

Service Manual

Direct Drive Automatic Turntable System

SL-DL1

[E], [EK], [XL], [EB], [EF],
[EG], [EI], [EH], [XA], [XM]

SL-DL1(K)

[E], [XL], [EG],
[EH], [XA], [XM]

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

Areas

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

English

Specifications

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

■ General

Power supply: ~ 110-120/220-240V, 50/60 Hz
Power consumption: 17 W
Dimensions: 43 x 8.8 x 35 cm
 (W x H x D)
 43 x 39.7 x 35 cm
 (Maximum height when top (dust cover) is open.)
Weight: 7.1 kg (15.6 lb.)

■ Turntable section

Type: Automatic turntable
 Auto start/Auto lead-in
 Auto return
 Auto stop
 Repeat play
 Auto speed select
 Manual speed selection possible.
 Auto size select
 2-speed search functions
 Record presence detection
Drive method: Direct drive
Motor: Brushless DC motor
Drive method: F.G. servo control
Turntable platter: Aluminum die-cast
 Diameter 31.2 cm

Turntable speeds: 33-1/3 rpm and 45 rpm
 Auto speed select
 (Manual selection possible)
Pitch control: 10% adjustment range
Wow and flutter: 0.012% WRMS*
 0.025% WRMS (JIS C5521)
 ± 0.035% peak
 (IEC 98A Weighted)

* Measured by obtaining signal from built-in frequency generator of motor assembly.

Rumble: -56 dB (IEC 98A Unweighted)
 -78 dB (IEC 98A Weighted)

■ Tonearm section

Type: Dynamic balanced type
 Linear tracking tonearm
 4-pivot gimbal suspension
Effective length: 10.5 cm (4-1/8")
Tracking error angle: Within ± 0.1°
Effective mass: 9 g (including cartridge)
Resonance frequency: 12 Hz
Tonearm drive motor: DC motor

SL-DL1

■ Cartridge section

Type: Moving magnet stereo cartridge
 One point suspension system
Magnet: Samarium cobalt (Sm-Co)
Magnetic circuit: All laminated core
Frequency response: 10 Hz to 35 kHz
 20 Hz to 10 kHz ± 1 dB
Output voltage: 2.5 mV at 1 kHz, 5cm/s. zero to peak lateral velocity
 (7 mV at 1 kHz, 10cm/s. zero to peak 45° velocity [DIN 45 500])

Channel separation: More than 22 dB at 1 kHz
Channel balance: Within 1.8 dB at 1 kHz
Recommended load impedance: 47 kΩ ~ 100 kΩ
Compliance (dynamic): 12 x 10⁻⁶ 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-23CS
 (Equivalent replacement stylus: EPS-23ES)

Deutsch

TECHNISCHE DATEN

Änderungen der technischen Daten vorbehalten.
 Die angegebenen Gewichts- und Abmessungsdaten sind circa Werte.

■ Allgemeine Daten

Stromversorgung: ~ 110-120/220-240V, 50/60 Hz
 Wechselstrom
Leistungsaufnahme: 17 W
Abmessungen: 43 x 8,8 x 35 cm
 (B x H x T)
 43 x 39,7 x 35 cm
 (Maximale Höhe bei vollständig geöffnetem Gehäuseoberteil.)
Gewicht: 7,1 kg

Rumpel-Fremdspannungsabstand: -56 dB (IEC 98A unbewertet)
Rumpel-Geräuschspannungsabstand: -78 dB (IEC 98A bewertet)

■ Plattenspieler

Type: Automatischer Plattenspieler
 Auto-Start/Auto-Zuführung
 Rückführautomatik
 Stopp-Automatik
 Wiederhol-Betrieb
 Automatische Drehzahlwahl
 Manuelle Drehzahlwahl möglich
 2-Geschwindigkeiten-Suchfunktionen
 Plattenpräsenz-Registrierung
 Direktantrieb
Antrieb: Kollektorloser Gleichstrommotor
Motor: FG-Servo-Steuerung
Antriebsregel-Methode: Aluminium-Druckguß
Plattenteller: Durchmesser 31,2 cm

Plattenteller-Drehzahlen: 33-1/3 und 45 U/min
 Automatische Drehzahlwahl
 (manuelle Wahl möglich)

Drehzahl-Feinregulierung: 10% Einstellbereich
Gleichlaufschwankungen: 0,012% WRMS*
 0,025% WRMS (JIS C5521)
 ± 0,035% Spitze
 (IEC 98A bewertet)

* Gemessen anhand von Signalen vom eingebauten Frequenzgenerator des Motorbauteils.

■ Tonarm

Type: Dynamisch ausbalancierter Tangential-Tonarm mit Kardan-aufhängung mit 4-Punkt-Drehlager
Effektive Länge: 105 mm
Spurfehlwinkel: Innerhalb ± 0,1°
Effektive Masse: 9 g (einschließlich Tonabnehmer)
Resonanzfrequenz: 12 Hz
Tonarm-Antriebsmotor: Gleichstrommotor

■ Tonabnehmer

Type: Stereo-Magnet-Tonabnehmer mit Einpunkt-Aufhängungssystem
Magnet: Samarium-Kobalt (SM-Co)
Magnetkreis: Ganzlamellenkern
Frequenzgang: 10 Hz bis 35 kHz
 20 Hz bis 10 kHz ± 1 dB
Ausgangsspannung: 2,5 mV bei 1 kHz
 5 cm/s. Null-zu-Spitze, lateral
 (7 mV bei 1 kHz 10 cm/s. Null-zu-Spitze, 45° [DIN 45 500])
 Mehr als 22 dB bei 1 kHz
 Innerhalb 1,8 dB bei 1 kHz

Kanaltrennung: Mehr als 22 dB bei 1 kHz
Kanalabweichung: Innerhalb 1,8 dB bei 1 kHz
Empfohlene Endimpedanz: 47 kΩ ~ 100 kΩ
Nachgiebigkeit (dynamisch): 12 x 10⁻⁶ cm/dyn bei 100 Hz
Auflagekraft-Einstellbereich: 1,25 ± 0,25 g (12,5 ± 2,5 mN)
Gewicht: 6 g (nur Tonabnehmer)
Ersatznadel: EPS-23CS
 (Gleichwertige Ersatznadel: EPS-23ES)

Technics

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

CARACTERSTIQUES

Les spécifications sont susceptibles d'être modifiées sans préavis.
Le poids et les dimensions donnés sont approximatifs.

■ Généralités

Alimentation: Alternatif 110-120/220-240V, 50/60 Hz
Consommation: 17 W
Dimensions: 43 x 8,8 x 35 cm
(L x H x P)
43 x 39,7 x 35 cm
(Hauteur maximum lorsque le dessus
(couvercle protègepoussière) est ouvert.)
Poids: 7,1 kg

■ Platine de lecture

Type: Platine automatique
Départ automatique/Entrée
automatique
Retour automatique
Arrêt automatique
Audition répétée
Sélection de vitesse automatique
Sélection de vitesses manuelle possible
Sélection automatique du diamètre
Fonctions exploratrices à 2 vitesses
Détection de la présence d'un disque

**Système d'entraîne-
ment:** Entraînement direct
Moteur: Moteur C.C. sans balai
Groupe de réglage: Servocommande du générateur
de fréquence

Plateau de lecture: Aluminium moulé sous pression
Diamètre 31,2 cm
Vitesses de rotation: 33-1/3 et 45 t/p.m
Sélecteur de vitesse automatique
(Sélection manuelle possible)

Réglage d'écart: Plage de réglage de 10%
**Pleurage et scintille-
ment:** 0,012% de valeur efficace*
0,025% de valeur efficace
(JIS C5521)
± 0,035% de crête
(IEC 98A Pondéré)

* Mesuré par l'obtention d'un signal provenant du générateur de
fréquences incorporé de l'ensemble du moteur.

Ronflement: -56 dB (IEC 98A Non pondéré)
-78 dB (IEC 98A Pondéré)

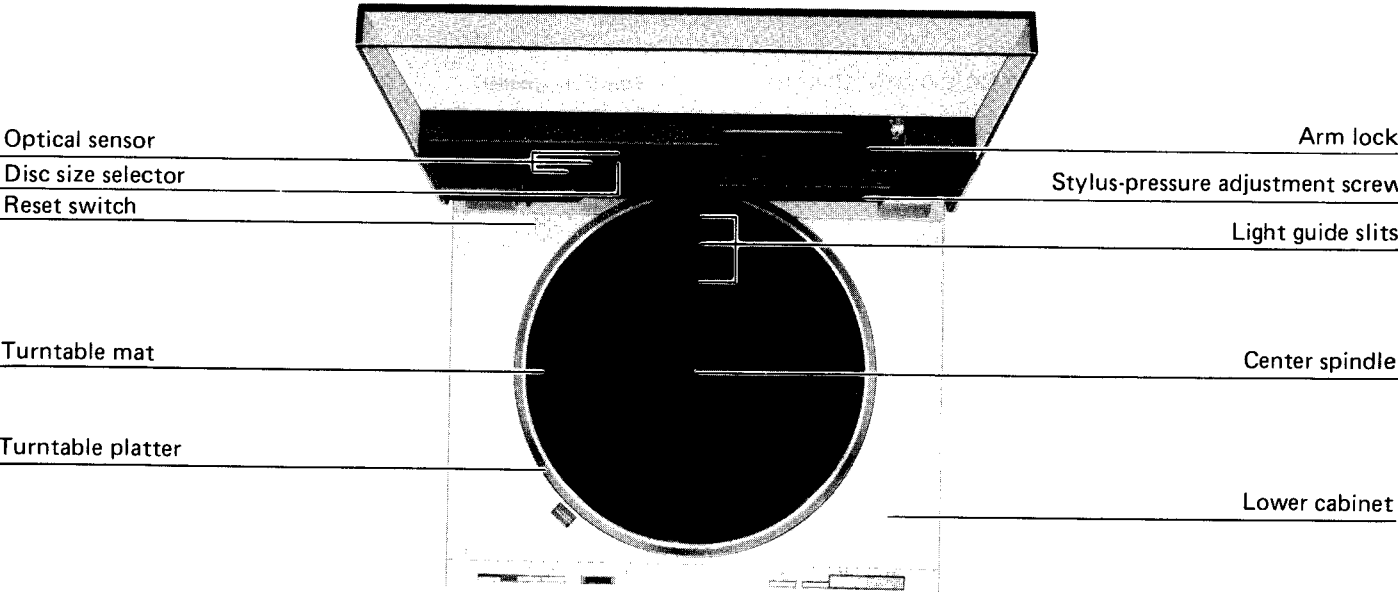
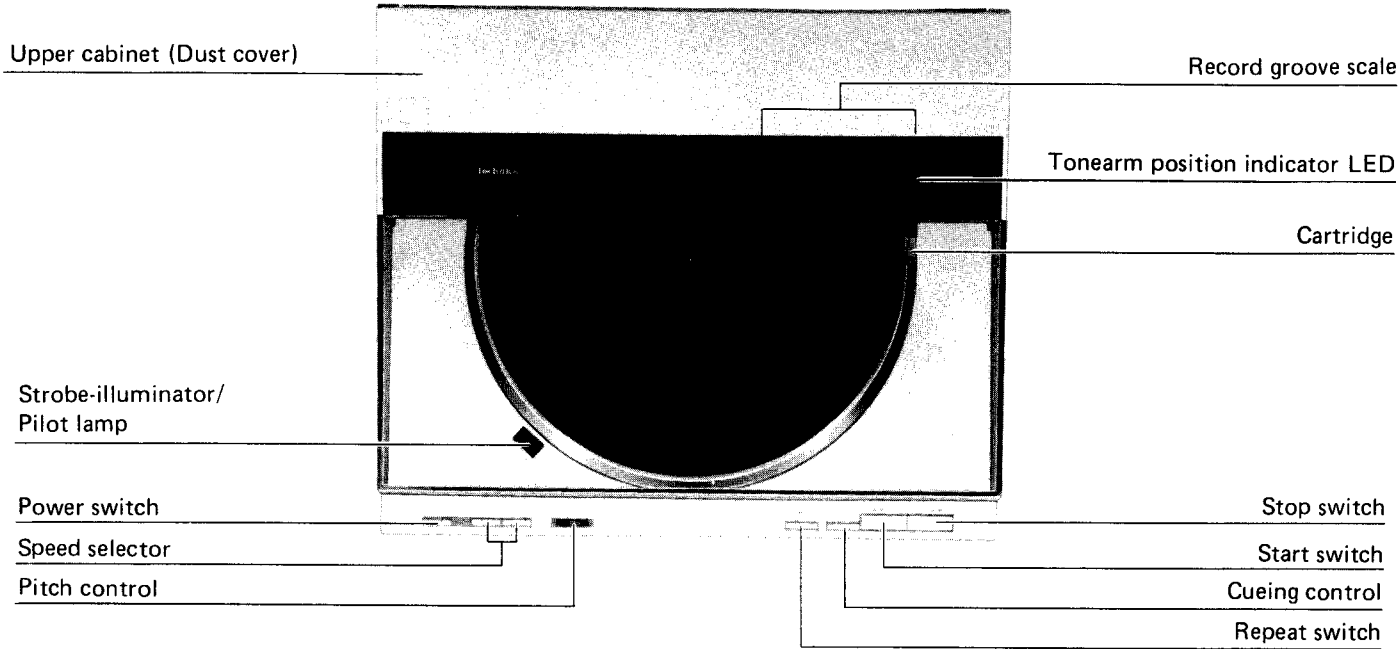
■ Bras de lecture

Type: Bras de lecture d'alignement
linéaire de type à équilibre
dynamique avec suspension à la
cardan à 4 pivots
Longueur effective: 105 mm
Angle d'erreur de piste: En deçà de ± 0,1°
Masse réelle: 9 g (y compris la cellule pick-up)
**Fréquence de
résonance:** 12 Hz
**Moteur d'entraînement
du bras de lecture:** Moteur C.C. sans noyau

■ Cellule pick-up

Type: Cellule pick-up stéréo à aimant mobile
Système de suspension ponctuelle
Samarium-Cobalt (Sm-Co)
Aimant: Noyau entièrement feuilleté
Circuit magnétique: 10 Hz à 35 kHz
Réponse en fréquence: 20 Hz à 10 kHz ± 1 dB
2,5 mV à 1 kHz; 5 cm/s., zéro à vitesse
latérale de crête
(7 mV à 1 kHz; 10 cm/s., zéro à vitesse
45° de crête [DIN 45 500])
Tension de sortie: Plus de 22 dB à 1 kHz
En deçà de 1,8 dB à 1 kHz
Séparation des canaux: Plus de 22 dB à 1 kHz
Equilibrage des canaux: En deçà de 1,8 dB à 1 kHz
**Impédance de charge
recommandée:** 47 kΩ ~ 100kΩ
Elasticité (dynamique): 12 x 10⁻⁶ cm/dyne à 100 Hz
**Plage de la force
verticale:** 1,25 ± 0.25 g (12,5 ± 2,5 mN)
Poids: 6 g (cellule seule)
**Remplacement de la
pointe de lecture:** EPS-23CS
(Pointe de lecture de remplacement
équivalente: EPS-23ES)

■ LOCATION OF CONTROLS



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■ FEATURES

Dynamic balanced linear tracking tonearm employs optical sensor and groove deflection angle detection for extremely stable and accurate tracking.

The linear tracking tonearm moves across the record surface in the same way as the cutter head used to make the record in the first place. Therefore there is virtually no tracking error or skating force.

Located by the stylus is an optical sensor that detects tracking conditions by means of groove deflection angle. Based on this information, tonearm movement is controlled to maintain optimum tracking at all times.

A precision DC motor is used for tonearm drive to assure quiet and accurate control.

A precision DC motor and low-friction slide bearing assure accurate tonearm movement.

A 4-point pivot bearing gimbal suspension developed by Technics reduces friction and raises sensitivity while contributing to smooth tracing ability.

Simple base operation. Completely automatic play.

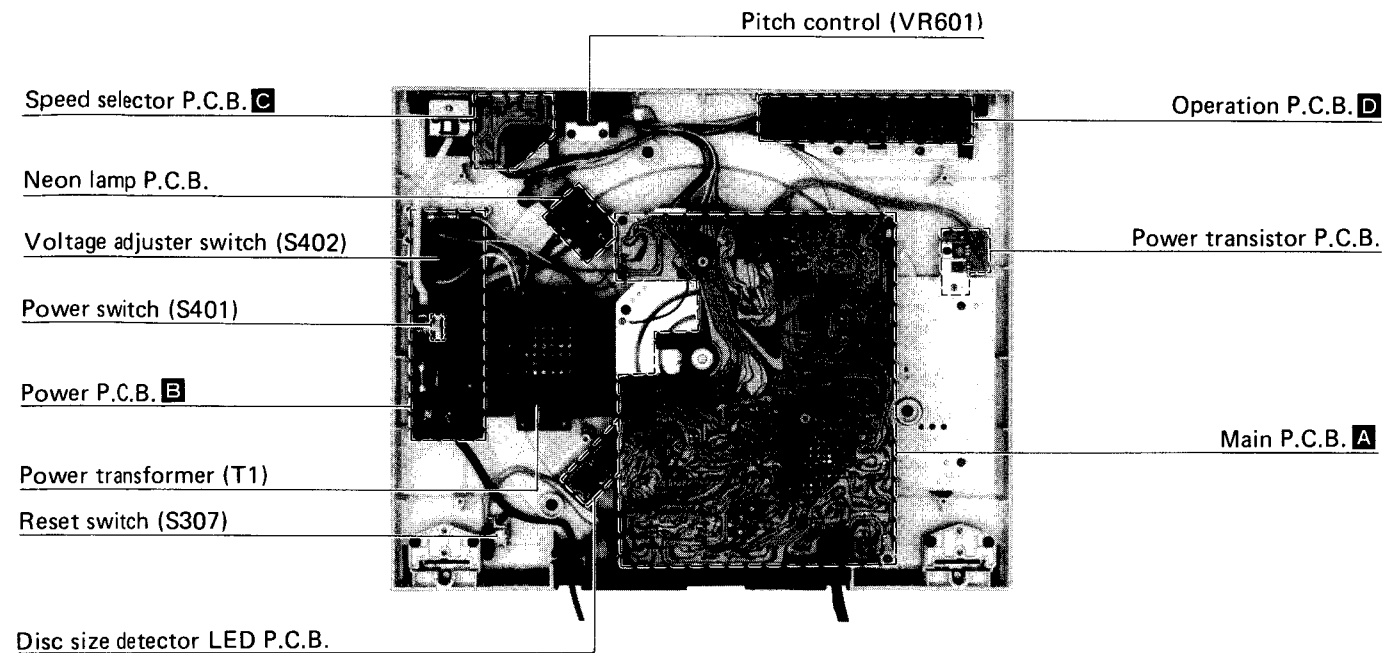
Turn on the power, put on a record, close the top and press the start switch. After that, everything is handled by the microcomputer and optical sensor which automatically detect record size, select correct speed and cue the tonearm to the lead-in groove.

For non-standard records, front panel speed selectors let you select the correct speed manually (large 45s, or small 33-1/3 records, for example).

The tonearm automatically returns to the start position after completing play. The tonearm does not move if no record is on the platter.

Complex operation also possible.

Although easy operation is a basic feature of this unit, complex functions are also possible. The "search" function allows start, stop switches controlled inward and outward movement of the tonearm at slow and fast speed, plus fine control in approximately 1 mm steps.

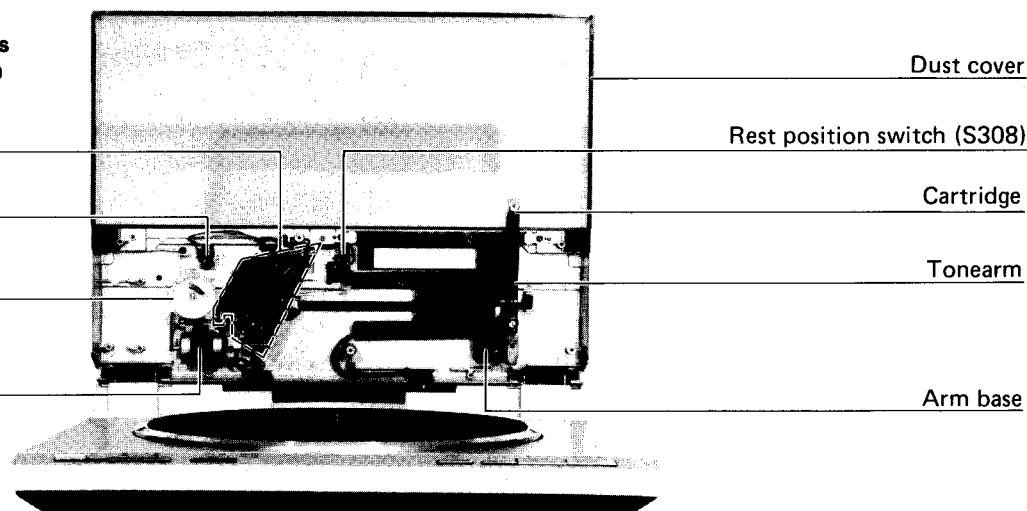


※ S309 (end detection switch) will be replaced by MN1400PE of which the end detection unit is built into MN1400PA (IC301) in the course of manufacture.

Disc size sensor P.C.B. **F**
 ※ End position switch (S309)

Arm drive wheel

Arm drive motor



■ QUICK REFERENCE CHART FOR START AND STOP OPERATION

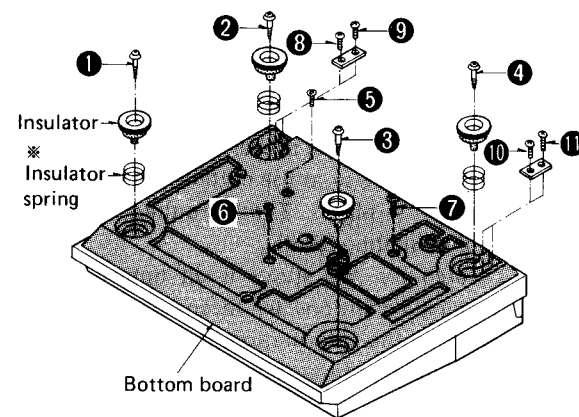
Switch pressed	Start Switch				Stop Switch			
	Pressed momentarily (less than one second)	Pressed intermittently	Pressed continuously		Pressed momentarily (less than one second)	Pressed intermittently	Pressed continuously	
			Lightly ◁ ◁	Hard ◀ ◀			Lightly ▷ ▷	Hard ▶ ▶
Cueing up/down								
Cueing up (▼)		Tonearm moves inward in small steps.	Tonearm moves inward.	Moves faster.		Tonearm moves outward in small steps.	Tonearm moves outward.	Moves faster.
Cueing down (▲)	Tonearm rises and returns to start position and begins play again.		Tonearm rises and moves inward.	Tonearm rises and moves faster.	Auto-return (reject)		Tonearm rises and moves outward.	Tonearm rises and moves faster.

DISASSEMBLY INSTRUCTIONS

How to remove the bottom board and main P.C.B.

1. Remove the turntable and turntable seat.
2. Turn the main body upside down, using a soft sheet of cloth or the like as a cushion to protect the upper cabinet and dust cover.
3. Remove the insulator and bottom board setscrews ① ~ ⑪. Then the bottom board can be removed. (See Fig. 1)
4. Remove the rear cover setscrews ⑫ and ⑬ to remove the rear cover. (Fig. 2)
5. Remove the main P.C.B. setscrews ⑭ ~ ⑳ and connectors ㉒ ~ ㉓. Then the main P.C.B. can be removed. (See Fig. 3)

* When installing the main P.C.B. onto the main body, make sure that the connector ㉒ (CN102) is engaged with the stator frame pin. (Fig. 3)



* Please note that the front and rear insulator springs are different from each other.
Front White
Rear Yellow

Fig. 1

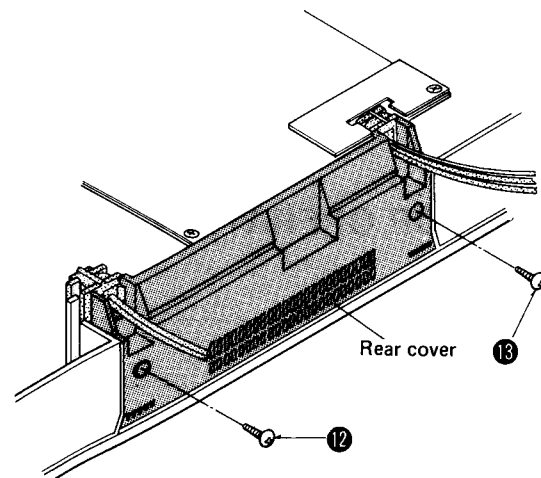


Fig. 2

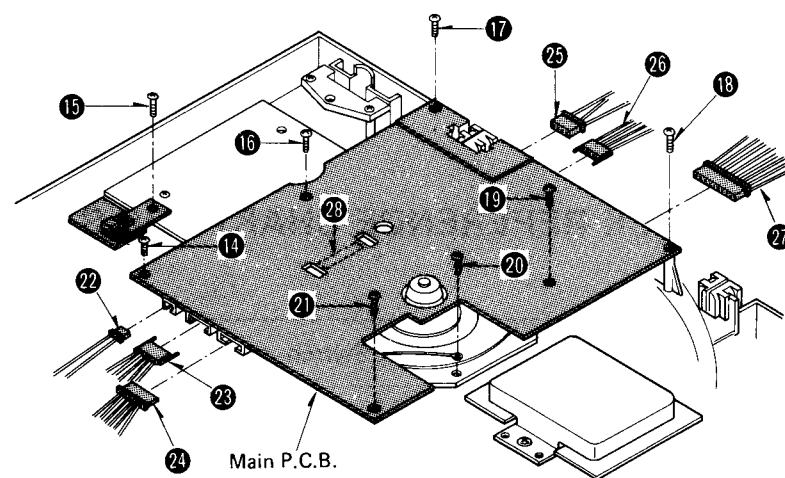


Fig. 3

How to remove the stator frame

1. Remove the main P.C.B.
(Refer to "How to remove the bottom board and main P.C.B.")
2. Remove the stator frame setscrews ㉑ ~ ㉔. Then the stator frame can be removed. (Fig. 4)

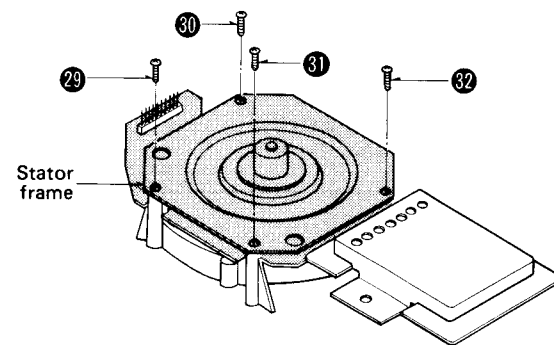


Fig. 4

How to remove the cartridge

1. Open the upper cabinet and turn the arm lock in the direction of the arrow to lock the tonearm.
2. Loosen the cartridge setscrew with the screwdriver. (Turn the set-screw until it is freed as shown in Fig. 5.)
3. Pull out the cartridge, taking care not to touch the stylus. (Fig. 6)
4. When mounting the cartridge, match the tonearm connector with the cartridge pin and completely insert the cartridge and tighten the setscrew. (Fig. 6)

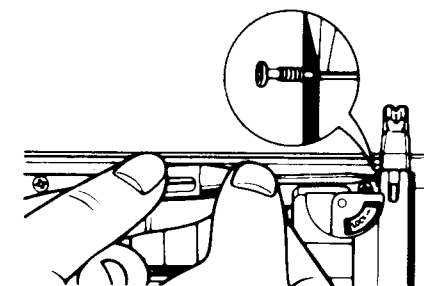


Fig. 5

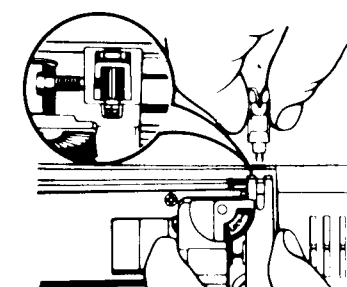


Fig. 6

How to remove the surface plate and dust cover

1. Remove the cartridge. (Refer to "How to remove the cartridge".)
2. Open the upper cabinet and push the scale part of the surface plate from inside. (Fig. 7)
* Carefully remove the surface plate since it is secured with double-sided tape.
3. Remove the dust cover setscrews ㉕ ~ ㉗. (Fig. 8)
4. Completely open the dust cover; remove the upper cabinet cover setscrews ㉘ ~ ㉚; and remove the upper cabinet cover while pulling the tonearm in the direction of the arrow. (Fig. 9)
5. Remove the dust cover setscrews ㉛ and ㉜.
Then the dust cover can be removed by pulling it in the direction of the arrow. (Fig. 10)

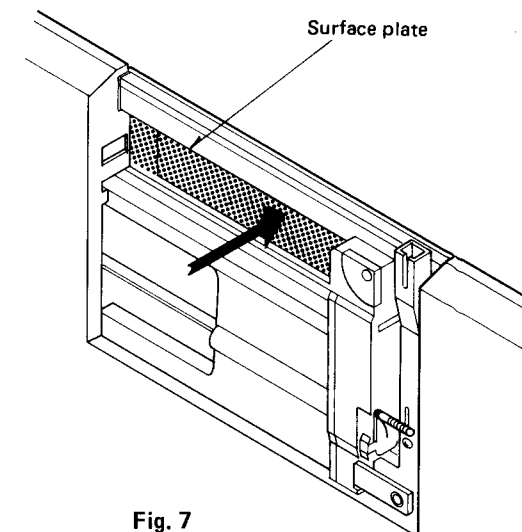


Fig. 7

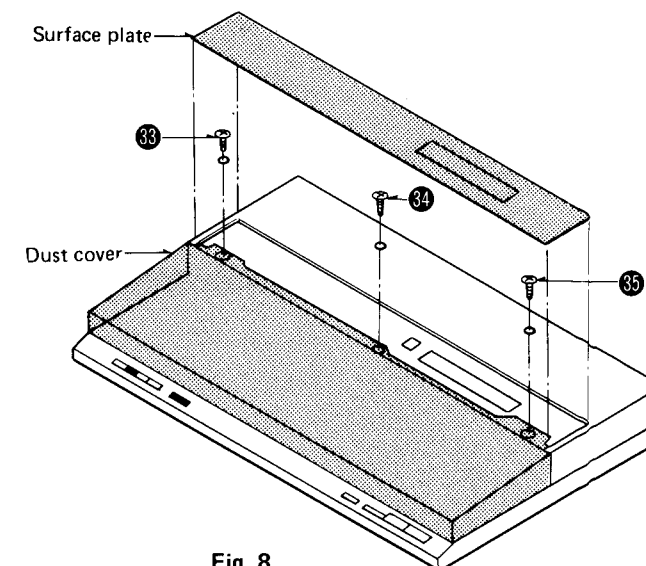


Fig. 8

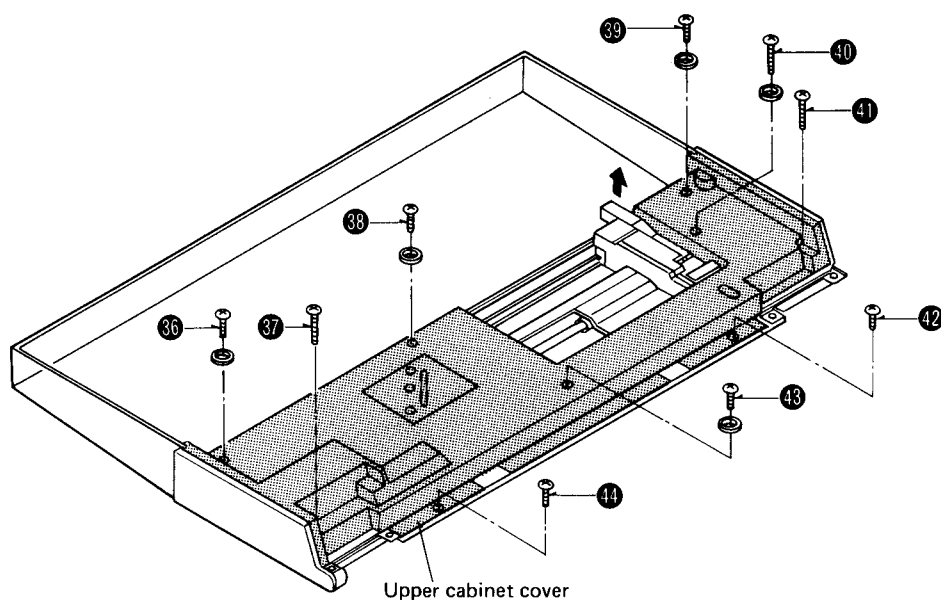


Fig. 9

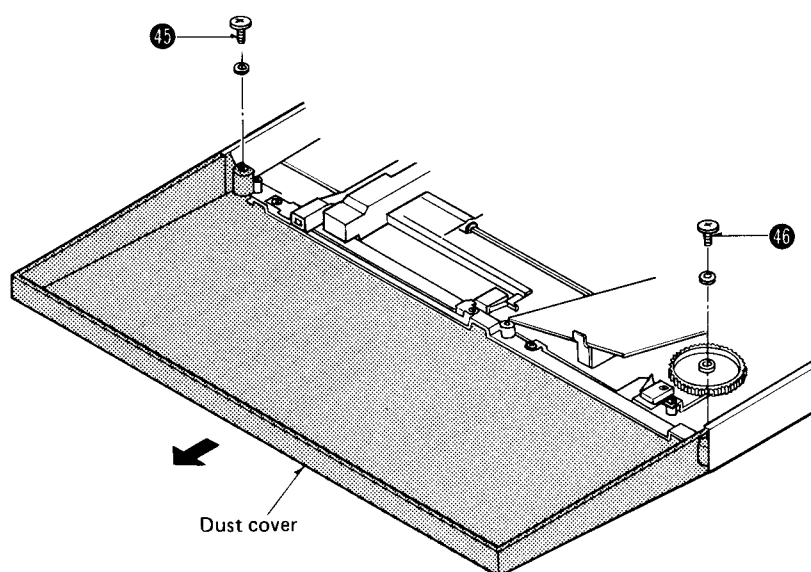


Fig. 10

● How to remove the upper cabinet

1. Remove the rear cover. (Refer to "How to remove the bottom board and main P.C.B.")
2. Remove the connectors 47 ~ 49. (Fig. 11)
3. Remove the hinge setscrews 50 ~ 53; open the upper cabinet and remove it by lifting. (Fig. 11)

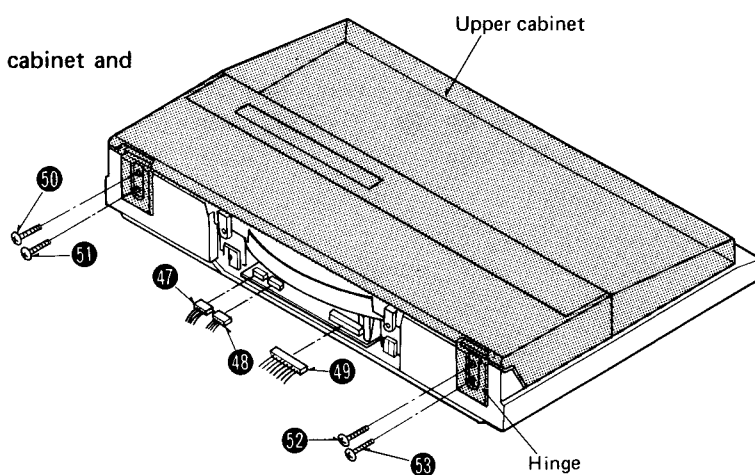


Fig. 11

• How to remove the arm drive plate and disc size sensor P.C.B.

1. Remove the upper cabinet cover. (Refer to "How to remove the surface plate and dust cover.")
2. Remove the disc size sensor P.C.B. setscrew 54 and connectors 55, 56. (Fig. 12)
3. To remove the disc size sensor P.C.B. completely, remove the upper cabinet and the lead wire clamber setscrews 57 in Fig. 12. (Refer to "How to remove the upper cabinet.")
4. Remove the arm drive rope from the tonearm, and remove the arm drive plate setscrews 58 ~ 61. Then the arm drive board can be detached. (Fig. 12)

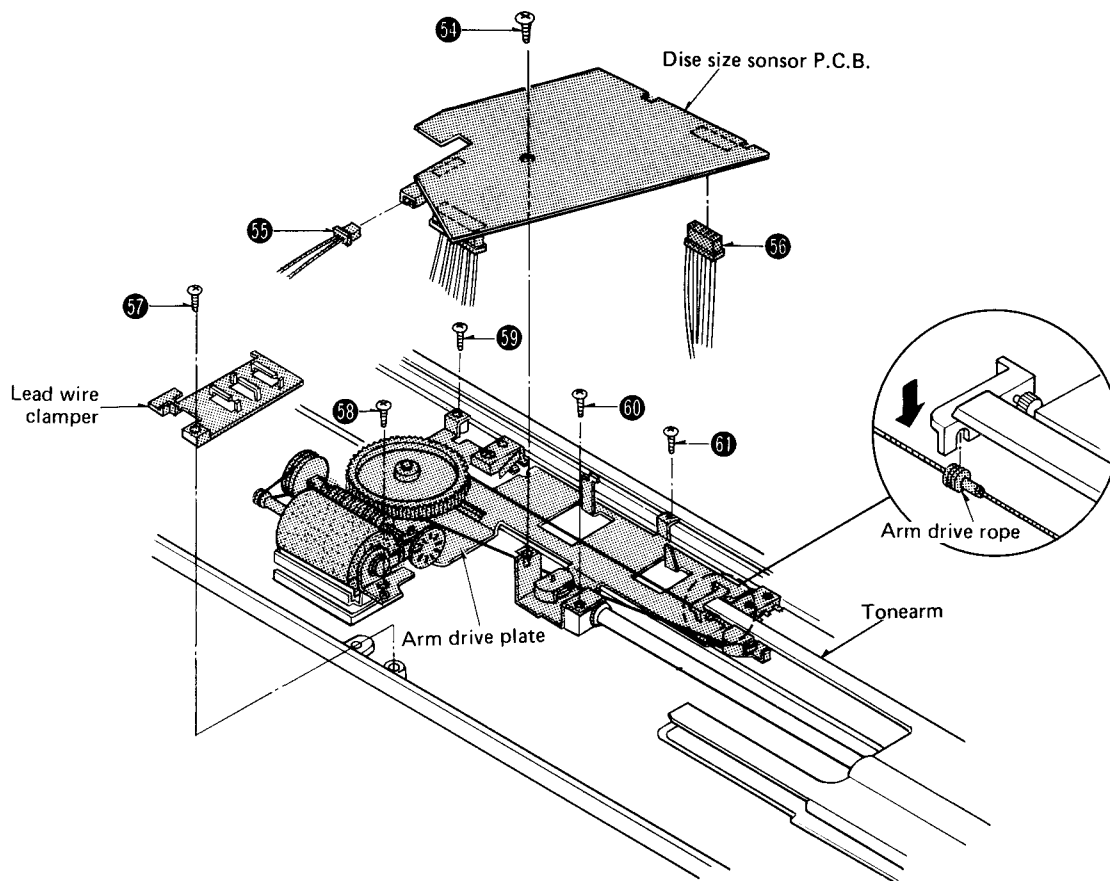


Fig. 12

• How to remove the tonearm

1. Remove the upper cabinet. (Refer to "How to remove the upper cabinet.")
2. Remove the arm drive plate. (Refer to "How to remove the arm drive plate and disc size sensor P.C.B.")
3. Remove the tonearm guide rail setscrew 62 and lead wire clamber setscrews 63, 64. Then the tonearm can be removed. (Fig. 13)

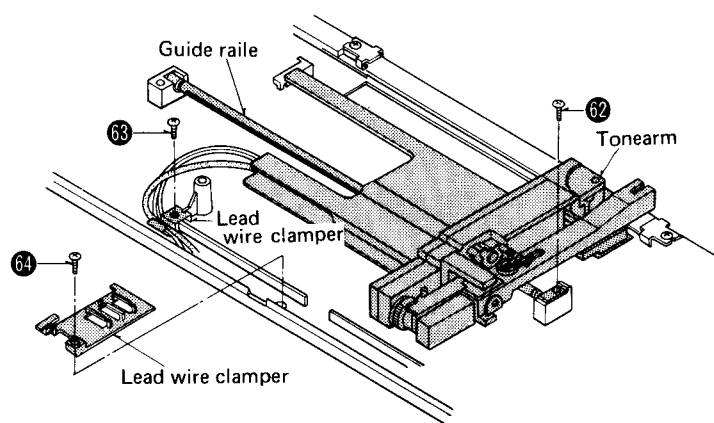


Fig. 13

■ HOW TO SET THE TONEARM DRIVE ROPE

If the rope is disengaged or when setting a new rope, follow the procedure below.

1. Remove the upper cabinet cover.
(Refer to "Disassembly instructions.")
2. Remove the E-ring **65** and washer **66** to remove the arm drive wheel.
(Fig. 14)
3. Turn over the arm drive wheel, and set the rope according to the steps 1 ~ 3 in Fig. 15.
4. Holding the rope set over the arm drive wheel, set the drive wheel and rope according to the steps 4 ~ 5 in Fig. 16.
5. After setting the rope, rotate the worm gear by hand to adjust the tonearm and rope connector positions, and secure them.
6. Rotate the worm gear by hand to check that the tonearm moves smoothly.
7. Mount the E-ring **65** and washer **66**.

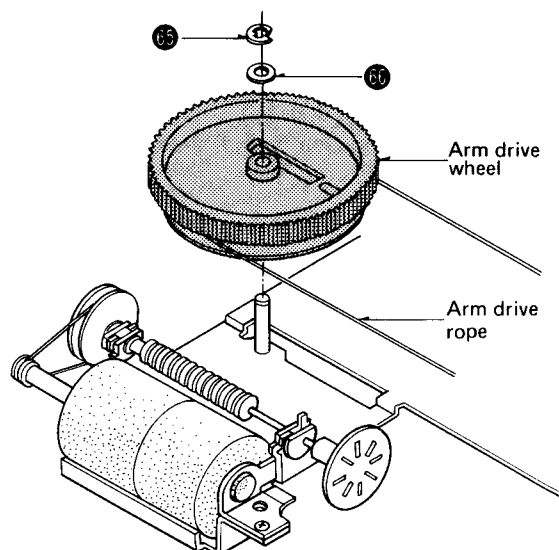


Fig. 14

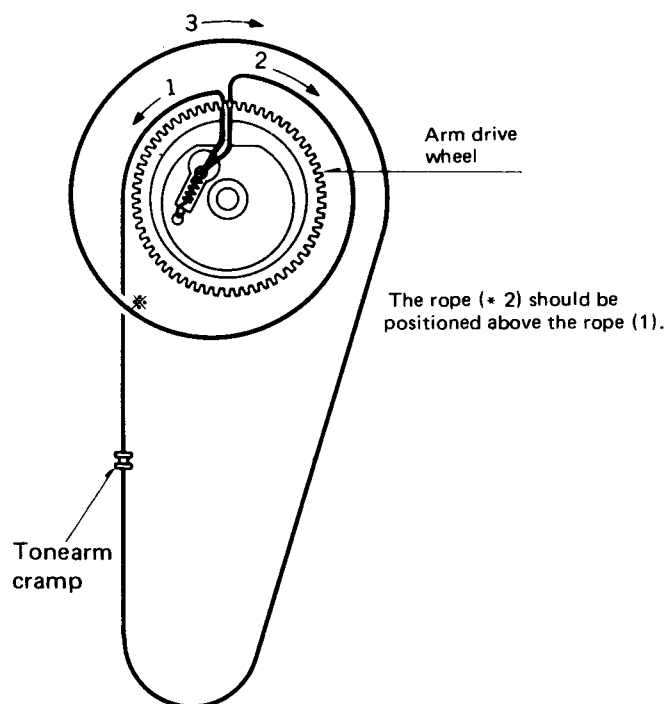


Fig. 15

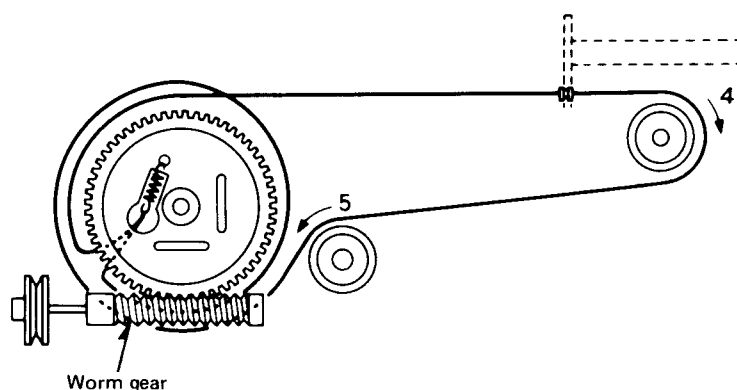


Fig. 16

■ REPLACEMENT OF HALL ELEMENT

When replacing the Hall element of the stator frame, be sure to place it with the marking side up as shown Fig. 17.

* The leg position is not specified provided that the marking side is up.

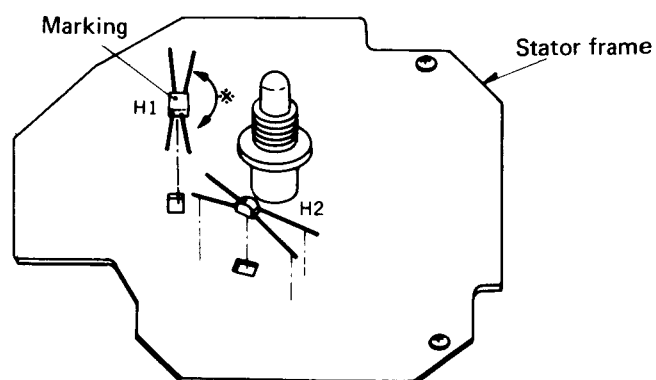


Fig. 17

DESCRIPTION OF CONNECTOR

Two types of connectors are used for this unit: one is directly soldered to the printed circuit board, and the other is insertion type.

The insertion type is represented by "CN", while the direct soldering type is by "BT". (See Fig. 18)

Note: Soldered connectors (indicated by BT) cannot be pulled out.

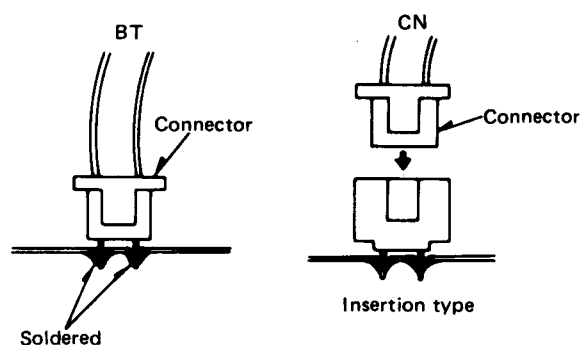


Fig. 18

MEASUREMENTS AND ADJUSTMENTS English

Adjustment of auto start

(Use a 30cm disc for this adjustment.)

1. Remove the surface plate. (Refer to "Disassembly instructions.")
2. Make sure that the tonearm is at the start position (the outermost periphery of turntable).
3. Insert the screwdriver into the adjusting hole. (Fig. 19)
 - * The start position is too much inside:
Turn the screwdriver counterclockwise.
 - * The start position is too much outside:
Turn the screwdriver clockwise.
4. If the start position is still deflected, turn the auto start position adjusting screw. (Fig. 19)
 - * The start position is too much inside:
Turn it clockwise.
 - * The start position is too much outside:
Turn it counterclockwise.
5. After the adjustment, be sure to lock the adjusting screw with bond.

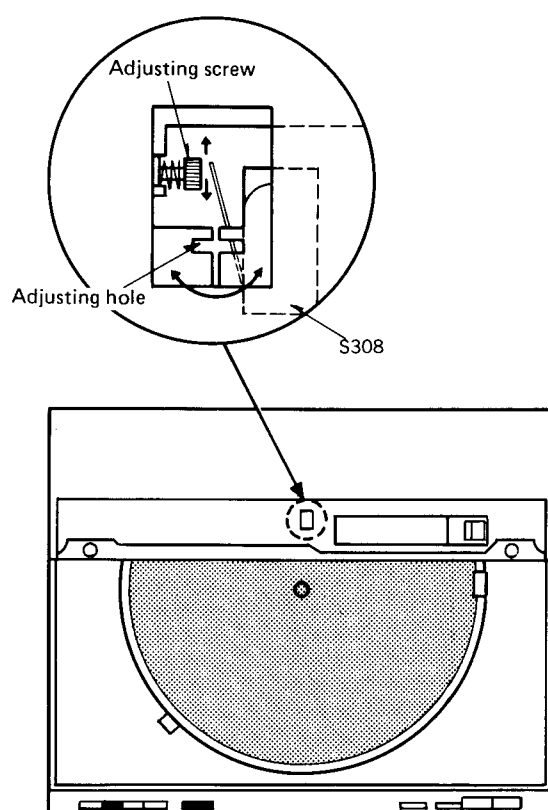


Fig. 19

Adjustment for the stylus pressure

Stylus pressure is normally set to 1.25 g but may be raised or lowered by ± 0.25 g. It may be necessary to increase stylus pressure when playing records cut at high levels, or when room temperature is low, or when the unit easily picks up external vibrations. This will help prevent distortion and groove-skipping. In such cases turn the screw clockwise (+) so the dial scale shows the desired stylus pressure, as indicated in the illustration. (Fig. 20)

Note: Do not turn the stylus-pressure adjustment screw further than the set limits (1.5 g ~ 1.0 g).

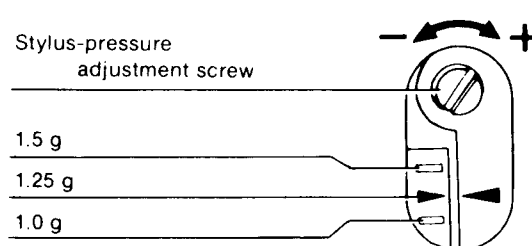


Fig. 20

● Offset adjustment of tonearm and servo gain

After repair of the tonearm and arm drive circuit, make the adjustment according to the following procedure.

Tools and equipment used

1. DC electronic voltmeters (VTVM).
2. 1mm pitch record.
3. Flat head screwdriver (small).
4. Phillips head screwdriver (small).
5. Hexagon wrench (M1.5).

Condition of the set

1. Remove the dust cover and surface plate. (Refer to "Disassembly instructions.")
2. Turn the reset switch (S307) "on" by pressing it with tape. (Fig. 21)
3. Remove the rear cover. (Refer to "Disassembly instructions.")
4. Completely open the upper cabinet and make sure that the tonearm operates when the start button is pressed.

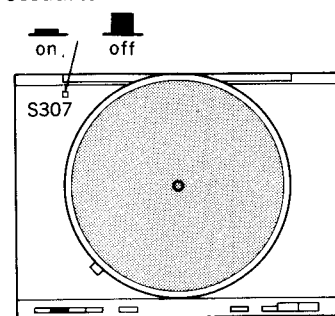
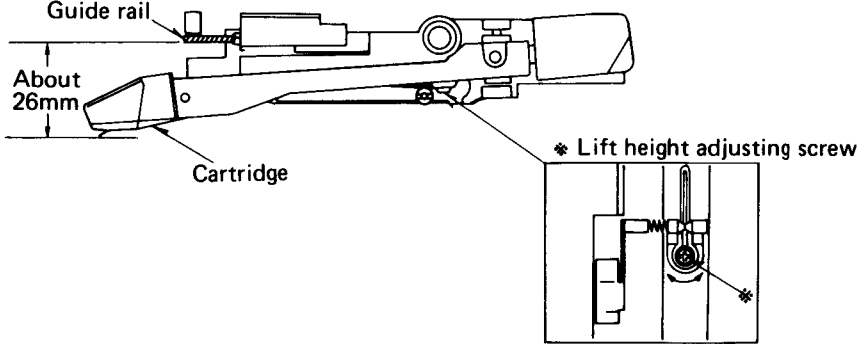
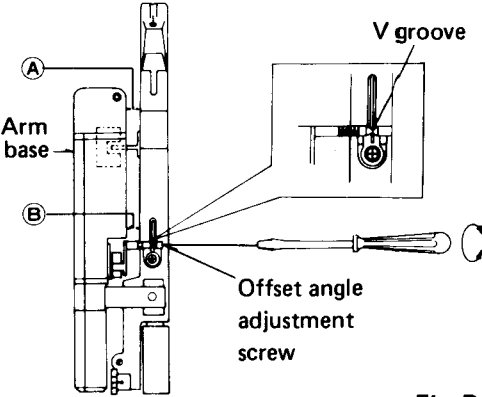
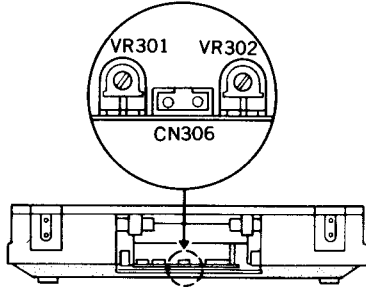
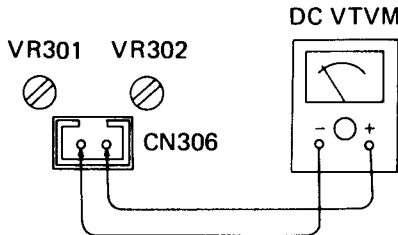
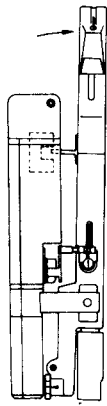
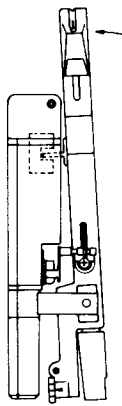
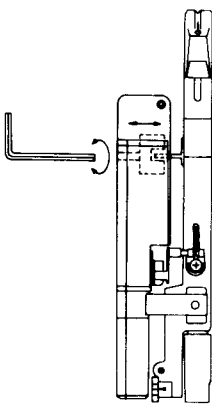
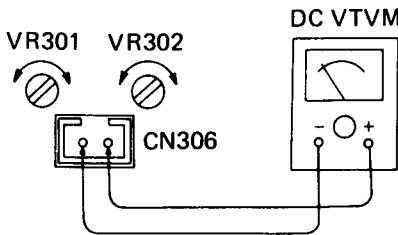


Fig. 21

Note: The tonearm does not operate with the turntable removed.

Step	Item	Adjustment method
1	Adjustment of arm lift height (See Fig. A)	① Turn the power switch "on" and move the tonearm towards the center of disc by pressing the start button. ② Press the cueing button to check that the clearance between the cartridge stylus and the guide rail is about 26mm. ③ If the clearance is incorrect, adjust the lift height by turning the adjusting screw with a flat head screwdriver. – Turn clockwise when excessive ($> 26\text{mm}$). – Turn anticlockwise when insufficient ($< 26\text{mm}$). Note: The lift height adjusting screws of the replacement tonearm is completely tightened up. So, loosen the adjusting screw before making the above adjustment.  Fig. A
2	Offset angle adjustment of tonearm (See Fig. B)	① Turn the power switch "on" and move the tonearm towards the center of disc by pressing the start button. ② Make sure that the arm center is aligned with the V groove of the lift lever. ③ Make sure that the arm base is in parallel with the arm. (Check the clearance between (A) and (B) in Fig. B.) ④ If the arm base is not in parallel with the arm, adjust it by turning the offset angle adjusting screw.  Fig. B

Step	Item	Adjustment method
3	Adjustment of tonearm sensitivity	- Turn the power switch "on" and move the tonearm towards the center of disc by pressing the start button. - Press the cueing button and make sure that the arm is lowered. - Connect the DC VTVM to the connector pin. (See Fig. C, D) - Read the voltage values with the tonearm fully shifted to the right and left respectively. (See Fig. E, F) - Calculate the center voltage from the difference between the two voltage values. For example, when the voltage is 1.5V in Fig. E and 0.02V in Fig. F then $\frac{(1.5V - 0.02V)}{2} + 0.02V = 0.76V$ (middle point voltage) - Set the tonearm to the center position, and turn the adjusting screw of the arm base by a hexagon wrench until the center voltage is achieved. (See Fig. G)      Fig. E Fig. F Fig. G
4	Servo gain and offset adjustment	- Put a record on the turntable. - Open the dustcover 1 or 2 cm, turn the power switch "on" and lower the tonearm. (In this case, do not allow the stylus to touch the disc.) - Connect the DC VTVM to the connector pin. (See Fig. H) - Make sure that VR301 has been completely turned clockwise. - Turn VR302 until the DC VTVM indicates 0.72V: (Servo gain adjustment) - Put a 1 mm-pitch record on the turntable, close the dust cover, and play the record. - Turn VR301 until the DC VTVM indicates 0.6V. (Offset adjustment)  Fig. H

● Adjustment of rotational speed

After replacement of drive IC (IC101) and variable resistors (VR101, 102) or when the rated speed is not obtained by turning the pitch control knob, perform the adjustment according to the following procedure.

1. Remove the bottom plate. (Refer to "Disassembly Instructions".)
2. Place the set on the player repair table. (See Fig. 22.)
3. Put on the record and play. (Or, set the reset switch S307 to "on" and the record size selection knob to "30 cm"; rotate the turntable with the upper cabinet opened.)
4. Push the speed selector button to "45 r.p.m.".
5. Turn the pitch control knob to central position.
6. Adjust VR101 by the screwdriver from under the set until the rated speed (45 r.p.m.) is obtained while checking it through the stroboscope. (See Fig. 23.)
7. Push the speed selector button to "33 r.p.m.".
8. Adjust VR102 by the screwdriver until the rated speed (33-1/3 r.p.m.) is obtained while checking it through the stroboscope. (See Fig. 23.)
9. After completing the above-mentioned adjustment, check that the rated speeds can be obtained by pushing the speed selector button.

Note: Be sure to perform the adjustment of 45 r.p.m. first. As a simple method, it is also possible to adjust VR101 and VR102, removing the turntable. (See Fig. 24.)

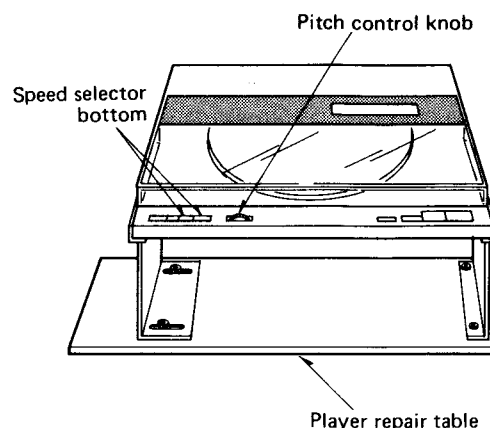


Fig. 22

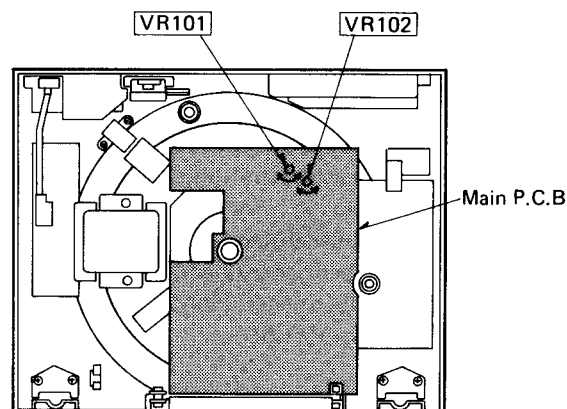


Fig. 23

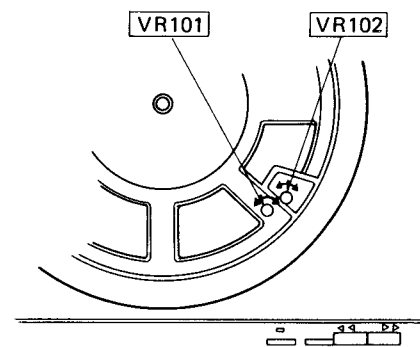


Fig. 24

■ MESSUNGEN UND JUSTIERUNGEN Deutsch

● Justierung der Auto-Start-Position

(Für diese Justierung ist eine 30cm-Platte zu verwenden.)

1. Die Deckplatte abnehmen. (Siehe "Entfernen der Deckplatte".)
2. Überprüfen, daß der Tonarm in der Start-Position ist (am Außenrand des Plattentellers).
3. Den Schraubenzieher in das Justierloch einführen. (Abb. 19)

* Die Start-Position ist zu weit innen: Den Schraubenzieher entgegen dem Uhrzeigersinn drehen.

* Die Start-Position ist zu weit außen: Den Schraubenzieher im Uhrzeigersinn drehen.

4. Wenn die Start-Position noch immer von der korrekten Position abweicht, die Auto-Start-Position-Justierschraube drehen. (Abb. 19)

* Die Start-Position ist zu weit innen: Im Uhrzeigersinn drehen.

* Die Start-Position ist zu weit außen: Entgegen dem Uhrzeigersinn drehen.

5. Nach erfolgter Justierung muß die Justierschraube mit Lack gesichert werden.

• Justieren Sie die Auflagekraft in den folgenden Fällen.

Die normale Auflagekraft beträgt 1,25 g, doch kann sie um $\pm 0,25\text{g}$ gesenkt oder erhöht werden.

Es könnte notwendig sein, die Auflagekraft zu erhöhen, wenn Platten abgespielt werden, die bei hohem Pegel geschnitten wurden, wenn die Raumtemperatur tief ist, oder wenn der Plattenspieler externer Vibration ausgesetzt

ist. Dies hilft dabei, Verzerrung und Überspringen der Rillen zu vermeiden.

Drehen Sie die Schraube in einem solchen Fall im Uhrzeigersinn (+), bis die Skala die gewünschte Auflagekraft anzeigt, wie in der Skizze gezeigt. (Abb. 20)

Anmerkung:

Drehen Sie die Auflagekraft-Justierschraube nie weiter, als bis zu den Begrenzungen (1,5 g ~ 1,0 g).

• Reibungswinkel-Justierung des Tonarms und der Servo-Verstärkung

Nach der Reparatur des Tonarms und der Tonarm-Antriebschaltung, sind die folgenden Justierungen durchzuführen.

Benötigte Werkzeuge und Instrumente

1. Elektronisches Gleichstrom-Röhrenvoltmeter oder Prüfgerät.
2. Platte mit 1mm-Rillenabstand.
3. Flachkopf-Schraubenzieher (klein).
4. Kreuzkopf-Schraubenzieher (Philips) (klein).
5. Sechskant-Schlüssel (M1,5).

Zustand des Gerätes

1. Die Staubabdeckung und die Plattentellerauflage entfernen. (Siehe "Anleitung für die Zerlegung".)
2. Den Deckelschalter (S307) durch Drücken mit Band einschalten. (Abb. 21)
3. Die Gehäuserückseite entfernen. (Siehe "Anleitung für die Zerlegung".)
4. Das obere Gehäuse vollständig öffnen und überprüfen, daß der Tonarm funktioniert, wenn die Start-Taste gedrückt wird.

Anmerkung: Der Tonarm funktioniert bei ausgebautem Plattenteller nicht.

Schritt	Einstell-Gegenstand	Justiermethode
1	Justierung der Tonarm-Lifthöhe (Siehe Abb. A)	① Den Netzschalter einschalten und den Tonarm durch Drücken der Start-Taste gegen die Plattenmitte bewegen. ② Die Lifttaste drücken und überprüfen, daß der Abstand zwischen der Tonabnehmer-Nadelspitze und der Führungsschiene ca. 26mm beträgt. ③ Falls der Abstand nicht korrekt ist, die Lifthöhe durch Drehen der Justierschraube mit einem Flachkopf-Schraubenzieher justieren. – Bei zu großem Abstand: im Uhrzeigersinn drehen ($> 26\text{mm}$). – Bei zu kleinem Abstand: entgegen dem Uhrzeigersinn drehen ($< 26\text{mm}$). Anmerkung: Die Lifthöhe-Justierschraube des Ersatztonarms ist vollständig angezogen. Die Justierschraube ist daher vor dem Durchführen obiger Justierung zu lösen.
2	Reibungswinkel-Justierung des Tonarms (Siehe Abb. B)	① Den Netzschalter einschalten und den Tonarm durch Drücken der Start-Taste gegen die Plattenmitte bewegen. ② Überprüfen, daß die Tonarmmitte mit der V-Kerbe der Liftachse übereinstimmt. ③ Überprüfen, daß der Tonarm parallel zum Tonarmträger ist. (Den Abstand zwischen ① und ② in Abb. B überprüfen.) ④ Falls der Tonarmträger nicht parallel zum Tonarm ist, durch Drehen der Reibungswinkel-Justierschraube justieren.

Schritt	Einstell-Gegenstand	Justiermethode
3	Justierung der Tonarm-Empfindlichkeit	① Den Netzschalter einschalten und den Tonarm durch Drücken der Start-Taste gegen die Plattenmitte bewegen. ② Die Lifttaste drücken und überprüfen, daß der Tonarm abgesenkt wird. ③ Das Gleichstrom-Röhrenvoltmeter an die Anschlußstifte anschließen . (Siehe Abb. C und D) ④ Die Spannungswerte bei ganz nach rechts und dann nach links gestelltem Tonarm ablesen. (Siehe Abb. E und F) ⑤ Vom Unterschied zwischen den beiden Spannungswerten die Mittelspannung berechnen. Zum Beispiel, wenn die Spannung in Abb. E 1,5V, und in Abb. F 0,02V beträgt: $\frac{(1,5V - 0,02V)}{2} + 0,02V = 0,76V$ (Mittelpunkt-Spannung) ⑥ Den Tonarm in die Mittelposition stellen, und die Justierschraube der Armbasis mit dem Sechskantschlüssel drehen, bis die Mittelspannung erreicht wird. (Siehe Abb. G)
4	Servo-Verstärkungs- und Reibungswinkel-Justierung	① Eine Platte auf den Plattenteller legen. ② Die Staubabdeckung 1 oder 2 cm öffnen, den Netzschalter einschalten und den Tonarm absenken. (In diesem Fall darauf achten, daß die Abtastnadel die Platte nicht berührt.) ③ Das Gleichstrom-Röhrenvoltmeter an die Steckerstifte anschließen. ④ Überprüfen, daß VR301 bis zum Anschlag im Uhrzeigersinn gedreht worden ist. ⑤ VR302 drehen, bis das Gleichstrom-Röhrenvoltmeter, 0,72V anzeigt. (Servo-Verstärkungs-Justierung) ⑥ Die Platte mit 1mm-Rillenabstand auf den Plattenteller auflegen, die Staubabdeckung schließen, und die Platte abspielen. ⑦ VR301 drehen, bis das Gleichstrom-Röhrenvoltmeter 0,6V anzeigt. (Reibungswinkel-Justierung)

• Justierung der Drehzahl

Nach dem Auswechseln des Antriebs-IC (IC101) und die Drehwiderstände (VR101, 102), oder wenn die Nenndrehzahl durch Drehen des Drehzahl-Feineinstellers nicht erreicht werden kann, sind die folgenden Justierungen durchzuführen.

1. Die Bodenplatte abnehmen. (Siehe "Ausbauen".)
2. Die Gerät auf den Plattenspieler-Reparaturtisch stellen.
(Siehe Abb. 22)
3. Eine Platte auflegen und abspielen. (Oder den Rückstellschalter S307 auf "on" und den Plattengröße-Wahlschalter auf "30 cm" stellen; der Plattenteller kann sich dadurch bei geöffnetem Gehäuseoberteil drehen.)
4. Den Drehzahl-Wahlschalter auf "45 U/min" einstellen.
5. Den Drehzahl-Feineinsteller in die Mitte stellen.

6. VR101 von der Unterseite her mit einem Schraubenzieher justieren, bis die Nenndrehzahl (45 U/min) anhand des Stroboskops festgestellt wird. (Siehe Abb. 23)

7. Die Drehzahl-Wahlschaltertaste auf "33 U/min" drücken.

8. VR102 mit dem Schraubenzieher justieren, bis die Nenndrehzahl anhand des Stroboskops festgestellt wird.
(Siehe Abb. 23)

9. Nach dem Durchführen der obigen Justierungen überprüfen, daß die Nenndrehzahlen durch Drücken der Drehzahl-Wahlschaltertaste erreicht werden.

Anmerkung: Die Justierung für 45 U/min muß unbedingt zuerst durchgeführt werden.

Eine einfache mögliche Justiermethode besteht darin, VR101 und VR102 nach Abnehmen des Plattentellers zu justieren. (Siehe Abb. 24)

MESURAGES ET MISES AU POINT Français

• Mise au point du démarrage automatique

(Utiliser un disque de 30 cm pour cette mise au point.)

1. Enlever la plaque ornementale. (Se référer aux "Instructions pour le Démontage".)
2. S'assurer que le bras de lecture est sur la position de démarrage (la périphérie la plus à l'extérieur de la platine).
3. Insérer le tournevis dans le trou de réglage. (Fig. 19)
 - * La position de démarrage est trop à l'intérieur: Tourner le tournevis dans le sens inverse des aiguilles d'une montre.
 - * La position de démarrage est trop à l'extérieur: Tourner le tournevis dans le sens des aiguilles d'une montre.

• Mettre au point la force verticale d'appui de la pointe de lecture dans les cas suivants.

La force verticale d'appui de la pointe de lecture est normalement réglée sur 1,25 g, mais elle peut être augmentée ou diminuée de $\pm 0,25$ g.

Il pourra être nécessaire d'augmenter la force verticale d'appui de la pointe lorsqu'on joue des disques enregistrés à des niveaux élevés, ou lorsque la température de la pièce est basse, ou encore lorsque l'appareil capte facilement des vibrations extérieures.

• Mise au point du décalage du bras de lecture et de l'amplification servo-mécanique

Après la révision du bras de lecture et du circuit d'entraînement du bras, effectuer la mise au point suivante selon la procédure ci-dessous.

Outils et équipement à utiliser:

1. Vérificateur ou voltmètre électronique (VTVM) à C.C.
2. Disque à écarts de 1 mm.
3. Tournevis à tête plate (petit).
4. Tournevis à tête Philips (petit).
5. Clef hexagonale (M1,5).

4. Si la position de démarrage est encore déviée, tourner la vis de mise au point du démarrage automatique. (Fig. 19)

* La position de démarrage est trop à l'intérieur: La tourner dans le sens des aiguilles d'une montre.

* La position de démarrage est trop à l'extérieur: La tourner dans le sens inverse des aiguilles d'une montre.

5. Après la mise au point, s'assurer de bloquer la vis de mise au point avec un adhésif.

Cela aidera à empêcher une distorsion et un sautiller des sillons. En pareils cas, tourner la vis de réglage dans le sens des aiguilles d'une montre (+), de façon à ce que la graduation du cadran indique la force verticale d'appui désirée de la pointe de lecture, comme il est montré sur l'illustration. (Voir Fig. 20)

Nota:

Ne pas tourner la vis de réglage de la force verticale d'appui de la pointe de lecture plus que les limites de réglage admissibles (1,5 ~ 1,0 g).

Conditions du réglage:

1. Retirer le couvercle protège-poussière et la plaque de surface. (Se référer aux "Instructions pour le Démontage".)
2. Mettre "en marche" le commutateur (S307) du couvercle en appuyant dessus avec un ruban. (Fig. 21)
3. Retirer le capot arrière. (Se référer aux "Instructions pour le Démontage".)
4. Ouvrir complètement le boîtier supérieur et s'assurer que le bras de lecture fonctionne lorsqu'on appuie sur la touche de démarrage.

Nota: Le bras de lecture ne fonctionne pas lorsque la platine est retirée.

Etape	Article	Méthode de réglage
1	Mise au point de la hauteur d'élévation du bras (Voir Fig. A)	① Mettre "en marche" l'interrupteur d'alimentation et déplacer le bras de lecture vers le centre du disque en appuyant sur la touche de démarrage. ② Appuyer sur la touche de pose/relevage pour vérifier si l'intervalle entre la pointe de lecture de la cellule pick-up et le rail de guidage est d'à peu près 26 mm. ③ Si l'intervalle n'est pas suffisant, ajuster la hauteur d'élévation en tournant la vis de réglage avec un tournevis à tête plate. – Tourner dans le sens des aiguilles d'une montre si l'intervalle est excessif (> 26 mm). – Tourner dans le sens inverse des aiguilles d'une montre si l'intervalle est insuffisant (< 26 mm). Nota: La vis de réglage de la hauteur d'élévation du bras de lecture de rechange est serrée à fond. Aussi, la desserrer avant d'effectuer la mise au point ci-dessus.
2	Mise au point de l'angle de décalage du bras de lecture (Voir Fig. B)	① Mettre "en marche" l'interrupteur d'alimentation et déplacer le bras de lecture vers le centre du disque en appuyant sur la touche de démarrage. ② S'assurer que le centre du bras soit aligné avec l'encoche en V du levier d'élévation. ③ S'assurer que le socle du bras soit parallèle au bras. (Vérifier l'intervalle entre (A) et (B) dans la Fig. B) ④ Si le socle du bras n'est pas parallèle au bras, l'ajuster en tournant la vis de réglage de l'angle de décalage.
3	Mise au point de la sensibilité du bras de lecture	① Mettre "en marche" l'interrupteur d'alimentation et déplacer le bras de lecture vers le centre du disque en appuyant sur la touche de démarrage. ② Appuyer sur la touche de pose/relevage et s'assurer que le bras soit abaissé. ③ Brancher le voltmètre électronique à C.C. à la broche du connecteur. (Voir les Figs. C et D) ④ Observer les valeurs de tension avec le bras de lecture complètement orienté respectivement vers la droite et la gauche. (Voir les Figs. E et F) ⑤ Calculer la tension moyenne à partir de la différence entre les deux valeurs de tension. Par exemple, lorsque la tension est de 1,5V dans la Fig. E et de 0,02V dans la Fig. F, alors: $\frac{(1,5V - 0,02V)}{2} + 0,02V = 0,76V$ (tension du point intermédiaire) ⑥ Placer le bras de lecture sur la position du centre, et tourner la vis de réglage du socle du bras avec une clef hexagonale jusqu'à ce que la tension médiane soit obtenue. (Voir Fig. G)
4	Mise au point du décalage et de l'amplification servomécanique	① Placer un disque sur la platine. ② Ouvrir le couvercle protège-poussière de 1 à 2 cm, mettre "en marche" l'interrupteur d'alimentation et abaisser le bras de lecture. (Dans ce cas, ne pas laisser la pointe de lecture toucher le disque.) ③ Brancher le voltmètre électronique à C.C. à la broche du connecteur. ④ S'assurer que VR301 a été entièrement tourné dans le sens des aiguilles d'une montre. ⑤ Tourner VR302 jusqu'à ce que le voltmètre électronique à C.C. indique 0,72V. (Mise au point de l'amplification servo-mécanique.) ⑥ Placer un disque à écarts de 1 mm sur la platine, refermer le couvercle protège-poussière et faire jouer le disque. ⑦ Tourner VR301 jusqu'à ce que le voltmètre électronique à C.C. indique 0,6V. (Mise au point du décalage.)

● Réglage de la vitesse rotationnelle

Après la remise en place du circuit intégré de commande (IC101) et des résistances variables (VR101, 102) ou lorsque la vitesse nominale de rotation n'est pas obtenue en tournant le bouton de réglage d'écart, exécuter la mise au point selon le mode opératoire suivant.

1. Retirer le plateau inférieur. (Se référer à "Comment démonter".)
2. Placer l'appareil sur la table de réparation pour électrophone. (Voir Fig. 22)
3. Placer dessus un disque et le faire jouer. (Ou, placer l'interrupteur de réenclenchement S307 sur "on" et la manette de sélection du diamètre de disque sur "30 cm"; faire tourner la platine en laissant le boîtier supérieur ouvert.)
4. Appuyer le bouton-commutateur de vitesse sur "45 r.p.m" (45 t/p.m.).
5. Tourner le bouton de réglage d'écart sur la position centrale.

6. Régler VR101 avec un tournevis à partir du dessous de l'appareil jusqu'à ce que la vitesse nominale de rotation (45 t/p.m) soit obtenue, tout en la vérifiant par l'intermédiaire du stroboscope. (Voir la Fig. 23)
7. Appuyer le bouton-commutateur de vitesse sur "33 r.p.m" (35 t/p.m.).
8. Régler VR102 avec un tournevis jusqu'à ce que la vitesse nominale de rotation (33 1/3 t/p.m.) soit obtenue, tout en la vérifiant par l'intermédiaire du stroboscope. (Voir la Fig. 23)
9. Après l'achèvement de la mise au point mentionnée cidessus, vérifier que les vitesses nominales de rotations peuvent être obtenues en appuyant sur la bouton-commutateur de vitesse.

Nota: S'assurer d'effectuer tout d'abord la mise au point pour 45 t/p.m.

Comme methode plus simplifiée, il est possible aussi de régler VR101 et VR102, en retirant la platine. (Voir la Fig. 24)

■ REPLACEMENT PARTS LIST...Cabinet & Chassis Parts

- 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 Δ make have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
 3. $\square$ -marked parts are used for black type only, while $\circ$ -marked parts are for silver type only.

4. Parts other than $\square$ and $\circ$ -marked are used for both black and silver types.
5. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.

Black type model No. : SL-DL1 (K)

Ref. No.	Part No.	Part Name & Description
MAIN CABINET PARTS		
1	SFTGQ11N01	Turntable Mat
2	SFTED11N01A	Turntable
3	$\circ$ SFACD11N01	Cabinet
3	$\square$ SFACD11N21	Cabinet (Black)
4	SFUMQ11N11	Cover, Rear
5	SFAZD11N01	Supporter, Hinge
6	SFUMQ11N01E	Knob Ass'y Start & Stop
7	SFUMD11N02	Cover, Indication Start & Stop
8	SFUMQ11N03	Guide, 33/45 Selector
9	SFUMD11N03	Cover, Indication 33/45 Selector
10	SFKTQ11N03	Knob, 33/45 Selector
11	SFKTQ11N04	Knob, Power
12	SFUMQ11N06	Shaft, Power Switch
13	SFUPQ11N04	Guide, Power Switch
14	SFGZD11N01	Spacer, L.E.D
15	SFDJQ11N02E	Connector Ass'y (6P)
16	SFUMC07-08	Holder, L.E.D
17	SFDJC07-05E	Connector Ass'y
18	SFUMD11N04	Panel, Strobe
19	SFUMD11N05E	Strobe Cover Ass'y
20	SFUMD11N01	Guide, Speed Adjustment
21	SFKTD11N01	Knob, Speed Adjustment
22	SFDJQ11N05E	Connector Ass'y (3P)
23 [E]	SFNND11S01	Name Plate
23 [EK, XL]	SFNND11G02	Name Plate
23 [EG, EB, EF, EH, EI]	SFNND11R01	Name Plate
23 [XA, XM]	SFNND11X01	Name Plate
24 [E, EH, EG, XM] EB, EF, XA	Δ SJA88	AC Cord
24 [EK] only	Δ QFC1205M	AC Cord
24 [XL] only	Δ QFC1208M	AC Cord
25	SFUM190-11	Bushing, AC Cord
25 [XL] only	SFUM190-12	Bushing, AC Cord

Ref. No.	Part No.	Part Name & Description
26	SFDHC07-01A	Phono Cord
27	SFUM190-11	Bushing, Phono Cord
28	SFMZD11N01Z	Stator Frame Ass'y
29	SFUZQ11N03	Shield Plate
30	SFUMQ11N05	Shaft, Connection
31	SFDSTWM9901A	Power Switch Supporter
32	SFGCQ11N04	Rubber, Power Transformer
33	SFUPQ11N09	Cover, Power Transformer
34	SFAUQ11N01E	Bottom Board
35	SFUPD11N03	Plate, Hinge
36	SFQCC07-01	Spring, Audio Insulator (Front)
37	SFQCC11N01	Spring, Audio Insulator (Rear)
38	SFGAD11N01E	Audio Insulator
39	SFUZD11N01	Sheet, Knob Guide
40	SFDJD11N03E	Connector Ass'y (6P)
41	SFDJD11N02E	Connector Ass'y (3P)
42	SFDJQ11N01E	Connector Ass'y (8P)
43	SFDJD11N01E	Connector Ass'y (2P)
44	SFNHD11X01	Lable
45	SFGZD11N02	Spacer, L.E.D
46	SFUZD11N02	Spacer, Strobe Panel
47	SFDBC07-01	Bushing, Transistor
UPPER CABINET PARTS		
50	SFUMQ11N12	Upper Cabinet Cover
51	SFNZC07-02	Lable Disc Size Selector
52	SFUPQ11N08	Guide, Upper Cabinet Cover
53	SFUMC07-16	Shutter
54	SFGCQ11N01	Cushion, Guide Rail
55	SFXJQ11N01	Guide Rail, Tonearm
56	SFUPC07-04	Supporter, Guide Rail
57	SFUPQ11N03	Guide Rail, Upper Cabinet
58	SFUPQ11N05	Supporter, Guide Rail
59	SFGCQ11N02	Cushion, Guide Rail
60	$\circ$ SFACQ11N02	Upper Cabinet (Silver)
60	$\square$ SFACQ11N04	Upper Cabinet (Black)

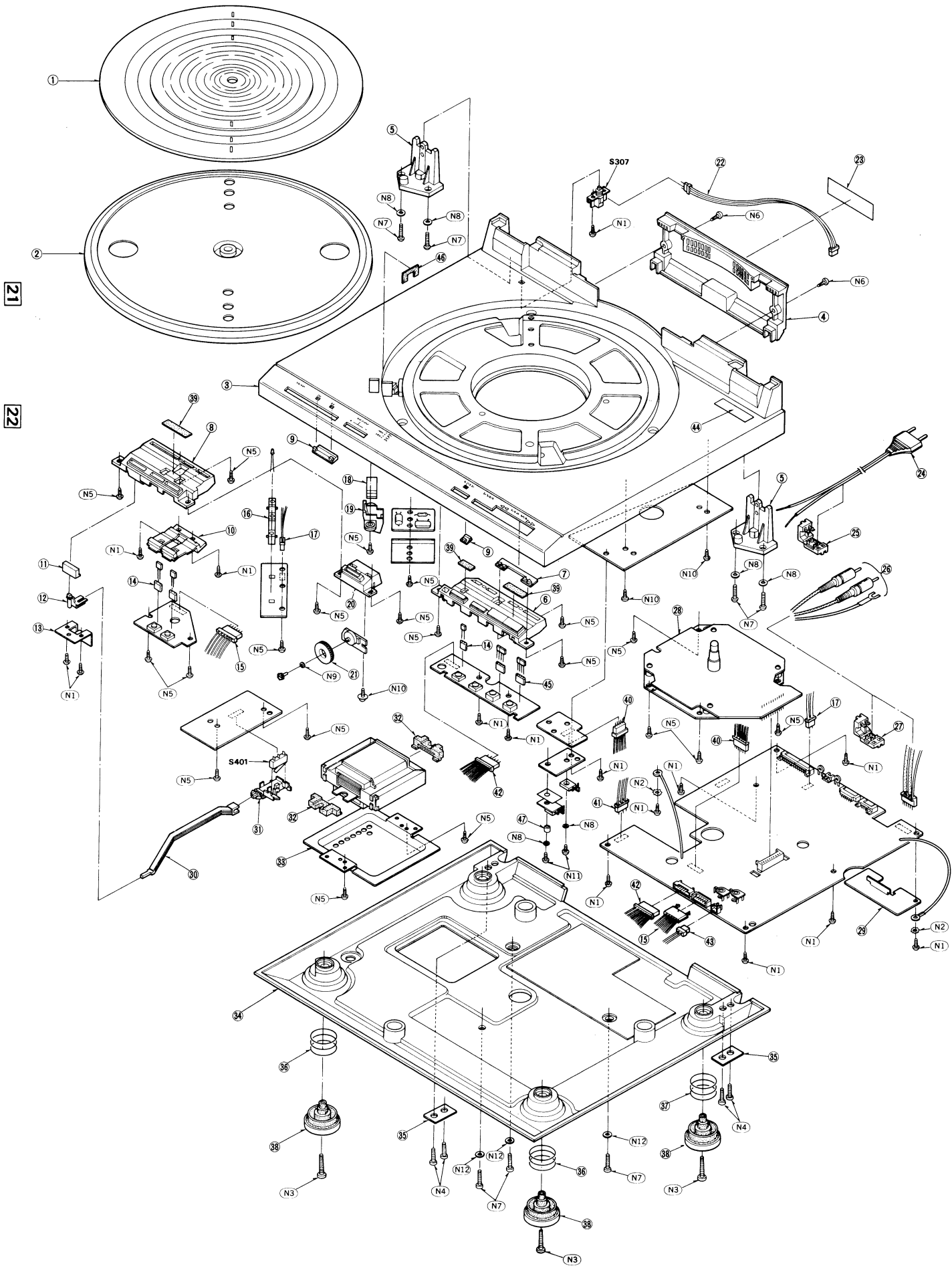
Ref. No.	Part No.	Part Name & Description
61	SFADD11N01E	Dust Cover
62	SFUMC07-09	Guide, Lead Wire
63	SFKD11N01	Surface Plate
64	SFATQ11N02A	Hing
65	SFUPC07-01E	Arm Drive Plate
66	SFUPC07-07	Clamper, Lead Wire
67	SFUMC07-23	Pulley
68	SFUMC07-22	Stopper, Pulley
69	SFUMC10-05	Arm Drive Wheel
70	SFDC10-02E	Connector, 4 Pin (With Wire)
71	SFXZC07-01R	Worm Ass'y
72	SFGBC10-01	Belt, Arm Drive
73	SFUC07-05E	Arm Drive Rope
74	SFMHC07-01E	Arm Drive Motor
75	SFGCQ11N03	Cushion, Arm Drive Motor
76	SFUPQ11N15	Supporter, Arm Drive Motor
77	SFDC07-01E	Connector, 12 Pin (With Wire)
78	SFUZQ11N02	Lable, Surface Plate
TONEARM PARTS		
101	SFPAM00701A	Tonearm
102	EPCP23SK	Cartridge
	EPS-23CS	Stylus
103	SFPCS00701A	Tonearm Position Indicator
104	SFPKD00701E	Arm Base
105	SFDZC07-01E	Cueing Plunger (RL501)
106	SFJL00701A	Lift Ass'y
107	SFSP01505	Spring, Lift Ass'y
108	SFPKD00702	Arm Base Cover

Ref. No.	Part No.	Part Name & Description
109	SFPSP00706	Spring, Rest Position Adjustment
110	SFDJC07-03E	Connector, Phono (With Wire)
111	SFDJC07-02E	Connector, 5 Pin (With Wire)
113	SFPGM00702	Cushion, Lead Wire
114	SFPZB00709	Bracket, Arm Base
115	SFGZ172-01	Spacer, Arm Base Cover
SCREWS, WASHERS and CIRCLIPS		
N1	XTV3+8BFN	Screw, Tapping, $\oplus$ 3 x 8
N2	XWC3B	Washer, ϕ 3
N3	XTV3+20BFN	Screw, Tapping, $\oplus$ 3 x 8
N4	XTN4+12BFZ	Screw, Tapping, $\oplus$ 4 x 20
N5	XTV3+10BFZ	Screw, Tapping, $\oplus$ 3 x 10
N6	XTV3+10BFZ	Screw, Tapping, $\oplus$ 3 x 10
N7	XTV3+14BFZ	Screw, Tapping, $\oplus$ 3 x 14
N8	XWA3B	Washer, ϕ 3
N9	XWA2B	Washer, ϕ 2
N10	SFXG172-01	Screw
N11	XSN3+8S	Screw
N12	XWE3	Washer
N13	XTV3+16BFZ	Screw, Tapping, $\oplus$ 3 x 16
N14	XTN3+8BFZ	Screw, Tapping, $\oplus$ 3 x 8
N15	XTV3+8BFN	Screw, Tapping, $\oplus$ 3 x 6
N16	XYN23+C10BN	Screw, Tapping, $\oplus$ 2.3 x 10
N17	XTS26+6B	Screw, Tapping, $\oplus$ 2.6 x 6
N18	SFXGQ11N01	Screw, Dust Cover
N19	SFXWQ11N01	Washer, Dust Cover

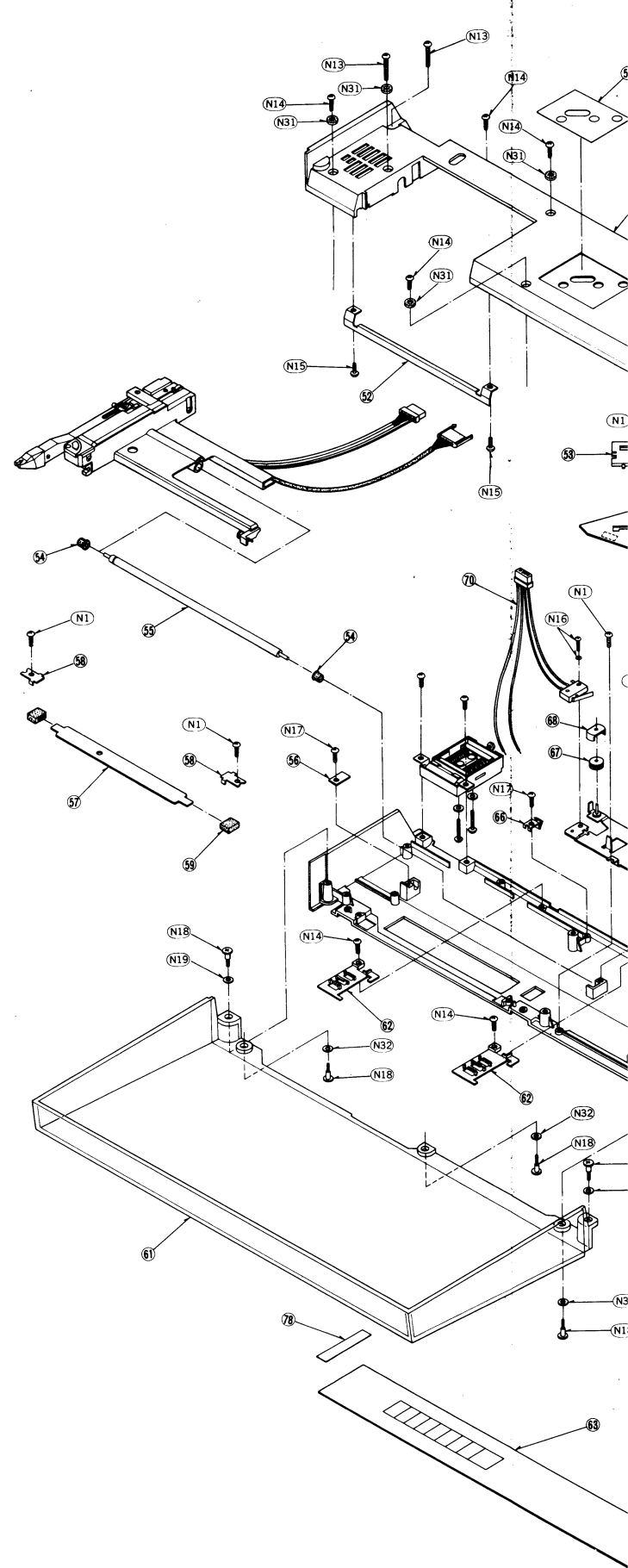
Ref. No.	Part No.	Part Name & Description
N20	XYC4+CJ20FZ	Screw, Tapping, $\oplus$ 3 x 20
N21	XUC3FT	Circlip, ϕ 3
N22	SFXW551D2	Washer
N23	XTV3+8BFZ	Screw, Tapping, $\oplus$ 3 x 8
N24	XXE3D6FZ	Screw, Offset Angle Adjustment
N25	XTN23+6BFZ	Screw, Tapping, $\oplus$ 2.3 x 6
N26	XTN3+4B	Screw, Tapping, $\oplus$ 3 x 4
N27	SFPEV00702	Screw, Tonearm
N28	XSN2+4BV	Screw, Tapping, $\oplus$ 2 x 4
N29	XXE3D3FZS	Screw, Tonearm
N30	SFXGC10-06	Screw
N31	SFXWQ11N05	Washer, Upper Cabinet Cover
N32	SFXWQ11N04	Washer, Dust Cover
ACCESSORIES		
A1 [E] only	SFNUD11S01	Instructions Book, Printed Matter
A1 [EK] only	SFNUD11G01	Instructions Book, Printed Matter
A1	SFNUD11X01	Instructions Book, Printed Matter
A2	SFWE212-01	45 Adaptor
A3 [XA, XM] only	SFKD119118	2 Pin Plug
PACKING PARTS		
P1	SFHPD11M01	Carton Box (Silver)
P1 [EF] only	SFHPD11C01	Carton Box (Silver)
P1	SFHPD11M21	Carton Box (Black)
P2	SFHHQ11N01	Pad, Front
P3	SFHHQ11N02	Pad, Rear

EXPLODED VIEW

Main Cabinet



Upper Cabinet



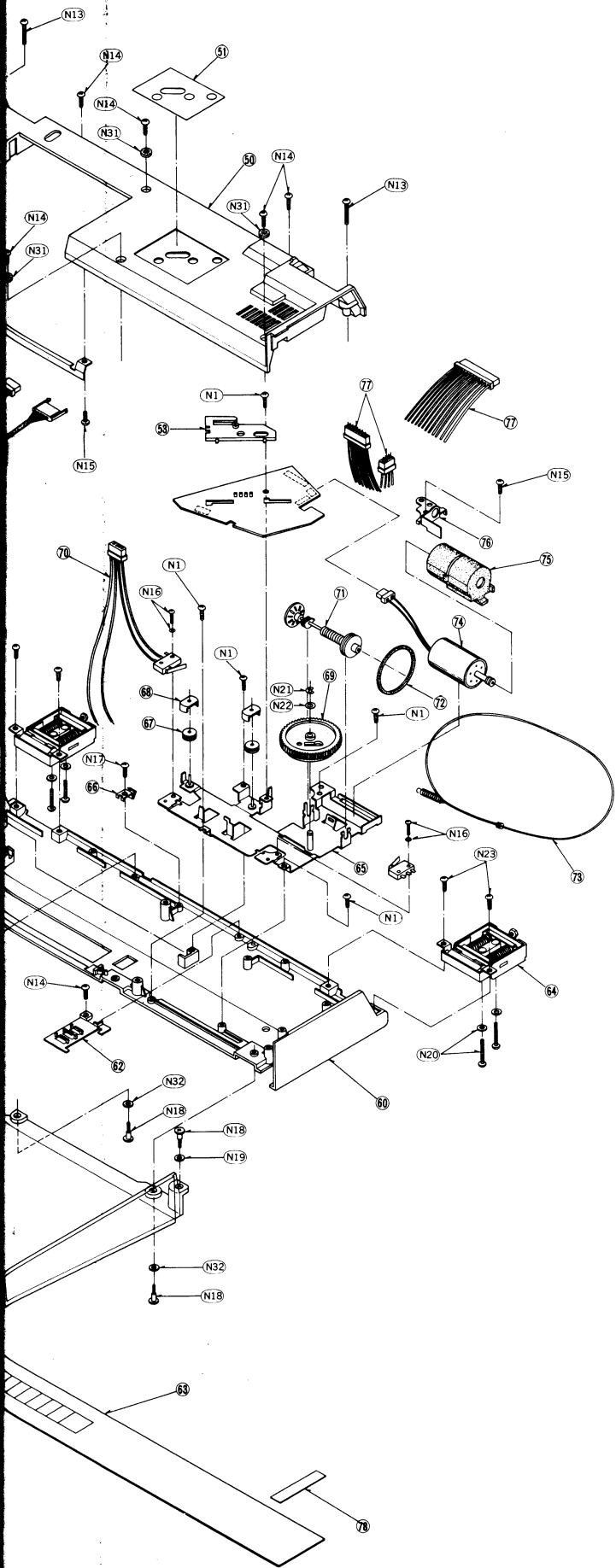
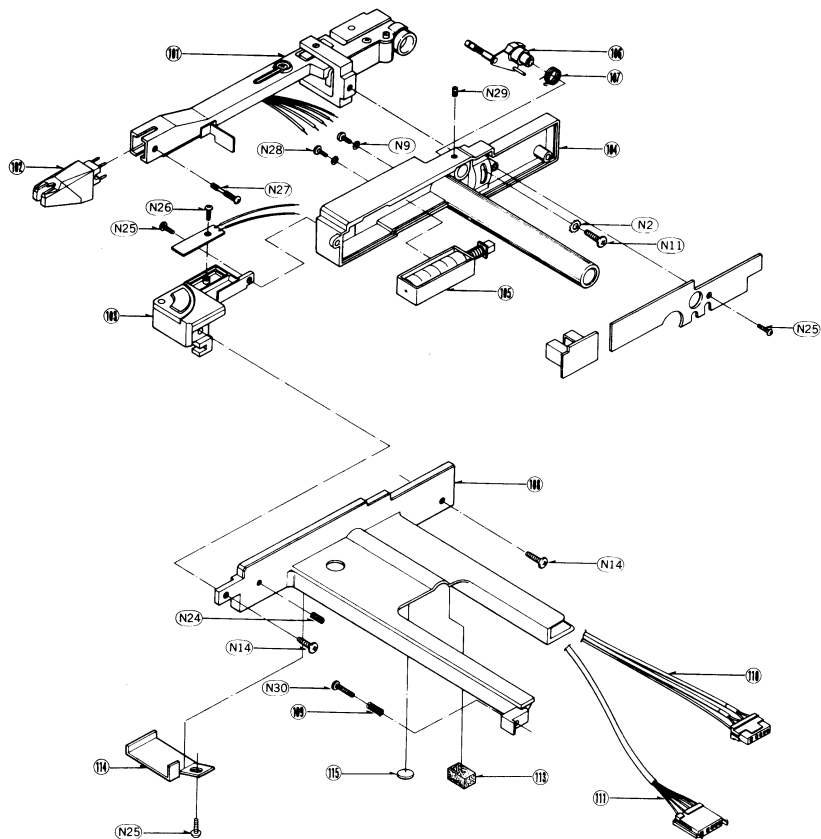
Part Name & Description
⊕ 3 x 20
⊕ 3 x 8
Angle Adjustment
⊕ 2.3 x 6
⊕ 3 x 4
⊕ 2 x 4
Cabinet Cover
over
ok, Printed Matter
ok, Printed Matter
ok, Printed Matter
er)
er)
ck)

Ref. No.	Part No.	Part Name & Description
P4	SFHDQ11N01	Pad, Top
P5	SFHSD11N03	Cabinet Spacer
P6	SFHSD11N01E	Arm Spacer
P7	SFHSD11N02	Dust Cover Spacer
P8	SFYH60X60	Polyethylene Bag, Unit
P9	SFYH40X45	Polyethylene Bag, Turntable
P10	SFYF09A15	Polyethylene Bag, 45 Adaptor
P11[XA, XM]only	SFHSC07-02	Spacer (A), Corner
P12[XA, XM]only	SFHSC07-03	Spacer (B), Corner

Areas

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

Tonearm



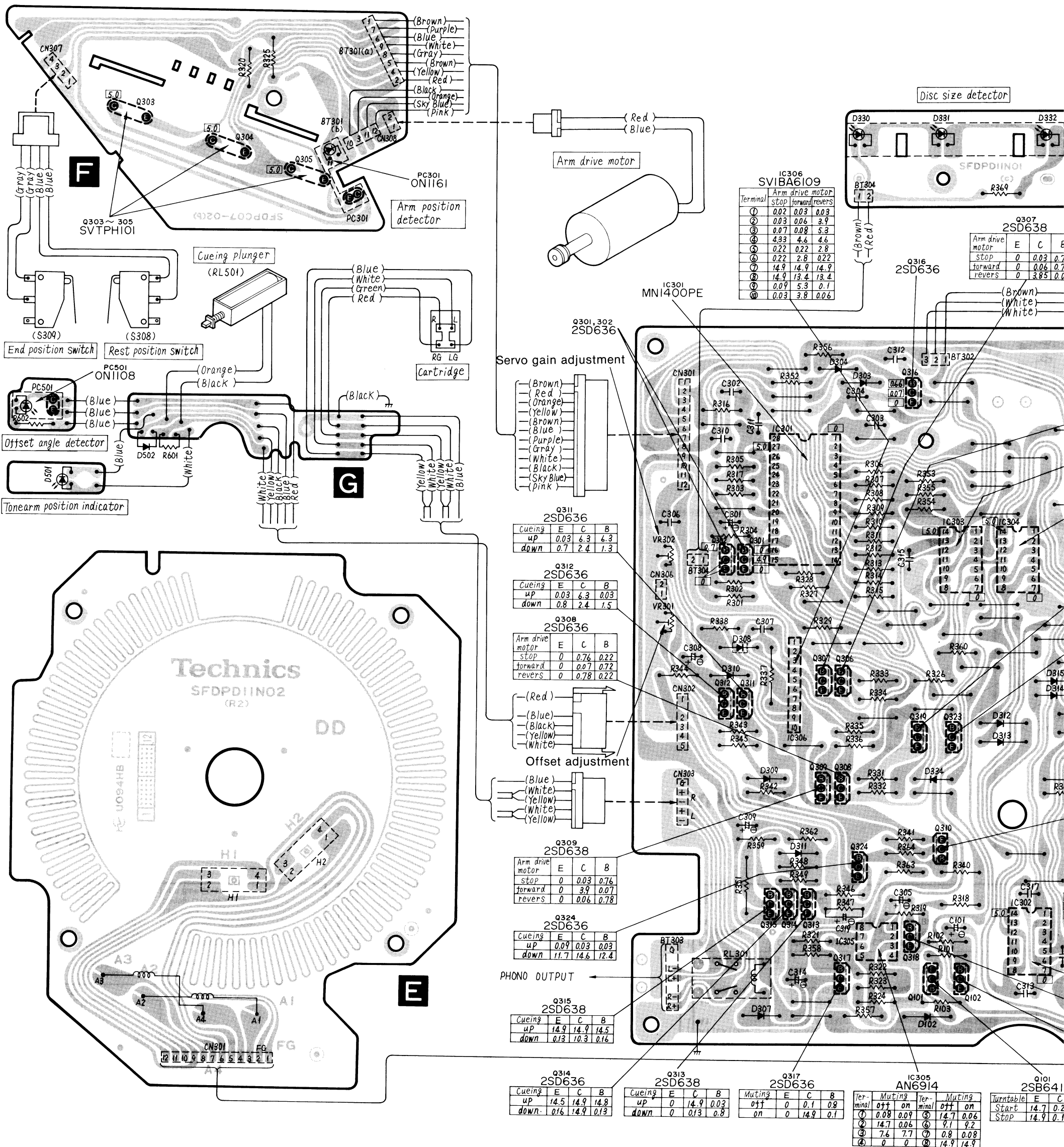
REPLACEMENT PARTS LIST...Electrical Parts

- 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 Δ make 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.

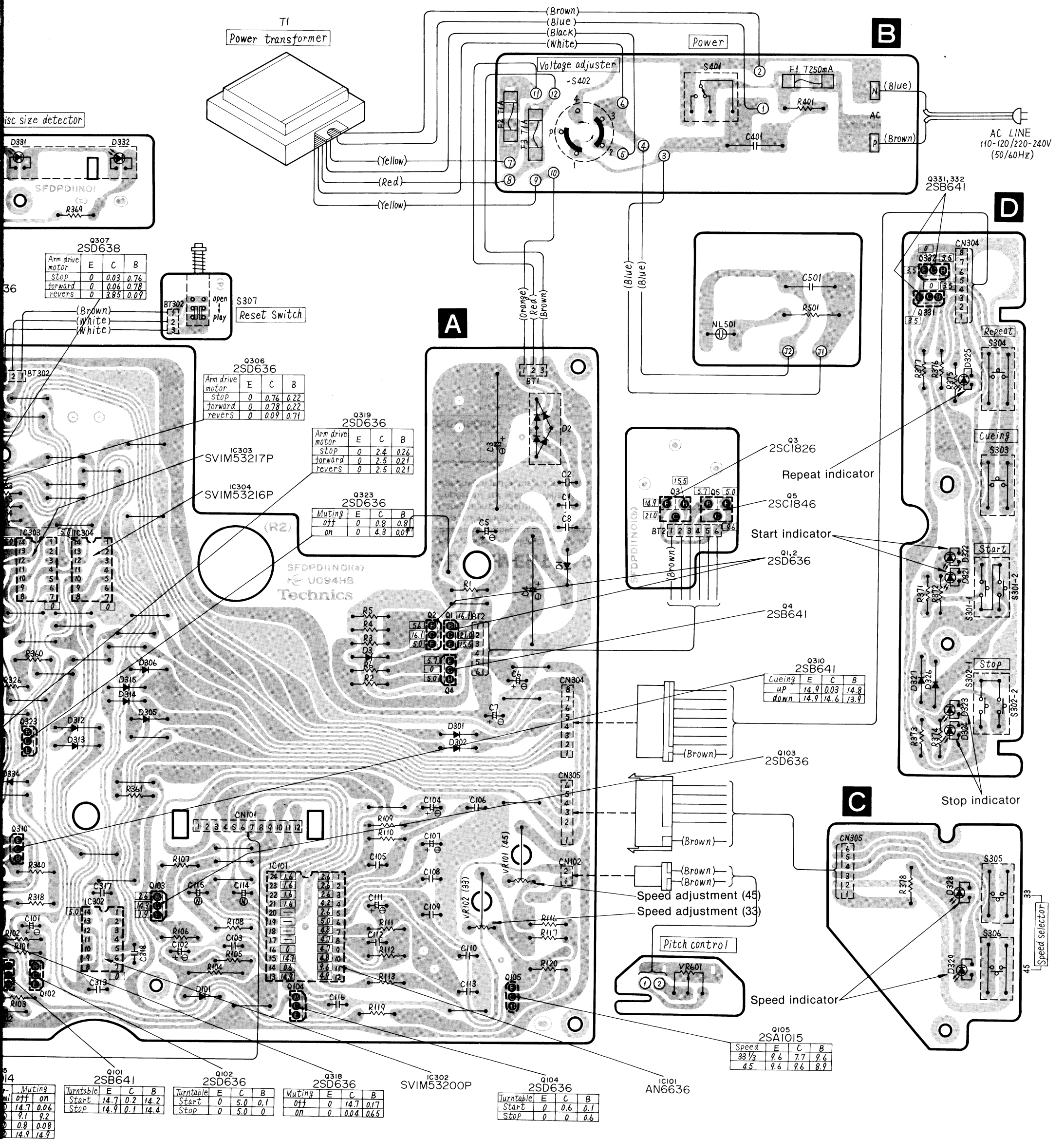
Ref. No.	Part No.	Part Name & Description
INTEGRATED CIRCUIT		
IC101	AN6636	IC, Drive
IC301	MN1400PE	IC, Micro-Computer
IC302	SVIM53200P	IC, Nand
IC303	SVIM53217P	IC, Buffer
IC304	SVIM53216P	IC, Inverter
IC305	AN6914	IC, Comparater
IC306	SVIBA6109	IC, Arm Motor Drive
TRANSISTORS		
Q1, 2	2SD636	Transistor, Regulator & Drive Detector
Q3	2SC1826	Transistor, Regulator
Q4, 101	2SB641	Transistor, Regulator & Drive Detector
Q5	2SC1846-R	Transistor, Regulator
Q102 ~ 104	2SD636	Transistor, Regulator & Switching
Q105	2SA1015-Y	Transistor, Regulator
Q301, 302, 306	2SD636	Transistor, Buffer
308, 311, 312		Switching & Muting Relay Drive
314, 316 ~ 319		
323, 324		
Q303 ~ 305	SVTPH101-Q2	Photo Transistor, Disc Size Detector
Q307, 309, 313	2SD638	Transistor, Buffer
315		
Q310, 331, 332	2SB641	Transistor, Switching
DIODES		
D1	Δ SVDRM1Z	Diode
D2	Δ SVDS1RBA20Z	Diode, Rectifier
D3	MA1051A	Diode, 5.1V Zener
D101, 301 ~ 307	MA162A	Diode
309 ~ 311, 314		
315, 334		
D102, 312, 313	20A90	Diode
D308	MA26TO-A	Diode
D321 ~ 325	SVDPR5531K	Light Emitting Diode, Red
D326, 327	20A90	Diode
D328, 329	SVDPR5531K	Light Emitting Diode, Red
D330 ~ 332	SVDAR3402S	Light Emitting Diode, Disc, Size Detector
D501	SVDEBR3432S	Light Emitting Diode, Arm Indicator
PHOTO INTERRUPTERS		
PC301	ON1161	Photo Interrupter, Arm Position Detector
PC501	ON1108	Photo Interrupter, Offset Angle Detector

Ref. No.	Part No.	Part Name & Description
RELAY		
RL301	SFDYQ11N01	Relay, Muting
RL501	SFDZC07-01E	Plunger, Cueing
LAMP		
LN501	Δ SFDNE2HU	Lamp
SWITCHES		
S301, 302	EVQBBR08K	Switch, Start & Stop
S303, 304, 305	EVQQBB04K	Switch, Repeat, Cueing & Speed Selector
306		
S307	ESB6247	Switch, Reset Switch
S308, 309	SFDSD2MSL-4	Switch, Rest & End Detector
S401	Δ SFDSSS5GLS	Switch, Power Source
S402	Δ SFDSHXW01317	Switch, Voltage Adjuster
FUSES		
F1	Δ XBAS2C025T1A	Fuse, T250mA, 250V
F2, 3	Δ XBA2C10TR0	Fuse, T1A, 250V
VARIABLE RESISTORS		
VR101	EVTS3MA00B54	Speed Adjustment (45) 50k Ω (B)
VR102	EVTS3MA00B24	Speed Adjustment (33) 20k Ω (B)
VR301	EVNM0AA00B14	Offset Adjustment 10k Ω (B)
VR302	EVNM0AA00B13	Servo Gain Adjustment 1k Ω (B)
VR601	EVLEAAT12B24	Pitch Control 20k Ω (B)
POWER TRANSFORMER		
T1	Δ SLT66PS7E	Power Transformer
HALL ELEMENT		
H1, 2	H-300A	Hall Element, Turntable Position Detector

Continued on page 31

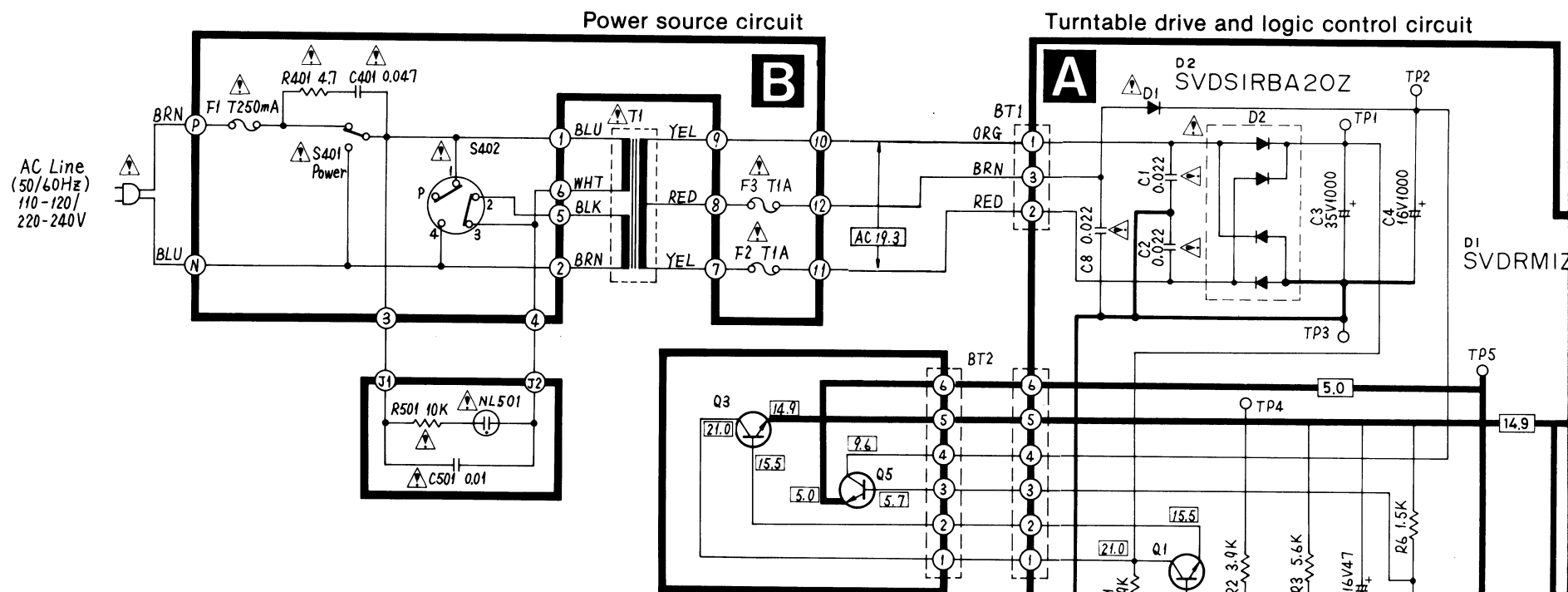


isc size detector

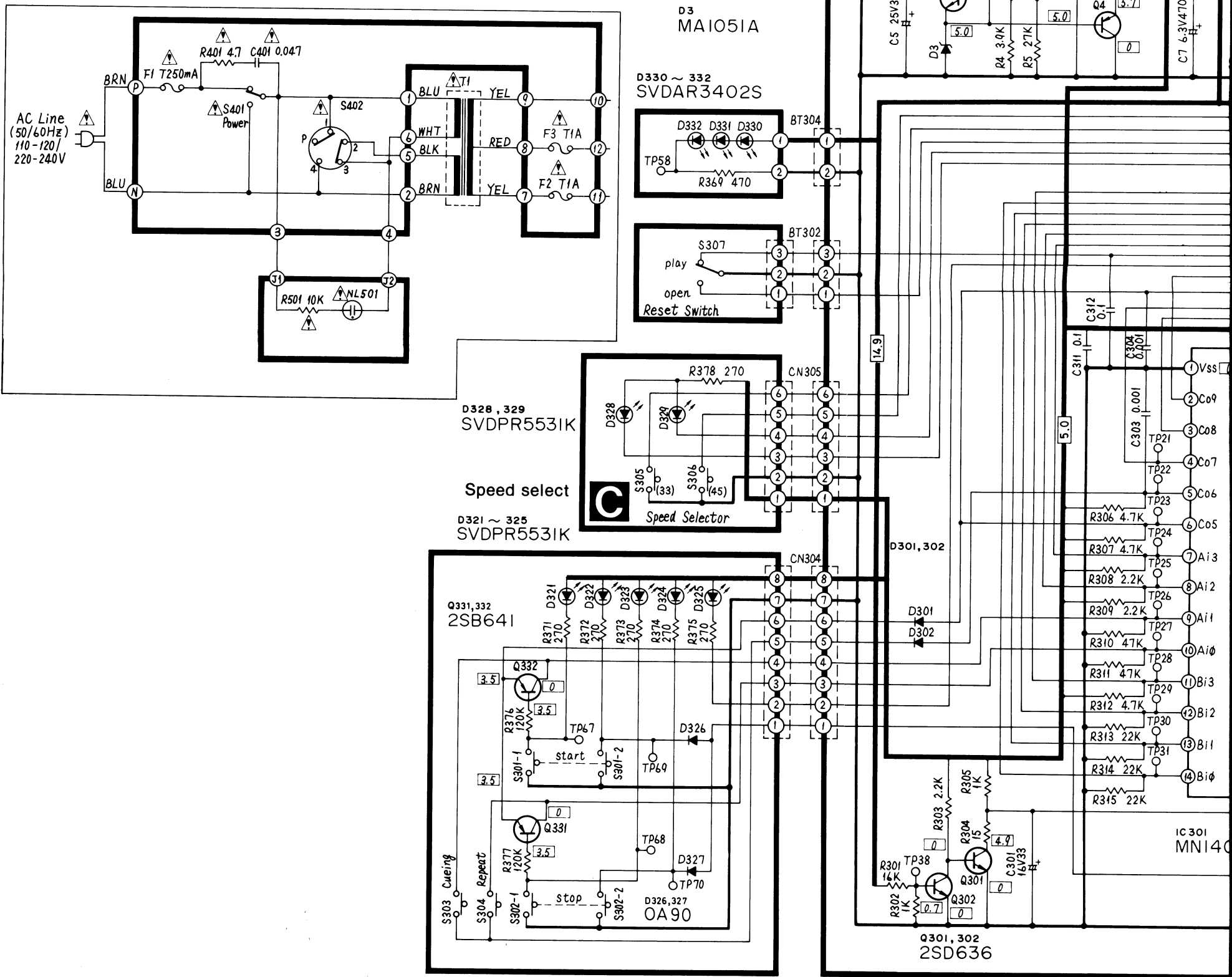


■ **SCHEMATIC DIAGRAM** (This schematic diagram may be modified at any time with the development of new technology.)

• Products for [EK], [EB], [EF], [EG], [EI], and [EH].



• Products for [E], [XL], [XA] and [XM].



D Operation circuit

IC305								
Terminal	①	②	③	④	⑤	⑥	⑦	⑧
Muting								
off	0.08	14.7	7.6	0	14.7	9.1	0.8	14.9
on	0.09	0.06	7.7	0	0.06	9.2	0.08	14.9

IC306										
Terminal	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩
Arm										
drive motor										
stop	0.02	0.03	0.07	4.33	0.22	0.22	14.9	14.9	0.09	0.03
forward	0.03	0.06	0.08	4.6	0.22	2.8	14.9	13.4	5.3	3.8
revers	0.03	3.9	5.3	4.6	2.8	0.22	14.9	13.4	0.1	0.06

7

8

9

10

11

12

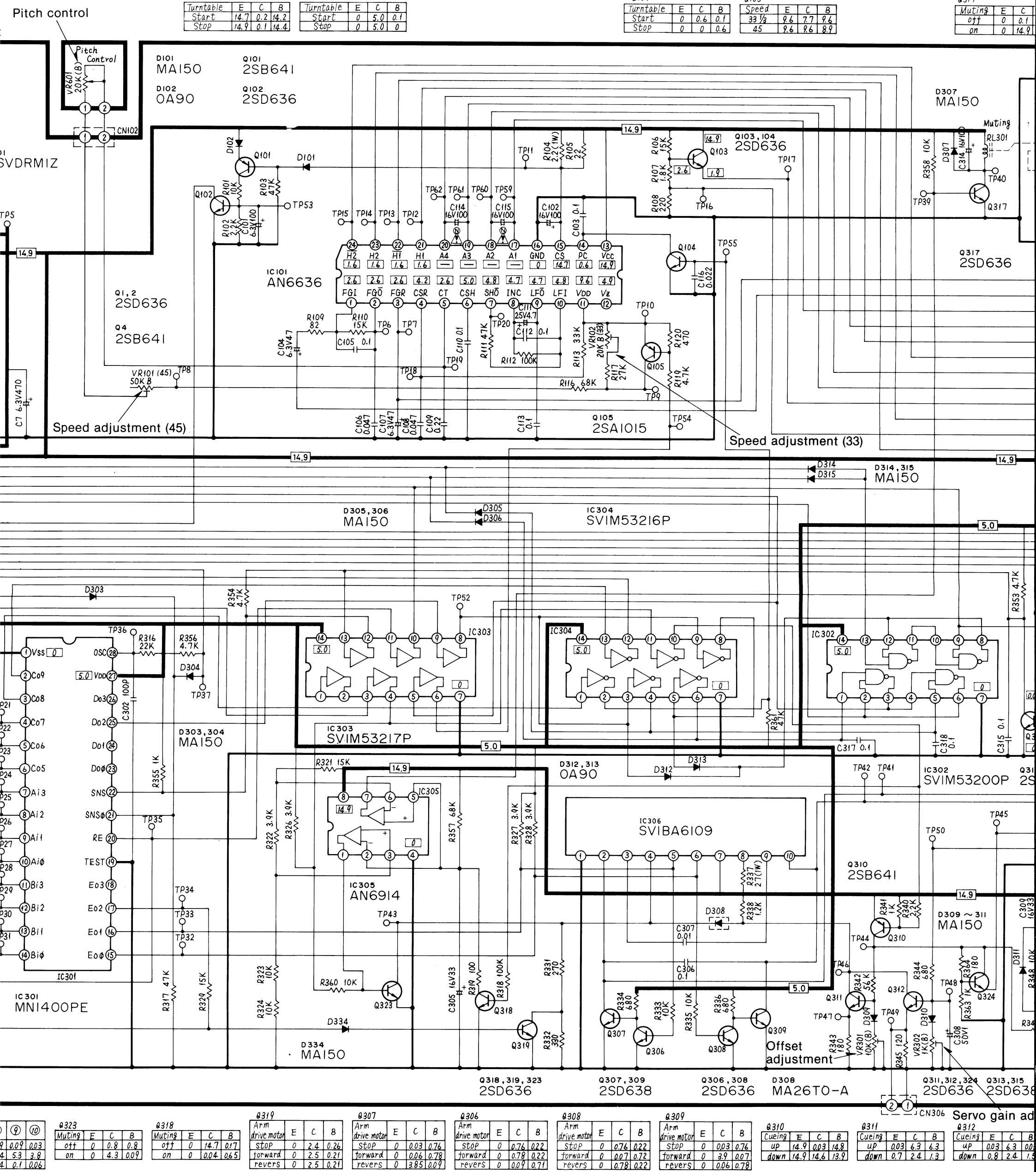
13

14

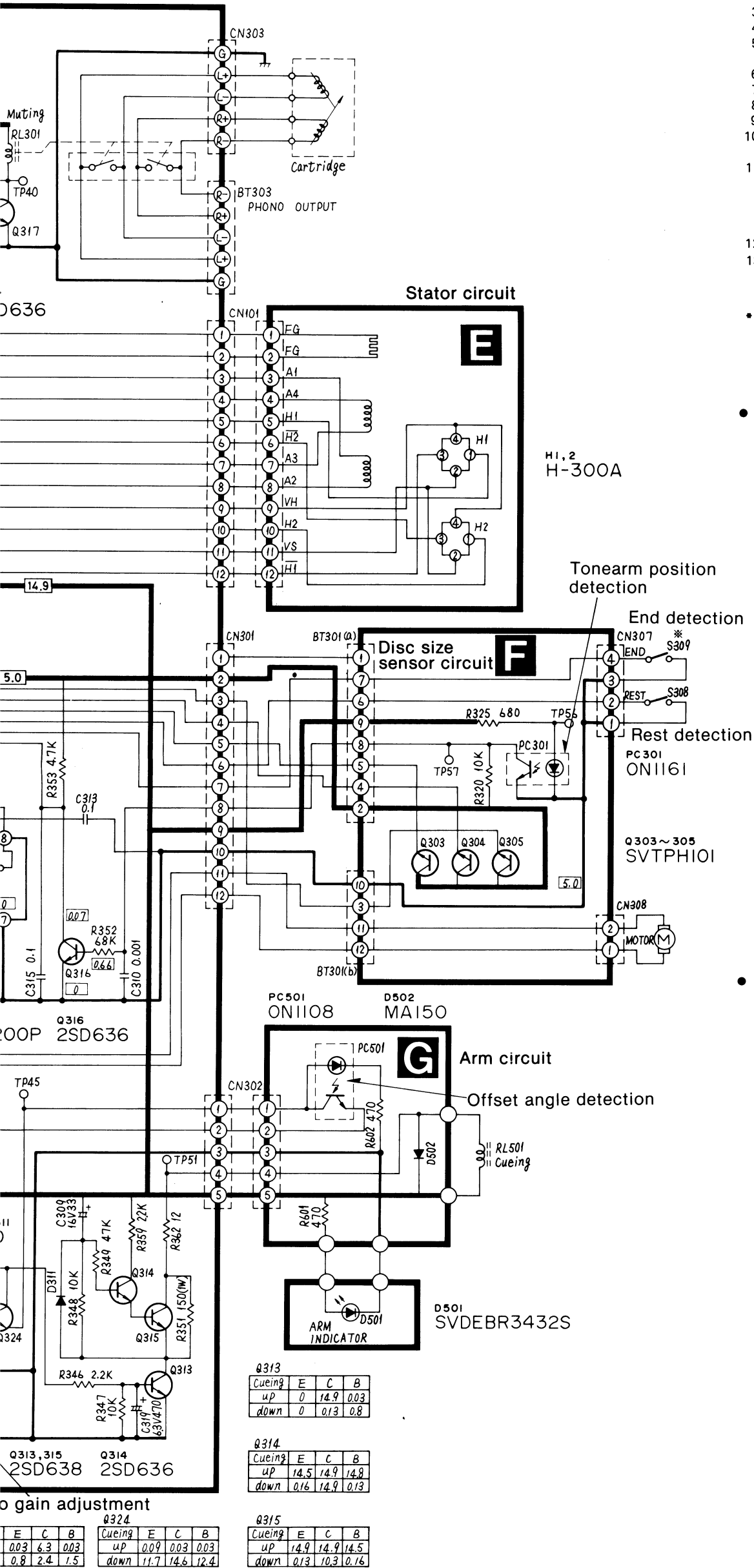
Q101				Q102			
Turntable	E	C	B	Turntable	E	C	B
Start	14.7	0.2	14.2	Start	0	5.0	0.1
Stop	14.9	0.1	14.4	Stop	0	5.0	0

Q104				Q105			
Turntable	E	C	B	Speed	E	C	B
Start	0	0.6	0.1	33 1/3	9.6	7.7	9.6
Stop	0	0	0.6	45	9.6	9.6	8.9

Q317			
Muting	E	C	B
off	0	0.1	
on	0	14.9	



Q317	E	C	B
up	0	0.1	0.8
down	0	14.9	0.1

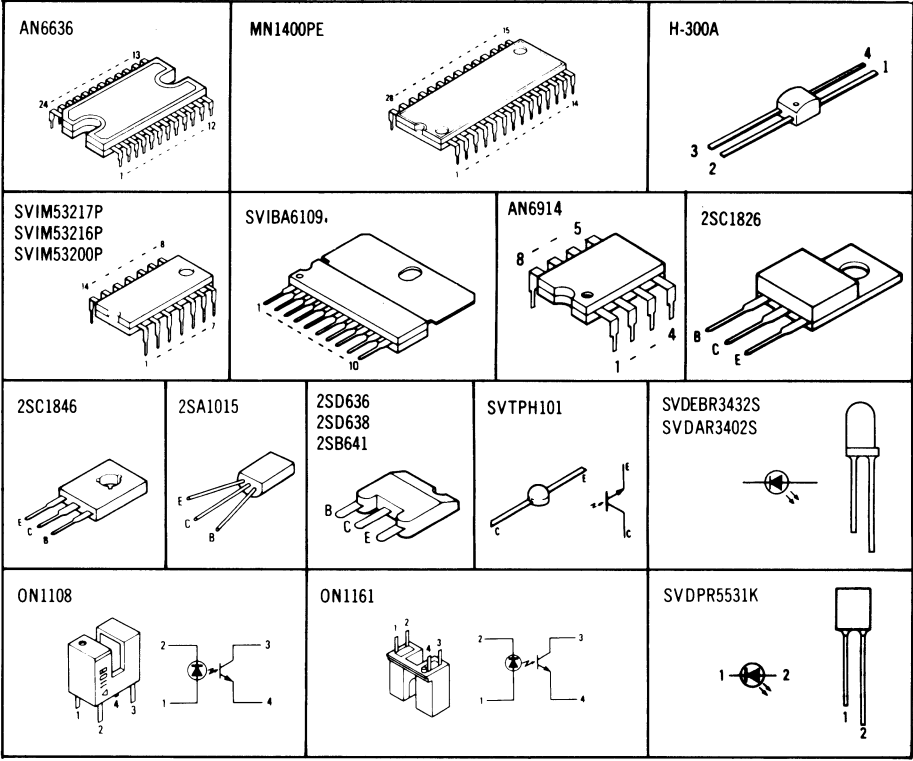


Notes:

- S301-1, 301-2** : Start switch in "off" position. (not push condition).
 ◀◀ Moves inward (S301-1)
 ▶▶ Moves faster (S301-2)
- S302-1, 302-2** : Stop switch in "off" position. (not push condition).
 ▶▶ Moves outward (S302-1)
 ▶▶ Moves faster (S302-2)
- S303** : Cueing switch in "▼" position. (not push condition).
- S304** : Repeat switch in "off" position. (not push condition).
- S305, 306** : Speed select switch in "off" position. (not push condition).
 S305..... 33-1/3 r.p.m. S306..... 45 r.p.m.
- S307** : Reset switch in "on" position.
- S308** : Rest position switch in "off" position.
- S309** : End position switch in "off" position.
- S401** : Power switch in "on" position.
- S402** : Voltage adjuster switch in "220 — 240V" position.
 110 — 120V ↔ 220 — 240V
- The value in is the standard voltage for this unit operated at 33-1/3r.p.m., which was measured by DC electronic voltmeter (high impedance) on the basis of the chassis. Accordingly, the voltage value may sometimes include a slight error depending on the internal impedance of the DC voltmeter (tester, etc.) used for the measurement.
- +⊕ voltage line.
- Important safety Notice:
 Components identified by mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

* **S309** (end detection switch) will be replaced by **MN1400PE** of which the end detection unit is built into **MN1400PA** (IC301) in the course of manufacture. At the time of servicing, it is possible to replace **MN1400PA** with **MN1400PE**, but not **MN1400PE** with **MN1400PA**. Incidentally, **MN1400PE** will be supplied as repair parts.

• Terminal guide of transistors, IC's, diodes and photo interrupters



• Reference voltage and waveform at each IC terminal (pin)

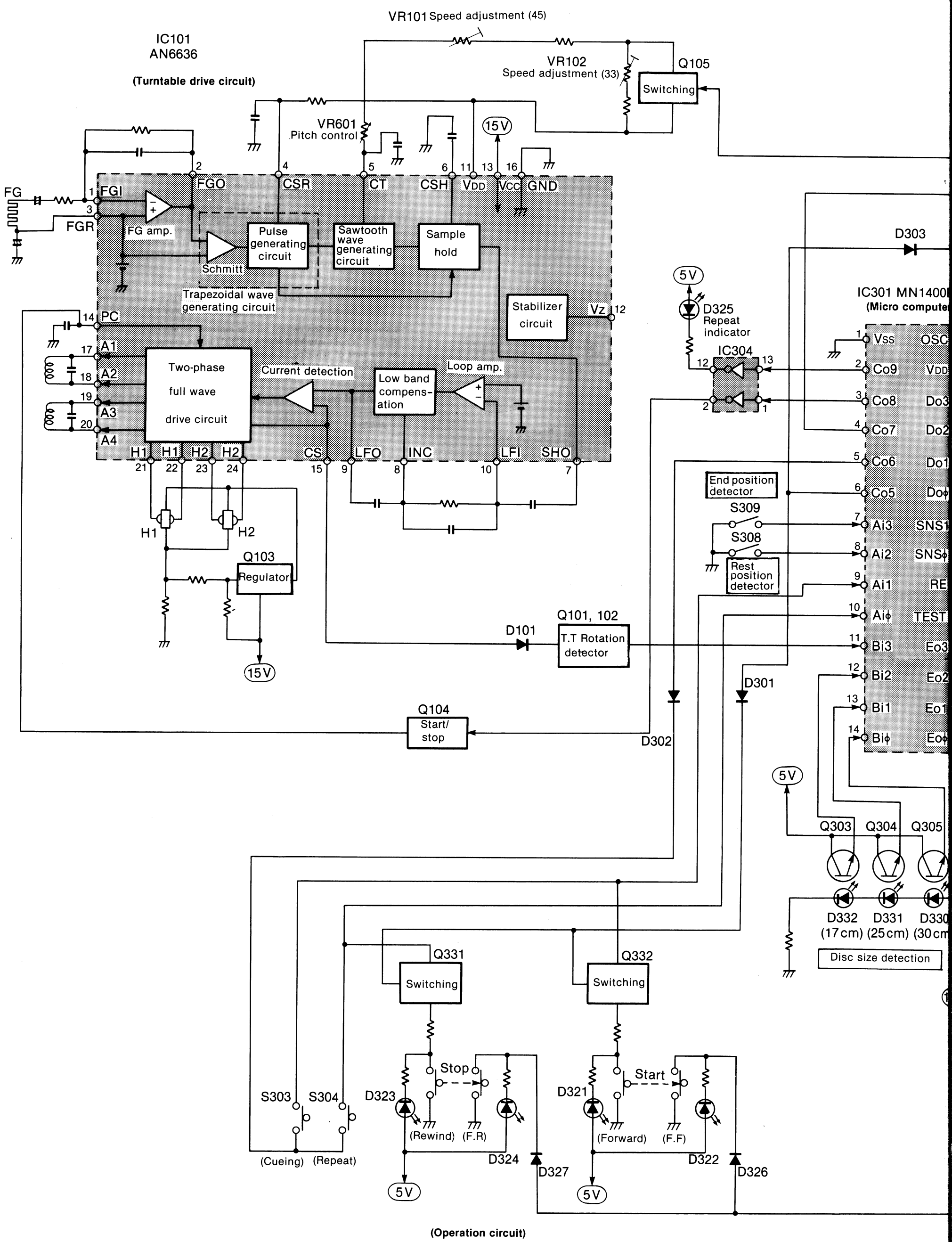
This indicated voltage values and waveform are measured by oscilloscope at 33r.p.m. rotation.

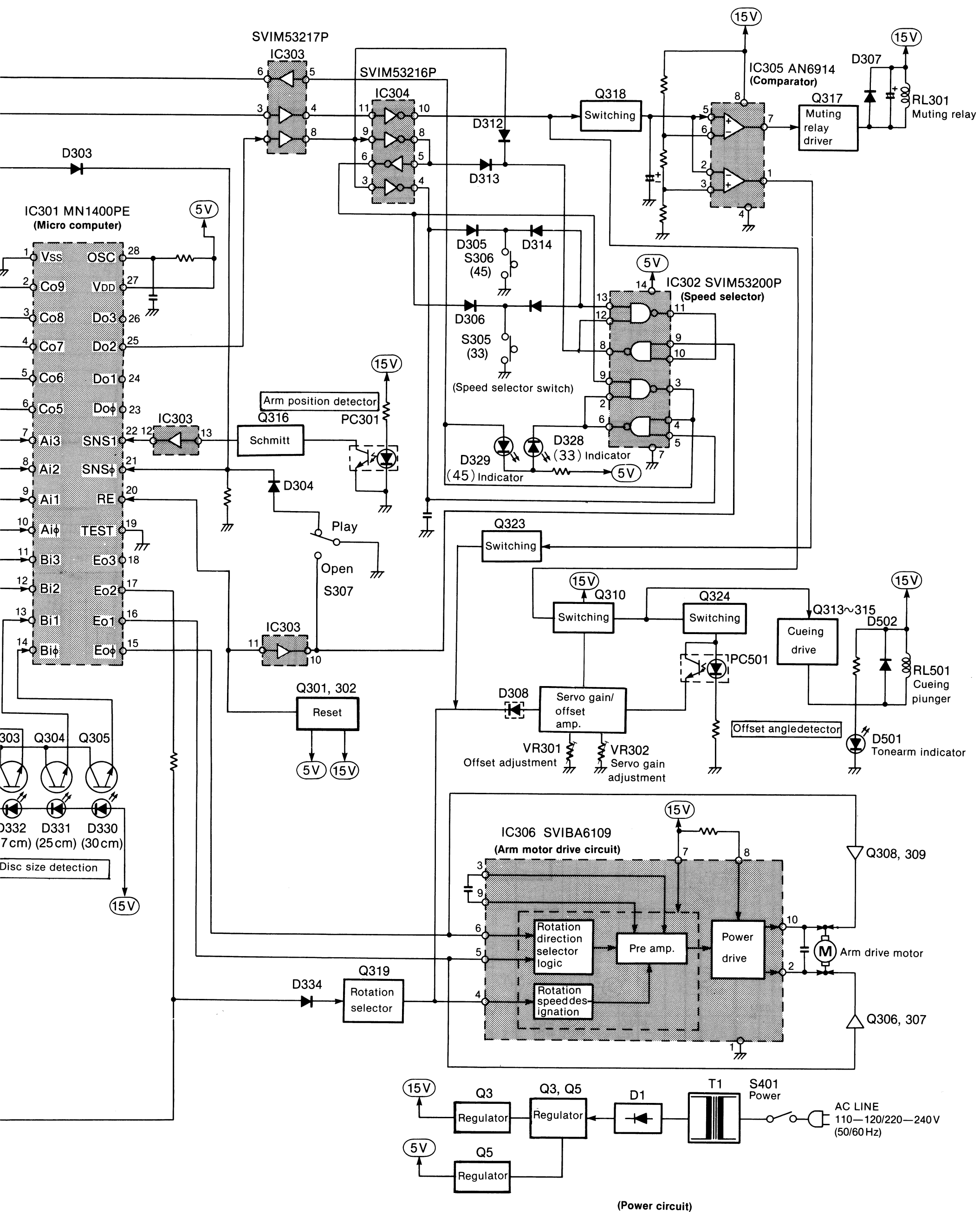
IC101 (AN6636)

	Stop	Start		Stop	Start		Stop	Start
①	2.6V	2.6V	⑥	8.1V	5.0V	⑰ ⑱ ⑲ ⑳	0V	※
②	2.6V		⑦	7.8V	4.8V			
			⑧	0.26V	4.7V			
			⑨	0.23V	4.8V			
③	2.6V	2.6V	⑩	5.4V	4.8V			
④	9.3V		⑪	9.6V	9.6V			
			⑫	5.0V	4.9V			
			⑬	14.9V	14.9V	㉑	1.58V	1.6V
⑤	8.7V		⑭	0V	0.6V	㉒	1.54V	1.6V
			⑮	14.9V	14.7V	㉓	1.5V	1.6V
			⑯	0V	0.0V	㉔	1.6V	1.6V

※ The waveform was obtained with oscilloscope connected between terminals ⑰ — ⑱, ⑲ — ⑳.

■ BLOCK DIAGRAM





Continued from page 23

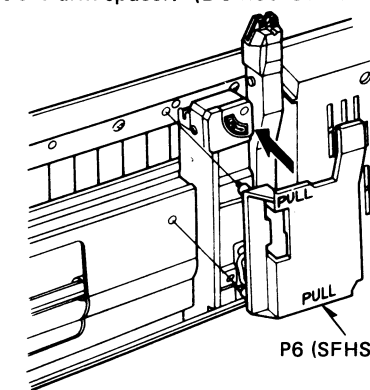
Ref. No.	Part No.	Part Name & Description				
RESISTORS						
R1, 2	ERD25FJ392	Carbon,	1/4W,	3.9kΩ,	± 5%	
R3	ERD25FJ562	Carbon,	1/4W,	5.6kΩ,	± 5%	
R4	ERD25FJ392	Carbon,	1/4W,	3.9kΩ,	± 5%	
R5	ERD25TJ273	Carbon,	1/4W,	27kΩ,	± 5%	
R6	ERD25FJ152	Carbon,	1/4W,	1.5kΩ,	± 5%	
R101	ERD25FJ103	Carbon,	1/4W,	10kΩ,	± 5%	
R102	ERD25FJ222	Carbon,	1/4W,	2.2kΩ,	± 5%	
R103	ERD25TJ473	Carbon,	1/4W,	47kΩ,	± 5%	
R104	ERX1ANJ2R2	Metal Oxide,	1W,	2.2Ω,	± 5%	
R105	ERD25FJ220	Carbon,	1/4W,	22Ω,	± 5%	
R106	ERD25TJ153	Carbon,	1/4W,	15kΩ,	± 5%	
R107	ERD25FJ182	Carbon,	1/4W,	1.8kΩ,	± 5%	
R108	ERD25FJ221	Carbon,	1/4W,	220Ω,	± 5%	
R109	ERD25FJ820	Carbon,	1/4W,	82Ω,	± 5%	
R110	ERD25TJ153	Carbon,	1/4W,	15kΩ,	± 5%	
R111	ERD25TJ473	Carbon,	1/4W,	47kΩ,	± 5%	
R112	ERD25TJ104	Carbon,	1/4W,	100kΩ,	± 5%	
R113	ERD25TJ333	Carbon,	1/4W,	33kΩ,	± 5%	
R116	ERO25CKF6802	Metal Film,	1/4W,	68kΩ,	± 1%	
R117	ERD25TJ273	Carbon,	1/4W,	27kΩ,	± 5%	
R119	ERD25FJ472	Carbon,	1/4W,	4.7kΩ,	± 5%	
R120	ERD25FJ471	Carbon,	1/4W,	470Ω,	± 5%	
R301	ERD25TJ163	Carbon,	1/4W,	16kΩ,	± 5%	
R302	ERD25FJ102	Carbon,	1/4W,	1kΩ,	± 5%	
R303	ERD25FJ222	Carbon,	1/4W,	2.2kΩ,	± 5%	
R304	ERD25FJ150	Carbon,	1/4W,	15Ω,	± 5%	
R305	ERD25FJ102	Carbon,	1/4W,	1kΩ,	± 5%	
R306, 307	ERD25FJ472	Carbon,	1/4W,	4.7kΩ,	± 5%	
R308, 309	ERD25FJ222	Carbon,	1/4W,	2.2kΩ,	± 5%	
R310, 311	ERD25TJ473	Carbon,	1/4W,	47kΩ,	± 5%	
R312	ERD25FJ472	Carbon,	1/4W,	4.7kΩ,	± 5%	
R313, 314	ERD25TJ223	Carbon,	1/4W,	22kΩ,	± 5%	
R315, 316	ERD25TJ223	Carbon,	1/4W,	22kΩ,	± 5%	
R317	ERD25TJ473	Carbon,	1/4W,	47kΩ,	± 5%	
R318	ERD25TJ104	Carbon,	1/4W,	100kΩ,	± 5%	
R319	ERD25FJ101	Carbon,	1/4W,	100Ω,	± 5%	
R320	ERD25FJ103	Carbon,	1/4W,	10kΩ,	± 5%	
R321	ERD25TJ153	Carbon,	1/4W,	15kΩ,	± 5%	
R322	ERD25FJ392	Carbon,	1/4W,	3.9kΩ,	± 5%	
R323, 324	ERD25FJ103	Carbon,	1/4W,	10kΩ,	± 5%	
R325	ERD25FJ681	Carbon,	1/4W,	680Ω,	± 5%	
R326, 327	ERD25FJ392	Carbon,	1/4W,	3.9kΩ,	± 5%	
R328	ERD25FJ392	Carbon,	1/4W,	3.9kΩ,	± 5%	
R329	ERD25TJ153	Carbon,	1/4W,	15kΩ,	± 5%	
R331	ERD25FJ271	Carbon,	1/4W,	270Ω,	± 5%	
R332	ERD25FJ331	Carbon,	1/4W,	330Ω,	± 5%	
R333	ERD25FJ103	Carbon,	1/4W,	10kΩ,	± 5%	
R334	ERD25FJ681	Carbon,	1/4W,	680Ω,	± 5%	
R335	ERD25FJ103	Carbon,	1/4W,	10kΩ,	± 5%	
R336	ERD25FJ681	Carbon,	1/4W,	680Ω,	± 5%	
R337	ERG1ANJ270	Metal Oxide,	1W,	27Ω,	± 5%	
R338	ERD25FJ122	Carbon,	1/4W,	1.2kΩ,	± 5%	
R340	ERD25FJ222	Carbon,	1/4W,	2.2kΩ,	± 5%	
R341	ERD25FJ102	Carbon,	1/4W,	1kΩ,	± 5%	
R342	ERD25TJ563	Carbon,	1/4W,	56kΩ,	± 5%	
R343	ERD25FJ181	Carbon,	1/4W,	180Ω,	± 5%	
R344	ERD25FJ681	Carbon,	1/4W,	680Ω,	± 5%	
R345	ERD25FJ121	Carbon,	1/4W,	120Ω,	± 5%	
R346	ERD25FJ222	Carbon,	1/4W,	2.2kΩ,	± 5%	
R347, 348	ERD25FJ103	Carbon,	1/4W,	10kΩ,	± 5%	
R349	ERD25TJ473	Carbon,	1/4W,	47kΩ,	± 5%	
R351	ERG1ANJ151	Metal Oxide,	1W,	150Ω,	± 5%	
R352	ERD25TJ683	Carbon,	1/4W,	68kΩ,	± 5%	
R353, 354	ERD25FJ472	Carbon,	1/4W,	4.7kΩ,	± 5%	
R355	ERD25FJ102	Carbon,	1/4W,	1kΩ,	± 5%	
R356	ERD25FJ472	Carbon,	1/4W,	4.7kΩ,	± 5%	
R357	ERD25TJ683	Carbon,	1/4W,	68kΩ,	± 5%	
R358	ERD25FJ103	Carbon,	1/4W,	10kΩ,	± 5%	
R359	ERD25FJ222	Carbon,	1/4W,	2.2kΩ,	± 5%	
R360	ERD25FJ103	Carbon,	1/4W,	10kΩ,	± 5%	
R361	ERD25TJ473	Carbon,	1/4W,	47kΩ,	± 5%	
R362	ERD25FJ120	Carbon,	1/4W,	12Ω,	± 5%	
R363	ERD25FJ102	Carbon,	1/4W,	1kΩ,	± 5%	
R364	ERD25FJ181	Carbon,	1/4W,	180Ω,	± 5%	
R369	ERD25FJ471	Carbon,	1/4W,	470Ω,	± 5%	
R371, 372	ERD25FJ271	Carbon,	1/4W,	270Ω,	± 5%	
R373, 374	ERD25FJ271	Carbon,	1/4W,	270Ω,	± 5%	
R375	ERD25FJ271	Carbon,	1/4W,	270Ω,	± 5%	
R376, 377	ERD25TJ124	Carbon,	1/4W,	120kΩ,	± 5%	
R378	ERD25FJ271	Carbon,	1/4W,	270Ω,	± 5%	
R401	ERD50FJ4R7	Carbon,	1/2W,	4.7kΩ,	± 5%	
R501	ERG1ANJ103	Metal Oxide,	1W,	10kΩ,	± 5%	
R601, 602	ERD25FJ471	Carbon,	1/4W,	470Ω,	± 5%	
CAPACITORS						
C1, 2	Δ ECKD1H223PF	Ceramic,	50V,	0.022μF,	± 100%	
C3	Δ ECEB1VS102	Electrolytic,	35V,	1000μF		
C4	Δ ECEB1CS102	Electrolytic,	16V,	1000μF		
C5	Δ ECEA1VS330	Electrolytic,	25V,	33μF		
C6	Δ ECEA1ES470	Electrolytic,	25V,	47μF		
C7	Δ ECEA0JS471	Electrolytic,	6.3V,	470μF		
C8	Δ ECKD1H223PF	Ceramic,	50V,	0.022μF,	± 100%	
C101	Δ ECEA1AS101	Electrolytic,	10V,	100μF		
C102	Δ ECEA1ES101	Electrolytic,	25V,	100μF		
C103	Δ ECQM1H104KZ	Polyester,	50V,	0.1μF,	± 10%	
C104	Δ ECEA1AS470	Electrolytic,	10V,	47μF		
C105	Δ ECQM1H104KZ	Polyester,	50V,	0.1μF,	± 10%	
C106	Δ ECQM1H473KZ	Polyester,	50V,	0.047μF,	± 10%	
C107	Δ ECEA1AS470	Electrolytic,	10V,	47μF		
C108	Δ ECQM1H473KZ	Polyester,	50V,	0.047μF,	± 10%	
C109	Δ ECQM1H224KZ	Polyester,	50V,	0.22μF,	± 10%	
C110	Δ ECQM1H104KZ	Polyester,	50V,	0.1μF,	± 10%	
C111	Δ ECEA25Z4R7	Electrolytic,	50V,	4.7μF		
C112, 113	Δ ECQM1H104KZ	Polyester,	50V,	0.1μF,	± 10%	
C114, 115	Δ ECEA1CN101S	Non-Polar Electrolytic,	16V,	100μF		
C116	Δ ECKD1H223PF	Ceramic,	50V,	0.022μF,	± 100%	
C301	Δ ECEA1CS330	Electrolytic,	16V,	33μF		
C302	Δ ECCD1H101K	Ceramic,	50V,	100pF,	± 10%	
C303, 304	Δ ECKD1H102KB	Ceramic,	50V,	0.001μF,	± 10%	
C305	Δ ECEA16Z33	Electrolytic,	16V,	33μF		
C307	Δ ECQM1H103KZ	Polyester,	50V,	0.01μF,	± 10%	
C308	Δ ECEA50Z1	Electrolytic,	50V,	1μF		
C309	Δ ECEA1CS330	Electrolytic,	16V,	33μF		
C310	Δ ECQM1H102KZ	Polyester,	50V,	0.001μF,	± 10%	
C311, 312	Δ ECKF1E104ZV	Ceramic,	25V,	0.1μF,	± 80%	
C313	Δ ECKF1E104ZV	Ceramic,	25V,	0.1μF,	± 80%	
C314	Δ ECKF1E104ZV	Ceramic,	25V,	0.1μF,	± 80%	
C315	Δ ECKF1E104ZV	Ceramic,	25V,	0.1μF,	± 80%	
C317, 318	Δ ECKF1E104ZV	Ceramic,	25V,	0.1μF,	± 80%	
C319	Δ ECEA0JS471	Electrolytic,	6.3V,	470μF		
C401 [E], [EK], [XL]	Δ ECNC4A473MD	Paper,	450VAC,	0.047μF,	± 20%	
C401	Δ ECQE2A473MZ	Polyester,	250VAC,	0.047μF,	± 20%	
C501 [EK], [EG] [EB], [EF] [EH], [EI]	Δ ECQE2A103MZ	Polyester,	250VAC,	0.01μF,	± 20%	

Areas

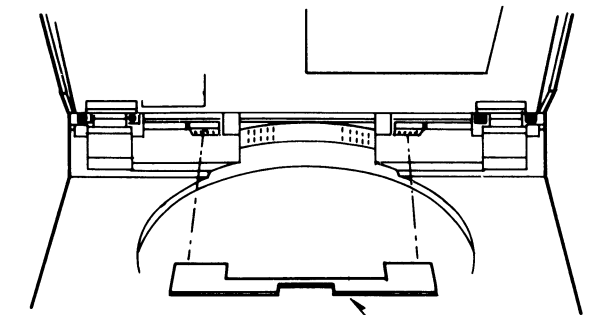
- * [E] is available in Switzerland and Scandinavia.
- * [EK] is available in United Kingdom.
- * [XL] is available in Australia.
- * [EB] is available in Belgium.
- * [EF] is available in France.
- * [EG] is available in F.R. Germany.
- * [EI] is available in Italy.
- * [EH] is available in Holland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

PACKING

1. Make sure that the tonearm is at the start position (the outermost periphery of turntable).
2. Mount the arm spacer. (Do not lock the arm.)
3. Insert the main body spacer between the main body and upper cabinet.

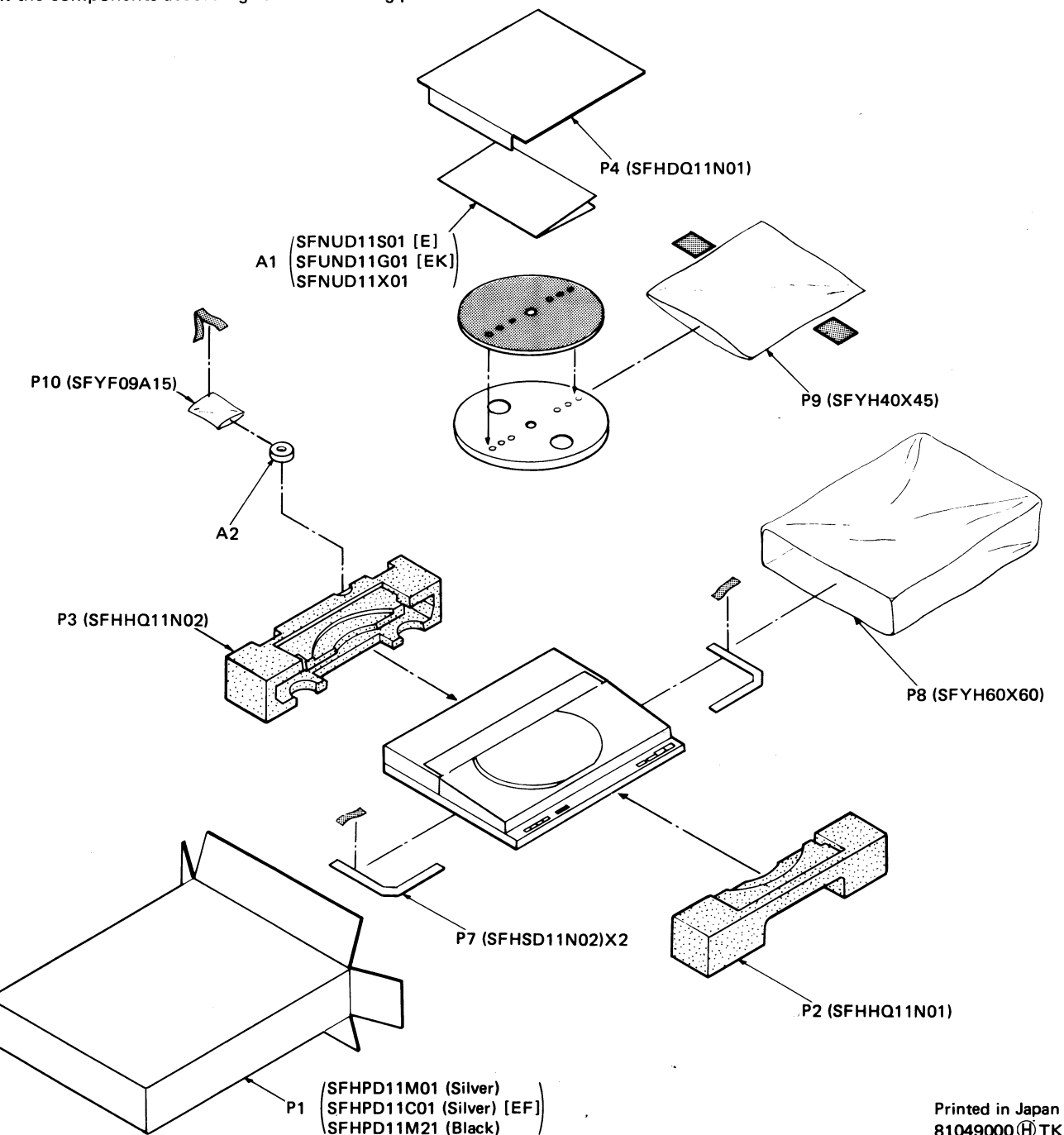


P6 (SFHSD11N01E)



P5 (SFHSD11N03)

4. Pack the components according to the following procedure.



Service Manual

Direct Drive Automatic Turntable System

SL-DL1

[PA], [PE], [PC]

SL-DL1(K)

[PC]

Areas

- * [PA] is available in far East PX.
- * [PE] is available in European Military.
- * [PC] is available in European Audio Club.

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

For additional information, please refer to the service manual for Model No. SL-DL1/SL-DL1 (K) (ORDER NO. SD81041862C8).

- Notes:
- * This service manual included only the change of the **SL-DL1/SL-DL1 (K)** service manual (ORDER NO. SD81041862C8).
 - * When servicing model **SL-DL1 [PA, PE, PC]/SL-DL1 (K) [PC]**, this service manual and **SL-DL1/SL-DL1 (K)** (ORDER NO. SD81041862C8) service manual should be used together.

CHANGES

■ REPLACEMENT PARTS LIST

Ref. No.	Change of Part No.		Part Name & Description	Per Set (Pcs.)	Remarks	
	SL-DL1/SL-DL1 (K) (ORDER NO. SD81041862C8)	SL-DL1/SL-DL1 (K) [PA, PE, PC]				
MAIN CABINET PARTS						
23		SFNND11S01	SFNND11P01 [PA] , [PE]	Name Plate	1	○
		SFNND11G02				
		SFNND11R01	SFNND11P02 [PC]	Name Plate	1	○
		SFNND11X01				
24	△	SJA88	SJA83	AC Cord	1	
		QFC1205M				
		QFC1208M				
25		SFUM190—11	SFUM190—12	Bushing, AC Cord	1	
		SFUM190—12				
ACCESSORIES						
A1		SFNUD11S01	SFNUD11P01	Instructions Book, Printed Matter	1	○
		SFNUD11G01				
		SFNUD11X01				
A3		SFDK119118	Deletion	2 Pin Plug	0	
A4		Addition	QJP0603S	Adaptor, Gimens	1	

Technics

Panasonic Tokyo
Matsushita Electric Industrial Co., Ltd.
1-2, 1-chome, Shiba-koen, Minato-ku, Tokyo 105 Japan

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

Ref. No.	Change of Part No.		Part Name & Description	Per Set (Pcs.)	Remarks
	SL-DL1/SL-DL1 (K) (ORDER NO. SD81041862C8)	SL-DL1/SL-DL1 (K) [PA, PE, PC]			
PACKING PARTS					
P1	○	SFHPD11M01	SFHPD11M01	Carton Box (Silver)	1
	○	SFHPD11C01			
	⊗	SFHPD11M21	SFHPD11M21	Carton Box (Black)	1
P11		SFHSC07-02	Deletion	Spacer (A), Corner	0
P12		SFHSC07-03	Deletion	Spacer (B), Corner	0
CAPACITORS					
C401	⚠	ECNC4A473MD ECQE2A473MZ	ECQE2A473MZ	Polyester, 0.047μF 250VAC, ± 20%	1
C501	⚠	ECQE2A103MZ	Deletion	Polyester, 0.01μF, 250VAC, ± 20%	0