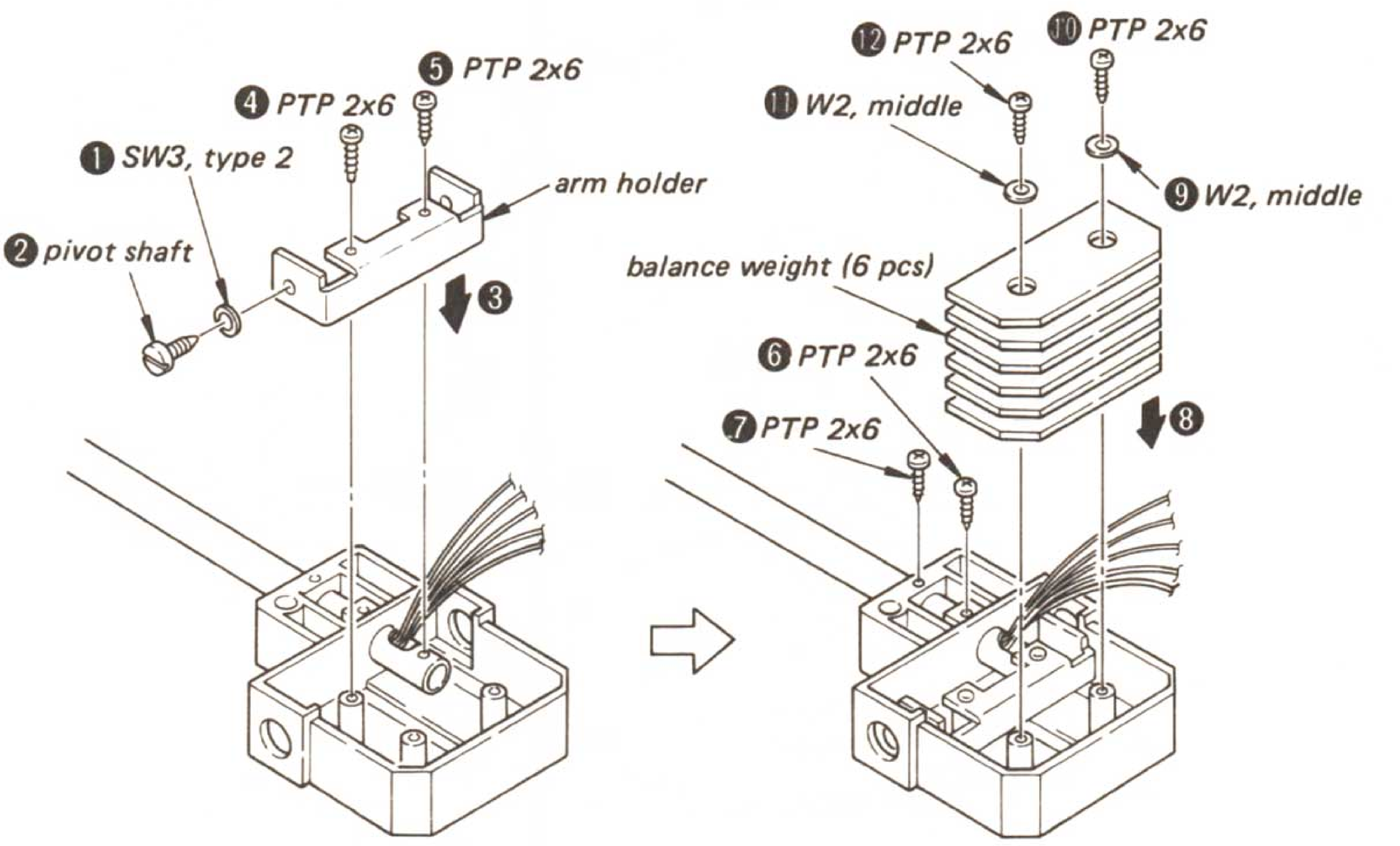
2-2. TONEARM ASSEMBLY

- Follow the assembly procedure in the numerical order given.

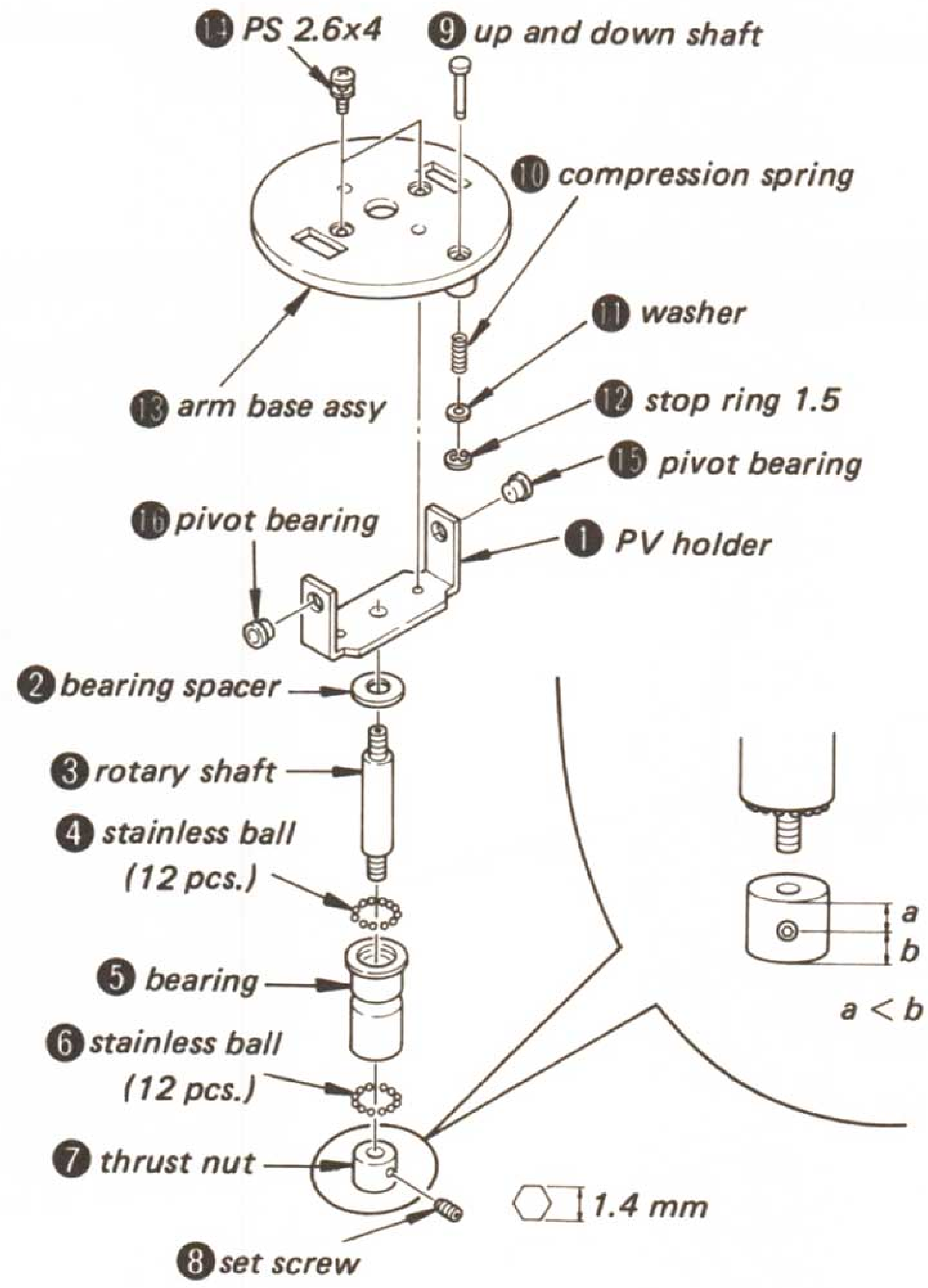
TONEARM ASSY (1)



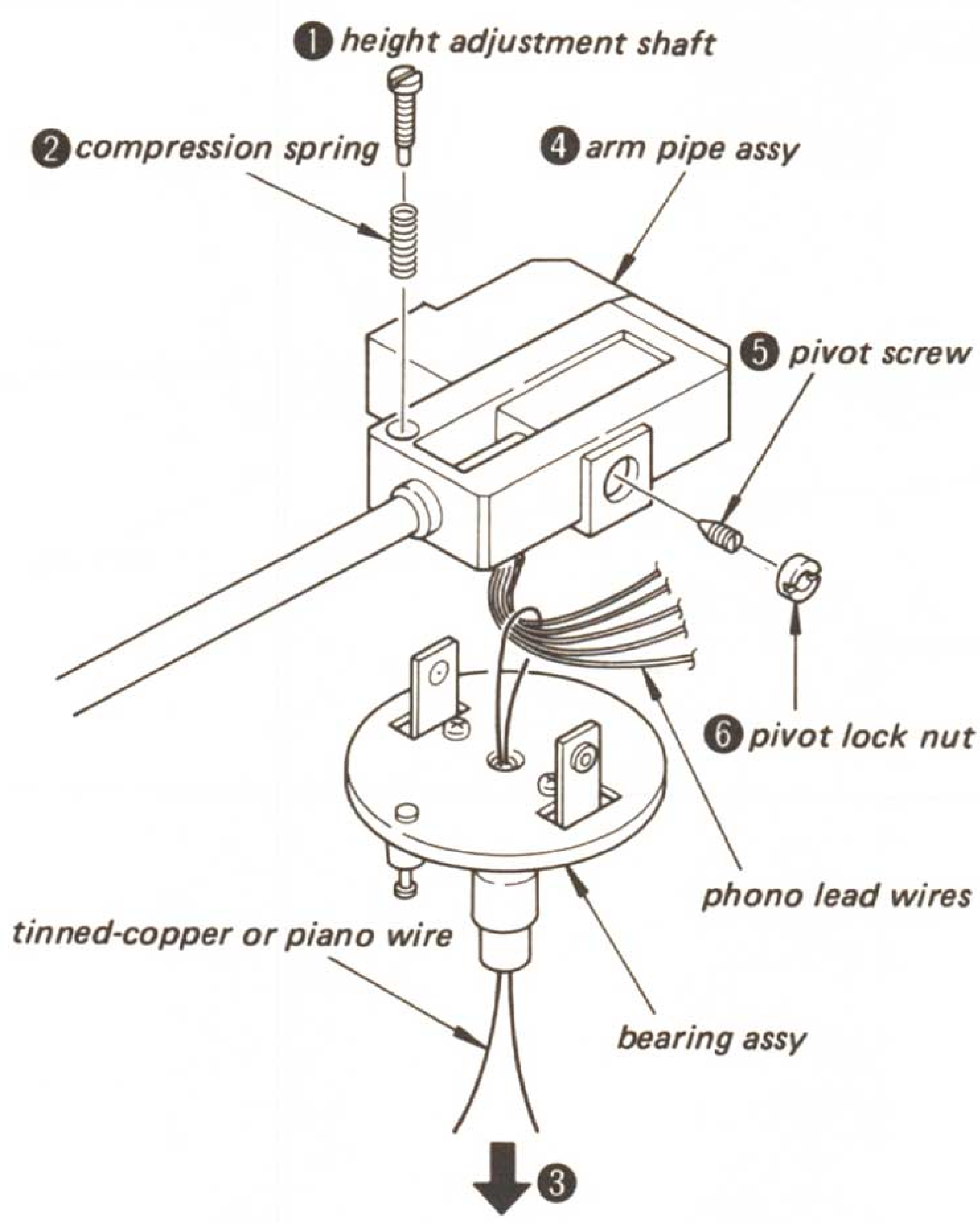
TONEARM ASSY (2)



TONEARM ASSY (3)



TONEARM ASSY (4)



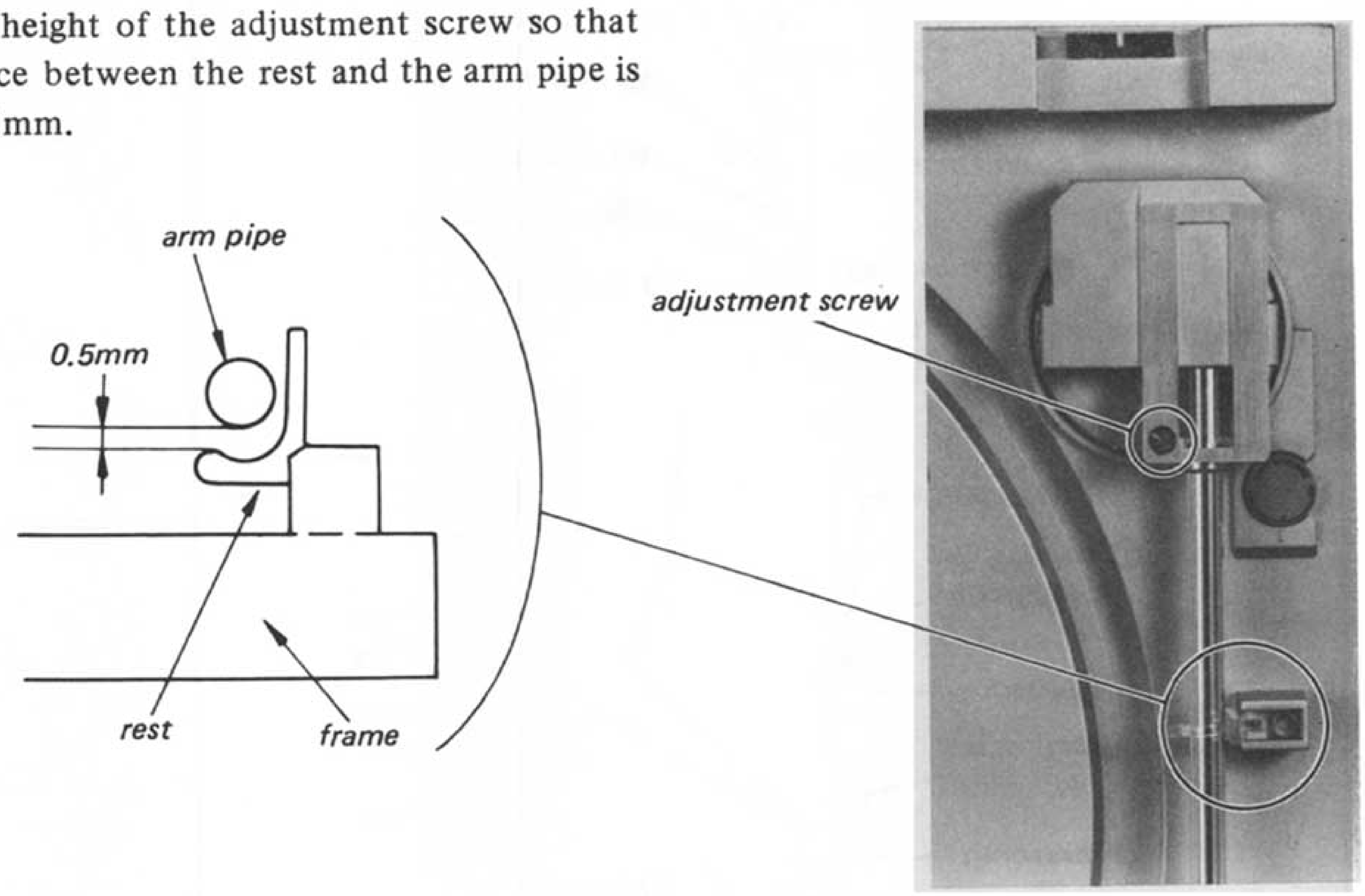
Thread phono lead wires through the bearing assy.

SECTION 3
ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

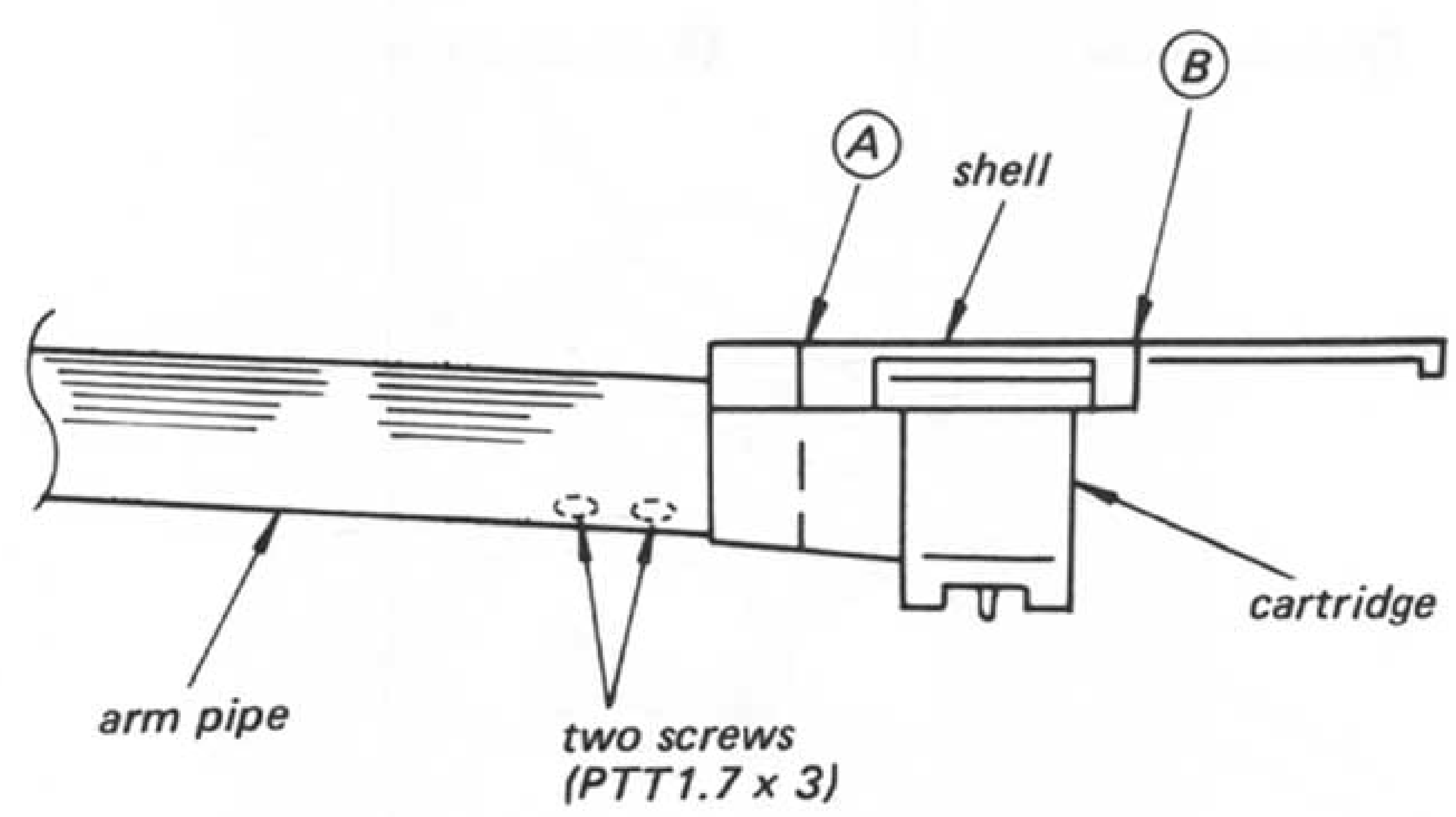
Tonearm Height Adjustment

1. POWER switch: ON
2. ARM LIFTER switch: ▼ (UP)
3. Adjust the height of the adjustment screw so that the clearance between the rest and the arm pipe is approx. 0.5mm.



Cartridge Level Adjustment

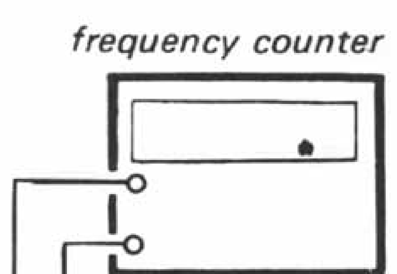
Loosen the two screws and adjust the position of shell so that the position of the point Ⓐ and point Ⓑ become horizontal.

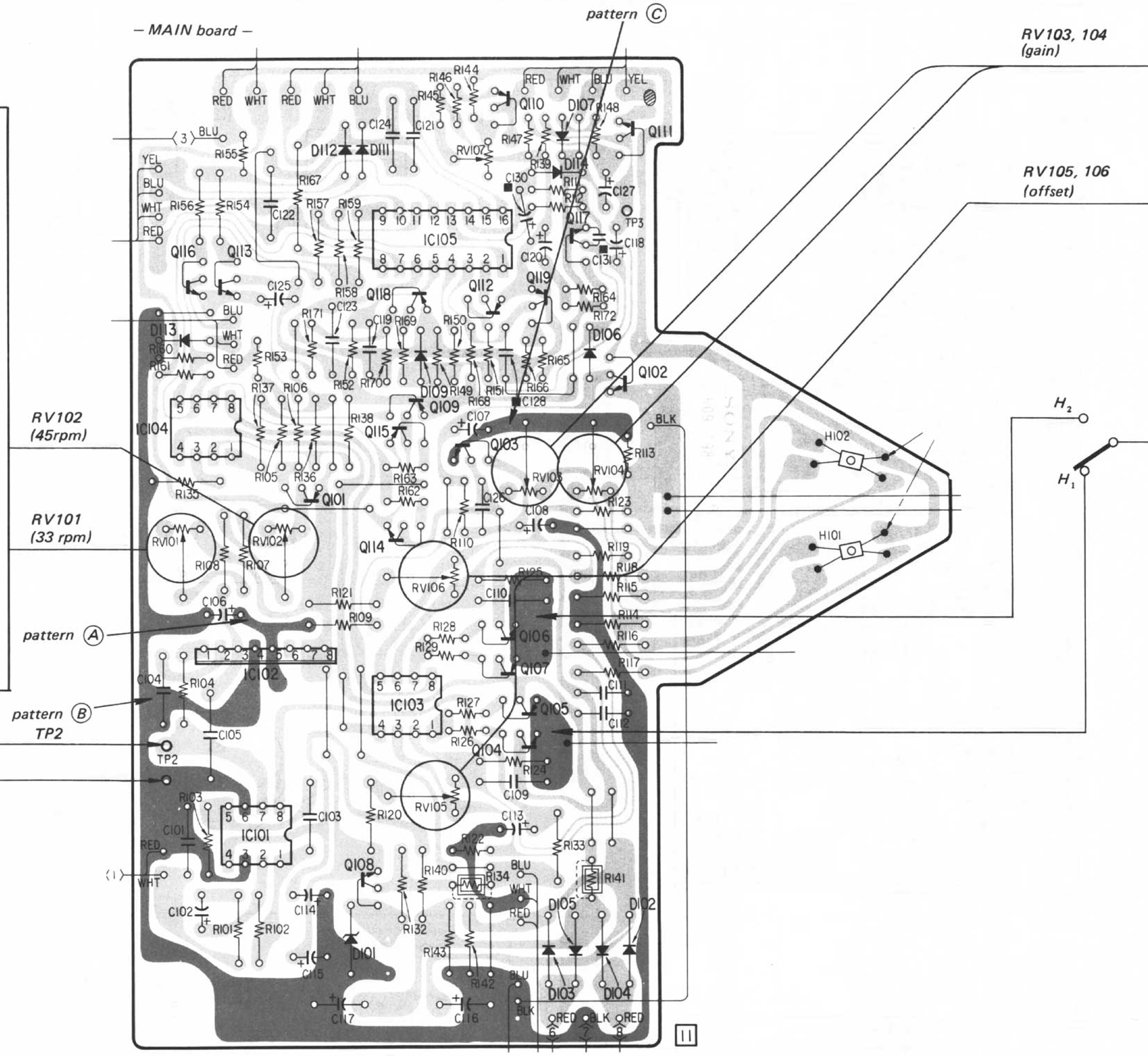


Turntable Speed Adjustment

1. Connect frequency counter to IC101 pin ⑦.
2. POWER switch: ON
   START switch: ON
   SPEED switch: 45 rpm
3. Adjust RV102 so that the frequency counter reading is 95.72 – 96.26Hz.
4. SPEED switch: 33 rpm
5. Adjust RV101 so that the frequency counter reading is 70.90 – 71.32Hz.

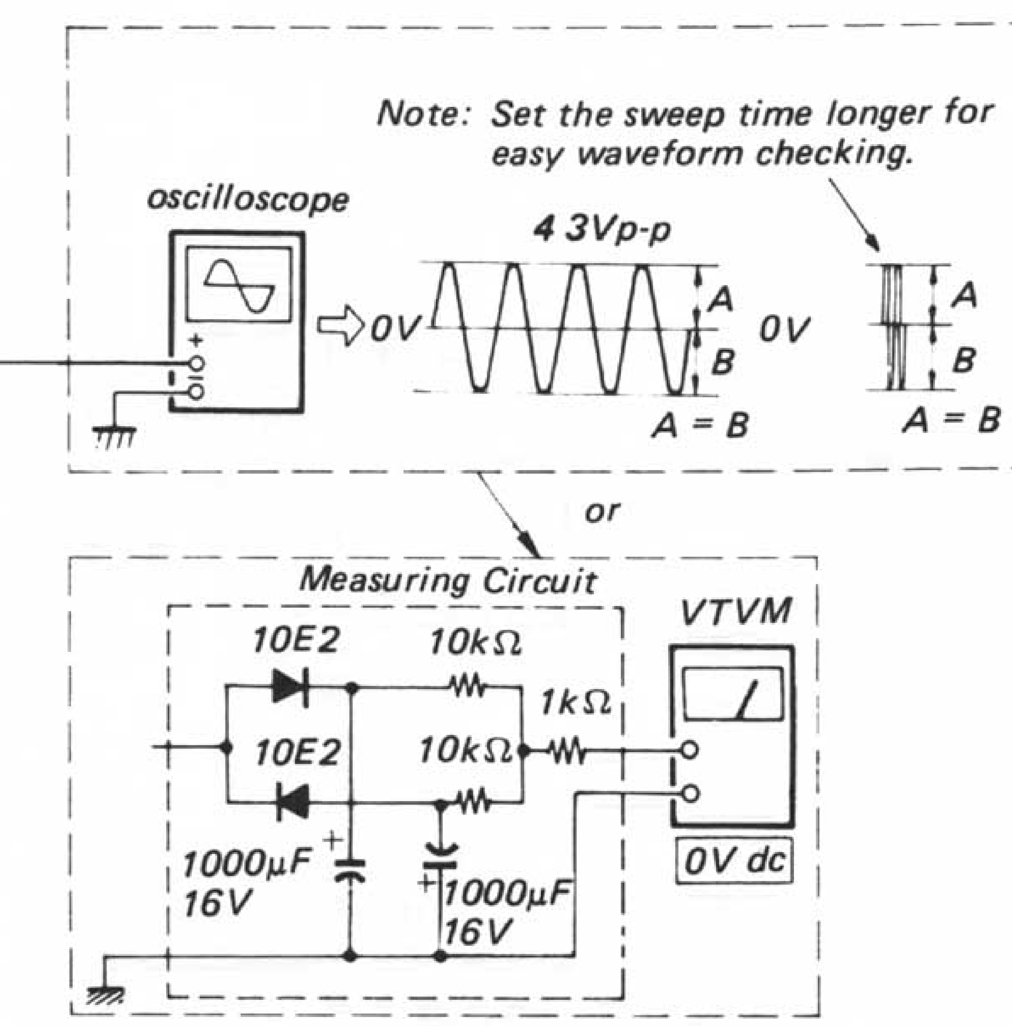
Note: When the adjustment of 45 rpm (RV102) is performed, it makes a difference of adjustment value of 33 rpm. So, the adjustment should be finally done by 33 rpm (RV101).





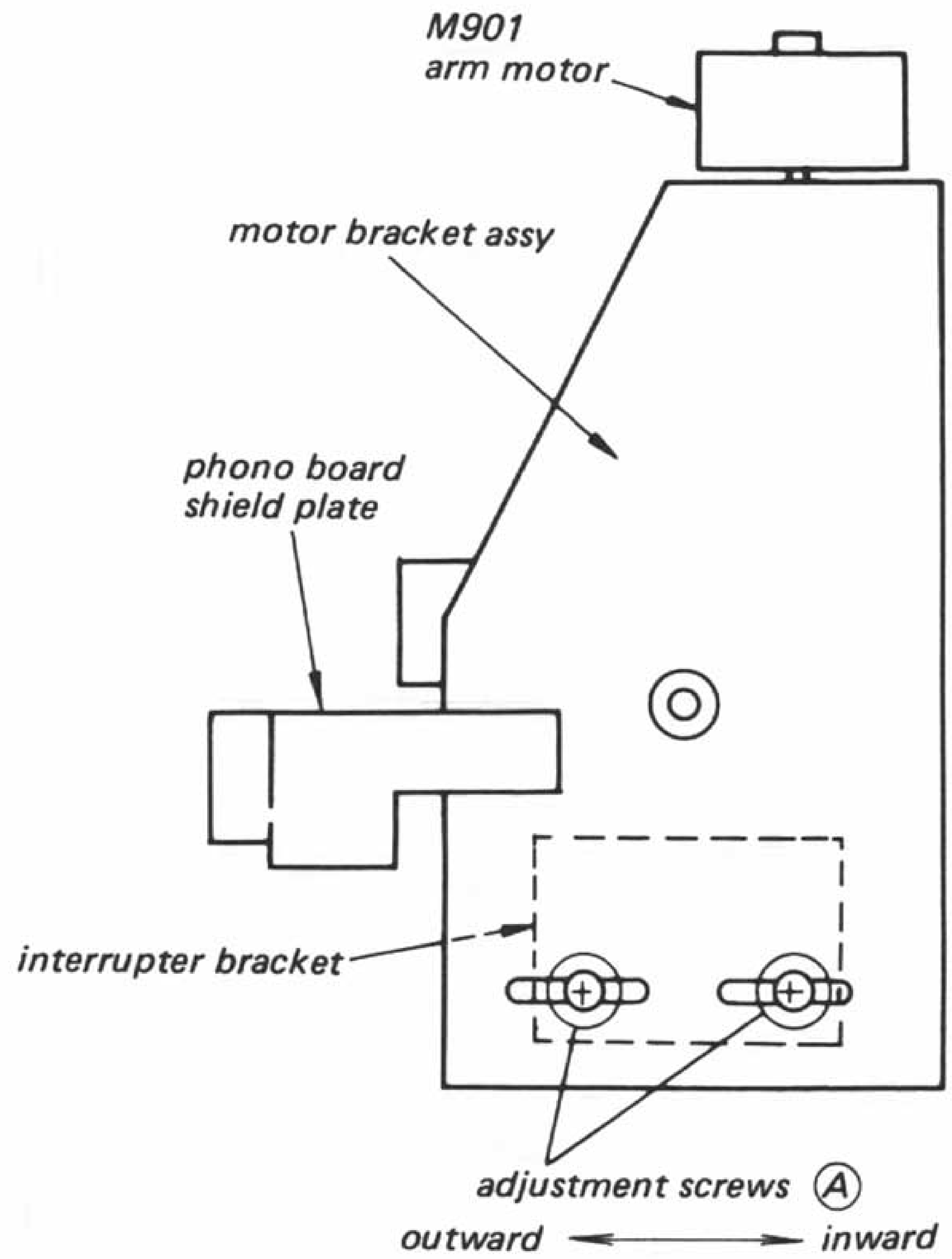
Gain/Offset Adjustment

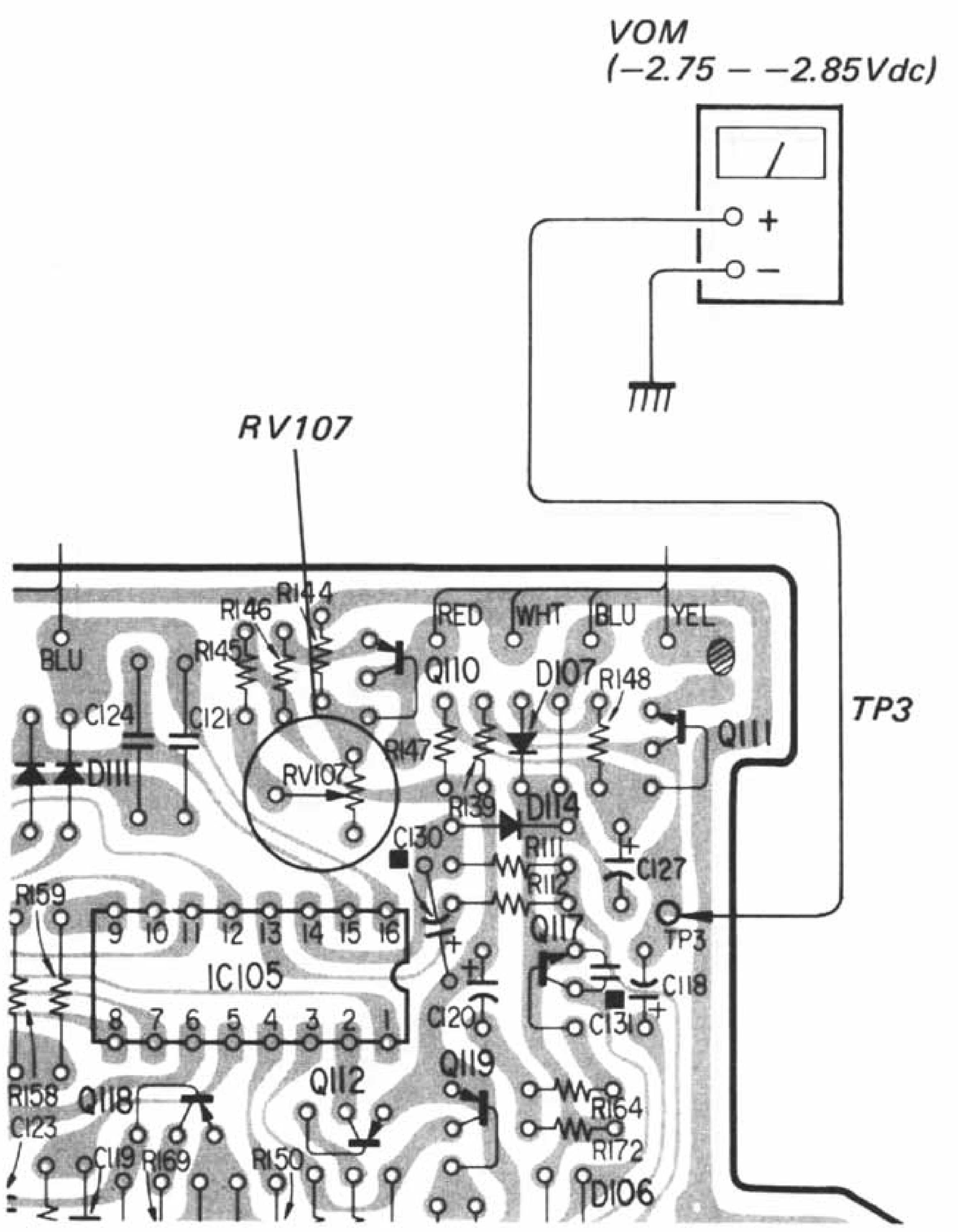
1. Connect IC102 pin ⑤ to the ground pattern. (Connect the pattern Ⓐ to Ⓑ with a jumper lead.)
2. Apply DC 1V to the emitter of Q103. (Pattern Ⓒ).
3. Adjust RV103(H1) and RV104(H2) so that the emitter voltage of Q104, 105(H1) and Q106, 107(H2) are 4.3Vp-p.····**Gain Adjustment**
4. Adjust RV105(H1) and RV106(H2) so that the emitter waveforms of Q104, 105(H1) and Q106, 107(H2) are as shown below (or so that DC potential is 0V). ......**Offset Adjustment**
5. After adjustment, remove the jumper lead connected in step 1.

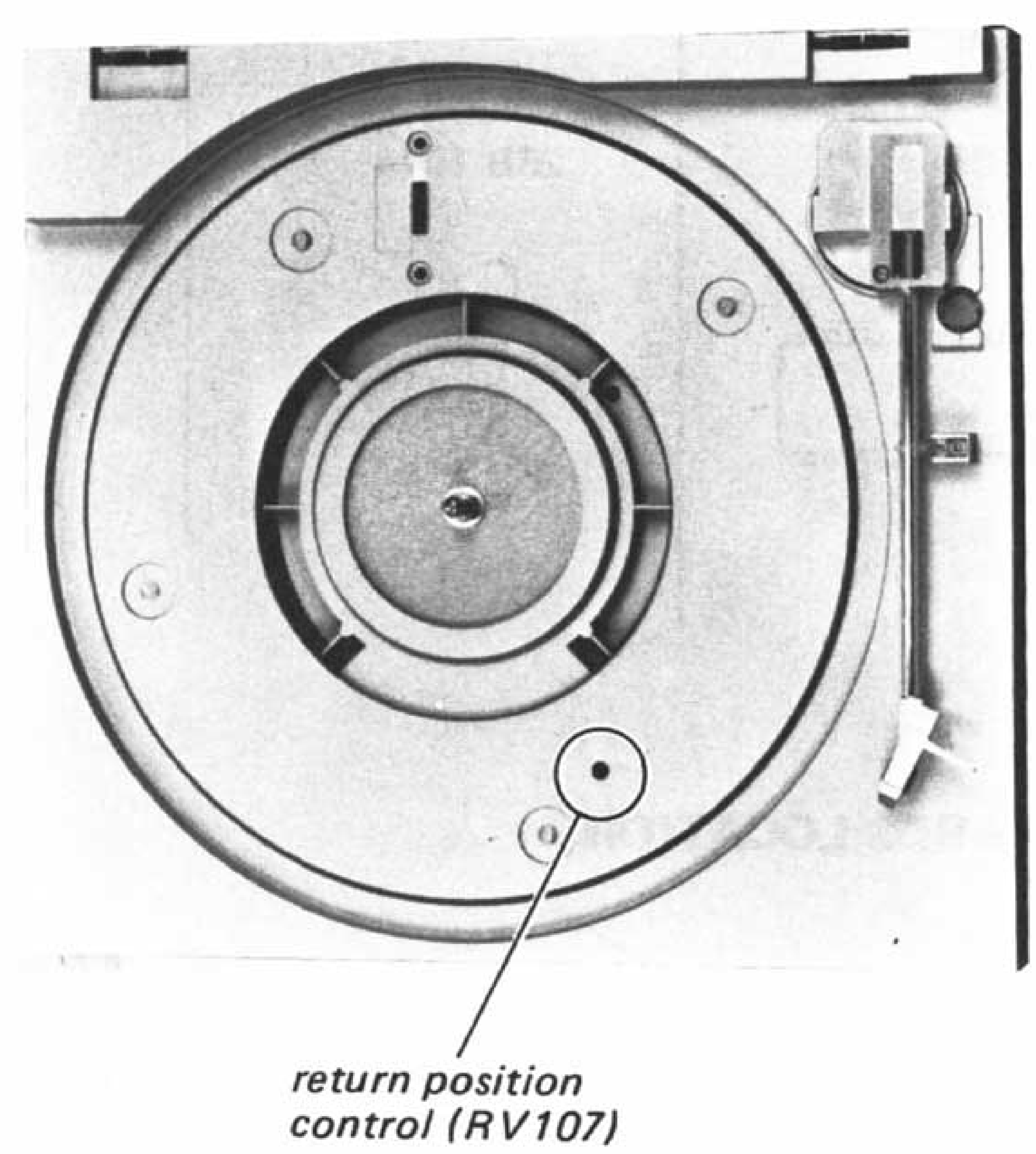


Automatic Return Position Adjustment

1. Loosen the two adjustment screws Ⓐ and move interrupter bracket fully inward (rightward).
2. Connect a VOM to TP3 and adjust RV107 for −2.75V to −2.85V reading on the VOM.
3. Put a test record (YFSB-6) on the turntable. Move the tonearm by hand and place the stylus over the return check groove.
4. SPEED switch: 33 rpm
5. Press the START/STOP switch and move interrupter bracket outward (leftward) so that the tonearm returns at count of 17 – 18.
6. Tighten the adjustment screws Ⓐ.

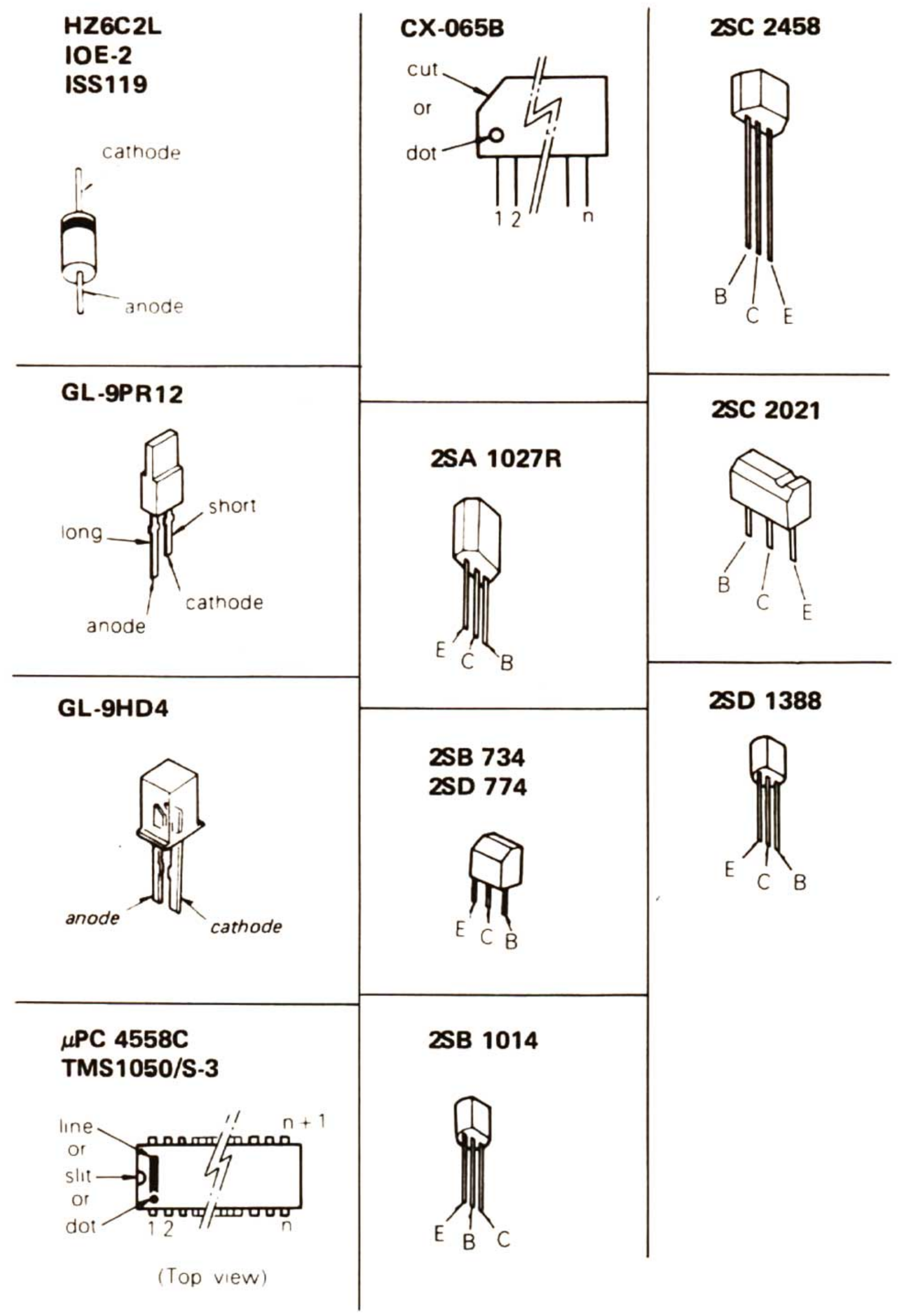




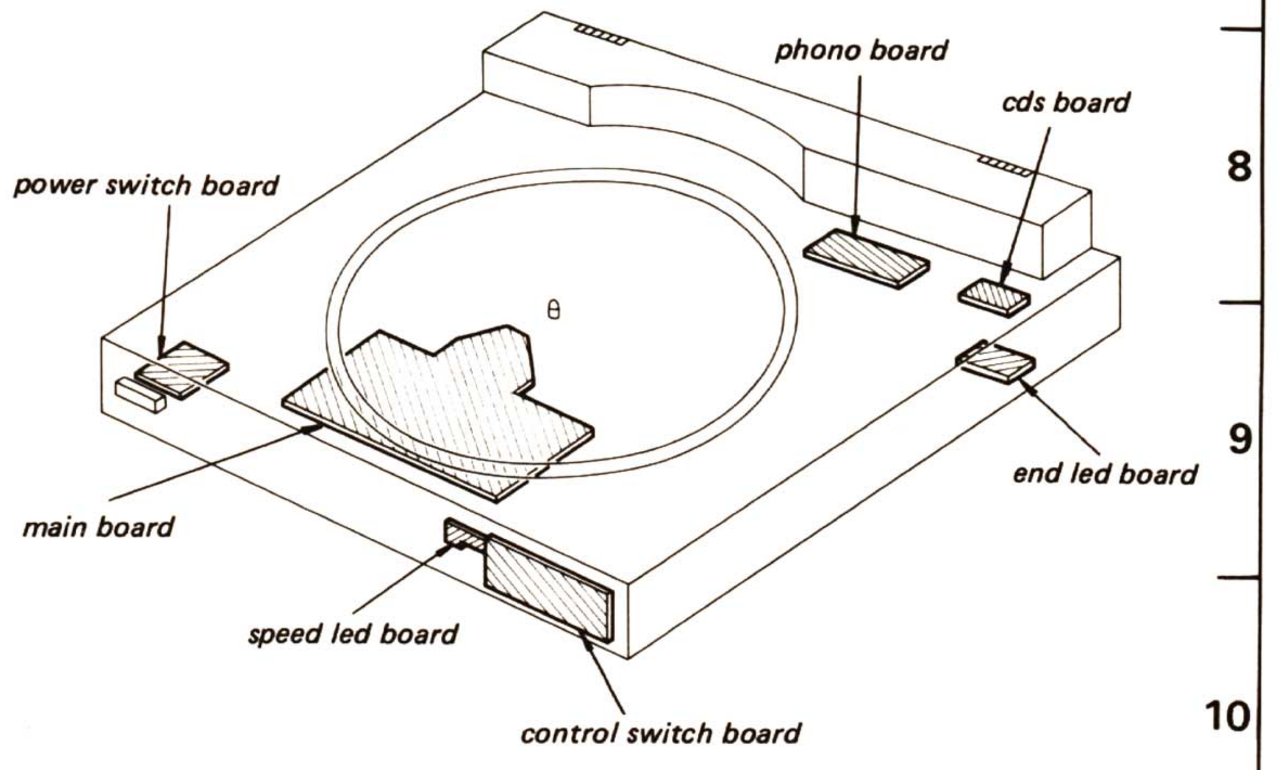


SECTION 4
DIAGRAMS

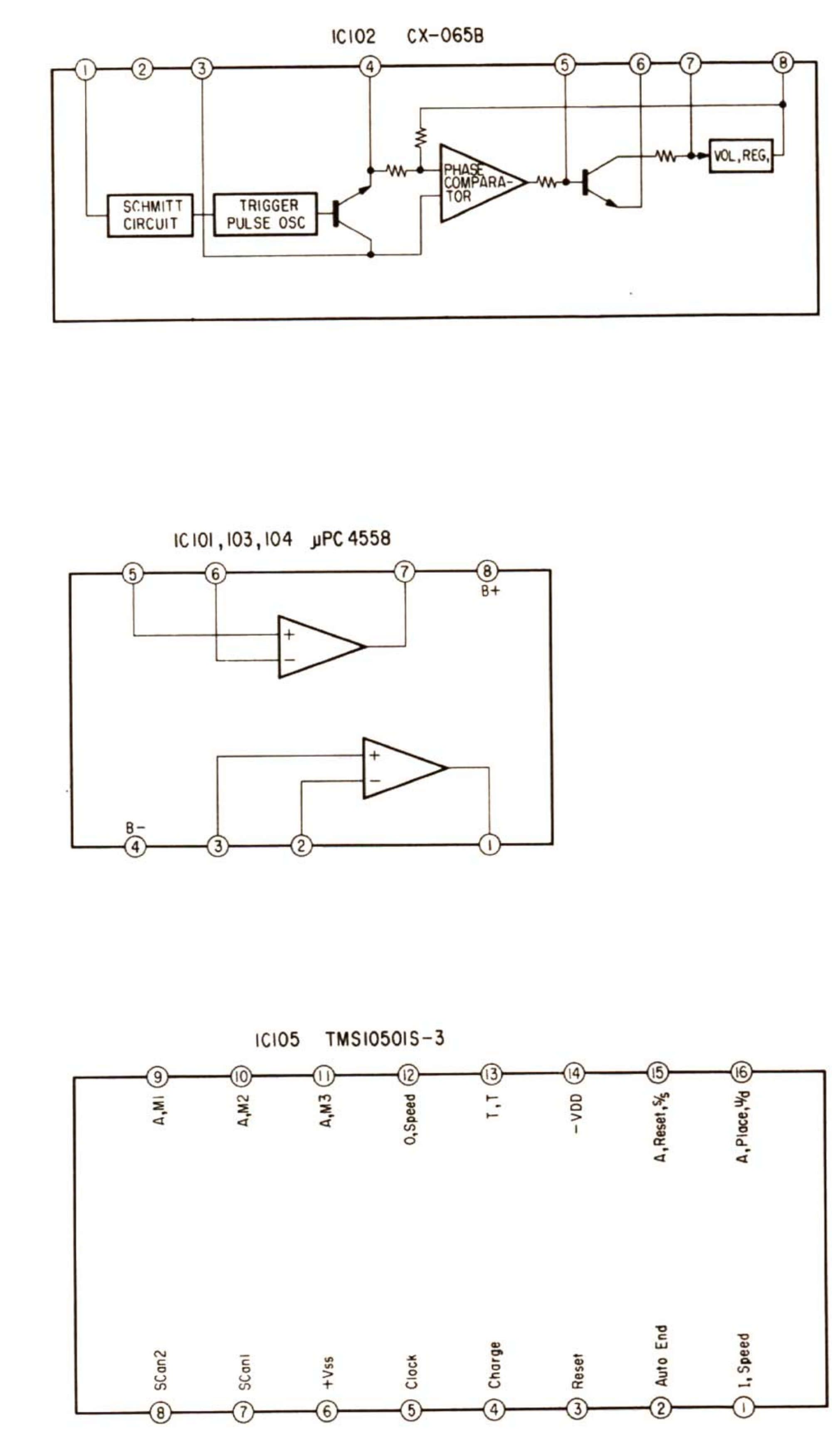
Semiconductor Lead Layouts

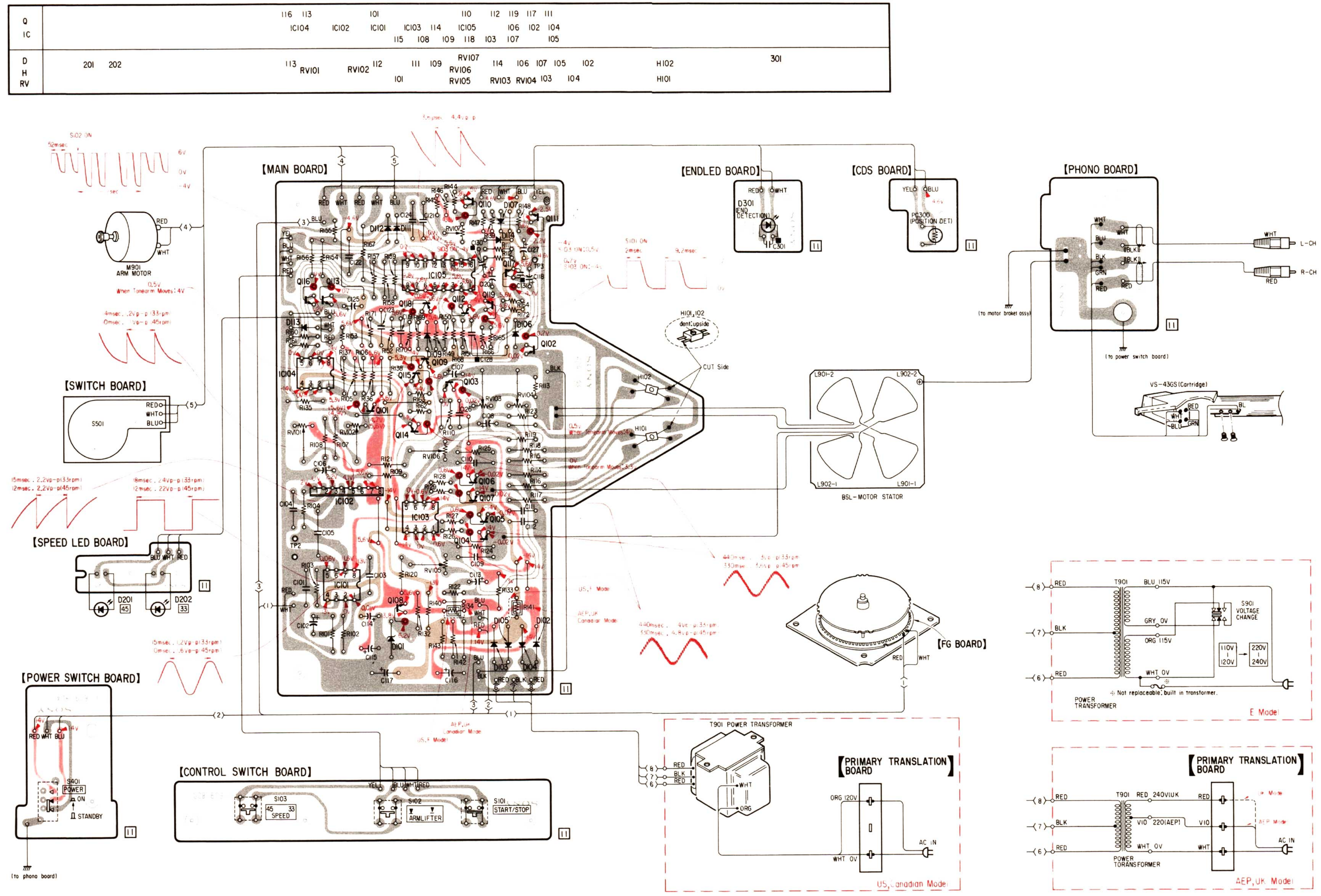


CIRCUIT BOARDS LOCATION



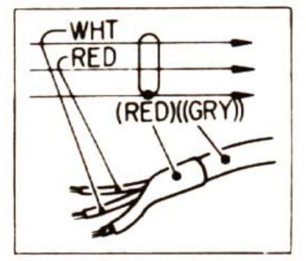
4-1. MOUNTING DIAGRAM





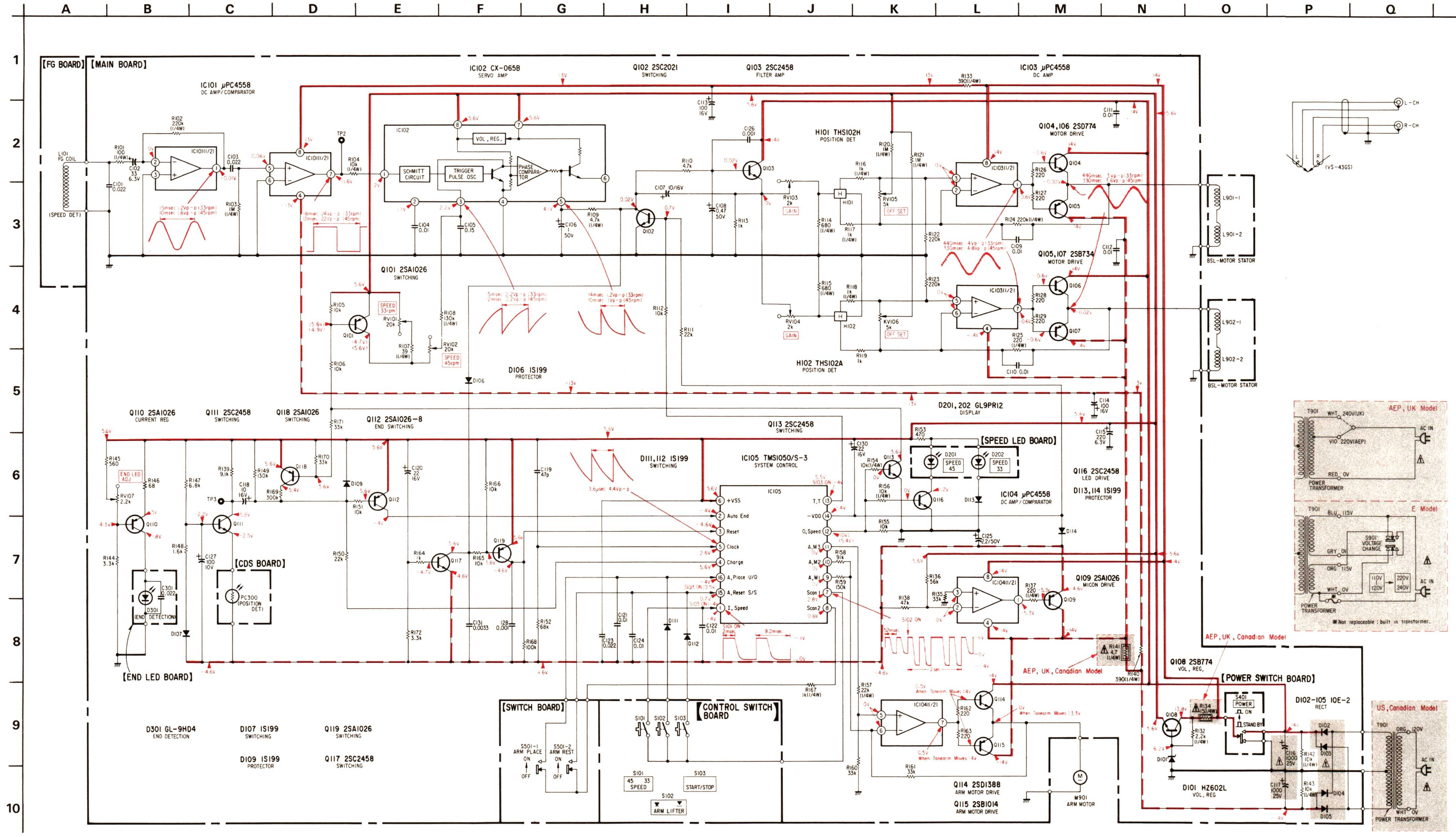
Note:

- ○—: parts extracted from the component side.
- ●—: parts extracted from the conductor side.
- ■ : part mounted on the conductor side.
- Color code of sleeving over the end of the jacket.



- B+ pattern
- B– pattern

4-2. SCHEMATIC DIAGRAM



Note:

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, ⅙W unless otherwise noted. kΩ : 1000 Ω, MΩ : 1000 kΩ
- : nonflammable resistor.
- : panel designation.
- : adjustment for repair.
- ——— : B+ bus.
- - - - : B– bus.
- Voltage and waveforms are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal conditions with a VOM.
- Waveforms are measured under no-signal conditions with an oscilloscope.

  no mark : STOP
  ( ) : 33rpm
  < > : 45rpm

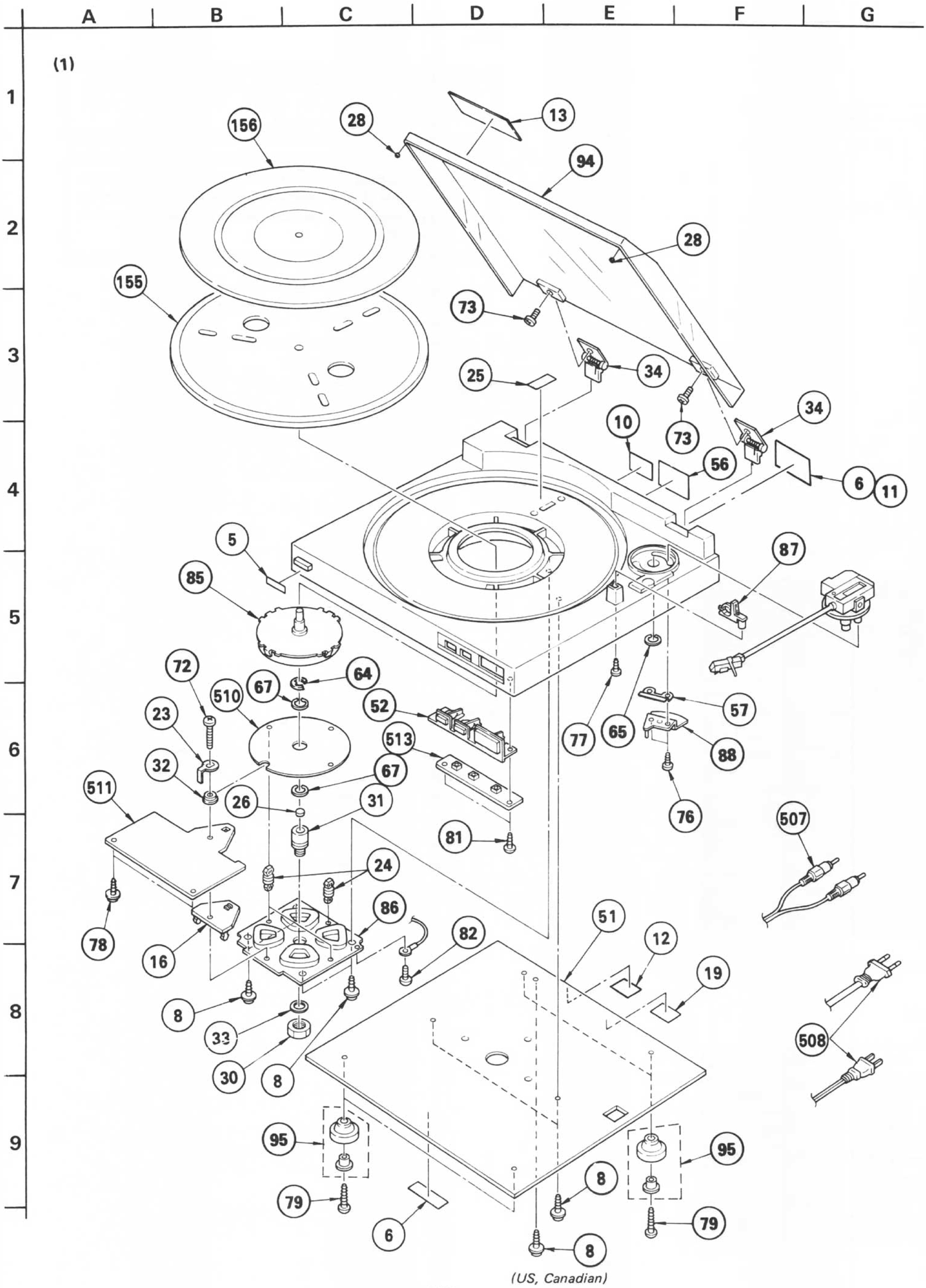
- Voltage and waveforms variations may be noted due to normal production tolerances.

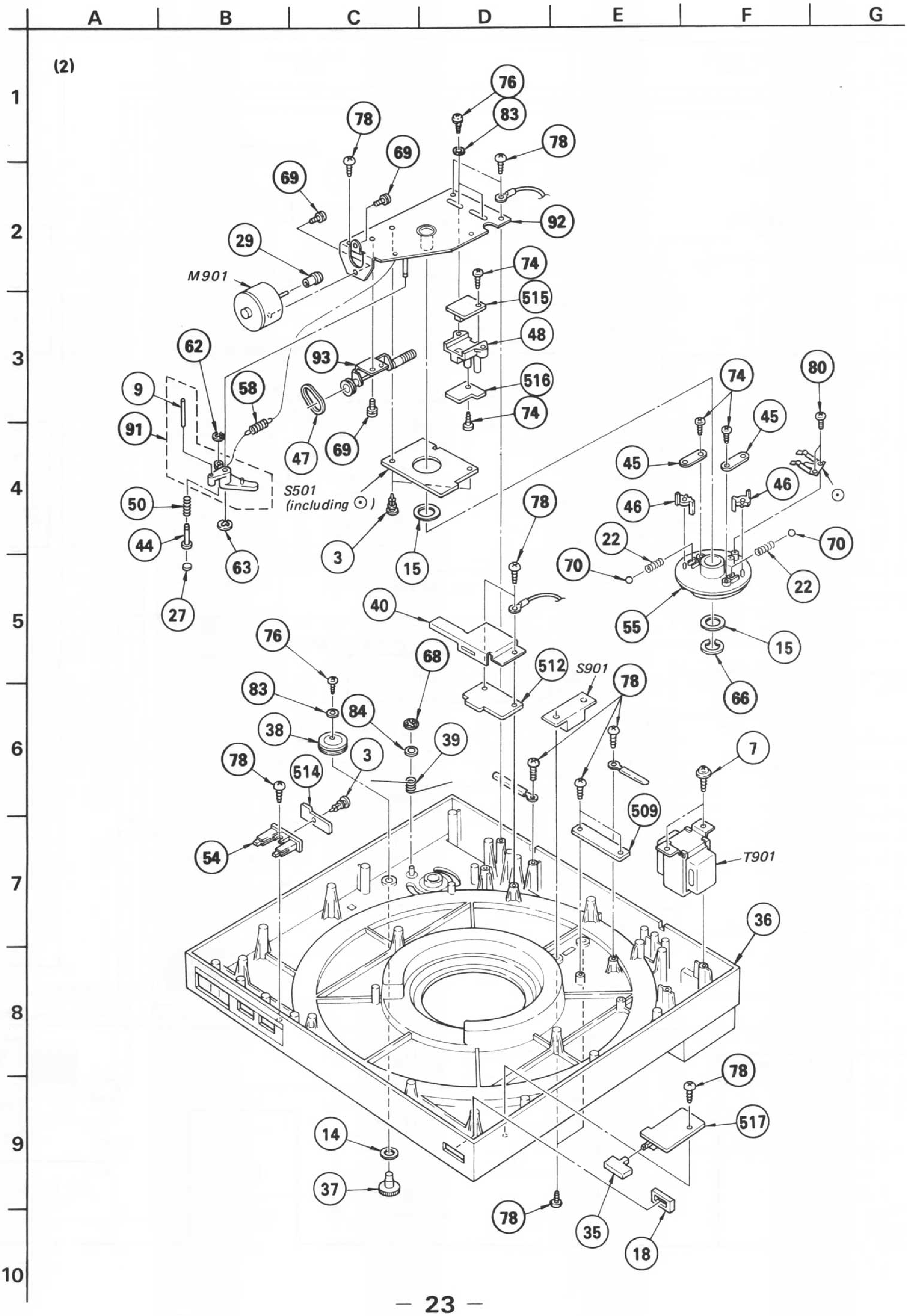
- Switch

Ret. No.	Switch	Position
S101	SPEED	33
S102	ARM LIFTER	DOWN
S103	START/STOP	STOP
S401	POWER	STANDBY
S501-1	ARM PLACE	OFF
S501-2	ARM REST	OFF

Note: Voltages are measured with a VOM (50kΩ/V).

SECTION 5
EXPLODED VIEW AND PARTS LIST




A
B
C
D
E
F
G
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3
4
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6
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9
10
(2)
76
83
78
69
69
78
92
29
M901
74
515
48
62
93
516
9
58
74
91
47
69
S501
(including ⊙)
50
3
15
44
63
27
74
80
45
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46
46
78
22
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22
55
15
66
40
76
68
512
S901
78
83
84
38
39
3
78
514
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509
54
T901
36
78
517
14
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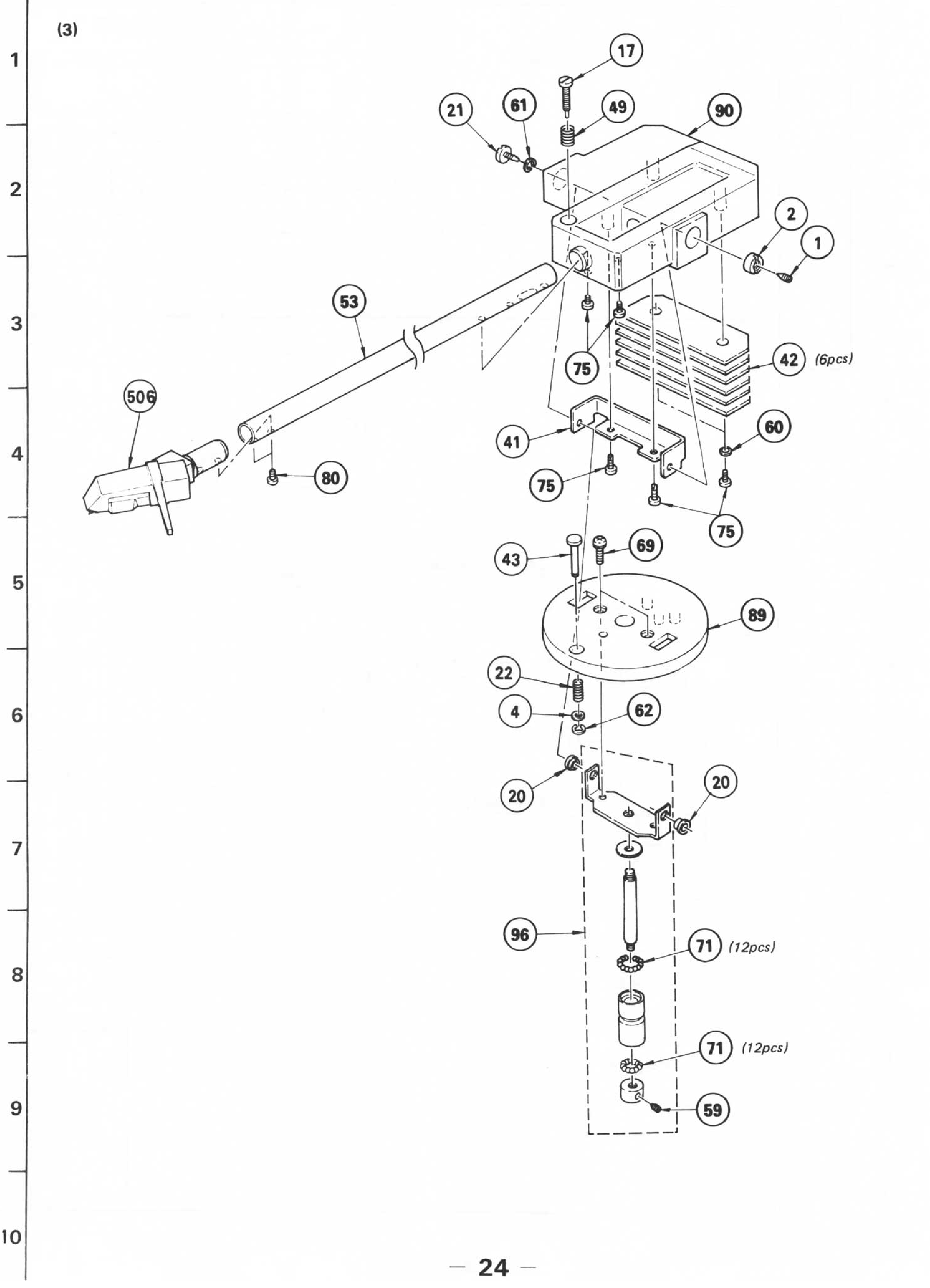
78
35
18

	A	B	C	D	E	F	G

(3)



1
2
3
4
5
6
7
8
9
10
17
21
61
49
90
2
1
53
42 (6pcs)
506
75
41
60
80
75
75
43
69
89
22
4
62
20
20
96
71 (12pcs)
71 (12pcs)
59

GENERAL SECTION

No.	Part No.	Description
1	2-203-518-61	SCREW, PIVOT
2	2-203-519-00	NUT (A), LOCK, PIVOT
3	3-531-576-21	RIVET
4	3-701-437-11	WASHER
5 ♠;	3-701-690-00	(UK)....LABEL (MADE IN JAPAN)
6 ♠;	3-703-043-21	(UK)....LABEL, CAUTION, MAIN
7	3-703-137-11	SCREW, +PTPWH 3X10
8	3-703-136-00	SCREW, +PTPWH 3X12
9 ♠;	3-703-358-06	PIN, PARALLEL (DIA. 2X14)
10	3-703-396-00	(UK)....LABEL, CAUTION
11 ♠;	3-703-677-00	(US)....LABEL, CAUTION, MAIN, NEW UL
12 ♠;	3-703-680-00	(US)....LABEL, CAUTION, SUB, NEW UL
13	3-703-705-01	STICKER, SONY SYMBOL (30)
14	4-844-041-11	WASHER, (N)
15	4-853-222-00	SPACER
16	4-857-642-00	HOLDER, PC BOARD
17 ♠;	4-873-347-00	SHAFT, ADJUSTMENT, HIGH
18	4-875-501-00	GUIDE, POWER KNOB
19 ♠;	4-876-344-00	(AEP)...LABEL, CAUTION, POWER CORD
20	4-877-814-00	BEARING, PIVOT
21	4-877-816-00	SHAFT, PIVOT
22	4-879-762-00	SPRING, COMPRESSION
23 ♠;	4-881-629-00	PLATE (A), GROUND
24	4-881-636-11	SUPPORT (TMD), PC
25 ♠;	4-881-683-00	(E).....LABEL, VOLTAGE
26	4-885-135-00	RETAINER, THRUST
27	4-885-139-00	PAD, BRAKE
28	4-885-183-00	CUSHION (D)
29	4-885-704-03	PULLEY, MOTOR
30	4-885-723-00	NUT, BEARING
31	4-885-724-00	BEARING
32	4-885-727-00	SPACER
33	4-885-728-03	PACKING
34	4-885-731-11	HINGE
35	4-885-734-00	BUTTON, POWER
36	4-887-901-01	(AEP,UK,E).......FRAME
36	4-887-901-11	(US,Canadian)....FRAME
37	4-887-902-00	KNOB, IFC
38 ♠;	4-887-903-00	CAM, IFC
39	4-887-904-00	SPRING
40 ♠;	4-887-905-00	PLATE, SHIELD
41 ♠;	4-887-906-00	HOLDER, ARM
42 ♠;	4-887-907-00	WEIGHT, BALANCE
43	4-887-911-00	SHAFT, UP AND DOWN
44	4-887-912-00	SHAFT, BRAKE
45 ♠;	4-887-913-00	BRACKET, CAM

GENERAL SECTION

No.	Part No.	Description
46	4-887-914-00	CAM, REVERSE
47	4-887-915-00	BELT, DRIVING
48 ♠;	4-887-916-00	BRACKET, INTERRUPTER
49	4-887-918-00	SPRING, COMPRESSION
50	4-887-919-00	SPRING, COMPRESSION
51 ♠;	4-887-920-00	BOARD, BOTTOM
52	4-887-921-00	BUTTON, CONTROL
53	4-887-922-00	PIPE, ARM
54 ♠;	4-887-923-00	HOLDER, LED
55	4-887-940-00	GEAR, DRIVING
56	4-887-943-00	(AEP)..........LABEL, MODEL NUMBER (AEP1)
56	4-887-944-00	(UK)...........LABEL, MODEL NUMBER (UK)
56	4-887-953-00	(E)......LABEL, MODEL NUMBER (E1,E2,PX1)
56	4-887-954-00	(US,Canadian)..LABEL, MODEL NUMBER (US,CND)
57	4-887-955-00	RETAINER, SPRING
58	4-887-956-00	SPRING, TENSION
59	7-621-712-17	SET-SCREW, SLOT 2.6X2 CUP POINT
60	7-623-105-12	W 2, MIDDLE
61	7-623-208-22	SW 3,TYPE 2
62	7-624-102-04	STOP RING 1.5, TYPE -E
63	7-624-105-04	STOP RING 2.3, TYPE -E
64	7-624-133-24	STOP RING 7, TYPE-CE
65	7-624-133-54	STOP RING 10, TYPE-CE
66	7-624-133-84	STOP RING 14, TYPE-CE
67	7-624-133-94	STOP RING 15, TYPE-CE
68	7-624-190-31	STOP RING 4, TYPE-CS
69	7-628-253-95	SCREW +PS 2.6X4
70	7-671-113-01	STEAL, BALL 3
71	7-671-151-01	STAINLESS, BALL 1/16INCH
72	7-682-149-13	SCREW +P 3X10
73	7-682-546-04	SCREW +B 3X5
74	7-685-104-11	SCREW +P 2X6 TYPE2 NON-SLIT
75	7-685-104-21	SCREW +PTP 2X6 TYPE4
76	7-685-133-11	SCREW +P 2.6X6 TYPE1
77	7-685-134-11	SCREW +P 2.6X8 TYPE2 NON-SLIT
78	7-685-647-14	SCREW +BVTP 3X10 TYPE2 N-S
79	7-685-651-11	SCREW +BVTP 3X20 TYPE1
80	7-685-799-74	SCREW +PTT 1.7X3
81	7-685-548-19	SCREW +BTP 3X12
82	7-685-871-01	SCREW +BVTT 3X6 (S)
83	7-688-002-11	W 2.6, MIDDLE
84	7-688-004-11	W 4, MIDDLE
85	A-4608-232-A	ROTOR ASSY
86	A-4608-233-A	STATOR ASSY

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- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.
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COILS
- MMH : mH, UH : μH

GENERAL SECTION

No.	Part No.	Description
87	X-4879-707-0	REST SUB ASSY, ARM
88 ♠;	X-4887-901-0	PLATE ASSY, SHUTTER
89	X-4887-902-0	BASE ASSY, ARM
90	X-4887-903-0	FRAME ASSY, ARM
91	X-4887-904-0	LIFTER ASSY
92 ♠;	X-4887-905-0	BRACKET ASSY, MOTOR
93	X-4887-906-0	WORM ASSY
94	X-4887-907-0	COVER ASSY, DUST
95	X-4887-908-0	INSULATOR ASSY
96	X-4887-909-1	BEARING ASSY

ACCESSORY & PACKING MATERIAL

No.	Part No.	Description
151	3-701-630-00	BAG, POLYETHYLENE
152	3-701-634-00	BAG, POLYETHYLENE
153	3-701-806-00	ADAPTOR, 45, (E)
154	3-773-359-11	(AEP,UK,E)......MANUAL, INSTRUCTION
154	3-773-359-21	(US,Canadian)...MANUAL, INSTRUCTION
154	3-773-359-31	(Canadian)......MANUAL, INSTRUCTION
155	4-883-720-02	TURNTABLE
156	4-887-941-01	(AEP,UK,E)......SHEET, TURNTABLE
156	4-887-941-11	(US,Canadian)...SHEET, TURNTABLE
157	4-887-947-00	INDIVIDUAL CARTON
158	4-887-948-00	HOLDER, TURNTABLE
159	4-887-949-00	CUSHION
160	4-887-950-00	PROTECTOR
161	4-887-951-00	BOLSTER, ARM
162	4-887-952-00	CUSHION, ARM

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COILS

- MMH : mH, UH : μH

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
501	♠;1-508-799-00	BASE POST (U TYPE)			
502	♠;1-508-800-13	U TYPE BASE POST 3P			
503	♠;1-508-801-00	U TYPE BASE POST 4P			
504	♠;1-508-802-00	BASE POST U TYPE			
505	♠;1-535-416-00	TERMINAL			
506	1-549-116-00	CARTRIDGE (VL-43GS)			
507	1-551-294-00	CORD (PHONO)			
508	⚠.1-534-817-XX	(AEP)..........CORD, POWER			
508	⚠.1-551-472-00	(E)............CORD, POWER			
508	⚠.1-551-506-XX	(US,Canadian)...CORD, POWER			
508	⚠.1-555-734-00	(E)............CORD, POWER			
508	⚠.1-556-562-00	(UK)...........CORD, POWER			
509	♠;1-608-536-00	PC BOARD, PRIMARY TRANSLATION			
510	1-608-883-00	PC BOARD, FG			
511	♠;1-608-798-00	PC BOARD, MAIN			
511	♠;A-4619-198-A	(Canadian,AEP,UK)...MOUNTED PCB, MAIN			
511	♠;A-4619-207-A	(US,E).............MOUNTED PCB, MAIN			
512	♠;1-609-799-00	PC BOARD, PHONO			
513	♠;1-609-800-00	PC BOARD, CONTROL SW			
514	♠;1-609-801-00	PC BOARD, SPEED LED			
515	♠;1-609-802-00	PC BOARD, END LED			
516	♠;1-609-803-00	PC BOARD, CDS			
517	♠;1-609-804-00	PC BOARD, POWER SW			
C101	1-161-494-00	CERAMIC	0.022MF	30%	25V
C102	1-123-645-00	ELECT	33MF	20%	6.3V
C103	1-161-494-00	CERAMIC	0.022MF	30%	25V
C104	1-161-330-00	CERAMIC	0.01MF	30%	25V
C105	1-130-885-00	FILM	0.15MF	5%	50V
C106	1-123-380-00	ELECT	1MF	20%	50V
C107	1-123-356-00	ELECT	10MF	20%	16V
C108	1-123-379-00	ELECT	0.47MF	20%	50V
C109	1-161-330-00	CERAMIC	0.01MF	30%	25V
C110	1-161-330-00	CERAMIC	0.01MF	30%	25V
C111	1-162-113-00	CERAMIC	0.01MF	30%	16V
C112	1-162-113-00	CERAMIC	0.01MF	30%	16V
C113	1-123-333-00	ELECT	100MF	20%	16V
C114	1-123-333-00	ELECT	100MF	20%	16V
C115	1-123-296-00	ELECT	220MF	20%	6.3V
C116 ⚠	1-123-337-00	ELECT	1000MF	20%	25V
C117 ⚠	1-123-337-00	ELECT	1000MF	20%	25V
C118	1-131-562-00	TANTALUM	10MF	5%	16V
C119	1-162-029-00	CERAMIC	47PF	5%	50V
C120	1-123-330-00	ELECT	22MF	20%	16V
C121	1-161-330-00	CERAMIC	0.01MF	30%	25V
C122	1-161-330-00	CERAMIC	0.01MF	30%	25V
C123	1-161-494-00	CERAMIC	0.022MF	30%	25V
C124	1-161-330-00	CERAMIC	0.01MF	30%	25V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C125	1-123-381-00	ELECT	2.2MF	20%	50V
C126	1-162-110-00	CERAMIC	0.001MF	10%	50V
C127	1-123-307-00	ELECT	100MF	20%	10V
C128	1-162-110-00	CERAMIC	0.001MF	10%	50V
C130	1-131-373-00	TANTALUM	22MF	20%	16V
C131	1-161-327-00	CERAMIC	0.0033MF	30%	50V
C301	1-161-494-00	CERAMIC	0.022MF	30%	25V
D101	8-719-910-68	DIODE HZ6C2L			
D102 ⚠	8-719-200-02	DIODE 10E-2			
D103 ⚠	8-719-200-02	DIODE 10E-2			
D104 ⚠	8-719-200-02	DIODE 10E-2			
D105 ⚠	8-719-200-02	DIODE 10E-2			
D106	8-719-911-19	DIODE 1SS119			
D107	8-719-911-19	DIODE 1SS119			
D109	8-719-911-19	DIODE 1SS119			
D111	8-719-911-19	DIODE 1SS119			
D112	8-719-911-19	DIODE 1SS119			
D113	8-719-911-19	DIODE 1SS119			
D114	8-719-911-19	DIODE 1SS119			
D201	8-719-906-55	DIODE GL-9PR12			
D202	8-719-906-55	DIODE GL-9PR12			
D301	8-719-906-48	DIODE GL-9HD4			
H101	8-719-800-17	DIODE THS102A			
H102	8-719-800-17	DIODE THS102A			
IC101	8-759-145-58	IC UPC4558C			
IC102	8-759-602-65	IC CX-065B			
IC103	8-759-145-58	IC UPC4558C			
IC104	8-759-145-58	IC UPC4558C			
IC105	8-759-907-32	IC TMS1050/S-3			
M901	1-541-163-00	MOTOR			
PC300	1-806-639-00	PHOTO CONDUCTIVE CELL, CDS			
Q101	8-729-612-77	TRANSISTOR 2SA1027R			
Q102	8-729-902-11	TRANSISTOR 2SC2021			
Q103	8-729-245-83	TRANSISTOR 2SC2458			
Q104	8-729-177-43	TRANSISTOR 2SD774			
Q105	8-729-103-43	TRANSISTOR 2SB734			
Q106	8-729-177-43	TRANSISTOR 2SD774			
Q107	8-729-103-43	TRANSISTOR 2SB734			
Q108	8-729-177-43	TRANSISTOR 2SD774			
Q109	8-729-612-77	TRANSISTOR 2SA1027R			
Q110	8-729-612-77	TRANSISTOR 2SA1027R			
Q111	8-729-245-83	TRANSISTOR 2SC2458			
Q112	8-729-602-68	TRANSISTOR 2SA1026-8			

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- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.
- F : nonflammable

COILS
- MMH : mH, UH : µH

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

ELECTRICAL PARTS

Ref.No.	Part No.	Description				
Q113	8-729-245-83	TRANSISTOR 2SC2458				
Q114	8-729-802-34	TRANSISTOR 2SD1388				
Q115	8-729-802-22	TRANSISTOR 2SB1014				
Q116	8-729-245-83	TRANSISTOR 2SC2458				
Q117	8-729-245-83	TRANSISTOR 2SC2458				
Q118	8-729-612-77	TRANSISTOR 2SA1027R				
Q119	8-729-612-77	TRANSISTOR 2SA1027R				
R101	1-246-449-00	CARBON	100	5%	1/4W	
R102	1-246-529-00	CARBON	220K	5%	1/4W	
R103	1-246-545-00	CARBON	1M	5%	1/4W	
R104	1-246-497-00	CARBON	10K	5%	1/4W	
R105	1-247-855-00	CARBON	10K	5%	1/6W	
R106	1-247-855-00	CARBON	10K	5%	1/6W	
R107	1-214-767-00	METAL	39K	1%	1/4W	
R108	1-214-780-00	METAL	130K	1%	1/4W	
R109	1-246-489-00	CARBON	4.7K	5%	1/4W	
R110	1-247-847-00	CARBON	4.7K	5%	1/6W	
R111	1-247-863-00	CARBON	22K	5%	1/6W	
R112	1-247-855-00	CARBON	10K	5%	1/6W	
R113	1-247-831-00	CARBON	1K	5%	1/6W	
R114	1-246-469-00	CARBON	680	5%	1/4W	
R115	1-246-469-00	CARBON	680	5%	1/4W	
R116	1-246-473-00	CARBON	1K	5%	1/4W	
R117	1-246-473-00	CARBON	1K	5%	1/4W	
R118	1-246-473-00	CARBON	1K	5%	1/4W	
R119	1-247-831-00	CARBON	1K	5%	1/6W	
R120	1-246-545-00	CARBON	1M	5%	1/4W	
R121	1-246-545-00	CARBON	1M	5%	1/4W	
R122	1-247-887-00	CARBON	220K	5%	1/6W	
R123	1-247-887-00	CARBON	220K	5%	1/6W	
R124	1-246-529-00	CARBON	220K	5%	1/4W	
R125	1-246-529-00	CARBON	220K	5%	1/4W	
R126	1-247-815-00	CARBON	220	5%	1/6W	
R127	1-247-815-00	CARBON	220	5%	1/6W	
R128	1-247-815-00	CARBON	220	5%	1/6W	
R129	1-247-815-00	CARBON	220	5%	1/6W	
R132	1-246-481-00	CARBON	2.2K	5%	1/4W	
R133	1-246-463-00	CARBON	390	5%	1/4W	
R134 ⚠	1-202-855-00	(Canadian,AEP,UK)...SOLID	15		1/4W	F
R135	1-247-867-00	CARBON	33K	5%	1/6W	
R136	1-247-873-00	CARBON	56K	5%	1/6W	
R137	1-246-457-00	CARBON	220	5%	1/4W	
R138	1-247-871-00	CARBON	47K	5%	1/6W	
R139	1-247-854-00	CARBON	9.1K	5%	1/6W	
R140	1-246-463-00	CARBON	390	5%	1/4W	
R141 ⚠	1-202-852-00	(Canadian,AEP,UK)...SOLID	4.7		1/4W	F

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R142	1-246-497-00	CARBON	10K	5%	1/4W
R143	1-246-497-00	CARBON	10K	5%	1/4W
R144	1-247-843-00	CARBON	3.3K	5%	1/6W
R145	1-247-825-00	CARBON	560	5%	1/6W
R146	1-247-803-00	CARBON	68	5%	1/6W
R147	1-247-851-00	CARBON	6.8K	5%	1/6W
R148	1-247-836-00	CARBON	1.6K	5%	1/6W
R149	1-247-882-00	CARBON	130K	5%	1/6W
R150	1-247-863-00	CARBON	22K	5%	1/6W
R151	1-247-855-00	CARBON	10K	5%	1/6W
R152	1-247-875-00	CARBON	68K	5%	1/6W
R153	1-247-823-00	CARBON	470	5%	1/6W
R154	1-246-497-00	CARBON	10K	5%	1/4W
R155	1-247-855-00	CARBON	10K	5%	1/6W
R156	1-246-497-00	CARBON	10K	5%	1/4W
R157	1-246-505-00	CARBON	22K	5%	1/4W
R158	1-247-878-00	CARBON	91K	5%	1/6W
R159	1-246-525-00	CARBON	150K	5%	1/4W
R160	1-247-867-00	CARBON	33K	5%	1/6W
R161	1-247-867-00	CARBON	33K	5%	1/6W
R162	1-247-815-00	CARBON	220	5%	1/6W
R163	1-247-815-00	CARBON	220	5%	1/6W
R164	1-247-831-00	CARBON	1K	5%	1/6W
R165	1-247-855-00	CARBON	10K	5%	1/6W
R166	1-247-855-00	CARBON	10K	5%	1/6W
R167	1-246-473-00	CARBON	1K	5%	1/4W
R168	1-247-879-00	CARBON	100K	5%	1/6W
R169	1-247-890-00	CARBON	300K	5%	1/6W
R170	1-247-867-00	CARBON	33K	5%	1/6W
R171	1-247-867-00	CARBON	33K	5%	1/6W
R172	1-247-843-00	CARBON	3.3K	5%	1/6W
RV101	1-226-237-00	RES, ADJ, CARBON 20K (SPEED 33)			
RV102	1-228-238-00	RES, ADJ, METAL GLAZE 20K (SPEED 45)			
RV103	1-226-234-00	RES, ADJ, CARBON 2K (GAIN)			
RV104	1-226-234-00	RES, ADJ, CARBON 2K (GAIN)			
RV105	1-226-235-00	RES, ADJ, CARBON 5K (OFFSET)			
RV106	1-226-235-00	RES, ADJ, CARBON 5K (OFFSET)			
RV107	1-224-250-XX	RES, ADJ, METAL GLAZE 2.2K (END LED)			
S101	1-553-856-00	SWITCH, KEY BOARD (SPEED)			
S102	1-553-856-00	SWITCH, KEY BOARD (ARM RIFTER)			
S103	1-553-856-00	SWITCH, KEY BOARD (START/STOP)			
S401	1-553-331-21	SWITCH, PUSH (POWER)			
S501	1-554-415-00	SWITCH (TONEARM POSITION)			
S901 ⚠	1-553-028-00	(E).....SWITCH, SLIDE (VOLTAGE SELECT)			
T901 ⚠	1-446-101-41	(US,Canadian)...TRANSFORMER, POWER			
T901 ⚠	1-446-825-31	(E).............TRANSFORMER, POWER			
T901 ⚠	1-446-953-21	(AEP,UK,).......TRANSFORMER, POWER			

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- F : nonflammable

COILS

- MMH : mH, UH : μH

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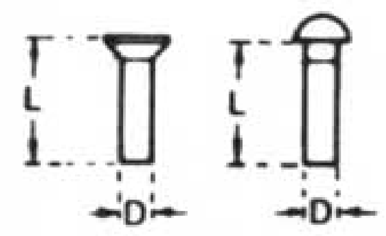
HARDWARE NOMENCLATURE

Screw: – P 3 x 10

- *L: Length in mm*
- *D: Diameter in mm*
- *Type of head*
- *Indicated slotted-head only. Unless otherwise indicated, it means cross-recessed head (Phillips type).*



Nut, Washer, Retaining ring: N 3

- *Diameter of usable screw or shaft*
- *Reference designation*

Reference Designation	Shape	Description	Remarks
		SCREWS	
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
		SELF-TAPPING SCREWS	
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
		SET SCREWS	
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
		NUT	
N		nut	
		WASHERS	
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
		RETAINING RINGS	
E		retaining ring	
G		grip-type retaining ring	

Sony Corporation
Consumer Products Group
Technical Support Dept.

9-951-137-11

English
83D02138-1
Printed in Japan
1983