

# Service Manual

**QUARTZ** Direct Drive  
Automatic Turntable System



Turntable System

## SL-QD33

SL-QD33

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] . . . . Asia, Latin America, Middle near East, Africa and Oceania.

**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:** Quartz direct drive  
Automatic turntable  
Auto-start  
Auto-return  
Auto-stop  
Repeat play  
Manual play

**Drive method:** Direct drive

**Motor:** Brushless-DC motor

**Drive control method:** Quartz phase locked 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:** 0.012% WRMS\*  
0.025% WRMS (JIS C5521)  
±0.035% Weighted zero to 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 DIN-A  
(IEC 98A unweighted)  
-78 dB DIN-B  
(IEC 98A weighted)

### ■ TONEARM SECTION

**Type:** Static-balanced straight tonearm  
Plug-in-connector cartridge  
system

**Effective length:** 230 mm (9-1/16")

**Overhang:** 15 mm (19/32")

**Tracking error angle:** Within 2°32' at outer groove of  
30 cm (12") record  
Within 0°32' at inner groove of  
30 cm (12") record

**Effective mass:** 13.5 g (including cartridge)

**Stylus pressure  
adjustment range:** 1.25±0.25 g

**Applicable cartridge  
weight:** 6 g

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

**Type:** Moving magnet stereo cartridge

**Magnet circuit:** All laminated core

**Frequency response:** 10 Hz~40 kHz

**Output voltage:** 2.5 mV at 1 kHz, 5 cm/s zero to  
peak lateral velocity  
(7 mV at 1 kHz, 10 cm/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):** 12×10<sup>-6</sup>cm/dyne at 100 Hz

**Stylus pressure range:** 1.25±0.25 g (12.5±2.5 mN)

**Weight:** 6 g (cartridge only)

**Replacement stylus:** EPS-30ES

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:** 8 W

**Dimensions (W×H×D):** 430×100×375 mm  
(16-15/16"×3-15/16"×14-3/4")  
When dust cover is open  
430×370×410 mm  
(16-15/16"×14-9/16"×16-1/8")

**Weight:** 4.5 kg (9.9 lb)

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

### ■ GENERAL

**Power supply:** For U.S.A. and Canada  
AC 120V, 60 Hz

## ■ CONTENTS

	Page		Page
SAFETY PRECAUTION . . . . .	2	CIRCUIT BOARD AND WIRING	
LOCATION OF CONTROLS . . . . .	3	CONNECTION DIAGRAM . . . . .	17
CONNECTIONS . . . . .	3	SCHEMATIC DIAGRAM . . . . .	19
DISASSEMBLY INSTRUCTIONS . . . . .	4	TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES . . . . .	22
MEASUREMENTS AND ADJUSTMENTS . . . . .	6	REPLACEMENT PARTS LIST . . . . .	23
TECHNICAL GUIDE . . . . .	8	EXPLODED VIEW . . . . .	25
DESCRIPTION OF IC301 (SVILC6526CPA) TERMINALS . . . . .	14		
BLOCK DIAGRAM . . . . .	15		

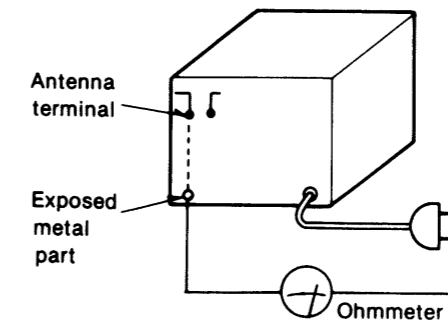
## ■ SAFETY PRECAUTION (This "safety precaution" is applied only in U.S.A.)

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

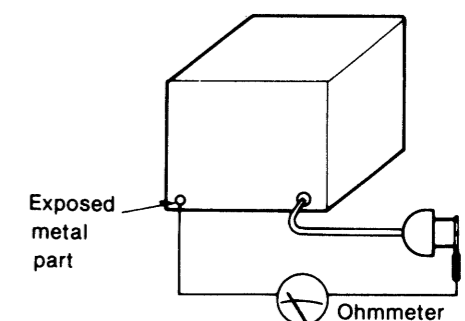
1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads, antenna, control shafts, handle brackets, etc. Equipment with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

# Technics

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

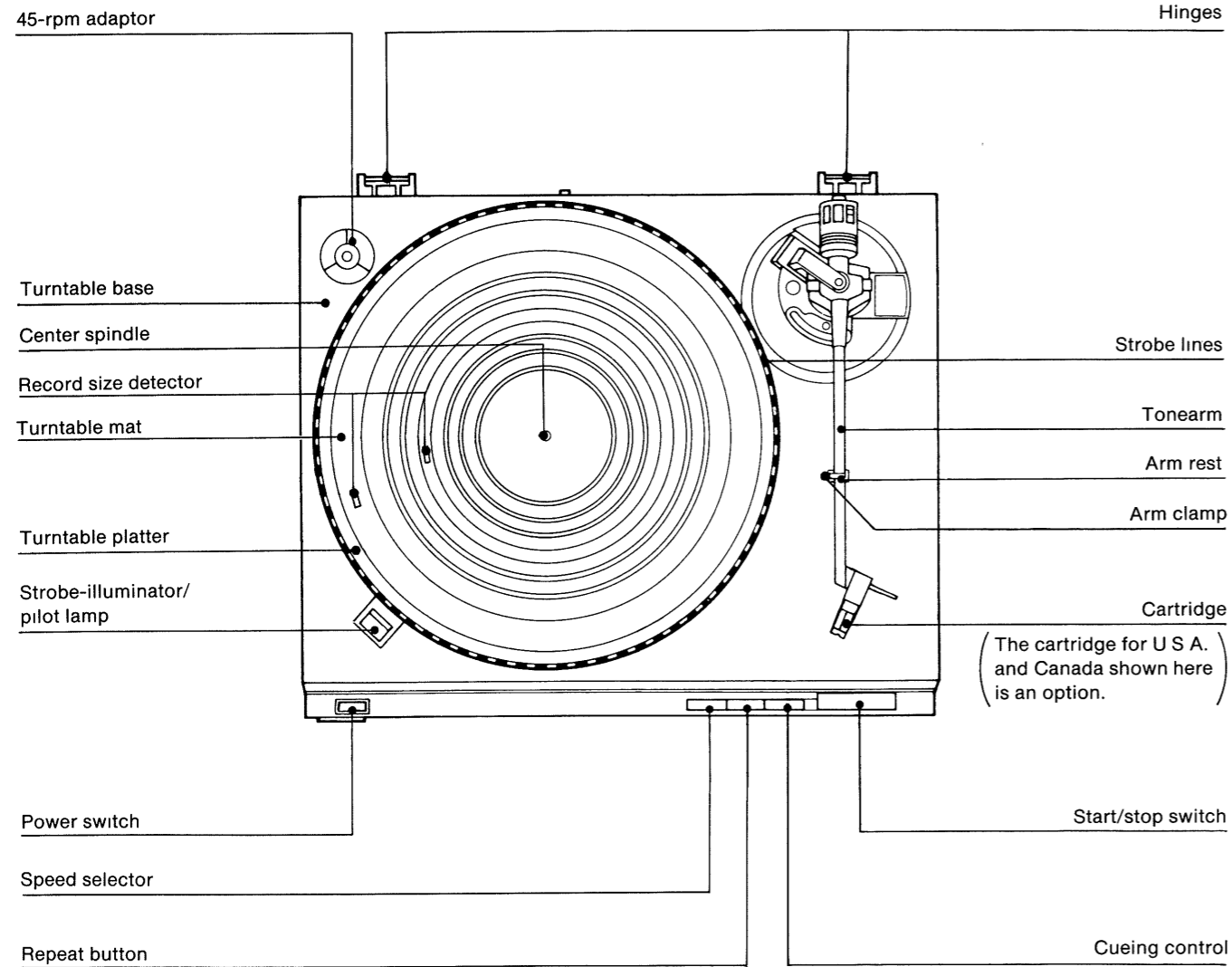
Panasonic Sales Company,  
Division of Matsushita Electric  
of Puerto Rico, Inc.  
Ave. 65 De Infanteria, KM 9.7  
Victoria Industrial Park  
Carolina, Puerto Rico 00630

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

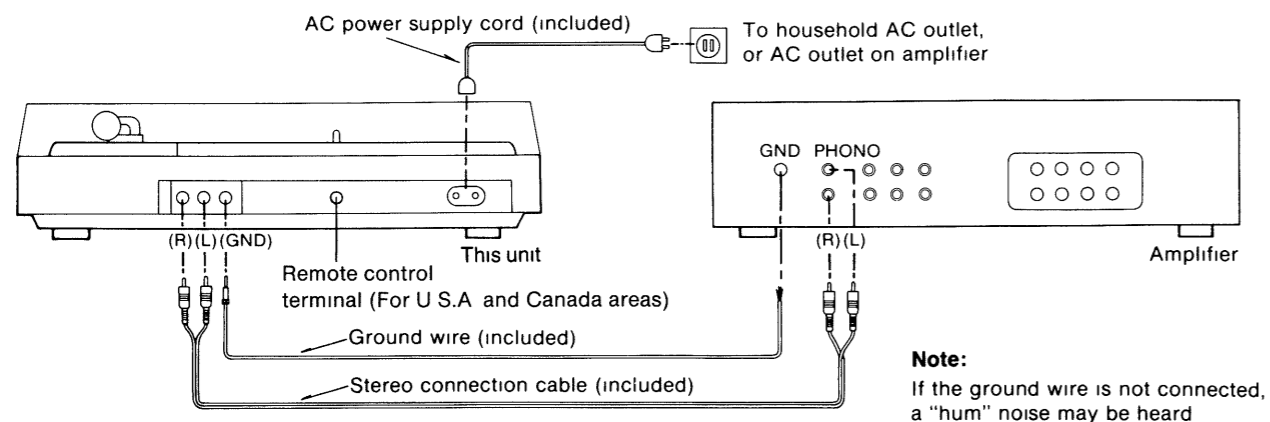
Matsushita Electric  
of Canada Limited  
5770 Ambler Drive, Mississauga,  
Ontario, L4W 2T3

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

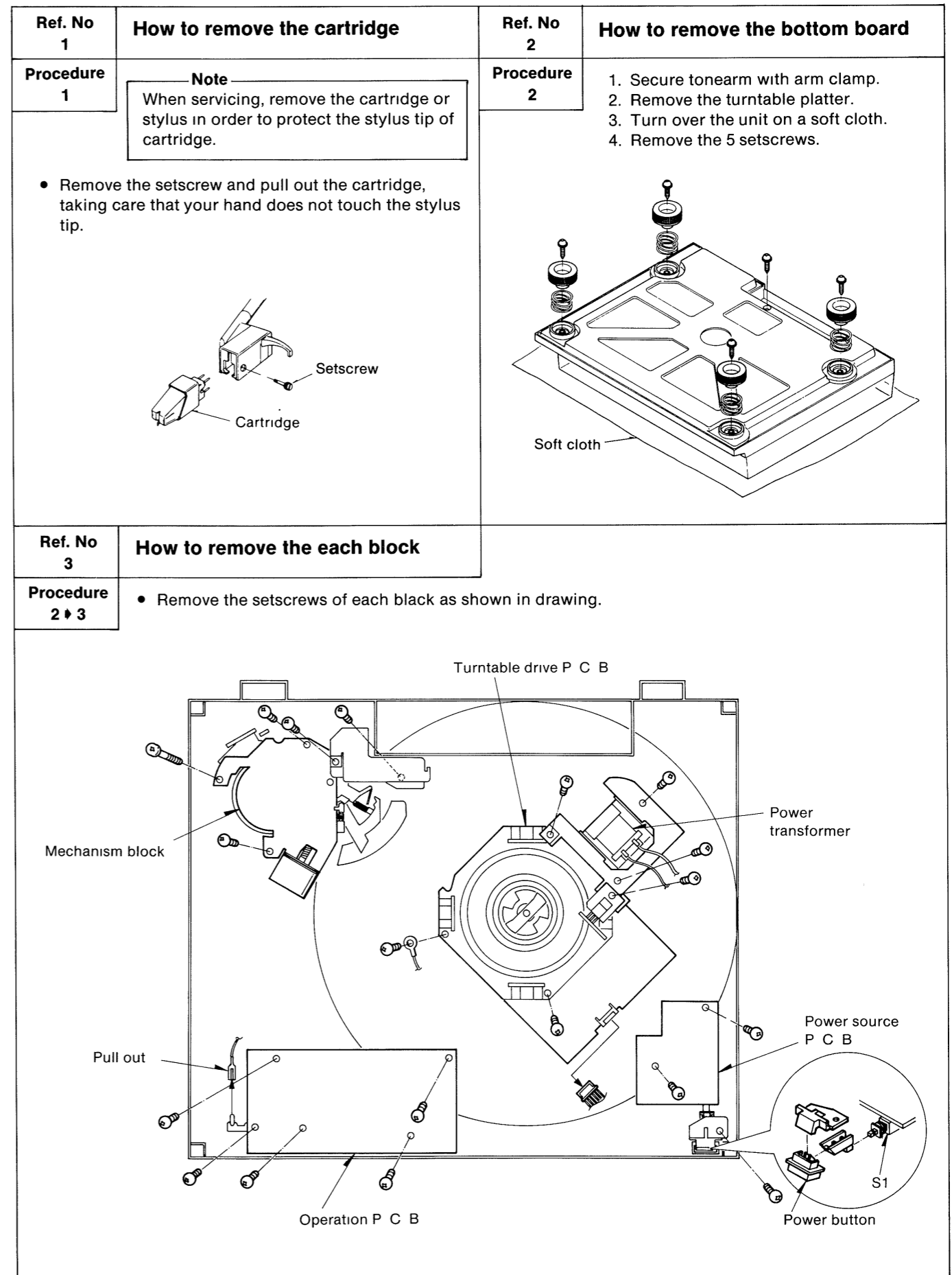
## LOCATION OF CONTROLS

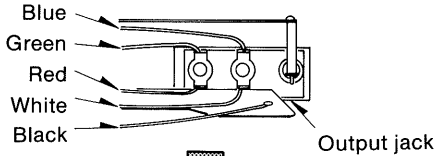
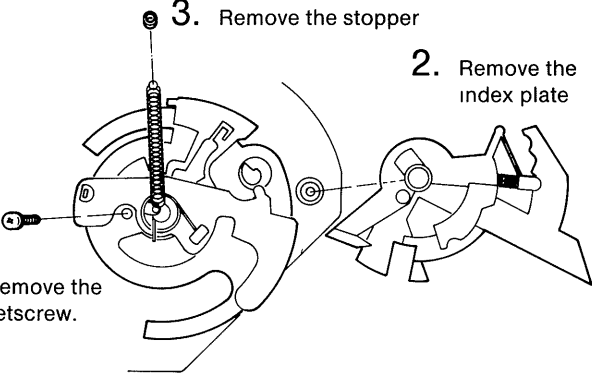
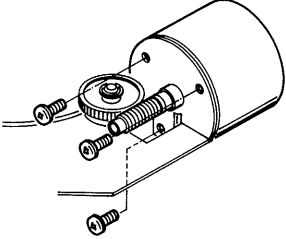
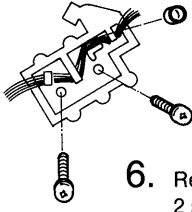
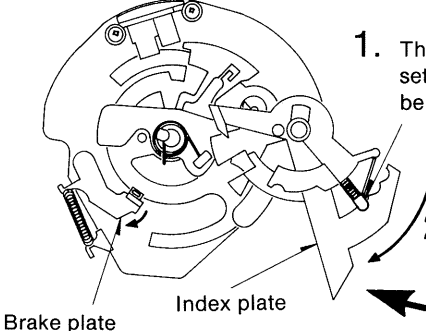
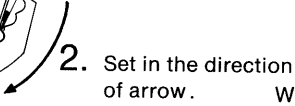
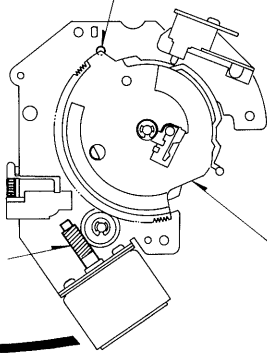
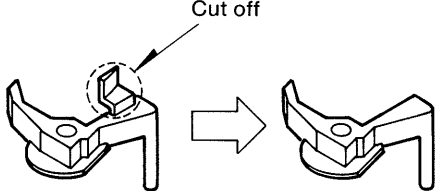


## CONNECTIONS



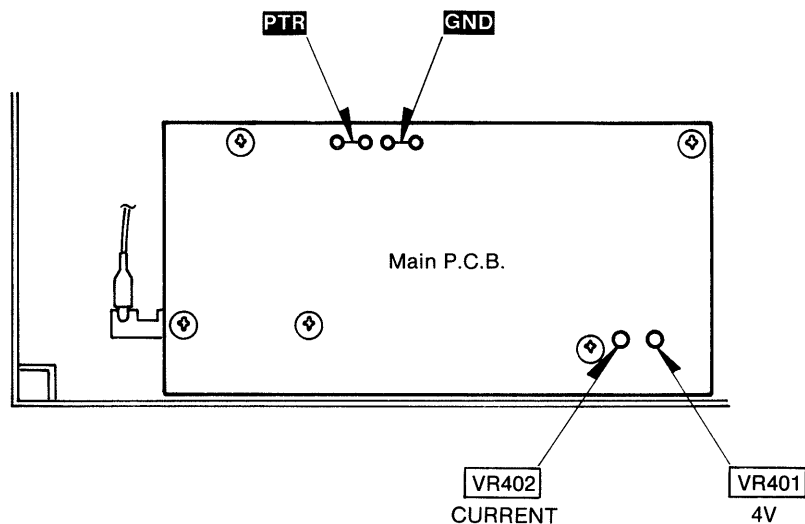
## DISASSEMBLY INSTRUCTIONS



Ref. No 4	How to remove the tonearm	Ref. No 5	How to remove the motor
Procedure 3 ▶ 4	1 Remove the mechanism block. 2. Remove in the numerical order shown	Procedure 3 ▶ 5	<ul style="list-style-type: none"> <li>Remove the 3 setscrews.</li> </ul>
<p>1. Unsolder the 5 lead wires.</p>  <p>Blue Green Red White Black</p> <p>Output jack</p> <p>3. Remove the stopper</p> <p>2. Remove the index plate</p> <p>4. Remove the setscrew.</p> 		 <p>5. Remove the lead holder.</p> <p>6. Remove the 2 setscrews.</p> 	
Ref. No 6	<b>How to fit the mechanism board</b>		
Procedure 6	1. Secure tonearm with arm clamp. 2. Fit in the numerical order.		
<p>1. The index plate should be set in the position shown below.</p>  <p>Brake plate Index plate</p> <p>2. Set in the direction of arrow.</p>  <p>Worm gear Main gear</p> <p>4. Secure it with 3 setscrews.</p>		<p>3. Turn the worm gear to shift the main gear to the position shown below.            ( Set the center of the hole in the board to the position of main gear. )</p> 	
<p><b>Note:</b> In this condition, tonearm is in the state of "cueing up", but it will be shifted to "cueing down" when power switch is turned "on" after assembly.            It can be installed in the initial state, but in that case the brake plate touches the main gear. Therefore, pull the brake plate when installing</p>			
<ul style="list-style-type: none"> <li><b>Movable piece cutting</b></li> </ul>			
<p>When using the movable piece for this unit, cut off the part as shown by using nippers</p>			
 <p>Cut off</p>			

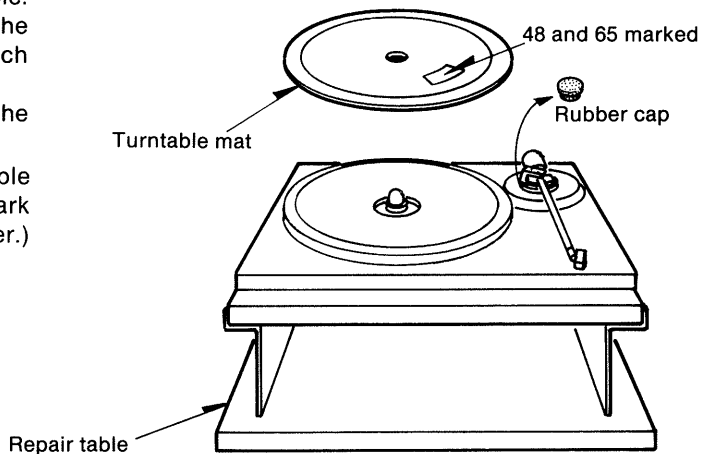
# MEASUREMENTS AND ADJUSTMENTS

## ADJUSTMENT POINTS



### STATE OF SET

1. Remove the bottom plate and put it on the repair table.
2. Make sure that the tonearm is free (cueing down) in the rest position. (If it is not free, turn on the power switch and wait until the tonearm is free.)
3. Set the stylus cover on the cartridge, and remove the rubber cap of arm base.
4. Turn over the turntable mat and put it on the turntable platter. (The turntable mat is provided with match mark at the position R65 mm and R48 mm from the center.)



### PROCEDURE BEFORE ADJUSTMENT

The microcomputer used in this unit has a function to select normal and adjustment modes. There are **Test 1** and **Test 2** for the adjustment mode. So, check the mode before making the adjustment.

#### How to select the adjustment mode

##### 1. Test mode 1

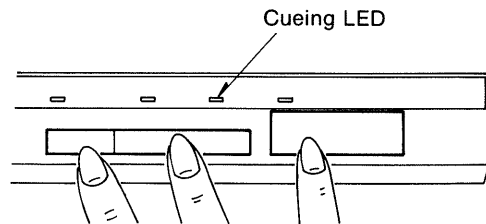
Before turning **on** the power switch, make sure that the tonearm is free in the rest position, and set all the 4 operation keys to **on** (pressing all the keys with fingers). Subsequently, turn **on** the power switch. (**In the test mode, the turntable will not rotate even when the tonearm is moved inwards.**)

##### 2. Test mode 2

Press the Stop key once in the state of Test mode 1.

##### 3. Normal mode

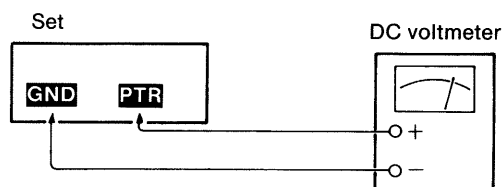
Press the Stop key once in the state of Test mode 2



## CURRENT ADJUSTMENT

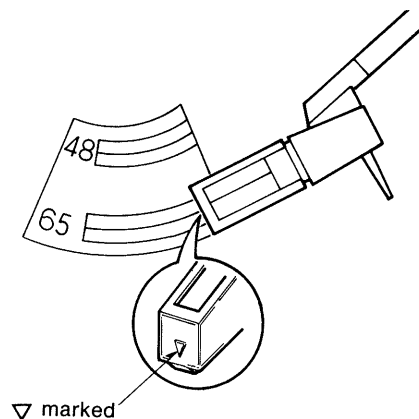
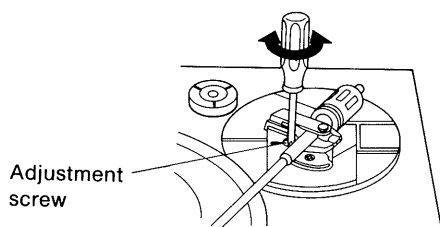
1. Set the microcomputer to **Test mode 1**.
2. Connect DC voltmeter to **PTR** (+) and **GND** (-) of P.C.B.
3. Move the tonearm to the position where the reading of DC voltmeter is **8V±0.005V**.
4. Adjust **VR402** so that cueing LED lights up.
5. After the LED lights up, be sure to turn off the power switch.

(Be sure to turn off the power switch before the next adjustment.)



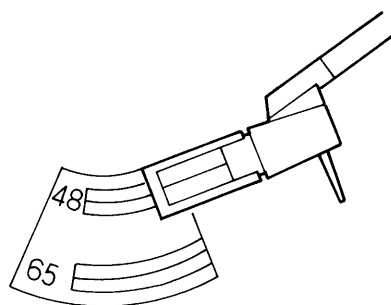
## 8V ADJUSTMENT

1. Set the microcomputer to **Test mode 1**.
2. Manually fix the stylus cover in the **65** position of turntable mat, matching the marks (▽).
3. Turn the **shutter plate adjusting screw** in the adjusting hole of the arm base so that the **cueing LED lights up**.



## 4V ADJUSTMENT

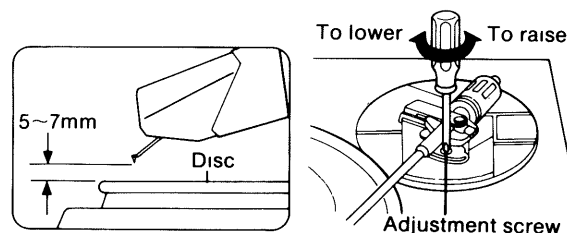
1. Press the Start/Stop key or Stop key and shift the mode to **Test 2** (In SL-QD33, Repeat LED lights up.)
2. Manually fix the stylus cover in the **48** position of turntable mat, matching the marks (▽).
3. Turn **VR401** so that the **cueing LED lights up**.
4. Return the tonearm to the rest position and press the Start/Stop or Stop key, then the mode is reset to the normal mode.



## ADJUSTMENT OF THE STYLUS-TO-DISC CLEARANCE

Make this adjustment if the cartridge is replaced, or at any other time an adjustment is necessary because of the length of the stylus being used. (This adjustment is usually unnecessary.)

1. Set the cueing control to "▽".
2. Move the tonearm to a position above the disc.
3. Adjust the stylus tip position.



## 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.
3. Turn the screw with a screwdriver, clockwise or counterclockwise as necessary.

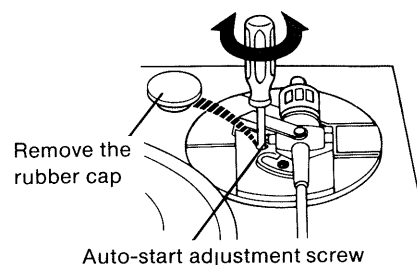
If the stylus tip sets down too far in the recorded groove,

—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



## TECHNICAL GUIDE

Unlike the conventional mechanism, the automatic operation mechanism of this unit has been improved in performance employing a new mechanism with microcomputer and motor for automatic operation and an optical end detection system.

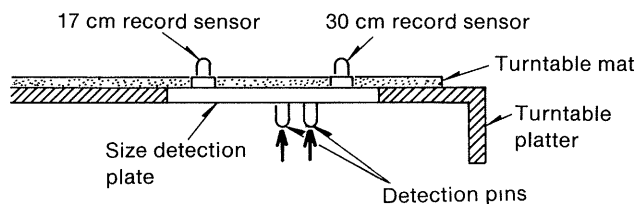
### Description of Mechanism

#### 1. Record size detection

The presence of record and its sizes 17 cm and 30 cm are detected by the size detection plate of the turntable platter and the index plate attached to the main body.

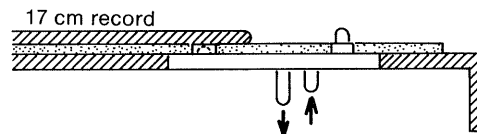
##### a) State of no record

Both of the 2 sensors are free and the detection pins are up.



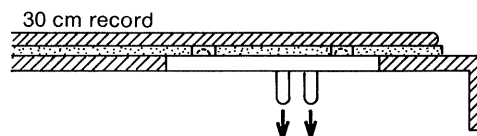
##### b) 17 cm record

The 17 cm record sensor is pressed by the record, and the inside detection pin is shifted down

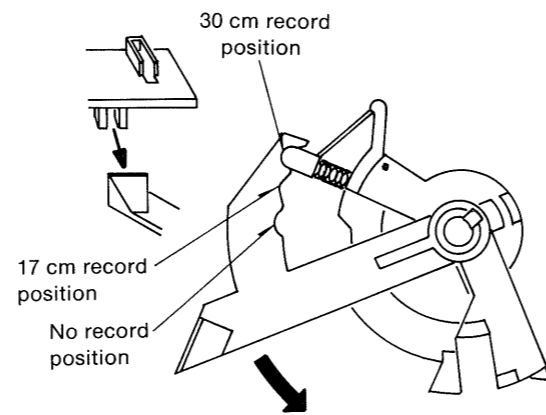
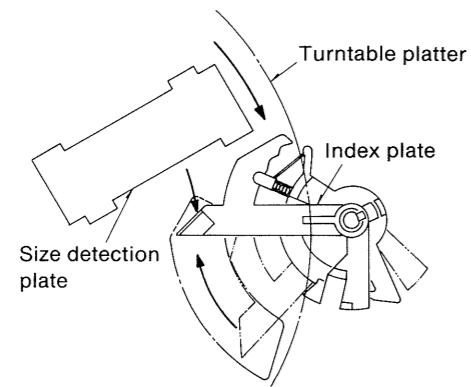


##### c) 30 cm record

Both of the 2 sensors are pressed, and the 2 detection pins are down.

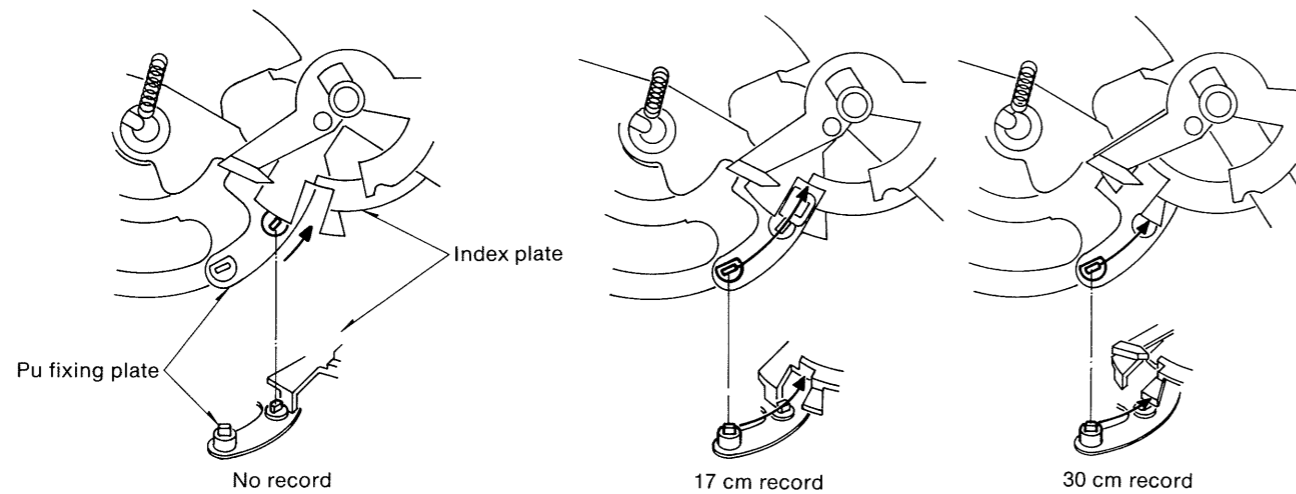


As the turntable platter starts rotating, the index plate is shifted from the initial position (broken line) to the solid line position by the arm mechanism. Since the detection pin of the turntable platter is as mentioned above, the detection pin does not touch the index plate. When 17 cm record is present, the inside detection pin touches the index plate thereby setting the index plate to the position of 17 cm record. When 30 cm record is present, both of the inside and outside detection pins come in touch with the index plate thereby setting the index plate to the position of 30 cm record.



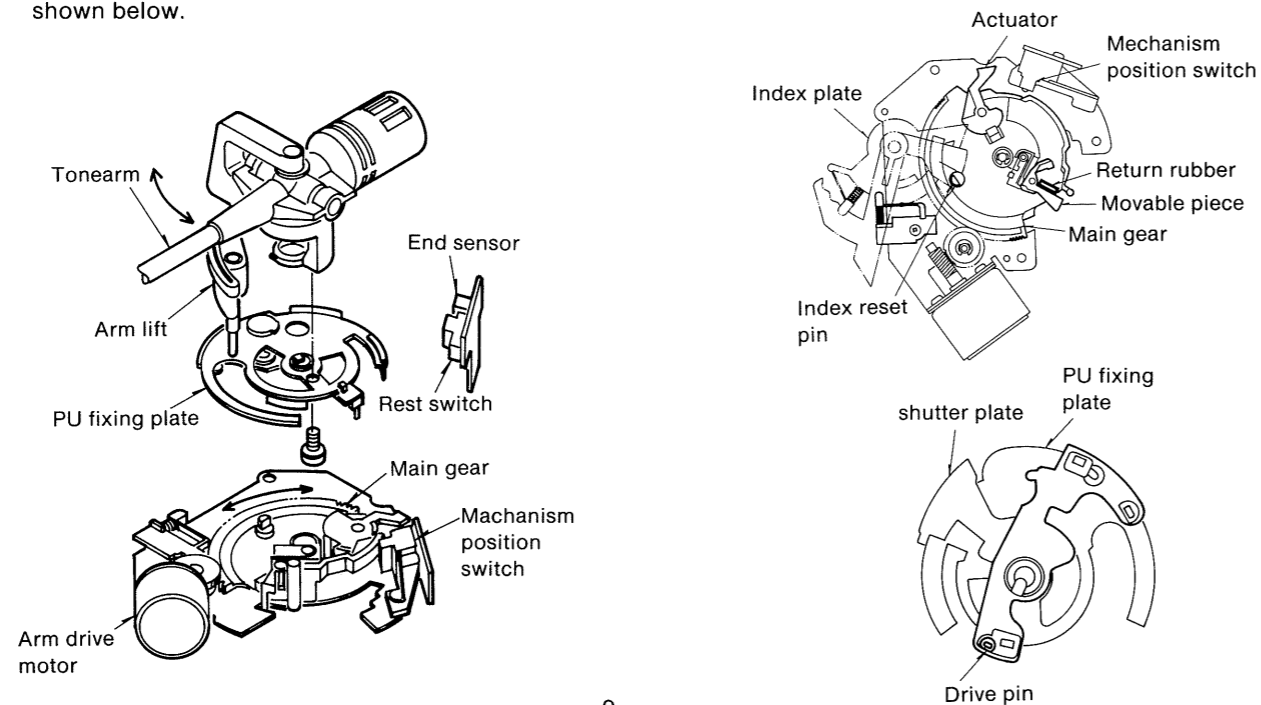
## 2. Drop position setting

When the index plate is set with the record size detected, the tonearm drop position at auto start is determined. The PU fixing plate moves in auto start but its movement is limited as the drop position setting pin of PU fixing plate touches the index plate to set the drop position. The position then set is the tonearm drop position.



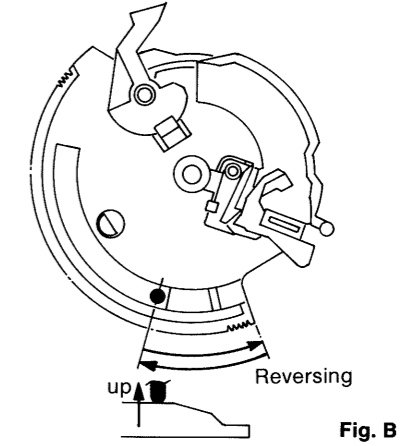
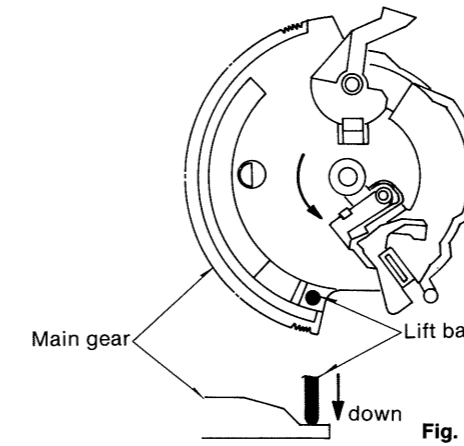
## 3. Mechanism of tonearm operation

The main gear is rotated by DC motor to perform cueing up/down, tonearm lead-in and return operations. Also, UP switch and DOWN switch are provided for the detection of mechanism operating position, and Rest switch, for the detection of tonearm rest position. The arm driving mechanism structure and the names of component parts are shown below.



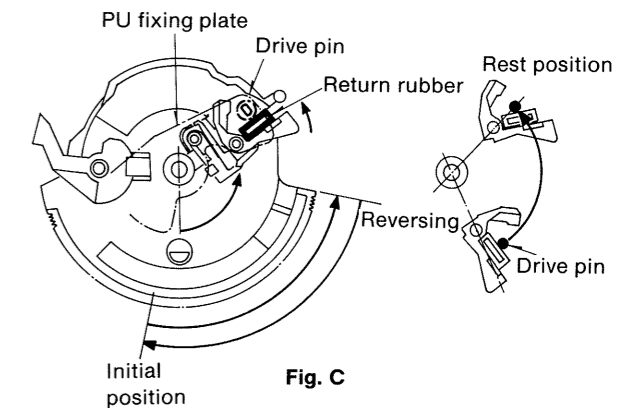
## a) Cueing operation

The lift rod is initially in the position of main gear (Fig. A) when cueing mode is "down". With the cueing key pressed, the motor rotates according to the command from the microcomputer to turn the main gear to the position of Fig. B. The main gear rotation causes the cueing mode to be shifted from "down" to "up". When the cueing key is pressed again, the motor reversely rotates according to the reversing command from the microcomputer, then the main gear returns to the initial position of Fig. A.



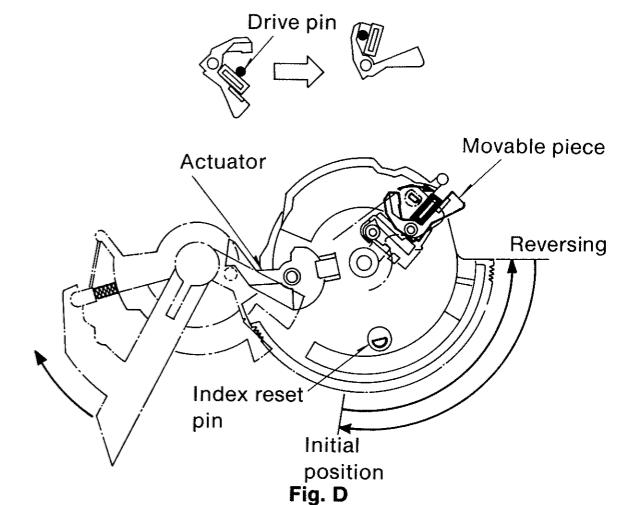
## b) Stop operation

During play mode, the main gear is in the initial position (Fig. A). With the stop key pressed, the motor rotates according to the command from the microcomputer to turn the main gear to the position of Fig. C. The rotation of main gear causes the cueing mode to be shifted to "up", and subsequently the return rubber pushes the drive pin of PU fixing plate to move the tonearm to the rest position. When the above operations have been completed, the motor reversely rotates according to the reversing command from the microcomputer, and the main gear returns to the initial position of Fig. A.

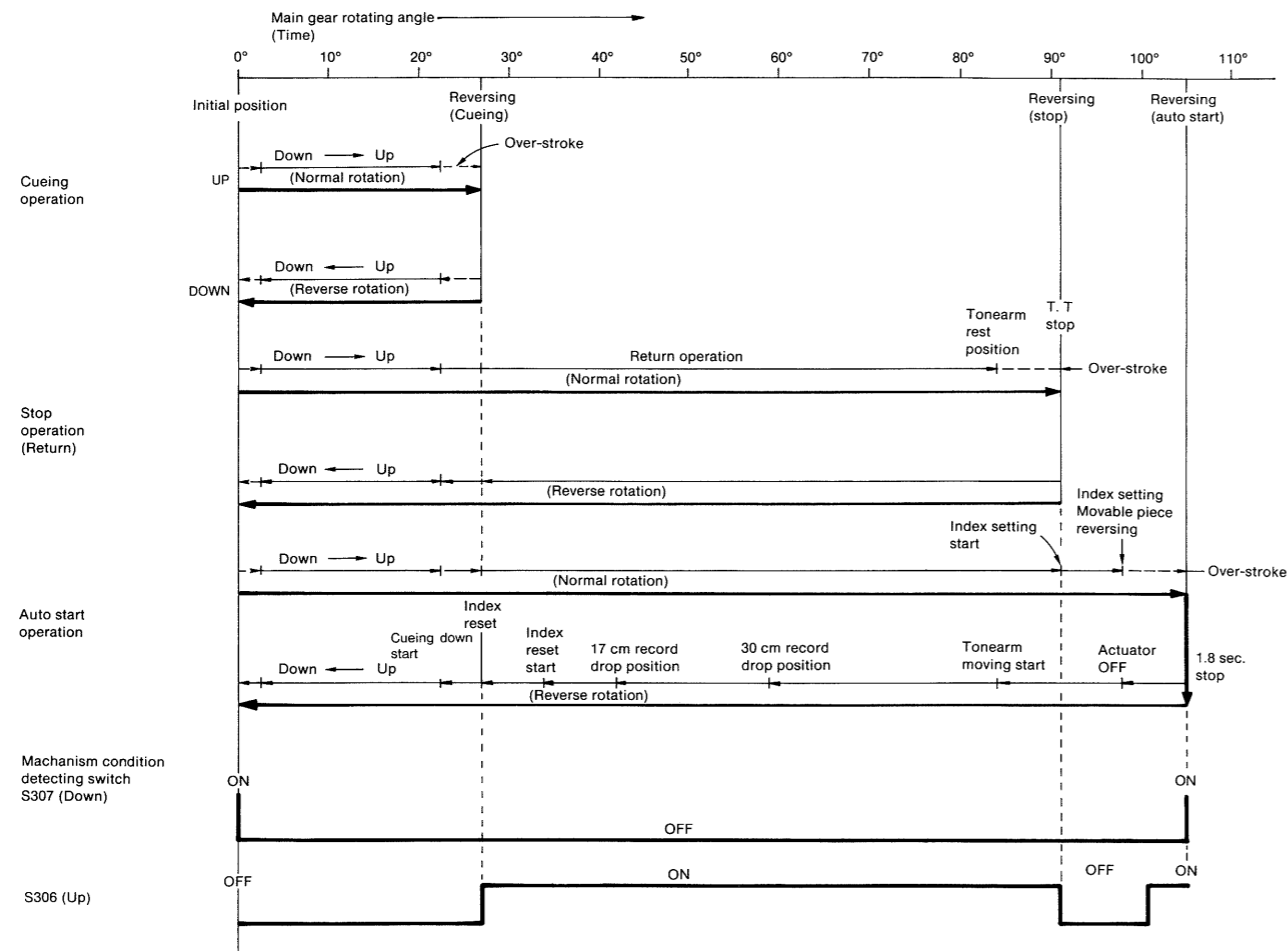


## c) Auto start operation

When the start key is pressed, the motor rotates according to the command from the microcomputer to turn the main gear to the position of Fig. D. The rotation of main gear causes the cueing mode to be shifted to "up", then the mechanism is set so that the pin of movable piece touches the mechanism board to catch the drive pin of PU fixing plate located in the rest position. Also, it is set so that the record size can be detected by the index plate with the actuator of main gear. With the above operations completed, the motor reversely rotates according to the reversing command from the microcomputer to return the main gear to the initial position of Fig. A. In that case, the PU fixing plate moves along with main gear because the drive pin is set on the movable piece, while tonearm is moved inside, but with the record size detected, the drive pin is released from the movable piece at the record drop position since the index plate is set in place.



#### 4. Auto mechanism timing chart

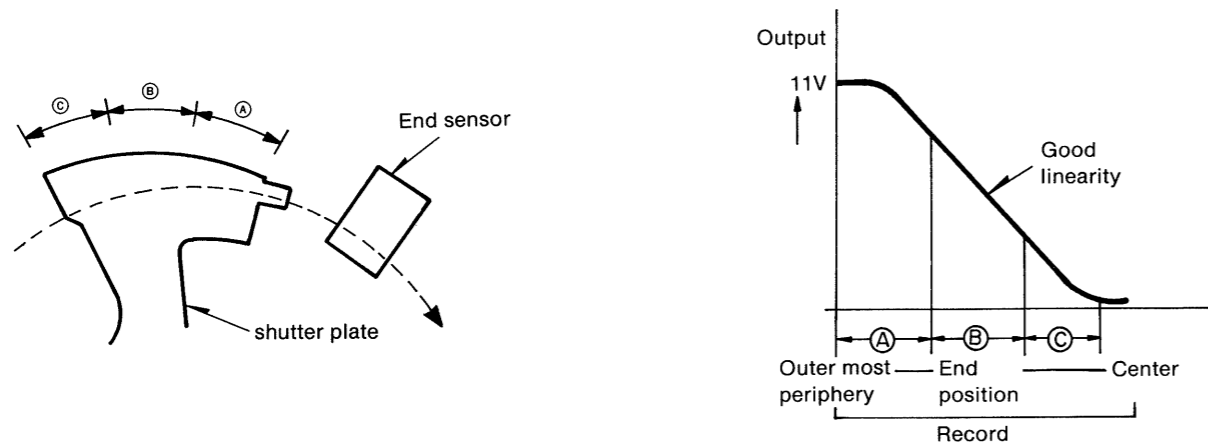


To detect the state of mechanism operation, a detection switch which turns ON/OFF with the rotation of main gear is installed as shown. With this switch operated, the state of mechanism is input to the microcomputer to give the normal or reverse rotation command to the motor.

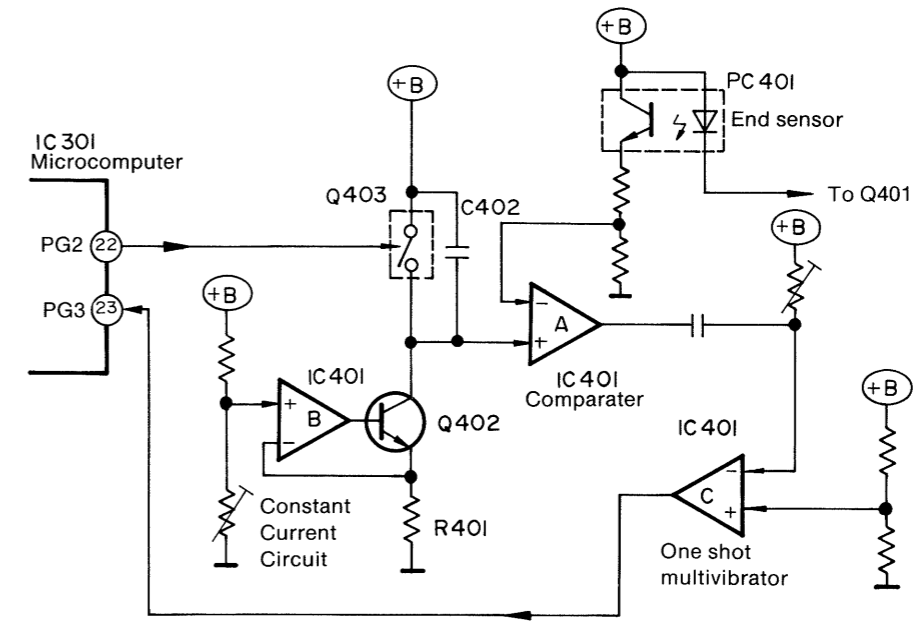
#### Description of Circuit

##### 1. End detection sensor

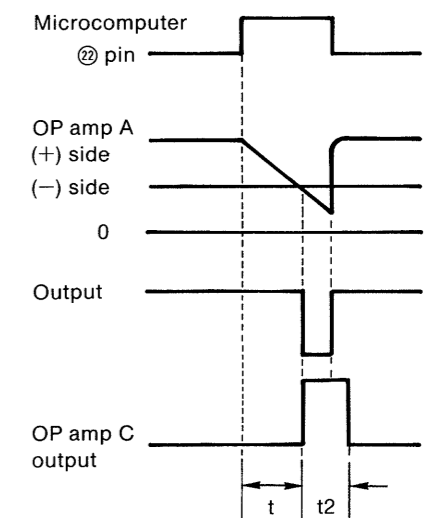
It detects the output voltage change when the shutter plate installed under the tonearm passes through the end detection sensor. The shutter plate is not shaped in circular arc but in volution so that the output voltage changes linearly. The good linearity part of the characteristic is used as the range of end detection. (The actual range of detection is R65~R48 mm from the center of the record.)



#### 2. End detection circuit



#### •Timing chart

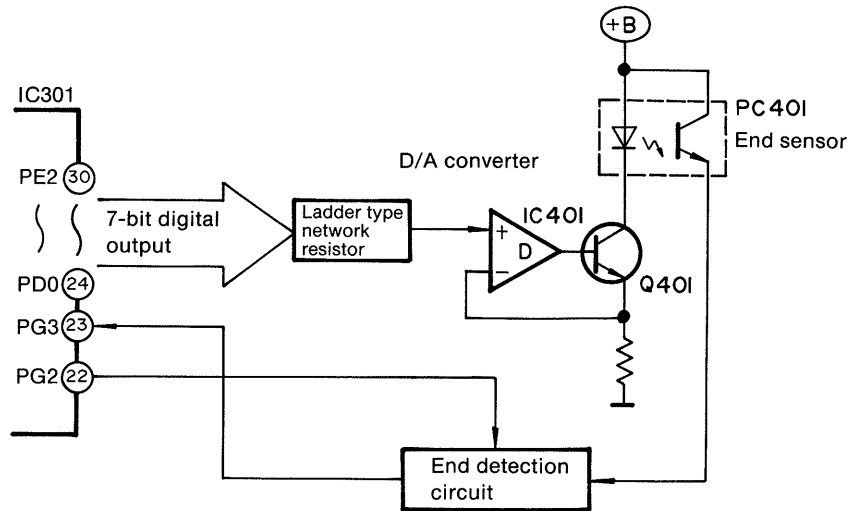


Q403 repeats to turn on/off with the strobe output from pin 22 (PG2) of microcomputer (IC301). When the strobe of pin 22 is at "L", Q403 turns on, therefore (+B) is applied to the (+) side of OP amp A (IC401). When the strobe of pin 22 changes to "H", Q403 turns off and the voltage on the (+) side of OP amp A is lowered but the constant current circuit consisting of OP amp B and Q402 keeps the current flowing to R401 constant so that the voltage charged in C402 is discharged causing the (+) side voltage of OP amp A to gradually decrease. The voltage and the output of end detection sensor (PC401) are compared at OP amp A. The output of OP amp A goes "L" when the (+) side voltage is lower than the (-) side voltage. The output of OP amp A is input to the (-) side of one-shot multi-vibrator consisting of OP amp C. The output of OP amp C goes "H" at the rise of (-) side input. Using this circuit, the microcomputer reads the time ( $t$ ) required until rise of the pulse input to pin 22 with the rise of the strobe of pin 22. Duty ( $t_2$ ) of output pulse of OP amp C is read by the microcomputer during the initial detection, which is the detection sensitivity. The wider the duty, the higher the sensitivity, and vice versa. The detection sensor is set so that the output changes in the range of end detection. Therefore,  $t$  is shorter when the output voltage is higher, and it is longer when the voltage is lower. Thus, the microcomputer is able to detect the tonearm position. Also, the amount of change in  $t$  can be found by reading the amount of  $t$  several times with the rotation of turntable platter, and therefore the tonearm advancing speed can be judged from the amount of change in  $t$ . In this way, the microcomputer detects the end of record to control the arm drive mechanism.



### 3. Automatic adjustment of end detection sensor output

In order to stabilize the operation point of end detection sensor after power ON, the output is automatically adjusted by the microcomputer so that the detection sensor output voltage becomes 11V while the tonearm is in the rest position and is returned to the rest position.



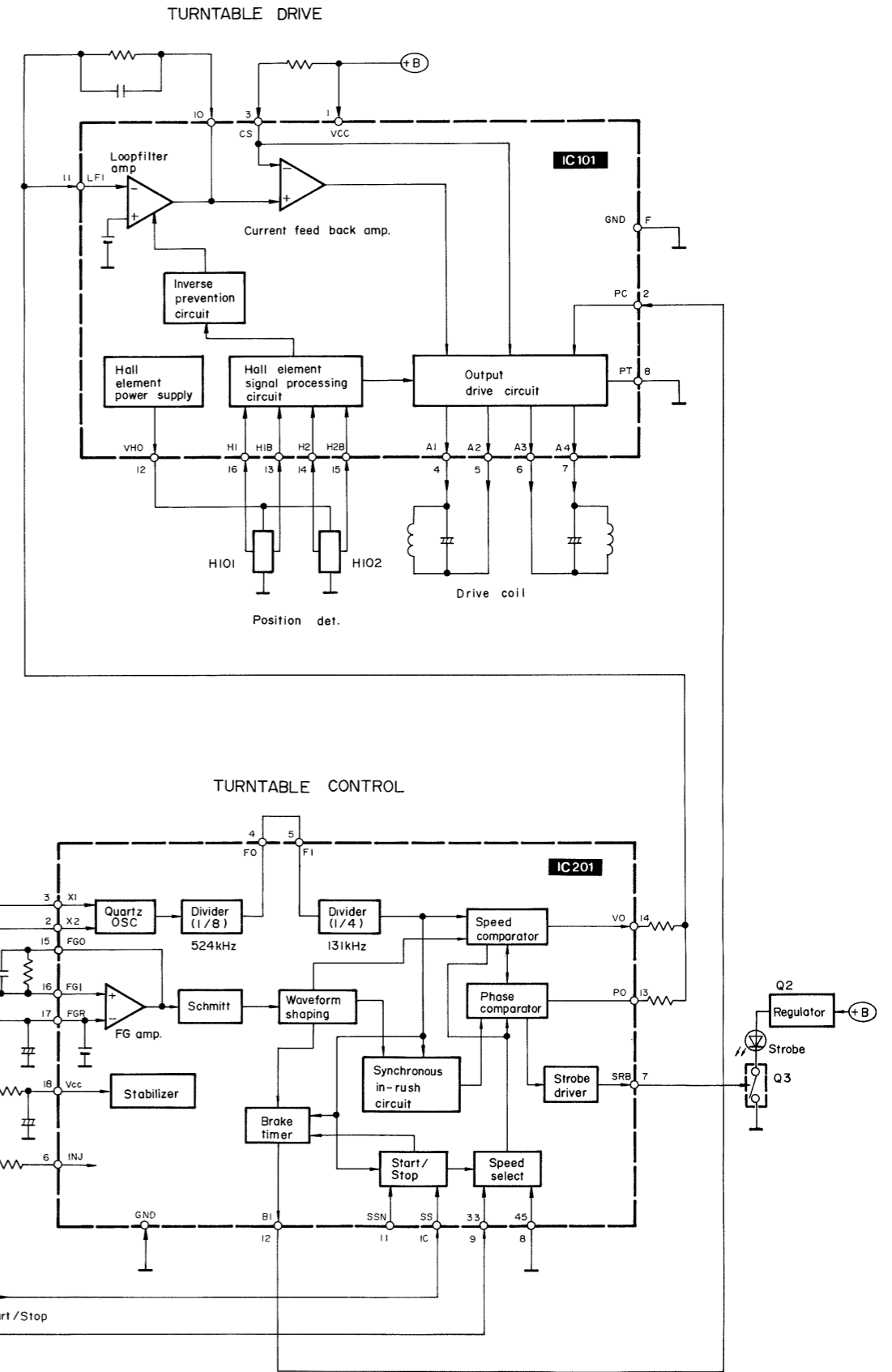
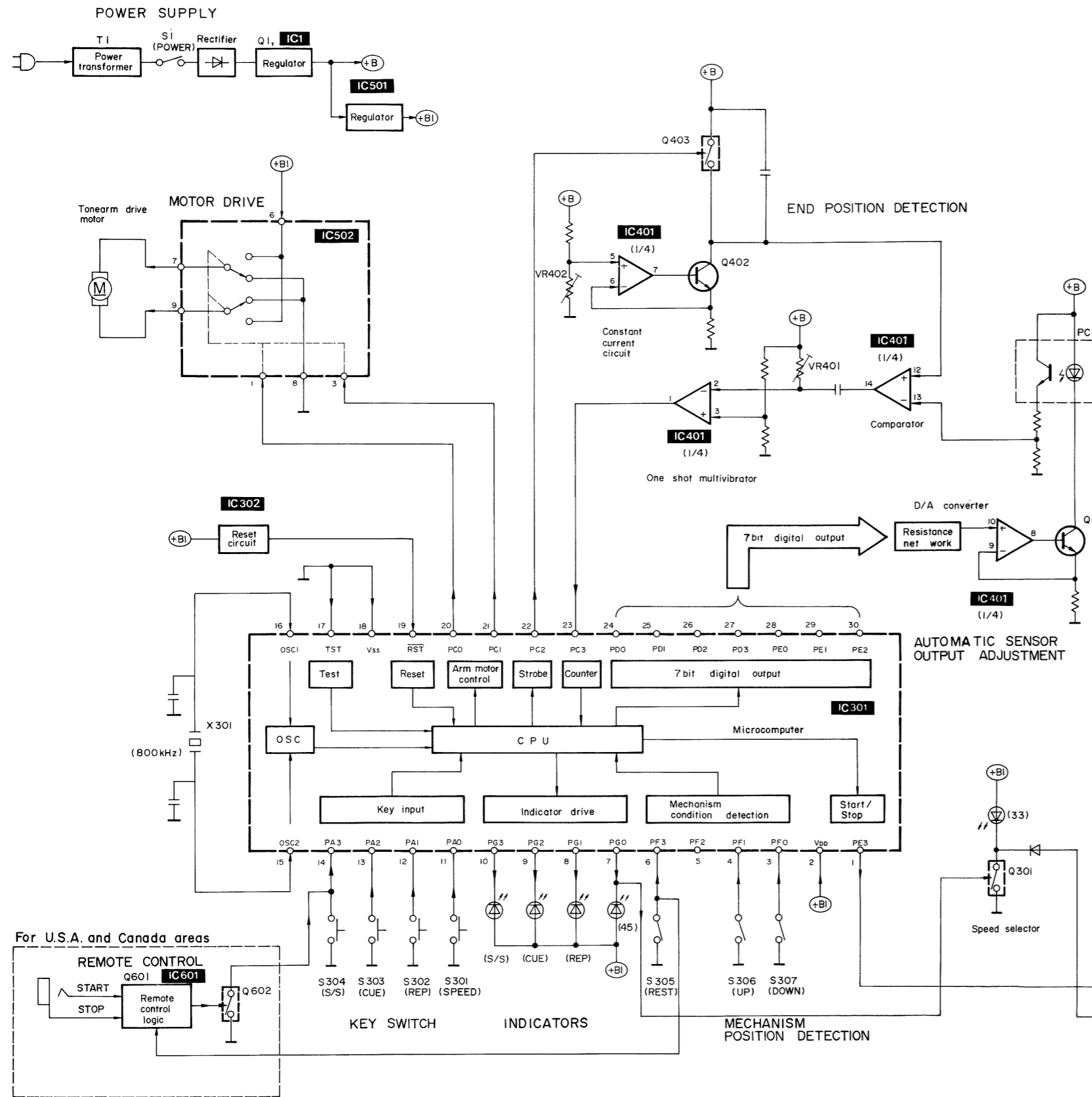
When the tonearm is in the rest position, 7-bit pulses are output from pins ⑳~㉓ of microcomputer, and the digital output is changed to analog output by OP amp D and D/A converter consisting of ladder type network resistor, thereby controlling the current flowing to LED of the detection sensor. In that case, strobe is output from pin ㉒ (PG2) of microcomputer, and the sensor output is detected by the end detection circuit mentioned in the previous section. The microcomputer outputs 7-bit pulses until the detected output becomes 11V thereby automatically adjusting the output of detection sensor.

## ■ DESCRIPTION OF IC301 (SVILC6526CPA) TERMINALS

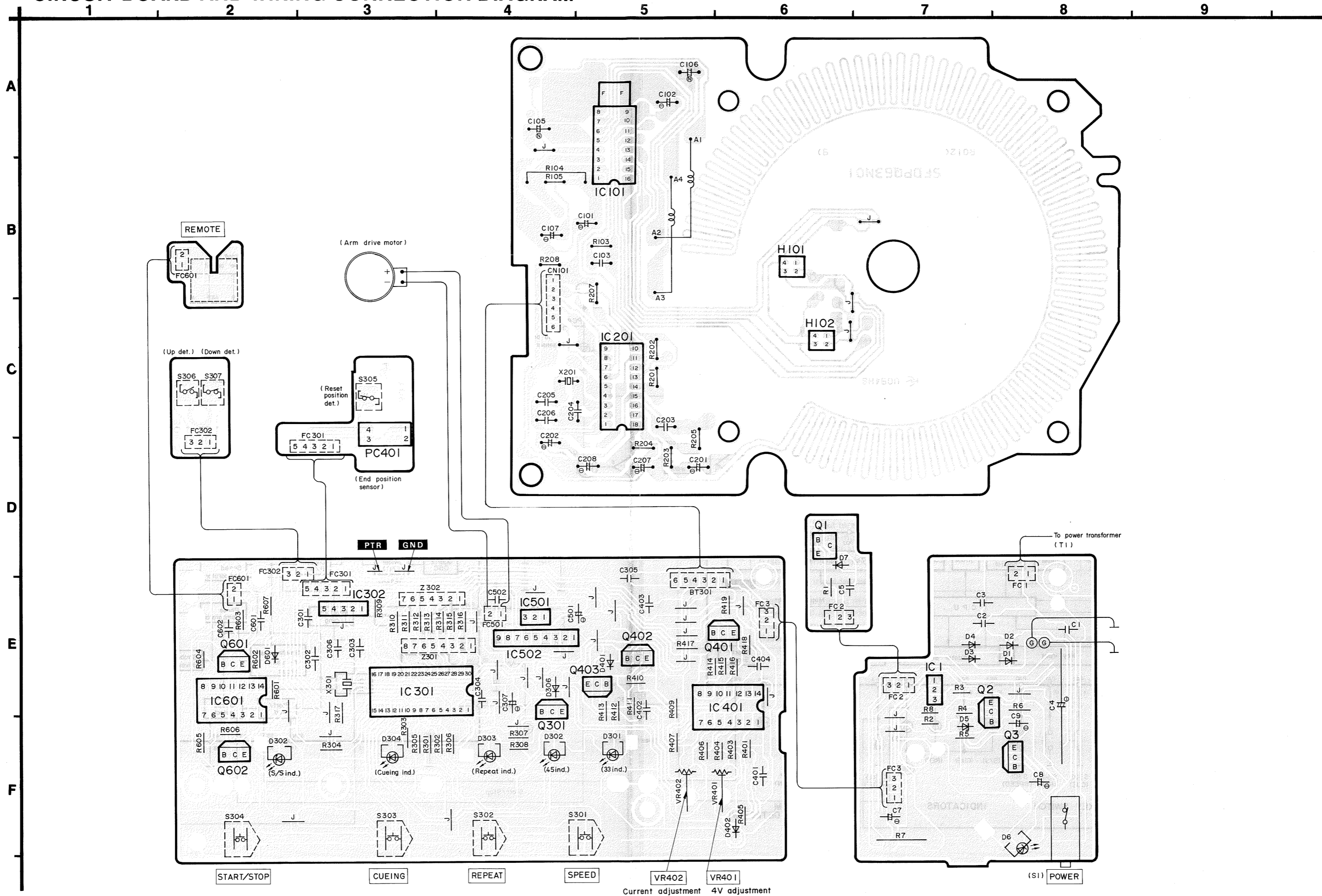
Pin No.	Mark	Description
1	PE3	Turntable start/stop command output terminal ("L" at start, "H" at stop.)
2	VDD	Power supply terminal (+5V)
3	PF0	Mechanism condition detecting switch (Down SW) input terminal. (Mechanism condition is detected in up switch combination.)
4	PF1	Mechanism condition detecting switch (Up SW) input terminal. (Mechanism condition is detected in down switch combination.)
5	PF2	Full-auto mechanism and semi-auto mechanism mode changeover terminal. [Open . . . full-auto (SL-QD33), Ground . . . semi-auto (SL-QD22).]
6	PF3	Tonearm rest position detecting switch input terminal. ("L" with tonearm is rest position.)
7	PG0	45 LED lighting output and speed changeover command output terminal (LED lights up at "L", 45 r.p.m. . . "L", 33 r.p.m. . . "H".)
8	PG1	REPEAT LED lighting output terminal. (LED lights up at "L"). . . full-auto (SL-QD33)
9	PG2	CUEING LED lighting output terminal. (LED lights up at "L".)
10	PG3	START/STOP LED lighting output terminal. (LED lights up at "L".)
11	PA0	Speed select key input terminal. (Used in full-auto mode.) 33 key input terminal. (Used in semi-auto mode.)
12	PA1	Repeat key input terminal. (Used in full-auto mode.) 45 key input terminal. (Used in semi-auto mode.)
13	PA2	Cueing key input terminal.
14	PA3	Start/stop key input terminal. (Used in full-auto mode.) Stop key input terminal. (Used in semi-auto mode.)

Pin No.	Mark	Description																			
15	OSC2	Clock oscillation input terminal. (800 kHz)																			
16	OSC1	Clock oscillation input terminal. (800 kHz)																			
17	TEST	Test terminal (Not used, connected to ground.)																			
18	VSS	Ground terminal																			
19	REST	Reset terminal (Microcomputer is reset at "L".)																			
20	PG0	Tonearm motor drive control output terminal. <table border="1" style="margin-left: 20px;"> <thead> <tr> <th rowspan="2">Part</th> <th colspan="4">Motor conditions</th> </tr> <tr> <th>Braked</th> <th>Free</th> <th>Normal</th> <th>Reverse</th> </tr> </thead> <tbody> <tr> <td>PG0</td> <td>H</td> <td>L</td> <td>L</td> <td>H</td> </tr> <tr> <td>PG1</td> <td>H</td> <td>L</td> <td>H</td> <td>L</td> </tr> </tbody> </table>	Part	Motor conditions				Braked	Free	Normal	Reverse	PG0	H	L	L	H	PG1	H	L	H	L
Part	Motor conditions																				
	Braked	Free	Normal	Reverse																	
PG0	H	L	L	H																	
PG1	H	L	H	L																	
21	PG1																				
22	PG2	Strobe output terminal. (Strobe is output during detection sensor automatic output adjustment and end detection.)																			
23	PG3	Detection sensor automatic output adjustment and end detection input terminal. (It reads the time from rise of strobe of PG2 until rise of pulse input during automatic adjustment and end detection.)																			
24	PD0	7-bit digital output terminal. (7-bit pulses are output to LED of detection sensor until the output of detection sensor becomes 11V with the input of PG3. . . . Automatic output adjustment of detection sensor.)																			
25	PD1																				
26	PD2																				
27	PD3																				
28	PE0																				
29	PE1																				
30	PE2																				
		MSB)																			

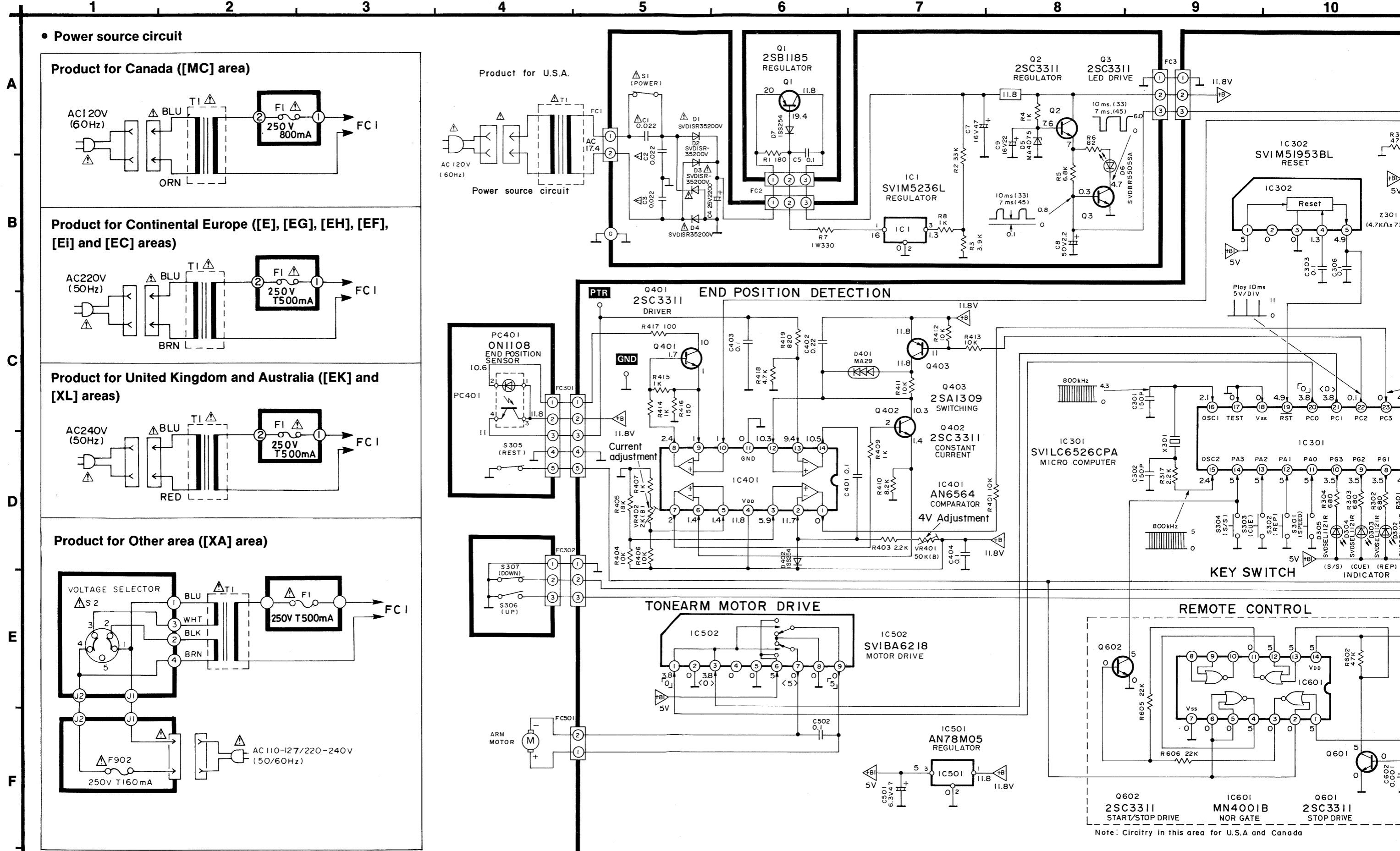
# ■ BLOCK DIAGRAM

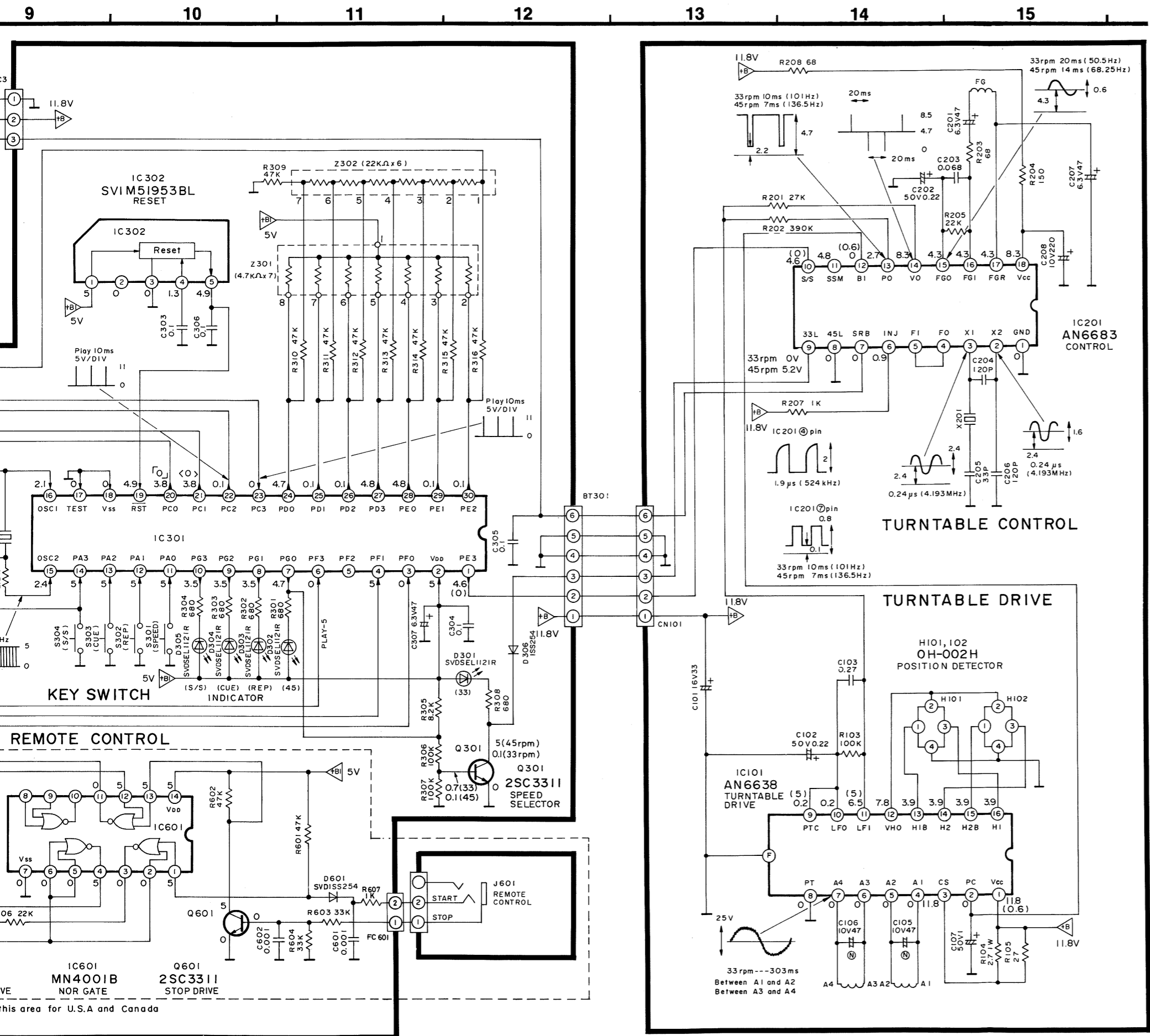


# CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM



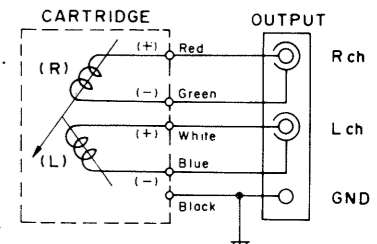
**■ SCHEMATIC DIAGRAM** (This schematic diagram may be modified at any time with development of new technology.)





**Notes:**

- S1 : Power switch in "on" position.
- S2 : Voltage selector switch in "220-240V" position.  
(For [XA] area only)
- S301 : Speed select switch.
- S302 : Repeat switch.
- S303 : Cueing switch.
- S304 : Start/stop switch.
- S305 : Rest position detection switch in "on" position.  
(Tonearm is in the rest position.)
- S306 : Mechanism position detection (up) switch in "off" position.  
(Tonearm is in the rest position.)
- S307 : Mechanism position detection (down) switch in "on" position.  
(Tonearm is in the rest position.)
- The voltage value and waveform are the standard values (stop mode) of this measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of chassis. Therefore, the voltage value and waveform may include some error due to the internal impedance of the tester or the measuring unit.  
\* ( ) is the voltage when turntable is in rotation.  
\* [ ] is the voltage when arm motor is in normal rotation mode.  
\* < > is the voltage when arm motor is in reverse rotation mode.
- Important safety notice:  
Components identified by  $\Delta$  mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.



**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.

**Product for MC only**

**FUSE REPLACEMENT**

$\text{---} \text{---} \text{---}$  Symbol located near the fuse indicates fast operating type. For continued protection against fire hazard, replace with same type fuse. Refer to the symbol for fuse rating.

**FUSIBLE REMPLACEMENT**

$\text{---} \text{---} \text{---}$  Le symbole qui se trouve près du fusible signifie un fusible à action rapide. Pour une protection continue contre les risques d'incendie, n'utiliser que des fusibles du même type. Se rapporter au symbole pour la valeur des fusibles.

**TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES**

 SVILC652CPA 30 pin AN6564 14 pin AN6683 18 pin MN4001B 14 pin	 SVIM5236L 1. Vin 2. GND 3. Vout	 SVIM51953BL 1 - - - 5
 AN78M05 1. Vin 2. GND 3. Vout	 AN6638 16 8	 SVIBA6218 1
 2SC3311 2SA1309 E C B	 SVDISR 35200V ISS254 MA29 Anode Cathode Ca ← A	 MA4075 Anode Cathode Ca ← A
 ON1108 1 2 3	 SVDSEL1121R Anode Cathode Ca ← A	 2SB1185 B C E



EXPLODED VIEW

Part No.	Value
EFCR1E104ZFM	0.1
ECEA0JU470	47
ECQG1H104KZT	0.1
ECQG1H224KZW	0.22
EFCR1E104ZFM	0.1
ECEA0JU470	47
EFCR1E104ZFM	0.1
ECKR1H102ZF	0.001

Description	Value
Washer, φ3	(2)
Screw	(1)
Washer, φ3	(2)
Screw, φ2.6×5	(3)
Screw, φ3×35	(1)
Screw, φ3×8	(2)
Screw, φ3×8	(5)
Screw	(2)

Instruction Book	(1)
Instruction Book	(1)
Instruction Book	(1)
Instruction Book	(1)
Instruction Book	(1)
Instruction Book	(1)
Instruction Book	(1)

AC Cord	(1)
AC Cord	(1)
AC Cord	(1)
AC Cord	(1)
AC Cord	(1)

Output Cord	(1)
Ground Wire	(1)
45 Adaptor	(1)
Adaptor	(1)

Remote Control Cord	(1)
---------------------	-----

Carton Box	(1)
Carton Box	(1)
Carton Box	(1)
Carton Box	(1)
Carton Box	(1)
Carton Box	(1)
Carton Box	(1)

Pad, Left	(1)
Pad, Right	(1)
Pad, Tonearm Weight	(1)
Clamper, Tonearm	(1)
Clamper, Turntable	(2)
Polyethylene Bag, Unit	(1)
Polyethylene Bag, Dust Cover	(1)
Polyethylene Bag, Turntable Mat	(1)
Pad, Turntable Mat	(1)

