

Service Manual

QUARTZ Direct Drive
Automatic Turntable System

Turntable System

SL-QD22



Color

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

Note:

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

Color	Areas
(K)	[M] U.S.A.
(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.



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-return
Auto-stop
- 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)
- Rumble:** -56 dB DIN-A (IEC 98A unweighted)
-78 dB DIN-B (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.

■ 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

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

SL-QD22

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^{-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-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.)

■ GENERAL

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

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

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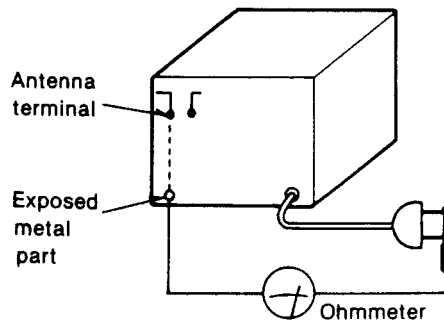
■ SAFETY PRECAUTION (This "safety precaution" is applied only in U.S.A.)

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

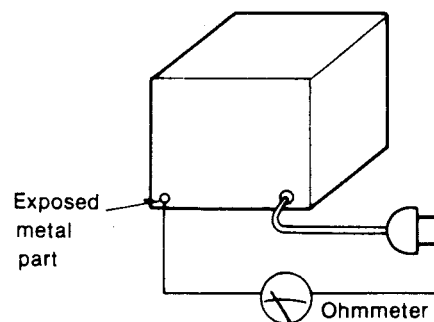
1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads, antenna, control shafts, handle brackets, etc. Equipment with antenna terminals should read between $3M\Omega$ and $5.2M\Omega$ 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 = $3M\Omega$ — $5.2M\Omega$

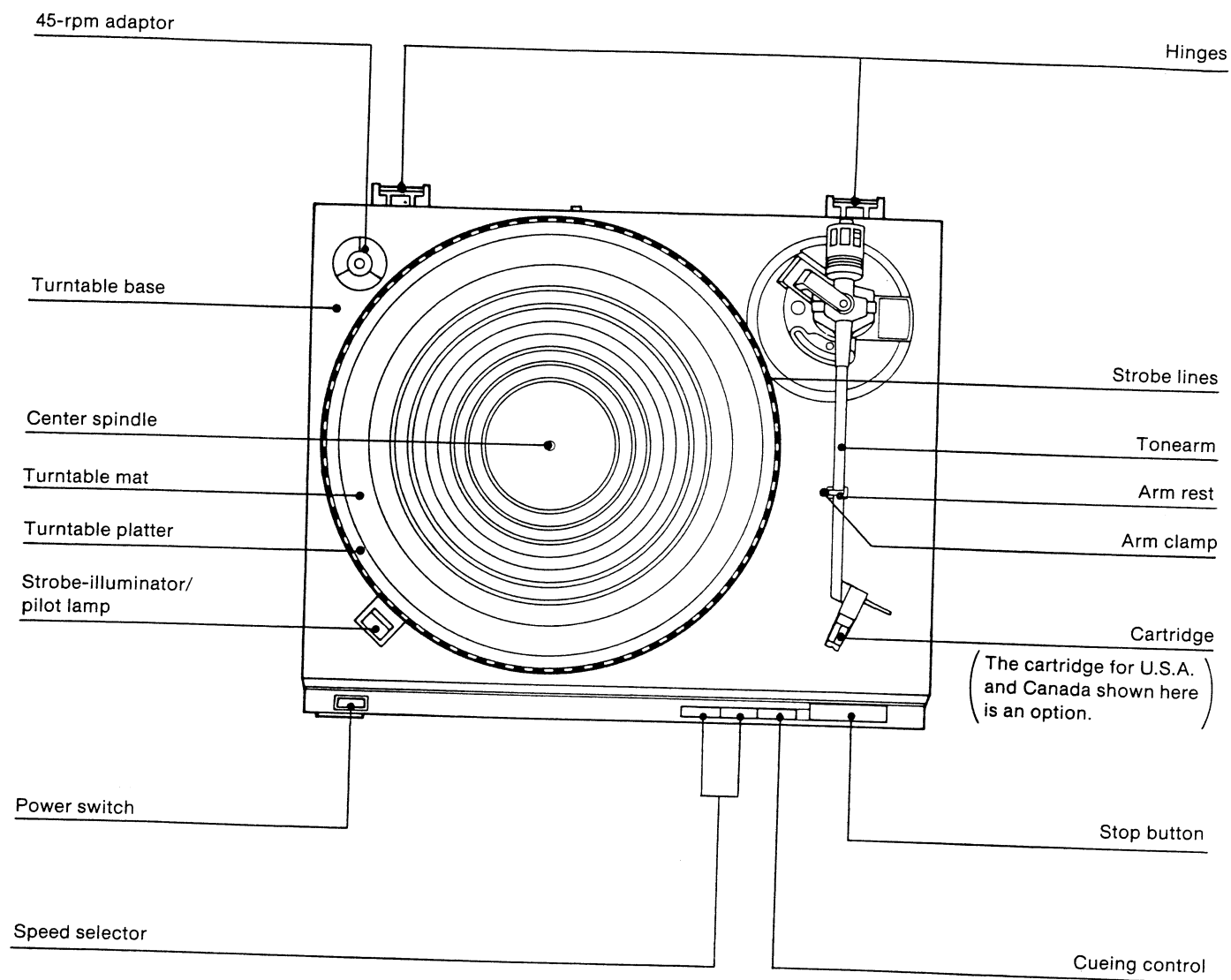


(Fig. B)

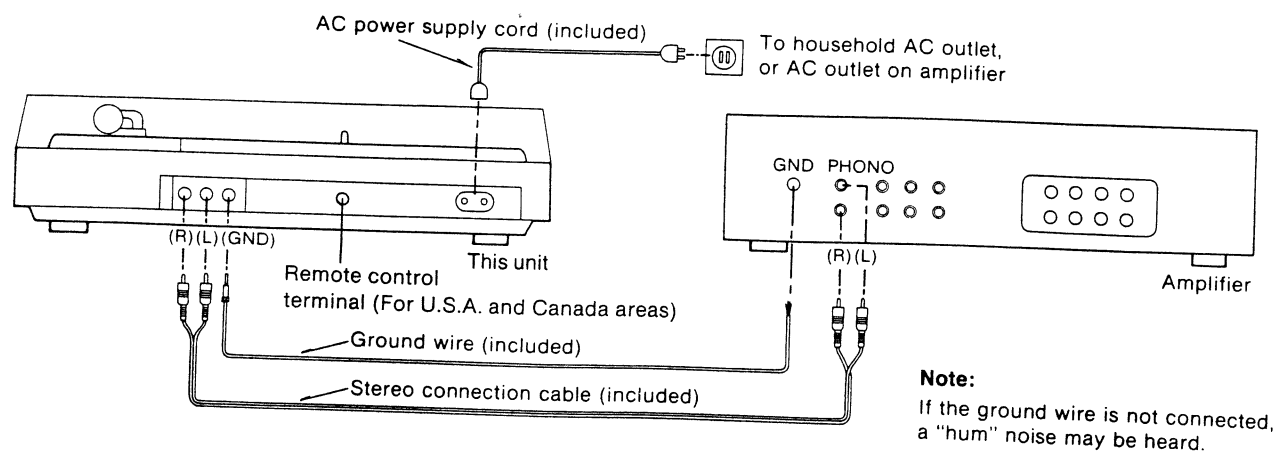
Resistance = Approx ∞

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.

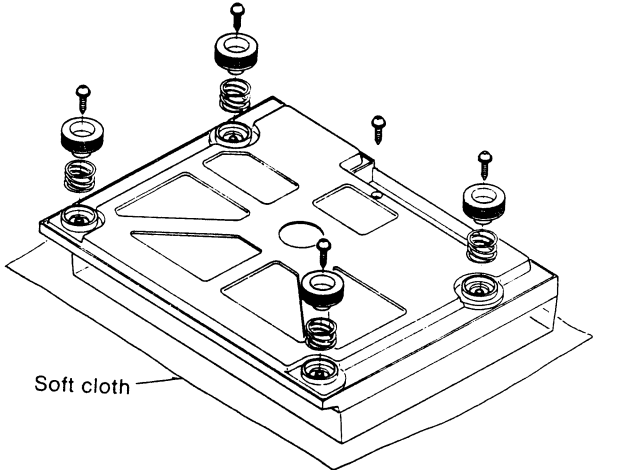
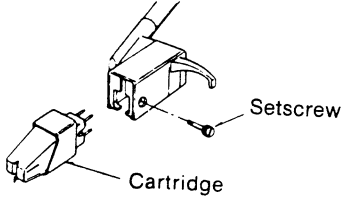
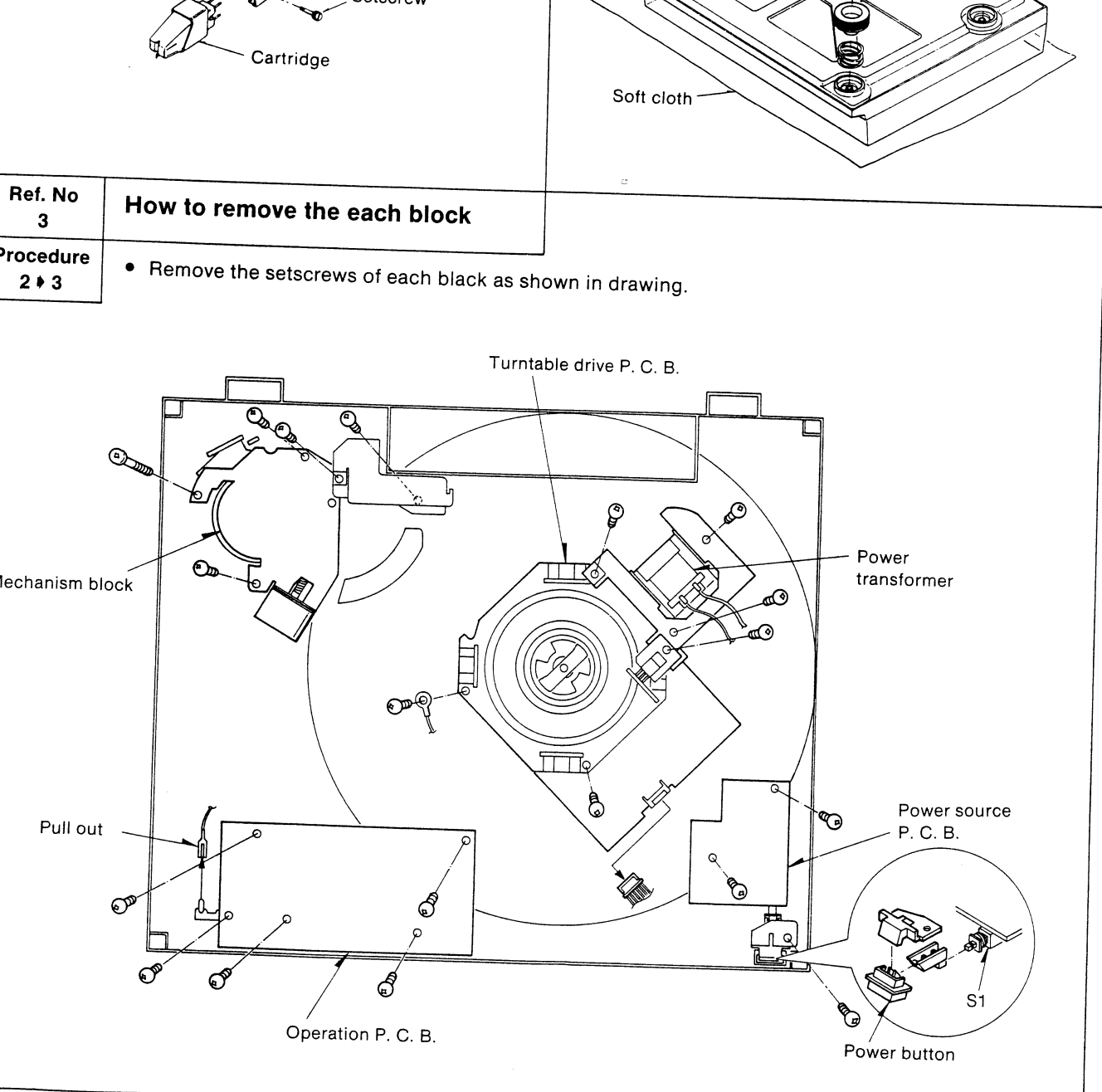
LOCATION OF CONTROLS



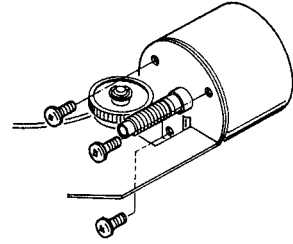
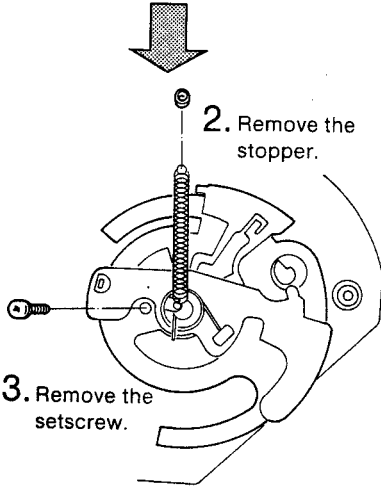
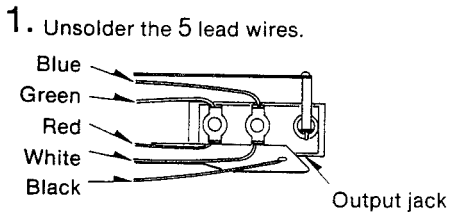
CONNECTIONS



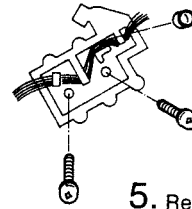
DISASSEMBLY INSTRUCTIONS

<p>Ref. No 1</p>	<p>How to remove the cartridge</p>	<p>Ref. No 2</p>	<p>How to remove the bottom board</p>
<p>Procedure 1</p>	<p>Note When servicing, remove the cartridge or stylus in order to protect the stylus tip of cartridge.</p>	<p>Procedure 2</p>	<p>1. Secure tonearm with arm clamp. 2. Remove the turntable platter. 3. Turn over the unit on a soft cloth. 4. Remove the 5 setscrews.</p>
<p>• Remove the setscrew and pull out the cartridge, taking care that your hand does not touch the stylus tip.</p>			
		<p>Soft cloth</p>	
<p>Ref. No 3</p>	<p>How to remove the each block</p>		
<p>Procedure 2 + 3</p>	<p>• Remove the setscrews of each block as shown in drawing.</p>		
 <p>Mechanism block</p> <p>Turntable drive P. C. B.</p> <p>Power transformer</p> <p>Power source P. C. B.</p> <p>Operation P. C. B.</p> <p>Power button</p> <p>S1</p> <p>Pull out</p>			

Ref. No 4	How to remove the tonearm	Ref. No 5	How to remove the motor
Procedure 3 → 4	<ol style="list-style-type: none"> 1. Remove the mechanism block. 2. Remove in the numerical order shown. 	Procedure 3 → 5	<ul style="list-style-type: none"> • Remove the 3 setscrews.



4. Remove the lead holder.



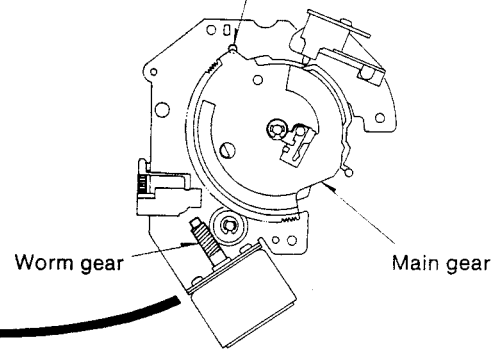
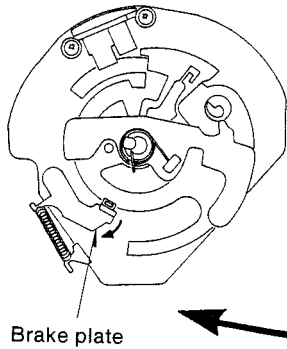
5. Remove the 2 setscrews.

Ref. No 6	How to fit the mechanism board
--------------	---------------------------------------

Procedure
6

1. Secure tonearm with arm clamp.
2. Fit in the numerical order.

1. Turn the worm gears and shift the main gear to the position shown below.
(Set the center of the hole in the board to the position of main gear.)



2. Secure it with 3 setscrews.

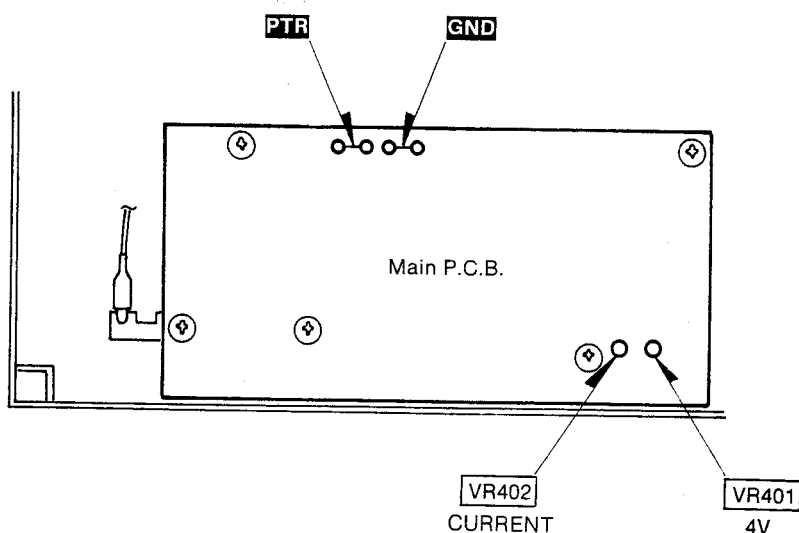
Note: In this condition, tonearm is in the state of "cueing up", but it will be shifted to "cueing down" when power switch is turned "on" after assembly.
It can be installed in the initial state, but in that case the brake plate touches the main gear. Therefore, pull the brake plate when installing.

NOTE

• Please refer to the TECHNICAL GUIDE in the Service Manual for Model SL-QD33 (Order No. HAD8605533C0) regarding operation of mechanical parts and circuits of this unit.

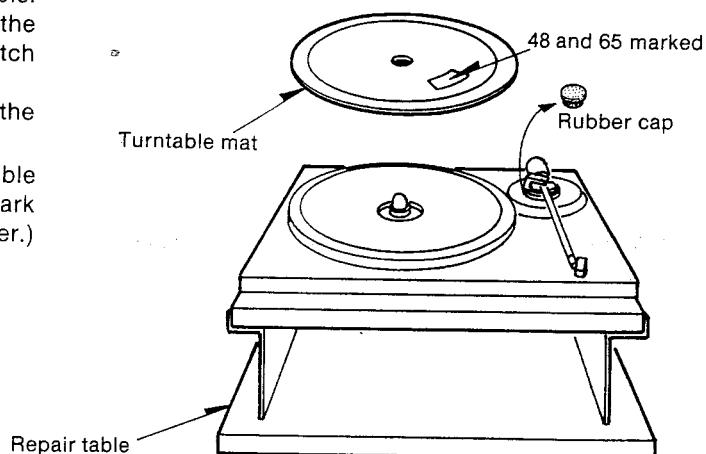
MEASUREMENTS AND ADJUSTMENTS

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

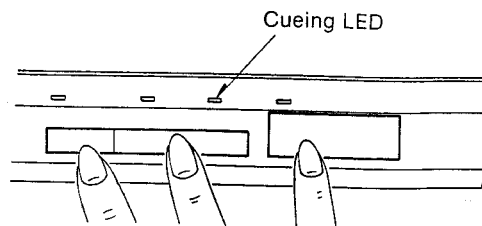
Before turning on the power switch, make sure that the tonearm is free in the rest position, and set all the 4 operation keys to on (pressing all the keys with fingers). Subsequently, turn on the power switch. (In the test mode, the turntable will not rotate even when the tonearm is moved inwards.)

2. Test mode 2

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

3. Normal mode

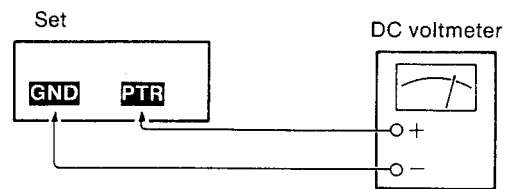
Press the Stop key once in the state of Test mode 2.



CURRENT ADJUSTMENT

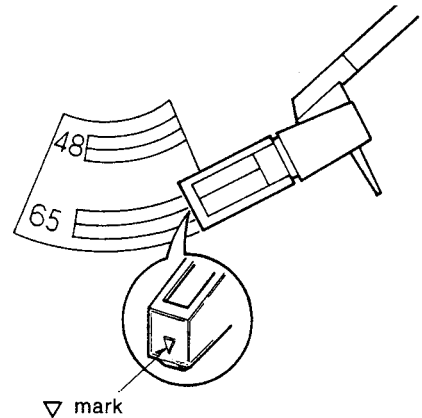
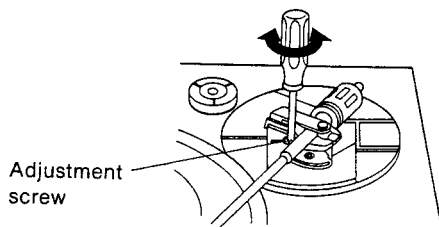
1. Set the microcomputer to **Test mode 1**.
2. Connect DC voltmeter to **PTR** (+) and **GND** (-) of P.C.B.
3. Move the tonearm to the position where the reading of DC voltmeter is $8V \pm 0.005V$.
4. Adjust **VR402** so that the **cueing LED lights up**.
5. After the LED lights up, be sure to turn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

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



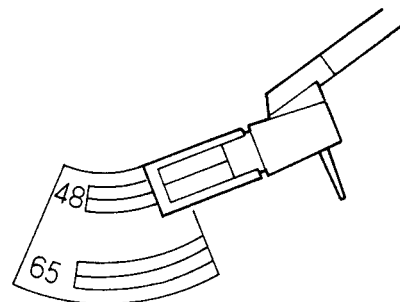
8V ADJUSTMENT

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

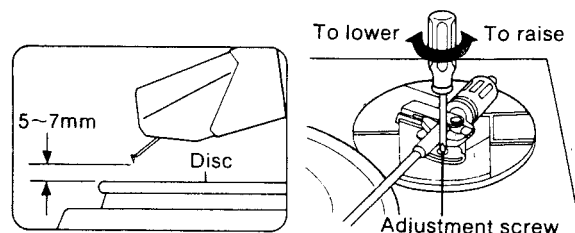
1. Press the Stop key and shift the mode to **Test mode 2**.
2. Manually fix the stylus cover in the **48** position of turntable mat, matching the marks (▽).
3. Turn **VR401** so that the **cueing LED lights up**.
4. Return the tonearm to the rest position and press the Stop key, then the mode is reset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

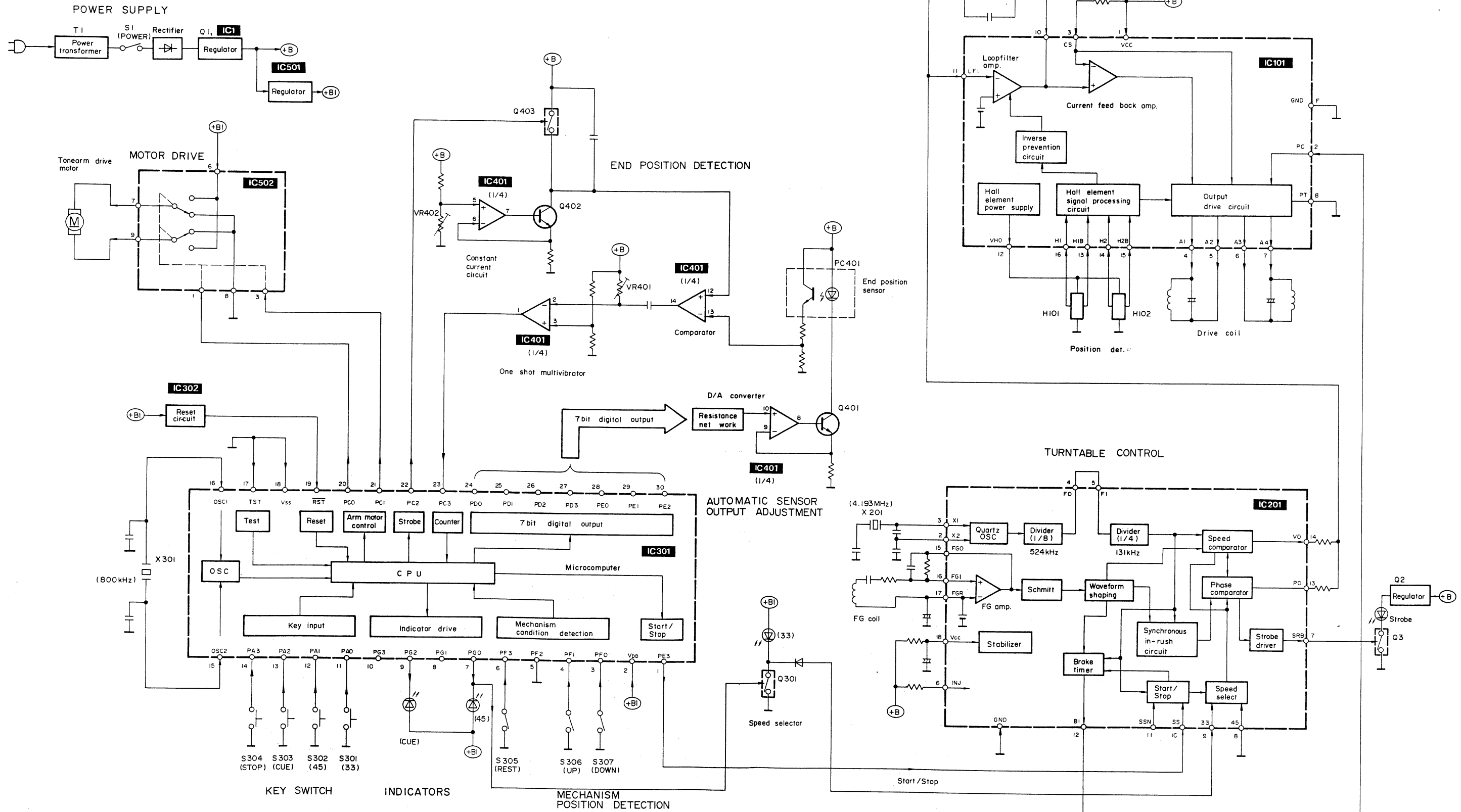


DESCRIPTION OF IC301 (SVILC6526CPA) TERMINALS

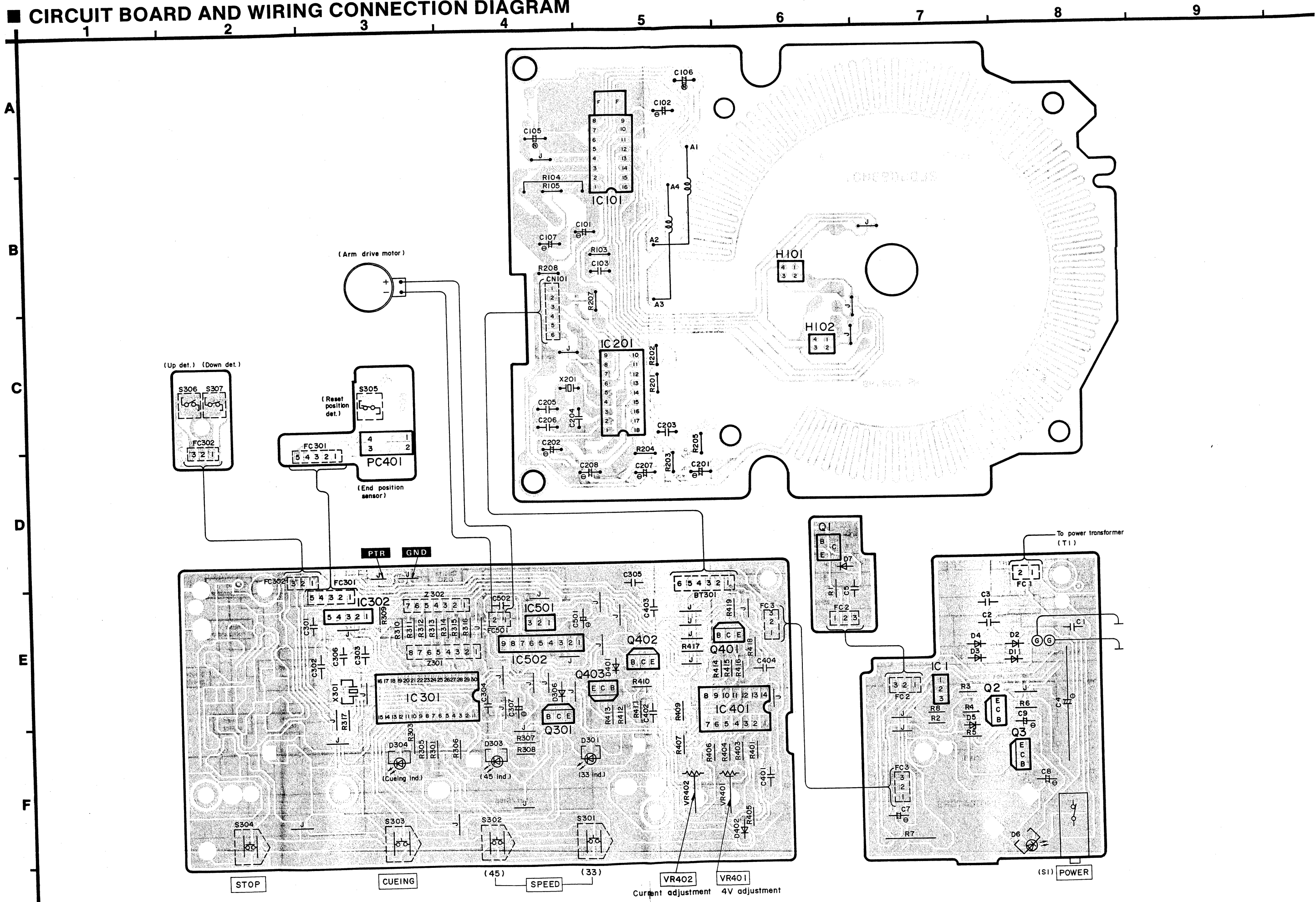
Pin No.	Mark	Description
1	PE3	Turntable start/stop command output terminal ("L" at start, "H" at stop.)
2	VDD	Power supply terminal (+5V)
3	PF0	Mechanism condition detecting switch (Down SW) input terminal. (Mechanism condition is detected in up switch combination.)
4	PF1	Mechanism condition detecting 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: auto; margin-right: auto;"> <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																				

■ BLOCK DIAGRAM



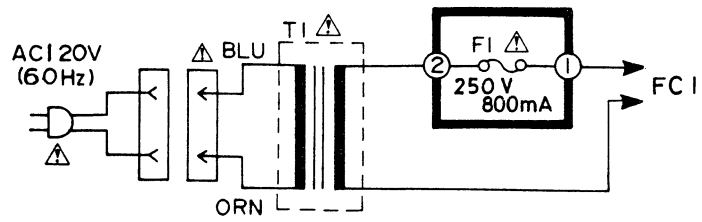
CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM



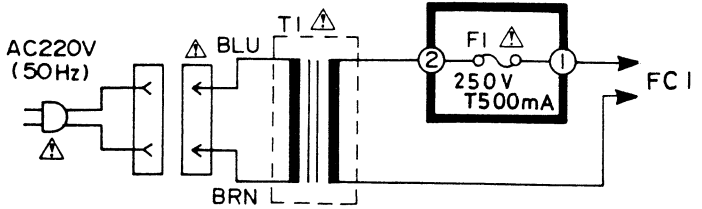
SCHEMATIC DIAGRAM (This schematic diagram may be modified at any time with development of new technology.)

• Power source circuit

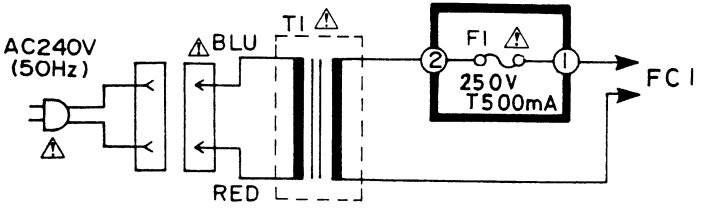
Product for Canada ([MC] area)



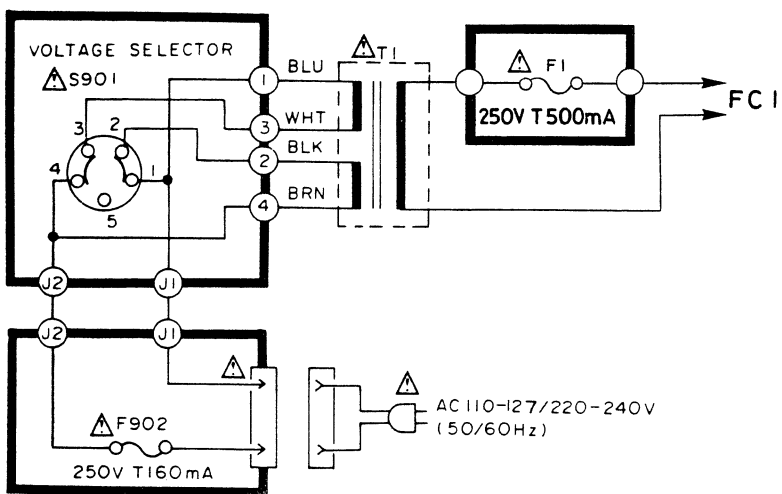
Product for Continental Europe ([E], [EG], [EH], [EF], [Ei] and [EC] areas)



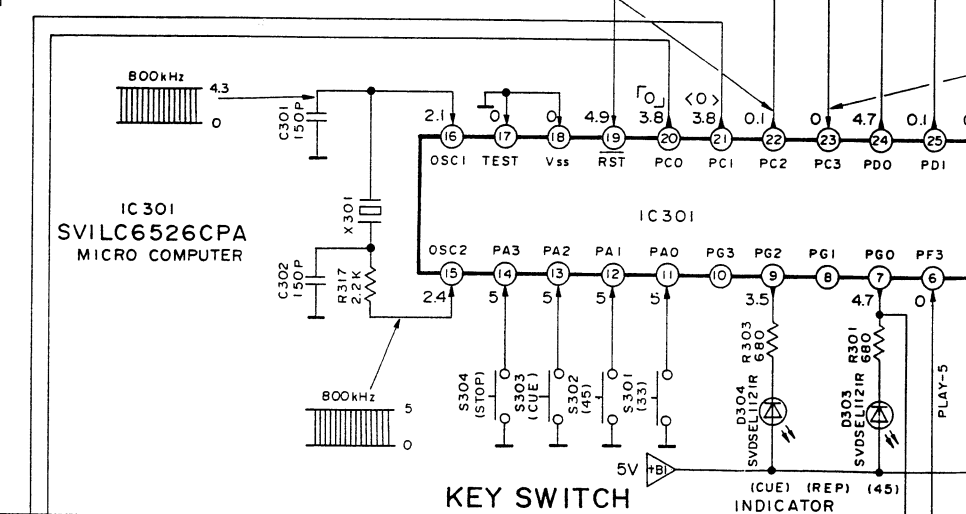
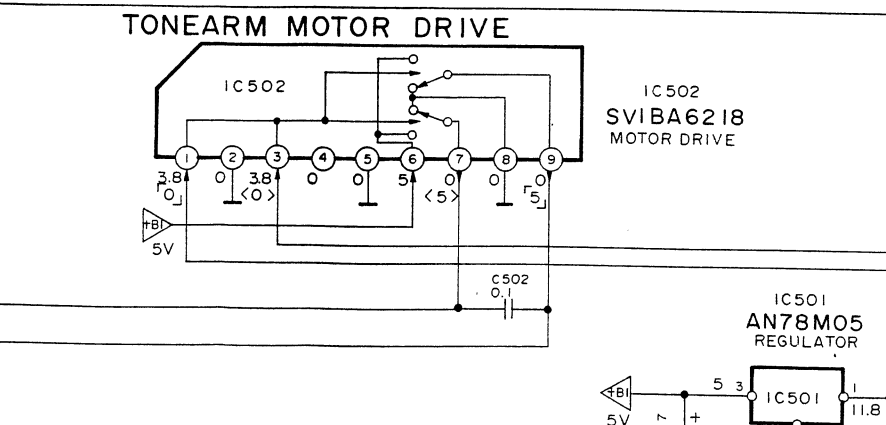
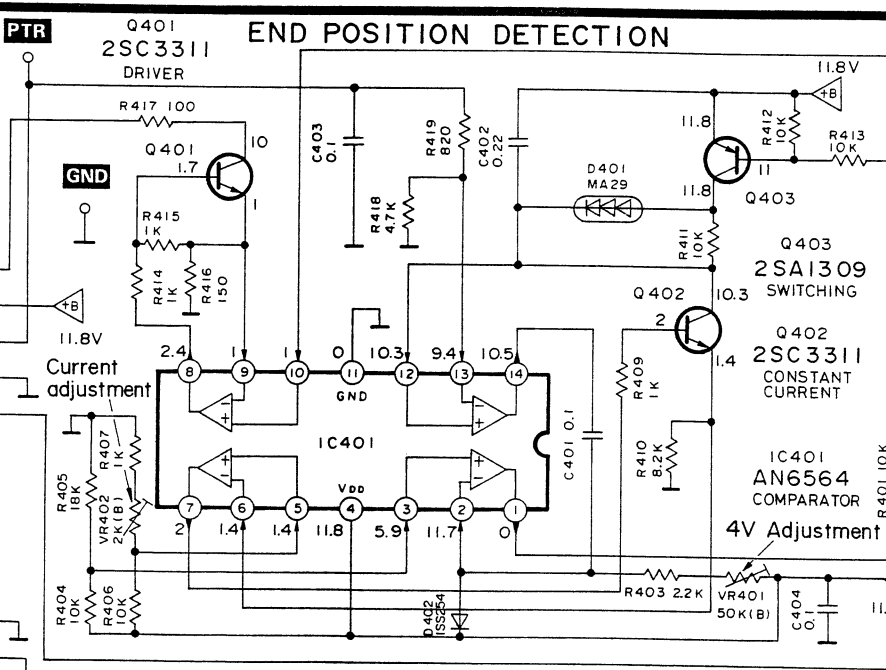
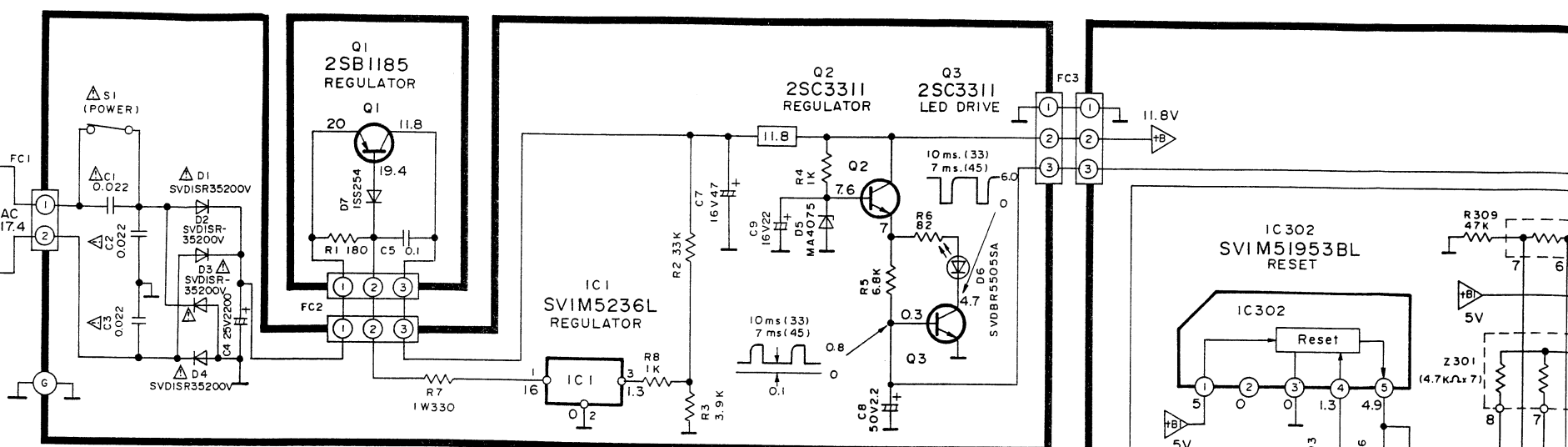
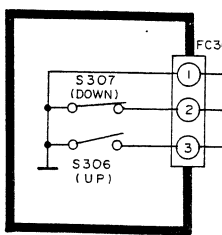
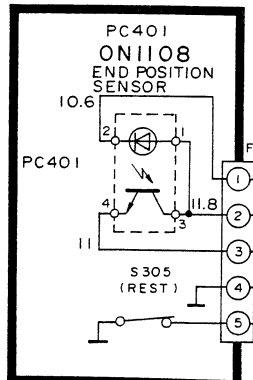
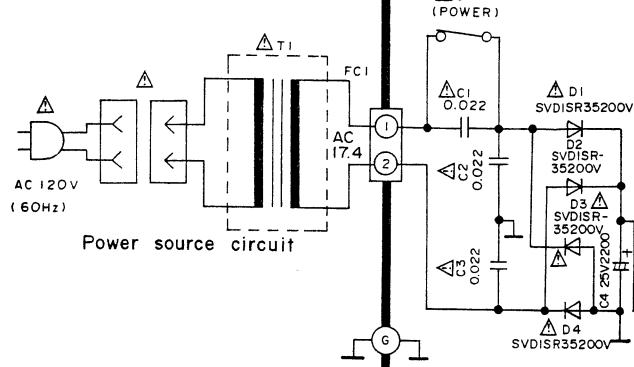
Product for United Kingdom and Australia ([EK] and [XL] areas)



Product for Other area ([XA] area)



Product for U.S.A.



REPLACEMENT PARTS LIST

Notes:

- Part numbers are indicated on most mechanical parts. Please use this part number for parts order.
- Important safety notice: Components identified by Δ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
- $\text{\textcircled{K}}$ -marked parts are used for black only, while $\text{\textcircled{O}}$ -marked parts are for silver type only.
- Parts other than $\text{\textcircled{K}}$ - and $\text{\textcircled{O}}$ -marked are used for both black and silver type.

- Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.
- The " $\text{\textcircled{S}}$ " mark is service standard parts and may differ from production parts.
- The parenthesized numbers in the column of description stand for the quantity per set.

Unless otherwise specified.
All resistors are in OHMS (Ω) K=1000 Ω , M=1000k Ω
All capacitors are in MICROFARADS (μ F), P=10⁻⁶ μ F.

Ref. No.	Part No.	Description
INTEGRATED CIRCUITS		
IC1	SVIM5236L	IC
IC101	AN6638	IC
IC201	AN6683	IC
IC301	SVILC6526CPA	IC
IC302	SVIM51953BL	IC
IC401	AN6564	IC
IC501	AN78M05	IC
IC502	SVBA6218	IC
TRANSISTORS		
Q1	2SB1185DEF	Transistor
Q2, 3	2SC3311	Transistor
Q301	2SC3311	Transistor
Q401, 402	2SC3311	Transistor
Q403	2SA1309	Transistor
DIODES		
D1-4	Δ SVD1SR35200V	Rectifier
D5	MA4075	Zener Diode
D6	SVDBR5505SA	LED
D7	ISS254TA	Diode
D301, 302	SVDEL1121R	LED
304		

Ref. No.	Part No.	Description
D306	ISS254TA	Diode
D401	MA29TA	Diode
D402	ISS254TA	Diode
OSCILLATORS		
X201	SVQNR41TR	Crystal, 4.193 MHz
X301	SVFCSB800D	Ceramic, 800 kHz
VARIABLE RESISTORS		
VR401	EVN61AA00B54	Variable Resistor, 50k Ω (B)
VR402	EVN61AA00B23	Variable Resistor, 2k Ω (B)
PHOTO INTERRUPTOR		
PC401	ON1108	End Position Sensor
COMPONENT COMBINATIONS		
Z301	EXBP87472KR	4.7k Ω X7
Z302	EXBS86223KR	22k Ω X6
HALL ELEMENTS		
H101, 102	OH-002	Hall Element

Ref. No.	Part No.	Description
SWITCHES		
S1	Δ SFDSF01N02	Power
S2 [XA]	Δ SFDSHXW225-3	Voltage Selector
S301-304	EVQQS405K	Operation
S305-307	SSHB1	Rest & Mechanism Position Det.
POWER TRANSFORMER		
T1 [M]	Δ SLT48DTL3A	Power Source
T1 [MC]	Δ SLT48DT11C	Power Source
T1	Δ SLT48DTE13E	Power Source
T1 [EK, XL]		
T1 [XA]	Δ SLT57DT7E	Power Source
T1 [other]	Δ SLT48DT10E	Power Source
FUSES		
F1 [MC]	Δ XBA2F08NU100	250V, 800mA
only		
F1	Δ XBA2C05TB0	250V, T500mA
except [M]		
F902 [XA]	Δ XBA2C016TB0	250V, T160mA
only		

Ref. No.	Part No.	Value
CAPACITORS		
C1	Δ ECQG1223KZ	0.022
C2, 3	Δ ECKD1H223ZF	0.022
C4	ECEB1EU222	2200
C5	ECFR1H104ZFM	0.1
C7	ECEA1CU470	47
C8	ECEA1HU2R2	2.2
C9	ECEA1CU220	22

Ref. No.	Part No.	Value
C101	ECEA1CU330	33
C102	ECEA50ZR22	0.22
C103	ECQV05274JZ	0.27
C105, 106	ECEA1AN470S	47
C107	ECEA1HU010	1
C201	ECEA0JU470	47
C202	ECEA50ZR22	0.22
C203	ECQM1H683KZ	0.068

Ref. No.	Part No.	Value
C204	ECCD1H121KC	120P
C205	ECCD1H330JC	33P
C206	ECCD1H121KC	120P
C207	ECEA0JU470	47
C208	ECEA1AU221	220
C301, 302	ECCD1H151K	150P
C303	ECQG1H104KZT	0.1
C304, 305	ECFR1E104ZFM	0.1

Ref. No.	Part No.	Value
C306	ECFR1E104ZFM	0.1
C307	ECEA0JU470	47
C401	ECQG1H104KZT	0.1
C402	ECQG1H224KZW	0.22
C403, 404	ECFR1E104ZFM	0.1
C501	ECEA0JU470	47
C502	ECFR1E104ZFM	0.1

Ref. No.	Part No.	Description
CABINET AND CHASSIS PARTS		
1	SFADZ15R01E	Dust Cover (1)
1-1	SFGZD04N01	Rubber Cushion (2)
2	SHOB6	Turntable Mat (1)
4	SFTEQD2N01	Turntable Platter (1)
5	SFTMC07-01E	Magnet (1)
6	SFMGQ34N01	Cover, Stator Coil (1)
7	SFMZQ63M53A	Stator Frame Ass'y (1)
8 [XA]	SFGCC05X01	Cushion Rubber (2)
8 [other]	SFGCC05N02	Cushion Rubber (2)
9	SFGZC05N03	Cushion Rubber (1)
10	SFUPC05N02	Shield Plate (1)
11	$\text{\textcircled{O}}$ SKMB36-0S	Plate (1)
11	$\text{\textcircled{K}}$ SKMB36-0K	Plate (1)
12	$\text{\textcircled{O}}$ SBCB100-0S	Button (1)
12	$\text{\textcircled{K}}$ SBCB100-0C	Button (1)
13	SUWB9	Lever, Knob (1)
14	SHRB40	Bracket (1)
15	SFUMBD2N07	Strobe Cover (1)
16	SFUMBD2N06	Holder (1)
17 [M,MC]	SGXB130-00F	Ornament Plate (1)
17 [other]	SGXB130-00G	Ornament Plate (1)
18	$\text{\textcircled{O}}$ SBCB120-0S	Button (1)
18	$\text{\textcircled{K}}$ SBCB120-0C	Button (1)
19	SHRB41	Holder (1)
20	SKUB3-1	Bottom Cover (1)
21	SFQCQD3N01	Spring, Insulator (4)
22	SKLB2	Insulator (4)
23	$\text{\textcircled{O}}$ SFGK170-01	Rubber Cap (2)
23	$\text{\textcircled{K}}$ SFGK171F01	Rubber Cap (2)
24	SMCB2	Shield Plate (1)
25	SFDJBD2N03	Terminal Plate (1)
26	$\text{\textcircled{O}}$ SKMLQD33-SM	Cabinet (1)
26	$\text{\textcircled{K}}$ SKMLQD33-KM	Cabinet (1)
27 [M]	SGTB69	Name Plate (1)
27 [MC]	SGTB70	Name Plate (1)
27 [E,EC]	SGTB71	Name Plate (1)
27 [EG]	SGTB72	Name Plate (1)
27 [EK]	SGTB74	Name Plate (1)
27 [XA]	SGTB75	Name Plate (1)
27 [XL]	SGTB99	Name Plate (1)
27 [other]	SGTB73	Name Plate (1)
28	SGXB230	Plate (1)
29	$\text{\textcircled{O}}$ SKMB55-0S	Cover (1)
except [M, MC]		
29	$\text{\textcircled{K}}$ SKMB55-0K	Cover (1)
except [M, MC]		

Ref. No.	Part No.	Description
30	$\text{\textcircled{O}}$ SKMB35-0S	Cover (1)
except [XA]		
30	$\text{\textcircled{K}}$ SKMB35-0K	Cover (1)
except [XA]		
31	SHRB14	Tonearm Rest (1)
32	SFATZ15R01A	Hinge (2)
33	Δ SJSB4	AC Socket (1)
TONEARM PARTS		
41	SFPAMQD201A	Tonearm Ass'y (1)
42	EPC-P30	*Cartridge (1)
except [M, MC]		
43	EPS-30ES	*Stylus (1)
except [M, MC]		
44	SFCNC03301	Cover (1)
except [M, MC]		
45	SUXB4	Shaft (1)
46	SFUMBD2N51	Lift Arm (1)
47	SUWLQD33-KM	Arm Base (1)
48	SUSB1	Spring (1)
49	SHRB48	Lever (1)
50	SFGZN05N51	Cushion Rubber (1)
51	SUSB14	Spring (1)
55	SUWB10E	Plate, Pick-up Fixing (1)
55-1	SUSB22	Spring (1)
56	SFGZZ15R02	Spacer (2)
57	SHRB32-1	Holder (1)
58	SHRB43-1	Pin (1)
MECHANISM PARTS		
61	SUKB6E	Mechanism Plate (1)
62	SDGB3	Main Gear (1)
64	SFGZB63M51	Cushion Rubber (1)
67	SDMB6E	Motor Ass'y (1)
68	SHGB11	Cushion Rubber (1)
69	SDGB6	Wheel (1)
70	SHRB62	Holder (1)
71	SHRB64	Pin (2)
SCREWS AND WASHERS		
N1	XTV3+10G	Screw, $\text{\textcircled{O}}$ 3x10 (14)
N2	SFXWC06N02	Washer (1)
N3	XTN3+6J	Screw, $\text{\textcircled{O}}$ 3x6 (3)
N4	XYN3+C8S	Screw, $\text{\textcircled{O}}$ 3x8 (1)
N5	XTV3+6J	Screw, $\text{\textcircled{O}}$ 3x6 (4)
N6	SNSB4	Screw (4)
N7	XTW3+14QFYR	Screw, $\text{\textcircled{O}}$ 3x14 (1)
N8	SFPEV0Q601	Screw (1)
N9	SNSB1	Screw (2)
N11	SFXGQ34N02	Screw (1)
N12	XUC3	Washer, ϕ 3 (1)
N13	XYN26+C5	Screw, $\text{\textcircled{O}}$ 2.6x5 (3)
N14	XTV3+35J	Screw, $\text{\textcircled{O}}$ 3x35 (1)
N15	XTV3+8J	Screw, $\text{\textcircled{O}}$ 3x8 (2)
N16	XTV3+8G	Screw, $\text{\textcircled{O}}$ 3x8 (3)
N17	SNSB5	Screw (2)

Ref. No.	Part No.	Description
ACCESSORIES		
A1 [M]	SOX54010	Instruction Book (1)
A1 [MC]	SOXLQD22-KMC	Instruction Book (1)
A1 [EK]	SOX54012	Instruction Book (1)
A1 [EG]	SOX54013	Instruction Book (1)
A1 [EF]	SOX54014	Instruction Book (1)
A1 [EI]	SOX54015	Instruction Book (1)
A1	SOX54016	Instruction Book (1)
[XL, XA]		
A1 [other]	SOXLQD22-KE	Instruction Book (1)
A2	Δ SJA170	AC Cord (1)
[M, MC]		
A2 [EK]	Δ SFDAC05G02	AC Cord (1)
A2 [XL]	Δ SJA163	AC Cord (1)
A2 [XA]	Δ SJA168-1	AC Cord (1)
A2 [other]	Δ SFDAC05E02	AC Cord (1)
A3	SFDHBD2N01	Output Cord (1)
A4	SFDLJ11N01E	Ground Wire (1)
A5	SFWE212-01	45 Adaptor (1)
A6 [XA]	SJP9215	Adaptor (1)
only		
PACKING PARTS		
P1 [M]	$\text{\textcircled{O}}$ SPGB40	Carton Box (1)
P1 [MC]	$\text{\textcircled{O}}$ SPGB41	Carton Box (1)
P1 [EF]	$\text{\textcircled{O}}$ SPGB71	Carton Box (1)
P1 [EF]	$\text{\textcircled{O}}$ SPGB52	Carton Box (1)
P1	$\text{\textcircled{O}}$ SPGB70	Carton Box (1)
[other]		
P1	$\text{\textcircled{K}}$ SPGB51	Carton Box (1)
[other]		
P2	SFHHBD3N01	Pad, Left (1)
P3	SFHHBD3N02	Pad, Right (1)
P4	SFHZBD2N01	Pad, Tonearm Weight (1)
P5	SPEB2	Clamper, Tonearm (1)
P6	SPEB3	Clamper, Turntable (2)
P7	SFYH60X60	Polyethylene Bag, Unit (1)
P8	SPPB1	Polyethylene Bag, Dust Cover (1)
P9	SFYF32A35	Polyethylene Bag, Turntable Mat (1)
P10	SPSB10	Pad, Turntable Mat (1)

Resistors and Capacitors

Numbering System of Resistor

Example

ERD	S2	T	J	101
Type	Wattage	Shape	Tolerance	Value
(Carbon)	(1/4W)		(\pm 5%)	(100 Ω)
ERG	1	AN	J	331
Type	Wattage	Shape	Tolerance	Value
(Metal Oxide)	(1W)		(\pm 5%)	(330 Ω)
ERX	1	AN	J	2R7
Type	Wattage	Shape	Tolerance	Value
(Metal Film)	(1W)		(\pm 5%)	(2.7 Ω)

Numbering System of Capacitor

Example

ECE	A or B	0J	U	470
Type	Shape	Voltage	Peculiarity	Value
(Electrolytic)		(6.3V)	use	(47 μ F)
ECQ	G	1	223	K
Type	Peculiarity	Voltage	Value	Tolerance
(Plastic Film)		(100V DC)	(0.022 μ F)	(\pm 10%)
ECK	R	1H	473	Z
Type	Shape	Voltage	Value	Tolerance
(Ceramic)		(50V DC)	(0.047 μ F)	\pm 20%

Type	Voltage		Tolerance
	ECE Type	Others	
ECE : Electrolytic	0J : 6.3V	1C : 16V DC	K : \pm 10%
	1A : 10V	1E : 25V DC	
ECK } : Ceramic	1C : 16V	05 : 50V DC	Z : \pm 20%
	1E : 25V	1H : 50V DC	
ECQ : Plastic Film	1V : 35V	1 : 100V DC	
	1H : 50V		
	1J : 63V		

Ref. No.	Part No.	Value	Ref. No.	Part No.	Value
R404	ERDS2TJ103	10K	R412, 413	ERDS2TJ103	10K
R405	ERDS2TJ183	18K	R414, 415	ERDS2TJ102	1K
R406	ERDS2TJ103	10K	R416	ERDS2TJ151	150
R407	ERDS2TJ102	1K	R417	ERDS2TJ101	100
R409	ERDS2TJ102	1K	R418	ERDS2TJ472	4.7K
R410	ERDS2TJ822	8.2K	R419	ERDS2TJ821	820
R411	ERDS2TJ103	10K			

Ref. No.	Part No.	Value
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EXPLODED VIEW

SL-QD22

