ORDER NO. HAD8603423C0
A2

Service Manual

FG Servo Automatic
Turntable System

Turntable System

SL-BD22

Color	Areas
(S) (K)	[M] ..... U.S.A.
(S) (K)	[MC] ... Canada.
(S) (K)	[E] ..... Switzerland and Scandinavia.
(S) (K)	[EK] .... United Kingdom.
(S) (K)	[XL] .... Australia.
(S) (K)	[EG] ... F.R. Germany.
(S) (K)	[EB] .... Belgium.
(S) (K)	[EH] .... Holland.
(S) (K)	[EF] .... France.
(S) (K)	[Ei] ..... Italy.
(S) (K)	[EC] .... Czechoslovakia.
(S) (K)	[XA] .... Southeast Asia, Oceania, Africa, Middle Near East and Central South America.

Color

(S)..... Silver Type
(K) .... Black Type

Note:
Only models for U.S.A. and Canada are not provided with cartridge.

T4P is the standard mark for plug-in-connector system. Products carrying this mark are interchangeable and compatible with each other.

SPECIFICATIONS

■ TURNTABLE SECTION

Type: Automatic turntable
Features: Auto-return
Auto-stop
Drive method: Belt drive
Motor: DC motor
Drive control method: FG servo control
Turntable platter: Aluminum die-cast
Diameter 31.2 cm (12-9/32")
Turntable speeds: 33-1/3 rpm and 45 rpm
Wow and flutter: 0.045% WRMS (JIS C5521)
±0.06% Weighted zero to peak
(IEC 98A weighted)
Rumble: −70 dB DIN-B (IEC 98A weighted)

■ TONEARM SECTION

Type: Static-balanced straight tonearm
Plug-in-connector cartridge system
Overhang: 15 mm (19/32")
Effective length: 230 mm (9-1/16")
Tracking error angle: Within 2°32' at outer groove of 30 cm (12") disc within 0°32' at inner groove of 30 cm (12") disc
Effective mass: 13.5 g (including cartridge)
Stylus pressure: 1.25 g (Fixed)
Applicable cartridge weight: 6 g
Phono cable capacitance: 90 pF

■ CARTRIDGE SECTION (Except for U.S.A. and Canada.)

Type: Moving magnet stereo cartridge
Frequency response: 10 Hz ~ 30 kHz
Output voltage: 2.5 mV at 1 kHz, 5 cm/s. zero to peak lateral velocity
Channel separation: 22 dB at 1 kHz
Channel balance: Within 2 dB at 1 kHz

Technics

Matsushita Services Company
50 Meadowland Parkway,
Secaucus, New Jersey 07094

Panasonic Sales Company, Division of Matsushita Electric of Puerto Rico, Inc.
Ave. 65 De Infanteria, KM 9.7
Victoria Industrial Park
Carolina, Puerto Rico 00630

Panasonic Hawaii, Inc.
91-238, Kauhi St. Ewa Beach
P.O. Box 774
Honolulu, Hawaii 96808-0774

Matsushita Electric of Canada Limited
5770 Ambler Drive, Mississauga,
Ontario, L4W 2T3

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

Recommended load impedance:	47 kΩ ~ 100 kΩ
Compliance (dynamic):	12×10^{-6} cm/dyne at 100 Hz
Stylus pressure range:	1.25±0.25g (12.5±2.5mN)
Weight:	6 g (cartridge only)
Replacement stylus:	EPS-24CS

■ GENERAL

Power supply:	For U.S.A. and Canada: AC 120V, 60 Hz For United Kingdom and Australia: AC 240V, 50 Hz For Continental Europe: AC 220V, 50 Hz For Others: AC 110~127/220~240V, 50/60 Hz
Power consumption:	3 W
Dimensions: (W×H×D)	430×93×375 mm (16-15/16"×3-21/32"×14-3/4") When dust cover is open: 430×360×410 mm (16-15/16"×14-5/32"×16-1/8")
Weight:	3.6 kg (7.9 lb.)

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

■ CONTENTS

■ SAFETY PRECAUTION

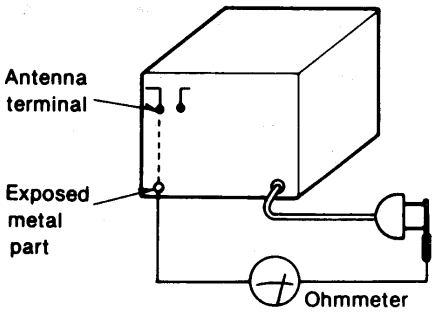
(This "safety precaution" is applied only in U.S.A.)

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

• INSULATION RESISTANCE TEST

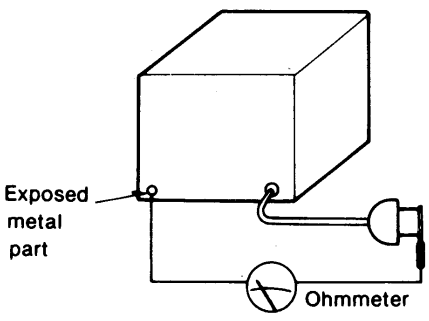
1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads, antenna, control shafts, handle brackets, etc. Equipment with antenna terminals should read between 3MΩ and 5.2MΩ to all exposed parts. (Fig. A) Equipment without antenna terminals should read approximately infinity to all exposed parts. (Fig. B)

Note: Some exposed parts may be isolated from the chassis by design. These will read infinity.



(Fig. A)

Resistance = 3MΩ—5.2MΩ

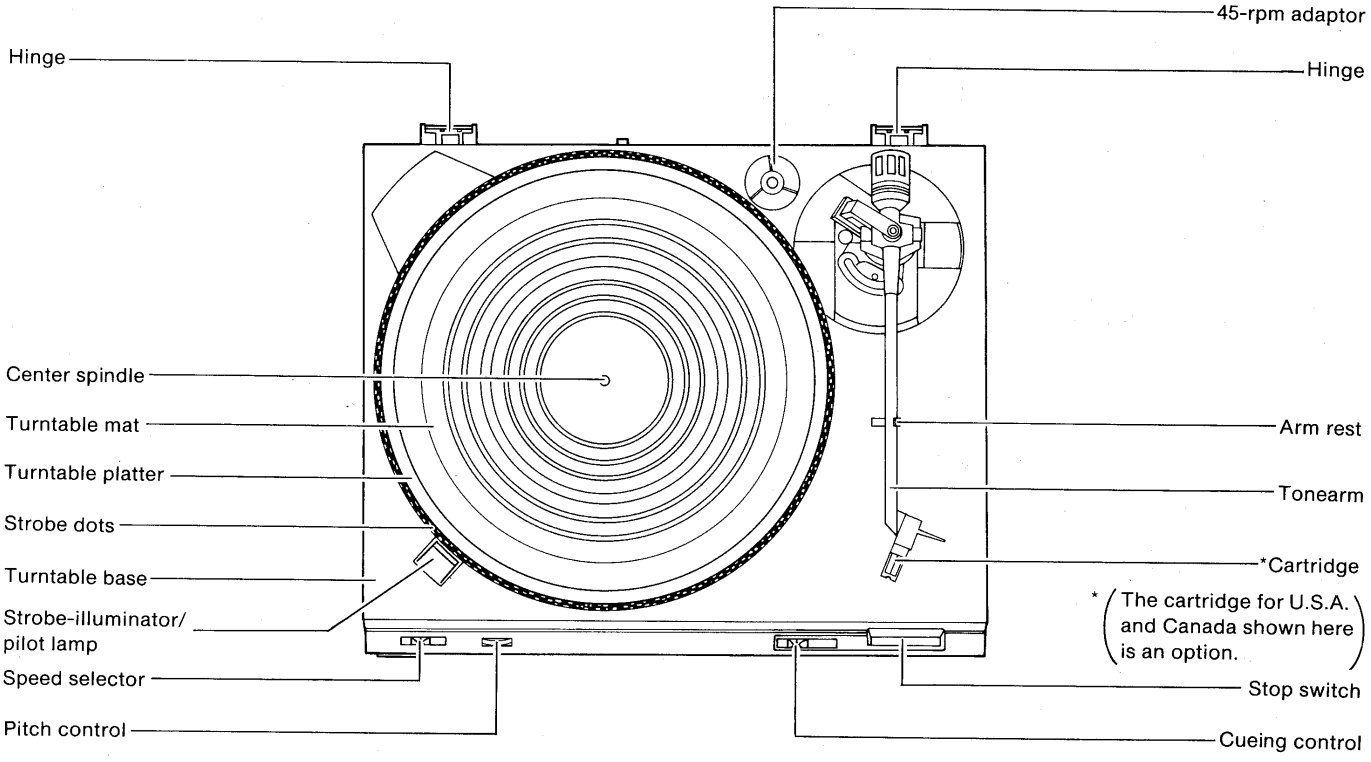


(Fig. B)

Resistance = Approx ∞

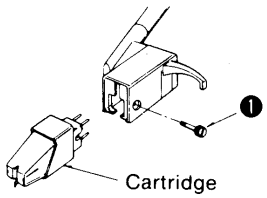
4. If the measurement is outside the specified limits, there is a possibility of a shock hazard. The equipment should be repaired and rechecked before it is returned to the customer.

■ LOCATION OF CONTROLS

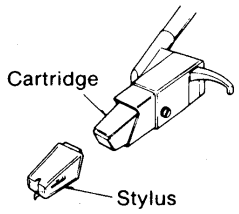


■ DISASSEMBLY INSTRUCTIONS

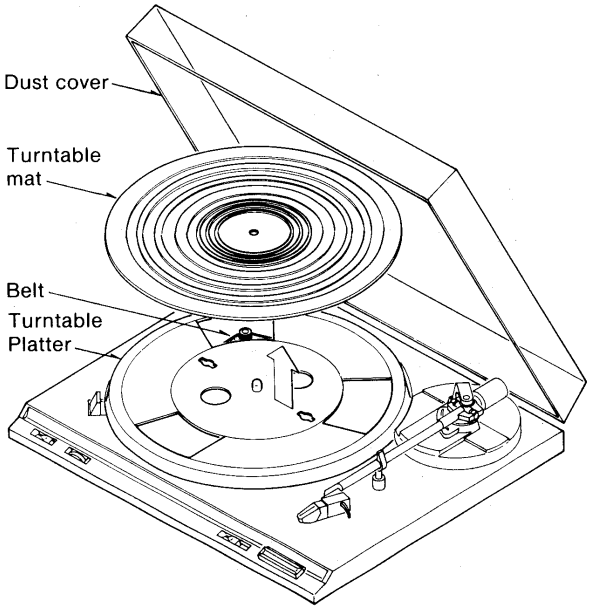
Ref. No 1	How to remove the cartridge
Procedure 1	1. Remove the setscrew ❶. 2. Pull out the cartridge, taking care that your hand does not touch the stylus tip.



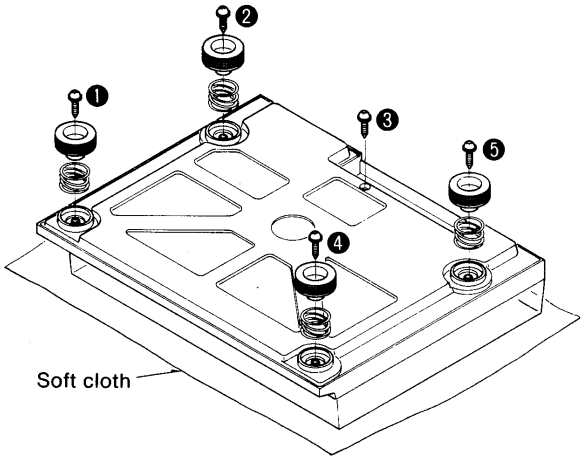
Ref. No 2	How to remove the stylus
Procedure 2	• Pull out the stylus, taking care not to touch the stylus tip.



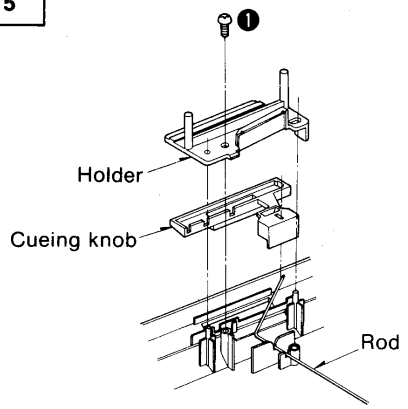
Ref. No 3	How to remove the turntable platter
Procedure 3	1. Open the dust cover and remove the turntable mat. 2. Remove the belt. 3. Lift up the turntable platter.



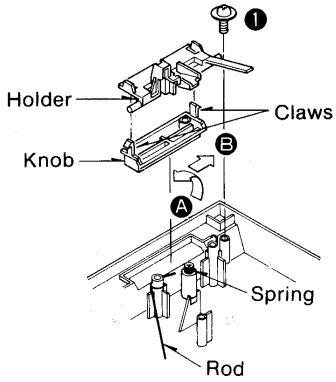
Ref. No 4	How to remove the bottom board
Procedure 3 ➧ 4	1. Turn over the unit on a soft cloth. 2. Remove the 5 setscrews (❶ ~ ❺).



Ref. No 5	How to remove the cueing knob
Procedure 3 ➧ 4 ➧ 5	• Remove the setscrew ❶.

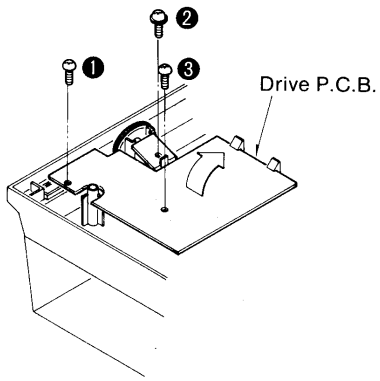


Ref. No 6	How to remove the stop switch knob
Procedure 3 ➧ 4 ➧ 6	1. Remove the setscrew ❶. 2. Remove the holder (with knob) in the direction of the arrows (Ⓐ, Ⓑ). 3. Release the 2 claws.

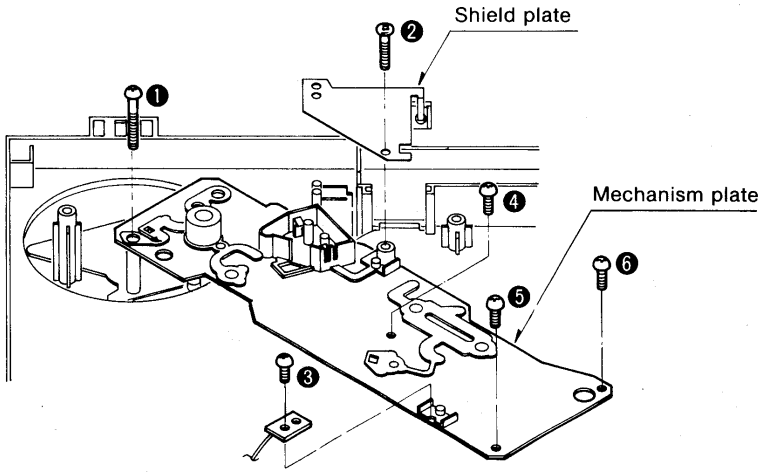


Note:
When attaching the stop knob, do not forget to attach the spring.

Ref. No 7	How to remove the drive P.C.B.
Procedure 3 ➧ 4 ➧ 7	1. Remove the 3 setscrews (❶ ~ ❸). 2. Remove the drive P.C.B. in the direction of the arrow.



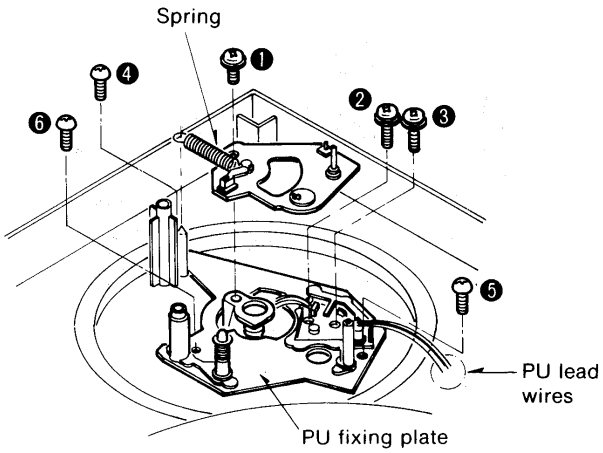
Ref. No 8	How to remove the mechanism plate
Procedure 3 ➧ 4 ➧ 8	1. Remove the 6 setscrews (❶ ~ ❻). 2. Lift up the mechanism plate.



Ref. No 9	How to remove the tonearm and PU fixing plate
Procedure 3➧4➧8➧9	

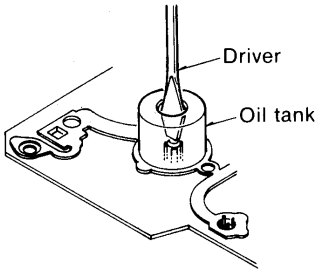
1. Unsolder the 5 PU lead wires from the phono terminal.
2. Remove the setscrew ❶ and spring.
3. To remove the tonearm, remove the 2 setscrews (❷, ❸).
4. To remove the PU fixing plate, remove the 3 setscrews (❹, ❺, ❻).

* PU lead wiring method
White .....L channel (+) terminal
Blue.....L channel (−) terminal
Red .....R channel (+) terminal
Green .....R channel (−) terminal
Black.....Ground terminal

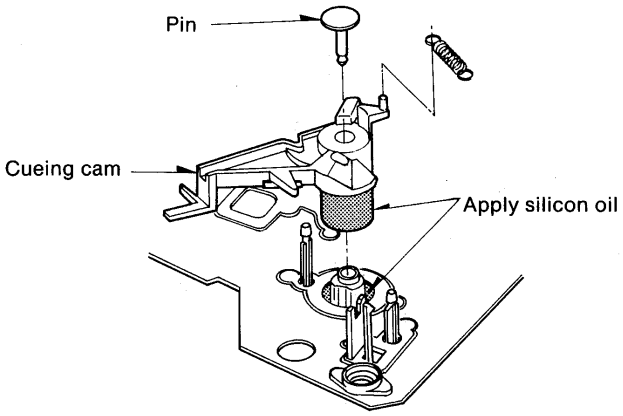


Ref. No 10	How to remove the cueing cam
Procedure 3➧4➧8➧10	

1. Push the pin with a driver.
2. Remove the pin and spring.
3. Remove the cueing cam.



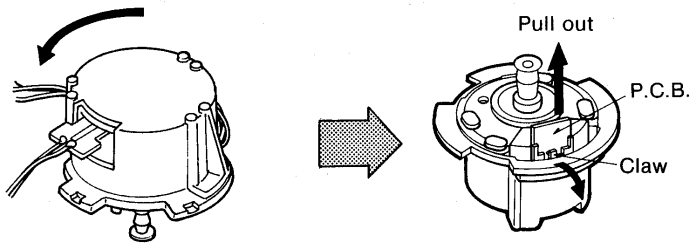
Note:
If the cueing time of the tonearm becomes too short, or if the cueing cam is replaced, apply silicon oil (Part No. SZZ0L11) according to the following procedure.
1. Remove the cueing cam.
2. Apply silicon oil to the cueing cam and oil tank.



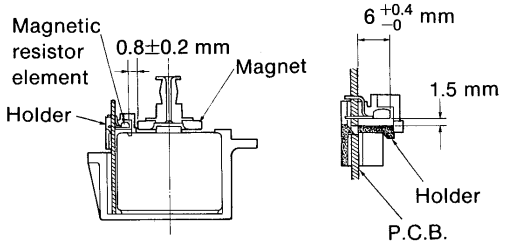
Ref. No 11	How to remove the magnetic resistor element
Procedure 3➧4➧11	

•Remove the motor assembly in the direction of the arrow.

1. Unsolder the 3 lead wires from the magnetic resistor P.C.B.
2. Release the claw and pull out the P.C.B.
3. Unsolder the 3 terminals of the magnetic resistor element.



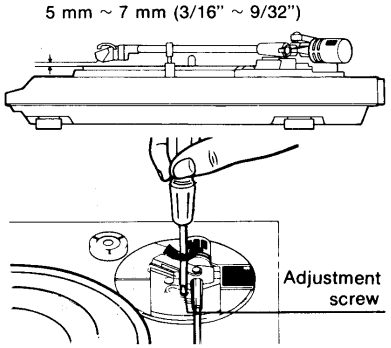
Note:
If the magnetic resistor element has been replaced, observe the following mounting precaution.
•The magnetic resistor element is supplied with the center lead bent. Be sure the seat the bent lead flush to the P.C.B.
•This will ensure the proper clearance (0.8±0.2 mm) between the magnet and the magnetic resistor element as shown below.



■ MEASUREMENTS AND ADJUSTMENTS

ARM-LIFT HEIGHT ADJUSTMENT

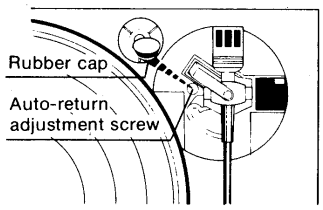
The arm-lift height (distance between the stylus tip and the record surface when the cueing control is at the "▽" position) has been adjusted at the factory to approximately 5 to 7 mm (3/16"—9/32").
If the clearance is too narrow or too wide, turn the adjustment screw clockwise or counterclockwise.
Clockwise rotation
—distance between the record and stylus tip is decreased.
Counterclockwise rotation
—distance between the record and stylus tip is increased.



AUTOMATIC RETURN ADJUSTMENT

1. Clamp the tonearm to the arm rest.
2. Remove the rubber cap.
3. Turn the screw with a screwdriver, clockwise or counter-clockwise as necessary.

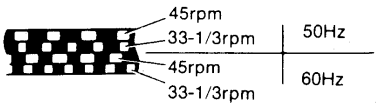
If the tonearm tends to return to the arm rest before the play has finished,
—turn counterclockwise.
If the tonearm fails to return after the final groove,
—turn clockwise.

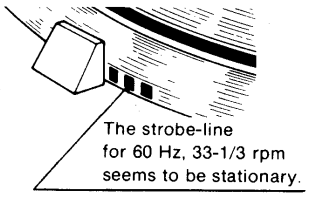


SPEED ADJUSTMENT (PITCH CONTROL)

There are strobe-lines cut on this turntable platter to indicate correct rotational speed.
If the strobe-line appears to be moving as the turntable rotates, adjust while playing a record.

1. Set the speed selector to the speed to be adjusted.
2. Push the power switch. The strobe-illuminator/pilot lamp will light up and the platter will rotate.
3. Watch the dot pattern on the side of the platter. Turn the pitch control one way or the other until the dots appear to stand still. This is the correct speed.
4. Turning the pitch control in the "+" direction increases the speed.
5. Turning the pitch control in the "—" direction decreases the speed.





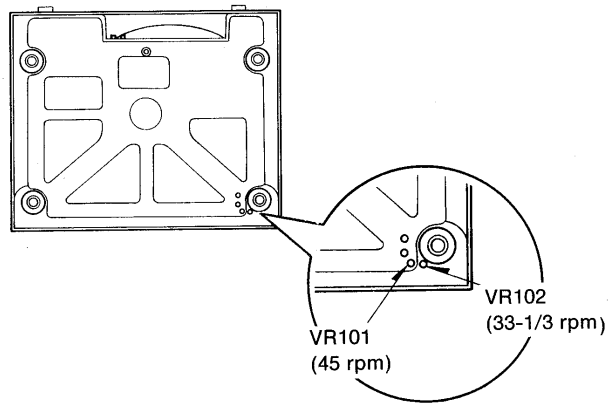
In the U.S.A. and CANADA use 60 Hz lines.
The 50 Hz lines are for European countries.

ROTATING SPEED

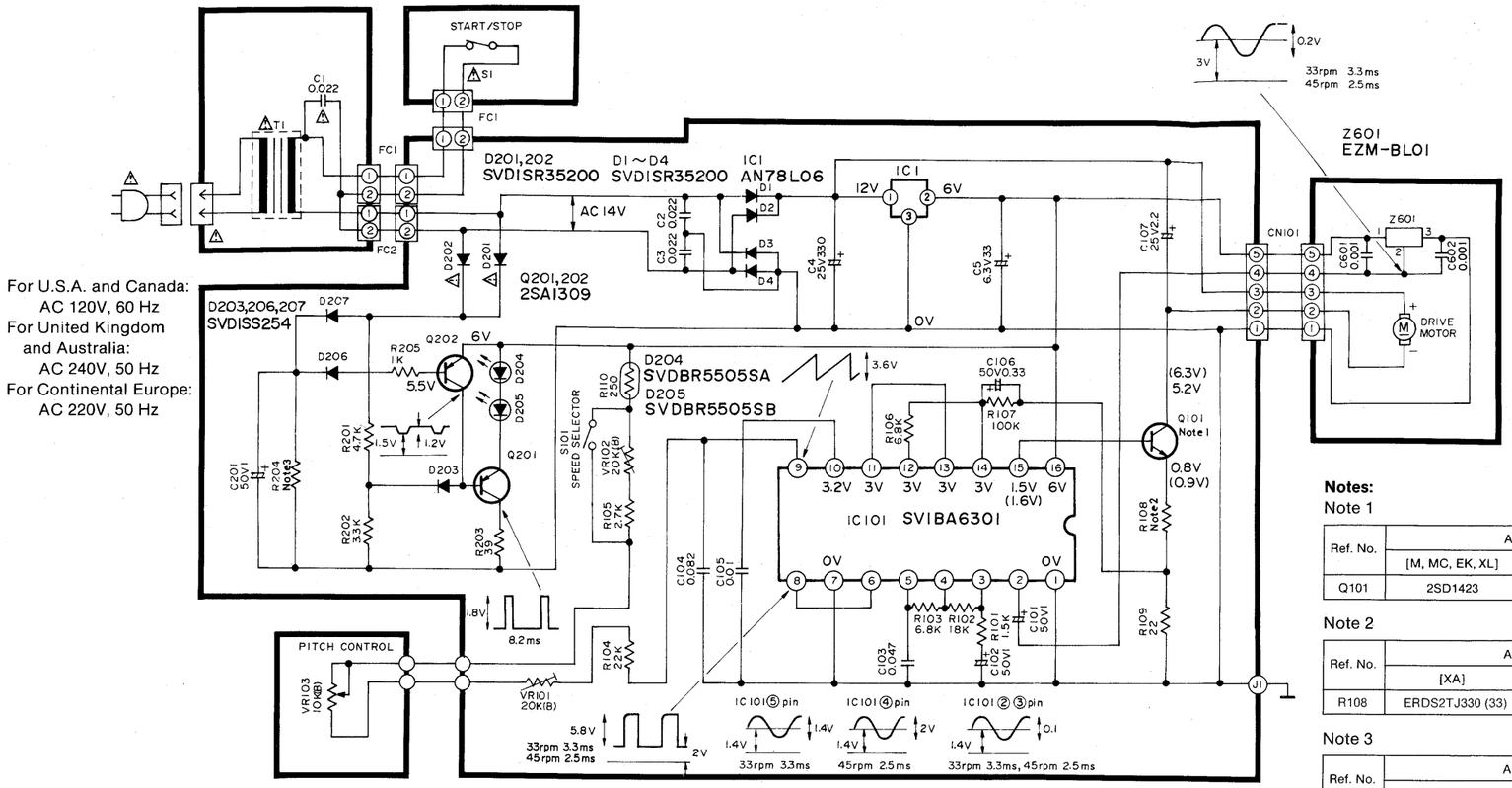
When the turntable drive/control IC (IC101) or the variable resistors (VR101, 102) are changed, or if the rated rotation is not reached even when the pitch control knob is turned, adjust the rotating speed in the following procedure.

1. Set the speed selector switch to the "45" position.
2. Turn VR101 with a screwdriver from the bottom of the set to the rated rotation (45 rpm) and check the rotation with a strobe while adjusting the speed.
3. Set the speed selector switch to the "33" position.
4. Turn VR102 with a screwdriver from the bottom of the set to the rated rotation (33-1/3 rpm) and check the rotation with a strobe while adjusting the speed.

Note: Be sure to make the adjustment for 45 rpm first.



■ SCHEMATIC DIAGRAM



Notes:

Note 1

Ref. No.	Areas	
	[M, MC, EK, XL]	[other]
Q101	2SD1423	2SC1383

Note 2

Ref. No.	Areas	
	[XA]	[other]
R108	ERDS2TJ330 (33)	ERDS2TJ220 (22)

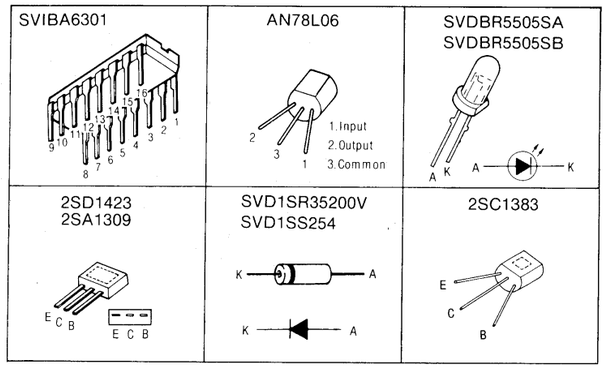
Note 3

Ref. No.	Areas	
	[M, MC, EK, XL, XA]	[other]
R204	ERDS2TJ332 (3.3 K)	ERDS2TJ562 (5.6 K)

Notes:

1. S1: Power switch in "on" position.
2. S101: Speed selector switch in "33" position.
3. The values are of the reference voltage for the turntable rotation (33 rpm) of this unit, measured by a DC voltmeter (high impedance) on the basis of chassis. So, some error might be included depending on the internal impedance of the measuring instrument and the unit measured.
   * ( ): voltage in 45 rpm.
4. 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.
5. VR101 is the 45 rpm speed adjustment variable resistor.
6. VR102 is the 33-1/3 rpm speed adjustment variable resistor.
7. This schematic diagram may be modified at any time with the development of new technology.

- **Terminal guide of IC's, transistors and diodes**

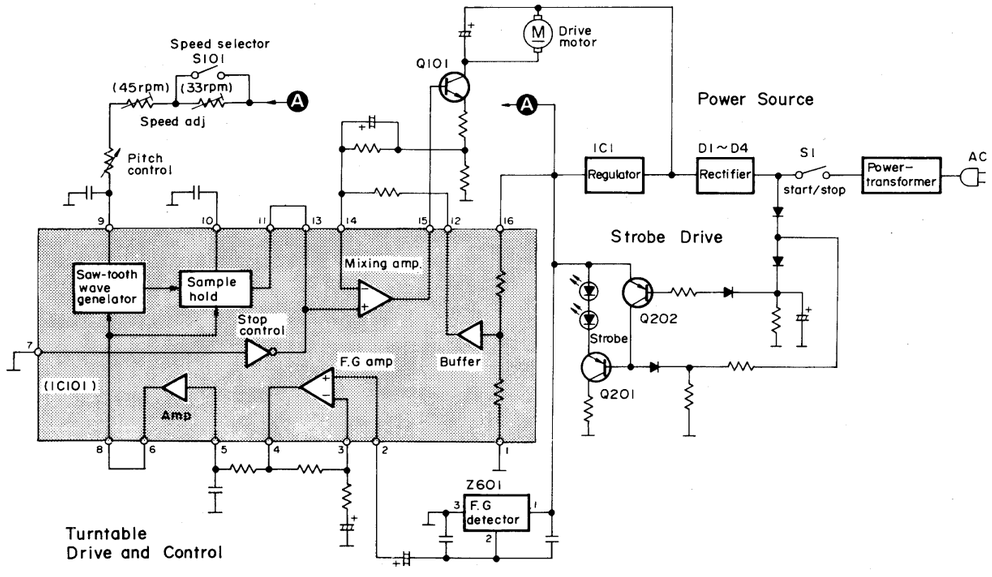


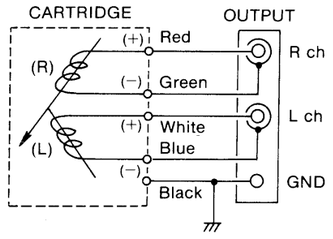
Caution!

IC and LSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.

- Cover the parts boxes made of plastics with aluminum foil.
- Ground the soldering iron.
- Put a conductive mat on the work table.
- Do not touch the legs of IC or LSI with the fingers directly.

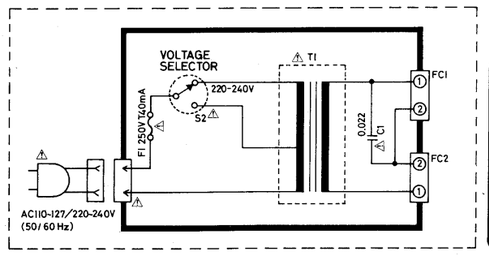
■ BLOCK DIAGRAM

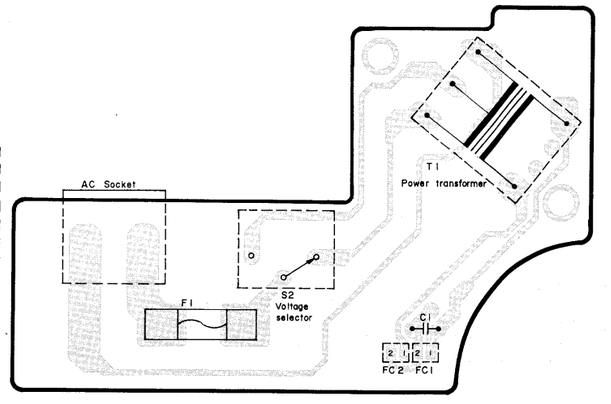




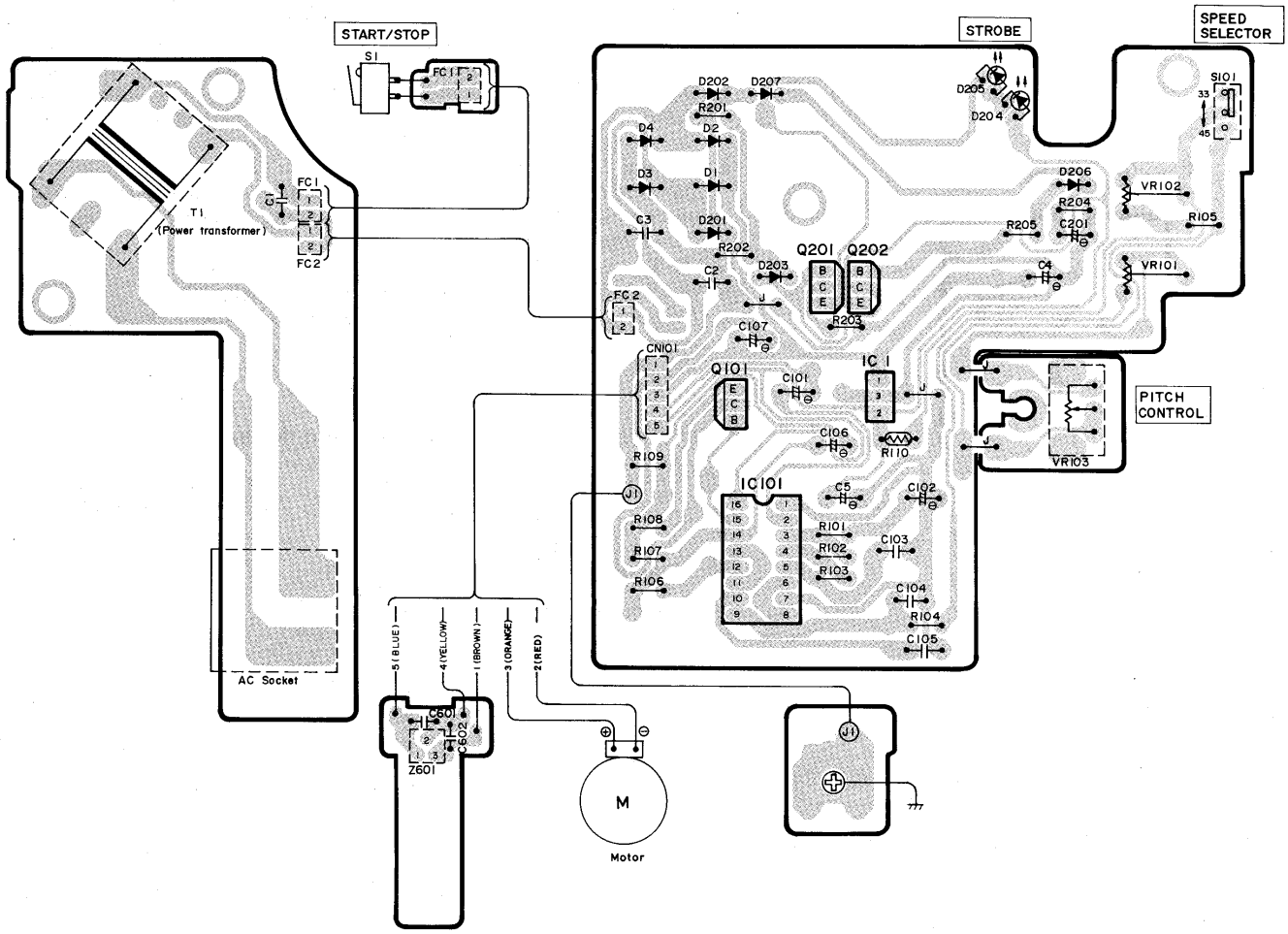
- **Power source circuit**

For [XA] area





■ CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM



■ TROUBLESHOOTING

No sound comes out. → Check the resistance at output pin plug (left and right channels).

- 0~ a few ohms → Check if shorted circuit at pin plug or lug terminal or connector or cartridge.
- ∞ (open) → Check if opened circuit at pin plug or lug terminal or connector or cartridge.
- 500~600Ω → Check if sequently connected to amplifier or check amplifier.

Strobe LED does not indicate. → **Strobe LED drive circuit**
• Waveform of collector of Q201

→ Q201, 202 (Drive transistor)
D201~D207
R201~R205
} defective

Turntable does not rotate.

→ AC power plug is connected?
- → Connect the AC power plug to an AC wall socket.

↓

Belt is set over the turntable capstan?
- → Set the belt correctly.

↓

Power source circuit
1. AC 14V between FC2 terminals ① and ②.
2. DC voltage of regulator IC (IC1)
   ① 12V ② 6V ③ 0V
3. DC voltage at terminal ⑫ of IC101 (3V).

→ T1 (Power transformer), S1 (Power switch), D1~D4 (Rectifier diode), IC1 (Regulator IC), IC101 (Drive IC) } defective

↓

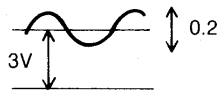
Drive circuit
- DC voltage of drive transistor (Q101)

	Base	Collector	Emitter
33 rpm	1.5V	6.3V	0.8V
45 rpm	1.6V	5.2V	0.9V

→ IC101 (Drive IC), Q101 (Drive transistor), Motor, R108,109 (Resistor) } defective

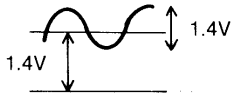
Unstable rotation

→ **FG amplifier circuit**
1. Waveform of terminal ④ of CN101



33 rpm 3.3ms
45 rpm 2.5ms

2. Waveform of terminal ⑤ of IC101



33 rpm 3.3ms
45 rpm 2.5ms

- → Z601 (Magnetic resistor element), IC101 (Control IC), R101~R103, C101~C103, Motor } defective

↓

Control circuit
1. Waveform of terminal ⑧ of IC101

33 rpm 3.3ms
45 rpm 2.5ms

2. Waveform of terminal ⑨ of IC101

33 rpm 3.3ms
45 rpm 2.5ms

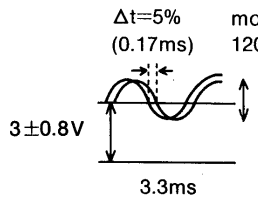
- → IC101 (Control IC) defective

Turntable rotates too fast or does not rotate.

→ 1. Conduction check of CN101 terminal of ④ and ⑤, ① and ④.
- → If the reading is ∞, then Z601 defective.
  If the reading is 1.3kΩ, then motor defective.

↓

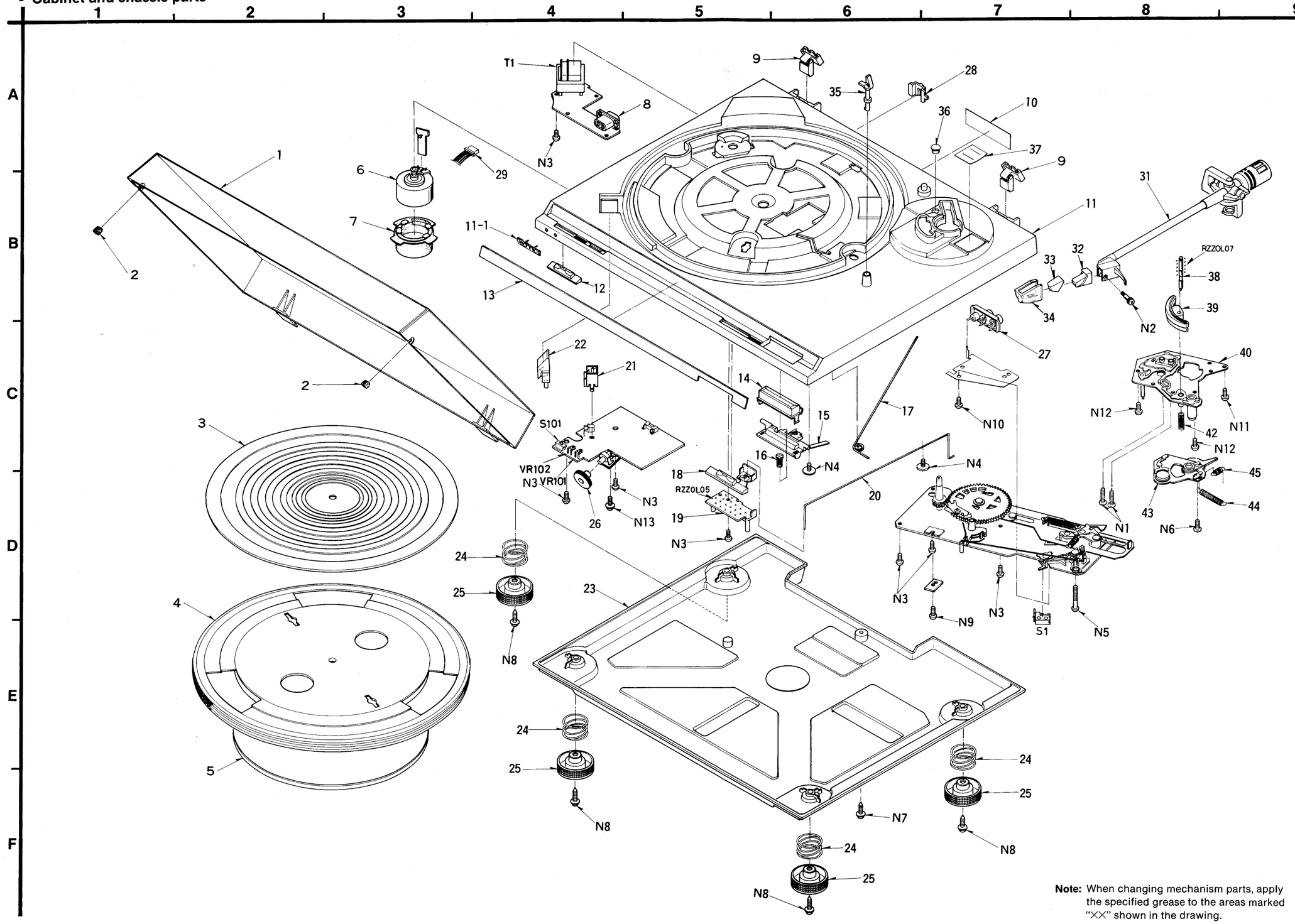
1. Waveform of terminal of CN101.



- → Refer to precaution on page 5.

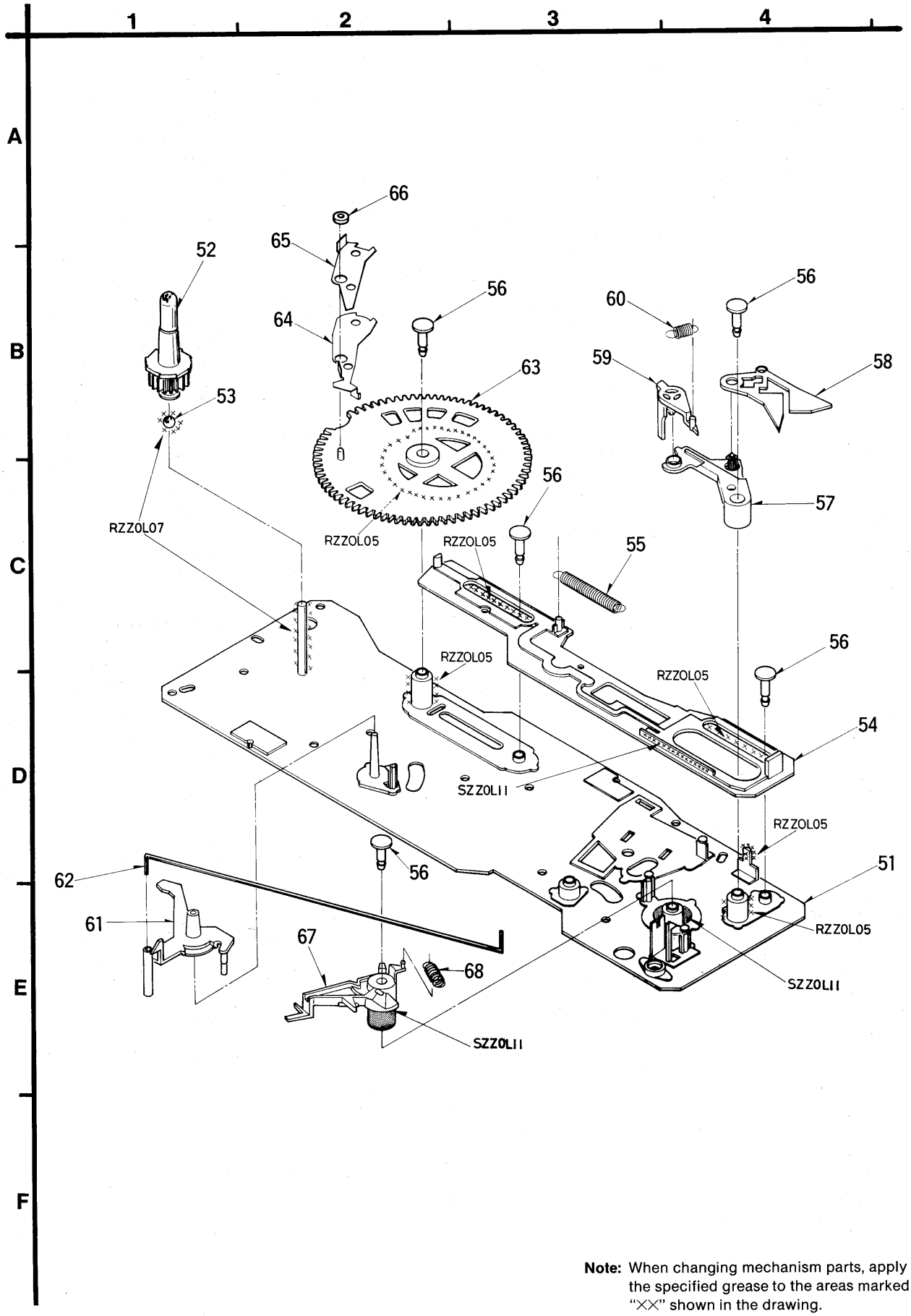
■ EXPLODED VIEW

• Cabinet and chassis parts



Note: When changing mechanism parts, apply the specified grease to the areas marked "××" shown in the drawing.

- **Mechanism parts**



Note: When changing mechanism parts, apply the specified grease to the areas marked "XX" shown in the drawing.

■ 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 ⚠ mark have special characteristics important for safety.
   When replacing any of these components, use only manufacturer's specified parts.
3. Ⓚ-marked parts are used for black type only, while ○-marked parts are used for silver type only.
4. Parts other than Ⓚ- and ○-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.
6. The "Ⓢ" mark is service standard parts and may differ from production parts.
7. The parenthesized numbers in the column of description stand for the quantity per set.

Color	Areas
(S) (K)	[M] ..... U.S.A.
(S) (K)	[MC] ... Canada.
(S) (K)	[E] ..... Switzerland and Scandinavia.
(S) (K)	[EK] .... United Kingdom.
(S) (K)	[XL] .... Australia.
(S) (K)	[EG] ... F.R. Germany.
(S) (K)	[EB] .... Belgium.
(S) (K)	[EH] .... Holland.
(S) (K)	[EF] .... France.
(S) (K)	[Ei] ..... Italy.
(S) (K)	[EC] .... Czechoslovakia.
(S) (K)	[XA] .... Southeast Asia, Oceania, Africa, Middle Near East and Central South America.

Ref. No.	Part. No.	Description
INTEGRATED CIRCUITS		
IC1	AN78L06	Regulator
IC101	SVIBA6301	FG Servo
TRANSISTORS		
Q101 [M, MC] [EK, XL]	2SD1423	Switching
Q101 [other]	2SC1383	Switching
Q201, 202	2SA1309	Strobe Drive
DIODES		
D1~4	⚠SVD1SR35200V	Rectifier
D201, 202	⚠SVD1SR35200V	Rectifier
D203	SVD1SS254	Switching
D204	SVDBR5505SA	Strobe, LED
D205	SVDBR5505SB	Strobe, LED
D206, 207	SVD1SS254	Switching
SWITCHES		
S1	⚠SFDSD72R01	Power
S2 [XA] only	⚠SFDSHXW02067	Voltage Selector
S101	SFDSHSW0834	Speed Selector
VARIABLE RESISTORS		
VR101, 102	EVN61AA00B24	Speed Adjustment, 20 kΩ (B)
VR103	EVJE1AF20B14	Pitch Control, 10 kΩ (B)
MAGNETIC RESISTOR ELEMENT		
Z601	EZM-BL01	F.G Detector
FUSE		
F1 [XA] only	⚠XBA2C004T1B	250V, T40 mA
POWER TRANSFORMER		
T1 [M]	⚠SLT35KL5B	Power Source
T1 [MC]	⚠SLT35K97C	Power Source
T1 [EK, XL]	⚠SLT35KE61E	Power Source
T1 [XA]	⚠SLT35KE62E	Power Source
T1 [other]	⚠SLT35K64E	Power Source

Ref. No.	Part. No.	Description
THERMISTER		
R110	ERTD2ZFK251S	250Ω
RESISTORS		
R101	ERDS2TJ152	Carbon, 1/4W, 1.5kΩ, ±5%
R102	ERDS2TJ183	Carbon, 1/4W, 18kΩ, ±5%
R103	ERDS2TJ682	Carbon, 1/4W, 6.8kΩ, ±5%
R104	ERDS2TJ223	Carbon, 1/4W, 22kΩ, ±5%
R105	ERDS2TJ272	Carbon, 1/4W, 2.7kΩ, ±5%
R106	ERDS2TJ682	Carbon, 1/4W, 6.8kΩ, ±5%
R107	ERDS2TJ104	Carbon, 1/4W, 100kΩ, ±5%
R108 [XA]	ERDS2TJ330	Carbon, 1/4W, 33Ω, ±5%
R108 [other]	ERDS2TJ220	Carbon, 1/4W, 22Ω, ±5%
R109	ERDS2TJ220	Carbon, 1/4W, 22Ω, ±5%
R201	ERDS2TJ472	Carbon, 1/4W, 4.7kΩ, ±5%
R202	ERDS2TJ332	Carbon, 1/4W, 3.3kΩ, ±5%
R203	ERDS2TJ390	Carbon, 1/4W, 39Ω, ±5%
R204 [M, MC, EK, XL, XA]	ERDS2TJ562	Carbon, 1/4W, 5.6kΩ, ±5%
R204 [other]	ERDS2TJ332	Carbon, 1/4W, 3.3kΩ, ±5%
R205	ERDS2TJ102	Carbon, 1/4W, 1kΩ, ±5%
CAPACITORS		
C1	⚠ECQG1223KZ	Polyester, 100V, 0.022μF, ±10%
C2, 3	⚠ECKR1H223ZF	Ceramic, 50V, 0.022μF, $^{+80}_{-20}$ %
C4	ECEA1EU331	Electrolytic, 25V, 330μF
C5	ECEA0JU330	Electrolytic, 6.3V, 33μF
C101, 102	ECEA1HU010	Electrolytic, 50V, 1μF
C103	ECQG1H473KZT	Polyester, 50V, 0.047μF, ±10%

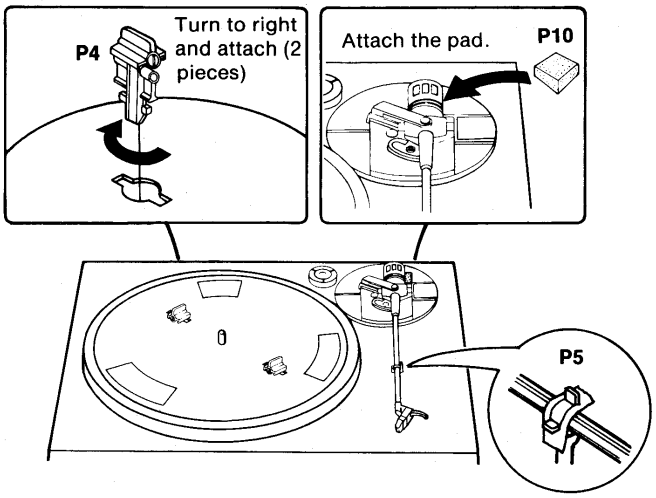
Ref. No.	Part. No.	Description
C104	ECQP2A823JZW	Polypropylene, 200V, 0.082μF, ±5%
C105	ECQG1H103KZT	Polyester, 50V, 0.01μF, ±10%
C106	ECEA1HUR33	Electrolytic, 50V, 0.33μF
C107	ECEA1EU2R2	Electrolytic, 25V, 2.2μF
C201	ECEA1HU010	Electrolytic, 50V, 1μF
C601, 602	ECUX1H102MBM	Chip Ceramic, 50V, 0.001μF, ±20%
CABINET AND CHASSIS PARTS		
1	SFADZ15R01	Dust Cover (1)
2	SFGZD04N01	Rubber Cushion, Dust Cover (2)
3	SFTGB93M01	Turntable Mat (1)
4	SFTEBD2N01	Turntable Platter (1)
5	SFGBZ15R01	Belt (1)
6	SDMB5E	Motor Ass'y (1)
7	SHGB7	Cushion Rubber, Motor (1)
8	⚠SFDJHSC0515	AC Socket (1)
9	SFATZ15R01A	Hinge (2)
10 [M]	SGTB42	Name Plate (1)
10 [MC]	SGTB43	Name Plate (1)
10 [E, EC]	SGTB44	Name Plate (1)
10 [EK]	SGTB45	Name Plate (1)
10 [XL]	SGTB46	Name Plate (1)
10 [EG]	SGTB47	Name Plate (1)
10 [XA]	SGTB49	Name Plate (1)
10 [other]	SGTB48	Name Plate (1)
11 ○	SKMLBD22-SE	Cabinet With Badge (1)
11 Ⓚ	SKMLBD22-KM	Cabinet With Badge (1)
11-1 ○	SGB628	Badge (1)
11-1 Ⓚ	SGB628-1	Badge (1)
12 ○	SFKTBD2N03	Knob, Speed Selector (1)
12 Ⓚ	SBCB70-0C	Knob, Speed Selector (1)
13	SGXB110-1	Ornament Plate (1)
14 ○	SFKTBD2N01	Knob, Stop (1)
14 Ⓚ	SBCB30-0C	Knob, Stop (1)
15	SFUMBD2N01	Base, Stop Knob (1)
16	SFQHZ15R01	Spring (1)
17	SFUZZ15R01	Rod, Stop Knob (1)

Ref. No.		Part. No.	Description	
18	○	SBCB60-0S	Knob, Cueing	(1)
18	Ⓚ	SBCB60-0C	Knob, Cueing	(1)
19		SKMB140	Bracket, Cueing Knob	(1)
20		STZB4	Rod, Cueing	(1)
21		SFUMBD2N06	Holder, LED	(1)
22		SFUMBD2N07	Strobe	(1)
23		SKUB3-1	Bottom Cover	(1)
24		SUSB38	Spring, Insulator	(4)
25		SKLB3	Insulator	(4)
26	○	SFKTBD2N04	Knob, Speed Adjuster	(1)
26	Ⓚ	SBCB80-0C	Knob, Speed Adjuster	(1)
27		SFDJBD2N03	Jack, Output	(1)
28	○	SKMB160-0S	Cover	(1)
28	Ⓚ	SKMB160-0K	Cover	(1)
29		SWKBB42051	Connector Ass'y (5P)	(1)
TONEARM PARTS				
31 [M, MC XA]		SFAB5A	Tonearm Ass'y	(1)
31 [other]		SFAB14A	Tonearm Ass'y	(1)
32 [except M, MC]		EPC-P24S	★Cartridge	(1)
33 [except M, MC]		EPS-24CS	★Stylus	(1)
34 [except M, MC]		SFCNC05101	Cover, Stylus	(1)
35		SHRB14	Tonearm Rest	(1)
36	○	SFGK170-01	Cap	(1)
36	Ⓚ	SFGK171F01	Cap	(1)
37		SGXB60	Plate, Canceller	(1)
38		SFXJBD2N51	Shaft, Lift Arm	(1)
39		SFUMBD2N51	Lift Arm	(1)
40		SFUPBD2N51E	Arm Base	(1)
42		SUSB12	Spring	(1)
43		SFUPBD2N52E	Plate, Pick-up Fixing	(1)
44		SFQHZ15R55	Spring	(1)
45		SFQHZ15R61	Spring	(1)

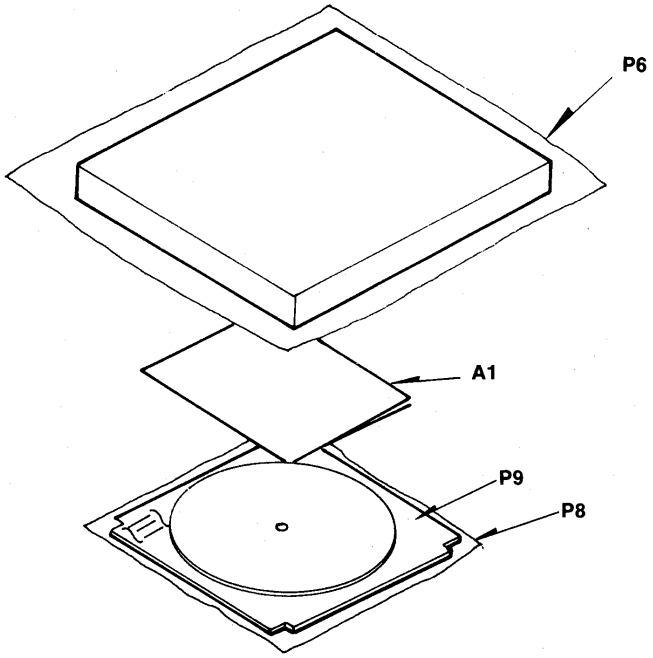
Ref. No.	Part. No.	Description	
MECHANISM PARTS			
51	SUKB4E	Mechanism Plate	(1)
52	SDWB1A	Turntable Shaft	(1)
53	SFYB-5-32	Ball	(1)
54	SFUBZ15R51	Plate, Drive	(1)
55	SFQHZ15R64	Spring, Drive Plate	(1)
56	SFUMZ15R56	Pin	(5)
57	SFUMZ15R54	Switch Lever (A)	(1)
58	SFUMBD2N52	Switch Lever (B)	(1)
59	SFUMZ15R59	Switch Lever (C)	(1)
60	SFQHZ15R62	Spring	(1)
61	SFUMZ15R52	Lever, Actuating	(1)
62	SFQSZ15R51	Rod, Actuating	(1)
63	SFUGZ15R51	Main Gear	(1)
64	SFURZ15R52	Rink (A), Main Gear	(1)
65	SFURZ15R51	Rink (B), Main Gear	(1)
66	SFUMZ15R61	Washer	(1)
67	SHRB11	Cam, Cueing	(1)
68	SFQHZ15R63	Spring	(1)
SCREWS			
N1	SNSB1	Screw	(2)
N2	SFPEV0Q601	Screw, Cartridge	(1)
N3	XTV3+10G	Screw, ⊕3×10	(7)
N4	SFXGQ06N01	Screw	(2)
N5	XTV3+30J	Screw, ⊕3×30	(1)
N6	XYC3+CG10	Screw, ⊕3×10	(1)
N7	XTW3+14QFYR	Screw, ⊕3×14	(1)
N8	SNSB3	Screw	(4)
N9	XYE3+EJ8	Screw, ⊕3×8	(1)
N10	XTV3+16J	Screw, ⊕3×16	(1)
N11	XTV3+6G	Screw, ⊕3×6	(1)
N12	XTV3+8G	Screw, ⊕3×8	(2)
N13	XTW3+10Q	Screw, ⊕3×10	(1)

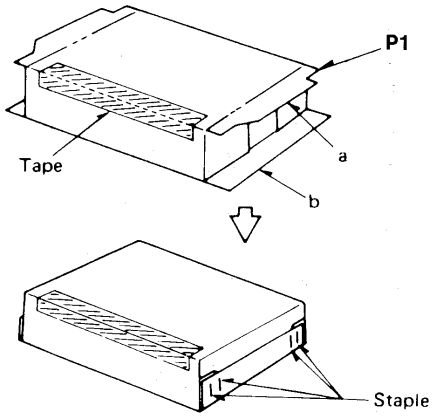
Ref. No.	Part. No.	Description	
ACCESSORIES			
A1 [M]	SQX53772	Instruction Book	(1)
A1 [MC]	SQXLBD22-SMC	Instruction Book	(1)
A1 [EG]	SQX53803	Instruction Book	(1)
A1 [Ei]	SQX53776	Instruction Book	(1)
A1 [other]	SQXLBD22-SE	Instruction Book	(1)
A2	SFDHBD2N01	Output Cord	(1)
A3	SFDLJ11N01E	Ground Wire	(1)
A4	SFWE212-01	45 Adaptor	(1)
A5 [M, MC]	⚠SJA170	AC Cord	(1)
A5 [XL]	⚠SJA163	AC Cord	(1)
A5 [EK]	⚠SFDAC05G02	AC Cord	(1)
A5 [XA]	⚠SJA168-1	AC Cord	(1)
A5 [other]	⚠SFDAC05E02	AC Cord	(1)
A6 [XA] only	⚠SJP9215	Adaptor	(1)
PACKING PARTS			
P1 [M] ○	SPGB23	Carton Box	(1)
P1 [M] Ⓚ	SPGB20	Carton Box	(1)
P1 [MC] ○	SPGB24	Carton Box	(1)
P1 [MC] Ⓚ	SPGB21	Carton Box	(1)
P1 [EF] ○	SPGB58	Carton Box	(1)
P1 [EF] Ⓚ	SPGB56	Carton Box	(1)
P1 [other] ○	SPGB57	Carton Box	(1)
P1 [other] Ⓚ	SPGB55	Carton Box	(1)
P2	SPSB4	Pad, Left	(1)
P3	SPSB5	Pad, Right	(1)
P4	SPEB3	Clamper, Turntable	(2)
P5	SPEB2	Clamper, Tonearm	(1)
P6	SPPB1	Polyethylene Bag, Dust Cover	(1)
P7	SFYH60×60	Polyethylene Bag, Unit	(1)
P8	SFYF32A35	Polyethylene Bag, Turntable Mat	(1)
P9	SFHDBD2N01	Pad, Turntable Mat	(1)
P10	SPEB4	Pad, Tonearm Weight	(1)

■ PACKING

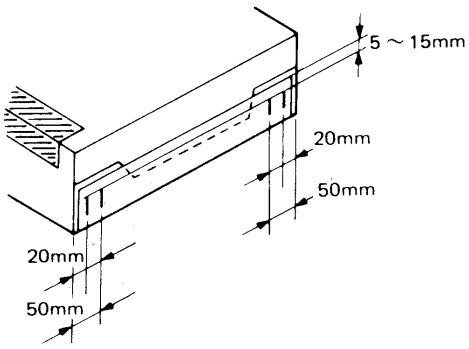


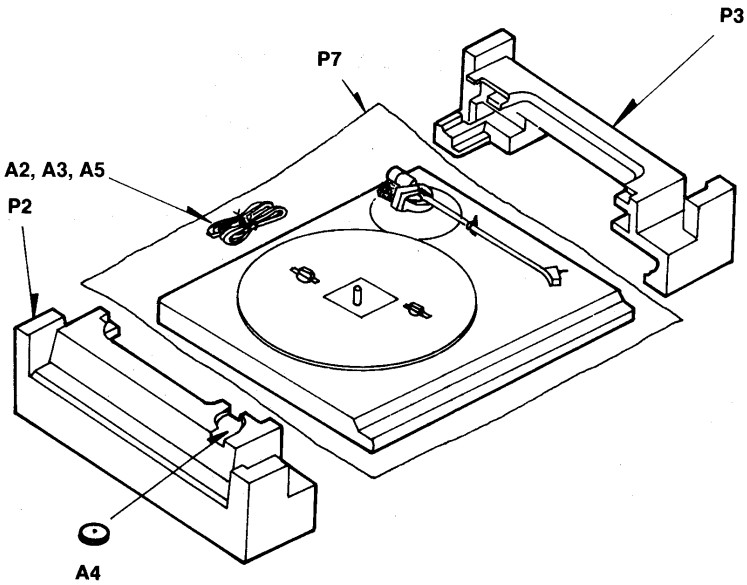
1. Place the unit (with cushions attached) as illustrated.
2. Fold the flaps according to the line marks.
3. Seal the top with adhesive tape.
   - Use gum tape or adhesive cloth tape of 50mm wide at least.
4. For the edges, first fold the flap "a" and then flap "b", and staple. Remember to staple only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





- Stapling positions are shown below.





Printed in Japan
850312000 Ⓢ HS/HY