ORDER NO. DPD83060003C8

# Service Manual

Turntable System

# SL-QX300/(K)

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

**Areas**

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

T4P is the standard mark for the "P-mount" plug-in connector system. Products carrying this mark are inter-changeable and compatible with each other.

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

## Specifications

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

### ■ General

| | |
|---|---|
| **Power supply:** | For United Kingdom and Australia: 240V, AC 50Hz<br>For Continental Europe: 220V, AC 50Hz<br>For Others: 110—120/220—240V, 50/60Hz |
| **Power consumption:** | 7 W |
| **Dimensions: (W×H×D)** | 43 × 10 × 38 cm<br>43 × 36 × 42 cm<br>(Maximum height when top (dust cover) is open ) |
| **Weight:** | 6kg |

### ■ Turntable section

| | |
|---|---|
| **Type:** | Quartz direct drive |
| **Features:** | Fully automatic turntable<br>Auto start/Auto lead-in<br>Auto return, Auto stop<br>Auto size select<br>Record presence detection<br>Repeat play, Manual play |
| **Drive method:** | Direct drive |
| **Motor:** | Brushless DC motor |
| **Drive control method:** | Quartz-phase-locked control |
| **Turntable platter:** | Aluminum die-cast<br>Diameter 31 2 cm (12-9/32 inches) |
| **Turntable speeds:** | 33-1/3 rpm and 45 rpm |
| **Pitch control:** | ±6% adjustment range |
| **Wow and flutter:** | 0 012% WRMS*<br>0 025% WRMS (JIS C5521)<br>±0 035% peak (IEC 98A Weighted) |

* This rating refers to turntable assembly alone, excluding effects of record cartridge or tonearm but including platter. Measured by obtaining signal from built-in frequency generator of motor assembly.

| | |
|---|---|
| **Rumble:** | −56 dB (IEC 98A Unweighted)<br>−80 dB (IEC 98A Weighted) |

### ■ Tonearm section

| | |
|---|---|
| **Type:** | Statically-balanced straight tonearm<br>Plug-in connector cartridge system |
| **Effective length:** | 230 cm (9-1/16 ) |
| **Overhang:** | 15 mm (19/32 ') |
| **Tracking error angle:** | Within 2°32' at the outer groove of 30 cm (12 ') record<br>Within 0°32' at the inner groove of 30 cm (12 ') record |
| **Friction:** | Less than 7 mg (lateral vertical) |
| **Effective mass:** | 7.5 g (without cartridge) |
| **Stylus pressure adjustment range:** | 1 25 ±0 25 g |
| **Applicable cartridge weight range:** | 6 g |
| **Phono cable capacitance:** | 100 pf |

**Technics**

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

## ■ Cartridge section

| | | | |
|---|---|---|---|
| **Type:** | Moving magnet stereo cartridge | **Channel separation:** | 22 dB at 1 kHz |
| **Magnetic circuit:** | All laminated core | **Channel balance:** | Within 1 8dB at 1kHz |
| **Frequency response:** | 10 Hz~50kHz<br>20 Hz~10 kHz ±1 dB | **Recommended load impedance:** | 47 kΩ~100 kΩ |
| **Output voltage:** | 2 5 mV at 1 kHz 5 cm/s zero to peak lateral velocity<br>(7 mV at 1 kHz, 10 cm/s zero to peak 45° velocity [DIN 45 500]) | **Compliance (dynamic):** | 12×10⁻⁶ 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-P33ES |

- The power supply fot this unit varies depending upon the areas Also, the parts used for power supply are different So, refer to the circuit diagram and the replacement parts list
  * [EK], [XA] and [XM] areas are provided with voltage selector

## ■ CONTENTS



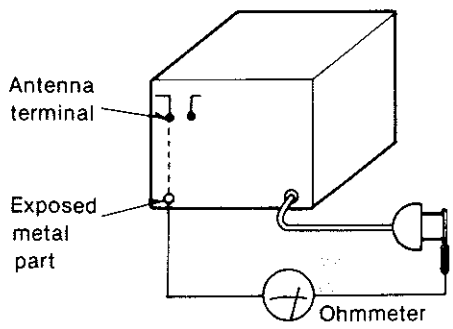
## ■ SAFETY PRECAUTION

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

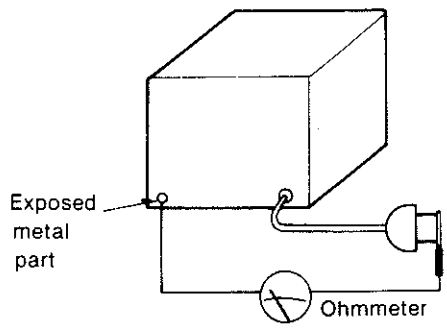
1. Unplug the power cord and short the two prongs of the plug with a jumper wire
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads antenna, control shafts, handle brackets, etc Equipment with 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

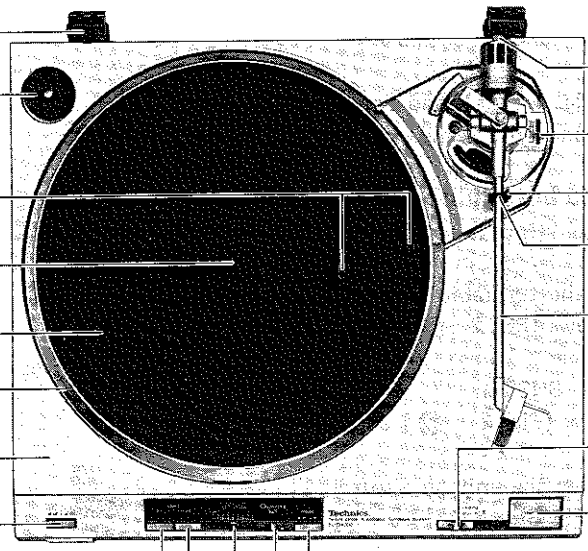


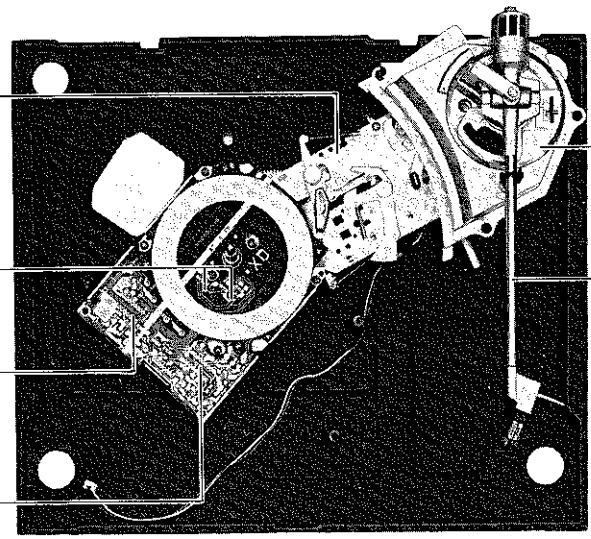

(Fig B)

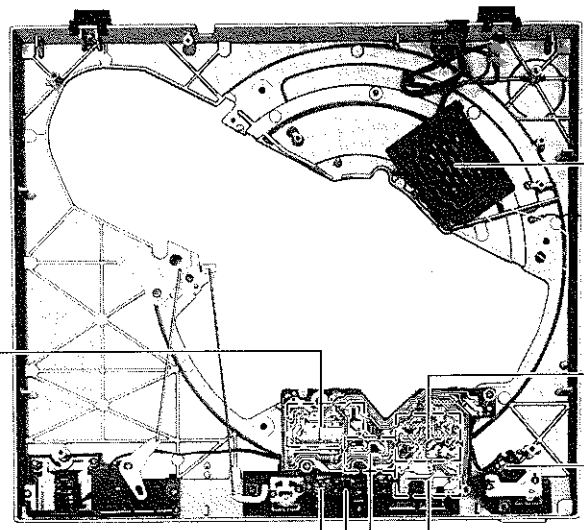
Resistance = Approx ∞

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

## • How to remove the cartridge

1. Open the dust cover and clamp the tonearm on the arm rest.
2. Remove the cartridge setscrew (**Fig. 1 : ❶**), and then pull out the cartridge in the direction of the arrow.

## • How to remove the cabinet and bottom board

1. Remove the cartridge. **(Refer to "How to remove the cartridge".)**
2. Remove the turntable mat and the turntable platter.
3. Remove the 5 panel cover setscrews (**Fig. 2 : ❷ ~ ❻**) and the panel cover.
4. Remove the 2 connectors (CN101, CN301).
5. Remove the ground wire setscrew (**Fig. 2 : ❼**) and ground wire
6. Close the dust cover, and turn over the unit on a soft cloth taking care not to damage (**Fig. 3**)
7. Remove the 4 audio insulator setscrews (**Fig. 3 : ❽ ~ ⓫**).
8. Remove the clamper setscrew (**Fig. 3 : ⓬**) and slightly lift the bottom board. Then, remove the phono output clamper in the direction of the arrow Ⓐ. **(Fig. 3)**
9. Return the unit and remove the dust cover.
10. Remove the tonearm from the arm rest and bring the tonearm to the center spindle as shown in **Fig. 2**.
11. Then, lift the cabinet in the direction of the arrow Ⓑ. **(Fig. 2)**

**Note:** When assembling the cabinet and bottom board, make sure that the cueing lever of the automatic mechanism plate is engaged with the cueing link of the cabinet (**Fig. 4**).
When replacing the audio insulator, make sure that the silver spring is in regular position as shown in **Fig. 3**.

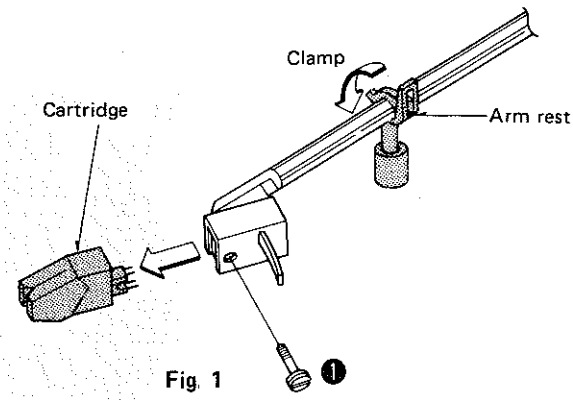



Fig. 1

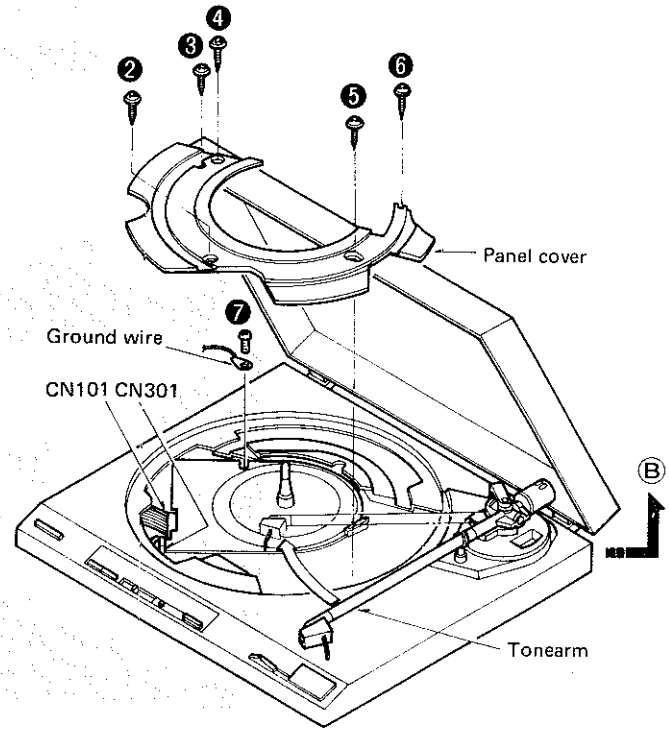



Fig. 2

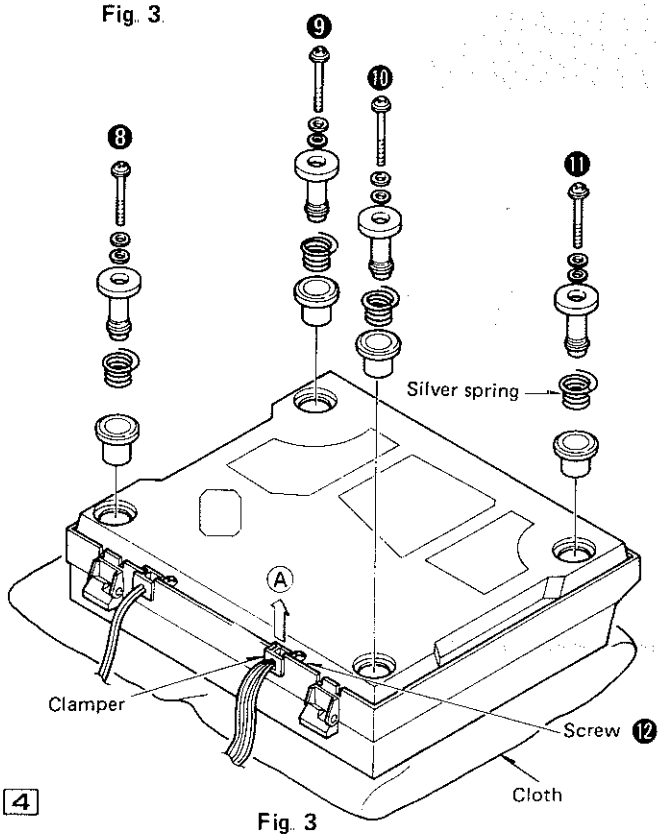



Fig. 3

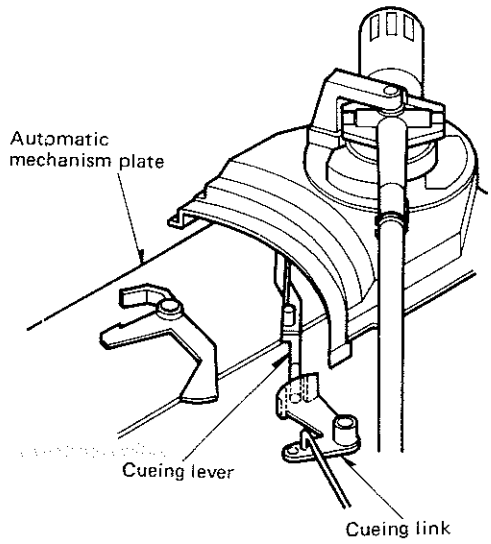



Fig. 4

## • How to remove the drive circuit P.C.B. and stator frame

1. Remove the cabinet and bottom board. **(Refer to "How to remove the cabinet and bottom board".)**
2. Remove the 6 stator frame setscrews **(Fig. 5 : ⑬ ~ ⑱ )**, then the stator frame can be removed

## • To separate the drive circuit P.C.B. and stator frame

1. Cut off the stopper by means of nippers.
2. Insert the screwdriver between stopper and P.C.B., then shift it up in the direction of arrow ② as in **Fig. 6**.
3. Remove the 4 setscrews **(Fig. 5 : ⑲ ~ ㉒ )** of drive circuit P.C.B. Then the drive circuit P.C.B. can be separated from the stator frame.

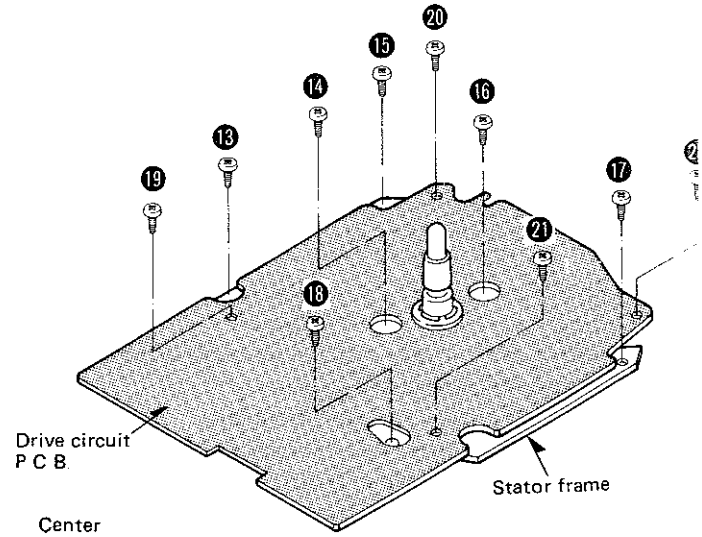



Fig. 5

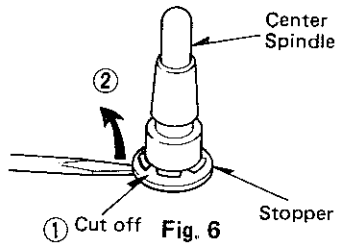



Fig. 6

## • How to remove the tonearm

1. Remove the cabinet and bottom board. **(Refer to "How to remove the cabinet and bottom board".)**
2. Remove the 3 tonearm base setscrews **(Fig. 7 : ㉔ ~ ㉖ )**.
3. Turn over the tonearm base.
4. Remove the shield plate setscrew **(Fig. 8 : ㉗ )** and remove the shield plate.
5. Remove the shielding tape and unsolder the 5 lead wires.
6. Remove the PU fixing plate setscrew **(Fig. 8 : ㉘ )** and canceler spring.
7. Remove the 2 tonearm setscrews **(Fig. 8 : ㉙ , ㉚ )**, then the tonearm can be removed in the direction of the arrow.

**Note:** When fitting the tonearm base to the automatic mechanism plate, make sure that the cueing lever is in "**cueing down**" position.

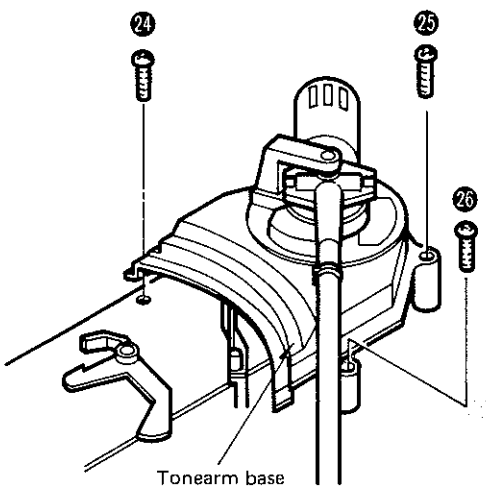



Fig. 7

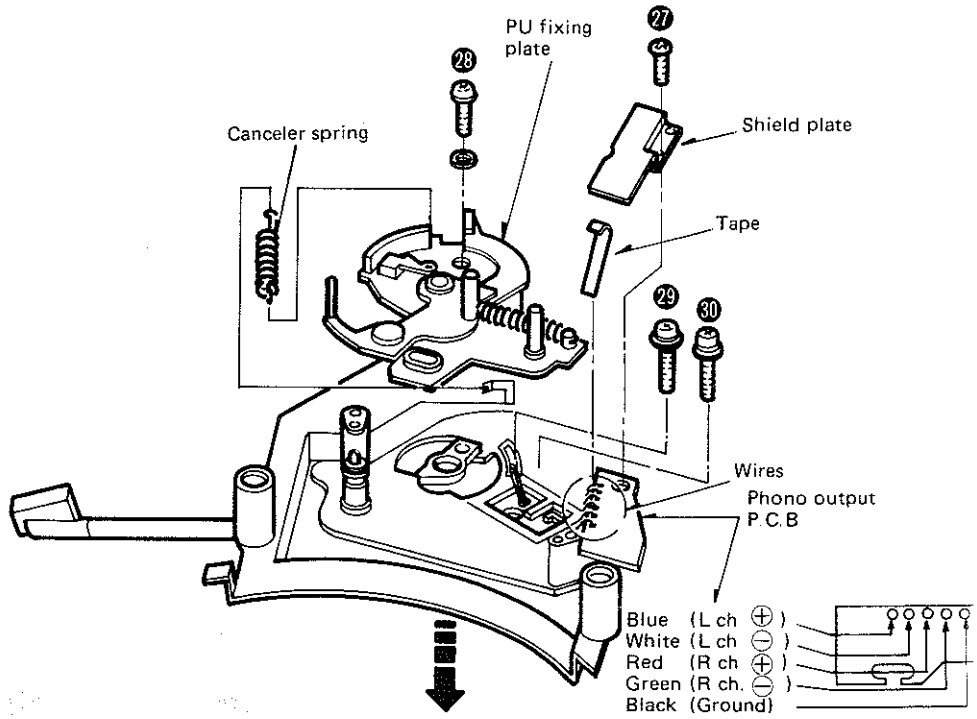



Fig. 8

## • How to remove the automatic mechanism plate Ass'y

1. Remove the tonearm base. **(Refer to "How to remove the tonearm".)**
2. Remove the stator frame. **(Refer to item 2 of "How to remove the drive circuit P.C.B. and stator frame".)**
3. Remove the ground wire setscrew **(Fig. 9 : ㉛ )** and the ground wire.
4. Remove the 4 automatic mechanism plate setscrews **(Fig. 9 : ㉜ ~ ㉟ )**, Then the automatic mechanism plate Ass'y can be removed.

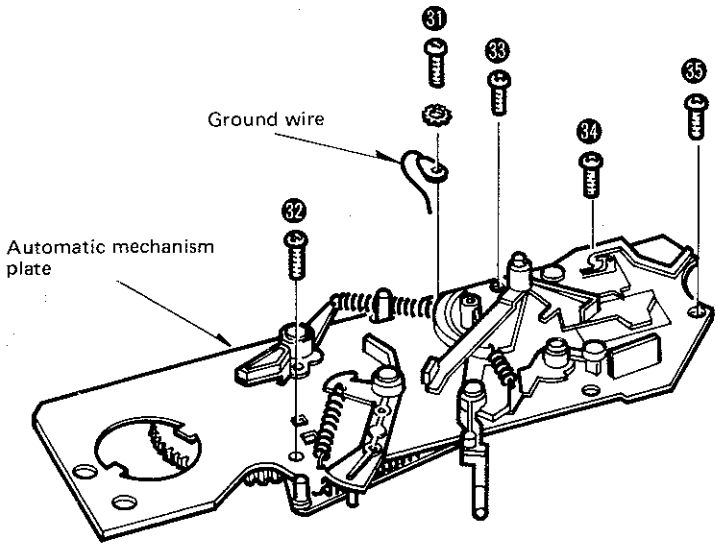



Fig. 9

## • How to remove the control circuit P.C.B.

(Power source and pitch control circuit)

1. Remove the cabinet and the bottom board. **(Refer to "How to remove the cabinet and bottom board".)**
2. Turn over the cabinet.
3. Remove the pitch control holder setscrew **(Fig. 10 : ㊱ )** and pitch control holder.
4. Remove the 6 setscrews **(Fig. 10 : ㊲ ~ ㊷ )** of control circuit P.C.B. Then, the control circuit P.C.B. can be removed.

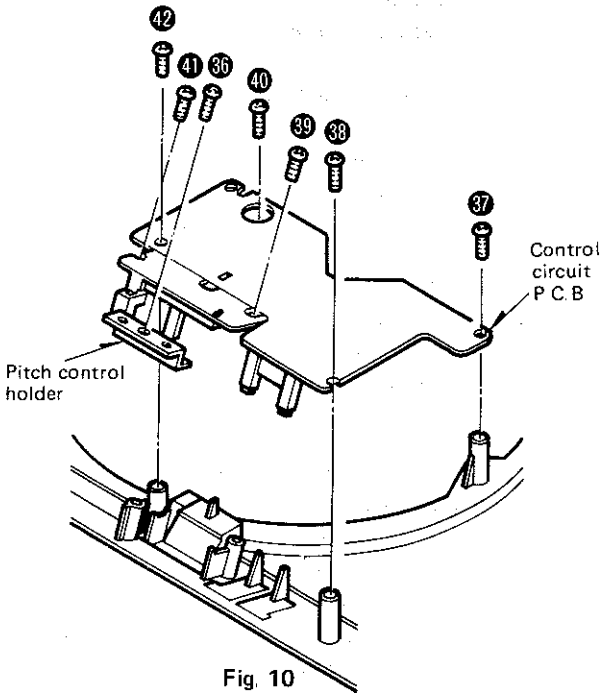



Fig. 10

## • How to remove the start/stop switch P.C.B.

1. Remove the cabinet and bottom board **(Refer to "How to remove the cabinet and bottom board".)**
2. Push the claw in the direction of the arrow Ⓐ. **(Fig. 11)**
3. Remove the P.C.B. in the direction of the arrow Ⓑ. **(Fig. 12)**

## • How to remove the on/off switch

1. Remove the cabinet and bottom board. **(Refer to "How to remove the cabinet and bottom board".)**
2. Remove the 2 switch holder setscrews **(Fig. 12 : ㊸, ㊹ )**, Then the on/off switch can be removed.

## • How to remove the Hall element

1. Remove the turntable platter.
2. Remove the terminal solder by use of solder sucker.
3. Hold the Hall element with a tweezers and remove it while touching the soldering iron to the terminal. **(Fig. 13)**

**Note:** Fit the Hall element with the part No. print up. The reverse in terminal position is allowable provided that the printed side is up.

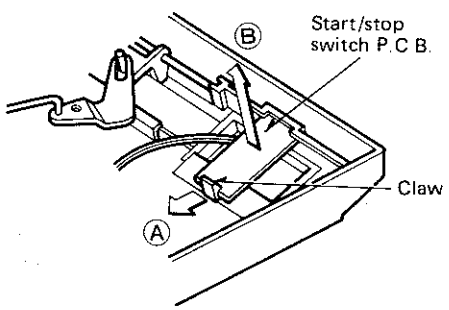



Fig. 11

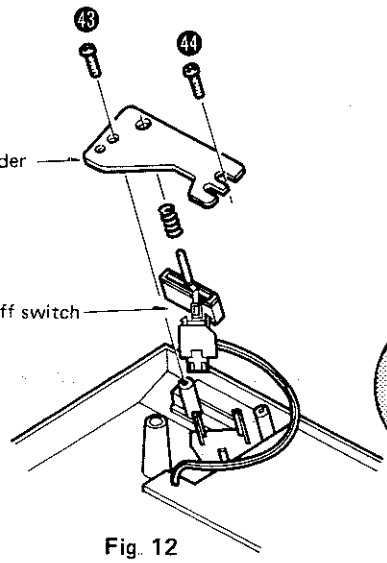



Fig. 12

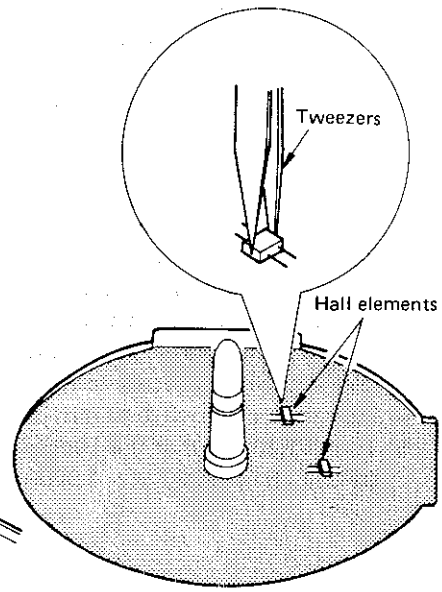



Fig. 13

# ■ MEASUREMENTS AND ADJUSTMENT

## • 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"). **(Fig. 14)**

If the clearance is too narrow or too wide, turn the adjustment screw clockwise or counterclockwise. **(Fig. 15)**

**Clockwise rotation**

– distance between the record and stylus tip is decreased.

**Counterclockwise rotation**

– distance between the record and stylus tip is increased.

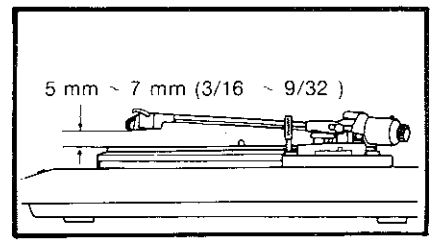



Fig. 14

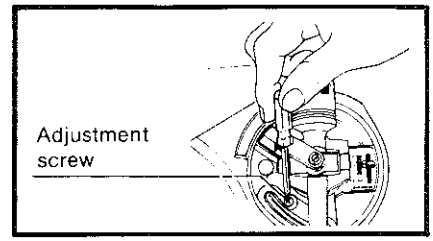



Fig. 15

## • Adjustment of automatic start position

If the stylus does not land in the lead-in groove, adjust as follows.

1. Clamp the tonearm to the arm rest.
2. Remove the rubber cap. **(Fig. 16)**
3. Turn the screw with a screwdriver, clockwise or counterclockwise as necessary.

If the stylus tip sets down too far in the recorded groove.

**– turn counterclockwise.**

If the stylus tip sets down outside of the record.

**– turn clockwise.**

Adjust so the stylus tip lands 1 ~ 2 mm in from the edge of the record.

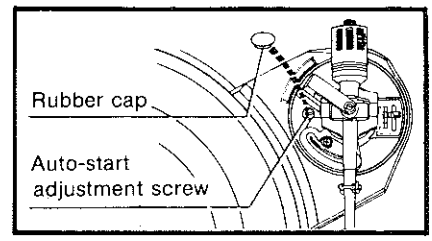



Fig. 16

## • Adjustment of automatic return position (Fig. 17)

(Remove the rubber cap.)

1. Put the stylus protector on the cartridge
2. Move the tonearm toward the center of the record.
   The auto-return adjustment screw will appear

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

**– turn counterclockwise.**

If the tonearm fails to return after the final groove.

**– turn clockwise.**

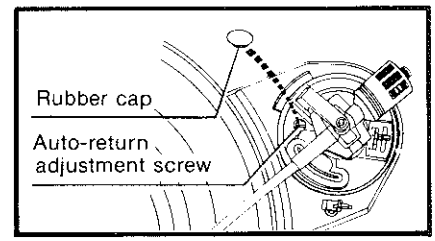



Fig. 17

## • Speed adjustment (pitch control) (Fig. 18)

New QLS (Quartz Linear Synthesizer) circuitry permits continuous analog pitch adjustment up to about ± 6% while maintaining quartz locked accuracy. When the pitch control is at the center position, the turntable rotates at standard speed (33-1/3 or 45 rpm).

Turn off the reset switch, then adjust the pitch control as desired, referring to the scale markings.

**Note:** 1) Turn reset switch on to play records at standard speed.

2) When the reset switch is on, the turntable rotates at standard speed, so pitch is not adjustable. If the reset switch is turned on after changing the pitch, the turntable will return to standard speed.

3) The strobe is quartz locked with the variable pitch settings, so the strobe markings always appear to be standing still.

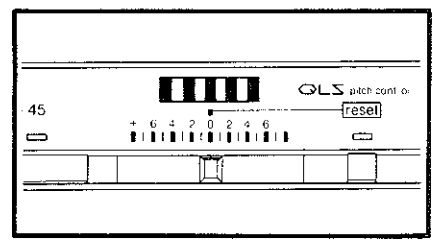



Fig. 18

## • Pitch control adjustment (reference frequency) (Fig. 19)

1. Remove the turntable platter and panel cover. **(Refer to "How to remove the cabinet and bottom board".)**
2. Set the pitch control knob to the center position.
3. Connect the oscilloscope to terminal 11 of IC302.
4. Push the on/off switch to turn it **"on"**.
5. Turn VR301 so that the frequency of output waveform is 523.64 kHz ~ 524.68 kHz (1 9097 $\mu$s ~ 1.9059 $\mu$s).

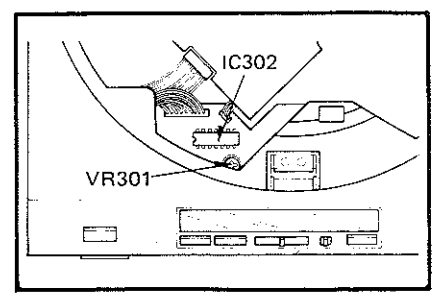



Fig. 19

# ■ TROUBLE SHOOTING

## • Conditions of the set

**Case 1: Refer to Fig. 20. (Checking each part in stop mode.)**

(1) Remove the turntable mat and turntable platter.
(2) Remove the panel cover.
(3) Push the on/off switch to turn it "**on**".

**Case 2: Refer to Fig. 21. (Checking each part in operation mode.)**

(1) Remove the turntable mat and turntable platter.
(2) Remove the panel cover.
(3) Remove the audio insulator (front left).
(4) Set the tester lead wire through the hold (audio insulator) in the bottom board, and connect the lead wire clip to the checking part
(5) Connect the ground terminal of the tester to the GND terminal of the phono cable.
(6) Put on the turntable platter, turntable mat and record.
(7) Push the on/off switch to turn it "**on**".
(8) Push the start/stop switch.

**Case 3: Refer to Fig. 22. (Checking each part in stop and operation modes.)**

(1) Remove the cabinet and bottom board.
(2) Remove the start/stop switch P.C.B.
(3) Remove the on/off switch.
(4) Connect the ground of control circuit P.C.B. to the automatic mechanism plate with wire.
(5) Push the on/off switch to turn it "**on**" and then check each part in stop mode
(6) When checking in operation mode, connect the tester lead wire to the checking part. Next, put on the turntable platter, mat and record, then push the start/stop switch.

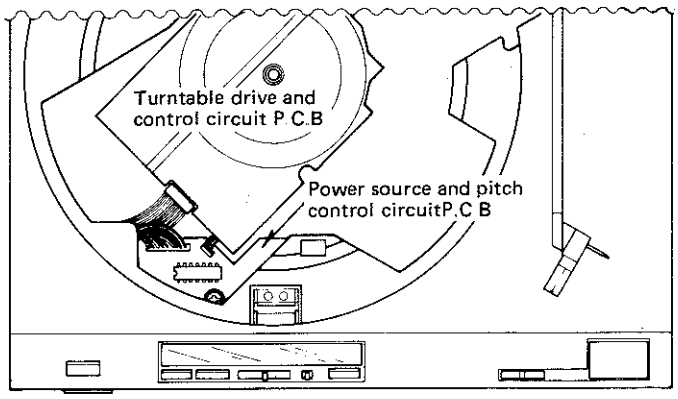



Fig. 20

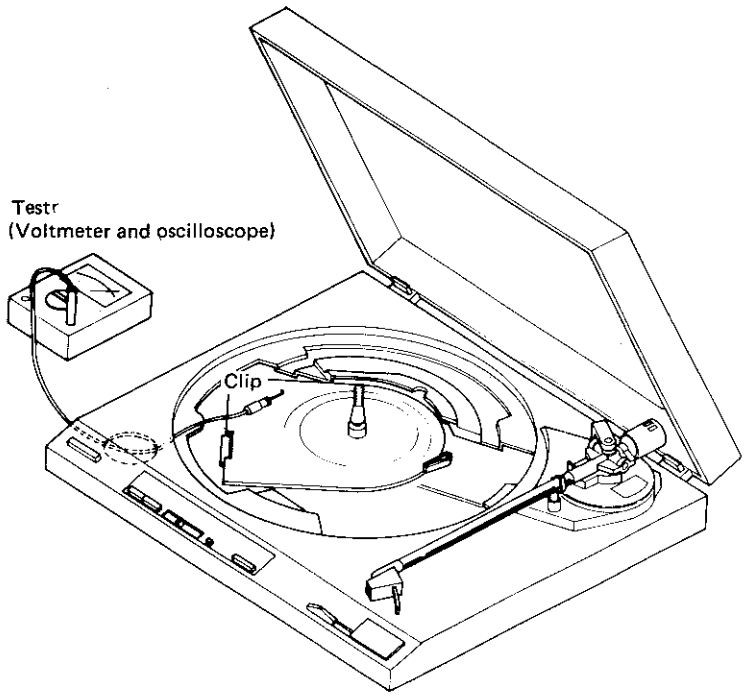



Fig. 21

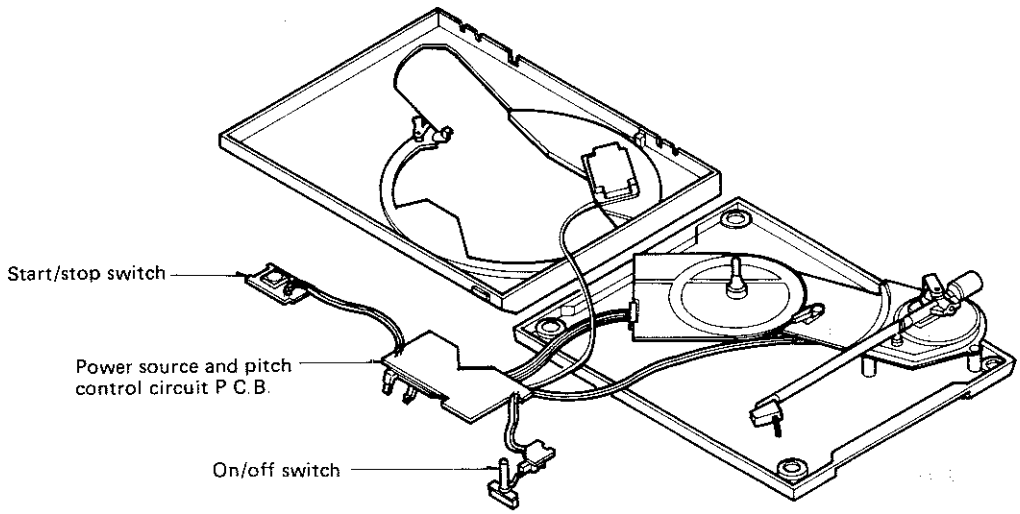



Fig. 22

## Turntable does not rotate

AC 24V between CN1 terminals ① and ②
NO → T1, AC cord

YES

DC voltage of regulator IC (IC1)
① 29V ② 0V ③ 15V
NO → S1, D1, C4, IC1

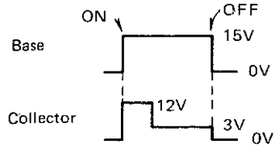
YES

**Power supply input terminal**
1. DC voltage at terminal ① of drive IC (IC101) ⟶ 15V
2. DC voltage at terminal ⑱ of control IC (IC201) ⟶ 8.5V

NO → IC101, IC201, R204, R208

YES

**Start/stop and brake circuit**
1. DC voltage of transistor (Q401)




2. DC voltage at terminal ⑩ of control IC (IC201) ⟶ 0V
3. DC voltage at terminal ⑫ of control IC (IC201) ⟶ 0.6V

NO → S302, D401, Q401, C401, R401 ~ R403, D402, RL401, S402, IC201, IC101

YES

**Drive coil and Hall element**
1. Conduction check of drive coils
2. DC voltage of Hall elements

| | ① | ② | ③ | ④ |
|---|---|---|---|---|
| Voltage | 3.9V | 7.8V | 3.9V | 0V |

NO → Drive coil, H101, H102, IC101

YES

**Drive circuit (Stop)**
1. DC voltage at each terminal of drive IC (IC101)

| | ② | ③ | ④ ~ ⑦ |
|---|---|---|---|
| Voltage | 0V | 15V | 0V |

| | ⑧ | ⑩ | ⑪ |
|---|---|---|---|
| Voltage | 0V | 0V | 6V |

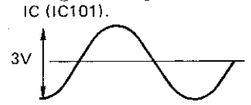
NO → IC101

YES

**Drive circuit (Rotation)**
1. DC voltage at each terminal of drive IC (IC101)

| | ② | ⑩ | ⑪ |
|---|---|---|---|
| Voltage | 0.6V | 5V | 4.8V |

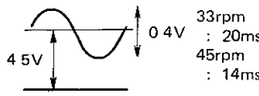
2. Waveform between terminal ④ and ⑤ (⑥ and ⑦) of drive IC (IC101).




NO → IC101

## Unsatable rotation

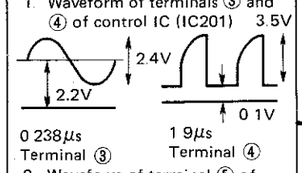
**FG amplifier circuit**
1. Conduction check of FG coil
2. Waveform of terminal ⑮ of control IC (IC1201)



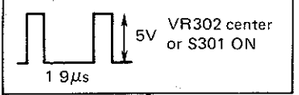

NO → F.G. Coil, IC201, R203, R205, C201 ~ C203

YES

**Quartz oscillator circuit**
1. Waveform of terminals ③ and ④ of control IC (IC201)



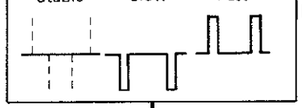

2. Waveform of terminal ⑤ of control IC (IC201)




NO → X201, IC201, C204 ~ C205

YES

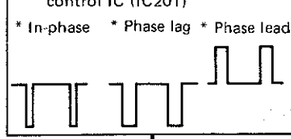
**Speed control circuit**
1. Waveform of terminal ⑭ of control IC (IC201)




NO → IC201, IC101

YES

**Phase control circuit**
1. Waveform of terminal ⑬ of control IC (IC201)




NO → IC201, IC101

YES

## Speed cannot be changed

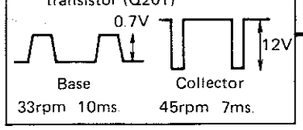
**Speed selector circuit**
1. Check voltage of terminals ⑧ and ⑨ of IC201.
Terminal ⑨ is initially at 0.2V, and only the terminal is kept at 0.2V when S201 or S202 is pushed

NO → IC201, S201, S202, D201, D202, R211

YES

## Strobe dones light up

**Strobe drive circuit**
1. Waveform of strobe drive transistor (Q201)




NO → IC201, Q201, D203, D204, R206, R210, C209



## Pitch control is detective

**Pitch control circuit**
1. DC voltage at each terminal of IC301

| | ② | ⑤ | ⑥ | ⑨ |
|---|---|---|---|---|
| Voltage | 1.8V | 0V | 4.4V | 9V |

NO → IC301, R1, R2, R307, D2, C7

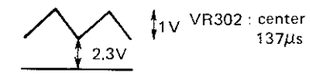
YES

**Input frequency**
1. Waveform of terminal ① of IC301


NO → IC301, R301, IC201

YES

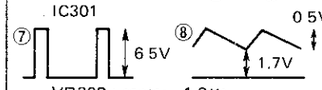
**C.R oscillator circuit**
1. Waveform of terminal ③ of IC301




NO → R302, IC301, VR301, VR302, C301

YES

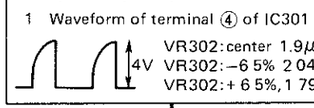
**VCO circuit**
1. Waveform terminals ⑦ and ⑧ of IC301




NO → IC301, R304, C304

YES

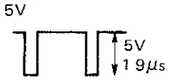
**Output frequency**
1. Waveform of terminal ④ of IC301



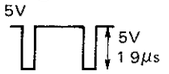

NO → IC301, R308

YES

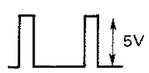
**Pitch control reset circuit**
1. DC voltage at terminals ⑤, ⑥ and ⑧ of IC302
S301, ON .0V S301, OFF .4V
2. DC voltage at terminals ② and ④ of IC302
S301, ON .5V S301, OFF .0V
3. DC voltage and waveform of terminals ③ and ⑬ of IC302
S301 OFF .5V
S301 ON




4. DC voltage and waveform of terminals ⑩ and ⑫ of IC302
S301, ON .5V
S301, OFF




5. Waveform of terminal ⑪ of IC301

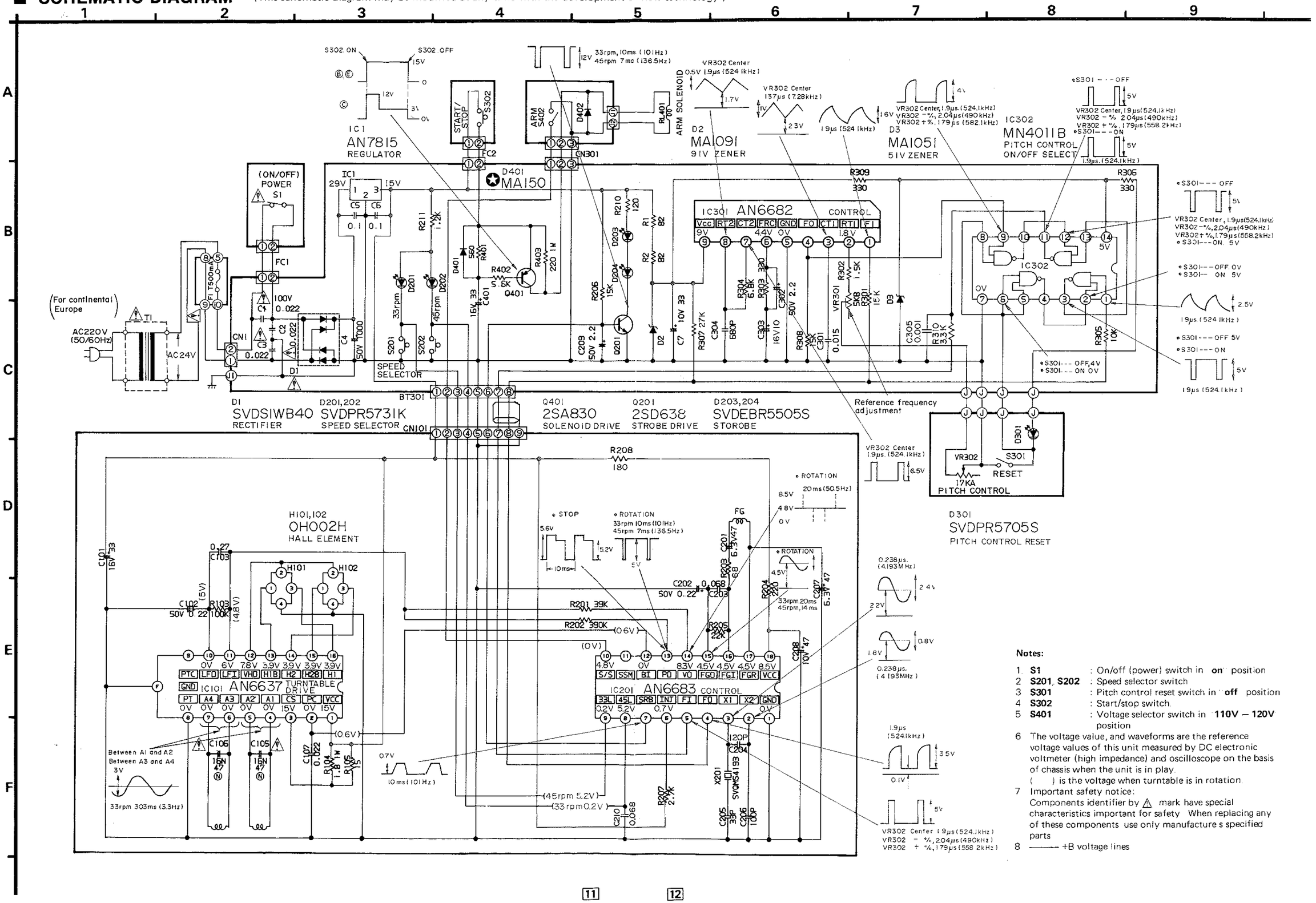



VR302 : center 1.9μs
VR302 : −6.5% 2.04μs
VR302 : +6.5% 1.79μs

NO → IC302, R305, R306, R309, D3, D301, S301

## ■ SCHEMATIC DIAGRAM

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

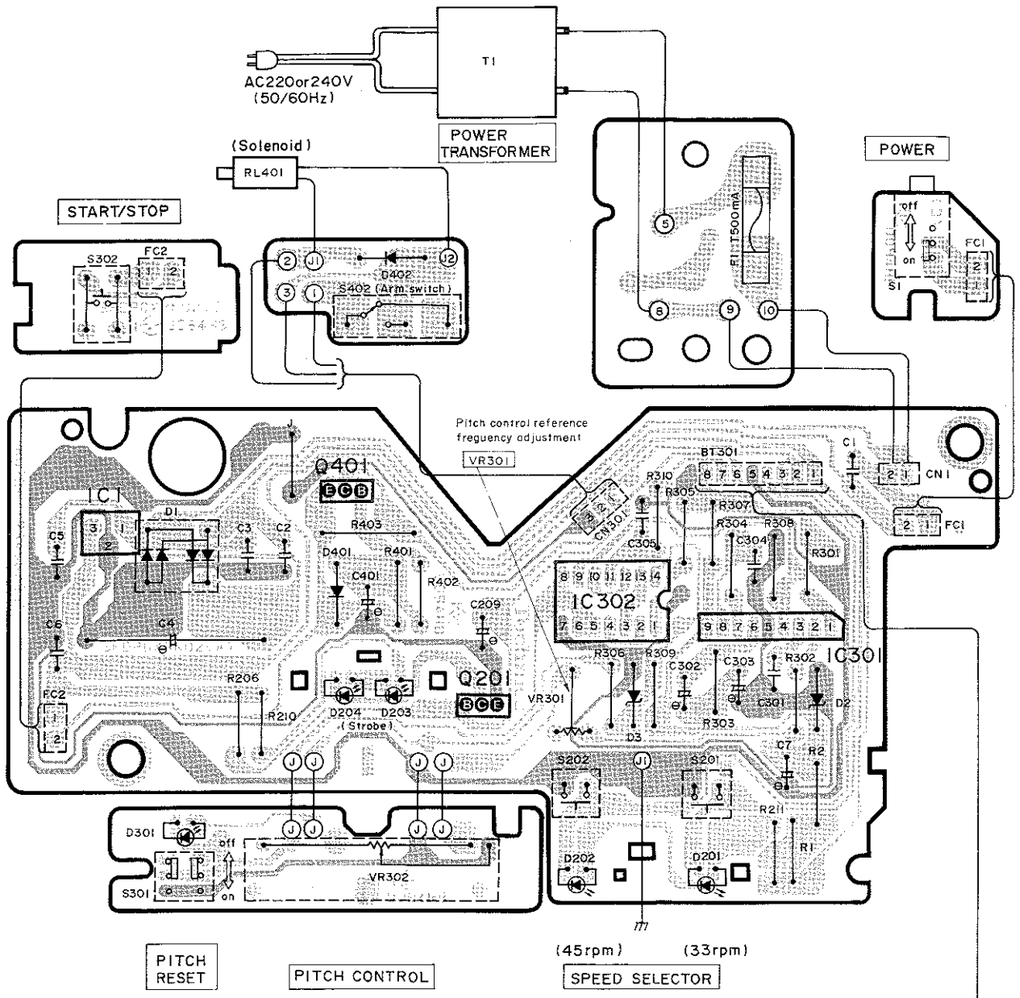


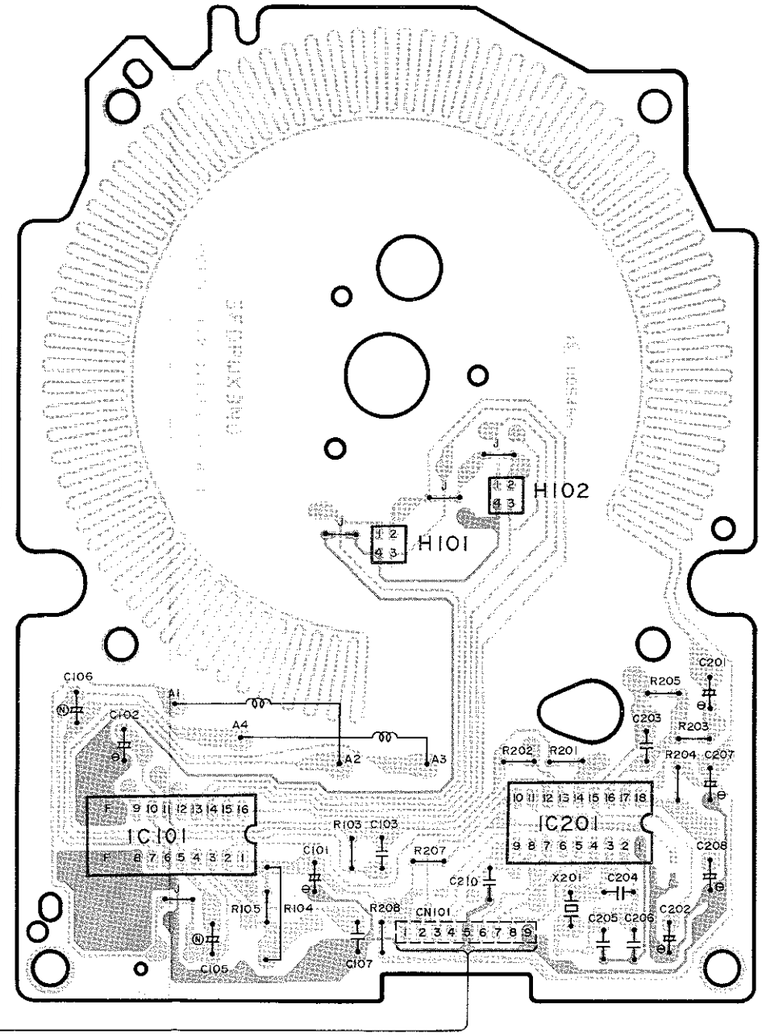

**Notes:**

1. **S1** : On/off (power) switch in "**on**" position
2. **S201, S202** : Speed selector switch
3. **S301** : Pitch control reset switch in "**off**" position
4. **S302** : Start/stop switch.
5. **S401** : Voltage selector switch in "**110V – 120V**" position
6. The voltage value, and waveforms are the reference voltage values of this unit measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of chassis when the unit is in play.
   ( ) is the voltage when turntable is in rotation.
7. Important safety notice:
   Components identifier by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacture s specified parts
8. ——— +B voltage lines

## ■ CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM

Ground (Earth) lines

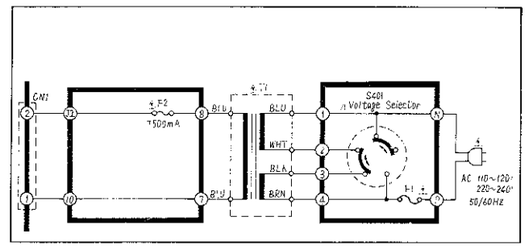


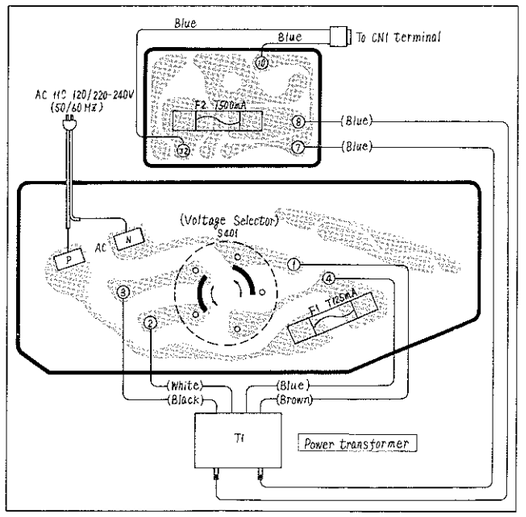

**Areas**

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

- **Power source circuit**
  **For [EK], [XA] and [XM] areas**




- **Power source circuit P.C.B.**
  **For [EK], [XA] and [XM] areas**



# ■ REPLACEMENT PARTS LIST (Electrical parts)

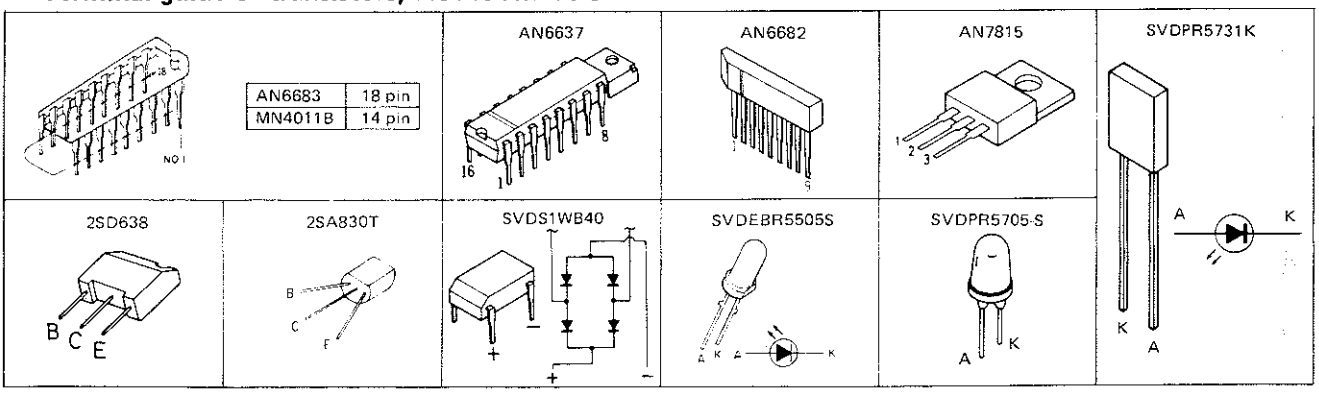
**Notes:** 1 Part numbers are indicated on most mechanical parts
Please use this part number for parts orders
2 Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts
3 Bracketed indications in Ref. No. columns specify the area
Parts without these indications can be used for all areas
4 The "Ⓢ" mark is service standard parts and may differ from production parts
5. The parenthesized numbers in the columns of description stand for the quantity per set

| Ref. No. | Part No. | Description |
|---|---|---|
| **INTEGRATED CIRCUITS** | | |
| IC1 | AN7815 | Regulator |
| IC101 | AN6637 | Drive |
| IC201 | AN6683 | Control |
| IC301 | AN6682 | Pich Control |
| IC302 | MN4011B | NAND Gate |
| **TRANSISTORS** | | |
| Q201 | 2SD638 | Strobe drive |
| Q401 | 2SA830T−93B | Solenoid drive |
| **DIODES** | | |
| D1 ⚠ | SVDS1WB40 | Rectifier |
| D2 | MA1091 | 9 1V, Zener |
| D3 | MA1051 | 5.1V, Zener |
| D201, 202 | SVDPR5731K | Light Emitting Diode |
| D203, 204 | SVDEBR5505S | Light Emitting Diode |
| D301 | SVDPR5705S | Light Emitting Diode |
| D401 Ⓢ | MA162A | Timer, Solenoid |
| D402 | SVDRM1Z | Arm Switch |
| **VARIABLE RESISTORS** | | |
| VR301 | EVN61AA00B53 | Speed Adjustment 5kΩ(B) |
| VR302 | EWANF5C15AU4 | Pich Control 17kΩ |
| **HALL ELEMENTS** | | |
| H101, 102 | OH−002 | Turntable Position |
| **CRYSTAL** | | |
| X201 | SVQMS4193 | 4.193MHz |
| **SWITCHES** | | |
| S1 ⚠ | SFDSC05N08 | On/Off |
| S201, 202 | EVQQSH03B | Speed Selector |
| S301 | ESB6439 | Pich Control |
| S302 | EVQQJR02K | Start/Stop |
| S401 ⚠ [XA,XM,EK] | SFDSHXW0225 | Voltage Selector |
| S402 | SFDSSS5GLP | Arm |
| **SOLENOID** | | |
| RL401 | SFDZQX3M51A | Solenoid Ass'y Start/Stop |
| **FUSES** | | |
| F1 [XA,XM,EK] ⚠ | XBA2C012TR0 | T 125mA 250V |
| F1 [Other Areas] ⚠ | XBA2C05TR0 | T 500mA 250V |
| F2 [XA,XM,EK] ⚠ | XBA2C05TR0 | T 500mA 250V |

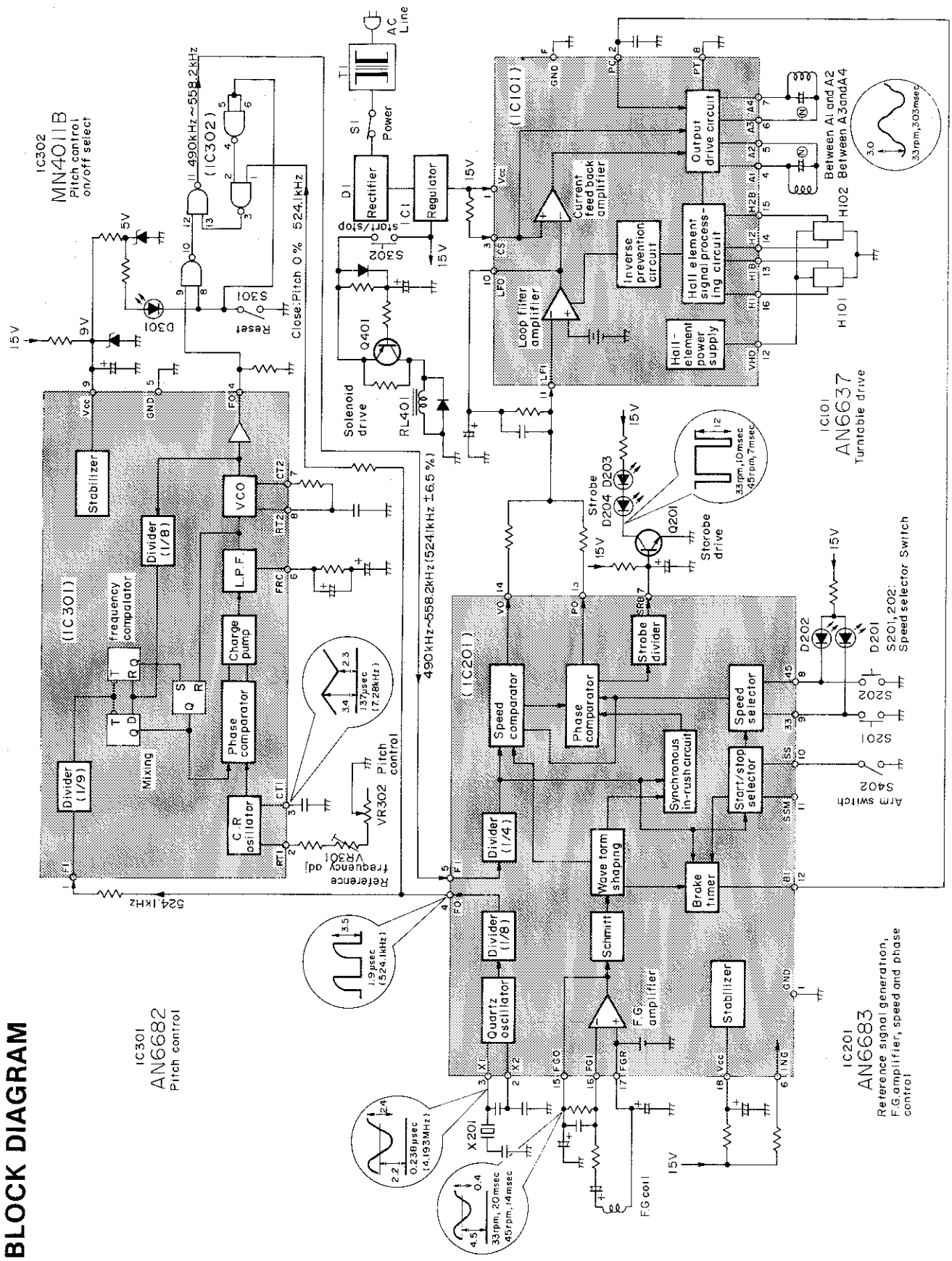
| Ref. No. | Part No. | Description |
|---|---|---|
| **POWER TRANSFORMER** | | |
| T1 [XA,XM,EK] ⚠ | SLT57P24E | Power Source |
| T1 [XL] ⚠ | SLT57DT5E | Power Source |
| T1 [Other Areas] ⚠ | SLT57DT4E | Power Source |
| **CAPACITORS** | | |
| C1 ⚠ | ECQM1223KZ | Polyester, 100V 0.022μF, ±10% |
| C2, 3 ⚠ | ECKD1H223PF | Ceramic, 50V 0.022μF, +100% −0% |
| C4 | ECEB1HU102 | Electrolytic, 1000μF |
| C5, 6 | ECQM1H104KV | Polyester, 50V 0.1μF |
| C7 | ECEA1AU330 | Electrolytic, 10V 33μF |
| C101 | ECEA1CU330 | Electrolytic 16V 33μF |
| C102 Ⓢ | ECEA1HSR22 | Electrolytic, 50V 0.22μF |
| C103 | ECQV05274JZ | Polyester, 50V 0.27μF, ±5% |
| C105, 106 ⚠ | ECEA1CN470S | Non Polar Electrolytic, 16V 47μF |
| C107 | ECKD1H223ZF | Ceramic, 50V 0.022μF +80% −20% |
| C201 | ECEA0JU470 | Electrolytic 6.3V 47μF |
| C202 Ⓢ | ECEA50ZR22 | Electrolytic, 50V 0.22μF |
| C203 | ECQM1H683KV | Polyester, 50V 0.068μF, ±10% |
| C204 | ECUV1H121JCM | Chip Ceramic, 50V, 120pF, ±5% |
| C205 | ECUV1H330JCM | Chip Ceramic, 50V 33pF ±5% |
| C206 | ECUV1H101JCM | Chip Ceramic 50V 100pF, ±5% |
| C207 | ECEA0JU470 | Electrolytic, 6.3V 47μF |
| C208 | ECEA1AU470 | Electrolytic 10V 47μF |
| C209 | ECEA1HU2R2 | Electrolytic, 50V 2.2μF |
| C210 | ECUV1H683JFM | Chip Ceramic, 50V 0.068μF |
| C301 | ECQK1153JZ | Polyester 100V 0.015μF |
| C302 | ECEA1HU2R2 | Electrolytic, 50V 2.2μF |
| C303 | ECEA1CU100 | Electrolytic, 16V 10μF |
| C304 Ⓢ | ECCD1H681J | Ceramic 50V 680pF |
| C305 Ⓢ | ECKD1H102KB | Ceramic, 50V 0.001μF |

| Ref. No. | Part No. | Description |
|---|---|---|
| **CAPACITORS** | | |
| C401 | ECEA1CU330 | Electrolytic 16V 33μF |
| **RESISTORS** | | |
| R1, 2 Ⓢ | ERD25FJ820 | Carbon, 1/4W, 82Ω |
| R103 | ERD10TLJ104U | Chip Carbon, 1/8W, 100kΩ ±5% |
| R104 Ⓢ | ERX1ANJ1R8 | Metal Film, 1W 1.8Ω, ±5% |
| R105 | ERD10TLJ150U | Chip Carbon, 1/8W, 15Ω, ±5% |
| R201 | ERD10TLJ393U | Chip Carbon, 1/8W 39kΩ, ±5% |
| R202 | ERD10TLJ394U | Chip Carbon, 1/8W 390kΩ, ±5% |
| R203 | ERD10TLJ680U | Chip Carbon, 1/8W, 68Ω, ±5% |
| R204 | ERD10TLJ221U | Chip Carbon, 1/8W 220Ω, ±5% |
| R205 | ERD10TLJ223U | Chip Carbon, 1/8W 22kΩ, ±5% |
| R206 Ⓢ | ERD25TJ153 | Carbon, 1/4W 15kΩ |
| R207 | ERD10TLJ272U | Chip Carbon, 1/8W 2.7kΩ, ±5% |
| R208 | ERD10TLJ181U | Chip Carbon, 1/8W 180Ω, ±5% |
| R210 Ⓢ | ERD25FJ121 | Carbon, 1/4W 120Ω |
| R211 Ⓢ | ERD25FJ122 | Carbon, 1/4W 1.2kΩ |
| R301 Ⓢ | ERD25TJ153 | Carbon, 1/4W 15kΩ |
| R302 Ⓢ | ERD25FJ152 | Carbon, 1/4W 1.5kΩ |
| R303 Ⓢ | ERD25FJ331 | Carbon, 1/4W 330Ω |
| R304 Ⓢ | ERD25FJ682 | Carbon, 1/4W 6.8kΩ |
| R305 Ⓢ | ERD25FJ103 | Carbon, 1/4W, 10kΩ |
| R306 Ⓢ | ERD25FJ331 | Carbon, 1/4W 330Ω |
| R307 Ⓢ | ERD25TJ273 | Carbon, 1/4W 27kΩ |
| R308 Ⓢ | ERD25TJ153 | Carbon, 1/4W 15kΩ |
| R309 Ⓢ | ERD25FJ331 | Carbon, 1/4W 330Ω |
| R310 Ⓢ | ERD25FJ332 | Carbon, 1/4W 3.3kΩ |
| R401 Ⓢ | ERD25FJ561 | Carbon, 1/4W 560Ω |
| R402 Ⓢ | ERD25FJ562 | Carbon, 1/4W 5.6kΩ |
| R403 Ⓢ | ERG1ANJ221 | Metal Film, 1W 220Ω |

## • Terminal guide of transistors, diodes and IC's

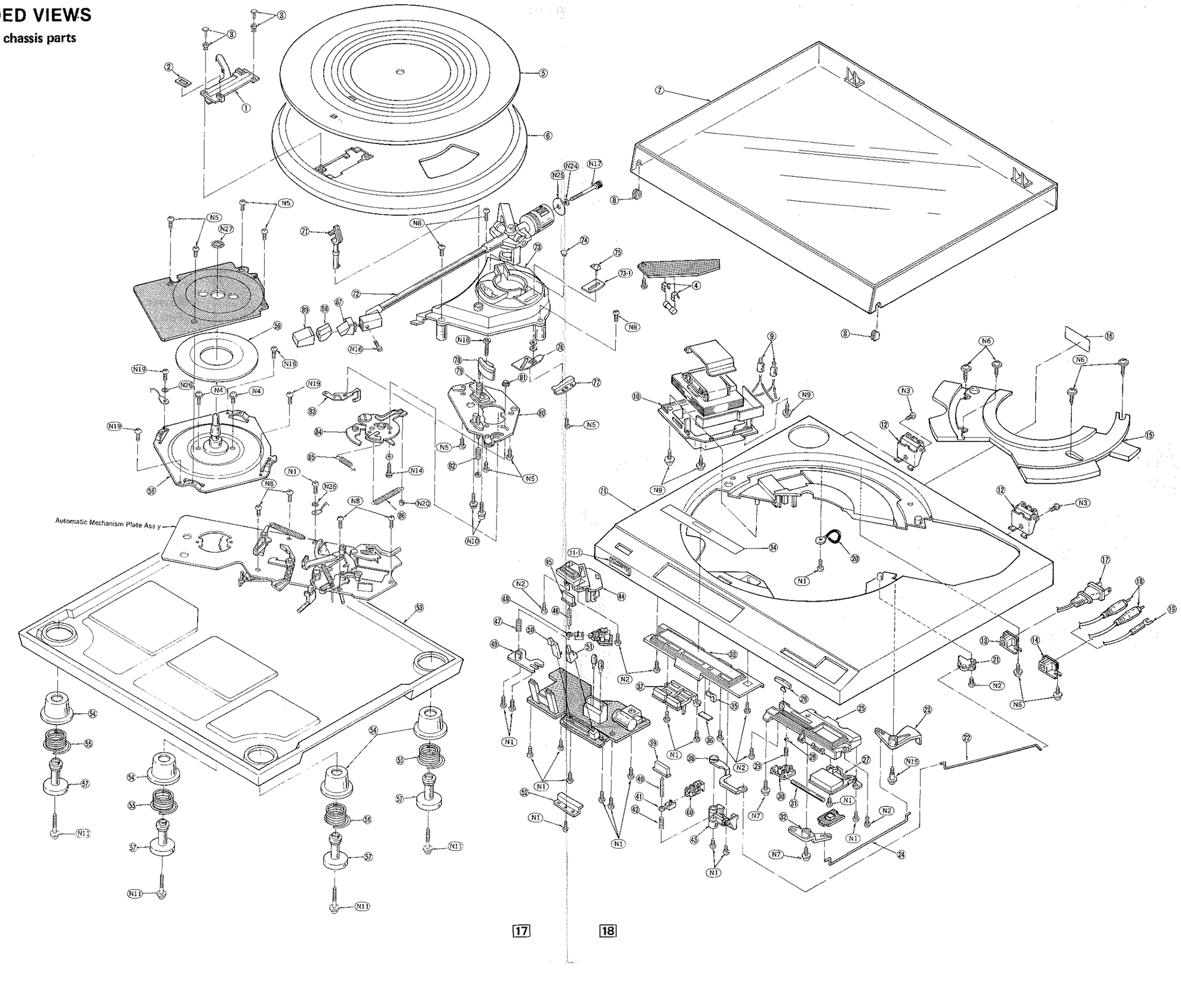


## ■ BLOCK DIAGRAM

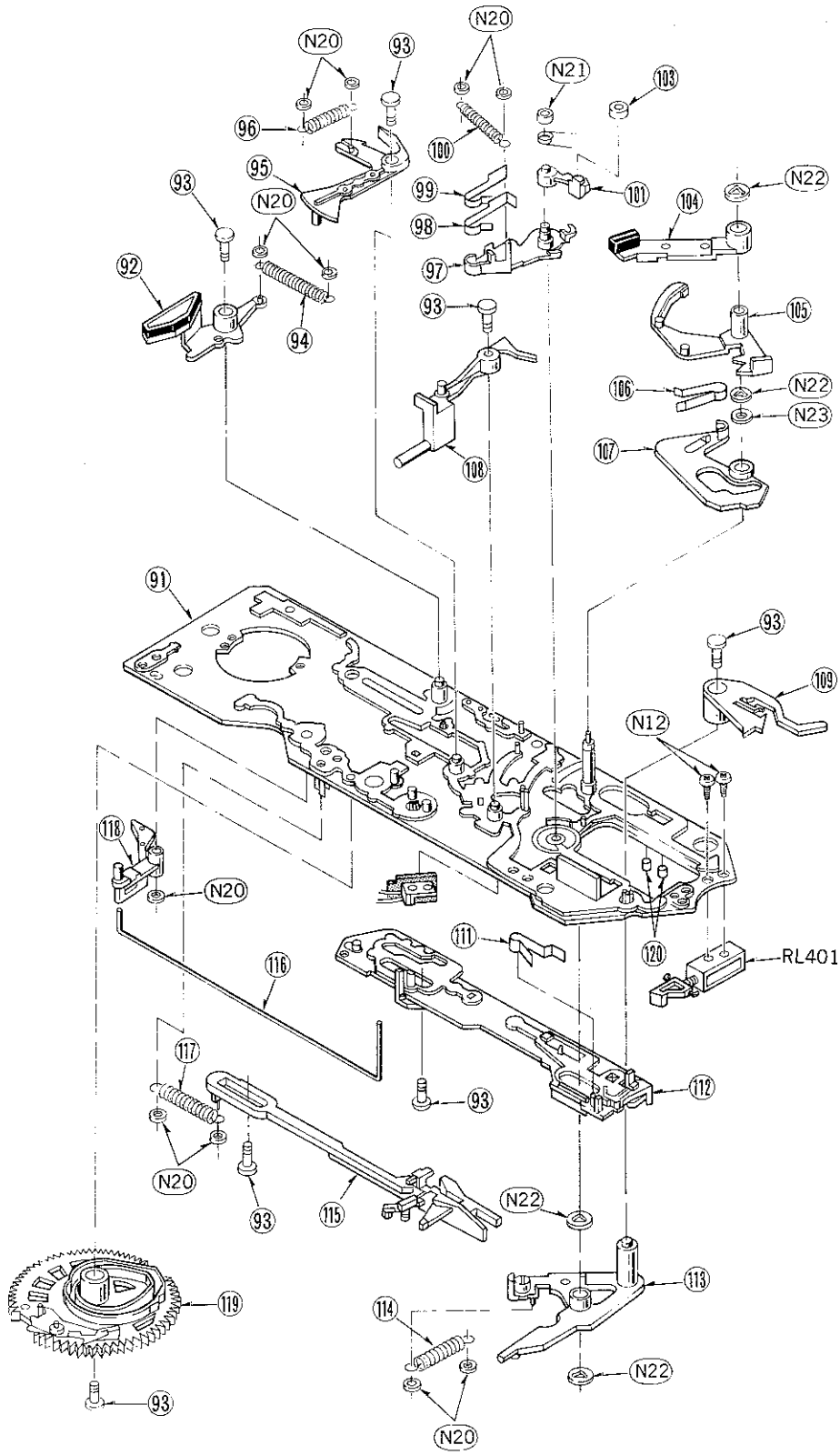


## ■ EXPLODED VIEWS

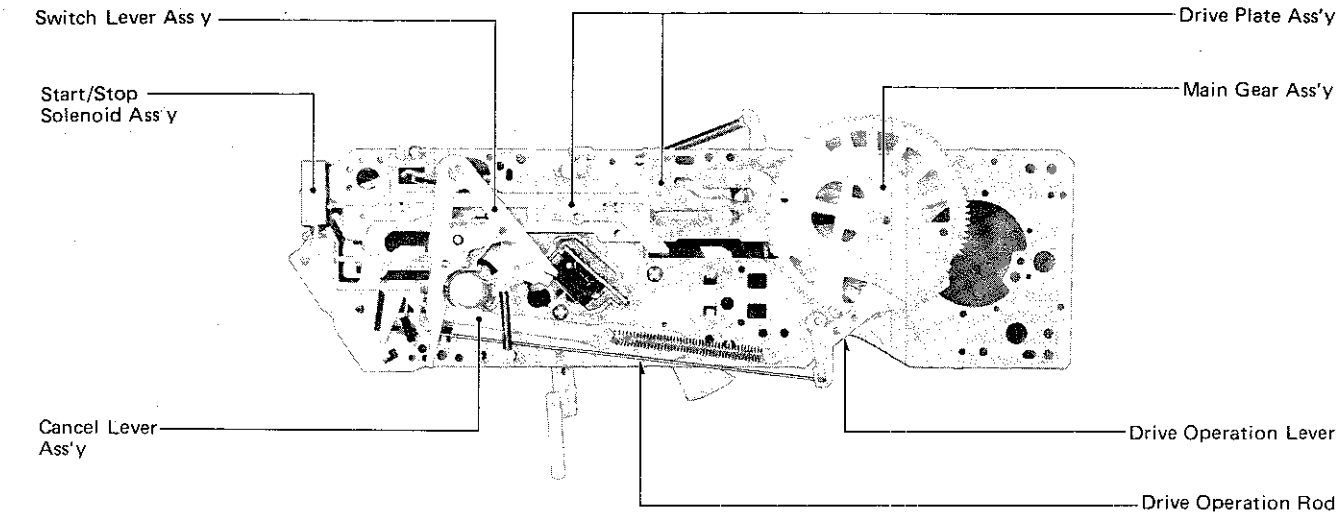
- **Cabinet and chassis parts**

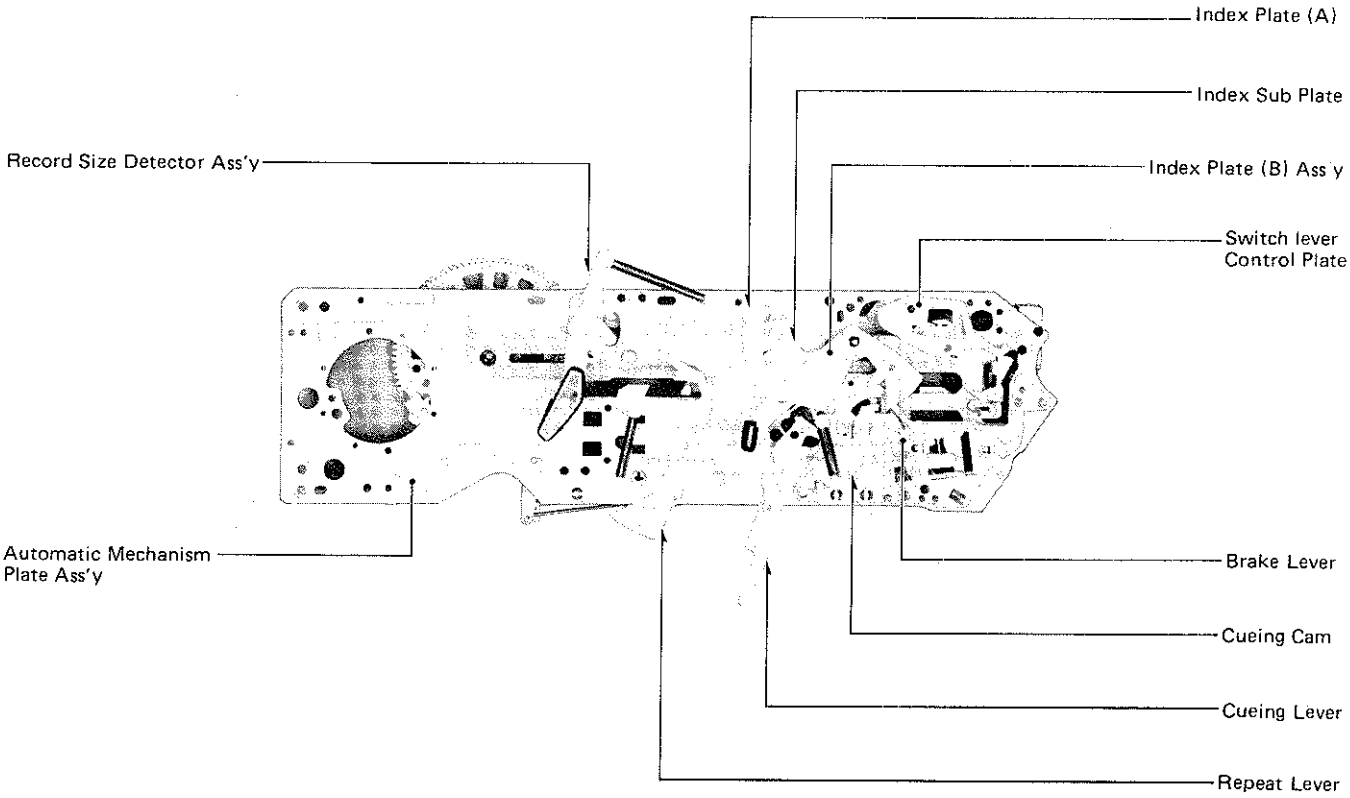


- **Automatic mechanism plate parts**



## • Location of automatic mechanism plate




# ■ REPLACEMENT PARTS LIST (Mechanical 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 ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.
4. The Ⓢ mark is service standard parts and may differ from production parts.
5. Ⓚ-marked parts are used for black only, while ○-marked parts are for silver type only.
6. Parts other than Ⓚ- and ○-marked are used for both black and silver types.
7. The parenthesized numbers in the columns of description stand for the quantity per set.

Black type model No. : SL-QX300(K)

**Areas**

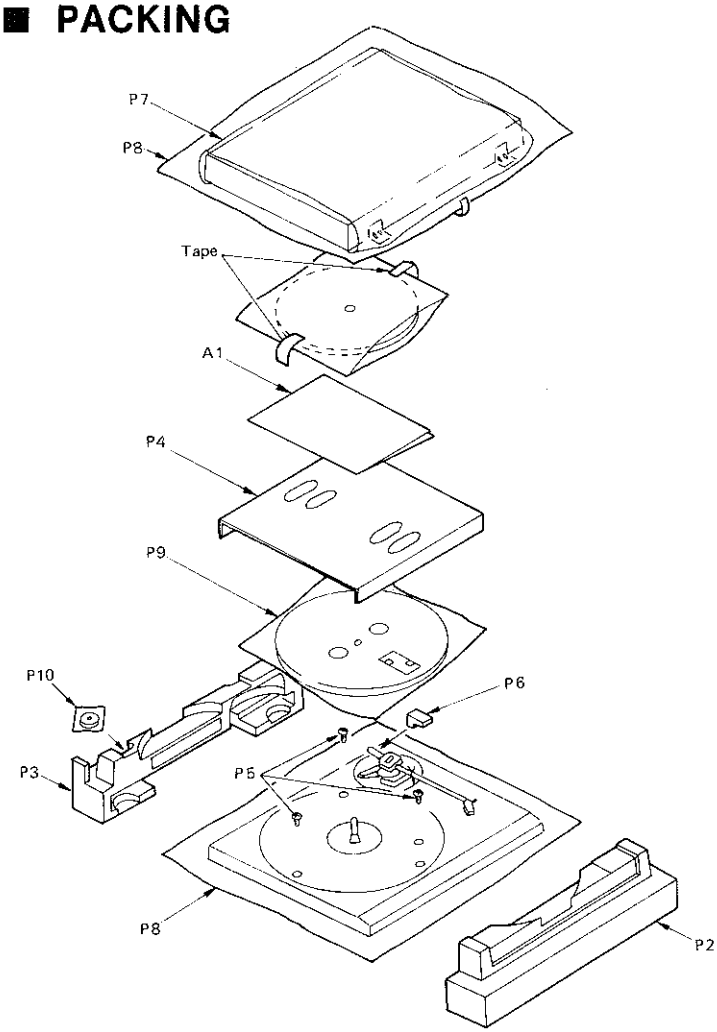
- * [E] is available in Switzerland and Scandinavia
- * [EK] is available in United Kingdom
- * [XL] is available in Australia
- * [EG] is available in F.R. Germany
- * [EB] is available in Belgium
- * [EH] is available in Holland
- * [EF] is available in France.
- * [Ei] is available in Italy.
- * [EC]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

| Ref. No | Part No | Description |
|---|---|---|
| **CABINET AND CHASSIS PARTS** | | |
| 1 | SFUMQ34N01E | Record Size Detector (1) |
| 2 | SFUZQX3M01 | Tape, Record Size Detector (1) |
| 3 | SFUZD33−01E | Latch, Record Size Detector (2) |
| 4 | SJT347 | Holder Fuse (4) |
| 5 | SFTGQ63M01 | Turntable Mat (1) |
| 6 | SFTEQX3M01A | Turntable Platter (1) |
| 7 | SFADZ15R01 | Dust Cover (1) |
| 8 | SFGZZ15R01 | Cushion Rubber Dust Cover (2) |
| 9 | SJE41 | Clamper, AC Cord & Power Transformer (2) |
| 10 | SFUMQX3M15 | Cover, Power Transformer (1) |
| **11** ○ | SFACQX3M01A | Cabinet(Silver) (1) |
| **11** Ⓚ | SFACQX3M21A | Cabinet(Black) (1) |
| 11−1 | SFKBQ63M01 | Badge, Cabinet (1) |
| 12 | SFATQX3M01A | Hinge (2) |
| 13 | SFUMQX34N10 | Bushing AC Cord (1) |
| 14 | SFUMQ34N10 | Bushing, Phono Cord & Ground Wire (1) |
| 15 | SFUMQ3M11 | Panel Cover (1) |
| **16**〔EK〕 | SFNNQX3G02 | Name Plate (1) |
| **16**〔E〕 | SFNNQX3S01 | Name Plate (1) |
| **16**〔XL〕 | SFNNQX3G01 | Name Plate (1) |
| **16**〔XA-XM〕 | SFNNQX3X01 | Name Plate (1) |
| **16** 〔Other Areas〕 | SFNNQX3R01 | Name Plate (1) |
| **17**〔EK〕 ⓈⒶ | SJA139 | AC Cord (1) |
| **17**〔XL〕 ⓈⒶ | SJAG23 | AC Cord (1) |
| **17** 〔Other Areas〕 ⓈⒶ | SJA137 | AC Cord (1) |
| 18 | SFDH212−01 | Phono Output Cord (1) |
| 19 | SFDLQX3M01E | Ground Wire (1) |
| 20 | SXE513 | Clamper (1) |
| 21 | SFUMQX3M13 | Guide, Repeat (1) |
| 22 | SFQSQX3M02 | Rod, Repeat (1) |
| 23 | SFUMQX3M09 | Cam, Cueing Lever (1) |
| 24 | SFQSQX3M01 | Rod, Cueing (1) |
| **25** ○ | SFUMQX3M03 | Base, Cueing (Silver) (1) |
| **25** Ⓚ | SFUMQX3M23 | Base, Cueing (Black) (1) |
| 26 | SFKTQ34N01 | Knob, Cueing (1) |
| 27 | SFKTQX3M02 | Button, Start/Stop (1) |
| 28 | SFYB−5−32 | Ball (1) |
| 29 | SFQA130−11 | Spring (1) |
| 30 | SFUMQX3M08 | Cueing Slider (1) |
| 31 | SFXJQX3M01 | Guide Shaft, Cueing Slider (1) |
| 32 | SFUMQX3M07 | Lever Cueing Rod (1) |
| 33 ○ | SFUMQX3M02 | Base, Size Selector Pich Control & Repeat Knob(Silver) (1) |
| **33** Ⓚ | SFUMQX3M22 | Base, Size Selector Pich Control & Repeat Knob(Black) (1) |
| 34 | SFKKQX3M01 | Surface Plate (1) |
| 35 | SFUMQX3M12 | Cover, LED (Strobe) (1) |
| 36 | SFUPQX3M01 | Reflector (1) |

| Ref. No | Part No | Description |
|---|---|---|
| **CABINET AND CHASSIS PARTS** | | |
| 37 | SFKTQX3M01 | Button, Speed Select (1) |
| 38 | SFUMQ34N05 | Lever Repeat (1) |
| 39 | SFKTQ34N02 | Knob, Repeat (1) |
| 40 | SFXJQ34N02 | Shaft Repeat Knob (1) |
| 41 | SFUMQ34N13 | Connecting Plate, Repeat Switch (1) |
| 42 | SFQAD20−01 | Spring Shaft (1) |
| 43 | SFUMQ34N12 | Holder, Repeat Switch (1) |
| **44** ○ | SFUMQX3M01 | Base, Power Switch Knob (Silver) (1) |
| **44** Ⓚ | SFUMQX3M21 | Base, Power Switch Knob (Black) (1) |
| 45 | SFKTQ34N02 | Knob, Power Switch (1) |
| 46 | SFXJQ34N02 | Shaft, Power Switch Knob (1) |
| 47 | SFQAD20−01 | Spring, shaft (1) |
| 48 | SFUMQ34N13 | Connecting Plate, Power Switch (1) |
| 49 | SFUMQX3M04 | Holder, Power Switch Knob (1) |
| 50 | SFKTQX3M04 | Knob, Pich Control (1) |
| 51 | SFKTQX3M03 | Knob, Lock (1) |
| 52 | SFUMQX3M14 | Shutter Pich Control (1) |
| 53 | SFAUQX3M01 | Bottom Board (1) |
| 54 | SFGAQX3M01 | Rubber Insulator (4) |
| 55 | SFQHQX3M01 | Spring Insulator (3) |
| 56 | SFQHQ34N03 | Spring(Silver) Insulator (1) |
| 57 | SFUMQ34N07E | Audio Insulator (4) |
| 58 | SFMZQ63M53A | Stator Flame Ass'y (1) |
| 59 | SFMGQ34N01 | Cover Stator Coil (1) |
| **60** | SFDSQX3M01E | Switch Ass'y Repeat (1) |
| **TONE ARM PARTS** | | |
| 71 | SFKUB63M01E | Arm Rest (1) |
| **72** ○ | SFPAMQ3201A | Tonearm Ass'y (Silver) (1) |
| **72** Ⓚ | SFPAMQ3205A | Tonearm Ass'y (Black) (1) |
| **73** ○ | SFPCSQ3201E | Cover Tonearm Base(Silver) (1) |
| **73** Ⓚ | SFPCSQ3203E | Cover Tonearm Base(Black) (1) |
| 73−1 | SFPAKQ3201 | Plate, Canceller (1) |
| **74** ○ | SFGK170−01 | Rubber, Cap (Silver) (1) |
| **74** Ⓚ | SFGK171F01 | Rubber, Cap (Black) (1) |
| 75 | SFPABQ3202 | Knob, Canceller (1) |
| 76 | SFPABQ3203 | Plate, Operation (1) |
| 77 | SFPZBQ3202 | Holder, Plate (1) |
| 78 | SFUMZ15R58 | Arm Lift (1) |
| 79 | SFQAZ15R52 | Spring, Arm Lift (1) |
| 80 | SFUPB63M51A | Base, Tonearm (1) |
| 81 | SFPZBQ3201 | Guide Operation Plate (1) |
| 82 | SFQAZ15R51 | Spring, Arm Lift (1) |
| 83 | SFUPQX3M51 | Plate, Operation (1) |
| 84 | SFUPB63M53A | Fixing Plate Ass'y, Tonearm (1) |
| 85 | SFQHQX3M51 | Spring Canceller(1) |
| 86 | SFXWZ15R51 | Spring (1) |
| 87 | EPC−P33 | ★Cartridge (1) |
| 88 | EPS−P33ES | ★Stylus (1) |
| 89 | SFCNC02301 | Cover Stylus (1) |

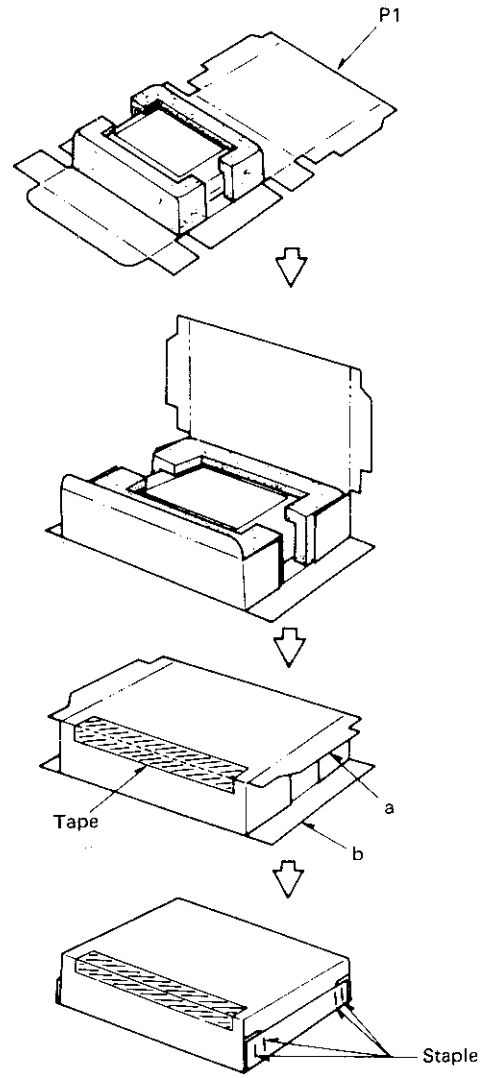
| Ref. No. | Part No. | Description |
|---|---|---|
| **AUTOMATIC MECHANISM PLATE PARTS** | | |
| 91 | SFUKB63M51E | Automatic Mechanism Plate Ass'y (1) |
| 92 | SFUMQ63M51E | Record Size Detector Ass'y (1) |
| 93 | SFUMZ15R56 | Pins (6) |
| 94 | SFQHB63M53 | Spring, Record Size Detector Ass'y (1) |
| 95 | SFUMB63M58 | Lever, Repeat (1) |
| 96 | SFQHB63M54 | Spring Repeat Lever (1) |
| 97 | SFUMB63M60 | Cam, Cueing (1) |
| 98 | SFQPB63M52 | Spring Cueing Cam (1) |
| 99 | SFQPB63M54 | Spring Cueing Cam (1) |
| 100 | SFQHB63M55 | Spring Cueing Cam (1) |
| 101 | SFUMB63M61 | Lever, Brake (1) |
| 102 | SFQSB63M52 | Spring Brake Lever (1) |
| 103 | SFUZB63M52 | Felt Brake Lever (1) |
| 104 | SFUMB63M64E | Plate(B) Ass'y Index (1) |
| 105 | SFUMB63M63 | Plate(A), Index (1) |
| 106 | SFQPB63M53 | Spring Index Sub Plate (1) |
| 107 | SFUMB63M62 | Sub Plate, Index (1) |
| 108 | SFUMB63M59 | Lever, Cueing (1) |
| 109 | SFUMB63M65 | Control Plate Switch Lever (1) |
| 111 | SFQPB63M51 | Spring (1) |
| 112 | SFUBB63M51E | Plate Ass'y Drive (1) |
| 113 | SFUMB63M55E | Lever Ass'y Switch (1) |
| 114 | SFQHB63M52 | Spring Switch Lever (1) |
| 115 | SFUMQX3M54E | Lever Ass'y Cancel (1) |
| 116 | SFQSB63M51 | Rod, Drive Operation (1) |
| 117 | SFQHQ62M51 | Spring Cancel Lever (1) |
| 118 | SFUMB63M54 | Lever, Drive Operation (1) |
| 119 | SFUGB63M51E | Main Gear Ass'y (1) |
| 120 | SFUZQX3M02 | Holder Lead Wires (2) |
| **SCREWS and WASHERS** | | |
| N1 Ⓢ | XTV3+8BFN | Screw (16) |
| N2 | XTW3+8E | Screw (8) |
| N3 | XTV3+8JFZ | Screw (2) |
| N4 | XTV3+8JFYR | Screw (6) |
| N5 Ⓢ | XTV3+6BFN | Screw (8) |
| N6 | XTW3+10TFYR | Screw (6) |
| N7 | XTW3+10Q | Screw (2) |
| N8 Ⓢ | XTV3+10BFN | Screw (7) |
| N9 | XTW3+10TFZ | Screw (3) |
| N10 | XYN3+F12S | Screw (2) |
| N11 | XTW4+30TFYR | Screw (4) |
| N12 | XYN2+C4FZ | Screw (2) |
| N13 | XTS3+16FFZ | Screw (1) |
| N14 | SFXGQ34N02 | Screw (1) |
| N15 | SFXGQ20−01 | Screw (1) |
| N16 | SFPEV0P301 | Screw (1) |
| N17 | SFPEVQ3201 | Screw (1) |
| N18 | SFXJQX3M01 | Screw (1) |
| N19 | XTV3+10JFYR | Screw (4) |
| N20 | SFXWZ15R51 | Washer (13) |
| N21 | SFUMZ15R61 | Washer (1) |
| N22 | SFXWB63M52 | Washer (1) |
| N23 | SFXWB63M53 | Washer (1) |
| N24 | SFPEWQ3202 | Washer (1) |
| N25 | SFPEWQ3201 | Washer (1) |
| N26 Ⓢ | XWC3B | Washer (2) |

## ■ PACKING

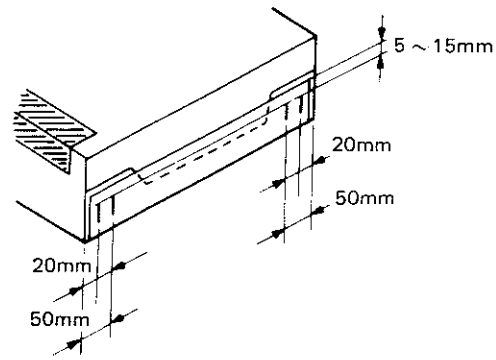



| Ref No. | Part No | Description |
|---|---|---|
| **ACCESSORIES** | | |
| A1 (EK) | SFNUQX3G01 | Instruction Book (1) |
| A1 (XL XA XM) | SFNUQX3X01 | Instruction Book (1) |
| A1 (EG) | SFNUQX3R01 | Instruction Book (1) |
| A1 (EF) | SFNUQX3F01 | Instruction Book (1) |
| A1 (EI) | SFNUQX3I01 | Instruction Book (1) |
| A1 (Other Areas) | SFNUQX3S01 | Instruction Book (1) |
| A2 | SFWE212—01 | Adaptor 45 r p. m (1) |
| A3 (XA XM) ⚠ | SFDKI19118 | 2p Plug (1) |
| **PACKING PARTS** | | |
| P1 (EF) ○ | SFHPQX3C01 | Carton Box (Silver) (1) |
| P1 (Other Areas) ○ | SFHPQX3M01 | Carton Box (Silver) (1) |
| P1 (EF) Ⓚ | SFHPQX3C21 | Carton Box (Black) (1) |
| P1 (Other Areas) Ⓚ | SFHPQX3M21 | Carton Box (Black) (1) |
| P2 | SFHHQX3M01 | Pad, Front (1) |
| P3 | SFHHQX3M02 | Pad, Rear (1) |
| P4 | SFHDQ34N01 | Pad, Turntable Platter (1) |
| P5 | SFXGQX3M01 | Screw, Clamp (3) |
| P6 | SFHZQX3M01 | Pad, Tonearm (1) |
| P7 | SFHZD03M01 | Sheet Dust Cover (1) |
| P8 | SFYH60×60 | Polyethylene Bag, Unit & Dust Cover (2) |
| P9 | SFYH40×45 | Polyethylene Bag Turntable Platter (1) |
| P10 | SFYF09A15 | Polyethylene Bag, 45 r p. m. Adaptor (1) |

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




* Stapling positions are shown below



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