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# Service Manual

**REPAIR & ADJUSTMENTS**

**PIONEER**

**Original**



**ORDER NO.  
ART-713-0**

**STEREO TURNTABLE**

# PL-2

# PL-120

**MODEL PL-2 COMES IN SIX VERSIONS DISTINGUISHED AS FOLLOWS:**

| Type | Voltage                          | Remarks                          |
|------|----------------------------------|----------------------------------|
| KUT  | 120V only                        | U.S.A. model (Without cartridge) |
| KCT  | 120V only                        | Canada model (Without cartridge) |
| WE   | 220V - 240V                      | Europe model                     |
| WB   | 220V - 240V                      | United kingdom model             |
| WP   | 220V - 240V                      | Oceania model                    |
| R    | 110V-120V/220V-240V (Switchable) | General export model             |

**MODEL PL-120 (which is minor change in design from PL-2) COMES IN FOUR VERSIONS DISTINGUISHED AS FOLLOWS:**

| Type | Voltage                          | Remarks              |
|------|----------------------------------|----------------------|
| WE   | 220V - 240V                      | Europe model         |
| WB   | 220V - 240V                      | United kingdom model |
| WP   | 220V - 240V                      | Oceania model        |
| R    | 110V-120V/220V-240V (Switchable) | General export model |

- This is the service manual for model PL-2/KUT. For servicing of the other types, please refer to the additional service manual.
- Ce manuel d'instruction se réfère au mode de réglage, en français.
- Este manual de servicio trata del método de ajuste escrito en español.

For the circuit and mechanism descriptions, please refer to the supplement of model PL-7 service manual (ART-768).

## CONTENTS

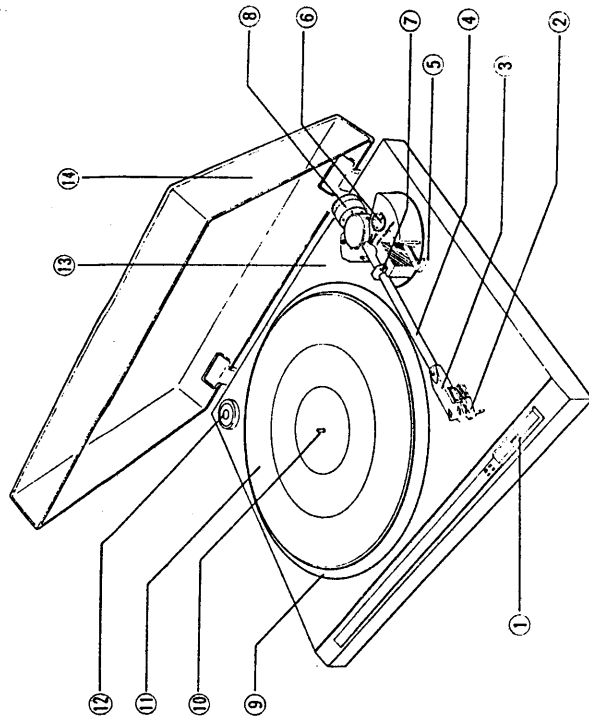
|    |    |
|----|----|
| 2  | 12 |
| 3  | 14 |
| 4  | 18 |
| 6  | 19 |
| 8  | 22 |
| 10 | 23 |
| 11 |    |
| 12 |    |
| 14 |    |
| 18 |    |
| 19 |    |
| 22 |    |
| 23 |    |

## SPECIFICATIONS

|                     |                                        |
|---------------------|----------------------------------------|
| Motor and Turntable | Belt-drive                             |
| Motor System        | DC motor                               |
| Motor               | 310mm diam. aluminum alloy die cast    |
| Motor               | 33-1/3 and 45 rpm                      |
| Motor               | Less than 0.05% (WRMS)                 |
| Motor               | More than 68dB (DIN-B)                 |
| Motor               | (With Pioneer cartridge model PC-220)  |
| Motor               | Static-balance type, Straight pipe arm |
| Motor               | 221mm                                  |
| Motor               | 15.5mm                                 |
| Motor               | 3g (min.) to 8g (max.)                 |

Functions  
Auto-return mechanism, Anti-skating force control, Stylus pressure  
red-readout counterweight, Cueing device, Free stop hinges

## 2. FRONT PANEL FACILITIES



### ① SPEED switch

Set this switch in accordance with the speed of the record which is to be played.  
[33] (depressed position): For 33-1/3 rpm records  
[45] (released position): For 45 rpm records

### ② Cartridge

### ③ Headshell

### ④ Tonearm

### ⑤ ARM ELEVATION lever

Operate this lever when starting record play or when temporarily suspending play.

### ⑥ ANTI-SKATE control

This is rotated when performing the anti-skating adjustment.

### ⑦ Arm rest

This serves to hold and clamp the tonearm. When moving the tonearm, release the clamp.

### ⑧ Tracking force adjustment weight

This is used when adjusting the tracking force.

### ⑨ Platter

### ⑩ Platter mounting shaft

### ⑪ Rubber mat

### ⑫ EP adapter

This is used when playing records without a "middle."

### ⑬ Cabinet

### ⑭ Dust cover

# 1. DISASSEMBLY

## 1.1 PANEL AND BASE

In removing the panel, follow the below listed steps in the order given. Using any unnecessary force will result in bending the springs or damaging other parts.

### Panel removal steps

1. Remove the headshell and weight assembly, and the weight shaft assembly.
2. The weight shaft assembly is removed by loosening screw (Hexagone socket screw) and the headshell by loosening screw ①.
3. Lift off the turntable platter.

4. Loosen insulator attachment screws ② and remove the insulator. (Do not mix the color-coded float springs. They must be replaced with their original insulators during reassembly.)
5. Remove the rear panel PU cord strain relief.
6. Lift the front section of the panel (operating controls) very slightly
7. Unplug the 2p connector.
8. Completely remove the PU cord from the panel.
9. Taking care not to damage the tonearm, remove it from the panel. (Hold the tonearm steady.)

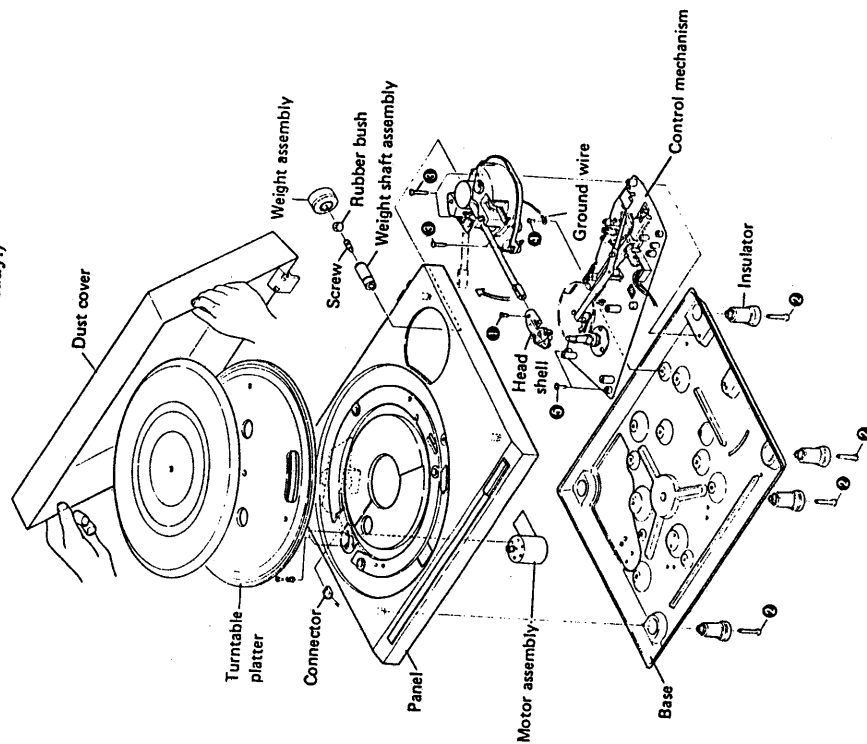


Fig. 3-1 Disassembly

## 3.2 TONEARM

1. Disconnect the tonearm lead wires from the PU board (See Fig. 3-2).
- Note that some of the lead wires have been soldered to the PU board, and must be disconnected with care.
- Loosen the set screw ③ with a screwdriver to remove the PU plate under the arm base (See Fig. 3-3).
- Undo the screw ④ securing the tonearm to the arm base (See Fig. 3-3).

## 3.3 TONEARM SECTION

Remove the tonearm section by taking out the three arm base attachment screws ⑤ and one ground wire securing screws ⑥.

## 3.4 CONTROL MECHANISM SECTION

After the tonearm section has been removed, loosen the three control mechanism attachment screws ⑦ and remove the assembly.

## 3.5 PANEL AND BASE REASSEMBLY

1. Attach the PU cord stopper.
2. Attach the insulators. (Make certain the color-coded float springs are attached to the correct insulators.)
3. Attach the weight shaft assembly.

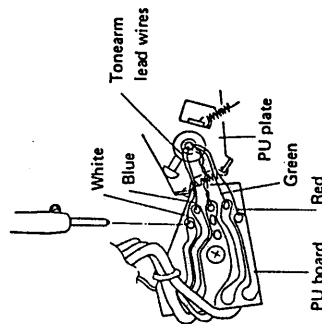


Fig. 3-2 Disconnect the tonearm lead wires

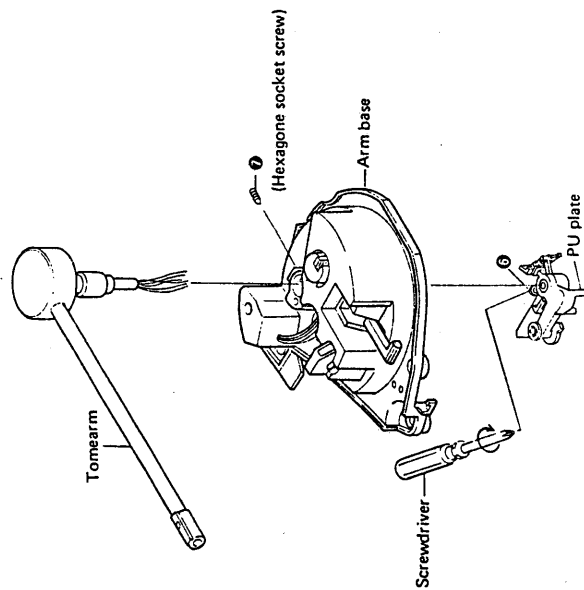


Fig. 3-3 Remote tonearm

# TROUBLESHOOTING

Use the following directions to find the cause of a type of breakdown. Improper adjustment should be completely readjusted.

## AUTO-RETURN DOES NOT WORK

Change in starting position adjustment.

YES

Starting plate does not follow the signal plate.

YES

Too much grease between the signal hole is small.

Inner diameter of the starting plate hole is small.

Protrusions on the caulk section of the starting plate hole.

Not enough grease between the starting plate and signal plate.

The curved section of the signal plate is deformed.

Arm lead wire is caught on something.

PU cord is touching the PU plate.

Operator of the detection lever is not smooth.

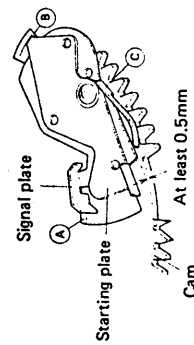


Fig. 4-1 Incomplete reset of starting and signal plates.

When performing the return operation, if the section of the signal plate and curved section of the starting plate are not in contact with the cam (A) and (B) respectively of the cam, reset is incomplete and the starting position will be incorrect. As a result, the return function may not work at times. In this case, bend the signal plate so that dimension (A) is 0.5mm or larger.

## RETURN IS FAST (RETURN AT 1mm PITCH)

Protrusions on the pinion gear section (See Section 2)

### Section 2

If there are rough areas of plastic protruding from the (A) section of the protruding section of the pinion gear, the return function may operate at a pitch of only 1mm. In this case, remove the plastic protrusions completely (Fig. 4-2).

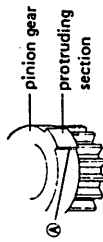


Fig. 4-2 Elimination of pinion gear protrusions

## MOTOR DOES NOT ROTATE

2P connector is not attached.

Connector is not properly installed.

## MOTOR DOES NOT STOP

The switch lever and switch locker are not locking (See section 3).

The installation location of the PU plate is incorrect.

### Section 3

In order to turn the power OFF, the PU plate shaft touches surface (A) of the switch locker pushing it over so it locks with the switch lever turning the microswitch OFF (Fig. 4-3). If the amount of push on the switch locker is insufficient, it can not lock with the switch lever. With the tonearm locked in the arm rest, as shown in figure 4-4, attach the PU plate precisely midway between the first and second points from the arm base scale mark counting away from you.

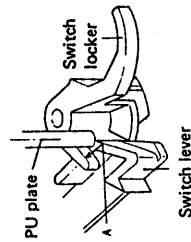


Fig. 4-3 Adjustment of switch locker

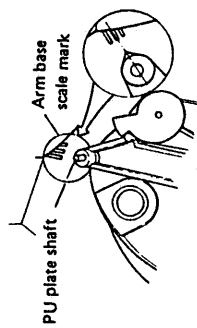


Fig. 4-4 Adjustment PU plate

## 5. PRECAUTIONS FOR REASSEMBLY

Follow these directions and precautions when reassembling a unit after completing repairs. Be sure to lubricate as required, make no mistakes when attaching parts, and avoid all other careless mistakes that may be the cause of trouble later on.

### 5.1 AREAS THAT REQUIRE LUBRICATION

#### NOTE:

Types of lubricants and areas where they are used are listed in table 1.

Table 1

| Type of Oil                   | Areas used      |
|-------------------------------|-----------------|
| Silicon Oil #100000 (GEM-002) | raising shaft   |
| GYA-008                       | all other areas |

Lubrication points are specified for oils other than GYA-008. Never use a different type of oil.

#### • Cam Section

Apply oil to the heart-shaped grooved section (rear side of the cam) and lock plate sliding section in order to minimize wear on the sliding section and the burden on the mechanism.

#### • Driving Plate Assembly

Decrease the burden on the mechanism and the wear on the sliding section.

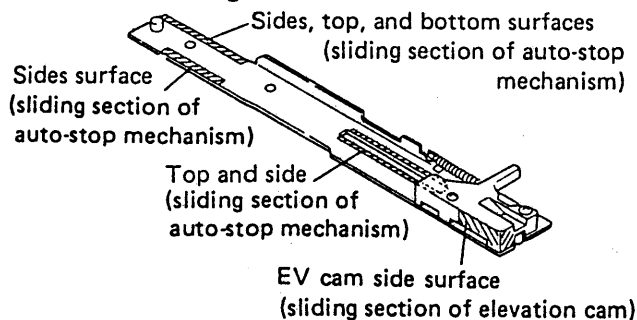


Fig. 5-1 Driving panel assembly section

#### • Switch Locker Section

Apply oil to the switch locker (opening) and sub-panel base sliding section to decrease the burden on the mechanism.

When applying oil to the opening (shaft hole), do not apply any oil 2—3mm from the bottom surface. If oil is applied 2—3mm within the bottom surface, it may come out the bottom and go between the switch lever and sub-panel base causing the switch lever to operate ineffectively.

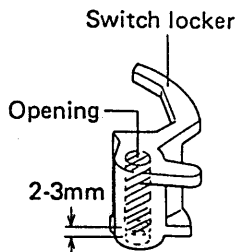


Fig. 5-2 Switch locker section

#### • EV Lever Unit Section

Apply oil to the sliding section of leaf spring (A) and EV lever unit to decrease the burden on the mechanism.

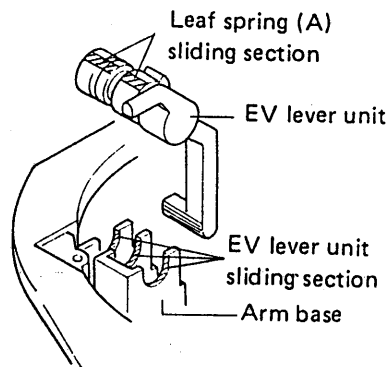


Fig. 5-3 EV lever unit section

#### • Elevation Cam Section

Apply oil to the elevation cam and sliding section of the raising shaft to decrease the burden when operated.

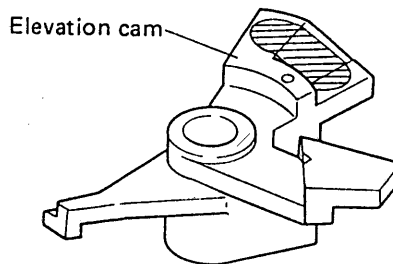


Fig. 5-4 Elevation cam section

#### • EV Sheet Section

Apply oil to the raising shaft and sliding section of the bearing to assure stability in the elevation lowering speed.

## 6. ELECTRICAL PARTS LIST

### NOTES:

- Parts without part number cannot be supplied.
- The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- For your Parts Stock Control, the fast moving items are indicated with the marks \*\* and \*.
- \*\* **GENERALLY MOVES FASTER THAN \***
- This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

### POWER SUPPLY ASSEMBLY (PWR-062)

| Mark     | Part No.         | Symbol & Description     |
|----------|------------------|--------------------------|
| $\Delta$ | PCL-040          | C1 Capacitor             |
|          | CEA 221M 25L     | C2                       |
|          | * PCX-010 (WL02) | D1                       |
| $\Delta$ | * PTT-123        | Power transformer (120V) |

#### • AS Knob Attachment

When installing the AS knob, put the AS knob rib against the AS knob revolution control stopper (attached to the arm base) and affix with the screw. As the stopper may break, be sure to press the AS knob down firmly when installing it.

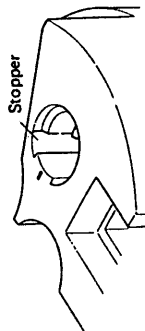


Fig. 5-8 AS knob attachment

#### • Arm Base Attachment

When attaching the arm base section to the mechanism section, put the mechanism section switch locker and switch lever in the locked position and verify that the tonearm is in the arm rest location. Also be sure to put the manual elevation lever in the up position and check that the PU plate shaft is in the position shown in figure 5-9.

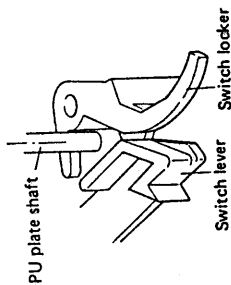


Fig. 5-9 Arm base attachment

#### • Wiring the Connector

When attaching the wires to the 2P connector from the microswitch, bend the lead wires from the connector housing as shown in figure 5-10 before attaching.

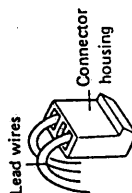


Fig. 5-10 Start lever unit attachment

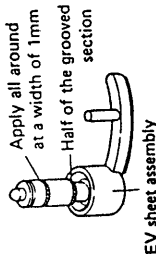


Fig. 5-5 EV sheet section

## 5.2 PRECAUTIONS FOR ATTACHMENT OF PARTS AND REASSEMBLY

### • Motor Attachment

When installing the motor, set the cam in the mechanism stop location and verify that the starting plate section B does not protrude beyond surface A of the cam. If the motor is attached with the starting plate section B protruding, the starting plate may be deformed, the motor pinion gear may be scratched, and the return function may be damaged.

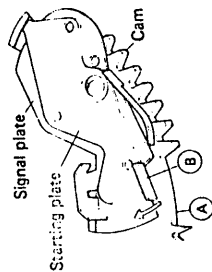


Fig. 5-6 Motor attachment

### • PU Plate Attachment

Push the PU plate into place so that the PU plate bearing section touches the revolution shaft attachment nut. Installation direction is as shown in figure 5-7. Note that there is a difference between auto-return and fully automatic models.

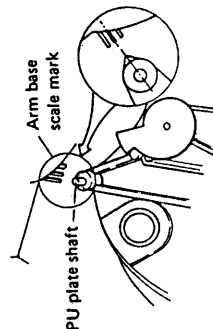
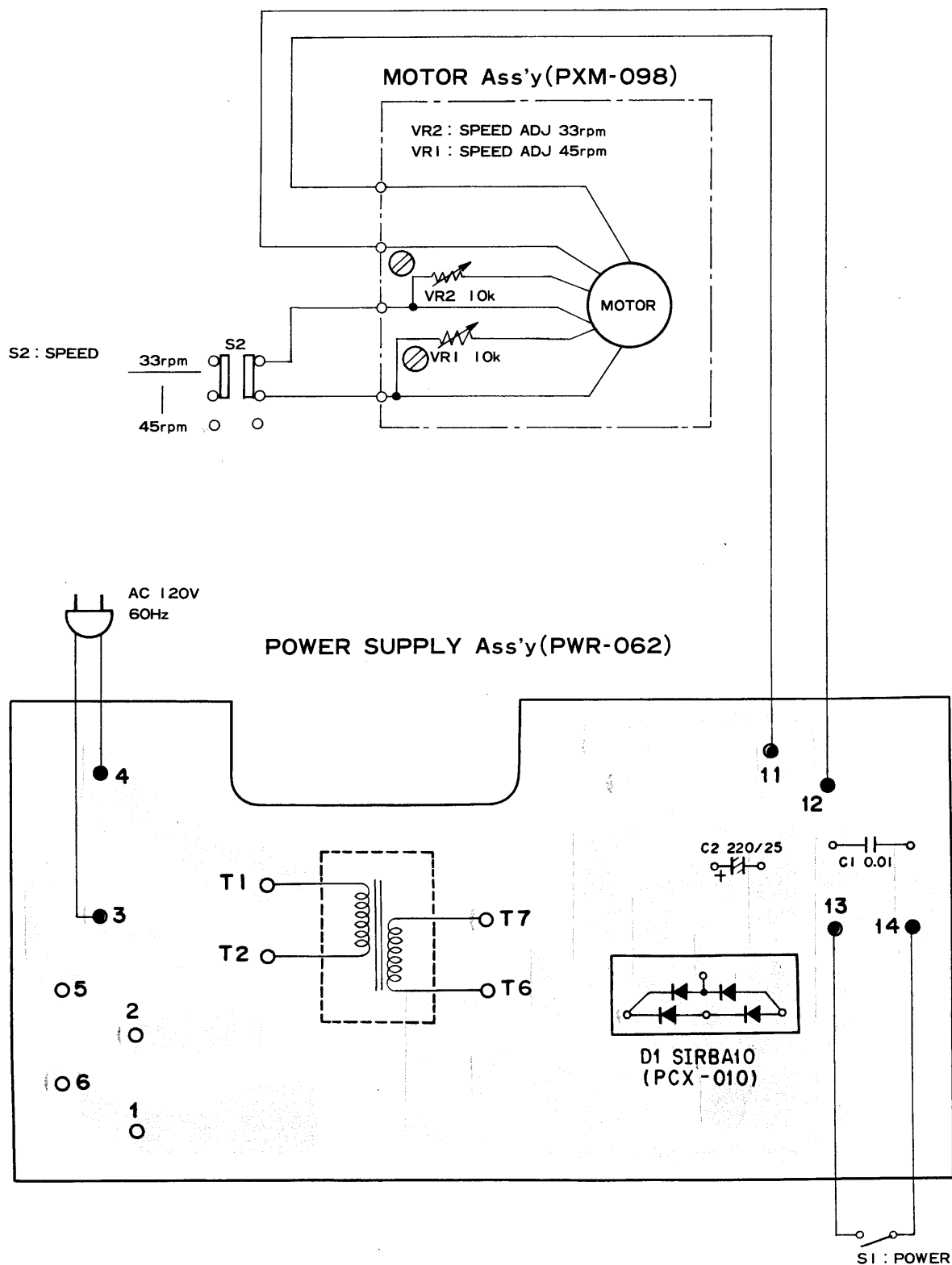
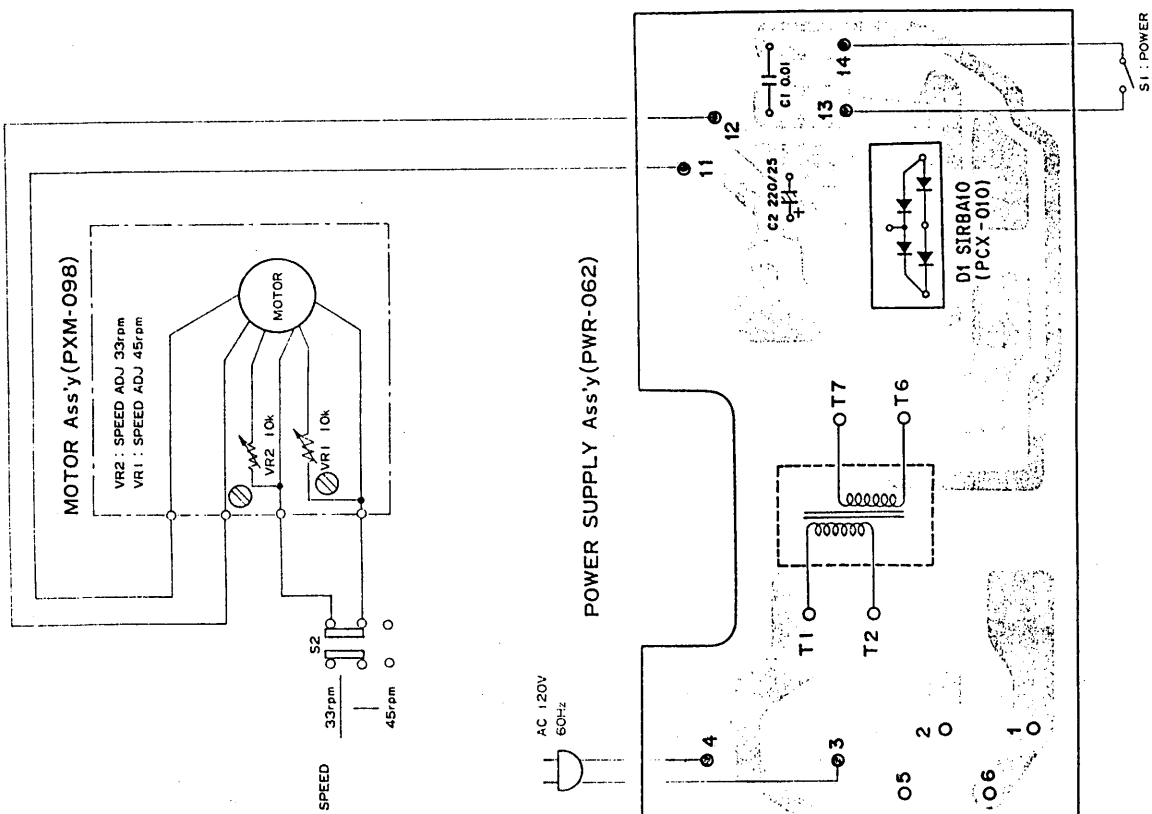


Fig. 5-7 PU plate attachment

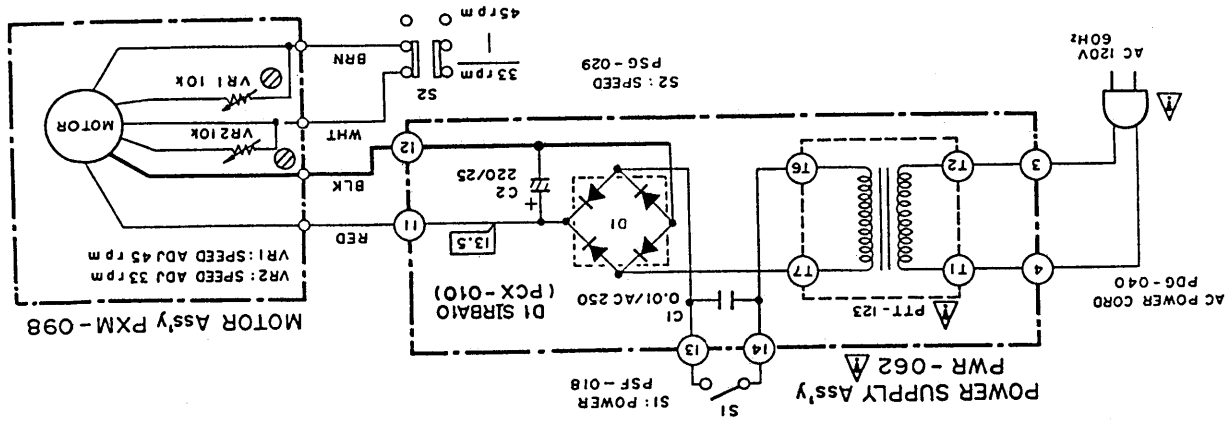
## 7. P.C. BOARD CONNECTION DIAGRAM



# 3. BOARD CONNECTION DIAGRAM

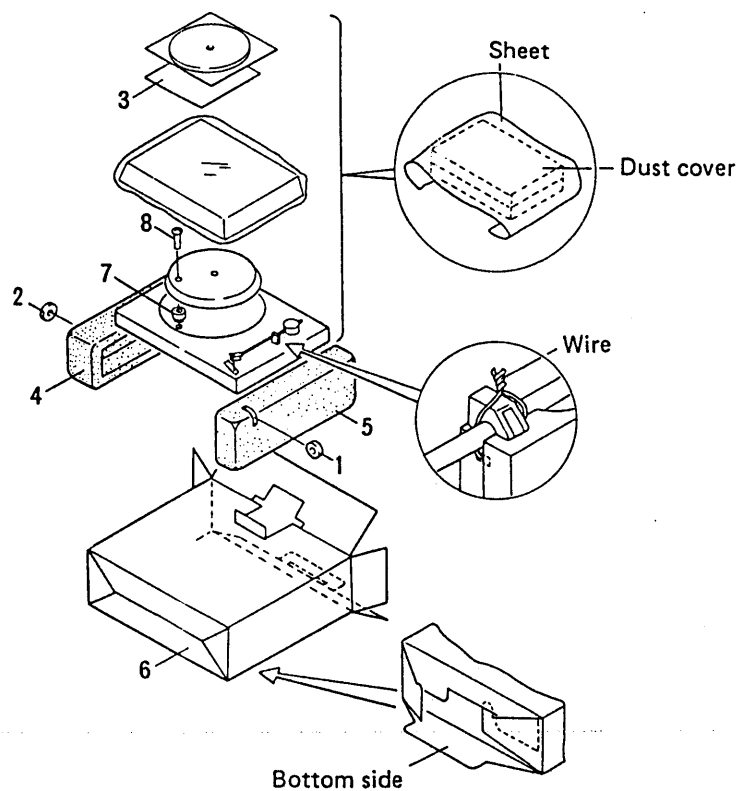


# 8. SCHEMATIC DIAGRAM



1. RESISTORS:  
Indicated in  $\Omega$ ,  $\frac{1}{2}W$ ,  $\pm 5\%$  tolerance unless otherwise noted k : k $\Omega$ , M : M $\Omega$ , (F) :  $\pm 1\%$ , (G) :  $\pm 2\%$ , (K) :  $\pm 10\%$ , (M) :  $\pm 20\%$  tolerance
  2. CAPACITORS:  
Indicated in capacity ( $\mu F$ )/voltage (V) unless otherwise noted p : pF  
Indication without voltage is 50V, except electrolytic capacitor.
  3. VOLTAGE  
DC voltage (V) at no input signal
  4. OTHERS:  
⊗ : Adjusting point.  
The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.
- SWITCHES:  
S1 : POWER ON — OFF  
S2 : SPEED 33 1/3 rpm — 45 rpm
- The underlined indicates the switch position.

## 9. PACKING



### Parts List

| Mark | No. | Part No. | Description               |
|------|-----|----------|---------------------------|
| ★ ★  | 1.  | N93-603  | 45 adaptor                |
|      | 2.  | PXB-501  | Weight assembly           |
|      | 3.  | PRB-193  | Operating instructions    |
|      | 4.  | PHA-127  | Protector (L)             |
|      | 5.  | PHA-128  | Protector (R)             |
|      | 6.  | PHG-443  | Packing case              |
|      | 7.  | PNX-294  | Turntable platter packing |
|      | 8.  | PBA-100  | Screw                     |

## 10. EXPLODED VIEWS

### 10.1 EXTERIOR

#### NOTES:

- Parts without part number cannot be supplied.
- The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- For your Parts Stock Control, the fast moving items are indicated with the marks **★★** and **★**.

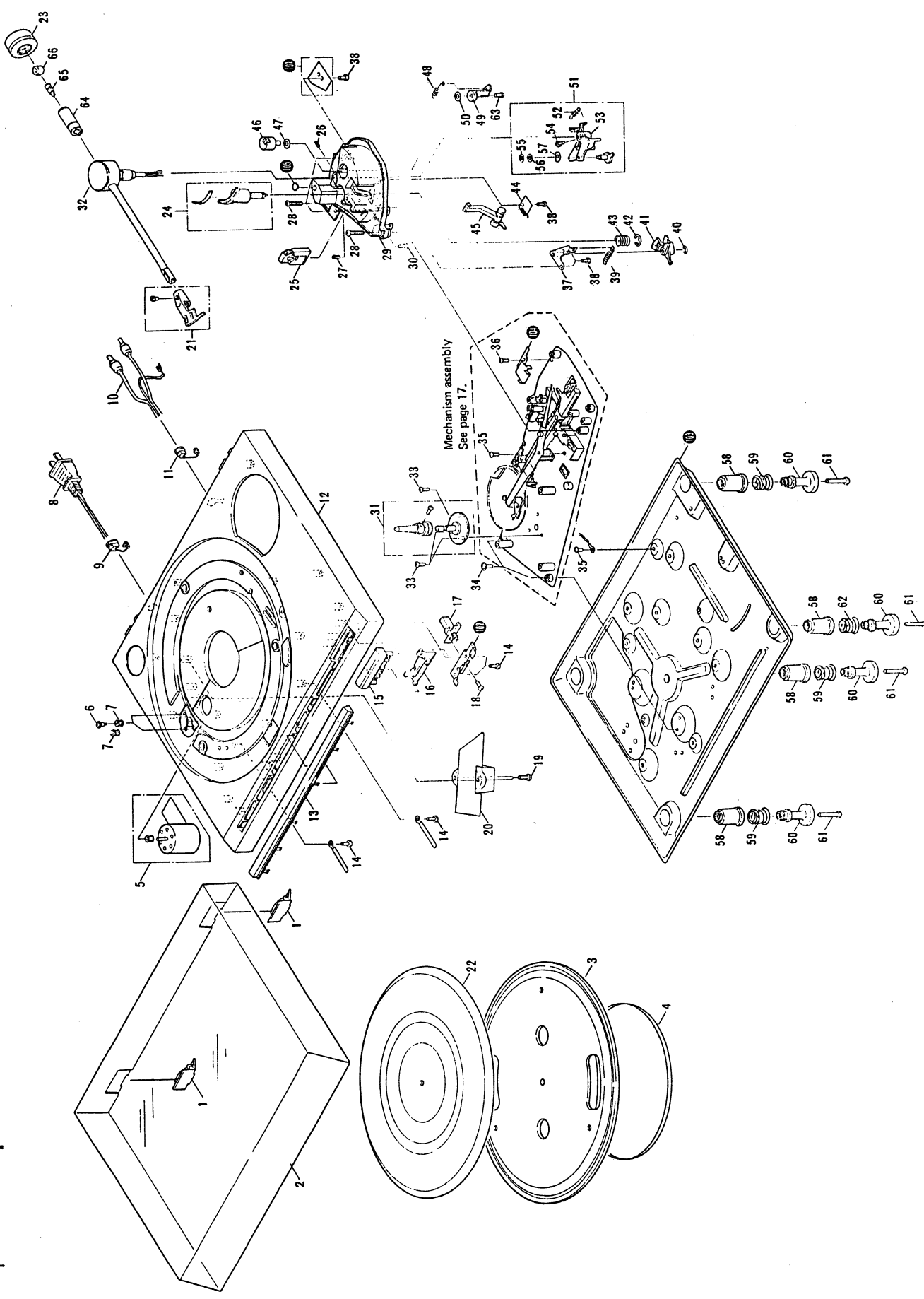
**★★ GENERALLY MOVES FASTER THAN ★**

This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

#### Parts List

| Mark     | No. | Part No.                | Description              | Mark | No.  | Part No.     | Description           |
|----------|-----|-------------------------|--------------------------|------|------|--------------|-----------------------|
| ★        | 1.  | PXB-155                 | Hinge assembly           |      | 41.  | PNX-339      | EV cam                |
| ★★       | 2.  | PNV-034                 | Dust cover               |      | 42.  | YE50S        | E-type washer         |
|          | 3.  | PNR-166                 | Turntable platter        |      | 43.  | PBH-293      | EV spring             |
| ★★       | 4.  | KEB-004                 | Belt                     |      | 44.  | PBK-053      | EV plate spring (A)   |
| ★★       | 5.  | PYY-102                 | Motor assembly           |      | 45.  | PNX-336      | EV cam lever          |
|          | 6.  | PBA-112                 | Screw                    |      | 46.  | PAC-100      | AS knob               |
|          | 7.  | PEB-172                 | Rubber cushion           |      | 47.  | PBF-017      | Washer                |
| $\Delta$ | 8.  | PDG-040                 | Power cord               |      | 48.  | PBH-292      | Spring                |
|          | 9.  | PEC-058                 | Strain relief            |      | 49.  | PNX-335      | AS plate              |
|          | 10. | PDE-064                 | PU cord                  |      | 50.  | PBE-012      | AS spring washer      |
|          | 11. | PEC-056                 | Strain relief            |      | 51.  | PXB-231      | PU plate (B) assembly |
|          | 12. | PNX-249                 | Panel                    |      | 52.  | PBH-308      | PU plate spring       |
|          | 13. | PAM-086                 | Front name plate (F)     |      | 53.  | PNX-301      | PU plate (A)          |
|          | 14. | PPZ30P080FMC            | Screw                    |      | 54.  | PMD40P080FMC | Screw                 |
|          | 15. | PAD-096                 | SP knob (D) unit         |      | 55.  | YS40FBT      | Fixed washer          |
|          | 16. | PNX-303                 | Switch lever (C)         |      | 56.  | WC40FMC      | Flat washer           |
| ★★       | 17. | PSG-029                 | Push switch              |      | 57.  | PNC-227      | PU spring washer      |
|          | 18. | PMZ30P050FMC            | Screw                    |      | 58.  | PEB-194      | Damper cushion        |
|          | 19. | IPZ30P160FMC            | Screw                    |      | 59.  | PBH-311      | Spring                |
| $\Delta$ | 20. | PWR-062                 | Power supply assembly    |      | 60.  | PNX-293      | Holder                |
|          | 21. | PXA-882                 | Headshell assembly       |      | 61.  | PBA-118      | Screw                 |
|          | 22. | PEA-057                 | Rubber mat assembly      |      | 62.  | PBH-312      | Spring                |
|          | 23. | PXM-501 <i>PXB-SD-1</i> | Weight assembly          |      | 63.  | VBZ30P150RMC | Screw                 |
| ★        | 24. | PXB-227                 | EV sheet assembly        |      | 64.  | PXT-596      | Weight shaft assembly |
| ★        | 25. | PXB-247                 | Tonearm rest assembly    |      | 65.  | PBA-535      | Screw                 |
|          | 26. | ZMD40H080FBT            | Screw                    |      | 66.  | PNT-554      | Rubber bush           |
|          | 27. | ZMR30H 150FZK           | Screw                    |      |      |              |                       |
|          | 28. | PBA-108                 | Screw                    |      |      |              |                       |
|          | 29. | PNX-341                 | Tonearm base             |      |      |              |                       |
|          | 30. | IPZ30P100FMC            | Screw                    |      | 101. |              | PU cord assembly      |
|          | 31. | PXB-177                 | Shaft assembly           |      | 102. |              | Selector base (B)     |
| ★        | 32. | PPD-624                 | Tonearm assembly         |      | 103. |              | Base                  |
|          | 33. | PDZ30P080FMC            | Screw                    |      | 104. |              | Protection plate      |
|          | 34. | PBA-109                 | Screw                    |      | 105. |              | Rubber bush           |
|          | 35. | PDZ30P050FMC            | Screw                    |      |      |              |                       |
|          | 36. | PDZ30P050FMC            | Screw                    |      |      |              |                       |
|          | 37. | PXT-462                 | EV plate spring (B) unit |      |      |              |                       |
|          | 38. | VBZ30P080FMC            | Screw                    |      |      |              |                       |
|          | 39. | PBH-238                 | EV cam spring            |      |      |              |                       |
|          | 40. | YE30S                   | E-type washer            |      |      |              |                       |

Exterior



# 11. ADJUST

## 11.1 AUTO-RETURN

1. Turn the auto return lever clockwise around the auto return lever.
2. When the auto return lever is back a little, the auto return lever will complete its circumference.
3. Stop turning the stylus tip is on the at the top of the stylus.
4. Once the stylus is completed, the auto return lever will automatically return to its original position.

## 11.2 ARM-EI

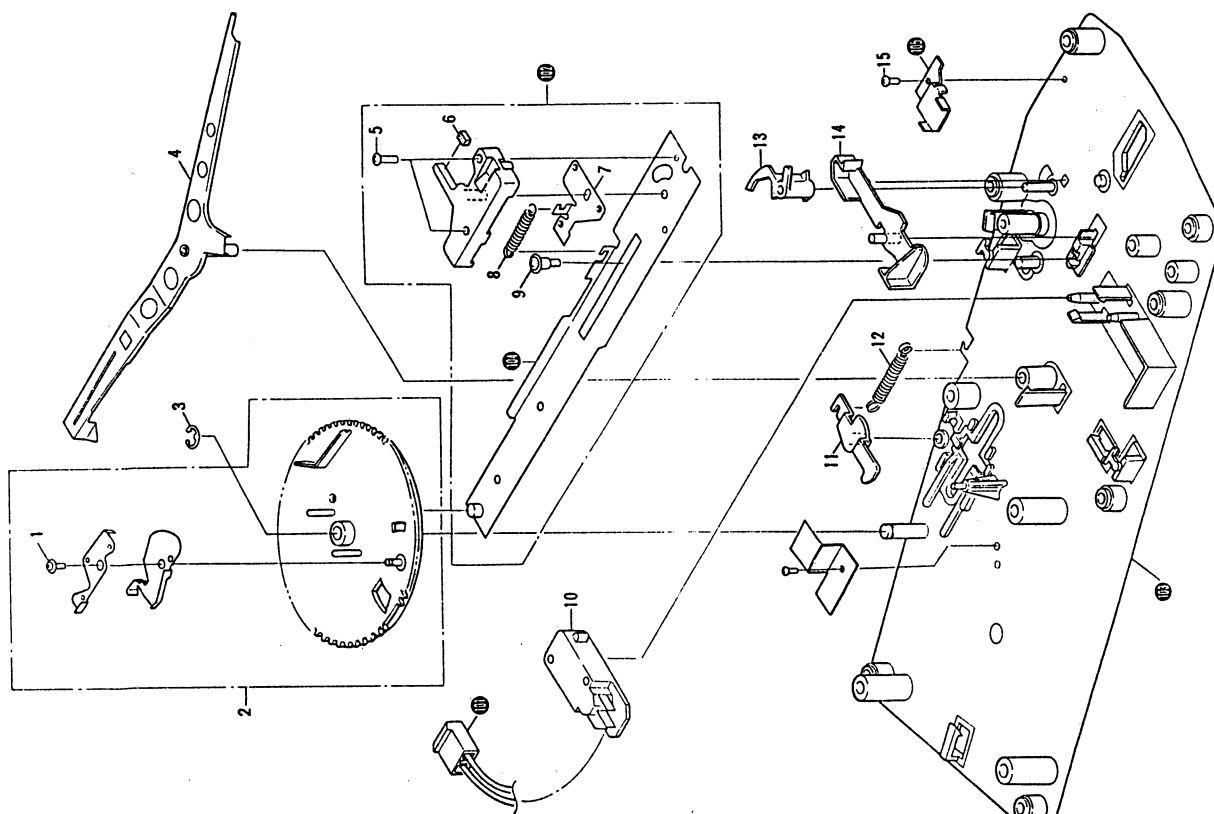
To proceed with adjustment, adjust the stylus into the stylus holder and rotate the counter-clockwise until the height of the stylus is  $7 \pm 2\text{mm}$ .

## 11.3 M

1. Turn the stylus tip into the stylus holder.
2. Turn the stylus tip into the stylus holder.
3. Turn the stylus tip into the stylus holder.

Parts List of Mechanism Assy

| Mark | No. | Part No.     | Description         | Mark | No.  | Part No.     | Description            |
|------|-----|--------------|---------------------|------|------|--------------|------------------------|
|      | 1.  | PBA-126      | Screw               |      | 11.  | PNX-035      | Lock plate             |
|      | 2.  | PYY-100      | Cam assembly        |      | 12.  | PBH-225      | Lock plate spring      |
|      | 3.  | YE40S        | E-type washer       |      | 13.  | PNX-031      | Switch lock angle      |
|      | 4.  | PXT-446      | Detector lever unit |      | 14.  | PNX-030      | Switch lever           |
|      | 5.  | PMZ26P100FMC | Screw               |      | 15.  | PDZ30P050FMC |                        |
|      | 6.  | PEC-065      | EV cam buffer       |      | 101. |              | Connector assembly     |
|      | 7.  | PNC-220      | Start plate         |      | 102. |              | Driving plate assembly |
|      | 8.  | PBH-224      | Start plate spring  |      | 103. |              | Sub-panel unit         |
|      | 9.  | PBA-123      | Screw               |      | 104. |              | Plate                  |
|      | 10. | PSF-018      | Microwitch          |      | 105. |              | Protection plate       |



## 11. ADJUSTMENTS

### 11.1 AUTO-RETURN ADJUSTMENT

1. Turn the auto return adjustment screw full around counter-clockwise.
2. When the auto return adjustment screw is turned back a little at a time clockwise, the tone-arm will commence to return to the outer circumference.
3. Stop turning the adjustment screw once the stylus tip is 33mm away from the center shaft.
4. Once the above adjustment procedure has been completed, check that the tonearm returns automatically as designed.

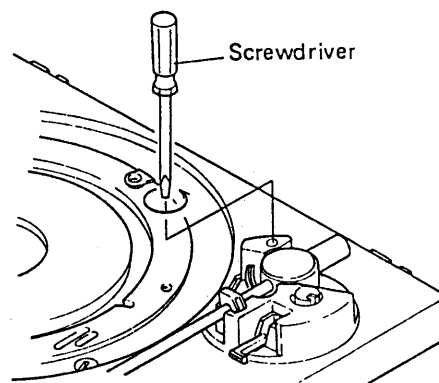


Fig. 11-1 Auto-return adjustment

### 11.2 ARM-ELEVATION ADJUSTMENT

To proceed with the elevation sheet height adjustment, insert the hexagonal wrench (for 3mm) into the hole at the front of the EV sheet and rotate it clockwise to reduce the height and counter-clockwise to increase the height. The height of the stylus tip from the record surface is  $\pm 2\text{mm}$ .

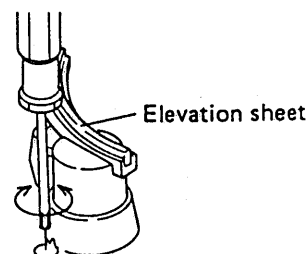


Fig. 11-2 Arm-elevation adjustment

### 11.3 MOTOR ADJUSTMENT

1. Turn the power on and start the turntable platter rotating.
2. Turn the speed adjustment knob around to the mechanically center position.
3. Adjust VR1 and VR2 in the motor assembly so that the stroboscope appears to be stationary. Again this adjustment is performed from below.
4. Adjust VR2 for 33 rpm speed, and VR1 for 45 rpm.
5. Always adjust at 33rpm.

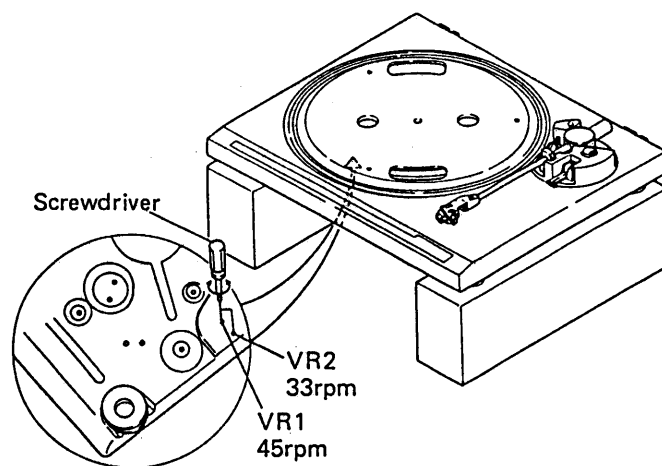


Fig. 11-3 Motor adjustment

**ADDITIONAL**

**PIONEER**

# *Service Manual*

ORDER NO.  
ART-714-0

STEREO TURNTABLE

# PL-2

WE, WB, WP

# PL-120

WE, WB, WP

- This additional service manual is applicable to the PL-2/WE,WB,WP and PL-120/WE,WB,WP types.
- The basic performance of the PL-2/WE,WB,WP and PL-120/WE,WB,WP types is the same as the PL-2/KUT types. Please refer to the PL-2/KUT type service manual (ART-713) with the exception of this supplements.
- Both model PL-2 and PL-120 have the same basic mechanism and performance.  
The only difference is in appearance.

## 1. SPECIFICATIONS

The specifications for PL-2/WE,WB,WP and PL-120/WE,WB,WP types are the same as the PL-2/KUT type except for following section;

### Miscellaneous

#### Power Requirements

PL-2/WE, WB, WP and PL-120/WE, WB, WP types  
..... AC 220V-240V 50/60Hz

## ONTRAST OF MISCELLANEOUS PARTS

## NOTES:

- Parts without part number cannot be supplied.
- The : mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- For your Parts Stock Control, the fast moving items are indicated with the marks \*\* and \*
- \*\* GENERALLY MOVES FASTER THAN \*
- This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

-2-

/WE, WB, WP types are the same as the PL-2/  
type except for following sections.

## LANEOUS PARTS

| Symbol & Description  | Part No. |         |         |         |
|-----------------------|----------|---------|---------|---------|
|                       | KUT type | WE type | WB type | WP type |
| Panel                 | PNX-349  | PNX-355 | PNX-355 | PNX-355 |
| Rubber mat assembly   | PEA-057  | PEA-058 | PEA-058 | PEA-058 |
| AC power cord         | PDG-040  | PDG-037 | PDG-038 | PDG-039 |
| Strain relief         | PEC-058  | PEC-056 | PEC-056 | PEC-056 |
| PU cord               | PDE-064  | PDE-044 | PDE-044 | PDE-044 |
| Switch lever C        | PNX-303  | PNX-303 | PNX-393 | PNX-303 |
| Power supply assembly | PWR-062  | PWR-066 | PWR-066 | PWR-066 |

## G AND FURNISHED PARTS

| Symbol & Description                                   | Part No. |         |         |         |
|--------------------------------------------------------|----------|---------|---------|---------|
|                                                        | KUT type | WE type | WB type | WP type |
| Operating instructions (English)                       | PRB-193  | PRD-068 | PRB-198 | PRB-198 |
| Operating instructions (English/German/French/Italian) | PHG-443  | PHG-466 | PHG-466 | PHG-466 |
| Packing case                                           | PHG-443  | PBA-905 | PBA-905 | PBA-905 |
| Cartridge mounting screw                               | PRB-193  | PBN-902 | PBN-902 | PBN-902 |
| Cartridge mounting nut                                 | PRB-193  | PRB-198 | PRB-198 | PRB-198 |

## SUPPLY ASSEMBLY

power supply assembly (PWR-066) is the same as the power supply assembly (PWR-062) except for following sections.

| Symbol & Description         | Part No.           |                   |                   |                   |
|------------------------------|--------------------|-------------------|-------------------|-------------------|
|                              | KUT type (PWR-062) | WE type (PWR-066) | WB type (PWR-066) | WP type (PWR-066) |
| Power transformer (120V)     | PTT-123            | PTT-125           | PTT-125           | PTT-125           |
| Power transformer (220-240V) | PTT-123            | PTT-125           | PTT-125           | PTT-125           |

PTT 144 PTT-144

## 2.2 PL-120

PL-120/WE, WB, WP types are the same as the PL-2/KUT type except for following sections.

## MISCELLANEOUS PARTS

| Mark | Symbol & Description | Part No.      |                |                |                |
|------|----------------------|---------------|----------------|----------------|----------------|
|      |                      | PL-2 KUT type | PL-120 WE type | PL-120 WB type | PL-120 WP type |
| A.   | Panel                | PNX-349       | PNX-359        | PNX-359        | PNX-359        |
|      | Rubber mat assembly  | PEA-057       | PEA-058        | PEA-058        | PEA-058        |
|      | Strain relief        | PEC-058       | PEC-056        | PEC-056        | PEC-056        |
|      | (for AC power cord)  | PDE-064       | PDE-044        | PDE-044        | PDE-044        |
|      | PU cord              | PDG-040       | PDG-037        | PDG-038        | PDG-039        |
|      | AC power cord        | PNX-336       | PNX-344        | PNX-344        | PNX-344        |
|      | EV cam lever         | PAC-100       | PAC-101        | PAC-101        | PAC-101        |
|      | AS knob              | PAD-096       | PAD-094        | PAD-094        | PAD-094        |
|      | { SP button (D) unit | PAM-086       | PAM-079        | PAM-079        | PAM-079        |
|      | { SP button (C) unit |               |                |                |                |
|      | Front name plate (F) |               |                |                |                |

## PACKING AND FURNISHED PARTS

| Mark | Symbol & Description                                   | Part No.      |                |                |                |
|------|--------------------------------------------------------|---------------|----------------|----------------|----------------|
|      |                                                        | PL-2 KUT type | PL-120 WE type | PL-120 WB type | PL-120 WP type |
|      | Operating instructions (English)                       | PRB-193       | PRD-074        | PRB-206        | PRB-206        |
|      | Operating instructions (English/German/French/Italian) | PHG-443       | PHG-460        | PHG-460        | PHG-460        |
|      | Packing case                                           | PHG-443       | PBA-905        | PBA-905        | PBA-905        |
|      | Cartridge mounting screw                               | PRB-193       | PBN-902        | PBN-902        | PBN-902        |
|      | Cartridge mounting nut                                 | PRB-193       | PRB-198        | PRB-198        | PRB-198        |

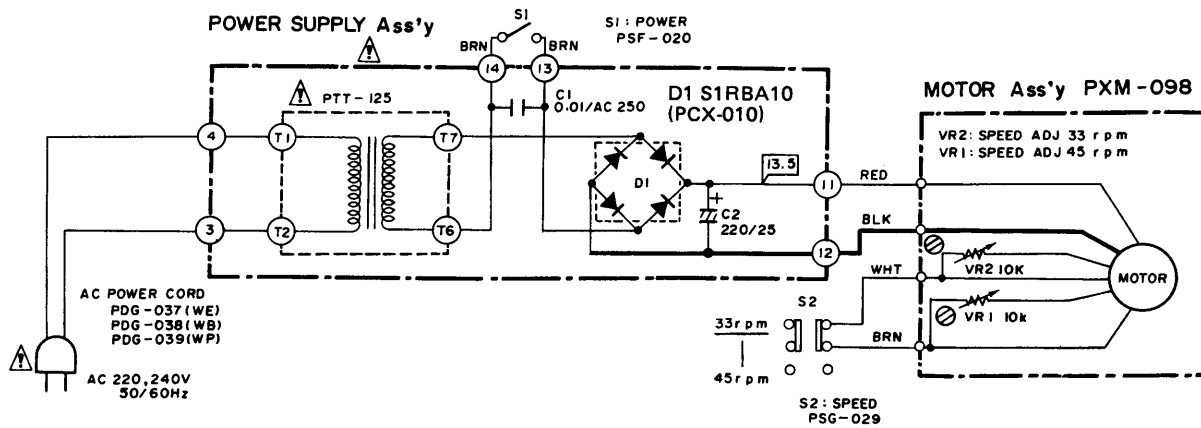
## POWER SUPPLY ASSEMBLY

The power supply assembly (PWR-066) is the same as the power supply assembly (PWR-062) except for following sections.

| Mark | Symbol & Description         | Part No.                |                          |                          |                          |
|------|------------------------------|-------------------------|--------------------------|--------------------------|--------------------------|
|      |                              | PL-2 KUT type (PWR-062) | PL-120 WE type (PWR-066) | PL-120 WB type (PWR-066) | PL-120 WP type (PWR-066) |
| ★    | Power transformer (120V)     | PTT-123                 | PTT-125                  | PTT-125                  | PTT-125                  |
|      | Power transformer (220-240V) | PTT-123                 | PTT-125                  | PTT-125                  | PTT-125                  |

### 3. SCHEMATIC DIAGRAM AND P.C. BOARD PATTERN

PL-2/WE, WB, WP and PL-120/WE, WB, WP types



#### 1. RESISTORS:

Indicated in  $\Omega$ ,  $\frac{1}{4}W$ ,  $\pm 5\%$  tolerance unless otherwise noted k : k $\Omega$ , M : M $\Omega$ , (F) :  $\pm 1\%$ , (G) :  $\pm 2\%$ , (K) :  $\pm 10\%$  (M) :  $\pm 20\%$  tolerance

#### 2. CAPACITORS:

Indicated in capacity ( $\mu F$ )/voltage (V) unless otherwise noted p : pF  
Indication without voltage is 50V except electrolytic capacitor.

#### 3. VOLTAGE

: DC voltage (V) at no input signal

#### 4. OTHERS:

: Adjusting point.

The mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

#### SWITCHES:

S1 : POWER ON — OFF  
S2 : SPEED 33 1/3 r.p.m. — 45 r.p.m.

The underlined indicates the switch position.

#### Power Supply Assembly (PWR-066)

