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PS-X50

*AEP Model
E Model
Canadian Model
US Model*



STEREO TURNTABLE SYSTEM

SPECIFICATIONS

GENERAL

Power Requirements:	120, 220V ac adjustable, 50/60Hz (AEP, E model) 120V ac, 60Hz (Canadian, US model)
Power Consumption:	12W (AEP, E model) 8W (Canadian, US model)
Dimensions:	Approx. 480(w) x 165(h) x 420(d) mm 18 ¹⁵ / ₁₆ x 6 ¹ / ₂ x 16 ⁹ / ₁₆ inches including projecting parts and controls
Weight:	Approx. 11.5kg, 25 lb 6 oz (net) Approx. 13kg, 28 lb 11 oz (in shipping carton)

TURNTABLE

Platter:	32 cm (12 ⁵ / ₈ inches) diecasting aluminum-alloy
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SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS 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.

ATTENTION AU COMPOSANT AYANT RAPPORT
A LA SÉCURITÉ !

LES COMPOSANTS IDENTIFIÉS PAR UN TRAMÉ ET UNE MARQUE  SUR LES DIAGRAMMES SCHEMATIQUES, LES VUES EXPLOSÉES 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 DES SUPPLÉMENTS PUBLIÉS PAR SONY.

Motor:	Linear BSL (brushless and slotless) motor
Drive System:	Direct drive, crystal lock control system
Speed:	33 ¹ / ₃ rpm, 45 rpm
Starting Characteristics:	Comes to nominal speed within a second revolution (33 ¹ / ₃ rpm)
Wow and Flutter:	±0.045% (DIN) (AEP, E model) 0.025% (WRMS)
S/N Ratio:	75dB (DIN-B)
Load Characteristics:	0% at 150g tracking force
Automatic System:	Arm return reject

TONEARM

Type:	Statically balanced, universal
Pivot-to-Stylus Length:	235mm, 9 ¹ / ₄ inches
Overall Arm Length:	330mm, 13 inches
Overhang:	14 mm, ⁹ / ₁₆ inch
Tracking Error:	+2°27', -1°30'
Tracking Force Adjustment Range:	0–2.5g
Shell Weight:	11g
Cartridge Weight Range: (including shell weight)	11–19.5g 19–27.5g (with extra weight)

SONY®

SERVICE MANUAL

PS-X50

PS-X50

AEP Model
E Model
Canadian Model
US Model



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ATTENTION AU COMPOSANT AYANT RAPPORT
À LA SÉCURITÉ !

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S/N Ratio:	75dB (DIN-B)
Load Characteristics:	0% at 150g tracking force
Automatic System:	Arm return reject

TONEARM

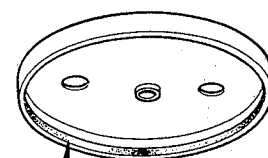
Type:	Statically balanced, universal
Pivot-to-Stylus Length:	235mm, 9 ¹ / ₄ inches
Overall Arm Length:	330mm, 13 inches
Overhang:	14 mm, ⁹ / ₁₆ inch
Tracking Error:	+2°27', -1°30'
Tracking Force Adjustment Range:	0-2.5g
Shell Weight:	11g
Cartridge Weight Range:	11-19.5g
(including shell weight)	19-27.5g (with extra weight)

SONY
SERVICE MANUAL

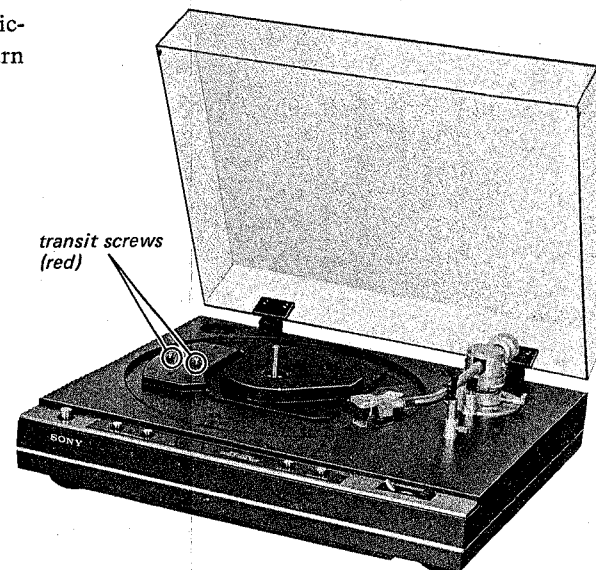
SERVICING NOTE

1. Perform the checking of the adjustment a few minutes after the power switch is turned on.
2. When replacing the pilot lamp of automatic-return detection, adjust the automatic-return adjustment (13 page).
3. Platter handling.
4. When adjusting the set, confirm that the transit screws are removed.

bottom view of platter



Be sure not to spoil the magnetic coating (dark brown color).



MODEL IDENTIFICATIONS

— Specification Label —

US, Canadian model

SONY	STEREO TURNTABLE SYSTEM
MODEL NO. PS-X50	
AC 120V 60Hz	8W
SERIAL NO.	
MADE IN JAPAN	

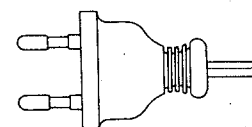
AEP, E model

SONY	STEREO TURNTABLE SYSTEM
MODEL NO. PS-X50	
~120, 220V 50/60Hz	12W
SERIAL NO.	
MADE IN JAPAN	

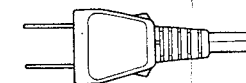
MODEL IDENTIFICATIONS

— Power Cord —

E1 model: euro-plug
1-551-530-11

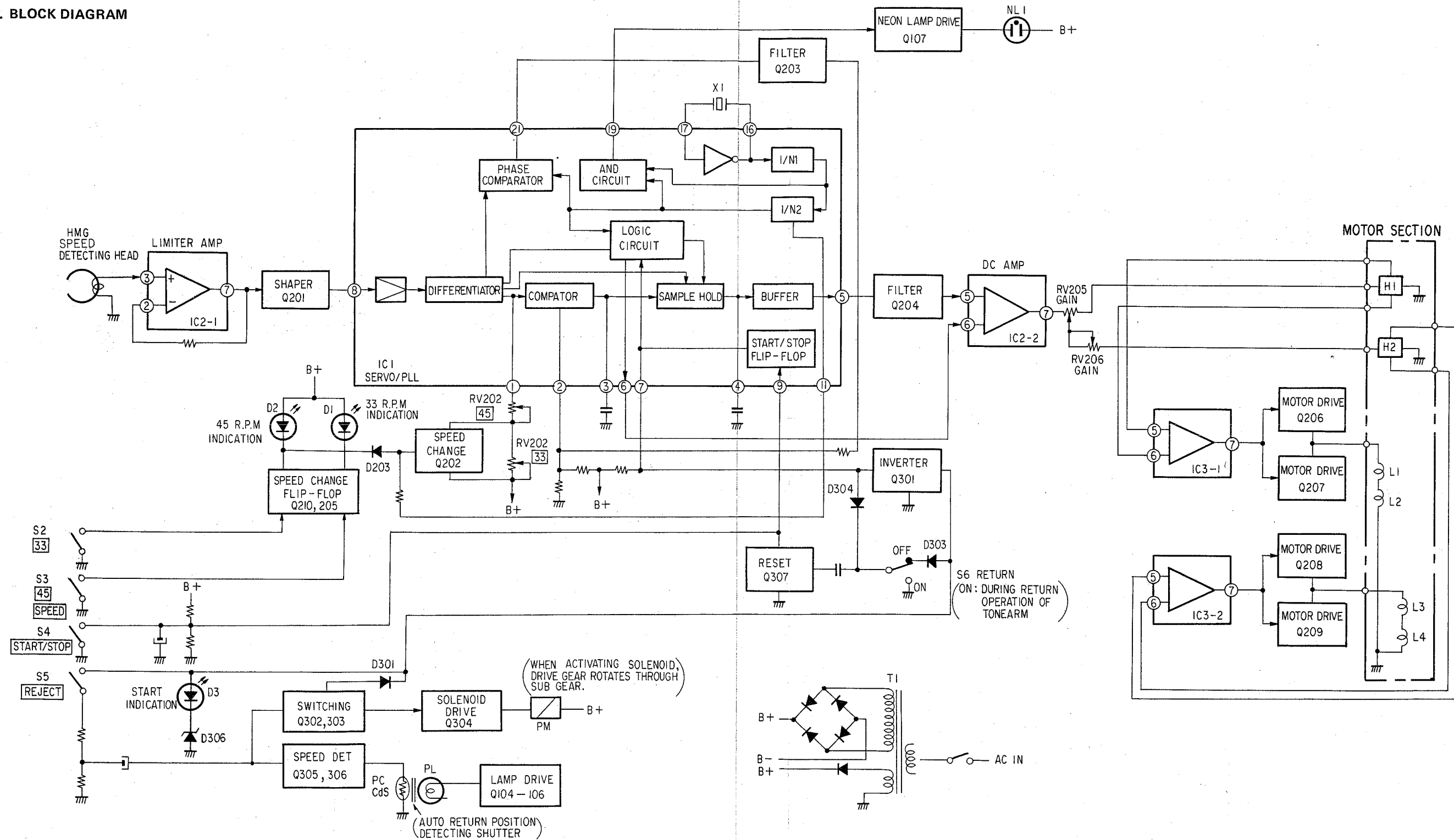


E2 model: parallel-blade plug
1-551-473-31



SECTION 1 OUTLINE

1. BLOCK DIAGRAM



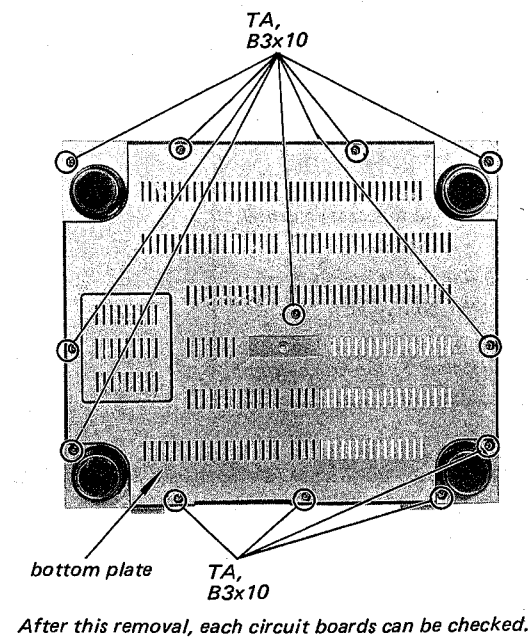
SECTION 2 DISASSEMBLY

PS-X50 PS-X50

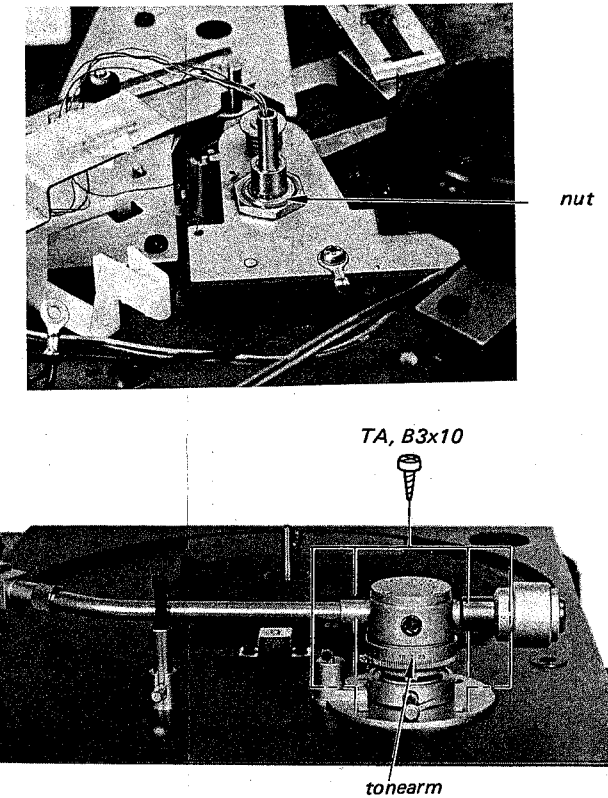
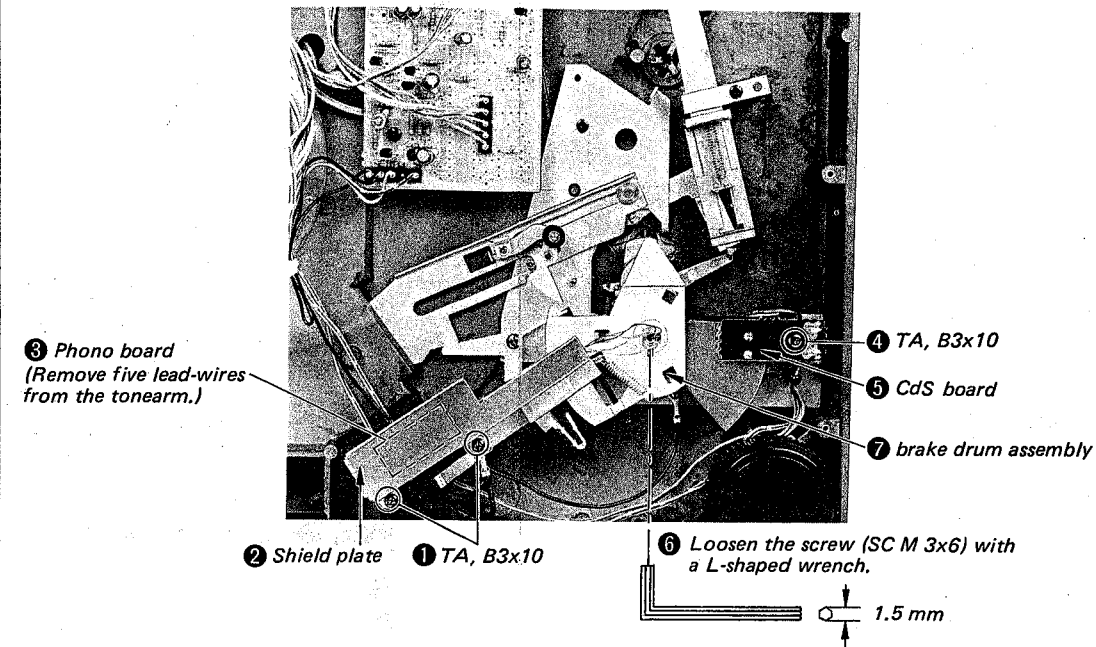
- Follow the disassembly procedure in the numerical order given.

Remove the dust cover, turntable sheet and turntable.

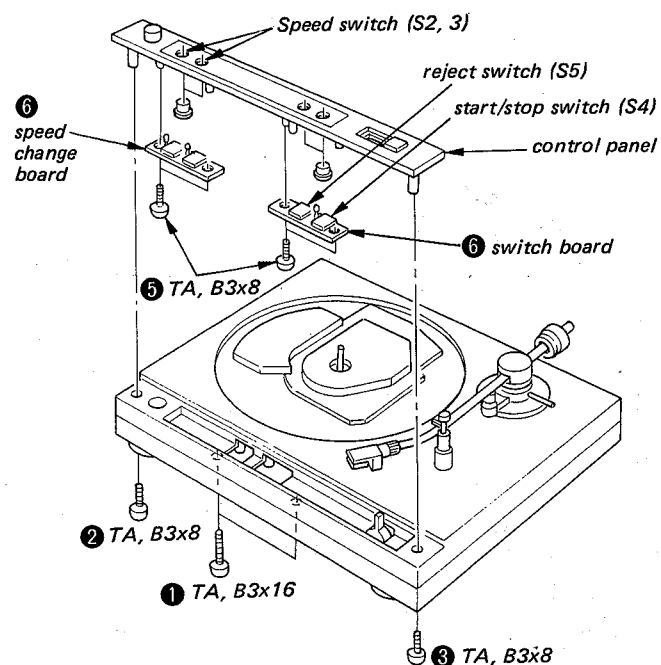
BOTTOM PLATE REMOVAL



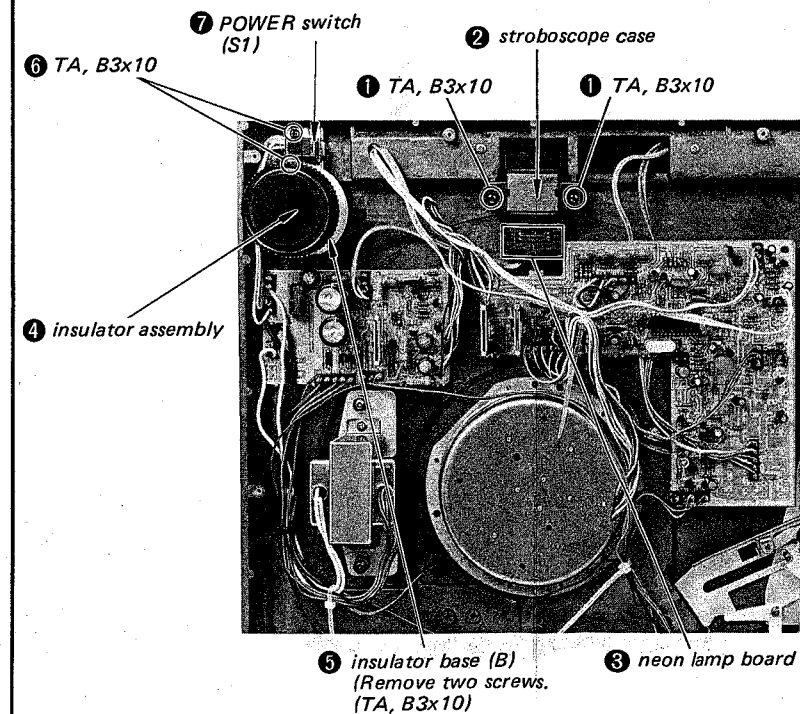
TONELARM REMOVAL (1)



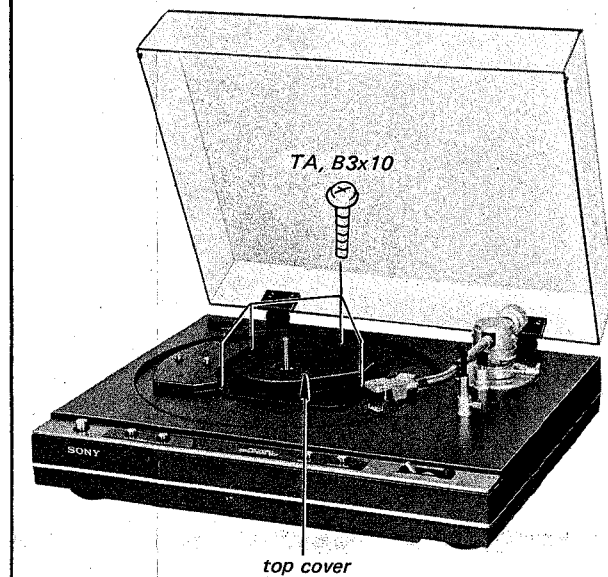
SPEED SWITCH (S2, 3), START/STOP SWITCH (S4) AND REJECT SWITCH (S5) REMOVAL



NEON LAMP (NL1) AND POWER SWITCH (S1) REMOVAL

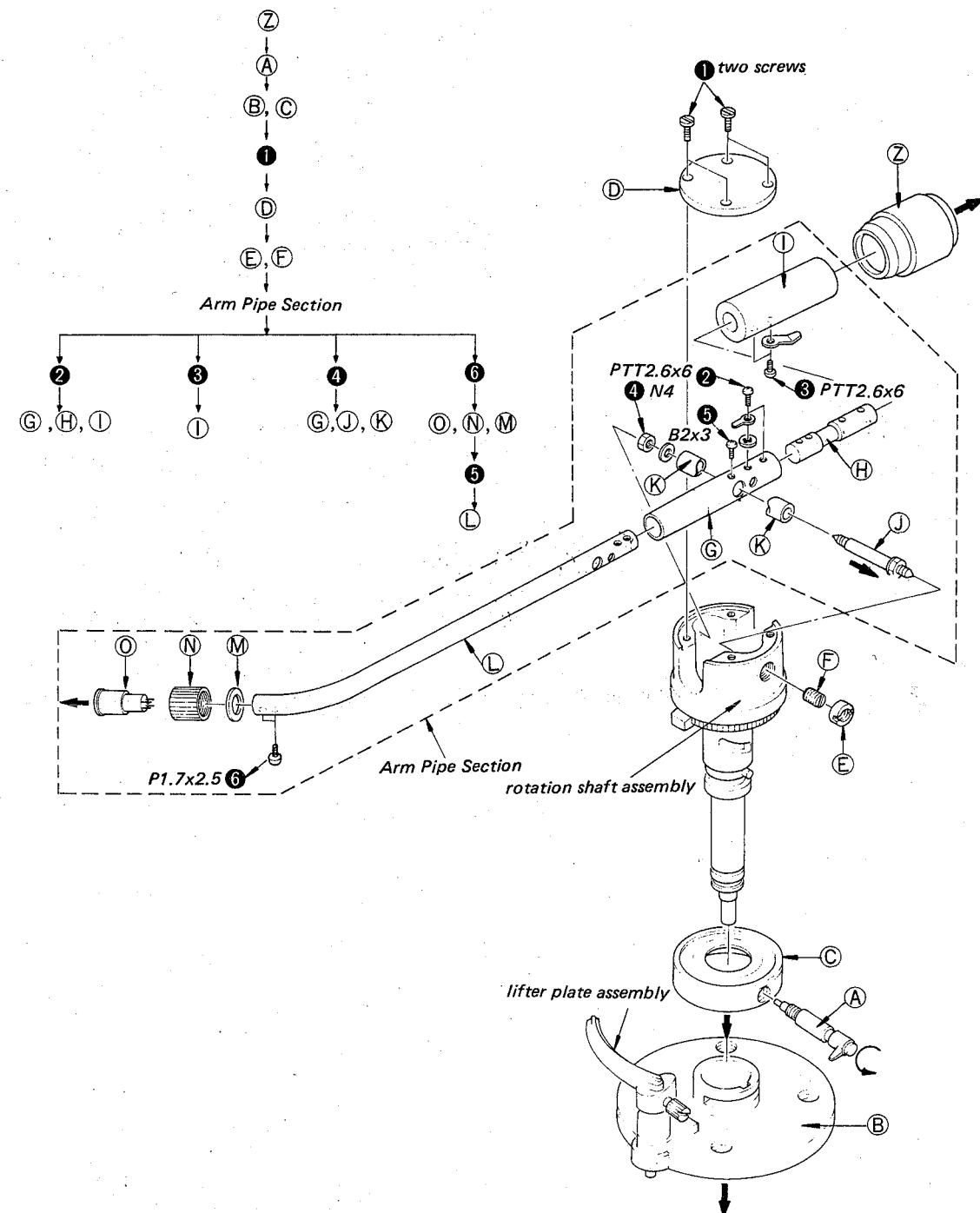


TOP COVER REMOVAL

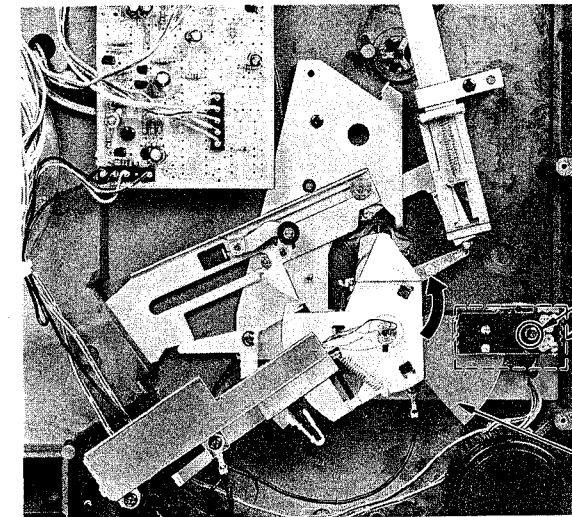


After this removal, drive gear, miniature switch (S6), solenoid (PM) and motor can be replaced.

TONARM REMOVAL (2)

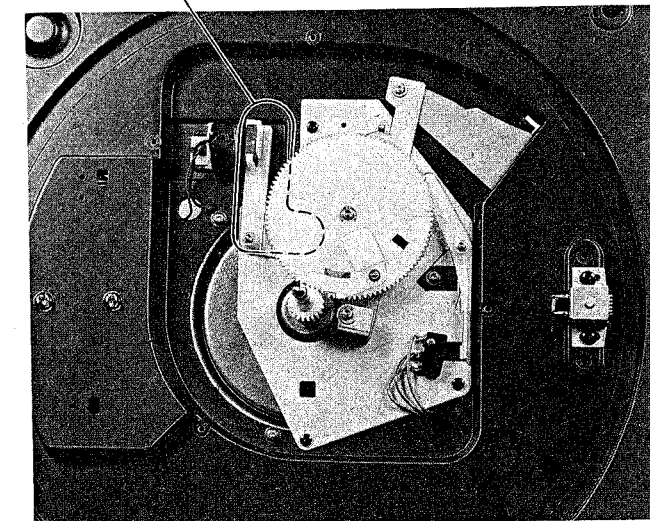
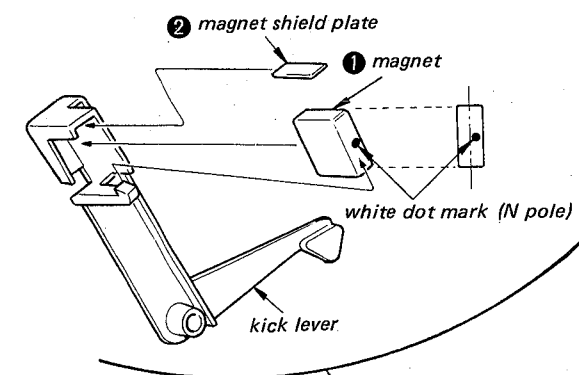


AUTOMATIC RETURN DETECTING LAMP (PL) REPLACEMENT



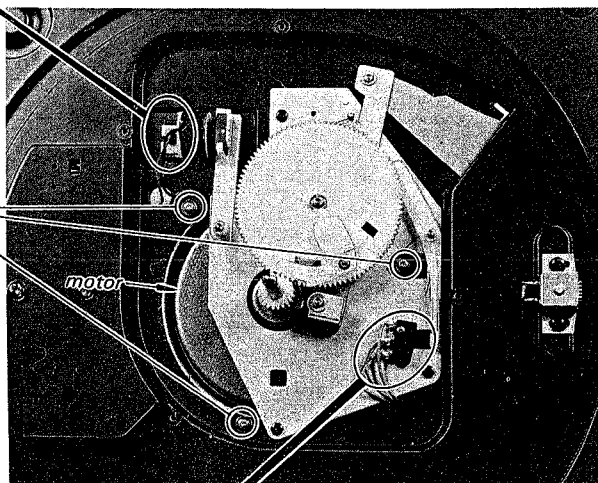
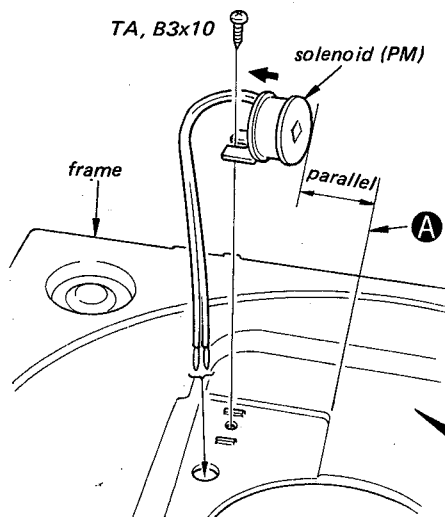
- ① TA, B3x10
 - ② CdS board
 - ③ Set the tonearm to center spindle side.
 - ④ Remove the lamp from the lamp holder.
- Shutter
(attached to the brake drum)

BRAKE MAGNET INSTALLATION



SOLENOID (PM) INSTALLATION

Install the solenoid (PM) parallel to **A** line.

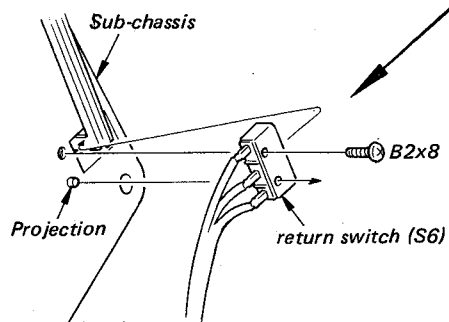


MOTOR REMOVAL

1. Remove the motor lead-wires from the servo amp/ system control/PLL board.
2. Remove three screws (PSW 3x12).
3. Remove the motor.

RETURN SWITCH (S6) INSTALLATION

Install the return switch (S6).

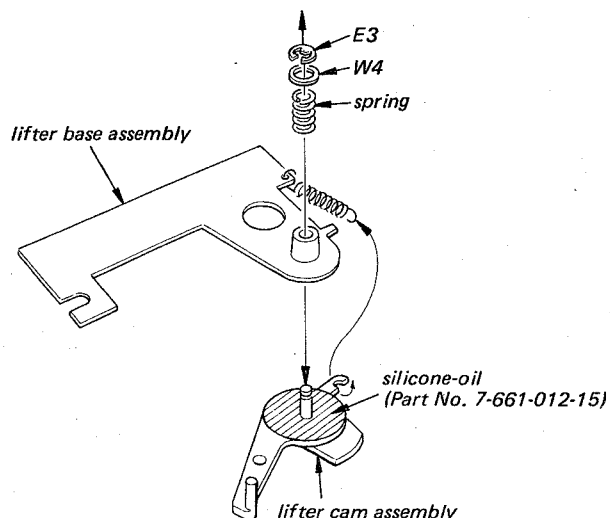
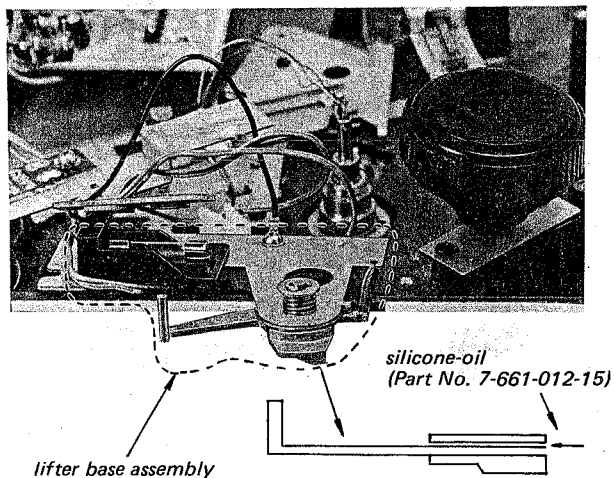


ARM LIFTER MECHANISM

The arm lifter mechanism of this set uses silicone-oil as damper of between the lifter cam assembly and the lifter base assembly.

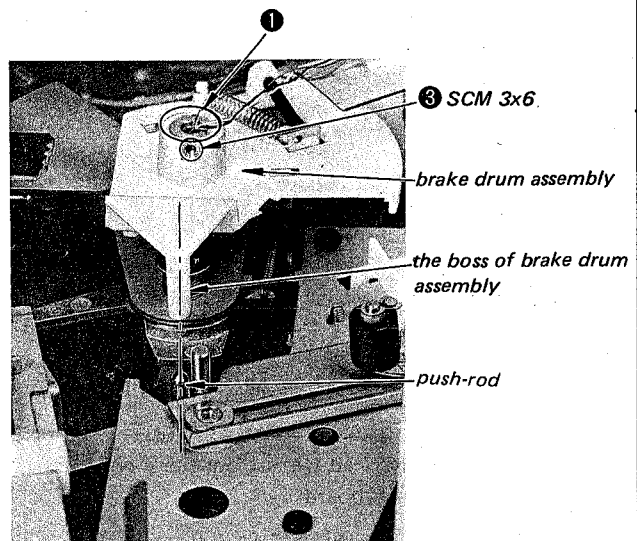
If the arm lifter moves down too quickly, apply silicone-oil in the numerical order given.

1. Perform the tonearm removal (1).
2. Remove the lifter base assembly.
3. Remove E3 and the lifter cam assembly from the lifter base assembly.
4. Wipe off the silicone-oil on the lifter cam assembly and lifter base assembly.
5. Apply silicone-oil (7-661-012-15) on the lifter cam assembly.
6. Install the lifter cam assembly on the lifter base assembly.



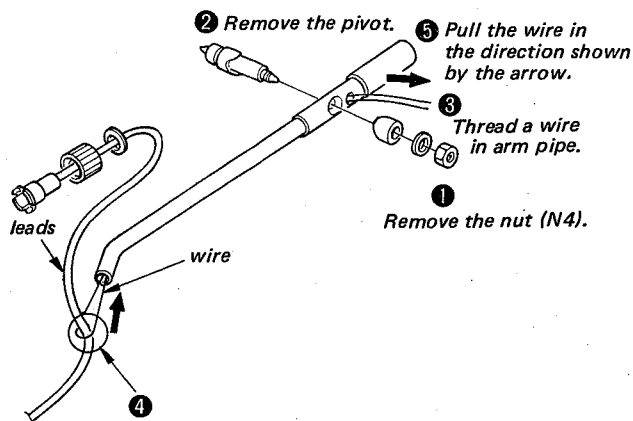
BRAKE DRUM ASSEMBLY INSTALLATION

1. Thread the lead wires of tonearm in the brake drum assembly.
2. Insert the brake drum assembly in the rotation shaft of tonearm.
3. Place the boss of brake drum assembly as shown below and fix the brake drum assembly with screw.
4. Perform the automatic return position adjustment (Refer to the electrical adjustment on page 13).

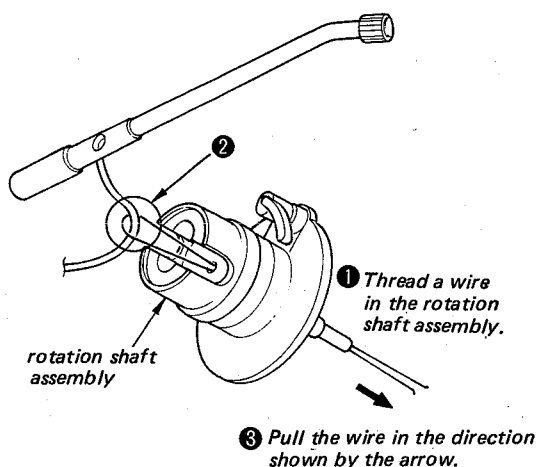


ONEARM INSTALLATION

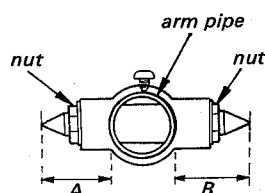
1. LEAD WIRE THREADING (1)



2. LEAD WIRE THREADING (2)

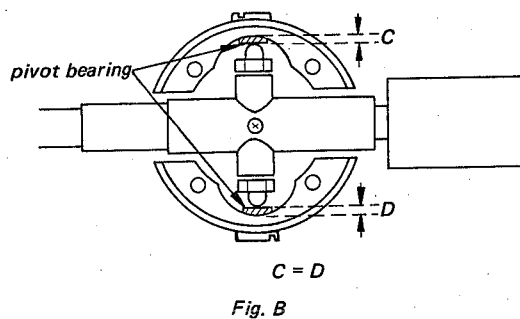
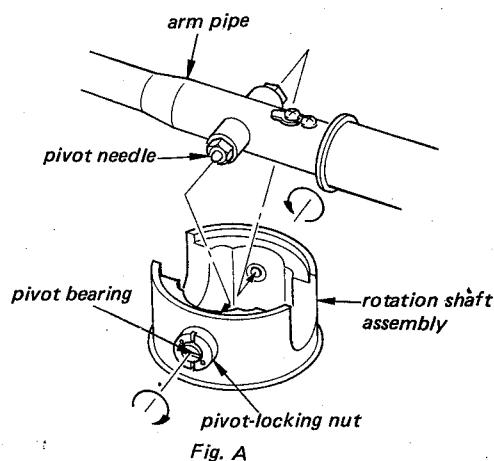


3. PIVOT NEEDLE INSTALLATION

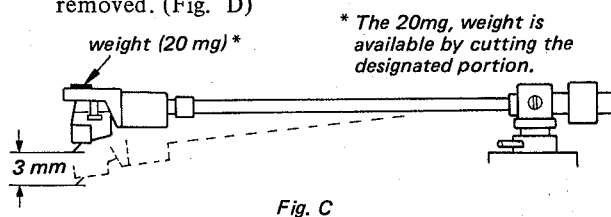


4. ARM PIPE INSTALLATION

- 1) Loosen the pivot-locking nuts and the pivot bearings.
- 2) Install the pivot needle to the pivot bearings as shown in Fig. A.
- 3) Tighten the pivot bearings temporarily as shown in Fig. B.



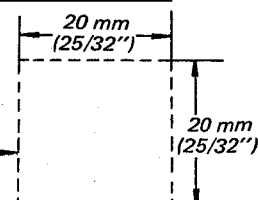
- 4) Install the tonearm on the set and perform the longitudinal balance adjustment.
- 5) Adjust the pivot bearings so that the tonearm sinks 3mm when the 20mg weight is placed on the shell as shown in Fig. C and the tonearm is in a horizontally balanced position when the weight is removed. (Fig. D)



* The 20mg. weight is available by cutting the designated portion.

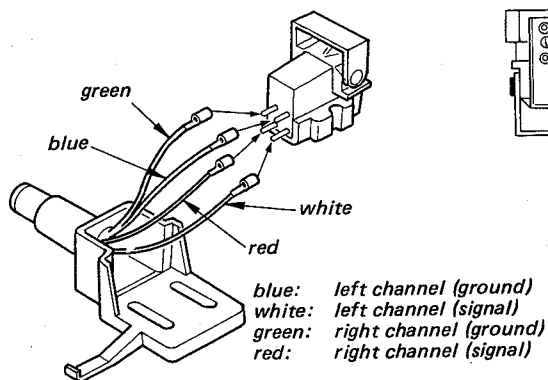


20 mg weight for tonearm balance adjustment



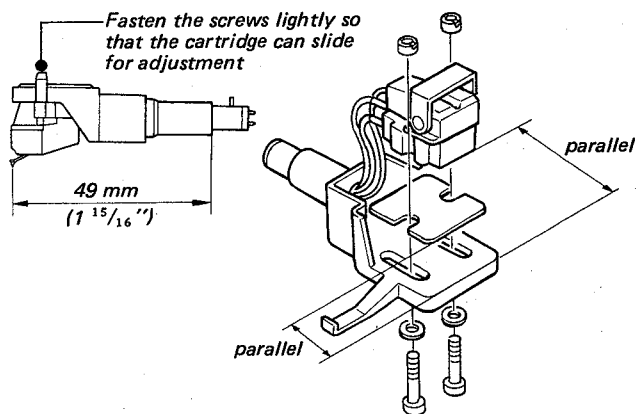
CARTRIDGE WIRE REPLACEMENT

1. CARTRIDGE WIRE CONNECTION



2. CARTRIDGE INSTALLATION

Install the cartridge into the shell with the mounting screws so that the distance between the shell end and the stylus tip is 49mm ($1\frac{15}{16}$ inches).

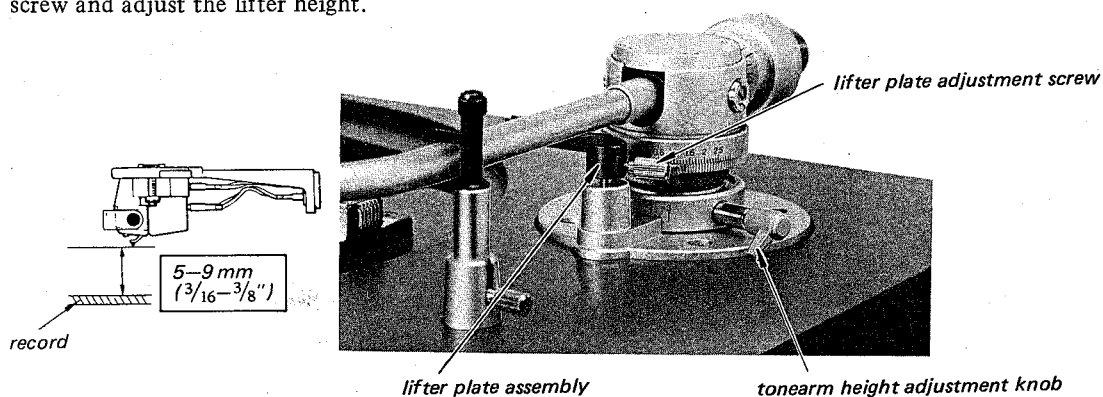


SECTION 3 ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENT

Stylus Height Adjustment

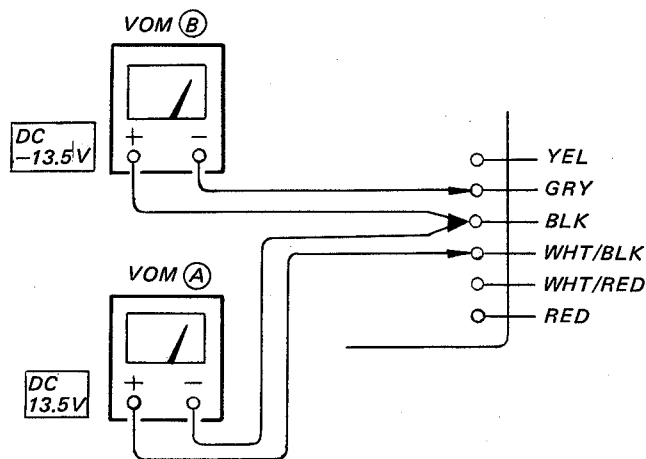
1. Bring the tonearm above the record.
2. Lift the cueing lever up and make sure that the clearance between the stylus tip and the record is 5–9 mm ($\frac{3}{16}$ – $\frac{3}{8}$ inches).
3. If necessary, loosen the lifter plate adjustment screw and adjust the lifter height.



3.2. ELECTRICAL ADJUSTMENT

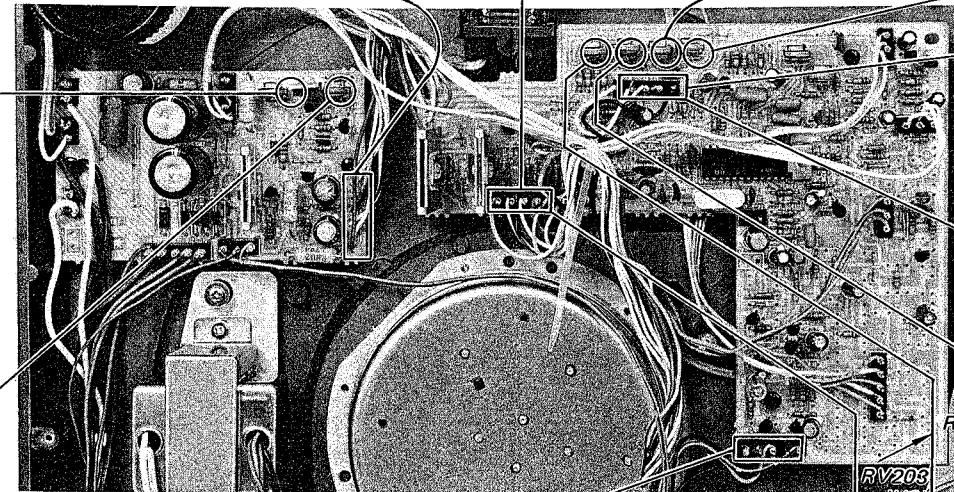
Voltage Adjustment

Adjust RV101 for 13.5 V dc reading on the VOM (A), and -13.5 V dc reading on the VOM (B).



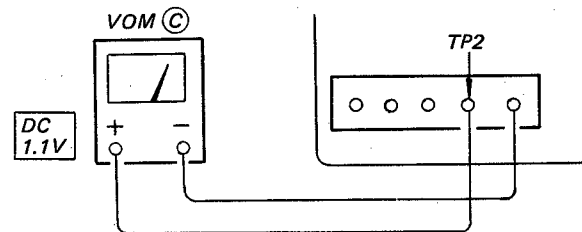
RV101

RV102

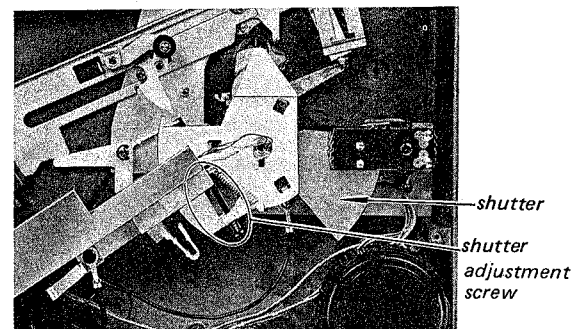
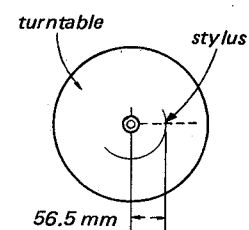


Automatic Return Adjustment

1. Set the power switch on.
2. Set the tonearm to the center spindle side.
3. Adjust RV102 for 1.1 V dc reading on the VOM (C).



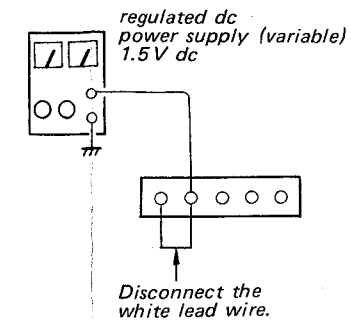
4. Set the stylus position as shown below. Adjust the shutter adjustment screw for 7.3 V dc reading on the VOM (C).



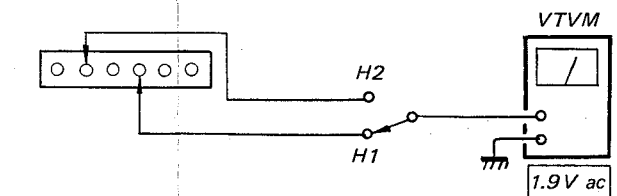
5. Set the test record (YFSB-6, BAND 2, 33 rpm).
6. Turn the shutter adjustment screw so that tonearm starts to return at count of 15-16.
7. Set the test record (YFSB-6, BAND 3, 33 rpm).
8. Adjust RV102 for the tonearm starts to return at only 1kHz playback signal is heard.
9. If RV102 is turned, readjust steps 4 to 7 several times.

Hall Device Gain Adjustment (33¹/₃ rpm)

1. Disconnect the white lead wire and connect the regulated power supply as shown below.

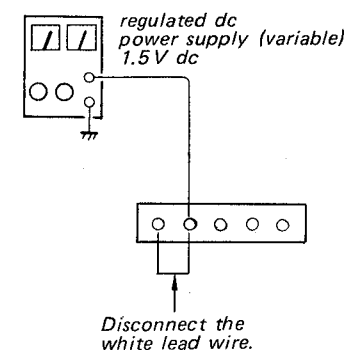


2. Connect VTVM to H1 and adjust RV205 for 1.9 V ac reading on VTVM.
3. Connect VTVM to H2 and adjust RV206 for 1.9 V ac reading on VTVM.



Motor Amp Offset Adjustment (33¹/₃ rpm)

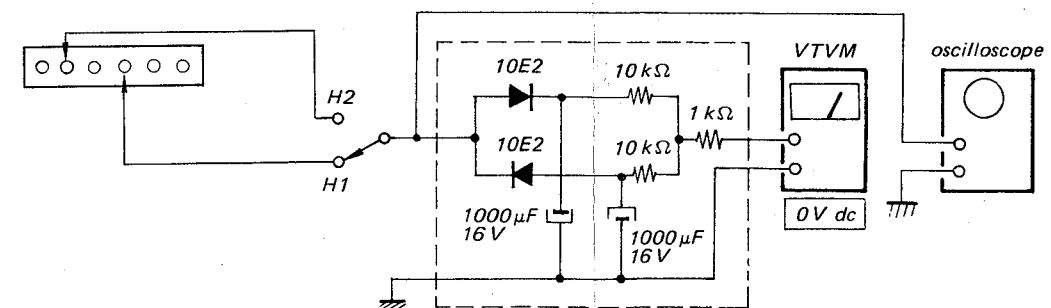
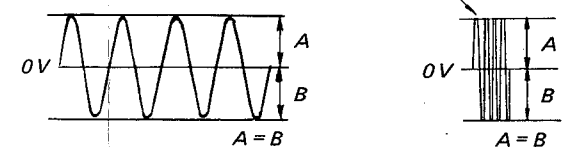
1. Disconnect the white lead wire and connect the regulated power supply as shown below.

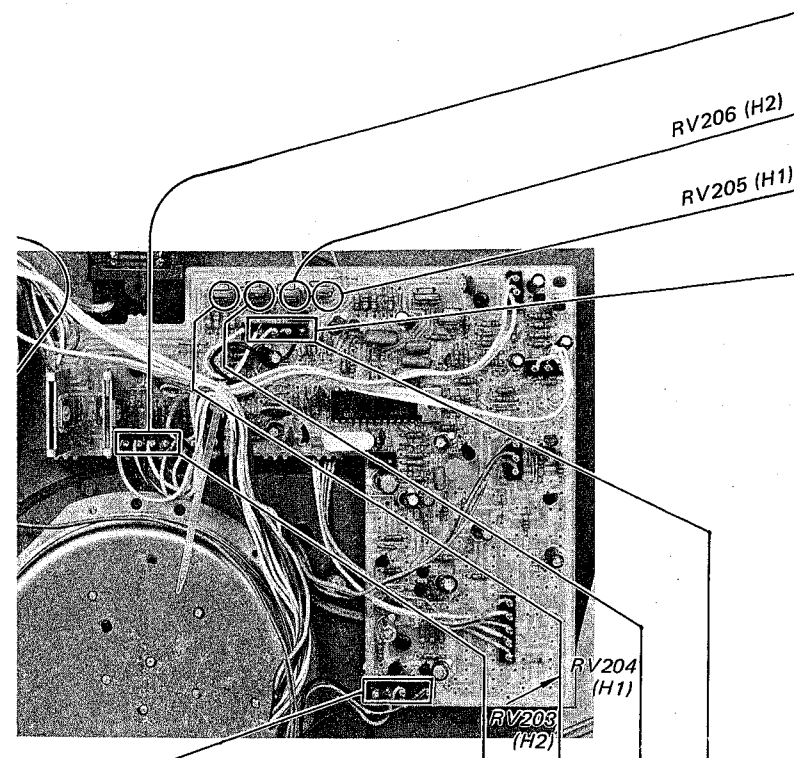


2. Connect VTVM or oscilloscope to H1 and adjust RV204 for 0 V dc VTVM reading or the waveform on oscilloscope as shown below.
3. Connect VTVM or oscilloscope to H2 and adjust RV203 for 0 V dc VTVM reading or the waveform on oscilloscope as shown below.

Waveform on Oscilloscope:

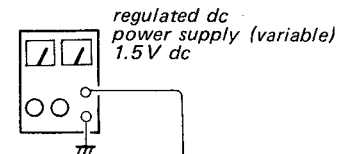
Note: Set the sweep time to longer for easy checking the waveform.



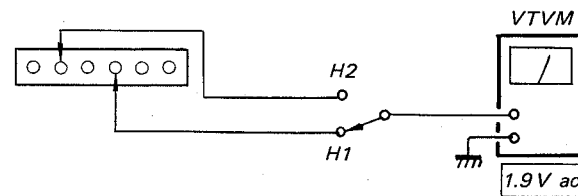


Hall Device Gain Adjustment ($33\frac{1}{3}$ rpm)

1. Disconnect the white lead wire and connect the regulated power supply as shown below.

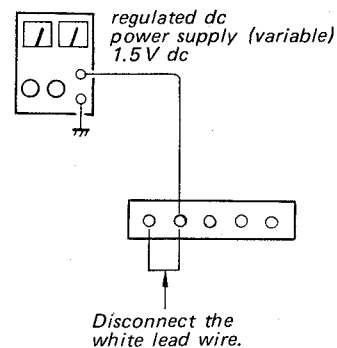


2. Connect VTVM to H1 and adjust RV205 for 1.9 V ac reading on VTVM.
3. Connect VTVM to H2 and adjust RV206 for 1.9 V ac reading on VTVM.



Motor Amp Offset Adjustment ($33\frac{1}{3}$ rpm)

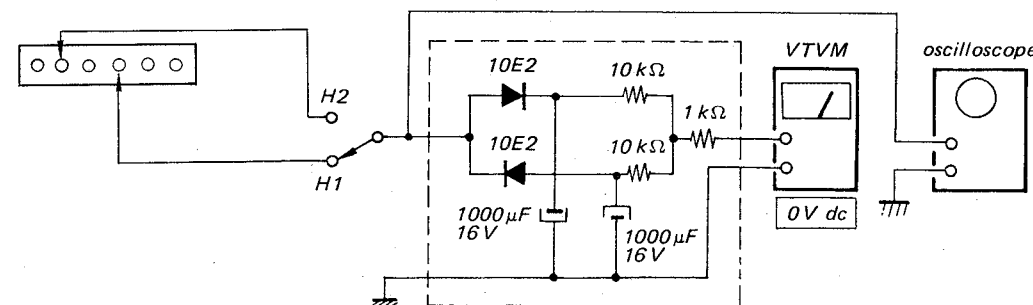
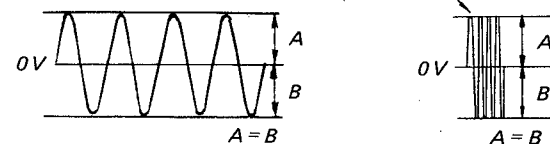
1. Disconnect the white lead wire and connect the regulated power supply as shown below.



2. Connect VTVM or oscilloscope to H1 and adjust RV204 for 0 V dc VTVM reading or the waveform on oscilloscope as shown below.
3. Connect VTVM or oscilloscope to H2 and adjust RV203 for 0 V dc VTVM reading or the waveform on oscilloscope as shown below.

Waveform on Oscilloscope:

Note: Set the sweep time to longer for easy checking the waveform.



Turntable Speed Adjustment

1. Set the SPEED switch (S2, 3) to "45" position.

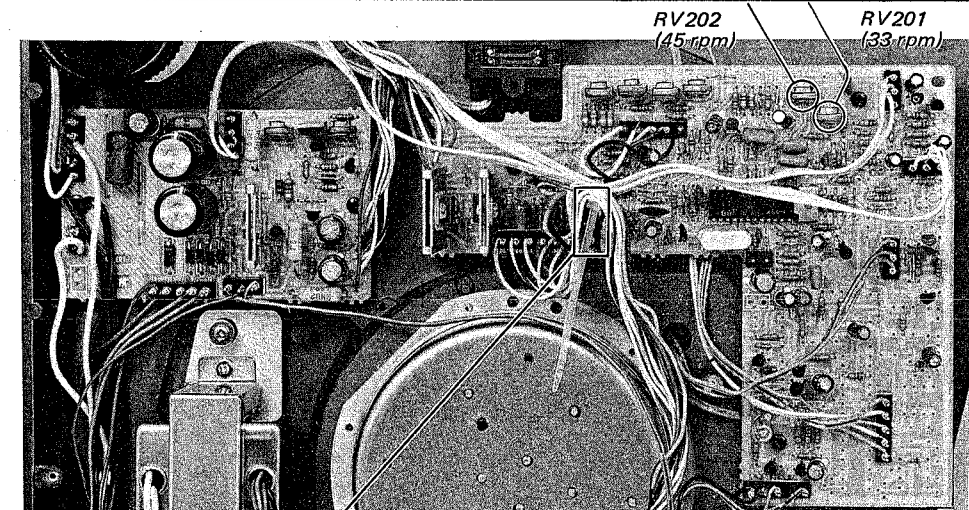
2. Reference waveform: **Note:** Waveform must appear ⊕ side.

3. If the correct waveform does not appear, adjust RV202 (45 rpm).

4. Set the SPEED switch (2, 3) to "33" position.

5. Reference waveform: **Note:** Waveform must appear ⊕ side.

6. If the correct waveform does not appear, adjust RV201 (33 rpm) so that the stroboscope pattern appears stationary.

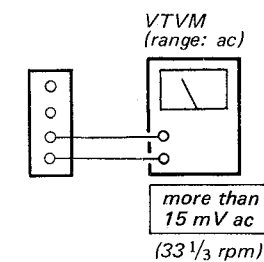


Speed Detecting Head Output Level Adjustment

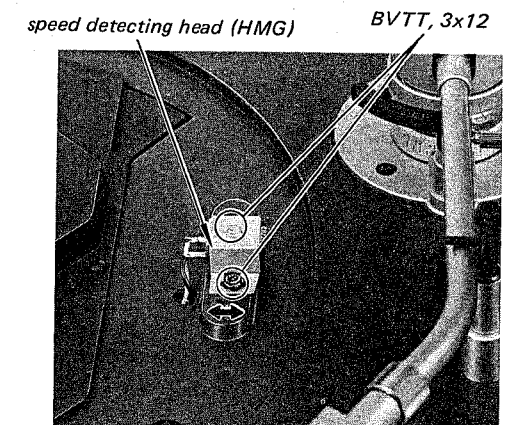
Power switch: ON

1. Adjust the position of the head so that the VTVM reading is more than 15 mV ac at $33\frac{1}{3}$ rpm.
2. Make sure that the head does not touch the turntable and tighten the screws securely.

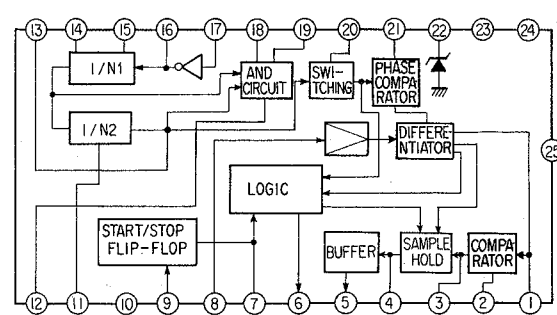
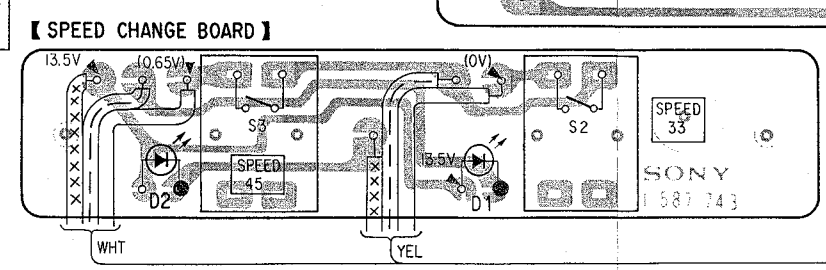
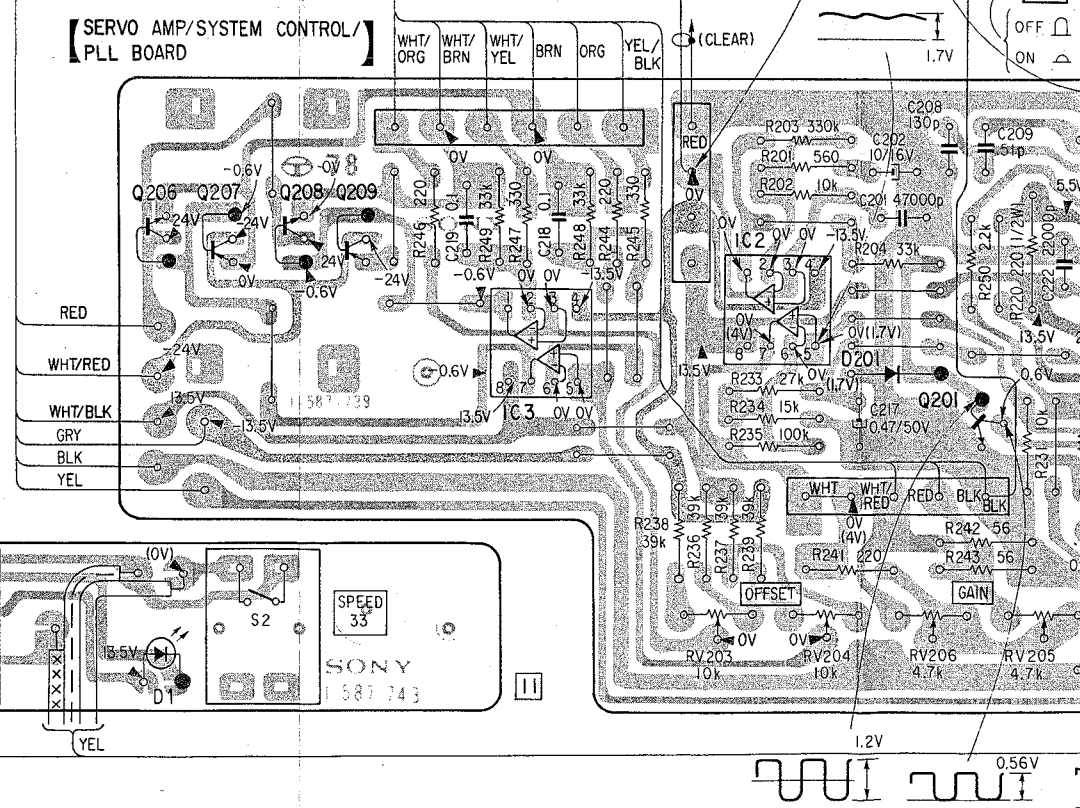
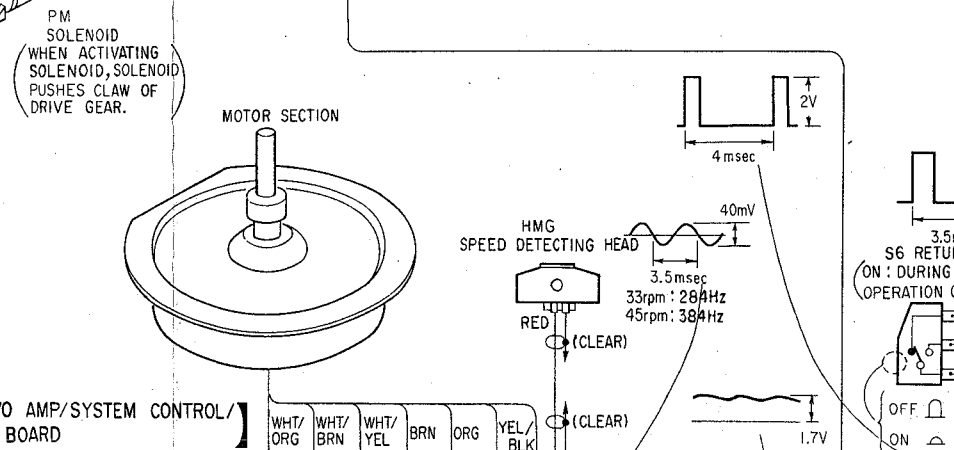
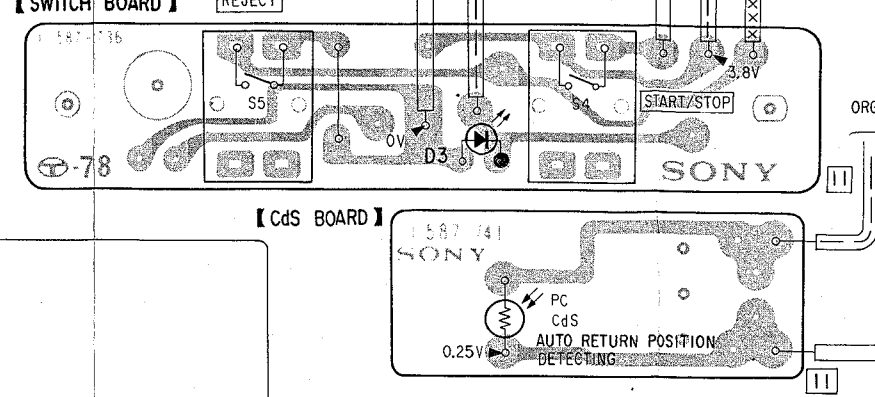
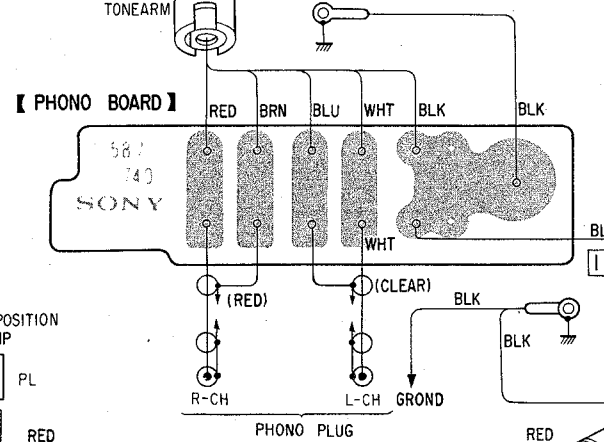
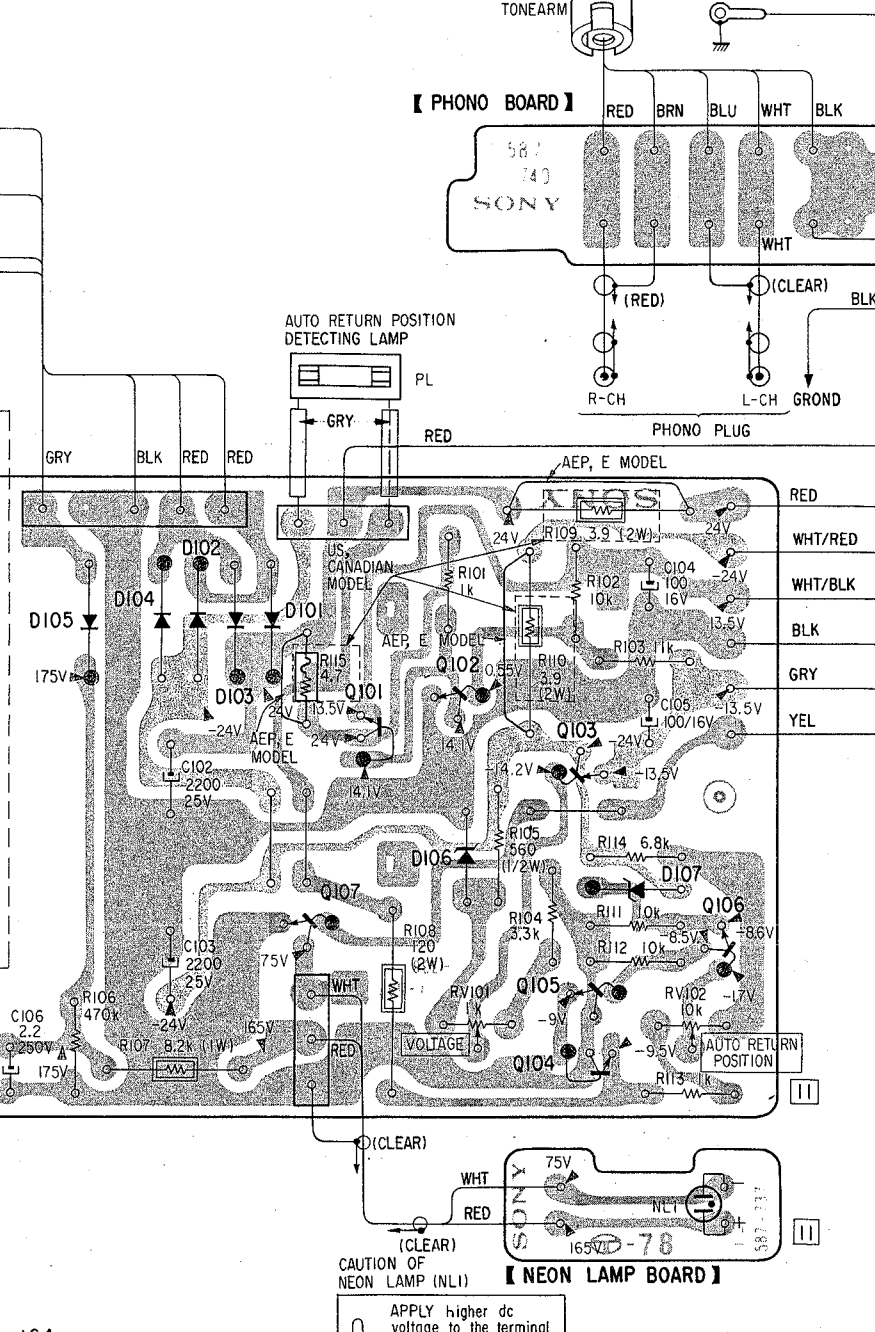
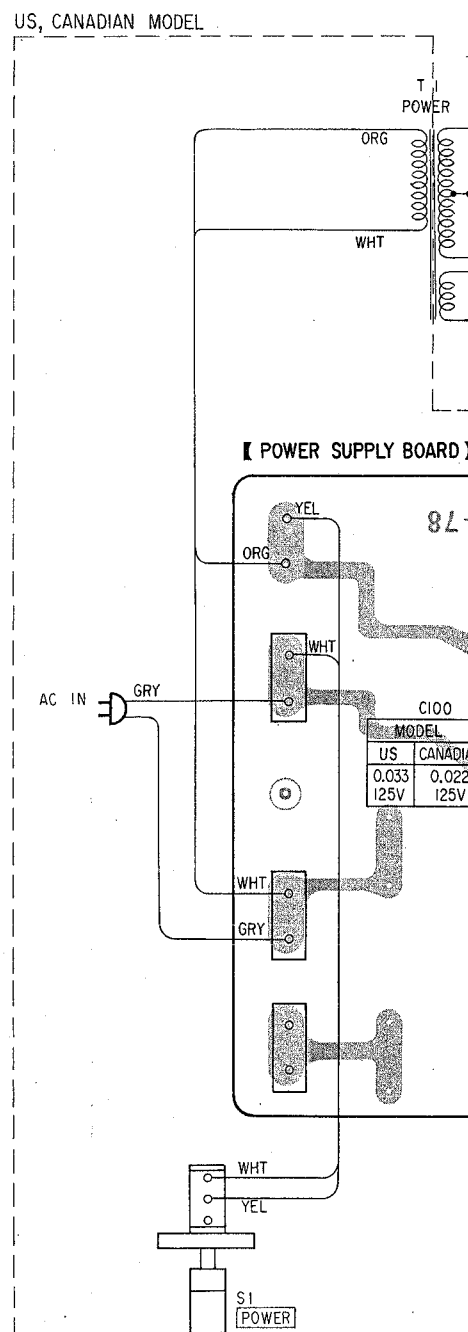
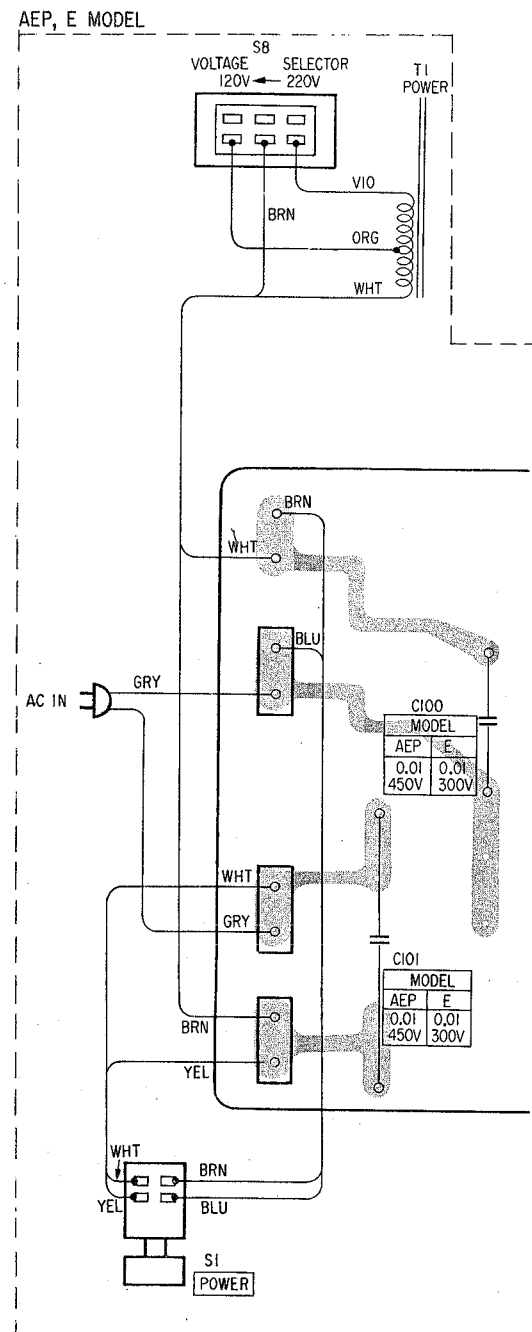
Note: The clearance between the magnet coated rim and the speed detecting head is more than 0.3 mm.



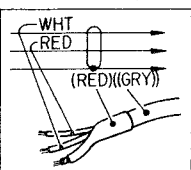
—Adjustment Location—



4-1. MOUNTING DIAGRAM

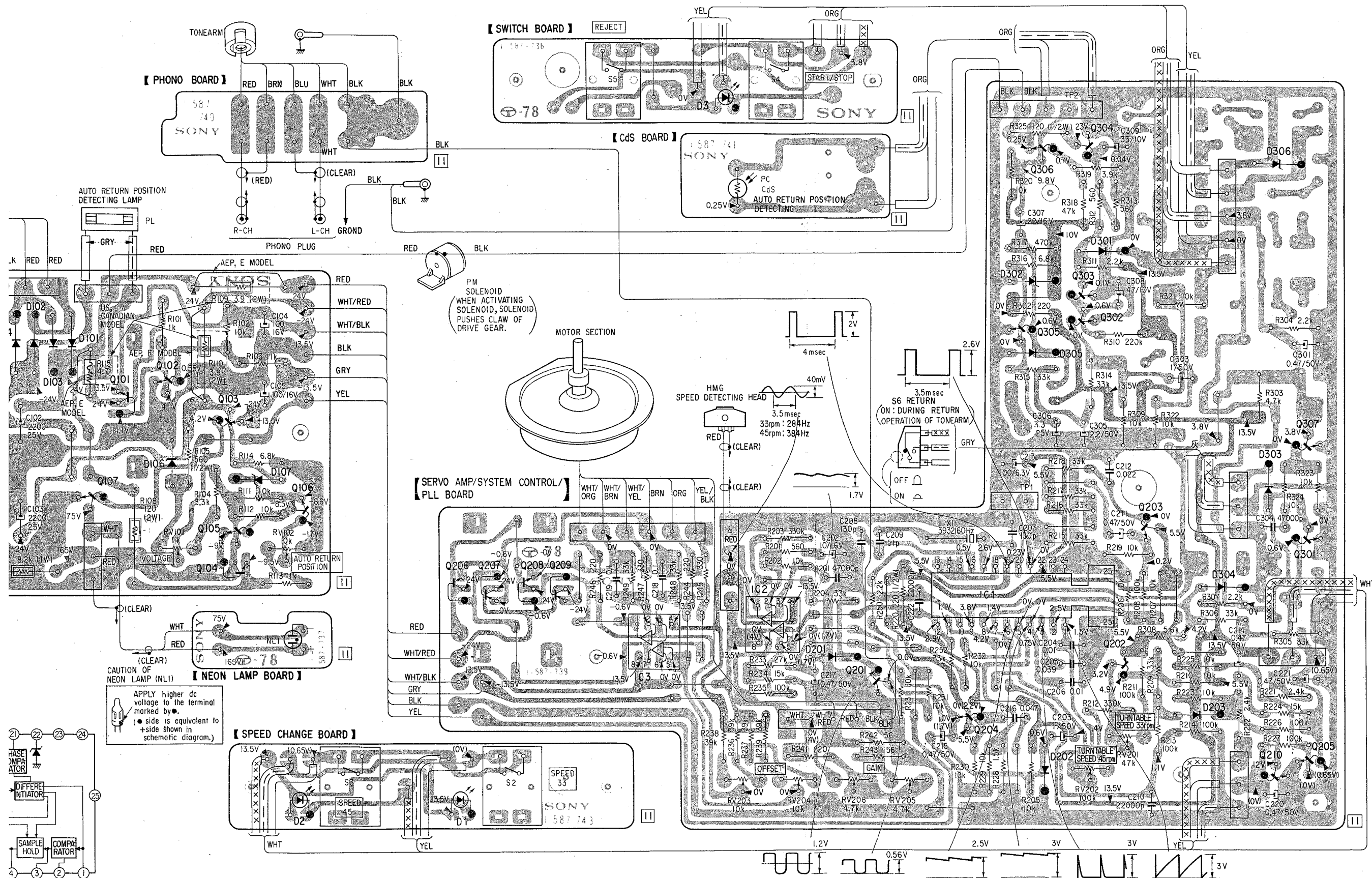


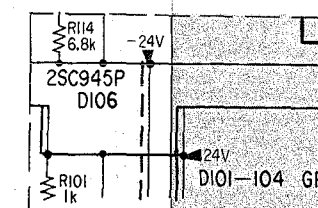
- B+ pattern
- B- pattern
- parts extracted from the component side.
- Color code of sleeving over the end of the jacket.



Q	IC	107	101	102	103,105	106	206	207	208	209	IC3	IC2	201
D		105	104,102,103,101	106	107	2					3		201

D E F G H I J K

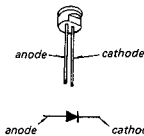
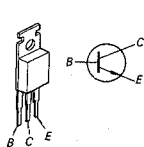




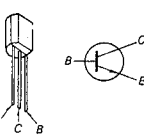
• Replacement Semiconductors

For replacement, use semiconductors except in ().

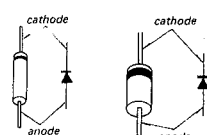
Q101, 104
Q206, 208 2SC1061(2SC1419C) D1-3: SLP24B



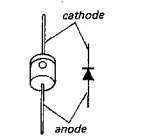
Q102, 105
Q106, 201
Q203-205
Q210
Q301-307 2SC1364(2SC945P)



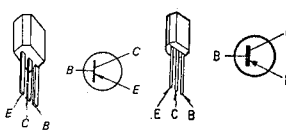
D101-104: 10E2(GP08)



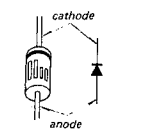
D105: 10D6(SIB01-06)



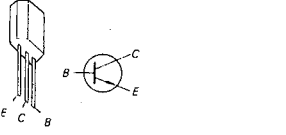
Q103: 2SA678(2SA844)



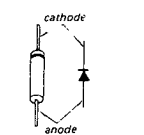
D106: EQB01-15(EQA01-15)
D107: EQB01-06(EQA01-06)
D302: EQB01-11Z(EQA01-11R)



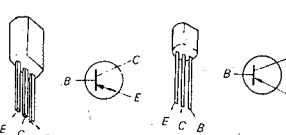
Q107: 2SC926A



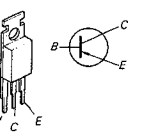
D201-203
D301
D303-305
D307
D306: RD4.3E(RD3.9E)



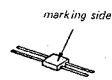
Q202: 2SA678(2SA733P)



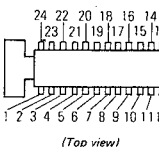
Q207, 209: 2SA671(2SA755C)



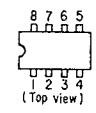
H1, 2: 5GF-MS-07F



IC1: CX193



IC2, 3: μ PC4557C



SECTION 5
EXPLODED VIEWS

5-1.

A

B

C

(1)

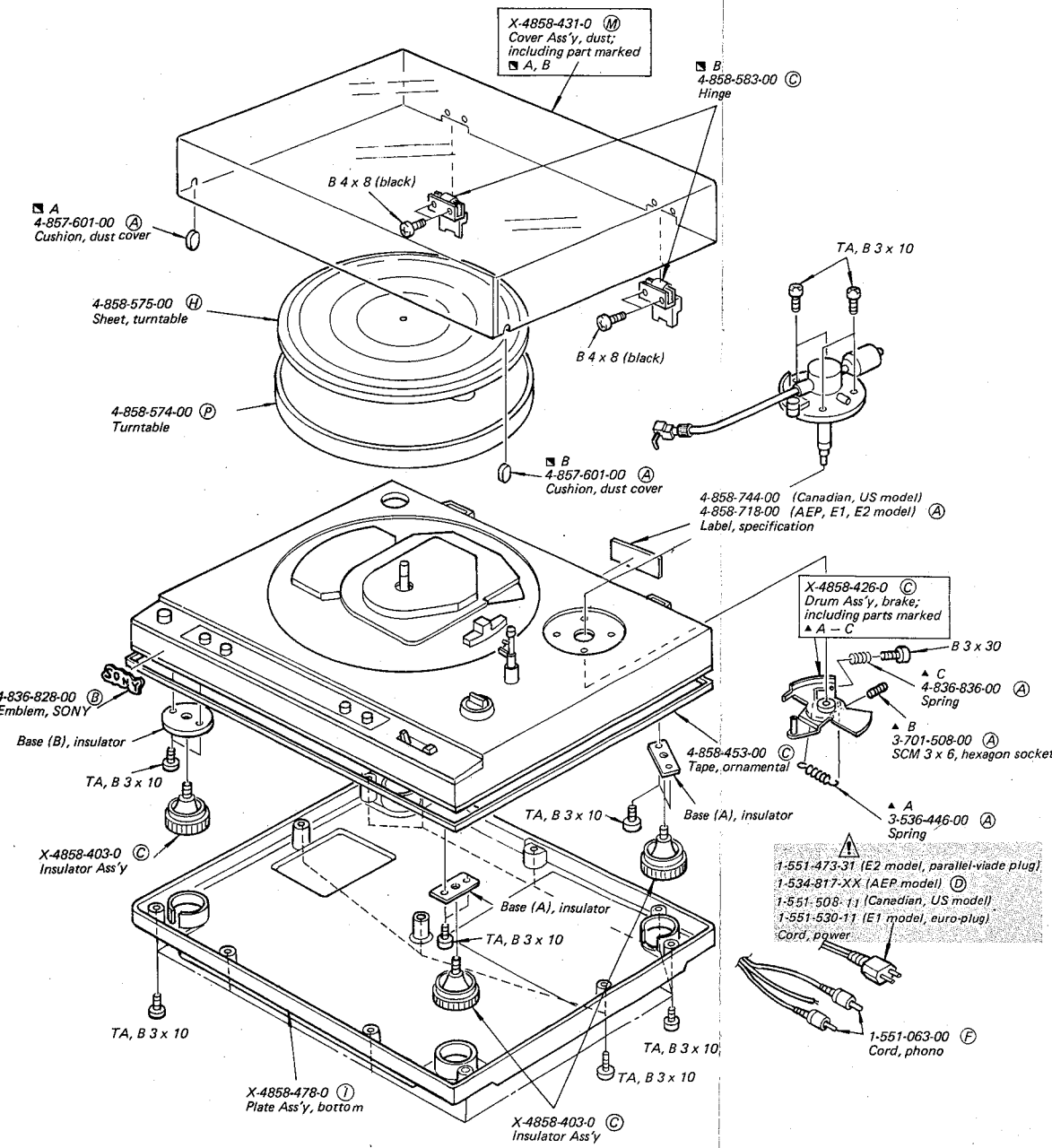
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- Circled letters (A to Z) are applicable to European models only.

1

2

3

4



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

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

5-2.

A

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- Circled letters (A to Z) are applicable to European models only.

1

2

3

4

4-844-084-00 (A) Pad, button

Complete Circuit Board speed change

1-552-174-00 (A) Switch, keyboard SPEED (S2, 3)

1-552-530-00 (C) 1-552-580-11 (A) Switch, pushbutton

Note: The part

SECTION 5

EXPLODED VIEWS

5-1.

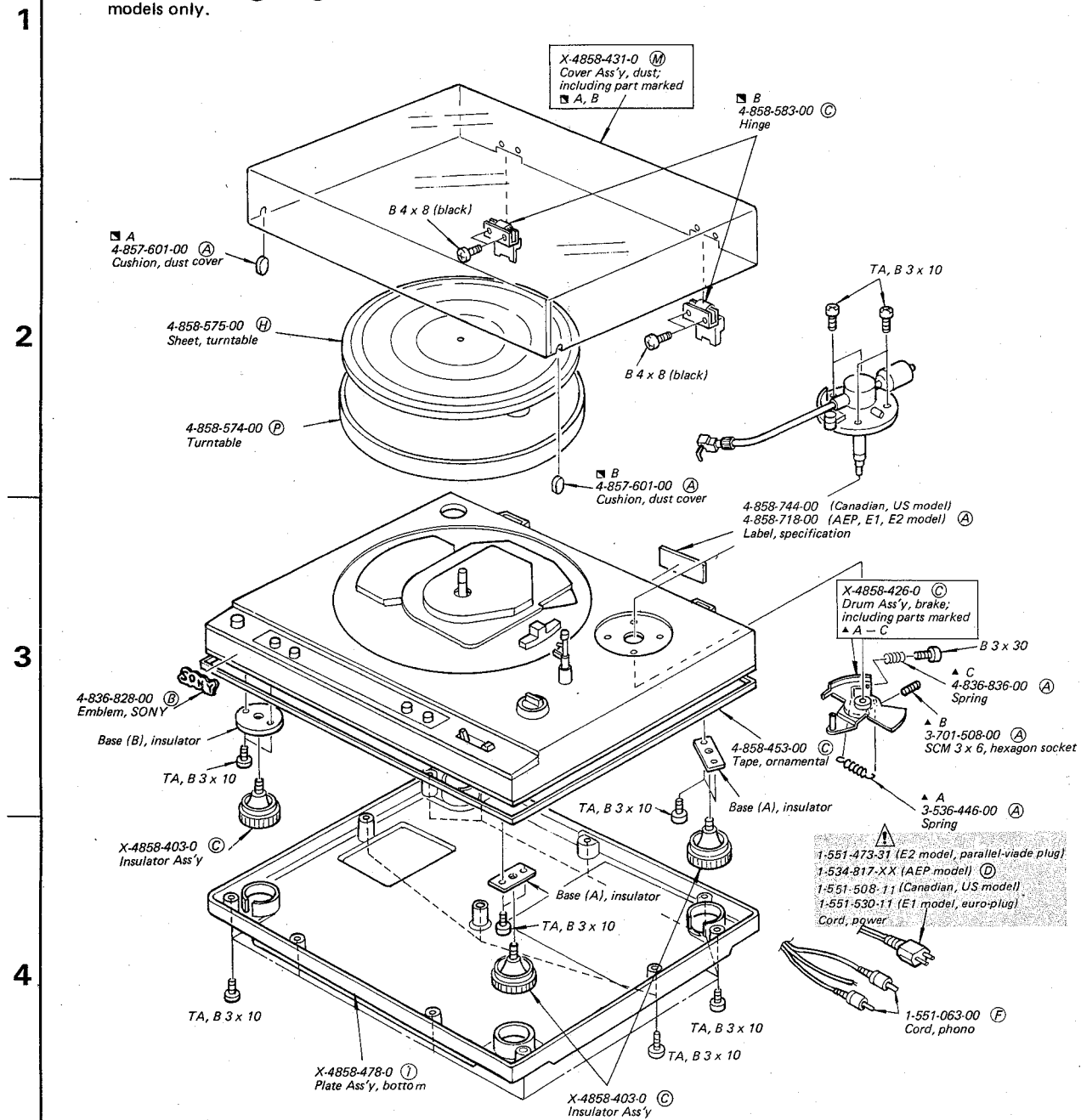
A

B

C

(1)

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- Circled letters (**A**) to (**Z**) are applicable to European models only.



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

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

5-2.

A

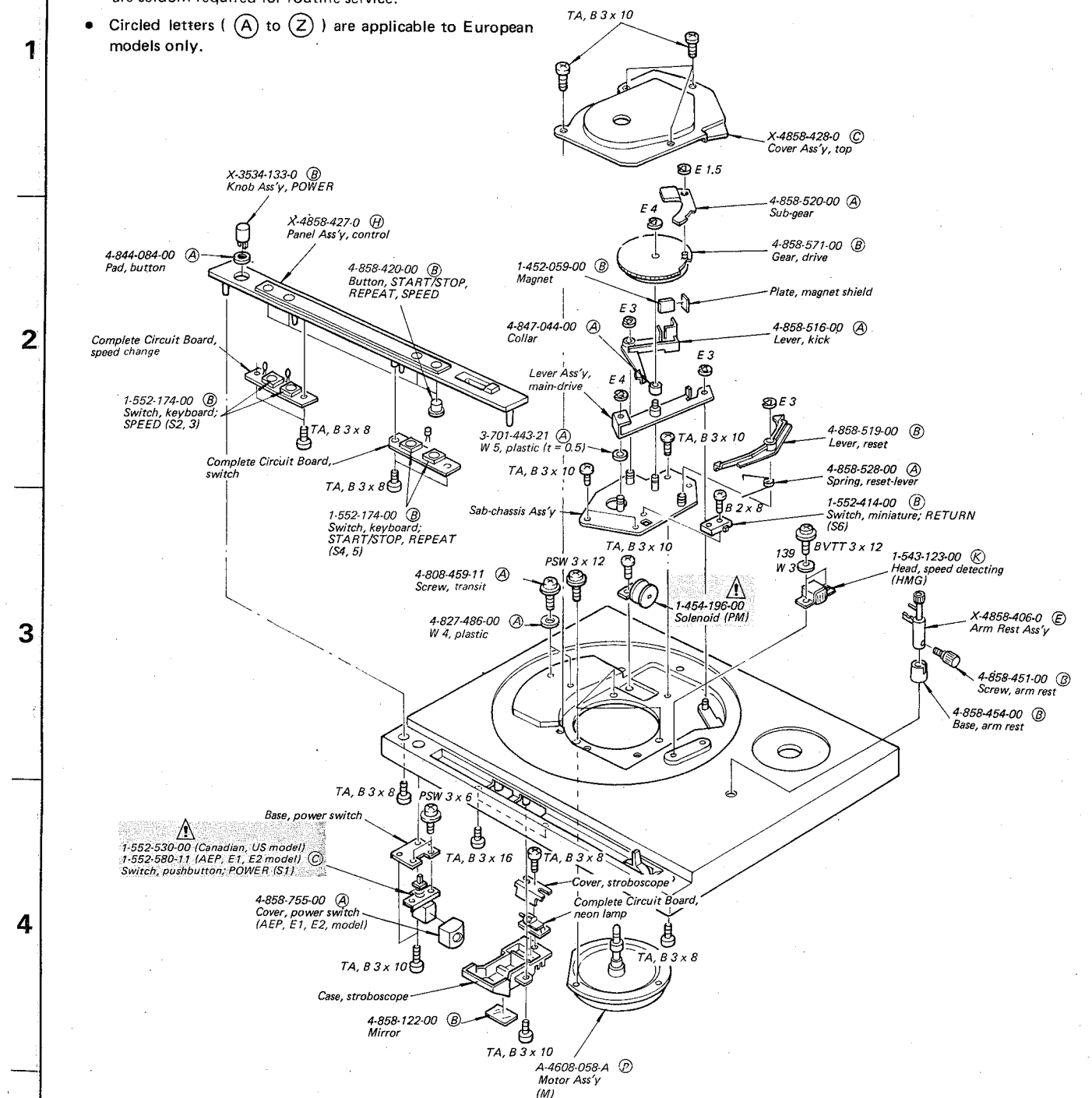
B

C

D

(2)

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- Circled letters (**A** to **Z**) are applicable to European models only.



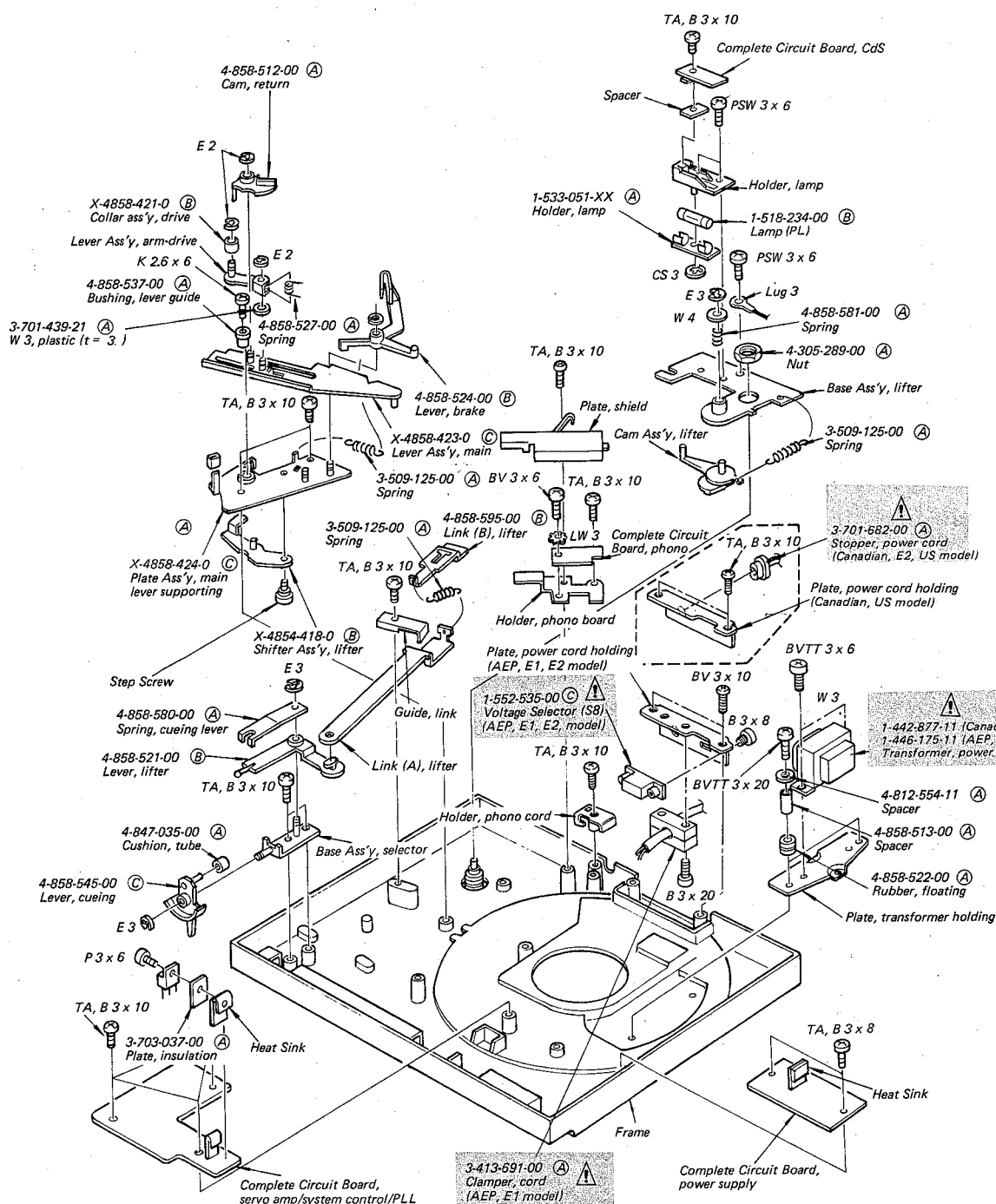
Note: The components identified by shading and mark  are critical for safety. Replace only with part number specified.

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

5-3.

(3)

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- Circled letters (**A** to **Z**) are applicable to European models only.



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

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

5-4.

A

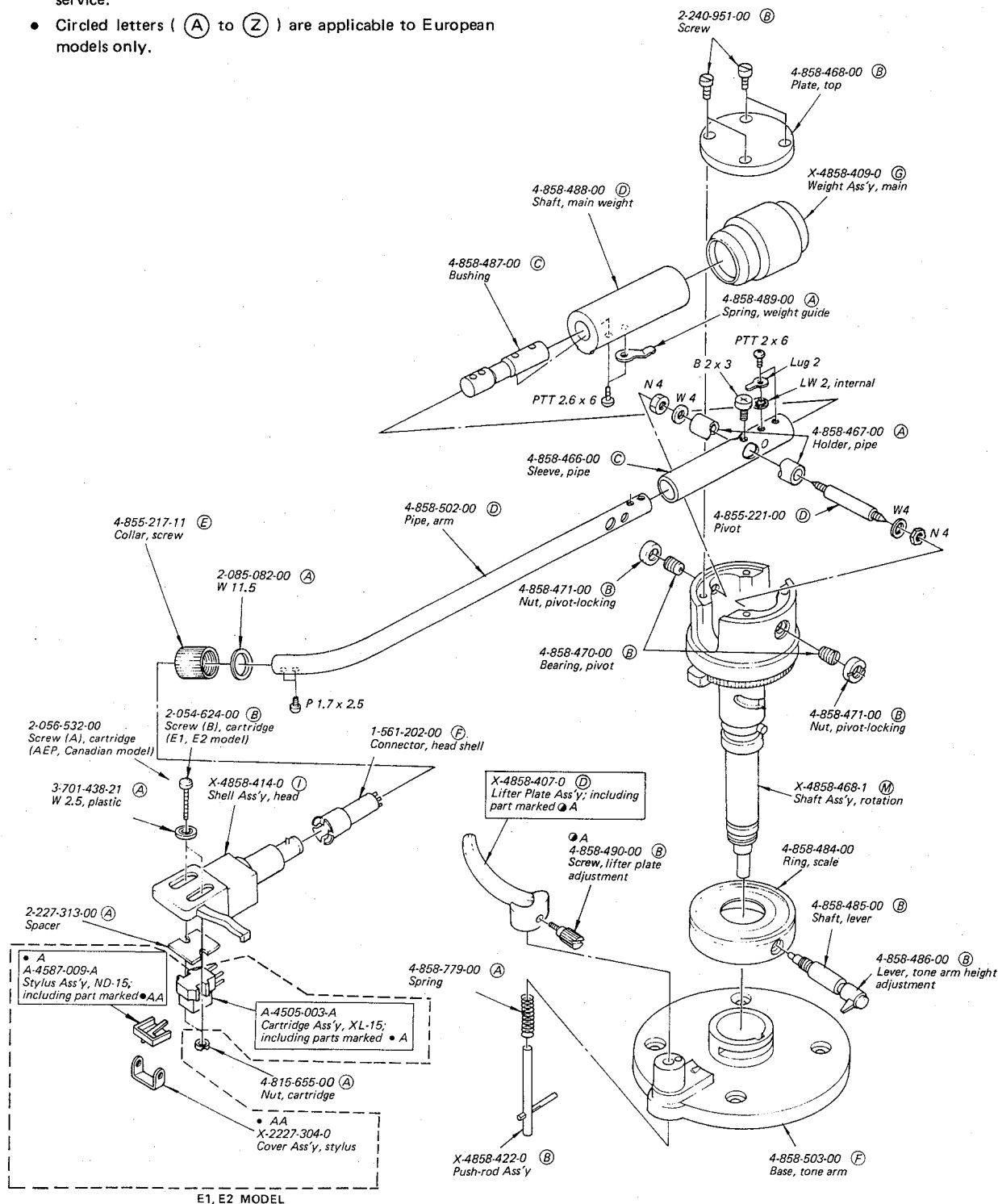
B

C

D

(4)

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- Circled letters (A to Z) are applicable to European models only.



SECTION 6

ELECTRICAL PARTS LIST

• Circled letters (A) to (Z) are applicable to European models only.

5. ELECTRICAL PARTS LIST

Ref. No. Part No. Description

SEMICONDUCTORS

Transistors

⇒ Q101 8-729-316-12 (D) 2SC1061
 ⇒ Q102 8-729-663-47 (B) 2SC1364
 ⇒ Q103 8-727-788-00 (B) 2SA678
 ⇒ Q104 8-729-316-12 (D) 2SC1061
 ⇒ Q105, 106 8-729-663-47 (B) 2SC1364
 Q107 8-720-950-03 (C) 2SC926A

⇒ Q201 8-729-663-47 (B) 2SC1364
 ⇒ Q202 8-727-788-00 (B) 2SA678
 ⇒ Q203-205 8-729-663-47 (B) 2SC1364
 ⇒ Q206 8-729-316-12 (D) 2SC1061
 ⇒ Q207 8-729-317-12 (E) 2SA671
 ⇒ Q208 8-729-316-12 (D) 2SC1061
 ⇒ Q209 8-729-317-12 (E) 2SA671
 ⇒ Q210 8-729-663-47 (B) 2SC1364

⇒ Q301-307 8-729-663-47 (B) 2SC1364

ICs

IC1 8-751-930-00 (K) CX193
 IC2, 3 8-759-145-57 (C) μ PC4557C

Diodes

D1-3 8-719-900-24 (C) SLP24B

⇒ D101-104 8-719-200-02 (B) 10E2
 ⇒ D105 8-719-210-06 (B) 10D6
 ⇒ D106 8-719-931-15 (B) EQB01-15
 ⇒ D107 8-719-931-06 (B) EQB01-06

⇒ D201-203 8-719-815-55 (B) 1S1555

⇒ D301 8-719-815-55 (B) 1S1555
 ⇒ D302 8-719-930-11 (B) EQB01-11Z
 ⇒ D303-305 8-719-815-55 (B) 1S1555
 ⇒ D306 8-719-143-07 (B) RD4.3E
 ⇒ D307 8-719-815-55 (B) 1S1555

H1, H2 8-719-905-07 (D) 5GF-MS-07F

TRANSFORMERS

T1 1-442-877-11 Transformer, power
 (Canadian, US model)
 T1 1-446-175-11 (L) Transformer, power
 (AEP, E1, E2 model)

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

• ⇒ : Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Ref. No. Part No. Description

CAPACITORS

• All capacitors are in μ F and ceramic unless otherwise noted. 50WV or less are not indicated except for electrolytics. p : μ F, elect : electrolytic.

C100 1-108-750-11 0.033 125V mylar (US model)
 C100 1-130-098-00 0.022 125V polyethylene
 (Canadian model)
 C100, 101 1-115-148-00 (C) 0.01 451V paper
 (AEP model)
 C100, 101 1-108-779-00 0.01 300V polyethylene
 (E1/E2 model)
 C102, 103 1-123-047-00 (B) 2200 32V elect
 C104, 105 1-121-415-00 (A) 100 16V elect
 C106 1-123-027-00 (B) 2.2 250V elect

C201 1-101-925-00 (A) 47,000p
 C202 1-121-651-00 (A) 10 16V elect
 C203 1-121-391-00 (A) 1 50V elect
 C204 1-108-804-00 (A) 0.01 mylar
 C205 1-108-360-00 (A) 0.039 mylar
 C206 1-108-804-00 (A) 0.01 mylar
 C207, 208 1-101-081-00 (A) 130p
 C209 1-102-491-00 (A) 51p
 C210 1-101-924-00 (A) 22,000p
 C211 1-121-726-00 (A) 0.47 50V elect
 C212 1-108-242-00 (A) 0.022 mylar
 C213 1-121-413-00 (A) 100 6.3V elect
 C214, 215 1-121-726-00 (A) 0.47 50V elect
 C216 1-108-812-00 (A) 0.047 mylar
 C217 1-121-726-00 (A) 0.47 50V elect
 C218, 219 1-108-870-00 (A) 0.1 mylar
 C220, 221 1-121-726-00 (A) 0.47 50V elect
 C222 1-101-924-00 (A) 22,000p

C301 1-121-726-00 (A) 0.47 50V elect
 C303 1-121-391-00 (A) 1 50V elect
 C304 1-101-925-00 (A) 47,000p
 C305 1-121-450-00 (A) 2.2 50V elect
 C306 1-121-392-00 (A) 3.3 25V elect
 C307 1-121-726-00 (A) 22 16V elect
 C308 1-121-352-00 (A) 47 10V elect
 C309 1-121-402-00 (A) 33 10V elect

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

Ref. No. Part No. Description

RESISTORS

• All resistors are in ohms. Common $\frac{1}{4}$ W carbon resistors are omitted. Refer to the list on the last page for their part numbers.

All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

k Ω : 1000 Ω , M Ω : 1000 k Ω

R105 1-244-867-00 (A) 560 $\frac{1}{2}$ W carbon
 R107 1-213-154-00 (B) 8.2K 1 W metal oxide
 (nonflammable)
 R108 1-206-642-00 (A) 120 2 W metal oxide
 (nonflammable)
 R109, 110 1-212-948-00 3.9 $\frac{1}{2}$ W fusible
 (Canadian, US model)
 R115 1-217-383-00 (B) 4.7 $\frac{1}{4}$ W fusible
 (Canadian, US model)
 R220 1-244-857-00 (A) 220 $\frac{1}{2}$ W carbon
 R325 1-244-851-00 (A) 120 $\frac{1}{2}$ W
 RV101 1-244-631-00 (B) 1K adjustable VOLTAGE
 RV102 1-244-645-XX (B) 10K adjustable AUTO RETURN
 RV201 1-224-636-00 (A) 47K adjustable SPEED
 RV202 1-224-648-XX (B) 100K adjustable SPEED
 RV203, 204 1-224-645-XX (B) 10K adjustable OFFSET
 RV205, 206 1-224-633-00 (B) 4.7K adjustable GAIN

SWITCHES

S1 1-552-530-00 Push button, POWER
 (Canadian, US model)
 S1 1-552-580-11 (C) Push button, POWER
 (AEP, E1, E2 model)
 S2-5 1-552-174-00 (B) Keyboard, SPEED,
 START/STOP, REPEAT
 S6 1-552-414-00 (B) Miniature, RETURN

S8 1-552-535-00 (C) Voltage Selector
 (AEP, E1, E2 model)

MISCELLANEOUS

M A-4608-058-A (P) Motor Ass'y.
 NL1 1-519-152-00 (B) Lamp, neon
 HMG 1-534-123-00 (K) Head, speed detecting
 PL 1-518-234-00 (B) Lamp 6V 100mA
 PM 1-454-196-00 (B) Solenoid
 X1 1-527-380-00 (C) Crystal 3932160Hz
 1-452-059-00 (B) Magnet
 1-533-051-XX (A) Holder, lamp

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

• Circled letters (A) to (Z) are applicable to European models only.

1-534-817-XX (D) Cord, power (AEP model)
 1-551-063-00 (F) Cord, phone
 1-551-473-31 Cord, power (E2 model)
 (parallel-blade plug)
 1-551-508-11 Cord, power (Canadian, US model)
 1-551-530-11 Cord, power (E1 model)
 (euro plug)
 1-561-202-00 (F) Connector, head shell
 1-800-652-00 (C) CdS

ACCESSORIES & PACKING MATERIALS

Part No. Description
 A-4505-003-A Cartridge Ass'y, XL-15
 (E1, E2 model)
 X-4858-409-0 (G) Weight Ass'y, main
 X-4858-414-0 (I) Shell Ass'y, head
 2-011-002-00 (A) Bag, plastic
 (AEP, Canadian model)
 2-054-624-00 Screw (B), cartridge
 (E1, E2 model)
 2-056-532-00 (B) Screw (A), cartridge
 (AEP, Canadian model)
 2-224-081-00 (B) Screw (E), cartridge
 (AEP, Canadian model)
 2-227-313-00 (A) Spacer
 3-701-438-21 (A) W2.6, plastic
 (AEP, Canadian, US model)
 3-701-613-00 (A) Bag, plastic (for extra weight)
 3-701-616-00 (A) Bag, plastic (for shell, main weight)
 3-701-630-00 (A) Bag, plastic
 3-701-634-00 (A) Bag, plastic
 3-701-806-00 (A) Adaptor, 45 rpm
 3-770-541-11 Manual, instruction
 (AEP, E1, E2 model)
 3-770-541-21 Manual, instruction
 (Canadian, US model)
 3-794-265-11 Sheet, XL-15 (E1, E2 model)
 3-794-288-31 Manual, instruction; French
 (Canadian model)
 4-815-655-00 (A) Nut (A), cartridge
 4-858-483-00 (C) Extra Weight
 4-858-585-00 (C) Cushion, right
 4-858-586-00 (C) Cushion, left
 4-858-587-00 (B) Case, accessory
 4-858-588-00 (C) Bag, protection
 4-858-590-00 (C) Box, accessory
 4-858-593-00 (A) Cushion, main weight shaft
 4-858-734-00 (F) Carton

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

1/4 WATT CARBON RESISTORS Ⓐ

Note: Circled letter Ⓐ is applicable to European models only.

Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.
1.0	1-246-401-00	10	1-246-425-00	100	1-246-449-00	1.0k	1-246-473-00	10k	1-246-497-00	100k	1-246-521-00
1.1	1-246-402-00	11	1-246-426-00	110	1-246-450-00	1.1k	1-246-474-00	11k	1-246-498-00	110k	1-246-522-00
1.2	1-246-403-00	12	1-246-427-00	120	1-246-451-00	1.2k	1-246-475-00	12k	1-246-499-00	120k	1-246-523-00
1.3	1-246-404-00	13	1-246-428-00	130	1-246-452-00	1.3k	1-246-476-00	13k	1-246-500-00	130k	1-246-524-00
1.5	1-246-405-00	15	1-246-429-00	150	1-246-453-00	1.5k	1-246-477-00	15k	1-246-501-00	150k	1-246-525-00
1.6	1-246-406-00	16	1-246-430-00	160	1-246-454-00	1.6k	1-246-478-00	16k	1-246-502-00	160k	1-246-526-00
1.8	1-246-407-00	18	1-246-431-00	180	1-246-455-00	1.8k	1-246-479-00	18k	1-246-503-00	180k	1-246-527-00
2.0	1-246-408-00	20	1-246-432-00	200	1-246-456-00	2.0k	1-246-480-00	20k	1-246-504-00	200k	1-246-528-00
2.2	1-246-409-00	22	1-246-433-00	220	1-246-457-00	2.2k	1-246-481-00	22k	1-246-505-00	220k	1-246-529-00
2.4	1-246-410-00	24	1-246-434-00	240	1-246-458-00	2.4k	1-246-482-00	24k	1-246-506-00	240k	1-246-530-00
2.7	1-246-411-00	27	1-246-435-00	270	1-246-459-00	2.7k	1-246-483-00	27k	1-246-507-00	270k	1-246-531-00
3.0	1-246-412-00	30	1-246-436-00	300	1-246-460-00	3.0k	1-246-484-00	30k	1-246-508-00	300k	1-246-532-00
3.3	1-246-413-00	33	1-246-437-00	330	1-246-461-00	3.3k	1-246-485-00	33k	1-246-509-00	330k	1-246-533-00
3.6	1-246-414-00	36	1-246-438-00	360	1-246-462-00	3.6k	1-246-486-00	36k	1-246-510-00	360k	1-246-534-00
3.9	1-246-415-00	39	1-246-439-00	390	1-246-463-00	3.9k	1-246-487-00	39k	1-246-511-00	390k	1-246-535-00
4.3	1-246-416-00	43	1-246-440-00	430	1-246-464-00	4.3k	1-246-488-00	43k	1-246-512-00	430k	1-246-536-00
4.7	1-246-417-00	47	1-246-441-00	470	1-246-465-00	4.7k	1-246-489-00	47k	1-246-513-00	470k	1-246-537-00
5.1	1-246-418-00	51	1-246-442-00	510	1-246-466-00	5.1k	1-246-490-00	51k	1-246-514-00	510k	1-246-538-00
5.6	1-246-419-00	56	1-246-443-00	560	1-246-467-00	5.6k	1-246-491-00	56k	1-246-515-00	560k	1-246-539-00
6.2	1-246-420-00	62	1-246-444-00	620	1-246-468-00	6.2k	1-246-492-00	62k	1-246-516-00	620k	1-246-540-00
6.8	1-246-421-00	68	1-246-445-00	680	1-246-469-00	6.8k	1-246-493-00	68k	1-246-517-00	680k	1-246-541-00
7.5	1-246-422-00	75	1-246-446-00	750	1-246-470-00	7.5k	1-246-494-00	75k	1-246-518-00	750k	1-246-542-00
8.2	1-246-423-00	82	1-246-447-00	820	1-246-471-00	8.2k	1-246-495-00	82k	1-246-519-00	820k	1-246-543-00
9.1	1-246-424-00	91	1-246-448-00	910	1-246-472-00	9.1k	1-246-496-00	91k	1-246-520-00	910k	1-246-544-00

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
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	

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		brazer-head screw	