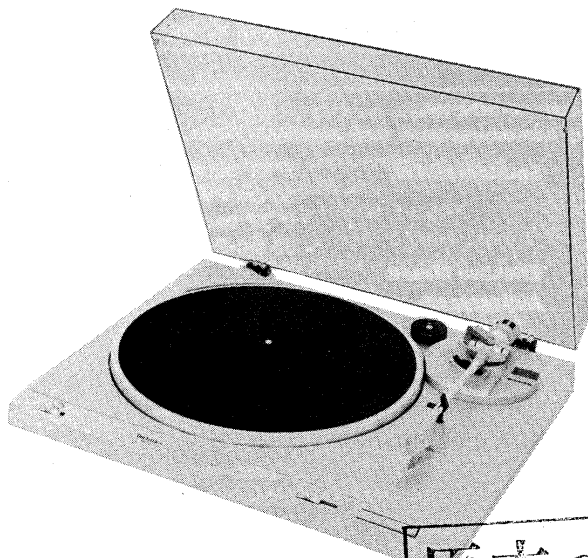


# Service Manual

## Turtable System SL-B210 SL-B210(K) [E], [EK], [EG], [Ei], [EC] [EB], [EH], [XL], [EF], [XA]



**TAP** is the standard mark for plug-in-connector type. Products carrying this mark are interchangeable and adaptable among each other.

English

原本のため  
持出厳禁

### Areas

- \* [E] is available in Switzerland and Scandinavia.
- \* [EK] is available in United Kingdom.
- \* [EG] is available in F.R. Germany.
- \* [Ei] is available in Italy.
- \* [EC] is available in Czechoslovakia.
- \* [EB] is available in Belgium.
- \* [EH] is available in Holland.
- \* [XL] is available in Australia
- \* [EF] is available in France.
- \* [XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.

- \* The colors of this model include silver and black.
- \* The black type model is provided with (K) in the Service Manual.

### Specifications

Specifications are subject to change without notice for further improvement.  
Weight and dimensions shown are approximate.

#### ■ General

|                        |                                                                                                         |
|------------------------|---------------------------------------------------------------------------------------------------------|
| Power supply:          | 220V, 50/60Hz (For Continental Europe)                                                                  |
| Power consumption:     | 2 W                                                                                                     |
| Dimensions:<br>(W×H×D) | 43 × 9.3 × 37.5 cm<br>(16-15/16" × 3-21/32" × 14-3/4")                                                  |
|                        | Maximum height when top<br>(dust cover) is open.<br>43 × 36 × 41 cm<br>(16-15/16" × 14-5/32" × 16-1/8") |
| Weight:                | 3.3 kg (7.3 lb.)                                                                                        |

#### ■ Turntable section

|                       |                                                               |
|-----------------------|---------------------------------------------------------------|
| Type:                 | Automatic turntable<br>Auto return<br>Auto stop<br>Belt drive |
| Drive method:         | DC motor                                                      |
| Motor:                | DC servo control                                              |
| Drive control method: | Aluminum die-cast                                             |
| Turntable platter:    | Diameter 30.4 cm (12 inches)                                  |
| Turntable speeds:     | 33-1/3 rpm and 45 rpm                                         |
| Wow and flutter:      | 0.045% WRMS (JIS C5521)<br>±0.06% peak<br>(IEC 98A Weighted)  |
| Rumble:               | -70 dB (IEC 98A Weighted)                                     |

#### ■ Tonearm section

|       |                                                                                  |
|-------|----------------------------------------------------------------------------------|
| Type: | Statically-balanced straight<br>tonearm<br>Plug-in connector cartridge<br>system |
|-------|----------------------------------------------------------------------------------|

|                                       |                                                                                                                        |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Effective length:                     | 230 mm (9-1/16")                                                                                                       |
| Overhang:                             | 15 mm (19/32")                                                                                                         |
| Tracking error angle:                 | Within 2°32' at the outer groove<br>of 30 cm (12") record<br>Within 0°32' at the inner groove<br>of 30 cm (12") record |
| Effective mass:                       | 7.5 g (without cartridge)                                                                                              |
| Stylus pressure<br>adjustment range:  | 1.25 g                                                                                                                 |
| Applicable cartridge<br>weight range: | 6 g                                                                                                                    |

#### ■ Cartridge section

|                                |                                                                                                                                  |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Type:                          | Moving magnet stereo cartridge                                                                                                   |
| Magnet circuit:                | All laminated core                                                                                                               |
| Frequency response:            | 10 Hz ~ 30 kHz<br>20 Hz ~ 10 kHz ±1 dB                                                                                           |
| Output voltage:                | 2.5 mV at 1 kHz, 5 cm/s. zero to<br>peak lateral velocity<br>(7 mV at 1 kHz, 10 cm/s. zero to<br>peak 45° velocity [DIN 45 500]) |
| Channel separation:            | 22 dB at 1 kHz                                                                                                                   |
| Channel balance:               | Within 2 dB at 1 kHz                                                                                                             |
| Recommended load<br>impedance: | 47 kΩ~100 kΩ                                                                                                                     |
| Compliance (dynamic):          | 12×10 <sup>-6</sup> cm/dyne at 100 Hz                                                                                            |
| Stylus pressure range:         | 1.25 ±0.25 g (12.5± 2.5 mN)                                                                                                      |
| Weight:                        | 6 g (cartridge only)                                                                                                             |
| Replacement stylus:            | EPS-24CS                                                                                                                         |

# Technics

Matsushita Electric Trading Co., Ltd.  
P.O. Box 288, Central Osaka Japan

- The power supply for this unit varies depending upon the areas. Also, the parts used for power supply are different. So, refer to the circuit diagram and the replacement parts list.
- ★ 220V (50/60 Hz) for Continental Europe.
- ★ 240V (50/60 Hz) for United Kingdom and Australia.
- ★ 110V-120V/220V-240V (50/60 Hz) for other areas. [XA] for other areas is provided with voltage selector.

## Deutsch

### TECHNISCHE DATEN

Änderungen der technischen Daten vorbehalten.

Die angegebenen Gewichts- und Abmessungsdaten sind ungefähre Werte.

#### ■ Allgemeine Daten

|                                 |                                                                                                     |
|---------------------------------|-----------------------------------------------------------------------------------------------------|
| <b>Stromversorgung:</b>         | 220V, 50/60 Hz<br>Wechselstrom                                                                      |
| <b>Leistungsaufnahme:</b>       | 2 W                                                                                                 |
| <b>Abmessungen<br/>(B×H×T):</b> | 43 × 9,3 × 37,5 cm<br>Maximale Höhe bei geöffnetem<br>Oberteil (Staubabdeckung).<br>43 × 36 × 41 cm |
| <b>Gewicht:</b>                 | 3,3 kg                                                                                              |

#### ■ Plattenspieler

|                                               |                                                                                     |
|-----------------------------------------------|-------------------------------------------------------------------------------------|
| <b>Typ:</b>                                   | Automatischer Plattenspieler<br>Rückführautomatik<br>Stopautomatik<br>Riemenantrieb |
| <b>Antrieb:</b>                               | Gleichstrommotor                                                                    |
| <b>Motor:</b>                                 | Gleichstrom-Servo-Steuerung                                                         |
| <b>Antriebsregel-Methode:</b>                 | Aluminium-Spritzguß                                                                 |
| <b>Plattenteller:</b>                         | Durchmesser 30,4 cm                                                                 |
| <b>Plattenteller-<br/>Drehzahlen:</b>         | 33-1/3 und 45 U/min                                                                 |
| <b>Gleichlaufschwankungen:</b>                | 0,045% WRMS (JIS C5521)<br>±0,06% Spitze (IEC 98A bewertet)                         |
| <b>Rumpel-Geräusch-<br/>spannungsabstand:</b> | -70 dB (IEC 98A bewertet)                                                           |

#### ■ Tonarm

|                         |                                                                                   |
|-------------------------|-----------------------------------------------------------------------------------|
| <b>Typ:</b>             | Statisch balancierter,<br>gerader Tonarm<br>Tonabnehmersystem<br>vom Einsteck-Typ |
| <b>Effektive Länge:</b> | 230 mm                                                                            |
| <b>Überhang:</b>        | 15 mm                                                                             |

|                                                           |                                                                                                      |
|-----------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| <b>Spurfehlwinkel:</b>                                    | 2°32' bei der Einlaufrille einer<br>30 cm-Platte<br>0°32' bei der Auslaufrille einer<br>30 cm-Platte |
| <b>Effektive Masse:</b>                                   | 7,5 g (ohne Tonabnehmer)                                                                             |
| <b>Auflagekraft-<br/>Einstellbereich:</b>                 | 1,25 g                                                                                               |
| <b>Zulässiger Ton-<br/>abnehmer-<br/>Gewichtsbereich:</b> | 6 g                                                                                                  |

#### ■ Tonabnehmer

|                                           |                                                                                                                                                 |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Typ:</b>                               | Stereo-Magnet-Tonabnehmer mit<br>Einpunkt-Aufhängungssystem<br>Ganzlamellenkern                                                                 |
| <b>Magnetkreis:</b>                       | 10 Hz bis 30 kHz                                                                                                                                |
| <b>Frequenzgang:</b>                      | 20 Hz bis 10 kHz ±1 dB<br>2,5 mV bei 1 kHz<br>5 cm/s. Null-zu-Spitze, lateral<br>[7 mV bei 1 kHz 10 cm/s. Null-<br>zu-Spitze, 45° (DIN 45 500)] |
| <b>Ausgangsspannung:</b>                  | 22 dB bei 1 kHz<br>Innerhalb 2 dB bei 1 kHz                                                                                                     |
| <b>Kanaltrennung:</b>                     |                                                                                                                                                 |
| <b>Kanalabweichung:</b>                   |                                                                                                                                                 |
| <b>Empfohlene<br/>Endimpedanz:</b>        | 47 kΩ~100 kΩ                                                                                                                                    |
| <b>Nachgiebigkeit<br/>(dynamisch):</b>    | 12 × 10 <sup>-6</sup> cm/dyn bei 100 Hz                                                                                                         |
| <b>Auflagekraft-<br/>Einstellbereich:</b> | 1,25 ±0,25 g (12,5 ±2,5 mN)                                                                                                                     |
| <b>Gewicht:</b>                           | 6 g (nur Tonabnehmer)                                                                                                                           |
| <b>Ersatznadel:</b>                       | EPS-24CS                                                                                                                                        |

## Français

### CARACTERISTIQUES

Les spécifications sont susceptibles d'être modifiées sans préavis.

Le poids et les dimensions donnés sont approximatifs.

#### ■ Généralités

|                                |                                                                                                                            |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| <b>Alimentation:</b>           | 220V, 50 ou 60 Hz                                                                                                          |
| <b>Consommation:</b>           | 2 W                                                                                                                        |
| <b>Dimensions:<br/>(L×H×P)</b> | 43 × 9,3 × 37,5 cm<br>Hauteur maximum lorsque le<br>dessus (couvercle<br>protège-poussière) est ouvert.<br>43 × 36 × 41 cm |
| <b>Poids:</b>                  | 3,3 kg                                                                                                                     |

#### ■ Platine de lecture

|                                      |                                                                |
|--------------------------------------|----------------------------------------------------------------|
| <b>Type:</b>                         | Platine automatique<br>Retour automatique<br>Arrêt automatique |
| <b>Système d'entraîne-<br/>ment:</b> | Entraînement par courroie                                      |
| <b>Moteur:</b>                       | Moteur C.C.                                                    |
| <b>Groupe de réglage:</b>            | Servocommande à C.C.                                           |
| <b>Plateau de lecture:</b>           | En aluminium moulé sous<br>pression<br>Diamètre 30,4 cm        |

|                                         |                                                                                  |
|-----------------------------------------|----------------------------------------------------------------------------------|
| <b>Vitesses de rotation:</b>            | 33-1/3 et 45 t/p.m                                                               |
| <b>Pleurage et scintille-<br/>ment:</b> | 0,045% de valeur efficace<br>(JIS C5521)<br>±0,06% de crête<br>(IEC 98A Pondéré) |
| <b>Ronflement:</b>                      | -70 dB (IEC 98A Pondéré)                                                         |

#### ■ Bras de lecture

|                                     |                                                                                                                              |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| <b>Type:</b>                        | Bras de lecture rectiligne<br>statiquement équilibré<br>Système de cellule de<br>lecture à connecteur<br>enfichable.         |
| <b>Longueur effective:</b>          | 230 mm                                                                                                                       |
| <b>Porte-à-faux:</b>                | 15 mm                                                                                                                        |
| <b>Angle d'erreur<br/>de piste:</b> | En deçà de 2°32' au sillon<br>extérieur d'un disque de 30 cm<br>En deçà de 0°32' au sillon<br>intérieur d'un disque de 30 cm |

|                                                         |                                                                             |                                                                                    |
|---------------------------------------------------------|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| <b>Masse réelle:</b>                                    | 7,5 g (sans la cellule pick-up)                                             | 10 cm/s., zéro à vitesse 45° de crête [DIN 45 500])                                |
| <b>Plage de réglage de la pression d'appui:</b>         | 1,25 g                                                                      | <b>Séparation des canaux:</b> 22 dB à 1 kHz                                        |
| <b>Gamme du poids des cellules pick-up utilisables:</b> | 6 g                                                                         | <b>Equilibrage des canaux:</b> En deçà de 2 dB à 1 kHz                             |
| <b>■ Cellule pick-up</b>                                |                                                                             | <b>Impédance de charge recommandée:</b> 47 kΩ~100 kΩ                               |
| <b>Type:</b>                                            | Cellule pick-up stéréo à aimant mobile                                      | <b>Elasticité (dynamique):</b> $12 \times 10^{-6}$ cm/dyne à 100 Hz                |
| <b>Circuit magnétique:</b>                              | Noyau entièrement feuilleté                                                 | <b>Plage de la force verticale d'appui:</b> $1,25 \pm 0,25$ g ( $12,5 \pm 2,5$ mN) |
| <b>Réponse en fréquence:</b>                            | 10 Hz à 30 kHz<br>20 Hz à 10 kHz $\pm 1$ dB                                 | <b>Poids:</b> 6 g (cellule seule)                                                  |
| <b>Tension de sortie:</b>                               | 2,5 mV à 1 kHz; 5 cm/s., zéro à vitesse latérale de crête<br>(7 mV à 1 kHz) | <b>Pointe de lecture de remplacement:</b> EPS-24CS                                 |

## Español

## ESPECIFICACIONES

Las especificaciones quedan sujetas a cambios sin aviso previo.  
El peso y las dimensiones indicados son aproximados.

## ■ En general

|                                           |                                                                                                                       |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| <b>Alimentación de corriente:</b>         | 220V, 50 Ó 60 Hz                                                                                                      |
| <b>Consumo de corriente:</b>              | 2 W                                                                                                                   |
| <b>Dimensiones:</b><br>(Ancho×Alto×Prof.) | 43 × 9,3 × 37,5 cm<br>Altura máxima cuando la parte de arriba (tapa contra el polvo) está abierta.<br>43 × 36 × 41 cm |
| <b>Peso:</b>                              | 3,3 kg                                                                                                                |

## ■ Sección del plato giratorio

|                                            |                                                                       |
|--------------------------------------------|-----------------------------------------------------------------------|
| <b>Tipo:</b>                               | Plato giratorio automático<br>Retorno automático<br>Parada automática |
| <b>Método de accionamiento:</b>            | Accionamiento por correa                                              |
| <b>Motor:</b>                              | Motor de corriente continua                                           |
| <b>Método de control de accionamiento:</b> | Servocontrol por corriente continua                                   |
| <b>Platillo del plato giratorio:</b>       | Aluminio fundido<br>Diámetro 30,4 cm                                  |
| <b>Velocidades del plato giratorio:</b>    | 33-1/3 y 45 rpm                                                       |
| <b>Ululaciones y trémolo:</b>              | 0,045% WRMS (JIS C5521)<br>$\pm 0,06\%$ cresta<br>(IEC 98A Ponderado) |
| <b>Ruido de rodadura:</b>                  | -70 dB<br>(IEC 98A Ponderado)                                         |

## ■ Sección del brazo sonoro

|                           |                                                                                                |
|---------------------------|------------------------------------------------------------------------------------------------|
| <b>Tipo:</b>              | Brazo sonoro recto<br>equilibrado estáticamente<br>Sistema de cartucho con conector enchufable |
| <b>Longitud efectiva:</b> | 230 mm                                                                                         |

|                                                   |                                                                                                                          |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| <b>Proyección:</b>                                | 15 mm                                                                                                                    |
| <b>Angulo de error de seguimiento:</b>            | Inferior a 2°32' en el surco exterior de un disco de 30 cm<br>Inferior a 0°32' en el surco interior de un disco de 30 cm |
| <b>Masa efectiva:</b>                             | 7,5 g (sin cartucho)                                                                                                     |
| <b>Radio de ajuste de la presión de la aguja:</b> | 1,25 g                                                                                                                   |
| <b>Radio de peso de cartucho utilizable:</b>      | 6 g                                                                                                                      |

## ■ Sección del cartucho

|                                         |                                                                                                                                            |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Tipo:</b>                            | Cartucho estereofónico de imán móvil                                                                                                       |
| <b>Circuito magnético:</b>              | Núcleo totalmente laminado                                                                                                                 |
| <b>Respuesta de frecuencia:</b>         | 10 Hz a 30 kHz<br>20 Hz a 10 kHz $\pm 1$ dB                                                                                                |
| <b>Voltaje de salida:</b>               | 2,5 mV a 1 kHz<br>velocidad lateral de cero a cresta de 5 cm/s<br>[7 mV a 1 kHz Velocidad de 45° de cero a cresta de 10 cm/s (DIN 45 500)] |
| <b>Separación de canales:</b>           | 22 dB a 1 kHz                                                                                                                              |
| <b>Equilibrio de canales:</b>           | Sin exceder 2 dB a 1 kHz                                                                                                                   |
| <b>Impedancia de carga recomendada:</b> | 47 kΩ a 100 kΩ                                                                                                                             |
| <b>Elasticidad (dinámica):</b>          | $12 \times 10^{-6}$ cm/dina a 100 Hz                                                                                                       |
| <b>Radio de presión de la aguja:</b>    | $1,25 \pm 0,25$ g ( $12,5 \pm 2,5$ mN)                                                                                                     |
| <b>Peso:</b>                            | 6 g (cartucho solo)                                                                                                                        |
| <b>Aguja de recambio:</b>               | EPS-24CS                                                                                                                                   |

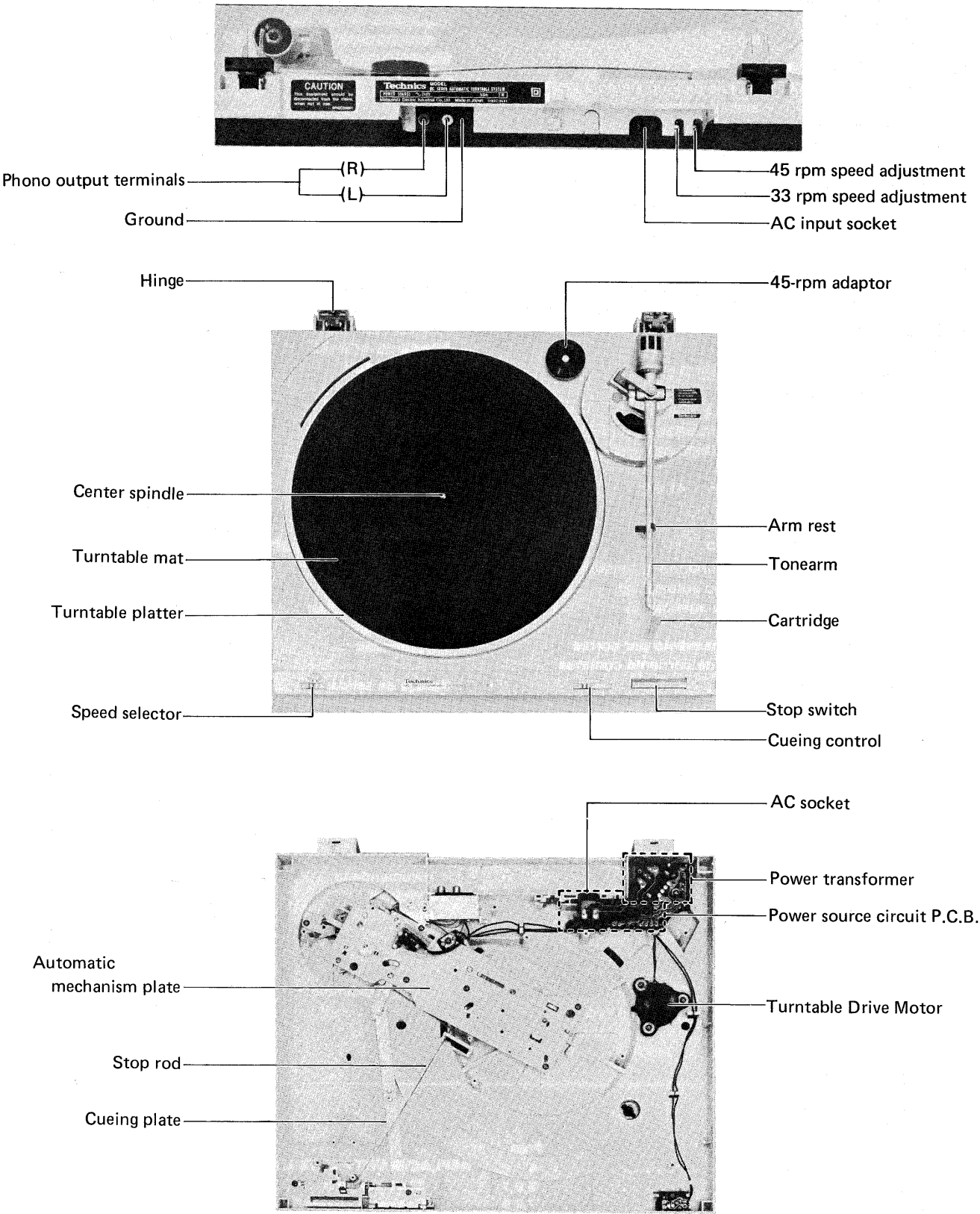
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## REPLACEMENT PARTS LIST

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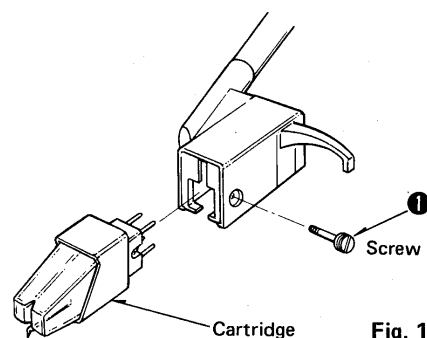
■ LOCATION OF CONTROLS



## DISASSEMBLY INSTRUCTIONS

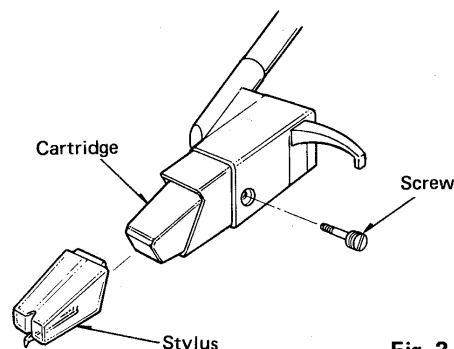
### • How to remove the cartridge (Fig. 1)

1. Fix the tonearm on the arm rest.
2. Remove the cartridge setscrew ①.
3. Pull out the cartridge with care not to let the hand touch the stylus tip.
4. When setting the cartridge, match the cartridge pin with the tonearm connector, and completely insert the cartridge and tighten the setscrew.


**Fig. 1**

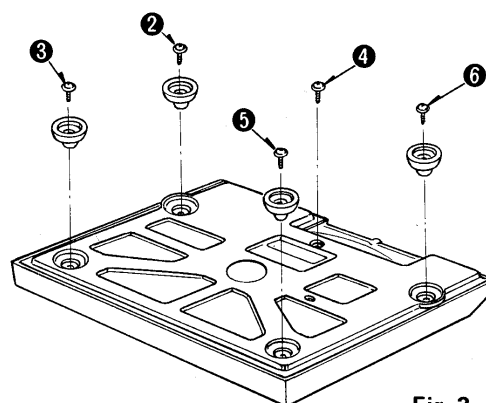
### • How to remove the stylus (Fig. 2)

1. Pull out the stylus with care not to touch the stylus tip.
2. When setting the stylus, match the stylus sleeve with the fitting hole in the cartridge body, and completely insert the stylus and make sure that there is no gap between the stylus knob and main body.


**Fig. 2**

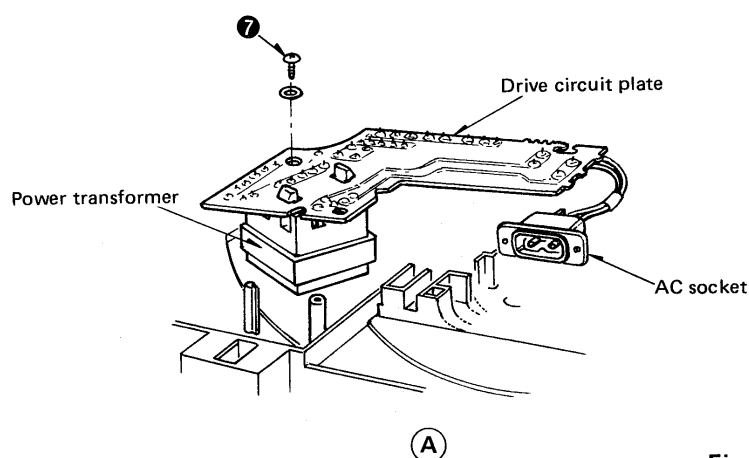
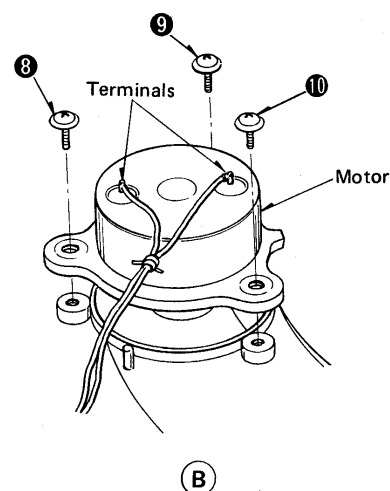
### • How to remove the bottom plate (Fig. 3)

1. Fix the tonearm on the arm rest.
2. Remove the turntable seat, belt and turntable.
3. Close the dust cover, and turn over the unit with care.
4. Remove the 5 setscrews [Fig. 3: ② ~ ⑥] of the bottom plate.


**Fig. 3**

### • How to remove the drive circuit P.C.B. (transformer) and motor

1. Remove the bottom plate. (Refer to "How to remove the bottom plate".)
2. Remove the setscrew [Fig. 4 (A): ⑦] of the P.C.B., then the drive circuit P.C.B. (transformer) and AC socket can be removed.
3. To remove the transformer from the drive circuit P.C.B., unsolder the transformer terminals and release the claw to remove the transformer from the P.C.B.
4. To remove the motor, remove the 3 setscrews [Fig. 4 (B): ⑧ ~ ⑩] which secure the main body and motor, and then unsolder the motor terminals.


**(A)**
**Fig. 4**

**(B)**

## • How to remove the mechanical board (Fig. 5)

1. Remove the bottom plate. (Refer to "How to remove the bottom plate".)
2. Remove the 5 setscrews [ Fig. 5: ⑪ ~ ⑮ ] of the mechanical board and output terminal shielding plate, and the setscrew ⑯ of the Ground terminal.
3. When fitting the mechanical board, do the following beforehand.
  - (1) Turn the turntable shaft to rotate the main gear until it comes to the no-gear part. (Fig. 6)
  - (2) Shift the cueing lever of the mechanical board to the "cueing up" position. (Fig. 7)

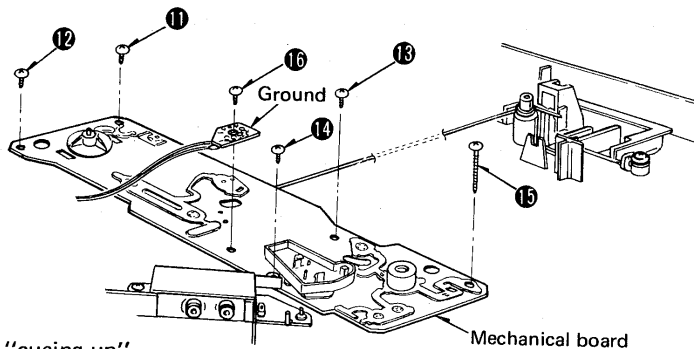


Fig. 5

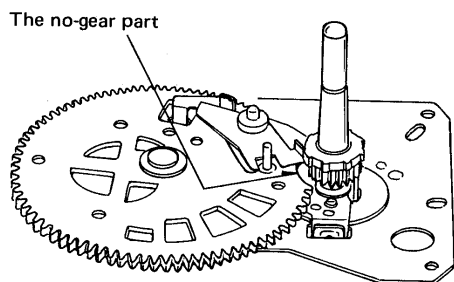


Fig. 6

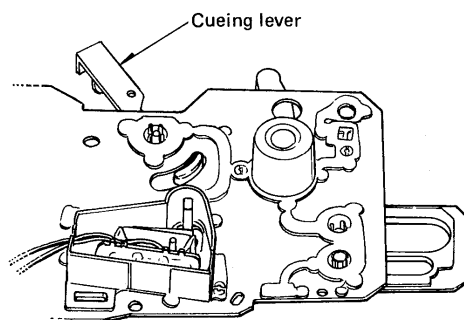


Fig. 7

## • How to remove the Pu fixing plate (Fig. 8)

1. Remove the bottom plate. (Refer to "How to remove the bottom plate".)
2. Remove the mechanical board. (Refer to "How to remove the mechanical board".)
3. Remove the setscrew ⑰ of the Pu fixing plate.

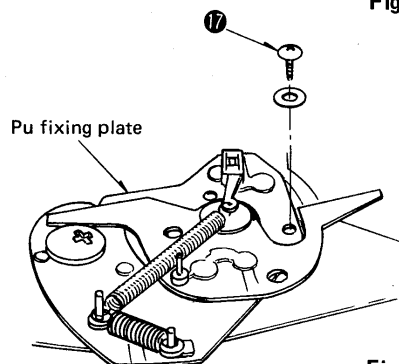


Fig. 8

## • How to remove the tonearm (Fig. 9)

1. Remove the Pu fixing plate. (Refer to "How to remove the Pu fixing plate".)
2. Unsolder the 5 Pu leads of output terminal.
3. Remove the 2 setscrews [ Fig. 9: ⑱ ~ ⑲ ] of the lift P.C.B.

Pu lead wiring method

|       |                   |
|-------|-------------------|
| White | L CH (+) terminal |
| Blue  | L CH (-) terminal |
| Red   | R CH (+) terminal |
| Green | R CH (-) terminal |
| Black | Ground terminal   |

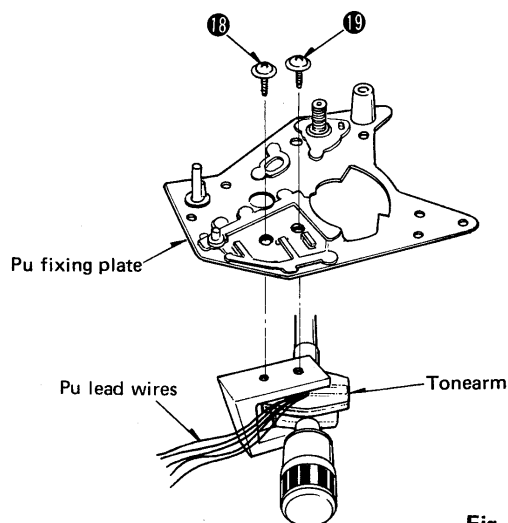


Fig. 9

### ● How to remove the lift plate (Fig. 10)

1. Remove the Pu fixing plate. (Refer to "How to remove the Pu fixing plate".)
2. Remove the 3 setscrews [ Fig. 10: 20 ~ 22 ] of the lift plate.

### ● How to remove the arm lift

1. Remove the Pu fixing plate. (Refer to "How to remove the Pu fixing plate".)
2. Remove the lift plate (Refer to "How to remove the lift plate".)
3. Remove the setscrew [ Fig. 11: 23 ] of the arm lift cover.
4. Remove the washer [ Fig. 11: 24 ] from the arm lift rod.
5. Pull out the arm lift rod in the direction of the arrow.

#### Caution:

- ★ Be sure to adjust the arm lift height. (Refer to page 7.)

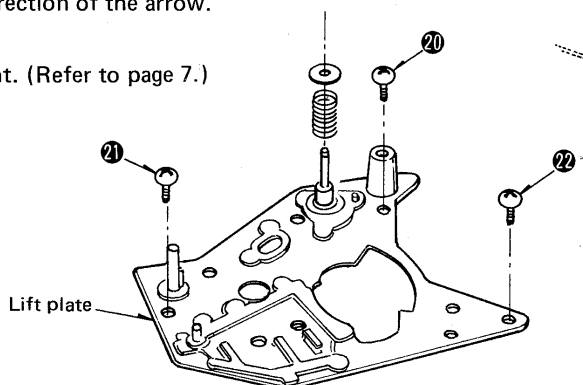


Fig. 10

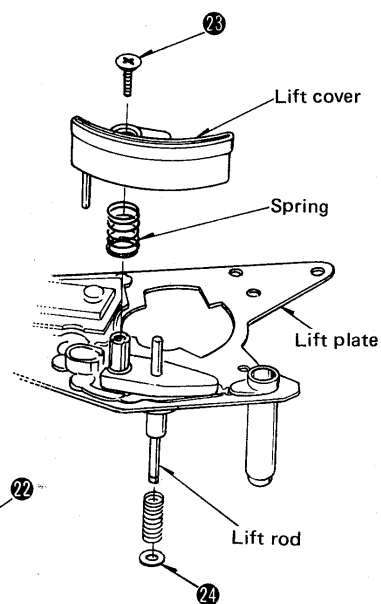


Fig. 11

## MEASUREMENTS AND ADJUSTMENT English

### ● Arm-lift height adjustment

The arm-lift height (distance between the stylus tip and the record surface when the cueing control is at the "▼" position) has been adjusted at the factory to approximately 4 to 6 mm (5/32" ~ 1/4"). (Fig. 12)

If the clearance is too narrow or too wide, turn the adjustment screw clockwise or counterclockwise. (Fig. 13)

#### Clockwise rotation

—distance between the record and stylus tip is decreased.

#### Counterclockwise rotation

—distance between the record and stylus tip is increased.

### ● Adjustment of automatic return position (Fig. 14)

(Remove the rubber cap.)

1. Put the stylus protector on the cartridge.
2. Move the tonearm toward the center of the record.

The auto-return adjustment screw will appear.

If the tonearm tends to return to the arm rest before the play has finished.

—turn counterclockwise.

If the tonearm fails to return after the final groove.

—turn clockwise.

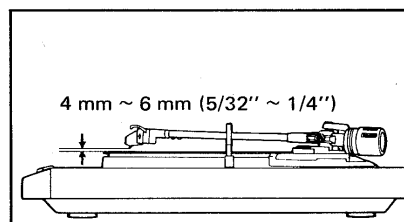


Fig. 12

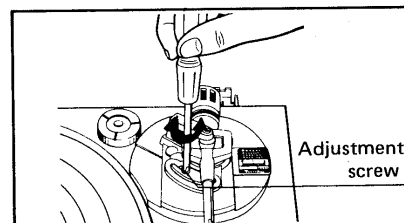


Fig. 13

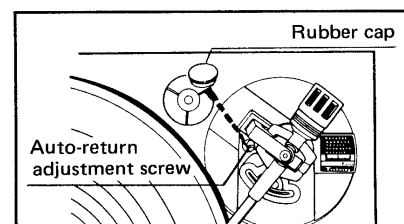


Fig. 14

## ● Adjustment of rotational speed

1. Place the set on a player bench.
2. Set the speed selector switch to the "33" position.
3. Turn the VR101 with a screwdriver from the back of the set to the rated rotation (33—1/3 rpm) and check the rotation with a strobe while adjusting the speed. (Fig. 15)
4. Set the speed selector switch to the "45" position.
5. Turn the VR102 with a screw driver from the back of the set to the rated rotation (45 rpm) and check the rotation with a strobe while adjusting the speed. (Fig. 15)

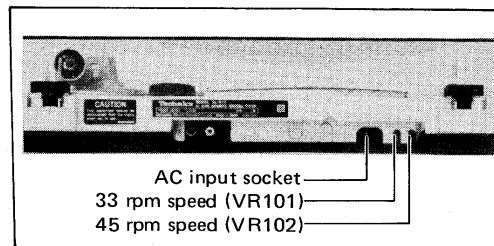


Fig. 15

## MESSUNGEN UND JUSTIERUNGEN

## Deutsch

### ● Justierung der Tonarmlifhöhe

Die Tonarmlifhöhe, d.h. der Abstand zwischen Nadelspitze und Schallplattenoberfläche bei Liftsteuerungs-Position "▼", wurde werkseitig auf ca. 4–6 mm eingestellt. (Abb. 12)

Falls der Abstand zu groß oder zu klein ist, drehen Sie die Justierschraube im Uhrzeigersinn oder entgegen dem Uhrzeigersinn. (Abb. 13)

#### Drehung im Uhrzeigersinn

—Der Abstand zwischen der Platte und der Nadelspitze wird kleiner.

#### Drehung entgegen dem Uhrzeigersinn

—Der Abstand zwischen der Platte und der Nadelspitze wird größer.

### ● Justierung des Abschaltpunktes der Automatik (Abb. 14)

(Die Gummikappe abnehmen)

1. Setzen Sie zuerst den Nadelschutz auf.
2. Führen Sie den Tonarm gegen die Plattenmitte. Die Justierschraube für den Abschaltpunkt der Automatik wird dann sichtbar.

Falls der Tonarm zu früh zurückkehrt.

—Entgegen dem Uhrzeigersinn drehen.

Falls der Tonarm nach Erreichen der Auslaufrille nicht zurückkehrt.

—Im Uhrzeigersinn drehen.

### ● Justierung der Drehzahl

1. Setzen das Gerät auf dem Plattenspieler-Reparaturtisch.
2. Stellen den Drehzahl-Wahlschalter auf die "33" — position.
3. Drehen VR 101 mit einem Schraubenzieher in der Hinterseite des Gerätes, bis die Neundrehzahl (33—1/3 U/min) unter gleichzeitiger Beobachtung mit stroboskopbestätigt ist. (Abb. 15)
4. Stellen den Drehzahl-Wahlschalter auf die "45" — Position.
5. Drehen VR102 mit einem Schraubenzieher in der Hinterseite des Gerätes, bis die Neundrehzahl (45 U/min) gleicherweise mit einem stroboskop bestätigt ist. (Abb. 15)

## MESURAGES ET RÉGLAGES

## Français

### ● Mise au point de la hauteur de l'élévateur du bras

La hauteur de l'élévateur du bras (distance entre l'extrémité de la pointe de lecture et la surface du disque, lorsque la commande de pose et de relevage est à la position "▼") a été réglée en usine sur approximativement 4 à 6 mm. (Fig. 12)

Si l'écartement est trop étroit ou trop large, tourner la vis de réglage dans le sens des aiguilles d'une montre ou dans le sens contraire. (Fig. 13)

#### Rotation dans le sens des aiguilles d'une montre.

—La distance entre la surface du disque et l'extrémité de la pointe de lecture diminue.

#### Rotation dans le sens contraire des aiguilles d'une montre.

—La distance entre la surface du disque et l'extrémité de la pointe de lecture augmente.

### ● Mise au point de la position de retour automatique (Fig. 14)

(Retirer le capuchon en caoutchouc.)

1. Placer le capot protecteur de la pointe de lecture sur la cellule pick-up.
2. Déplacer le bras de lecture vers le centre du disque. Alors, la vis de réglage du retour automatique apparaîtra.

Si le bras de lecture tend à revenir, vers le support du bras avant que l'audition ne soit terminée.

—tourner dans le sens contraire des aiguilles d'une montre.

Si le bras de lecture ne peut revenir en arrière après le dernier sillon.

—tourner dans le sens des aiguilles d'une montre.

### ● Réglage de la vitesse rotationnelle

1. Placer l'appareil sur une table de dépannage pour électrophone.
2. Régler le commutateur sélecteur de vitesse sur la position "33".
3. Adjuster VR 101 avec un tournevis à partir de l'arrière de l'appareil jusqu'à ce que la vitesse nominale de rotation (33 t/p.m.) soit obtenue tout en la vérifiant par l'intermédiaire du stroboscope. (Fig. 15)
4. Régler le commutateur sélecteur de vitesse sur la position "45".
5. Adjuster VR102 avec un tournevis jusqu'à ce que la vitesse nominale de rotation (45 t/p.m.) soit obtenue tout en la vérifiant par l'intermédiaire du stroboscope. (Fig. 15)

### ● Ajuste de la altura de elevación del brazo

La altura de elevación del brazo (o sea, la distancia entre la punta de la aguja y la superficie del disco cuando el control de colocación está en la posición "▼") ha sido regulada en la fábrica aproximadamente entre 4 y 6 mm. (Fig. 12)

En caso que la distancia fuese demasiado abundante o demasiado escasa, girar el tornillo de ajuste hacia la derecha o hacia la izquierda (Fig. 13)

#### Rotación hacia la derecha

— reduce la distancia entre el disco y la punta de la aguja.

#### Rotación hacia la izquierda

— aumenta la distancia entre el disco y la punta de la aguja.

### ● Ajuste de la posición para retorno automático (Fig. 14)

(Quitar la tapita de goma.)

1. Colocar la protección de la aguja en el cartucho.
2. Mover el brazo sonoro hacia el centro del disco.

Con ello, aparecerá el tornillo de ajuste del retorno automático.

Cuando el brazo sonoro fienda a volver a su apoyo antes de terminar la ejecución:

— **Girar hacia la izquierda.**

En caso que el brazo sonoro no vuelva después de haber tocado el último surco del disco:

**Girar hacia la derecha.**

### ● Ajuste de velocidad rotacional

1. Colocar el aparato sobre un banco de reparaciones.
2. Poner el selector de velocidad en la posición "33".
3. Girar el VR101 con un destornillador por detrás del aparato hasta la rotación nominal (33-1/3) y verificar la rotación con un estroboscopio mientras se ajuste la velocidad. (Fig. 15)
4. Poner el selector de velocidad en la posición "45".
5. Girar el VR102 con un destornillador por detrás del aparato hasta la rotación nominal (45 r.p.m.) y verificar la rotación con un estroboscopio mientras se ajuste la velocidad. (Fig. 15)

### ● Cueing Knob Repair Parts Supply Division

1. The cueing knob mechanism for this unit has been available in 2 types as shown below.
2. Repair parts of new type will be supplied. (Fig 16.)

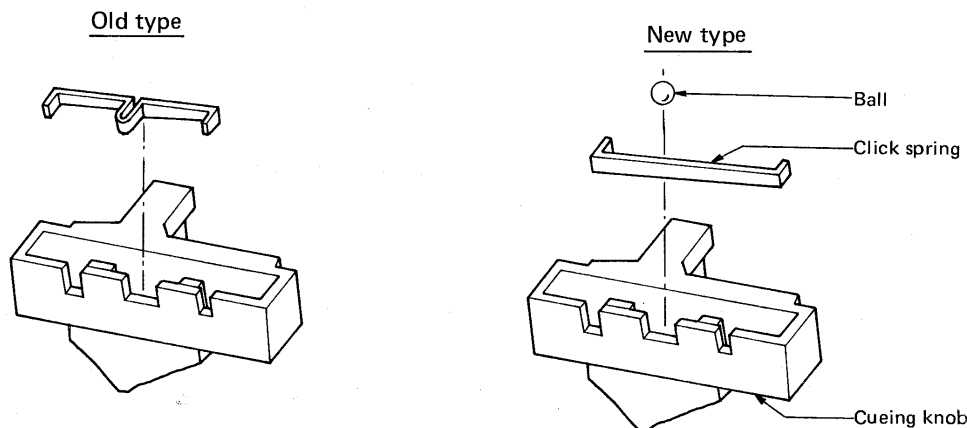


Fig 16.

3. New type included the ball, click spring and cuing knob in a single body.
4. When replacing the cuing knob, set it up as shown in Fig 17.
5. Repair part No SFKTZ15R04R ( for ball, click spring and knob in our body.)
6. After replacing the knob, apply grease as shown in Fig 18.

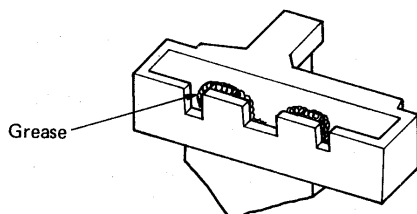


Fig. 18

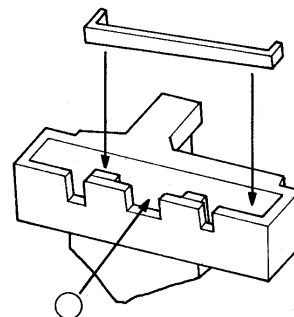
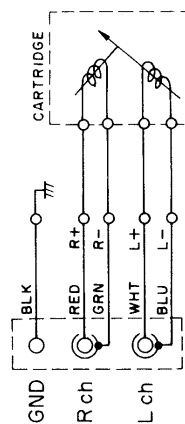
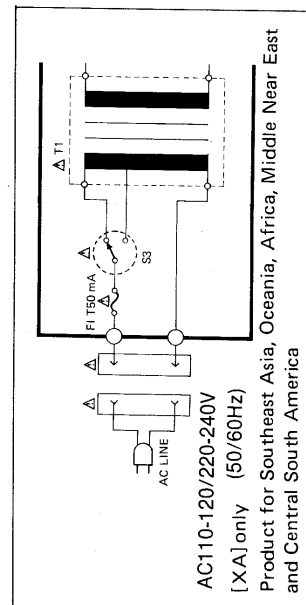
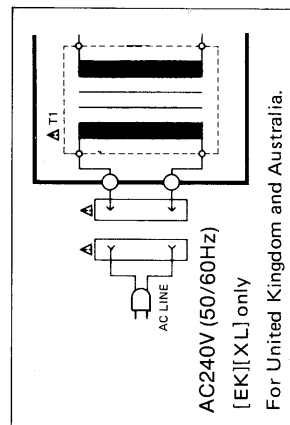
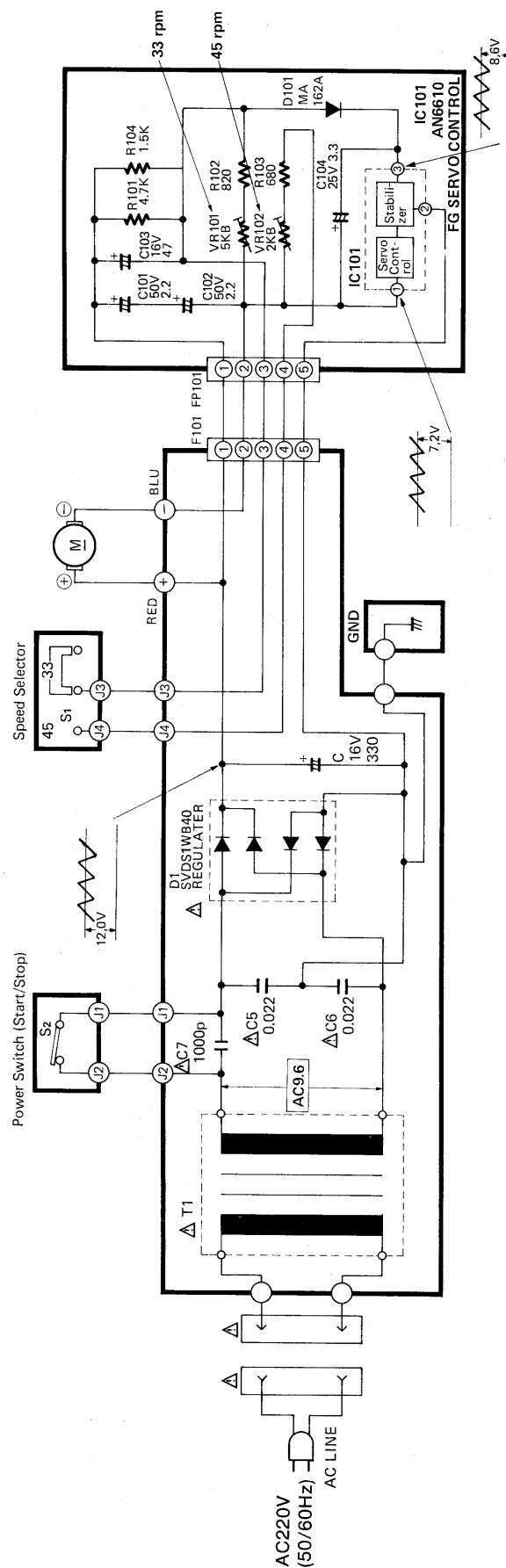
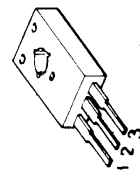


Fig. 17

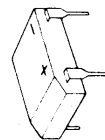
**(This schematic diagram may be modified at any time with the development of new technology.)**



- **Terminal guide of IC and diodes**



AN6610



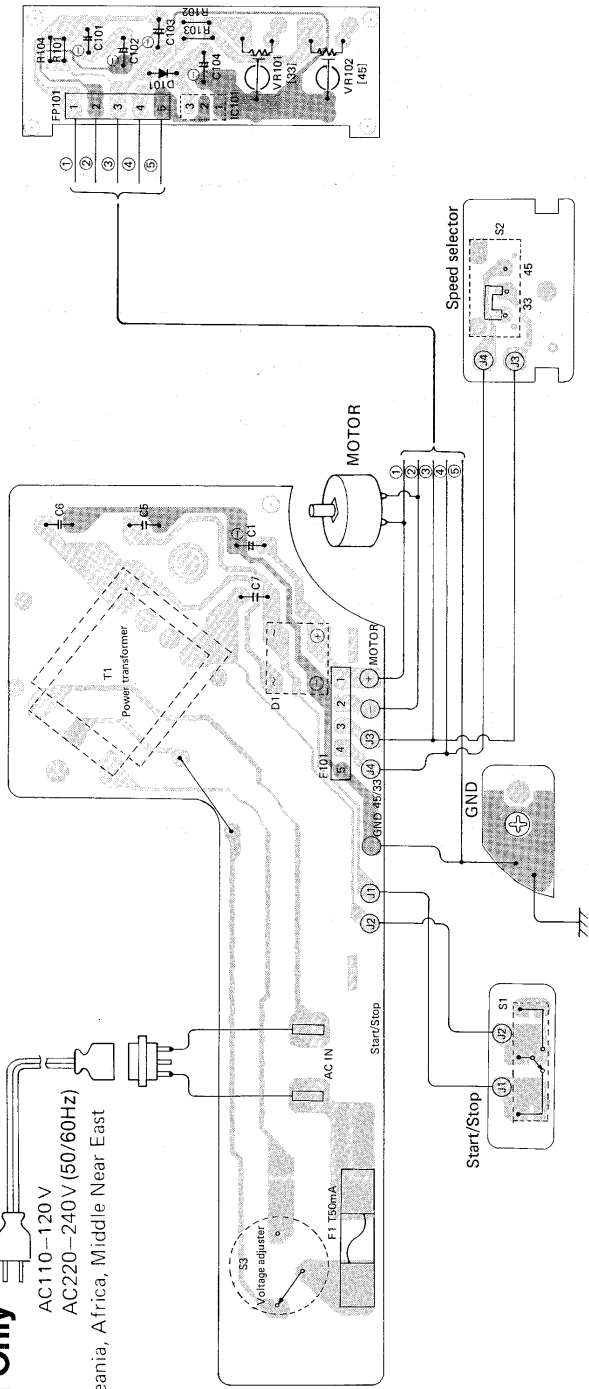
SVDS1WB40

**Notes:**

1. **S1** : Power (Arm) switch in "on.. position.
2. **S2** : Speed selector switch in "**33-1/3 rpm**" position  
33-1/3 rpm ↔ 45 rpm
3. **S3**: Voltage selector switch in "220~240V" position
4. The value and waveform in ☐ are of the reference voltage for the turntable rotation (33-1/3 rpm) of this unit, measured by DC voltmeter (high impedance) and oscilloscope on the basis of chassis.

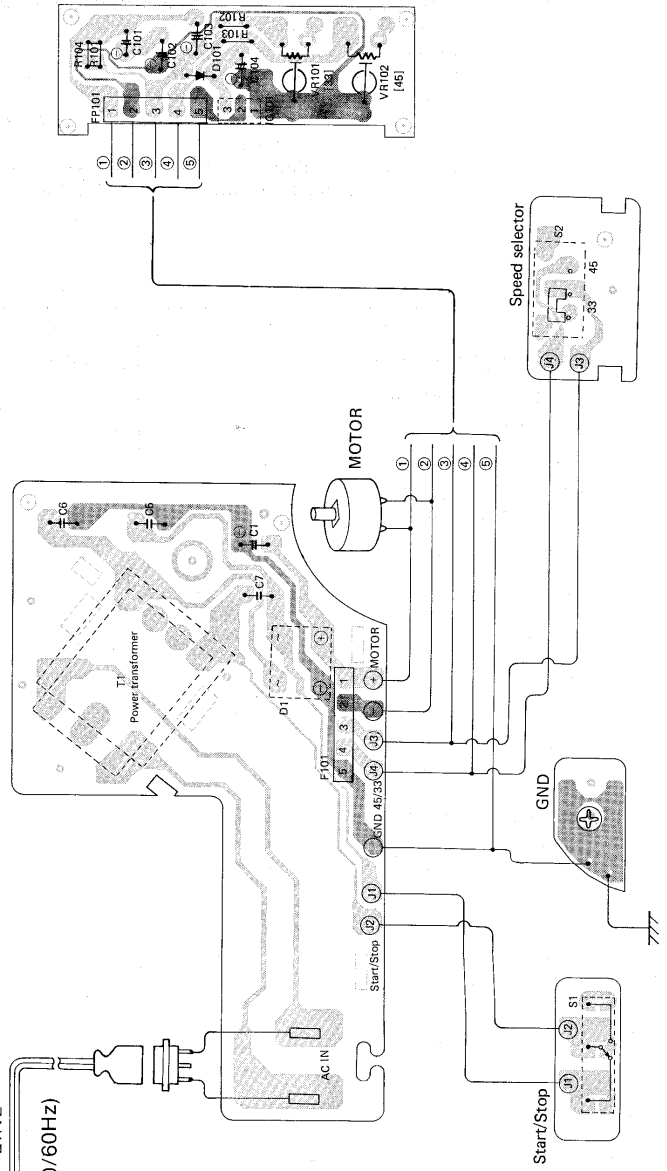
**[XA] Only**

AC LINE  
AC110-120V  
AC220-240V (50/60Hz)  
Product for Southeast Asia, Oceania, Africa, Middle Near East  
and Central South America.



AC LINE  
AC220V (50/60Hz)

**[Other Areas]**



## REPLACEMENT PARTS LIST

- Notes:**
1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
  2. Important safety notice:  
Components identified by  $\Delta$  mark have special characteristics important for safety.  
When replacing any of these components, use only manufacturer's specified parts.
  3. Bracketed indications in Ref. No. columns specify the area.  
Parts without these indications can be used for all areas.

4. The "S" mark is service standard parts and may differ from production parts.
5.  $\blacksquare$ -marked parts are used for black only, while  $\bigcirc$ -marked parts are for silver type only.
6. Parts other than  $\blacksquare$  and  $\bigcirc$ -marked are used for both black and silver types.

Black type model No.: SL-B210 (K)

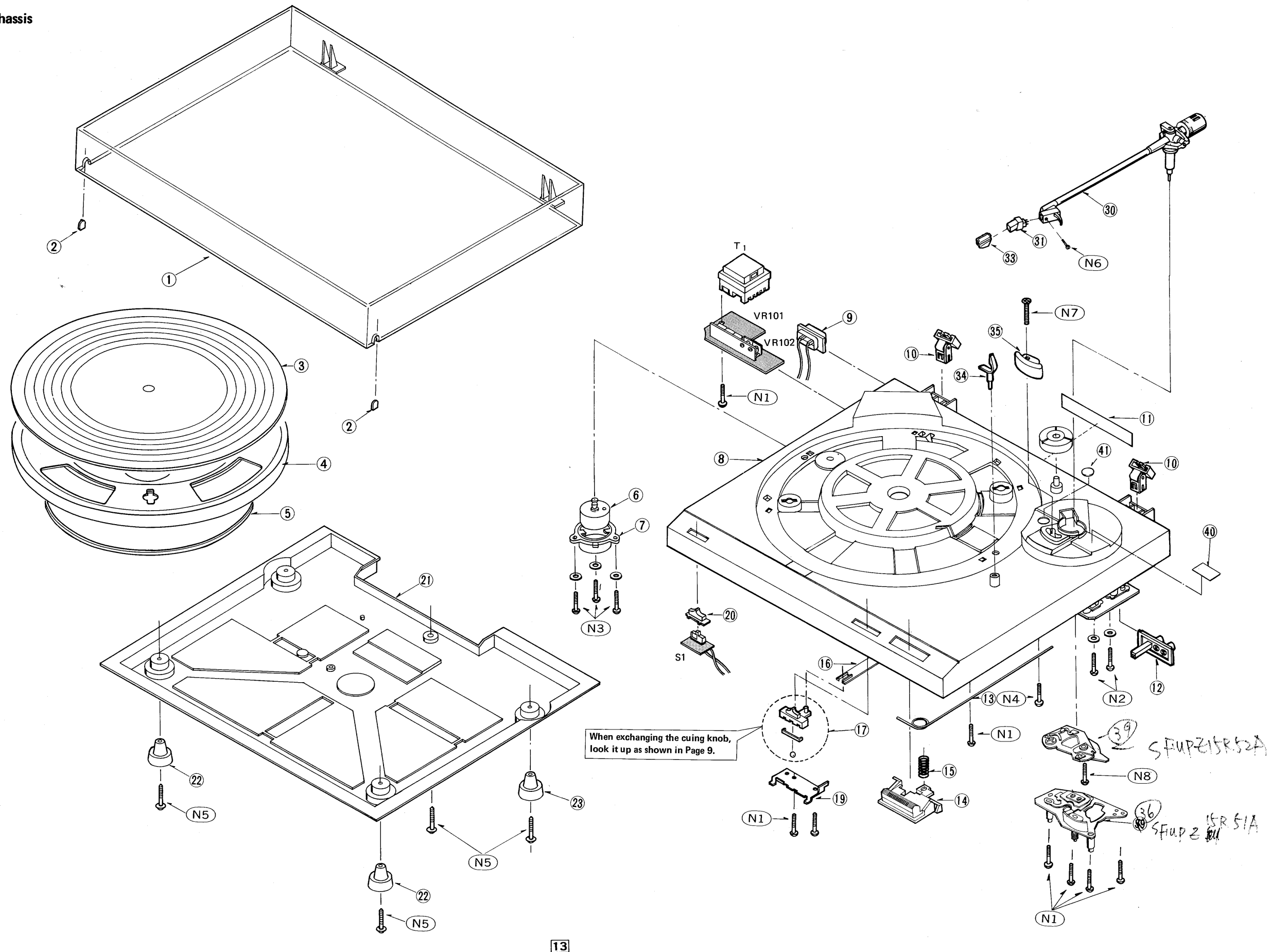
| Ref. No.                  | Part No.                                                    | Description                                  |
|---------------------------|-------------------------------------------------------------|----------------------------------------------|
| <b>INTEGRATED CIRCUIT</b> |                                                             |                                              |
| IC101                     | AN6610                                                      | Servo Control                                |
| <b>DIODES</b>             |                                                             |                                              |
| D1<br>D101                | $\Delta$ SVDS1WB40<br>S MA162A                              | Rectifier<br>Diode                           |
| <b>VARIABLE RESISTORS</b> |                                                             |                                              |
| VR101                     | EVN51AA00B53                                                | Speed Adjustment<br>5K $\Omega$ (B)          |
| VR102                     | EVN51AA00B23                                                | Speed Adjustment<br>2K $\Omega$ (B)          |
| <b>SWITCHES</b>           |                                                             |                                              |
| S1<br>S2<br>S3            | SFDSHSW0739<br>$\Delta$ SFDSSS5GLP<br>(XA)only SFDSHXW02066 | Speed Selector<br>on/off<br>Voltage Adjuster |
| <b>FUSE</b>               |                                                             |                                              |
| F1                        | (XA)only XBA2C005TIW                                        | 50mA 250V                                    |
| <b>POWER TRANSFORMER</b>  |                                                             |                                              |
| T1<br>T1<br>T1            | (EK) SLTF6648<br>(XA) SLT35K63E<br>[Other Areas] SLT35K59E  | Power Source<br>Power Source<br>Power Source |
| <b>RESISTORS</b>          |                                                             |                                              |
| R101                      | ERD25FJ472                                                  | Carbon 4.7K $\Omega$<br>1/4W $\pm$ 5%        |
| R102                      | ERD25FJ821                                                  | Carbon 820 $\Omega$<br>1/4W $\pm$ 5%         |
| R103                      | ERD25FJ681                                                  | Carbon 680 $\Omega$<br>1/4W $\pm$ 5%         |
| R104                      | ERD25FJ152                                                  | Carbon 1.5K $\Omega$<br>1/4W $\pm$ 5%        |

| Ref. No.                         | Part No.                  | Description                             |
|----------------------------------|---------------------------|-----------------------------------------|
| <b>CAPACITORS</b>                |                           |                                         |
| C1                               | ECEA1CS331                | Electrolytic 330 $\mu$ F<br>16V         |
| C5.6                             | $\Delta$ ECKD1H223MD      | Ceramic 0.022 $\mu$ F<br>50V $\pm$ 2%   |
| C7                               | ECKD2H102MD               | Ceramic 0.001 $\mu$ F<br>500V $\pm$ 20% |
| C101.102                         | ECEA50Z2R2                | Electrolytic 2.2 $\mu$ F<br>50V         |
| C103                             | ECEA1ES470                | Electrolytic 47 $\mu$ F<br>25V          |
| C104                             | ECEA50Z3R3                | Electrolytic 3.3 $\mu$ F<br>50V         |
| <b>CABINET and CHASSIS PARTS</b> |                           |                                         |
| 1                                | SFADZ15R01                | Dust Cover (1)                          |
| 2                                | SFGZZ15R01                | Cushion Rubber,<br>Dust Cover (2)       |
| 3                                | SFTGZ15R01                | Turntable Mat (1)                       |
| 4                                | SFTEZ15R01                | Turntable Platter (1)                   |
| 5                                | SFGBZ15R01                | Belt (1)                                |
| 6                                | SFMHZ15R01E               | Motor Ass'y (1)                         |
| 7                                | SFUMZ15R01                | Cover, Motor (1)                        |
| 8                                | $\bigcirc$ SFACZ15R01     | Cabinet (Silver) (1)                    |
| 8                                | $\blacksquare$ SFACZ15R21 | Cabinet (Black) (1)                     |
| 9                                | (XA) SFDJHSC0491          | Socket, AC Power (1)                    |
| 9                                | (EK) SFDJHSC0492          | Socket, AC Power (1)                    |
| 9                                | [Other Areas] SFDJHSC0505 | Socket, AC Power (1)                    |
| 10                               | SFATZ15R01                | Hinge (2)                               |
| 11                               | (EK) SFNNZ15G01           | Name Plate (1)                          |
| 11                               | (E),(EC) SFNNZ15S01       | Name Plate (1)                          |

| Ref. No.                         | Part No.                   | Description                   |
|----------------------------------|----------------------------|-------------------------------|
| <b>CABINET and CHASSIS PARTS</b> |                            |                               |
| 11                               | (XA) SFNNZ15X01            | Name Plate (1)                |
| 11                               | [Other Areas] SFNNZ15R01   | Name Plate (1)                |
| 12                               | SFDJZ15R01                 | Socket, Phono<br>Input (1)    |
| 13                               | SFUZZ15R01                 | Rod, Stop (1)                 |
| 14                               | SFKTZ15R01                 | Knob, Stop (1)                |
| 15                               | SFQHZ15R01                 | Spring, Stop Knob (1)         |
| 16                               | SFUPZ15R03                 | Plate, Cueing (1)             |
| 17                               | SFKTZ15R04R                | Knob, Cueing (1)              |
| 19                               | SFUPZ15R05                 | Plate, Cueing Knob (1)        |
| 20                               | SFKTZ15R02                 | Knob, S'peed<br>Selector (1)  |
| 21                               | SFAUZ15R01                 | Bottom Board (1)              |
| 22                               | SFGAZ15R01                 | Insulator, Front (2)          |
| 23                               | SFGAZ15R02                 | Insulator, Rear (2)           |
|                                  | SFGZZ15R02                 | Rubber (2)                    |
| <b>TONE ARM and ARM BASE</b>     |                            |                               |
| 30                               | $\bigcirc$ SFPAMZ1501A     | Tonearm Ass'y<br>(Silver) (1) |
| 30                               | $\blacksquare$ SFPAMZ1502A | Tonearm Ass'y<br>(Black) (1)  |
| 31                               | EPC-P24S                   | ★Cartridge (1)                |
| 33                               | EPS-24CS                   | ★Stylus (1)                   |
| 33                               | SFCNC02301                 | Cover, Stylus (1)             |
| 34                               | SFKUZ15R01                 | Arm Rest (1)                  |
| 35                               | SFUMZ15R58                 | Cover, Arm Lift (1)           |
| 36                               | SFUPZ15R51A                | Lift Base Ass'y (1)           |
| 37                               | SFQAZ15R51                 | Spring, Arm Lift (1)          |
| 38                               | SFQAZ15R52                 | Spring, Arm Lift (1)          |
| 39                               | SFUPZ15R52A                | Arm Base (1)                  |
| 40                               | SFKKZ15R01                 | Plate, Canceller (1)          |
| 41                               | $\bigcirc$ SFGK170-01      | Cap, Rubber<br>(Silver)       |
| 41                               | $\blacksquare$ SFGK171F01  | Cap, Rubber<br>(Black) (1)    |

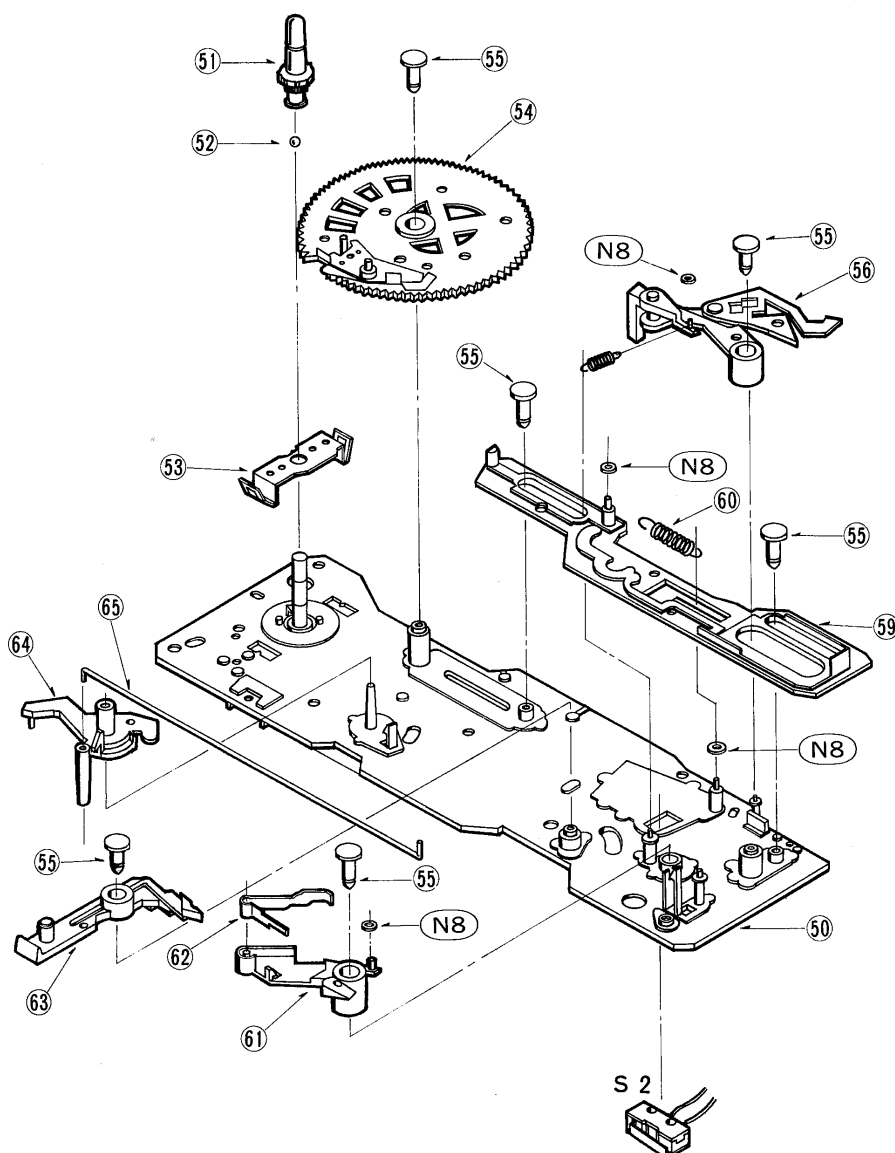
## ■ EXPLODED VIEWS

- **Cabinet and chassis**



## EXPLODED VIEWS

## ● Automatic mechanism plate



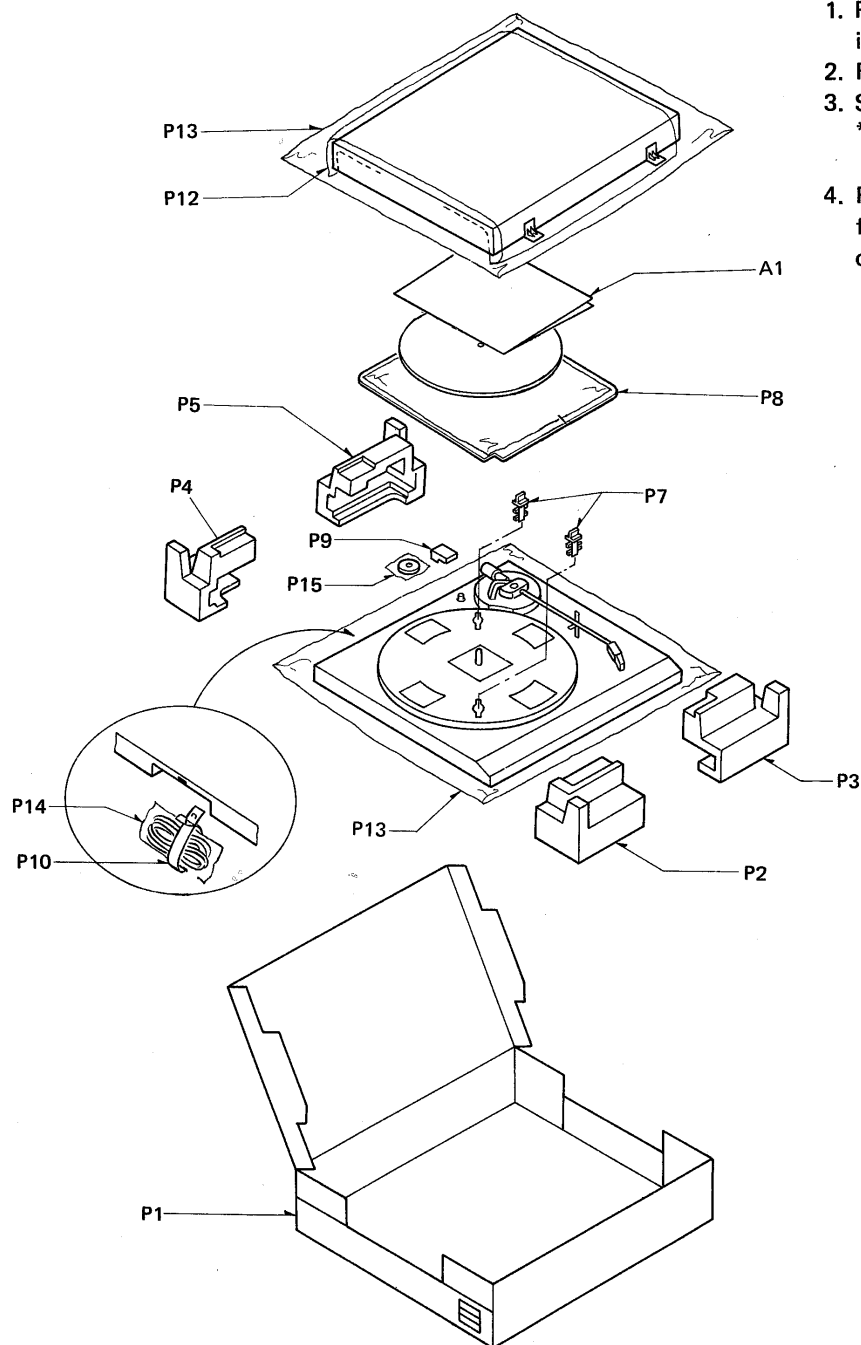
| Ref. No.                         | Part No.    | Description                    | Ref. No.                         | Part No.    | Description              | Ref. No.           | Part No.             | Description          |
|----------------------------------|-------------|--------------------------------|----------------------------------|-------------|--------------------------|--------------------|----------------------|----------------------|
| <b>AUTOMATIC MECHANISM ASS'Y</b> |             |                                | <b>AUTOMATIC MECHANISM ASS'Y</b> |             |                          | <b>ACCESSORIES</b> |                      |                      |
| 50                               | SFUKZ15R51E | Plate, Automatic Mechanism (1) | 63                               | SFUMZ15R51  | Lever, Cueing (1)        | A1                 | [EK] SFNUZ15G01      | Instruction Book (1) |
| 51                               | SFTUZ15R51E | Turntable Shaft Ass'y (1)      | 64                               | SFUMZ15R52  | Connector, Actuating (1) | A1                 | [EG] SFNUZ15R01      | Instruction Book (1) |
| 52                               | SFYB-5-32   | Ball (1)                       | 65                               | SFQSZ15R51  | Rod, Actuating (1)       | A1                 | [EF] SFNUZ15F01      | Instruction Book (1) |
| 53                               | SFUPZ15R55  | Base, Turntable Shaft (1)      | <b>SCREWS and WASHERS</b>        |             |                          | A1                 | [EI] SFNUZ15I01      | Instruction Book (1) |
| 54                               | SFUGZ15R51E | Main Gear Ass'y (1)            | N1                               | S XTV3+8BFN | Screw (13)               | A1 [Other Areas]   | SFNUZ15X01           | Instruction Book (1) |
| 55                               | SFUMZ15R56  | Pin (6)                        | N2                               | XYN3+F12    | Screw, Tonearm (2)       | A2                 | SFDHC05N01           | Phono Cord (1)       |
| 56                               | SFUMZ15R54E | Lever Ass'y (1)                | N3                               | SFXGB33N01  | Screw, Motor (3)         | A3                 | SFDLZ15R01           | Ground Wire (1)      |
| 57                               | SFQHZ15R52  | Spring (1)                     | N4                               | XTV3+30J    | Screw (1)                | A4                 | SFWE212-01           | 45r.p.m Adaptor (1)  |
| 58                               | SFQHZ15R53  | Spring (1)                     | N5                               | XTW3+14QFYR | Screw, Bottom Board (5)  | A5                 | [EK]S△ RJA43Z        | AC Cord (1)          |
| 59                               | SFUBZ15R51  | Plate, Drive (1)               | N6                               | SFPEVOP301  | Tapping, Cartridge (1)   | A5                 | [XA]S△ QFC1103       | AC Cord (1)          |
| 60                               | SFQHZ15R54  | Spring (1)                     | N7                               | XTS3+16FFZ  | Tapping, Arm Lift (1)    | A5 [Other Areas]   | RJA20Z               | AC Cord (1)          |
| 61                               | SFUMZ15R60  | Cam, Cueing (1)                | N8                               | SFXWZ15R51  | Washer (1)               | A6                 | [XA]only△ SFDK119118 | 2P Plug (1)          |
| 62                               | SFQPZ15R51  | Spring Plate (1)               |                                  |             |                          |                    |                      |                      |

## PACKINGS

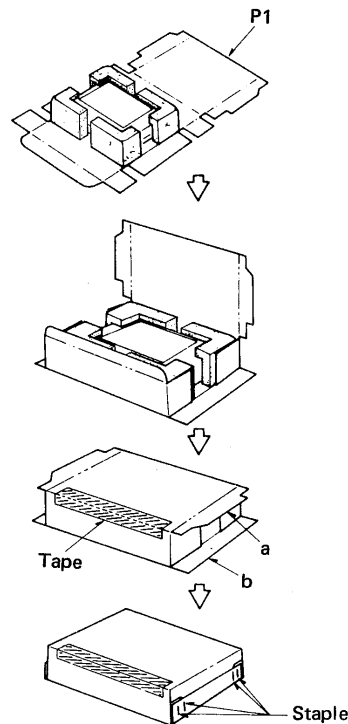
| Ref. No.             | Part No.   | Description             |
|----------------------|------------|-------------------------|
| <b>PACKING PARTS</b> |            |                         |
| P1 (EF) ○            | SFHPZ15F01 | Carton Box (Silver) (1) |
| P1 (Other Areas) ○   | SFHPZ15R01 | Carton Box (Silver) (1) |
| P1 (EF) □            | SFHPZ15F21 | Carton Box (Black) (1)  |
| P1 (Other Areas) □   | SFHPZ15R21 | Carton Box (Black) (1)  |
| P2                   | SFHHZ15R01 | Pad, Front Left (1)     |
| P3                   | SFHHZ15R02 | Pad, Front Right (1)    |

| Ref. No.             | Part No.   | Description            |
|----------------------|------------|------------------------|
| <b>PACKING PARTS</b> |            |                        |
| P4                   | SFHHZ15R03 | Pad, Rear Left (1)     |
| P5                   | SFHHZ15R04 | Pad, Rear Right (1)    |
| P6                   | SFHDZ15R01 | Pad, Turntable (1)     |
| P7                   | SFHKZ15R01 | Platter (1)            |
| P8                   | SFHDZ15R01 | Clamper, Turntable (1) |
| P9                   | SFHZZ15R01 | Platter (1)            |
| P10                  | SFHZZ15R02 | Platter (1)            |
| P11                  | SFYF30B35  | Pad, Turntable Mat (1) |

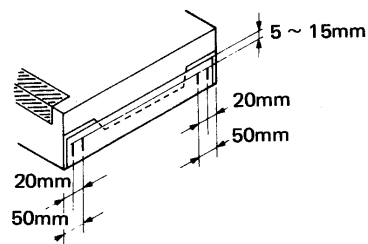
| Ref. No.             | Part No.   | Description                       |
|----------------------|------------|-----------------------------------|
| <b>PACKING PARTS</b> |            |                                   |
| P12                  | SFHZD03M01 | Sheet (1)                         |
| P13                  | SFYH60X60  | Polyethylene, Unit Dust Cover (2) |
| P14                  | SFYH17X16  | Polyethylene, AC Cord (1)         |
| P15                  | SFYF05A06  | Polyethylene, 45 Adaptor (1)      |
| P16 [XA] only        | SFYF09A15  | Polyethylene, 2P Plug (1)         |



1. Place the unit (with cushions attached) as illustrated.
2. Fold the flaps according to the line marks.
3. Seal the top with adhesive tape.  
\* Use gum tape or adhesive cloth tape of 50mm wide at least.
4. For the edges, first fold the flap "a" and then flap "b", and staple. Remember to staple only flap "b". (Use 15 or 16mm staple)



\* Stapling positions are shown below.



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