

60913

# PS-5520



*USA Model  
AEP Model  
UK Model  
GEP Model  
NEP Model  
Canada Model*

## STEREO TURNTABLE SYSTEM

### SPECIFICATIONS

#### GENERAL

**Speeds:** 33 1/3, 45 rpm

**Turntable drive system:** belt-drive

**Wow and flutter:** Less than 0.1% rms  
Less than 0.12%, weighted (DIN-45507)

**Signal-to-noise ratio:** Greater than 43 dB  
Greater than 61 dB, weighted (DIN-45544)

**Power consumption:** 14 watts

**Power requirements:** 120V, 60 Hz ac  
(USA and Canada Model)  
110, 127, 220 and 240V,  
50/60 Hz ac  
(AEP, GEP, NEP and UK Model)

**Dimensions:** 450 (w) x 175 (h) x 395 (d) mm  
17 3/4 (w) x 6 7/8 (h) x 15 9/16 (d) inches

**Net weight:** 8.5 kg (18 lb 11 oz)

**Shipping weight:** 11 kg (24 lb 3 oz)

#### TONE-ARM

**Type:** Static balanced

**Stylus-force adjustment range:** 0 to 3g, 0.25g increments

**Anti-skating force compensation range:** 1.5 ~ 3g, 0.5g increments

**Cartridge weight range:** 4 to 14g

#### CARTRIDGE VM-22GA (AEP, GEP and UK Model only)

**Output voltage:** 4 mV

**Load impedance:** 50 k ohms

**Frequency response:** 15 Hz to 22 kHz

**Optimum stylus force:** 1.5 to 2.5g

**Replacement stylus:** ND-126GA

# SONY®

## SERVICE MANUAL

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# SECTION 1

## TECHNICAL DESCRIPTION

### 1-1. SPECIFICATIONS

#### General

Speeds:	33 1/3, 45 rpm
Turntable drive system:	belt-drive
Wow and flutter:	Less than 0.1 % rms Less than 0.12 %, weighted (DIN-45507)
Signal-to-noise ratio:	Greater than 43 dB Greater than 61 dB, weighted (DIN-45544)
Turntable platter:	300 mm (11 13/16 ") dia, 1 kg (2 lb 3 oz) diecasted aluminum
Power consumption:	14 watts
Power requirements:	120 V, 60 Hz ac (USA and Canada Model) 110, 127, 220 and 240 V, 50/60 Hz ac (AEP, GEP, NEP and UK Model)

Dimensions: 450 (w) x 175 (h) x 395 (d) mm  
17 3/4 (w) x 6 7/8 (h) x 15 9/16 (d) inches

Motor: 4-pole synchronous

Net weight: 8.5 kg (18 lb 11 oz)

Shipping weight: 11 kg (24 lb 3 oz)

#### Tone-arm

Type: Static balanced

Arm length: 294 mm (11 9/16 "), overall  
215 mm (8 15/32 "), pivot-to-stylus

Overhang: 15 mm (19/32 ")

Stylus-force adjustment range: 0 to 3 g, 0.25 g increments

Anti-skating force compensation range: 1.5 ~ 3 g, 0.5 g increments

Cartridge weight range: 4 to 14g

Shell-head weight: 10.5 g

**Cartridge VM-22GA (AEP, GEP and UK Model only)**

Output voltage: 4 mV

Load impedance: 50 k ohms

Frequency response: 15 Hz to 22 kHz

Channel separation: 25 dB at 1 kHz

Optimum stylus force: 1.5 to 2.5 g

Weight: 6.7 g

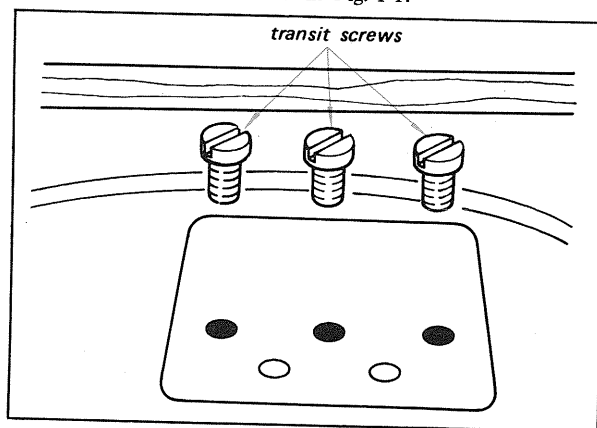
Replacement stylus: ND-126GA

### 1-2. OPERATING INSTRUCTIONS

#### Preparation

1. Remove the turntable as described in Procedure 2-3, and then remove the three transit screws from the turntable base so that the turntable base floats freely on its mounting springs.

**Note:** Place the removed screws in the container holes located on the caution label as shown in Fig. 1-1.



*Fig. 1-1. Transit screw preservation*

2. Apply proper stylus force and anti-skating force by using the applied counter weight and bias weight as described in Procedure 3-7.

#### CAUTION

Do not try to move the Speed Selector when the Operating Lever is placed in its stop position [1].

#### Procedure:

**Note:** Numbers in brackets referred to below are those used on Fig. 1-2 (a).

#### Automatic Play

1. Place a record onto the turntable, and then set the Record-Size Selector (7) for the size of records to be played.

2. Set the Operating Lever (8) to START, and then move the Speed Selector (2) to the desired speed.
3. Now the turntable will start to revolve and at the same time the tone-arm will gradually lower. After playing the record, the tone-arm will return to the rest and the unit will shut off automatically.

## REJECT

1. To reject a record at any time when the unit is in operation, move the Operating Lever (8) to "REJECT". The tone-arm will return to the rest and the unit will shut off automatically.

## MANUAL Play

1. Place a record onto the turntable, and then set the Record-Size Selector (7) for the size of records to be played.
2. Set the Operating Lever (8) to MANUAL, and then move the Speed Selector (2) to the desired speed.
3. Move the tone-arm above the record to the desired point and lower it to the groove. At the end of the record the tone-arm will return to the rest and the unit will shut off automatically.

## REPEAT

To repeat a record, set the Operating Lever (8) to REPEAT. Repetition will continue as long as the Operating Lever (8) is set to this position.

## CUEING

In manual play, the cueing device may be used to place the tone-arm on the beginning of the record. The cueing device also can raise or lower the tone-arm at any desired point.

## 1-3. PRINCIPLES OF OPERATION

When servicing this player a knowledge of the principles of operation is useful, particularly when the cause of a fault is not obvious. To follow the action of the mechanism, disconnect the power supply and rotate the turntable by hand.

**Note:** Numbers in brackets referred to following items are those used on Fig. 1-2 (a) and Fig. 1-2 (b).

## Turntable Drive

The motor drives the turntable by means of a stepped pulley on the motor spindle and a rubber belt which connects the inner flange of the turntable and the pulley step corresponding to the setting of the Speed Selector. The turntable starts to revolve when the Operating Lever (8) is moved from its stop position [I] to any other position. The control cam (23) moves the starting lever (19) along with sub-starting lever (20) and shut-off lever (18). This releases the tension upon the motor on/off switch (12) supplying power to the motor.

## Speed Selector

When the Speed Selector (2) is moved, it pivots the sub-speed control lever (10) which engages with the main speed-control lever (1) which raises or lowers the drive belt. Note that the sub-speed control lever (10) is restricted by means of the stopper (11) linked to the shut-off lever (18) when the Operating Lever (8) is placed in its stop position [I].

## Automatic Trip Mechanism Started by Operating Lever

When the Operating Lever (8) is set to "START", the same movement of the control cam (23) which initiates the turntable drive also operates the trip mechanism. The starting lever (19), along with sub-starting lever (20) slides and it pushes the tension spring (14) attached to the trip pawl from the bottom towards the turntable center. The lug on the trip pawl enters the path of the striker (3) on the revolving turntable shaft. Both lugs collide and the trip pawl is swept along so that the main cam (17) is also rotated until its teeth engage with those on the turntable shaft. The main cam movement performs an automatic operation of tone-arm which will be described later.

Notice that at "START" mode, the main lever (27) traces the inner groove of the main cam by means of the track changeover lever (16) mounted on the main cam (17). This moves the ratchet lever (25), locking the shut-off lever (18). As a result, the motor on/off switch (12) is held closed as long

as the main lever (27) does not clear the ratchet lever (25).

At the end of the main cam cycle, the tab (15) on the main cam (17) pushes back the starting lever (19) along with the control cam (23), so the Operating Lever (8) returns to its stop position.

### Tone-arm Movement, Record-Size Selection

As the main cam (17) rotates, its track guides the pin on the main lever (27) and tone-arm return lever (21), causing the tone-arm lever assembly (29) to pivot and to raise the tone-arm lifting spindle. Notice that the main lever (27) presses the friction pin (30) mounted at the end of tone-arm return lever, the tone-arm lifting lever (26) and the record-size selector lever (24) at the same time to perform the proper tone-arm movement.

The tone-arm lowering position is controlled by the setting of the Record-Size Selector (7) which determines the position of record-size selector lever (24). This lever restricts the movement of tone-arm as the main lever (27) presses down it to the position where it meets the tone-arm restricting pin (28) mounted on the tone-arm lever assembly (29).

The tone-arm is swept inwards by means of the friction link between the tone-arm return lever (21) and tone-arm lever assembly (29) as shown in Fig. 1-3. Proper friction is obtained by pressing the friction pin (30) mounted at the end of tone-arm return lever (21) with the main lever (27).

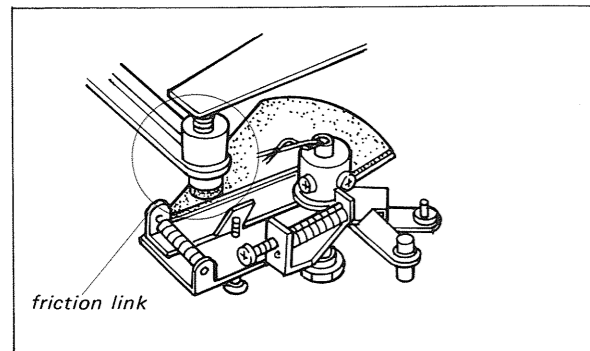


Fig. 1-3. Detail of friction link

The main cam (17) continues its movement and the main lever (27) returns to its initial position. Now the tone-arm lifting spindle gradually lowers due to

its hydraulic brake mechanism, thus lowering the tone-arm onto the record. At the same time, the record-size selector lever (24) is pulled upward disengaging from the tone-arm restricting pin (28) thereby allowing the tone-arm to track freely across the record. The main cam (17) completes the cycle and comes to rest when the gap in its teeth causes it to disengage itself from the turntable shaft.

### Automatic Trip Mechanism, Started by Record Lead-out Groove or Reject Movement

As the stylus tip enters the eccentric lead-out record groove, the tone-arm lever assembly (29) bears against the shut-off slide (22) which moves the trip pawl towards the turntable shaft as previously described. A premature change cycle is prevented by the striker on the boss tapping the trip pawl back as the tone-arm moves slowly inwards with the closely-spaced record groove until the acceleration imparted by the lead-out groove causes the trip pawl to move into the orbit of the striker. This reengages the teeth on the main cam (17) with those on the turntable shaft, thus rotating the cam to start another changing cycle. Reject operation is performed by moving the trip pawl into the orbit of the striker. When the Operating Lever is set to REJECT the starting lever (19) pushes the trip-pawl tension spring (14) inwards. As a result, the returning cycle is started.

Notice that the main lever (27) traces the outer groove in the main cam (17). This permits the ratchet lever (25) to release the shut-off lever (18), thereby cutting off power from the motor. Meanwhile, the tone-arm return lever (21) pivots, returning the tone-arm back to its rest.

### Manual Operation

When the Operating Lever (8) is set to "MANUAL", the same movement of the control cam (23) which initiates the turntable drive is performed. Notice that the ratchet lever (25) does not lock the shut-off lever (18).

### Repeat Operation

In repeat mode, the main lever (27) is forced to trace the inner groove of the main cam (17) by means of the pin (13) on the sub-starting lever. This determines the movement of the track changeover lever along with the main cam's revolution.

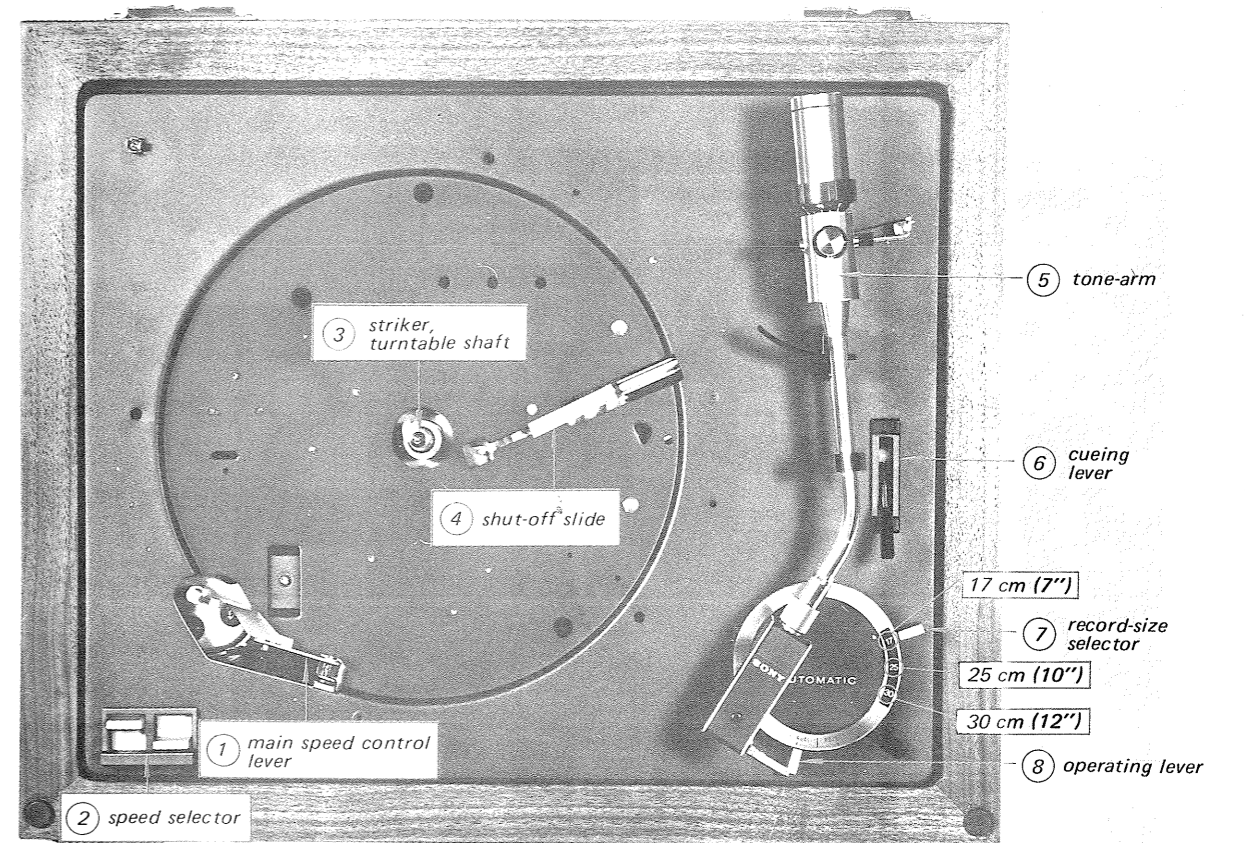


Fig. 1-2 (a). Top view

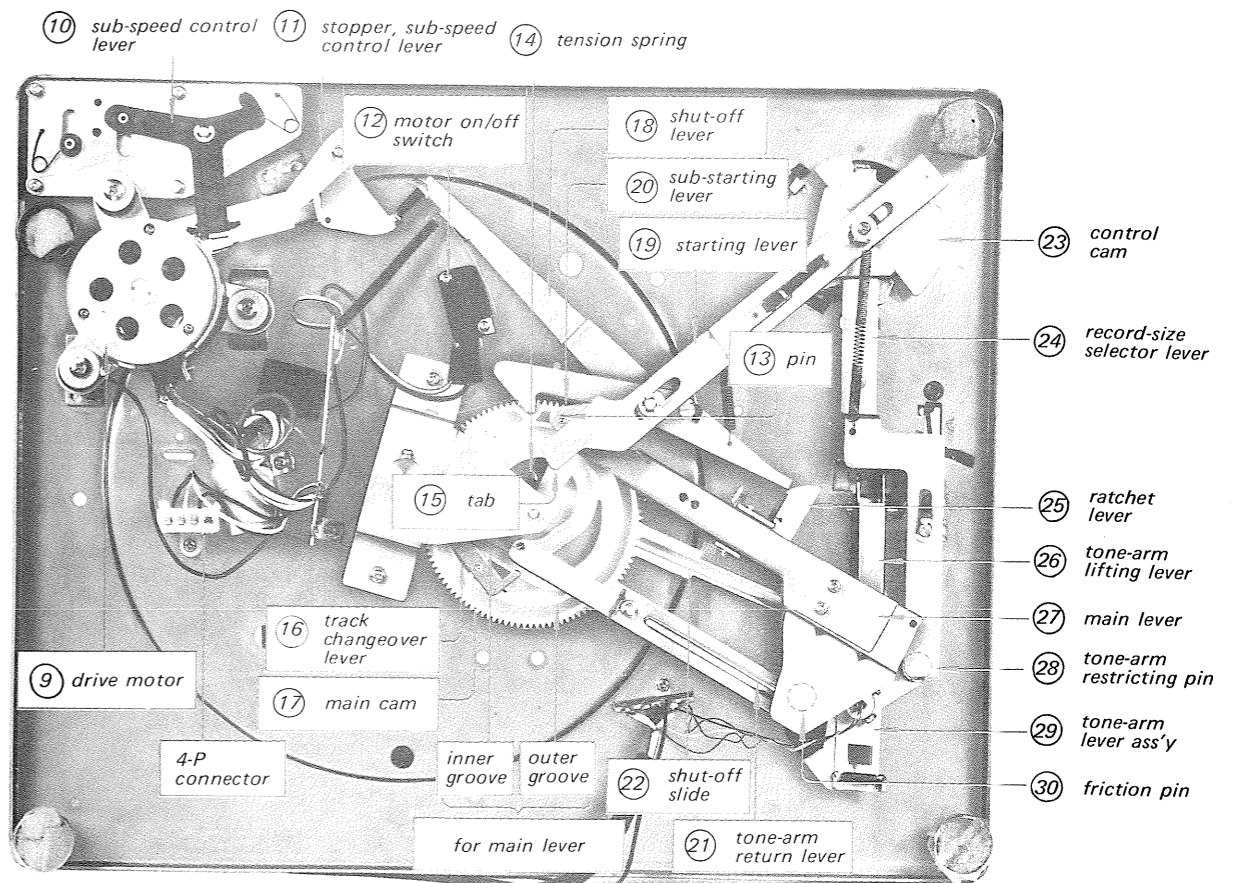


Fig. 1-2 (b). Bottom view (AEP, GEP, NEP, UK and USA Model)

## SECTION 2 DISASSEMBLY AND REPLACEMENT

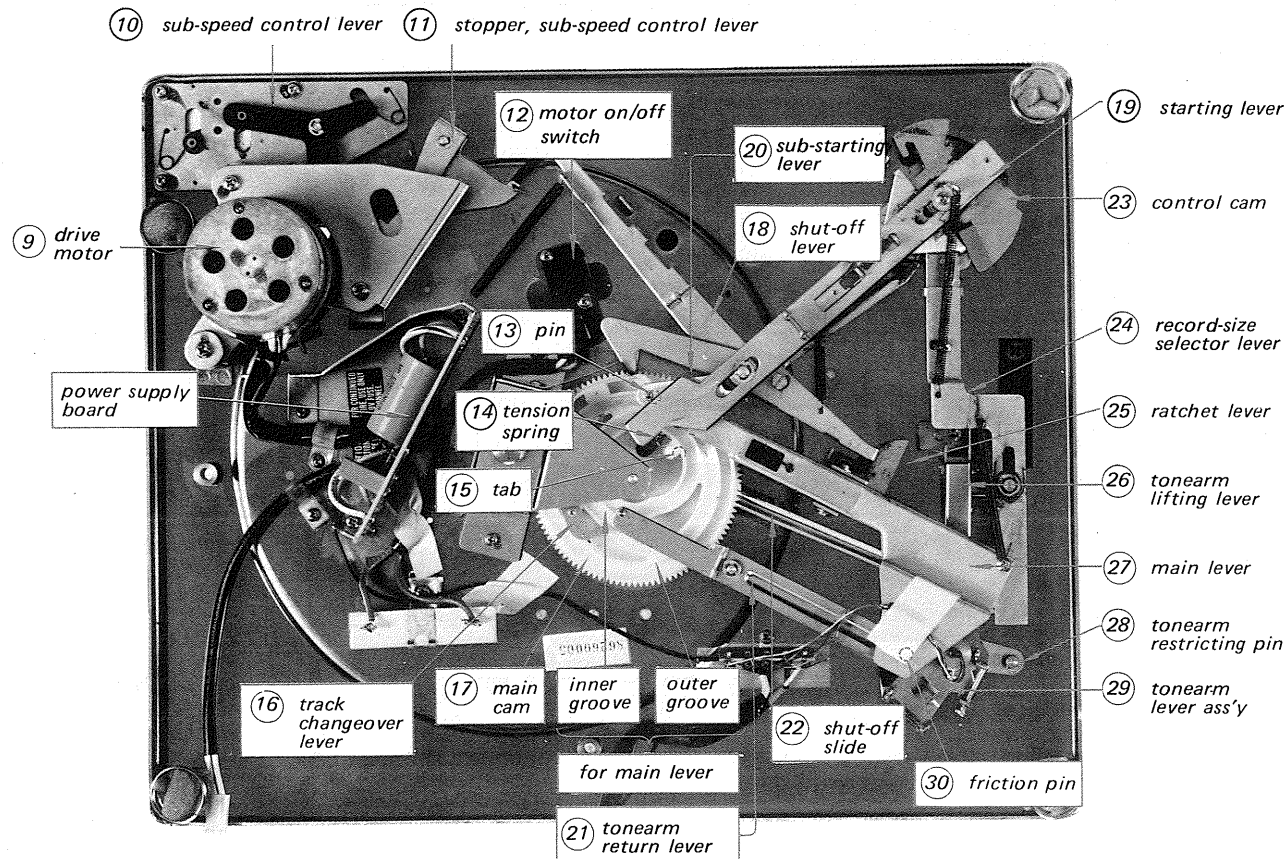


Fig. 1-2 (b). Bottom view (Canada Model)

### WARNING

Unplug the ac power cord before starting any disassembly or replacement procedures.

### CAUTION

To avoid damage to the stylus while performing the following procedures, make sure that the stylus protecting cover is in place.

### 2-1. TOOLS REQUIRED

The following tools are required to perform disassembly and replacement procedures on the PS-5520.

- Screwdriver, Phillips-head
- Jeweler's screwdriver
- Pliers, long-nose
- Wrench, adjustable
- Soldering iron, 40 to 50 watts

### 2-2. TOP COVER REMOVAL

1. Open the top cover, and then push the upper hinge toward the left to release the lock as shown in Fig. 2-1.
2. Carefully lift the top cover straight up. This frees the top cover.

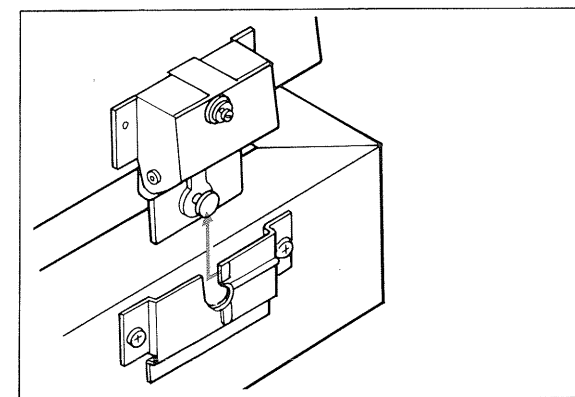


Fig. 2-1. Top cover removal

### 2-3. TURNTABLE REMOVAL

1. Remove the rubber mat from the turntable.

2. Insert both your thumbs into the two holes of the turntable, and hook the drive belt with left thumb as shown in Fig. 2-2.  
Fig. 2-3.
3. Lift the turntable straight up.

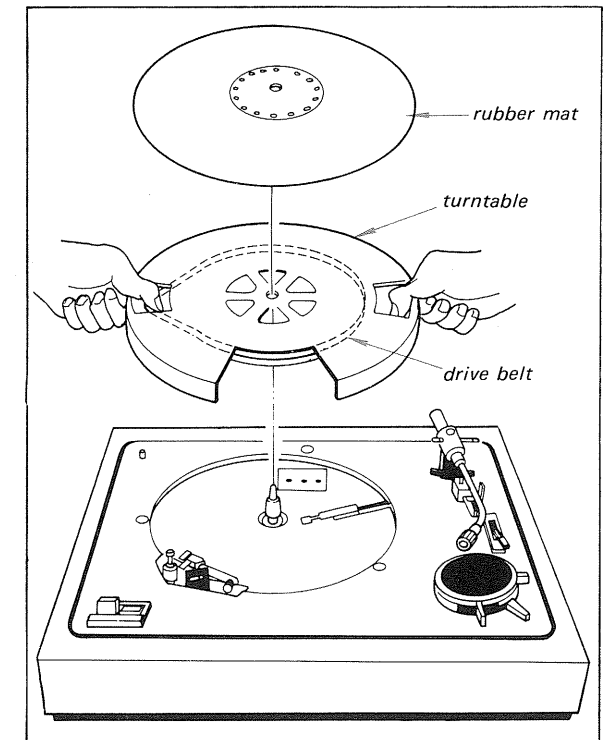


Fig. 2-2. Turntable removal

### 2-4. TURNTABLE BASE REMOVAL

1. Remove the top cover and turntable as described in Procedures 2-2 and 2-3.
2. Remove the three transit screws securing the turntable base to the wooden case, and then remove the two step screws securing the turntable base to the wooden case as shown in Fig. 2-3.
3. Carefully lift the turntable base while disconnecting the 4-p or 2-p connector from bottom of the turntable, and then place the turntable on a protective pad.

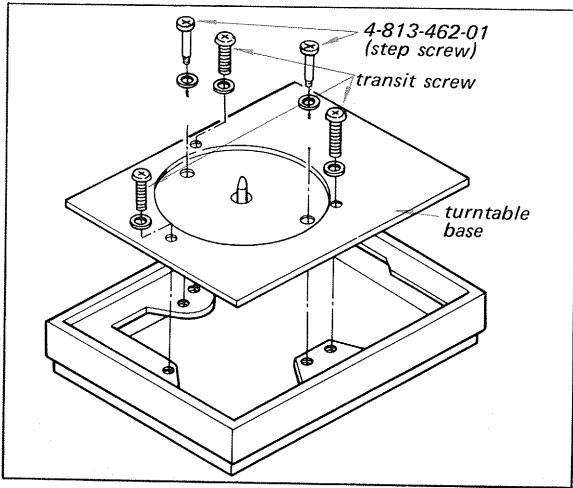


Fig. 2-3. Turntable base removal

**2-5. STYLUS TIP REPLACEMENT (AEP, GEP and UK Model only)**

1. Pull out the worn stylus tip and install the replacement tip as shown in Fig. 2-4.

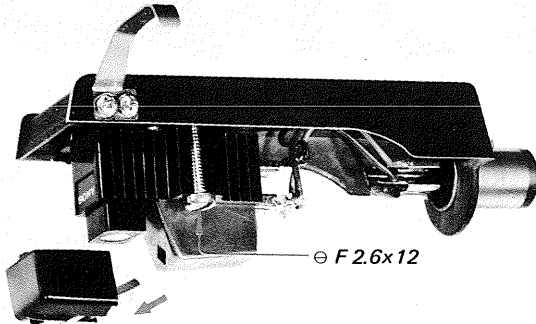


Fig. 2-4. Stylus tip and cartridge removal

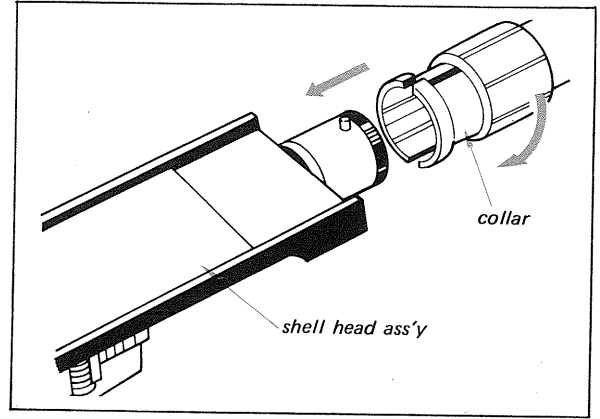


Fig. 2-5. Shell head removal

3. Remove the dust cap and cartridge, and then install the replacement cartridge. Refer to the wiring diagram in Fig. 2-6, when reinstalling the cartridge.
4. After installing the cartridge, readjust the stylus tip position by loosening the screw (⊖RK 2.6x3) that aligns the stylus tip with the mark on the shell head as shown in Fig. 2-7.

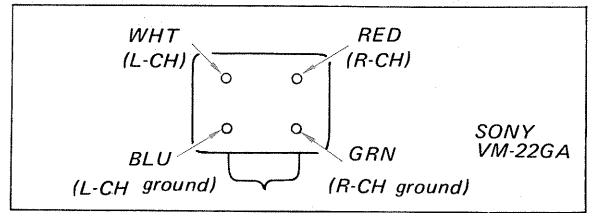


Fig. 2-6. Wiring diagram

**2-6. CARTRIDGE REPLACEMENT (AEP, GEP and UK Model only)**

1. Remove the shell head assembly from the tone-arm by loosening the collar as shown in Fig. 2-5.
2. Remove the two screws (⊖ F 2.6 x 12) (see Fig. 2-4) securing the cartridge to the shell head with a jeweler's screwdriver.

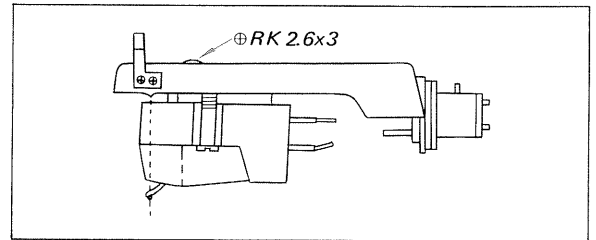


Fig. 2-7. Overhang adjustment

## 2-7. MOTOR ON/OFF SWITCH REPLACEMENT

1. Remove the turntable base as described in Procedure 2-4.
2. Remove the two screws ( $\oplus$ PSW 2.6x16) securing the motor on/off switch together with the flat spring as shown in Fig. 2-8. This frees the motor on/off switch.
3. Apply a drop of cement solvent to the insulation tube covering each terminal lug of the motor on/off switch, and then pull the tubes off.
4. Unsolder the lead wires from the defective switch and then install a replacement switch. Remember that each terminal lug of the new switch should be covered with an insulation tube glued with a rubber-based adhesives.

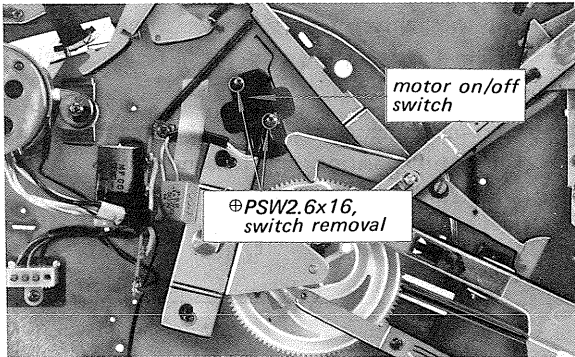


Fig. 2-8. Motor on/off switch replacement

## 2-8. TONE-ARM REPLACEMENT

1. Remove the counter weight from the tone-arm by simply pulling it out.
2. Remove the shell head as described in Procedure 2-6.
3. Remove the turntable base as described in Procedure 2-4, and flip the turntable base upside down. Place a support between the turntable base and the service bench to keep pressure off the tone-arm.
4. Unsolder the leads from the terminal beneath the turntable base as shown in Fig. 2-9.
5. Remove the main lever by removing the retaining ring as shown in Fig. 2-10.
6. Remove the tone-arm return lever assembly by removing the retaining ring from its shaft as shown in Fig. 2-10.

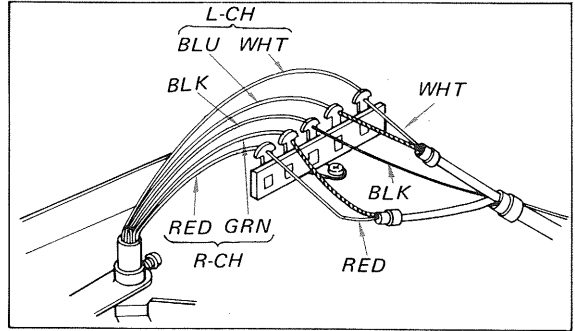


Fig. 2-9. Lead wire connections

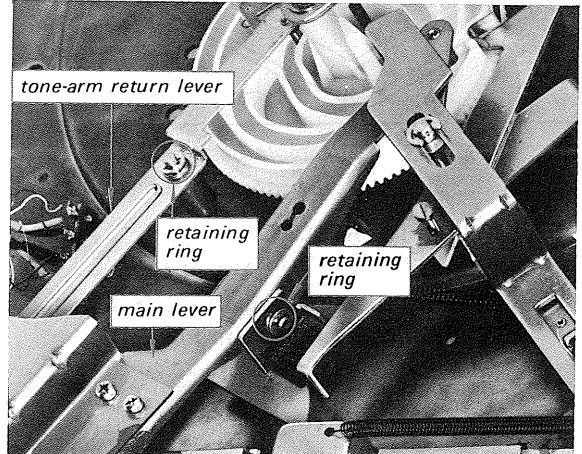


Fig. 2-10. Main lever and tone-arm return lever removal

7. Remove the shut-off slide by removing the retaining ring from tone-arm lever assembly. See Fig. 2-11. Take care not to lose the steel ball inserted between the shut-off slide and turntable base as shown in Fig. 2-11.
8. Remove the tone-arm lever assembly by loosening the two set screws ( $\oplus$ P 3x8) securing it to the tone-arm shaft as shown in Fig. 2-12.
9. Remove the hex nut securing the tone-arm together with tone-arm base. This frees the defective tone-arm.
10. Install the replacement tone-arm assembly. Note that the tab on the tone-arm base should be inserted in the small opening on the chassis as shown in Fig. 2-13 when installing the new tone-arm.
11. Refer to Fig. 2-14 for setting the proper tone-arm lever assembly height and position.



12. After completing the replacement procedure, proceed stylus set-down adjustment and automatic return position adjustment as described in Procedure 3-4 and 3-5.

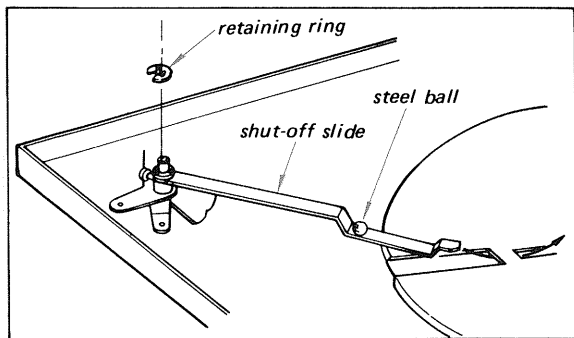


Fig. 2-11. Shut-off slide removal

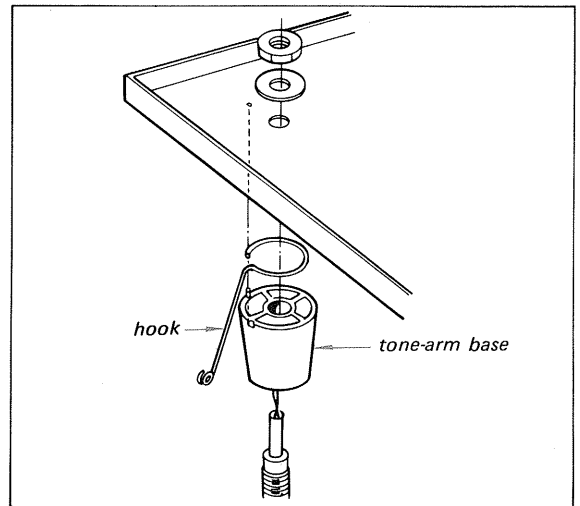


Fig. 2-13. Tone-arm base installation

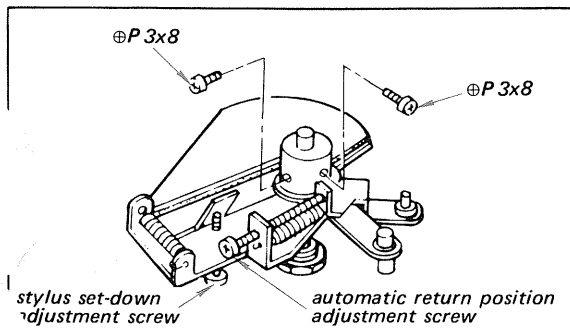


Fig. 2-12. Tone-arm lever and tone-arm ass'y removal

### OPERATING LEVER AND RECORD-SIZE SELECTOR REPLACEMENT

Remove the turntable base as described in Procedure 2-4, and flip it upside down. Place it on a support on the service bench to keep pressure off the tone-arm.

2. Set the record-size selector to 25 or 30.
3. Set the Operating Lever to REPEAT or MANUAL.

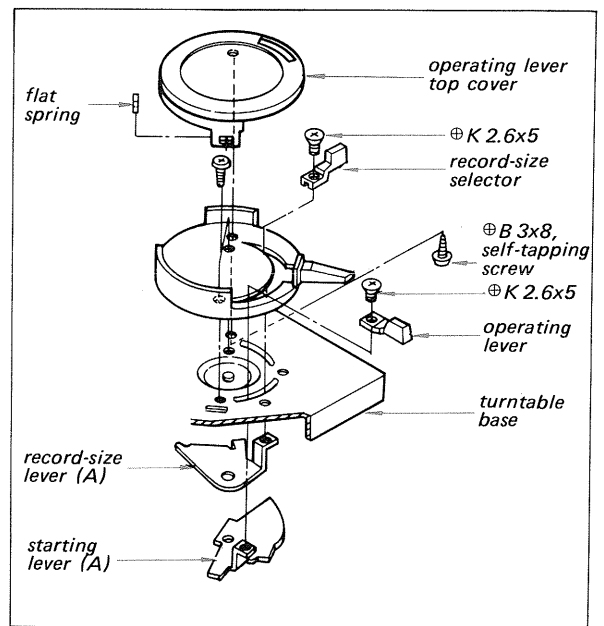
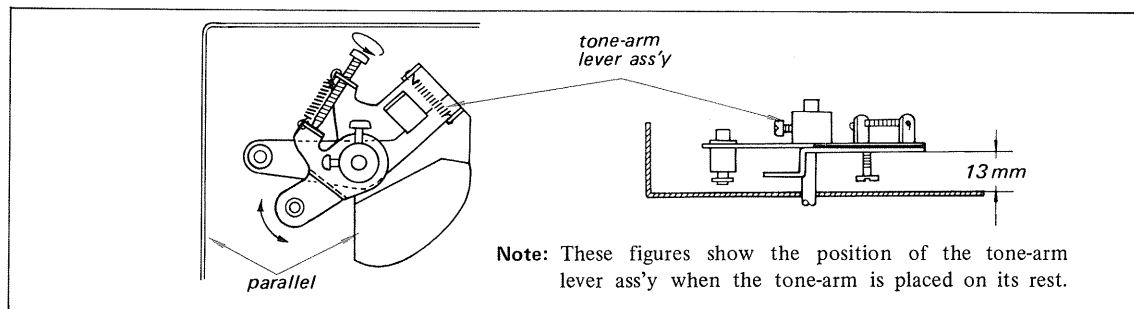


Fig. 2-15. Operating lever and record-size selector removal



Note: These figures show the position of the tone-arm lever ass'y when the tone-arm is placed on its rest.

Fig. 2-14. Tone-arm lever ass'y installation

4. Remove the self-tapping screw ( $\oplus B 3 \times 8$ ) and the flat spring securing the Operating Lever Top Cover to the turntable base as shown in Fig. 2-15. This frees the top cover.
5. Remove the screw ( $\oplus K 2.6 \times 5$ ) securing the defective Record-size Selector or Operating Lever and then install a new one.

## 2-10. MOTOR REPLACEMENT

1. Remove the turntable base as described in Procedure 2-4, flip it upside down. Place it on a support on the service bench to keep pressure off the tone-arm.
2. Remove the three screws ( $\oplus PS 4 \times 25$ ) securing the motor bracket to the turntable base.
3. Unsolder the lead wires from the terminal strip. This frees the motor with its bracket.

4. The defective motor can be removed by loosening the screw ( $\oplus PS 3 \times 20$ ) holding the motor bracket.
5. Remove the defective motor and then install the new one. Note that the top of the motor should coincide with the edge of the motor bracket when installing the replacement motor as shown in Fig. 2-16.

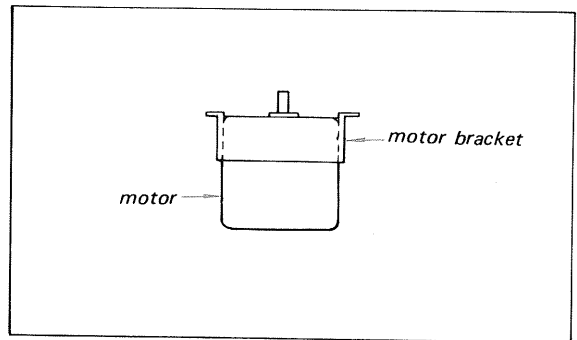


Fig. 2-16. Motor installation

## SECTION 3 ADJUSTMENTS

**Note:** The mechanical assembly is shipped from the factory with all adjustments set for correct performance. It should be unnecessary to change any adjustment before putting the equipment into service unless shipping damage has occurred. In the course of normal service, or in the event of component failure and replacement of parts, some readjustment may be necessary.

### 3-1. TOOLS REQUIRED

The following tools are required to perform these adjustment procedures.

1. Screwdriver, 2 mm blade
2. Soldering iron, 40 to 50 watts
3. Solder, rosin core
4. Tweezers

### 3-2. ADAPTATION TO LOCAL POWER LINE FREQUENCY (AEP, GEP, NEP and UK Model only)

The turntable can be adapted to operate at another power-line frequency by changing the motor pulley, the motor starting capacitor and motor wiring. Refer to the list below and Fig. 3-1 to determine the part number of the proper pulley.

<u>Description</u>	<u>Part Number</u>
50 Hz pulley . . . . .	4-808-828-00
60 Hz pulley . . . . .	4-808-829-00

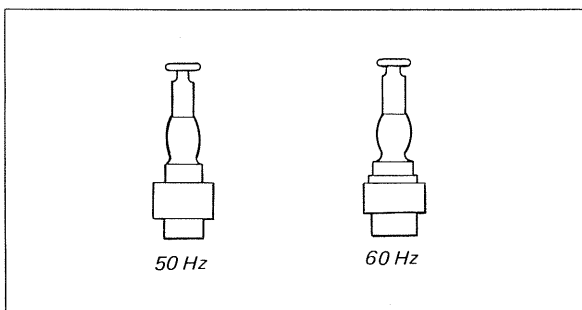


Fig. 3-1. Motor pulleys

#### Preparation:

Remove the turntable base as described in Procedure 2-4.

#### Motor Pulley

1. Remove the pulley by loosening the set screw securing it to the shaft with a screwdriver while pressing the motor from the bottom as shown in Fig. 3-2.

2. Install the replacement pulley, and then adjust the pulley height. The top of the motor pulley should be in line with the drive belt shifter (33 rpm position) as shown in Fig. 3-3.

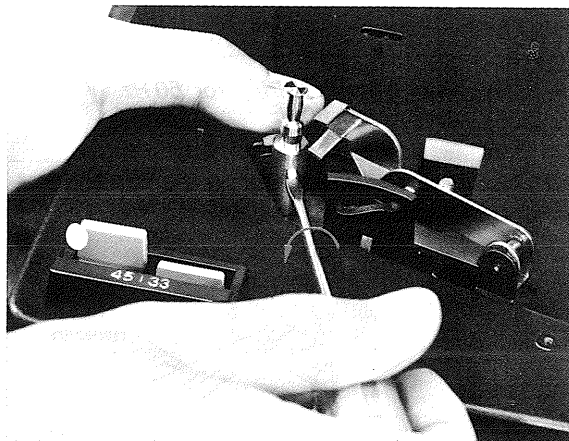


Fig. 3-2. Motor pulley removal

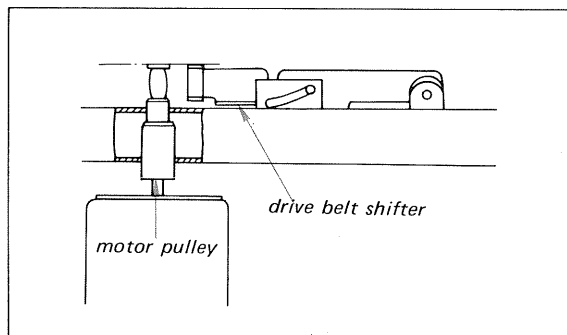


Fig. 3-3. Pulley-height adjustment

#### Starting Capacitor

Match the value of starting capacitor to line frequency as follows:

<u>Description</u>	<u>Part Number</u>
50 Hz . . . . . 1 $\mu$ F MP capacitor	1-113-148-00
60 Hz . . . . . 0.7 $\mu$ F MP capacitor	1-113-149-00

#### Motor Wiring

To obtain proper operation, the motor wiring must also be changed.

1. Remove the self-tapping screw ( $\Phi$ P 3 $\times$ 8) securing the 4-p AMPLOK socket to the turntable base and then change the wiring to match the line frequency as shown in Fig. 3-4.

To release the lead wire, press the terminal tip with tweezers, and then push it out as shown in Fig. 3-5.

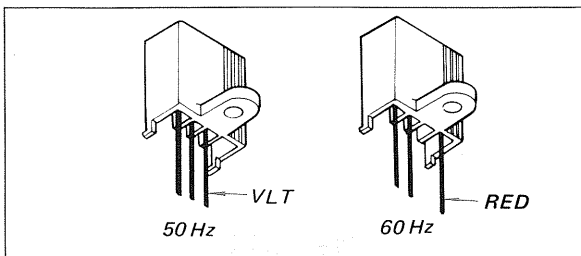


Fig. 3-4. Motor wiring for 50 Hz and 60 Hz

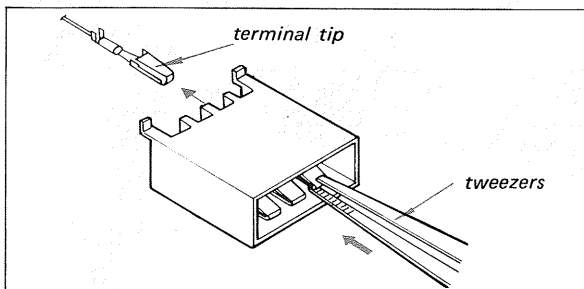


Fig. 3-5. Motor lead wire removal

### 3-3. CUEING HEIGHT ADJUSTMENT

1. Cueing height can be varied by turning the cueing height adjustment screw shown in Fig. 3-6. The clearance between the stylus tip and the turntable mat should be 7 mm to 9 mm as shown in Fig. 3-7 when the cueing lever is set to "up" position.

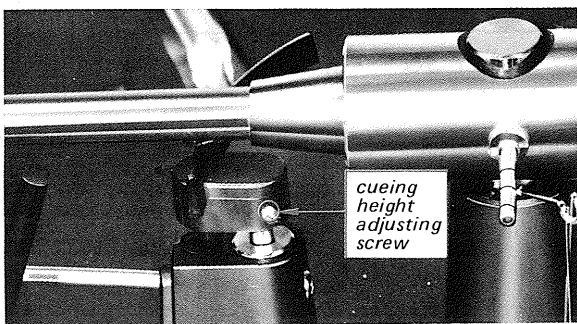


Fig. 3-6. Cueing height adjustment

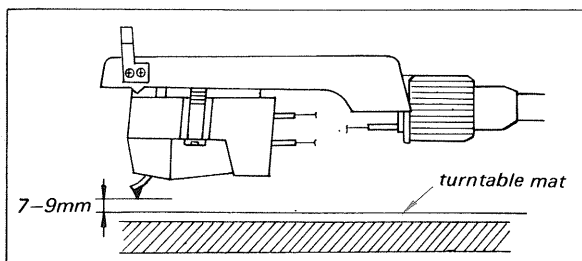


Fig. 3-7. Clearance between stylus tip and turntable mat.

### 3-4. STYLUS SET-DOWN ADJUSTMENT

1. The correct position for stylus set-down is 1.5 mm ( $1/16$  inch) in from the edge of the record. The position is adjusted by turning the set-down adjustment screw through the opening located near the tone-arm base as shown in Fig. 3-8. This screw appears only when the tone-arm is placed on its rest. The adjustment is performed with any records on the turntable.

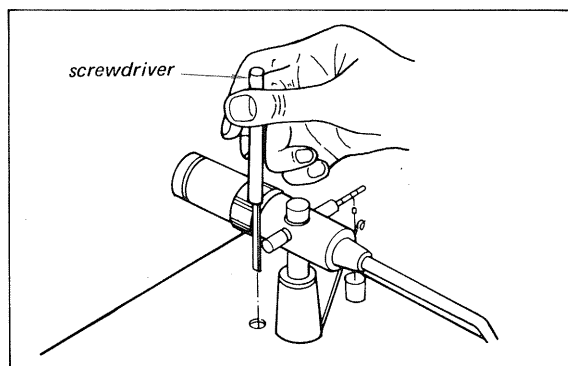


Fig. 3-8. Stylus set-down adjustment

### 3-5. AUTOMATIC RETURN POSITION ADJUSTMENT

The position where the tone-arm starts to return is adjusted by turning the screw shown in Fig. 3-9.

Turn the adjustment screw as necessary.

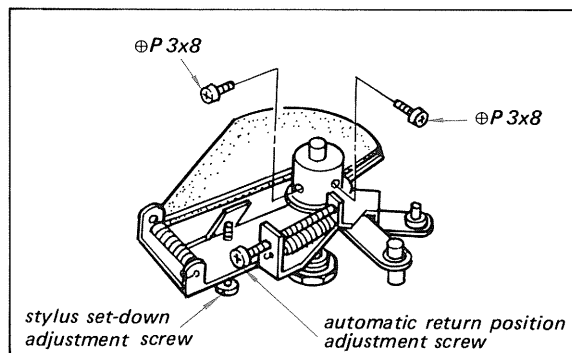


Fig. 3-9. Automatic return position adjustment

## SECTION 4 REPACKING

### 3-6. SHUT-OFF LEVER ADJUSTMENT

This is required if the power will not turn off at the end of MANUAL play operation.

1. Remove the turntable base as described in Procedure 2-4.
2. Confirm that the shut-off lever engages with ratchet lever in REPEAT mode, and then adjust the shut-off lever adjustment screw so that the shut-off lever is not locked by the ratchet lever when the Operating Lever is set to MANUAL position as shown in Fig. 3-10.

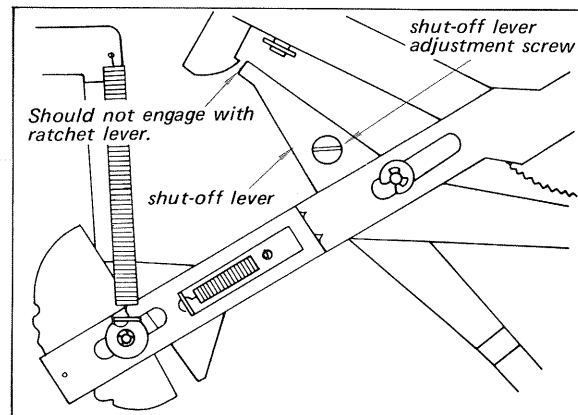


Fig. 3-10. Shut-off lever adjustment

### 3-7. STYLUS FORCE AND ANTI-SKATING FORCE ADJUSTMENT

1. Unhook the bias weight from the anti-skating force gauge.
2. Release the tone-arm from its arm-rest.

**Note:** Make sure that the tone-arm floats freely and the unit is not in mid cycle.

3. Horizontally balance the tone-arm by turning the counterweight at the rear of the tone-arm, and then set the stylus force scale "0" while holding the counterweight as shown in Fig. 3-11. Now the stylus force can be set by using this scale.
4. Turn the counterweight clockwise to obtain the proper (recommended) value of stylus force.
5. Hook the bias weight on the slot in the anti-skating force gauge corresponding to the stylus force. The anti-skating force gauge has three slots to compensate for 1, 2 or 3 grams of stylus force as shown in Fig. 3-12.

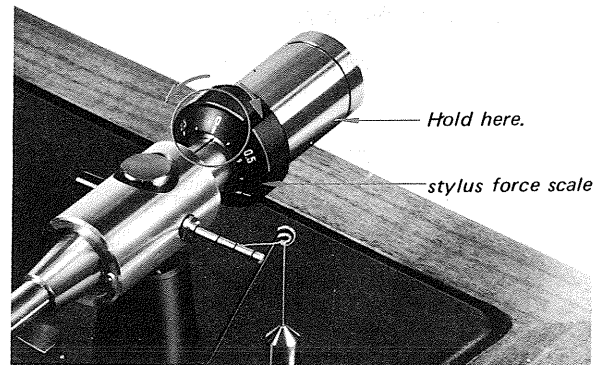


Fig. 3-11. Tone-arm balance adjustment

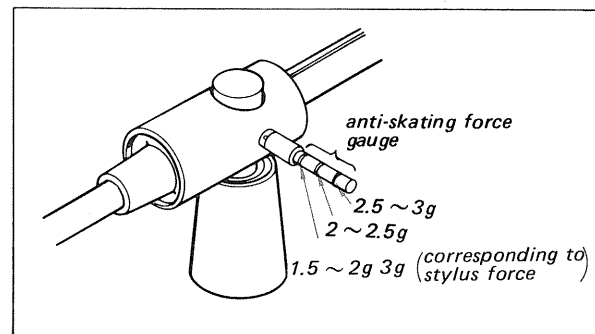


Fig. 3-12. Detail of anti-skating force gauge

### 3-8. LUBRICATION

Each time the PS-5520 is received for servicing, remove the turntable base and apply 2 or 3 drops of oil to the shaft of the turntable and motor. When lubricating the turntable shaft, inspect the drive belt, the surface of the motor pulley and the turntable drive surface. If they are dirty, wipe dust off from the belt with a dry cloth and clean the pulley and drive surfaces carefully with a soft cloth moistened with denatured alcohol.

The PS-5520's original shipping carton and packing materials are the ideal container for shipping the unit. However to secure the maximum

protection, the PS-5520 must be repacked in these materials precisely as before. The proper repacking procedures are shown in Fig. 4-1.

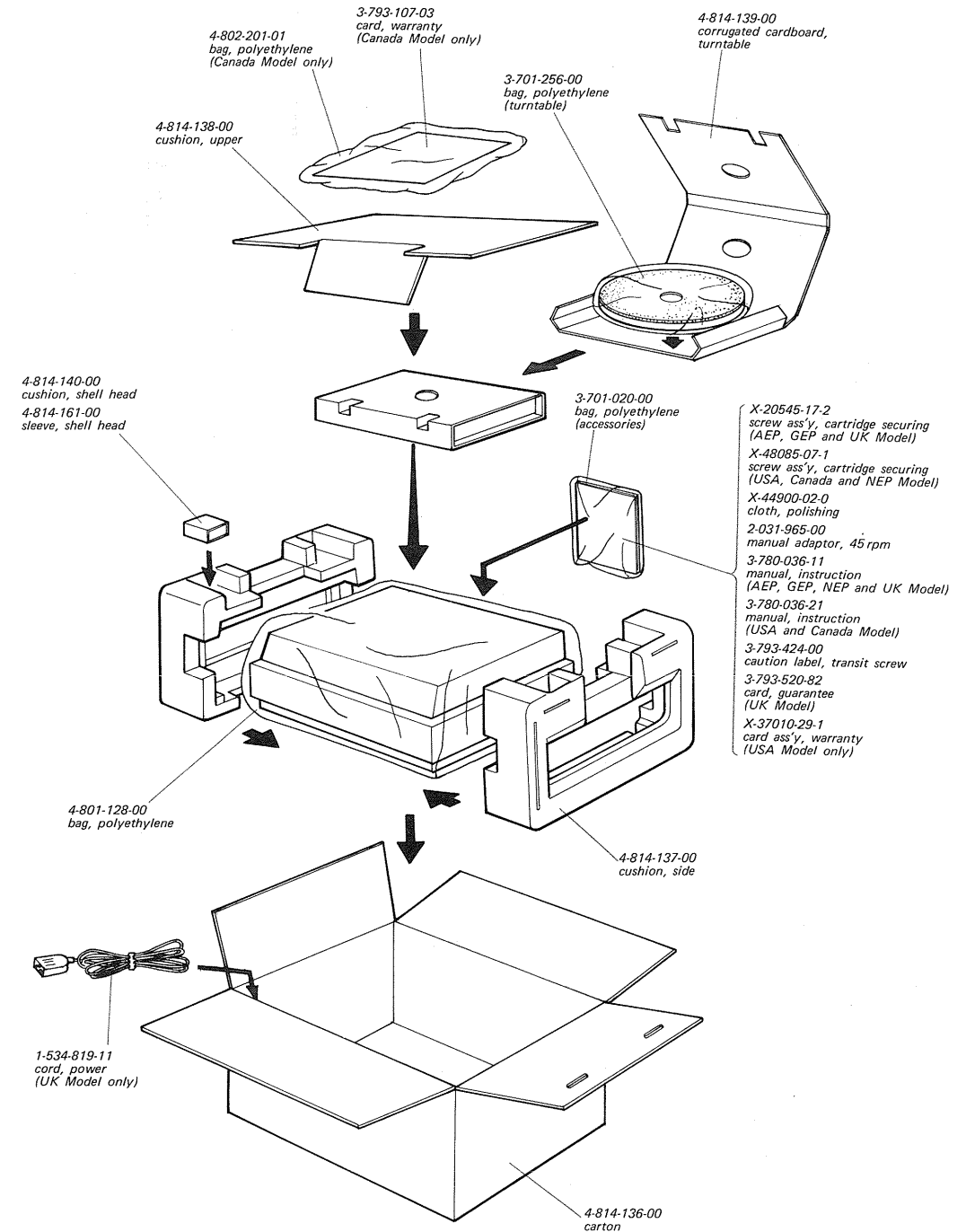
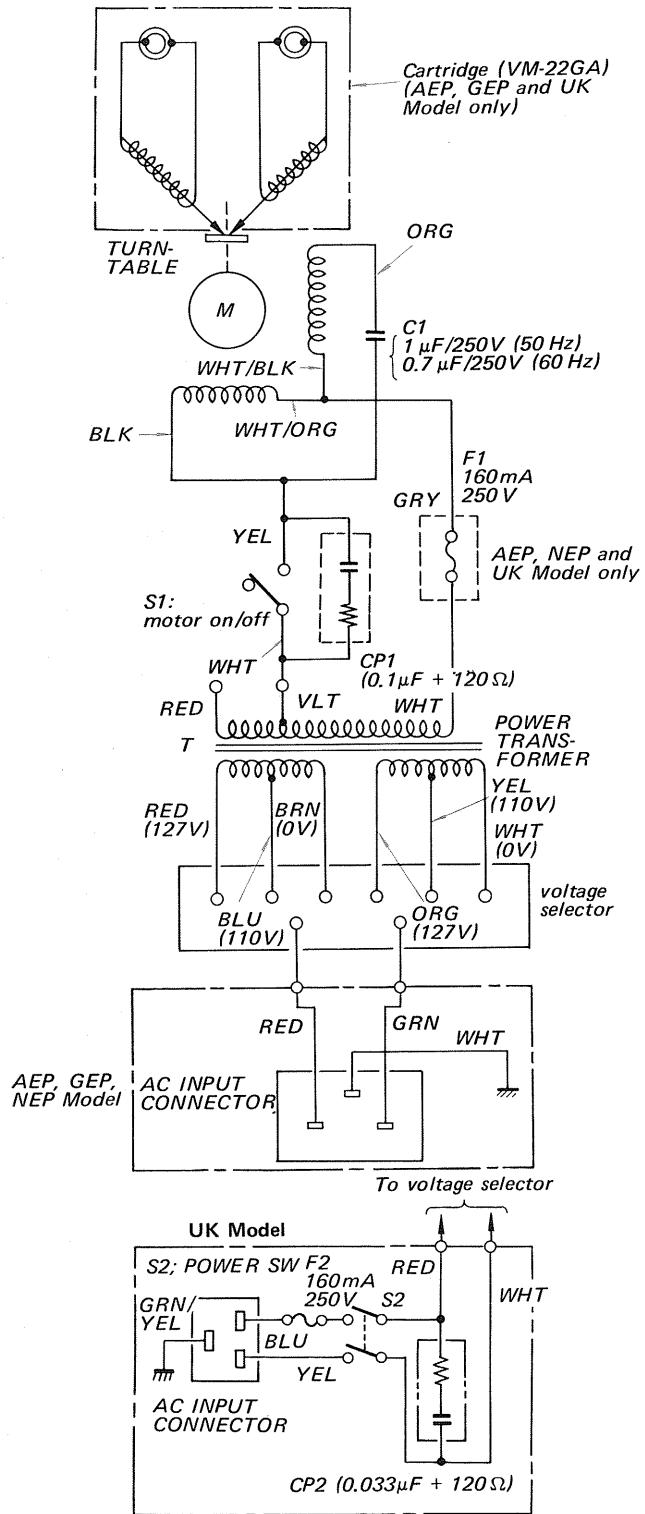


Fig. 4-1. Repacking

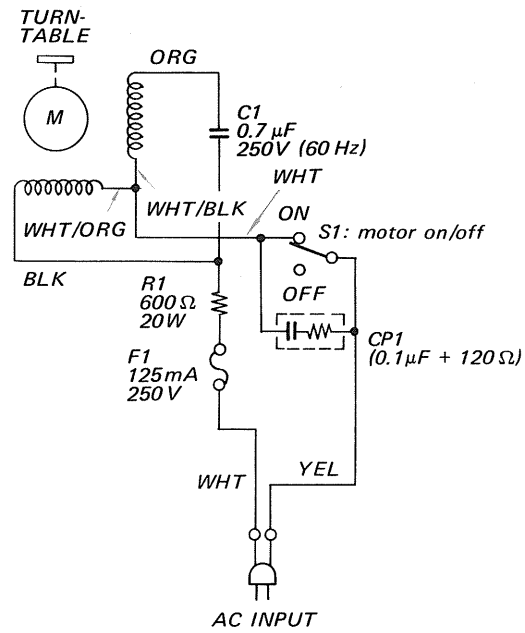
# SECTION 5 DIAGRAMS

## 5-1. SCHEMATIC DIAGRAM

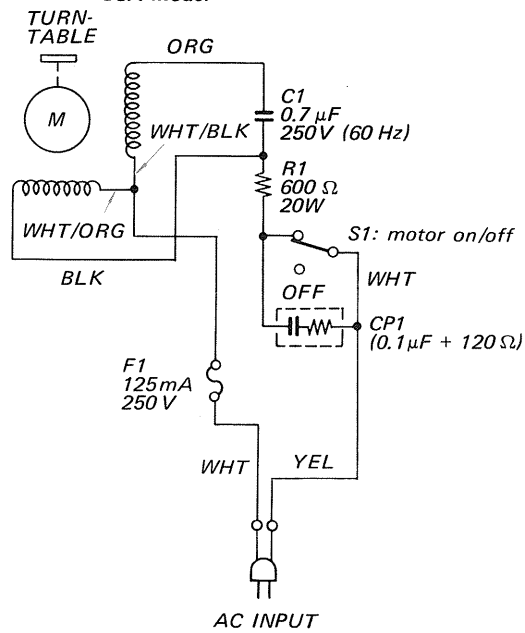
AEP, GEP, NEP and UK Model



Canada Model

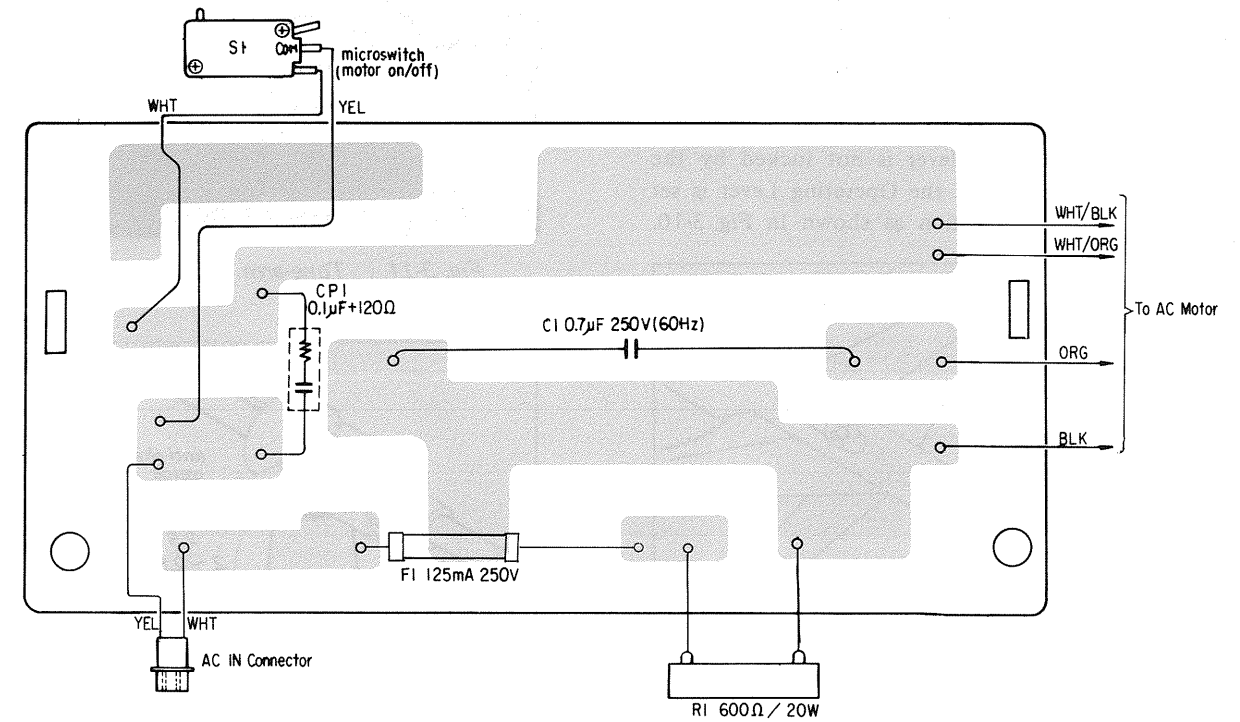


USA Model

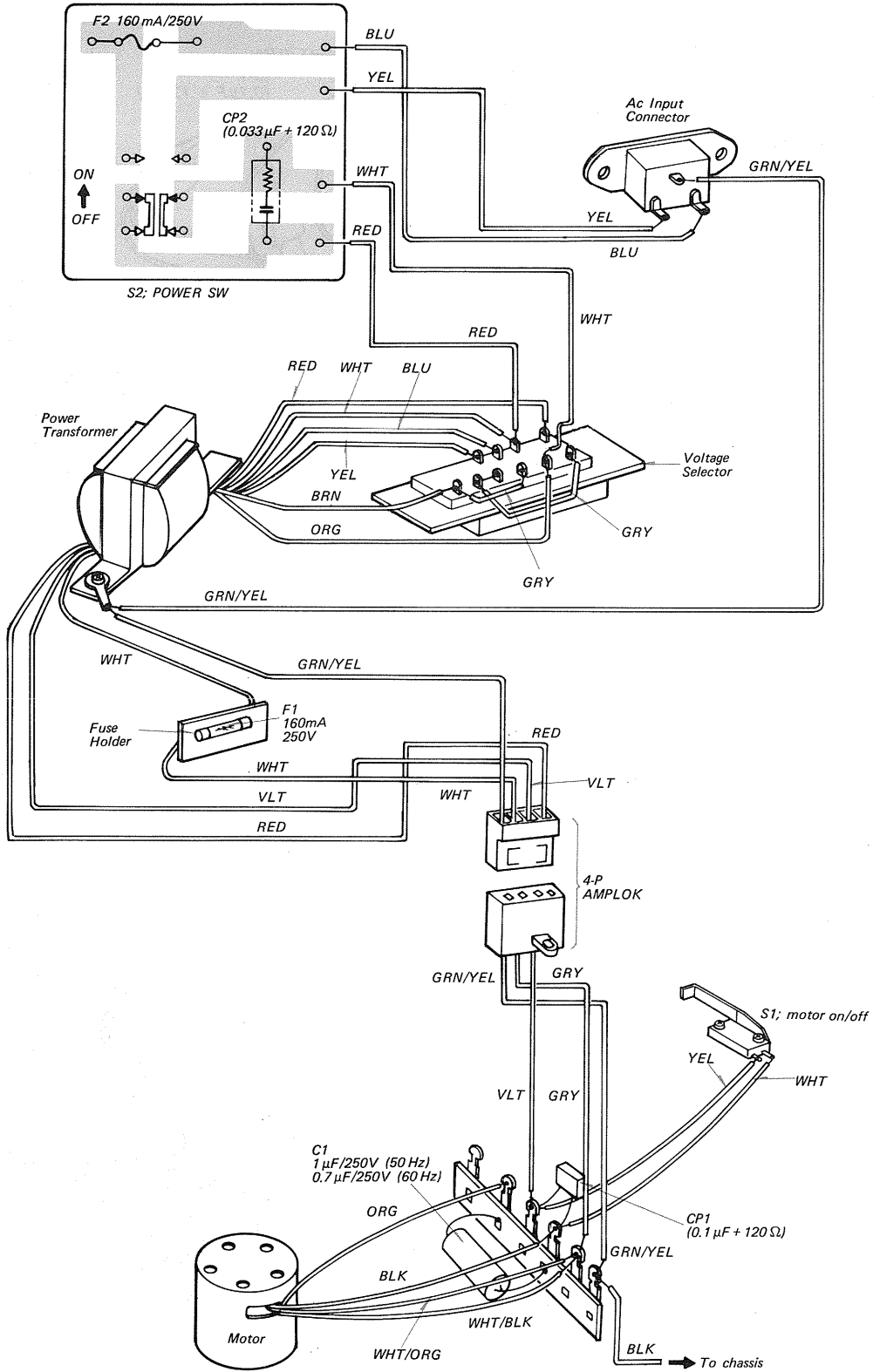


## 5-2. MOUNTING DIAGRAM – Power Supply Board – (Canada Model only)

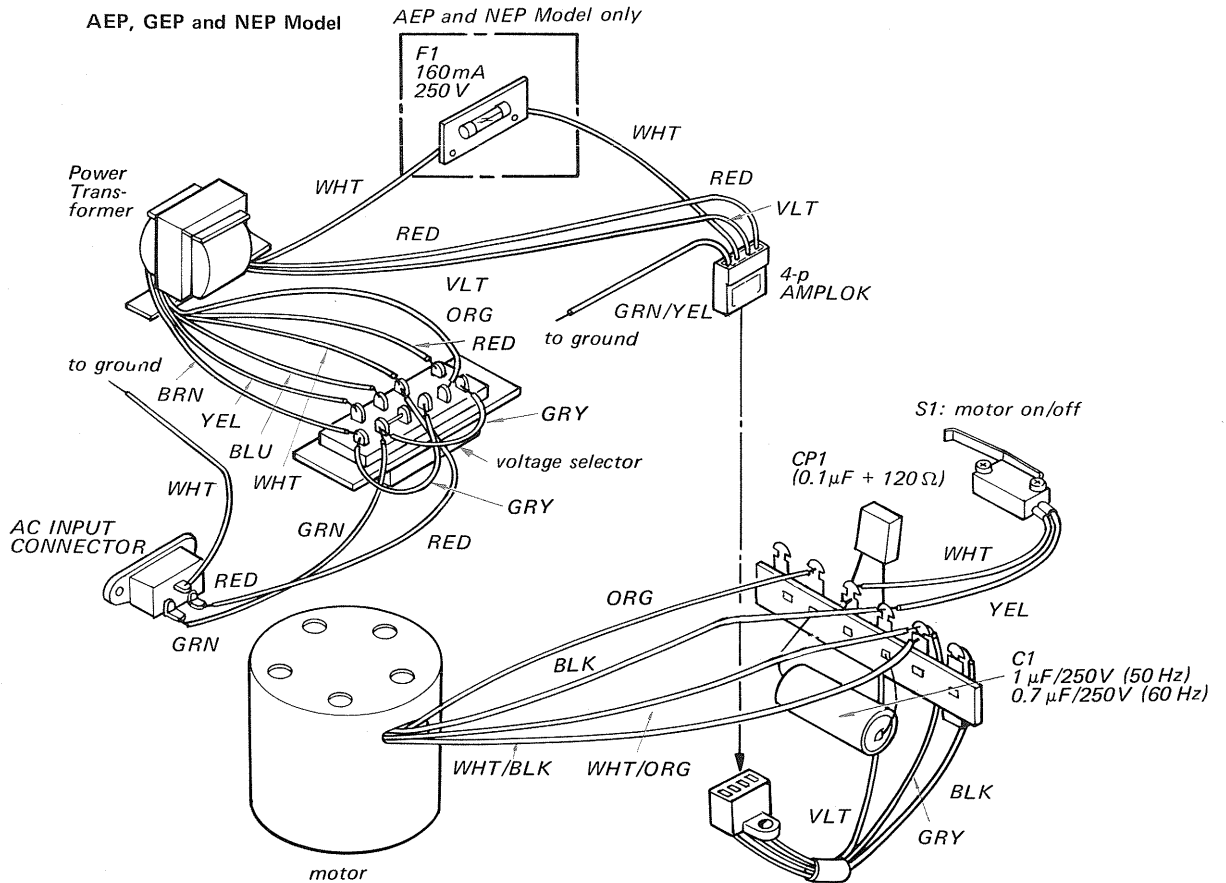
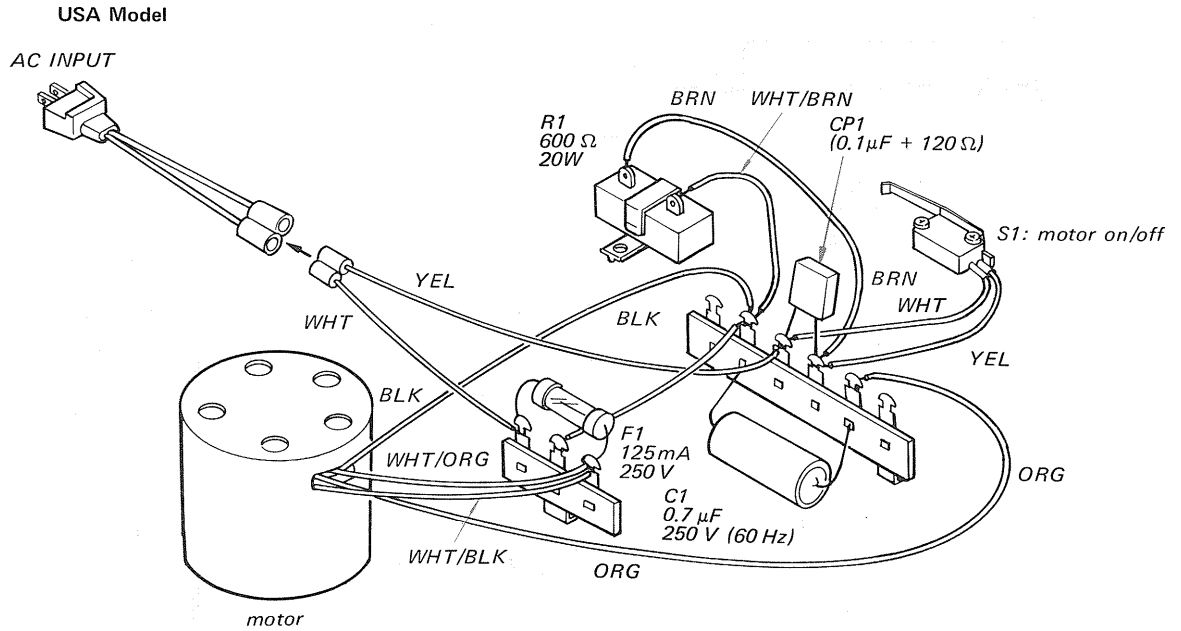
– Conductor Side –



5-3. MOUNTING/WIRING DIAGRAM  
(UK Model only)



# 5-4. WIRING DIAGRAM

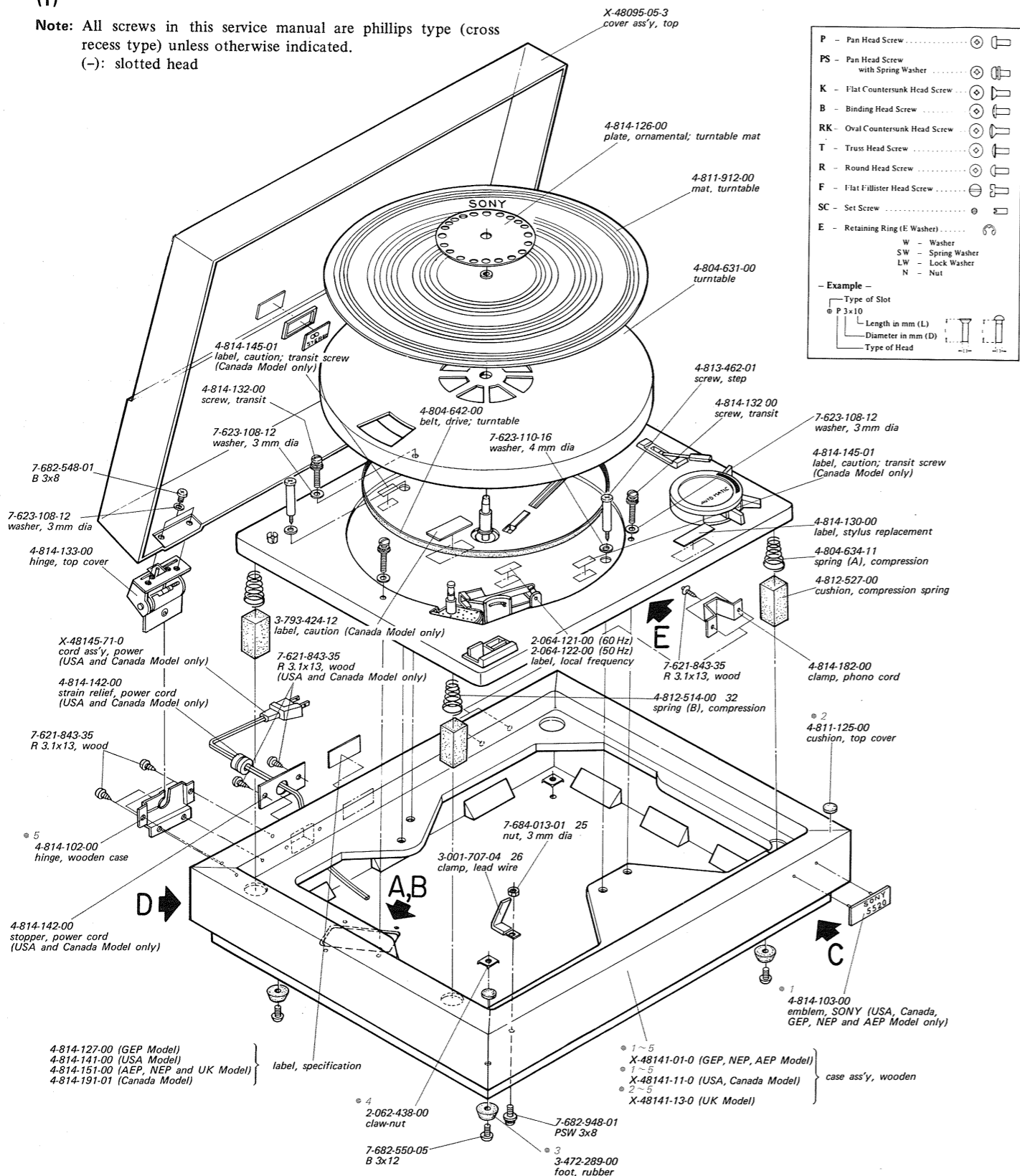




# SECTION 6 EXPLODED VIEWS

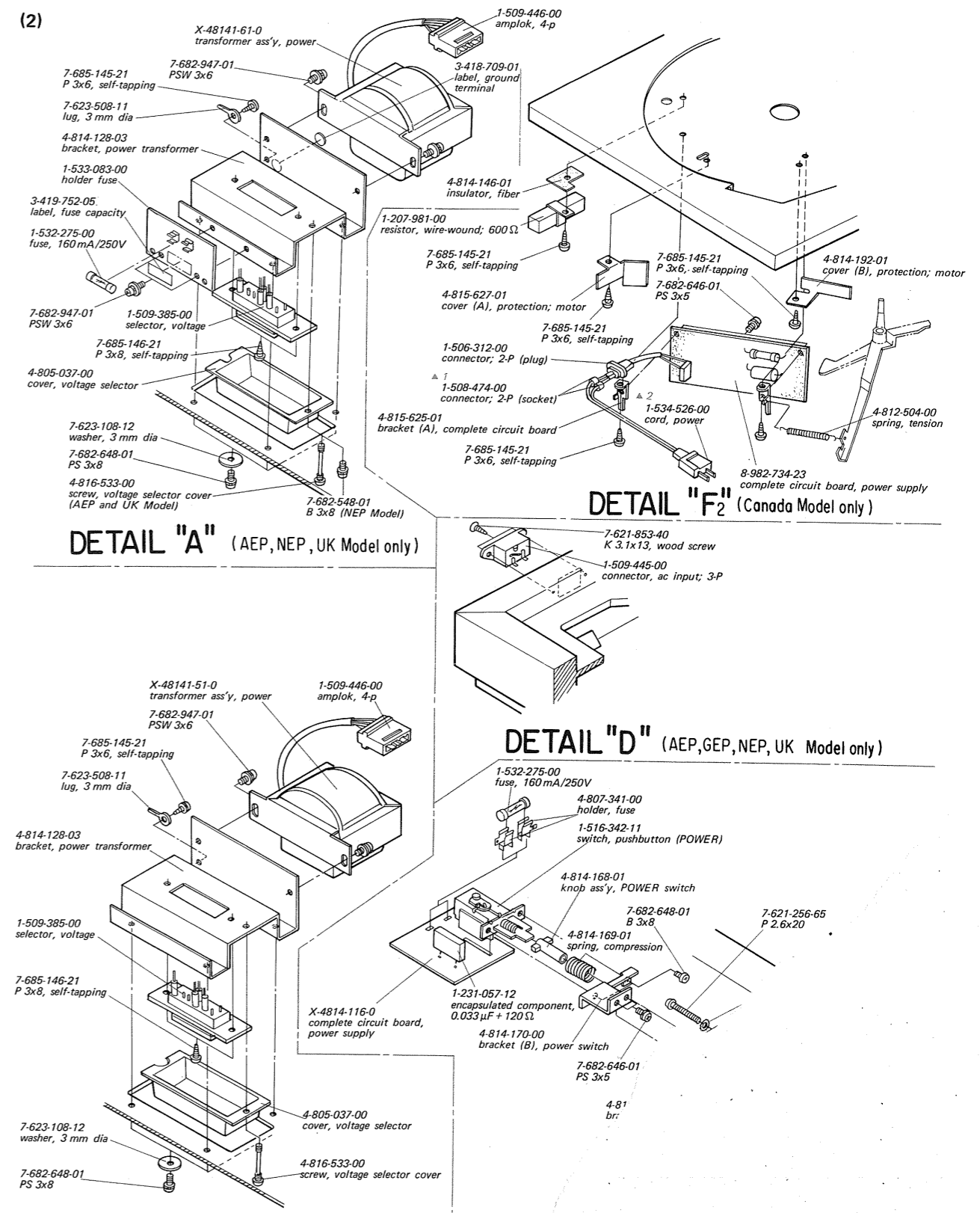
(1)

**Note:** All screws in this service manual are phillips type (cross recess type) unless otherwise indicated.  
(-): slotted head



**Note:** ● 1~5 Wooden case ass'y { X-48141-01-0 (GEP,NEP,AEP Model)  
X-48141-11-0 (USA,Canada Model) } includes the parts marked ●.  
● 2~5 Wooden case ass'y X-48141-13-0 (UK Model) includes the parts marked ●.

(2)



DETAIL "A" (AEP, NEP, UK Model only)

DETAIL "F2" (Canada Model only)

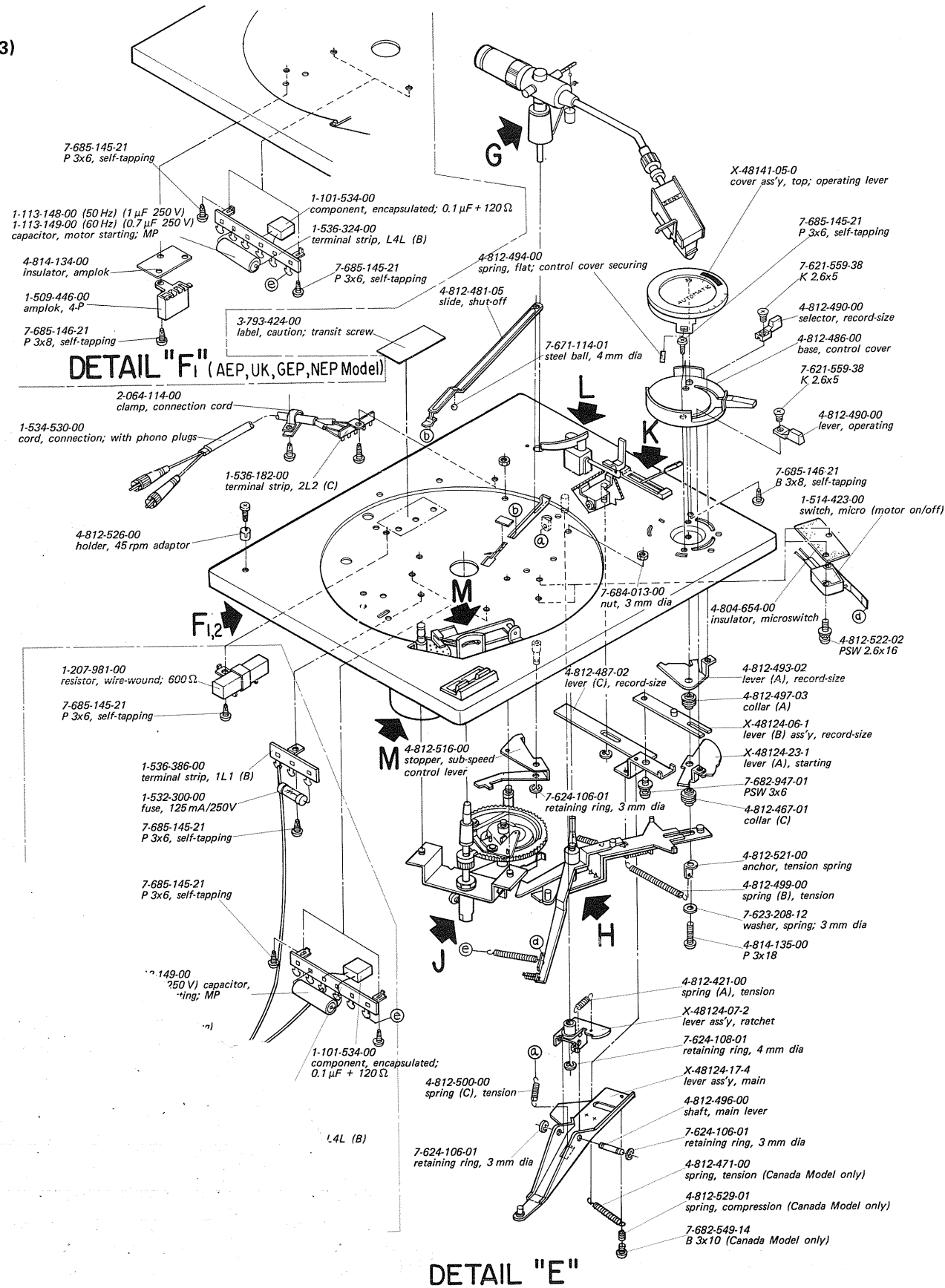
DETAIL "D" (AEP, GEP, NEP, UK Model only)

DETAIL "B" (GEP Model only)

DETAIL

Not

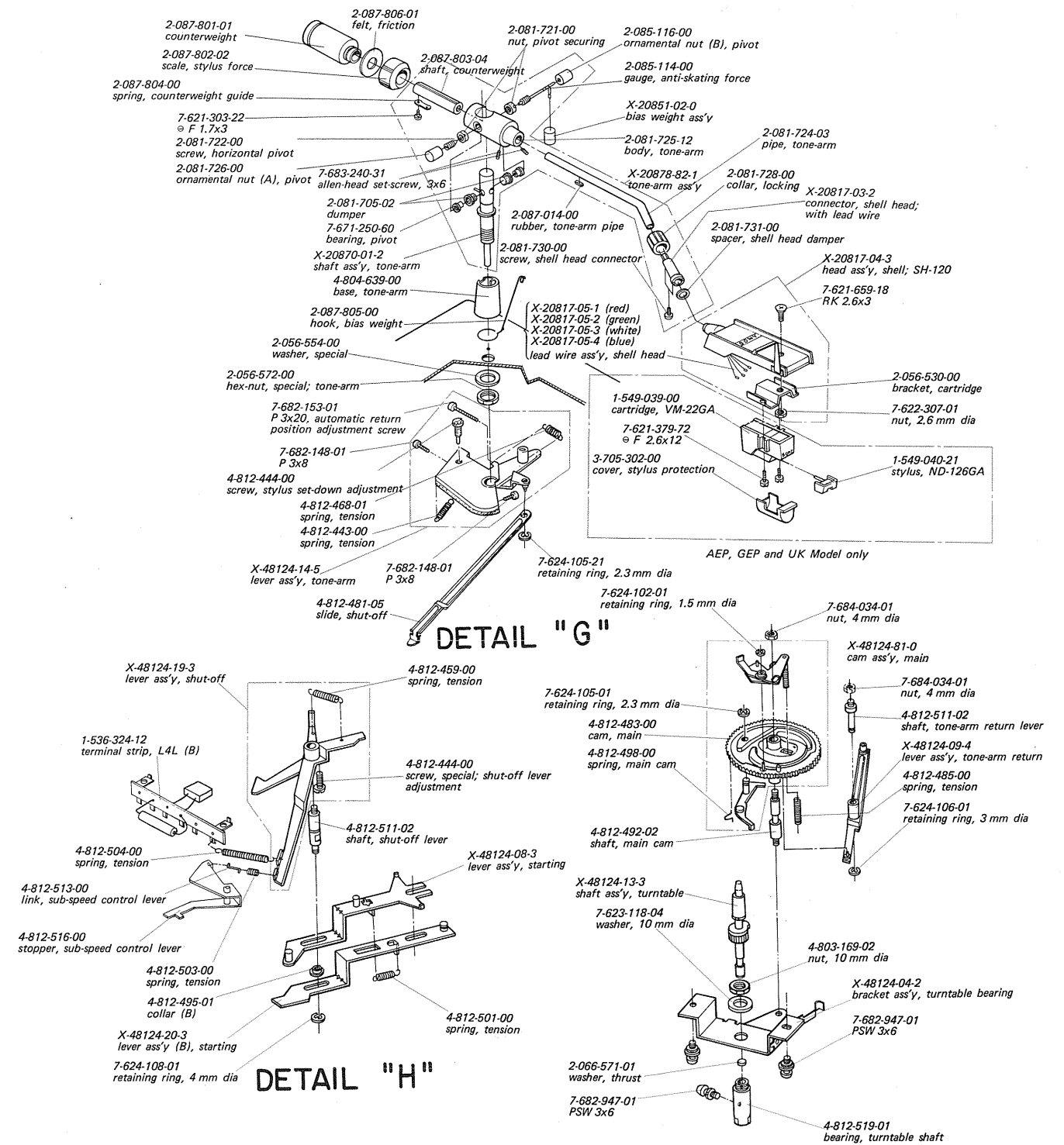
(3)



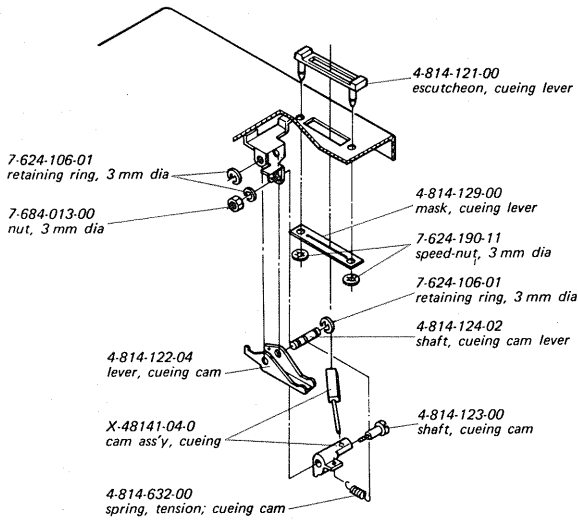
**DETAIL "E"**

Note: 1~2 Power cord ass'y (X-48145-71-0) includes the parts marked ▲.

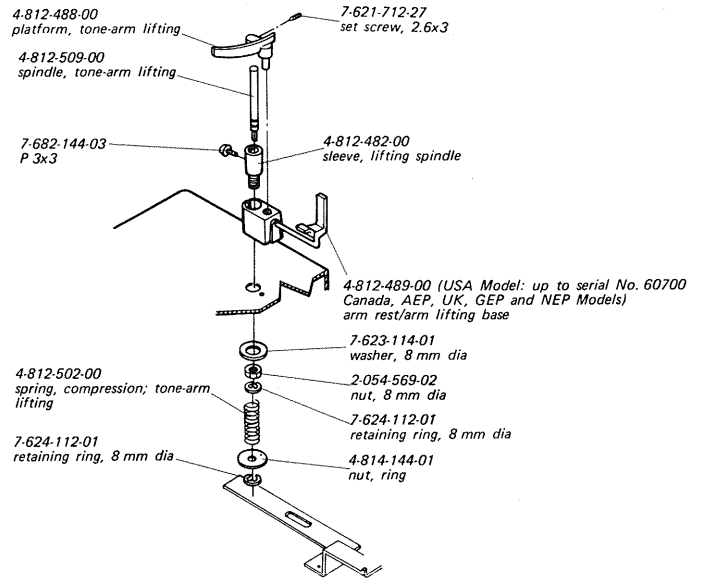
(4)



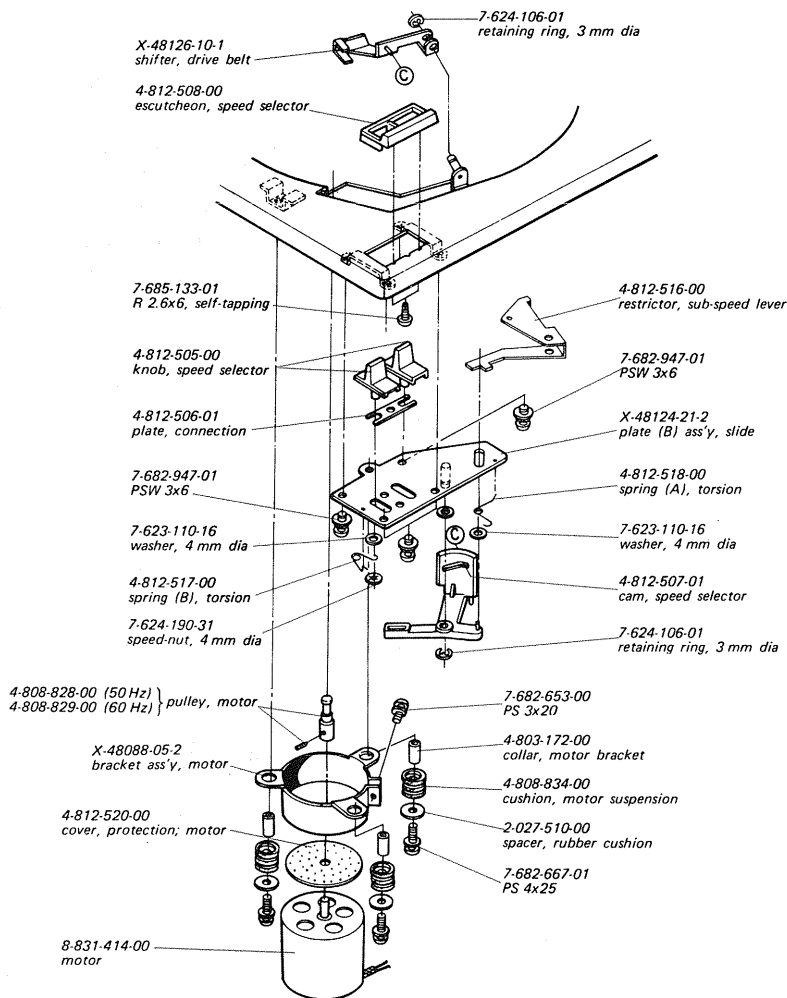
(5)



DETAIL "K"

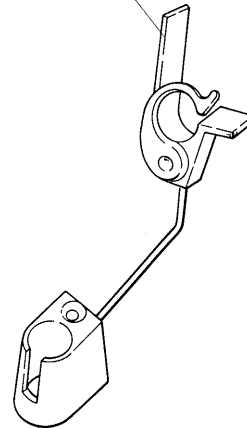


DETAIL "L"



DETAIL "M"

X-48216-81-0 (USA Model: Serial No. 60701 and later) Arm Rest Ass'y



# SECTION 7 ELECTRICAL PARTS LIST

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
	8-982-734-23	power supply board, complete (Canada Model only)	CP2	1-231-057-12	encapsulated component, 0.033 $\mu$ F + 120 $\Omega$ (UK Model only)
	X-4814-116-0	power supply board, complete (UK Model only)		1-509-445-00	connector, ac input; 3-p (AEP, GEP, NEP and UK Model only)
	X-48141-51-0	transformer ass'y, power (GEP Model only)		1-509-446-00	amplok, 4-p (AEP, GEP, NEP and UK Model only)
	X-48141-61-0	transformer ass'y, power (AEP, NEP and UK Model only)	S1	1-514-423-00	switch, micro (motor on/off)
	X-48145-71-0	cord ass'y, power (USA and Canada Model only)	S2	1-516-342-11	switch, pushbutton (POWER) (UK Model only)
	1-534-819-11	cord, power (UK Model only)	F1	1-532-275-00	fuse, 160mA/250V (AEP, NEP and UK Model only)
CI	1-113-148-00	capacitor, motor starting; MP 1 $\mu$ F 250 V (50 Hz) (AEP, GEP, NEP and UK Model only)	F1	1-532-300-00	fuse, 125 mA/250V (USA and Canada Model only)
	1-113-149-00	capacitor, motor starting; MP 0.7 $\mu$ F 250 V (60 Hz)	F2	1-532-275-00	fuse, 160mA/250V (UK Model only)
R1	1-207-981-00	resistor, wire-wound 600 $\Omega$ $\pm$ 5% 20W (USA and Canada Model only)		1-549-040-21	stylus, ND-126GA (AEP, GEP and UK Model only)
	1-506-312-00	2-p connector, plug (USA and Canada Model only)		1-534-530-00	connection cord with phono plugs
	1-508-474-00	2-p connector, socket (USA and Canada Model only)		1-536-182-00	terminal strip, 2L2 (C)
CP1	1-101-534-00	encapsulated component, 0.1 $\mu$ F + 120 $\Omega$		1-536-386-00	terminal strip, 1L1 (B) (USA Model only)
	1-509-385-00	voltage selector (AEP, GEP, NEP and UK Model only)		1-536-324-00	terminal strip, L4L (B) (AEP, UK, USA, NEP and GEP Model only)
				1-549-039-00	cartridge, VM-22GA (AEP, GEP and UK Model only)
				8-831-414-05	motor

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