Service Manual

QUARTZ Direct Drive **Automatic Turntable System**



Color

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

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

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

Turntable System

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] FR 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, Mıddle
	near East, Africa
	and Oceania.

SPECIFICATIONS

■ TURNTABLE SECTION

Type: Quartz direct drive

Automatic turntable Auto-start Auto-return Auto-stop Repeat play Manual play Direct drive

Drive method: 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

-56 dB DIN-A Rumble:

Technics

(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 13.5 g (including cartridge)

Matsushita Electric Trading Co., Ltd.

P O Box 288, Central Osaka Japan

Effective mass: Stylus pressure

adjustment range: 1 25±0 25 g Applicable cartridge

weight:

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

Moving magnet stereo cartridge

Magnet circuit: All laminated core Frequency response: 10 Hz~40 kHz

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

Division of Matsushita Electric of Puerto Rico, Inc. Ave 65 De Infanteria, KM 9 7 Victoria Industrial Park Carolina, Puerto Rico 00630

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

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

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]) More than 22 dB at 1 kHz

Channel balance: Within 18 dB at 1 kHz

Recommended load

Channel separation:

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

■ GENERAL

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

Specifications are subject to change without notice for further

Weight:

Power consumption:

Weight and dimensions shown are approximate

Dimensions (W×H×D): 430×100×375 mm

For United Kingdom and

AC 240V, 50 Hz

AC 220V, 50 Hz

For continental Europe

AC 110~127/220~240V, 50/60 Hz

(16-15/16"×3-15/16"×14-3/4")

(16-15/16"×14-9/16"×16-1/8")

When dust cover is open

430×370×410 mm

45 kg (99 lb)

Australia

For others.

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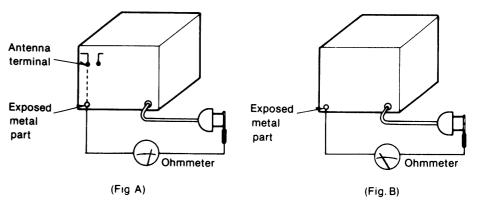
■ SAFETY PRECAUTION (This "safety precaution" is applied only in U.S.A.)

- 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

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



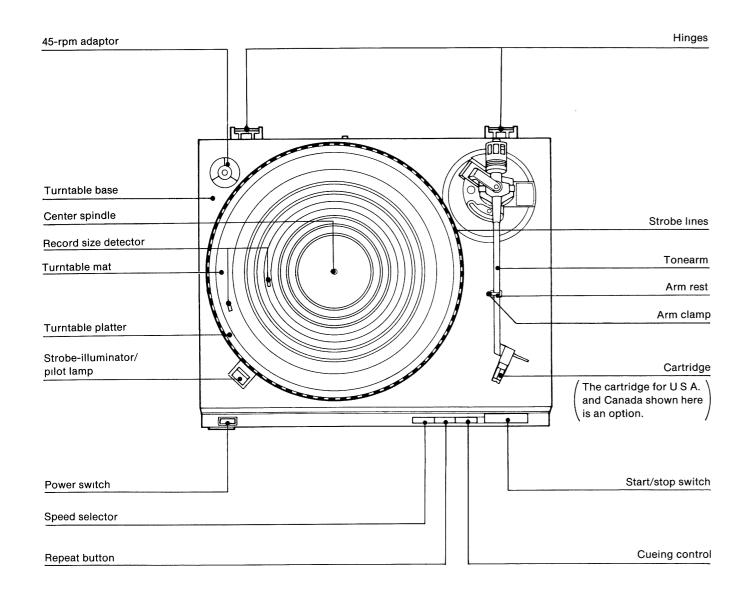
Resistance = $3M\Omega - 52M\Omega$

Resistance = Approx ∞

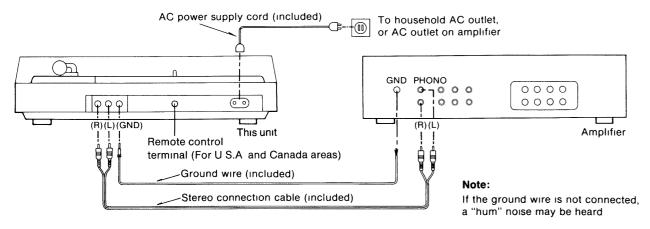
4. If the measurement is outside the specified limits, there is a possibility of a shock hazard. The equipment should be repaired and rechecked before it is returned to the customer



■ LOCATION OF CONTROLS

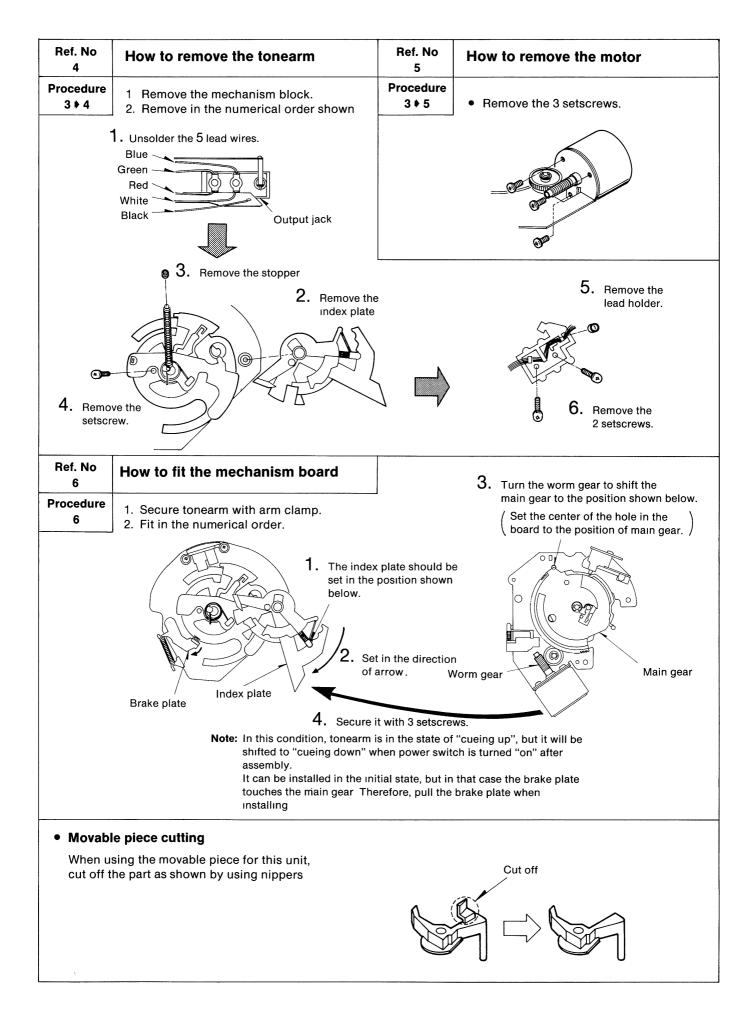


■ CONNECTIONS



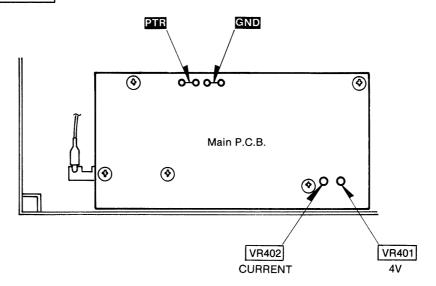
■ DISASSEMBLY INSTRUCTIONS

Ref. No 1	How to remove the cartridge	Ref. No 2	How to remove the bottom board
Procedure	Note	Procedure	Secure tonearm with arm clamp.
1	When servicing, remove the cartridge or stylus in order to protect the stylus tip of cartridge.	2	 Remove the turntable platter. Turn over the unit on a soft cloth. Remove the 5 setscrews.
	e the setscrew and pull out the cartridge, care that your hand does not touch the stylus		
	Setscrew	Soft clo	oth
Ref. No	How to remove the each block		
Procedure 2 ≱ 3	Remove the setscrews of each black as sl	- hown in drawir	ng.
Mechanisn		rntable drive P (Power transformer
Pul	Operation P C B		Power source P C B S1 Power button



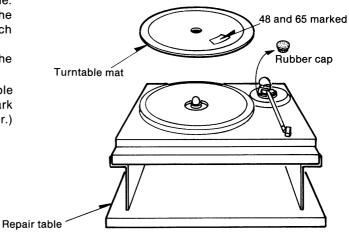
■ MEASUREMENTS AND ADJUSTMENTS

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

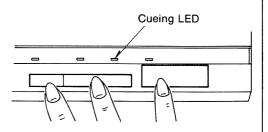
Before turning on the power switch, make sure that the tonearm is free in the rest position, and set all the 4 operation keys to on (pressing all the keys with fingers). Subsequently, turn on the power swith. (In the test mode, the turntable will not rotate even when the tonearm is moved inwards.)



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

3. Normal mode

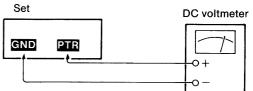
Press the Stop key once in the state of Test mode 2



CURRENT ADJUSTMENT

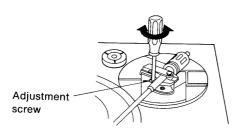
- 1. Set the microcomputer to Test mode 1.
- 2 Connect DC voltmeter to PTR (+) and GND (-) of P.C.B.
- 3 Move the tonearm to the position where the reading of DC voltmeter is 8V±0.005V.
- 4 Adjust VR402 so that cueing LED lights up.
- 5. After the LED lights up, be sure to turn off the power

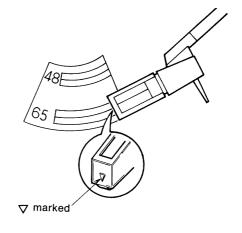
(Be sure to turn off the power switch before the next adjustment.)



8V ADJUSTMENT

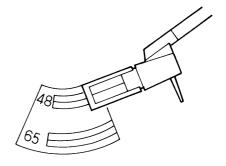
- 1. Set the microcomputer to **Test mode 1**.
- 2 Manually fix the stylus cover in the 65 position of turntable mat, matching the marks (∇) .
- 3. Turn the shutter plate adjusting screw in the adjusting hole of the arm base so that the cueing LED lights up.





4V ADJUSTMENT

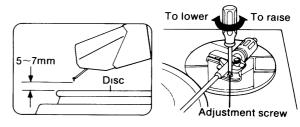
- 1. Press the Start/Stop key or Stop key and shift the mode to Test 2 (In SL-QD33, Repeat LED lights up.)
- 2. Manually fix the stylus cover in the 48 position of turntable mat, matching the marks (\(\nabla\)).
- 3. Turn VR401 so that the cueing LED lights up.
- 4. Return the tonearm to the rest position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

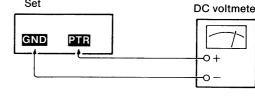


ADJUSTMENT OF THE STYLUS-TO-DISC CLEARANCE

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

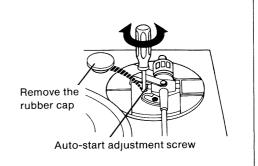
If the stylus does not land in the lead-in groove, adjust as follows.

- 1. Clamp the tonearm to the arm rest.
- 2. Remove the rubber cap.
- 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.

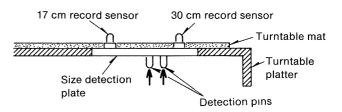
Description of Mechanism

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.

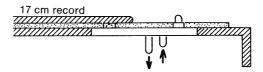
a) State of no record

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



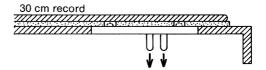
b) 17 cm record

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

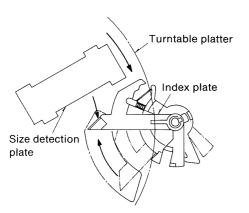


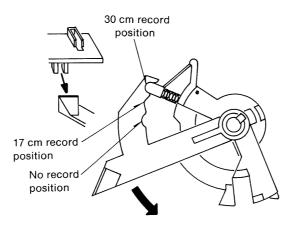
c) 30 cm record

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



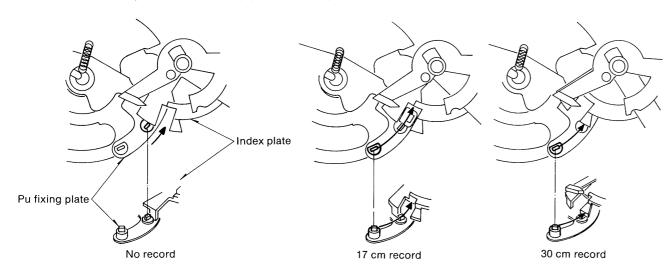
As the turntable platter starts rotating, the index plate is shifted from the initial position (broken line) to the solid line position by the arm mechanism. Since the detection pin of the turntable platter is as mentioned above, the detection pin does not touch the index plate. When 17 cm record is 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.





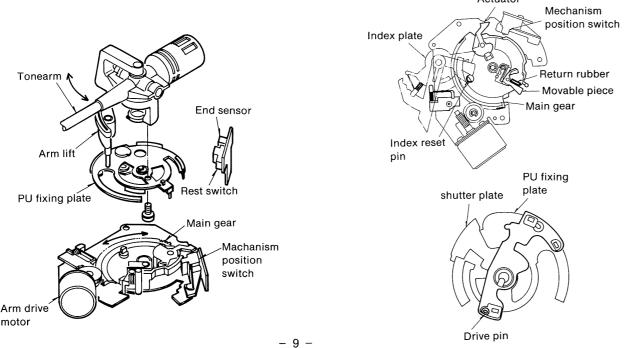
2. Drop position setting

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.



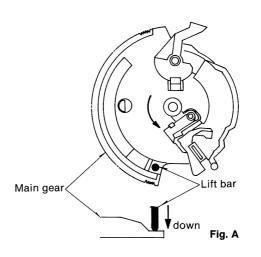
3. Mechanism of tonearm operation

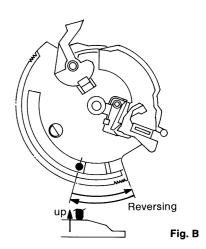
The main gear is rotated by DC motor to perform cueing up/down, tonearm lead-in and return operations. Also, UP switch and DOWN switch are provided for the detection of mechanism operating position, and Rest switch, for the detection of tonearm rest position. The arm driving mechanism structure and the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



a) Cueing operation

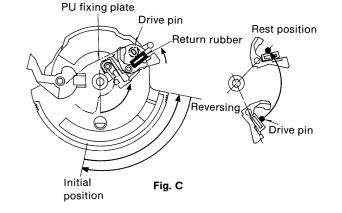
The lift rod is initially in the position of main gear (Fig. A) when cueing mode is "down". With the cueing key pressed, the motor rotates according to the command from the microcomputer to turn the main gear to the position of Fig. B. The main gear rotation causes the cueing mode to be shifted from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





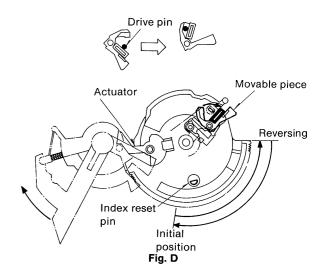
b) Stop operation

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.

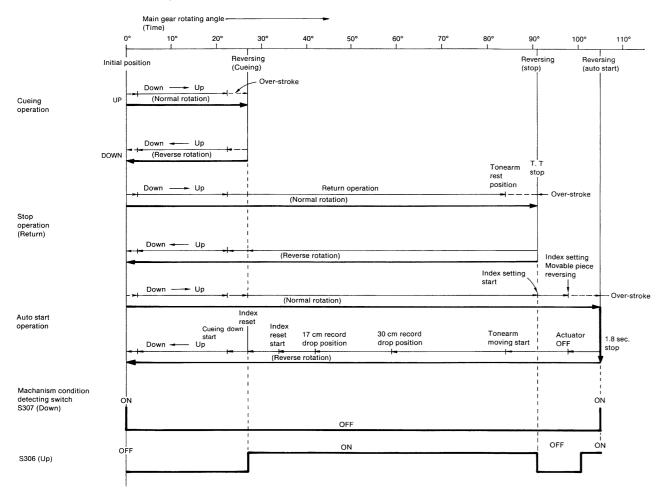


c) Auto start operation

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

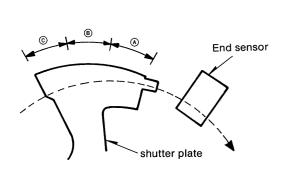


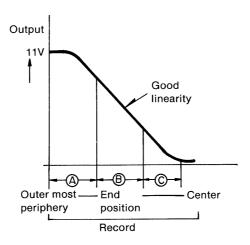
To detect the state of mechanism operation, a detection switch which turns ON/OFF with the rotation of main gear is installed as shown. With this switch operated, the state of mechanism is input to the microcomputer to give the normal or reverse rotation command to the motor.

Description of Circuit

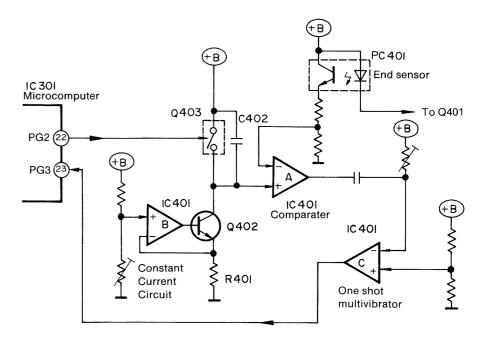
1. End detection sensor

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.)

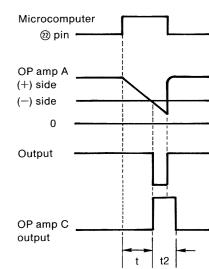




2. End detection circuit



Timing chart

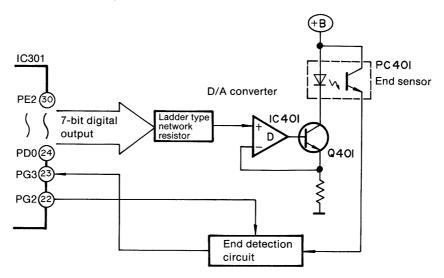


Q403 repeats to turn on/off with the strobe output from pin ② (PG2) of microcomputer (IC301). When the strobe of pin ② is at "L", Q403 turns on, therefore (+B) is applied to the (+) side of OP amp A (IC401). When the strobe of pin ② changes to "H", Q403 turns off and the voltage on the (+) side of OP 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 ⓐ with the rise of the strobe of pin ⓐ. Duty (t2) 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.



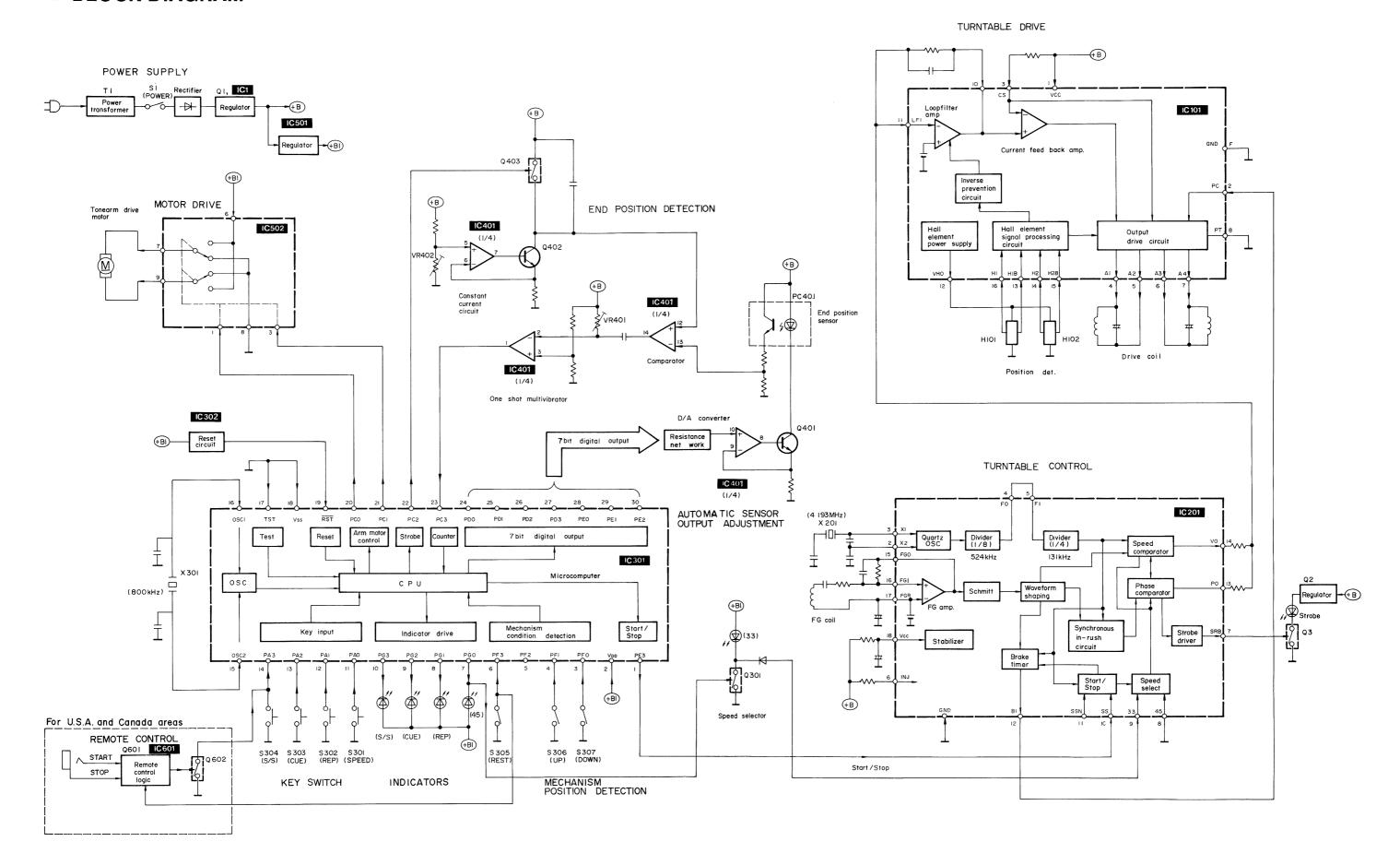
When the tonearm is in the rest position, 7-bit pulses are output from pins <a>® <a>® of microcomputer, and the digital output is changed to analog output by OP amp D and D/A converter consisting of ladder type network resistor, thereby controlling the current flowing to LED of the detection sensor. In that case, strobe is output from pin <a>® (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.

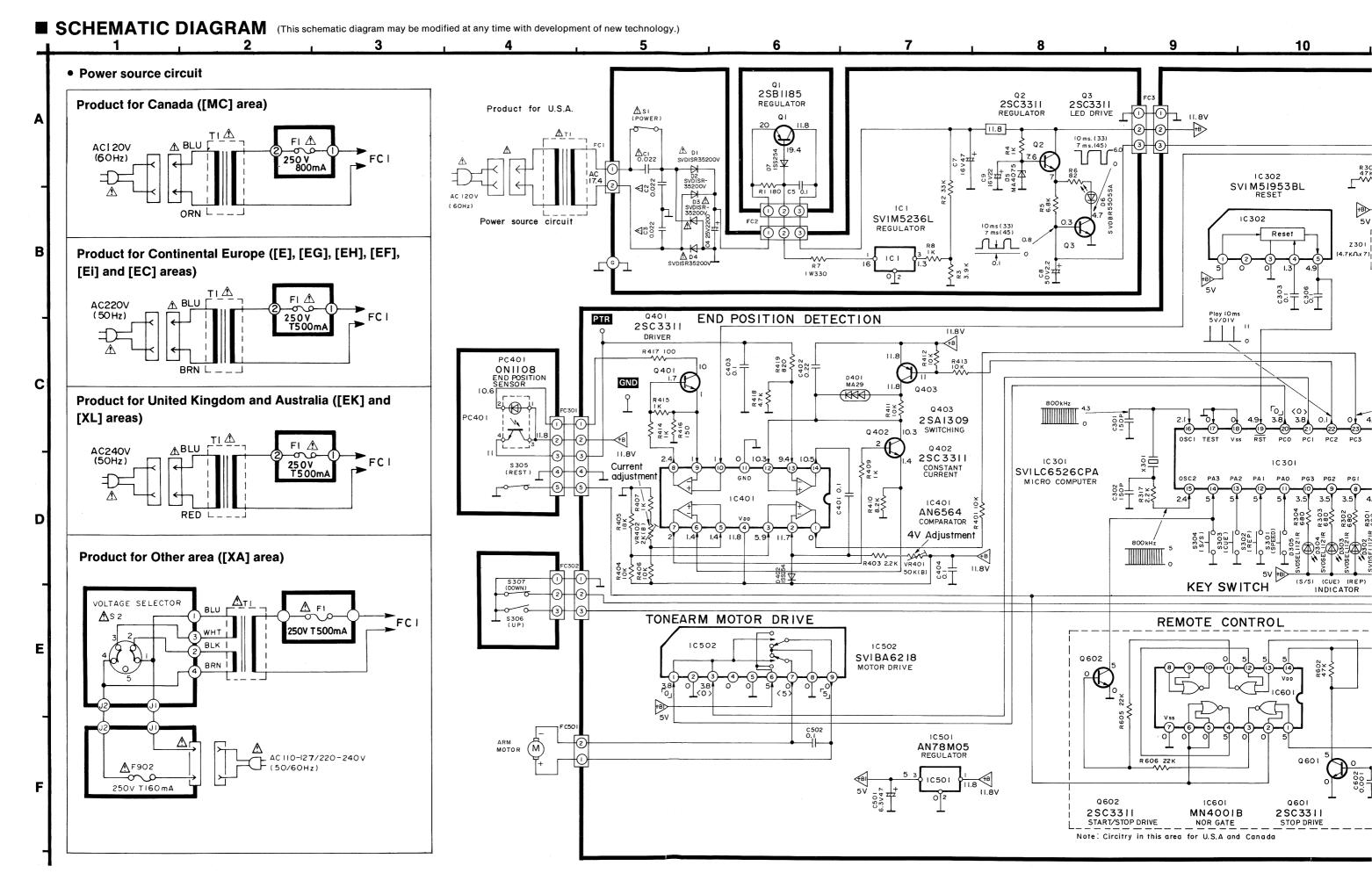
■ DESCRIPTION OF IC301 (SVILC6526CPA) TERMINALS

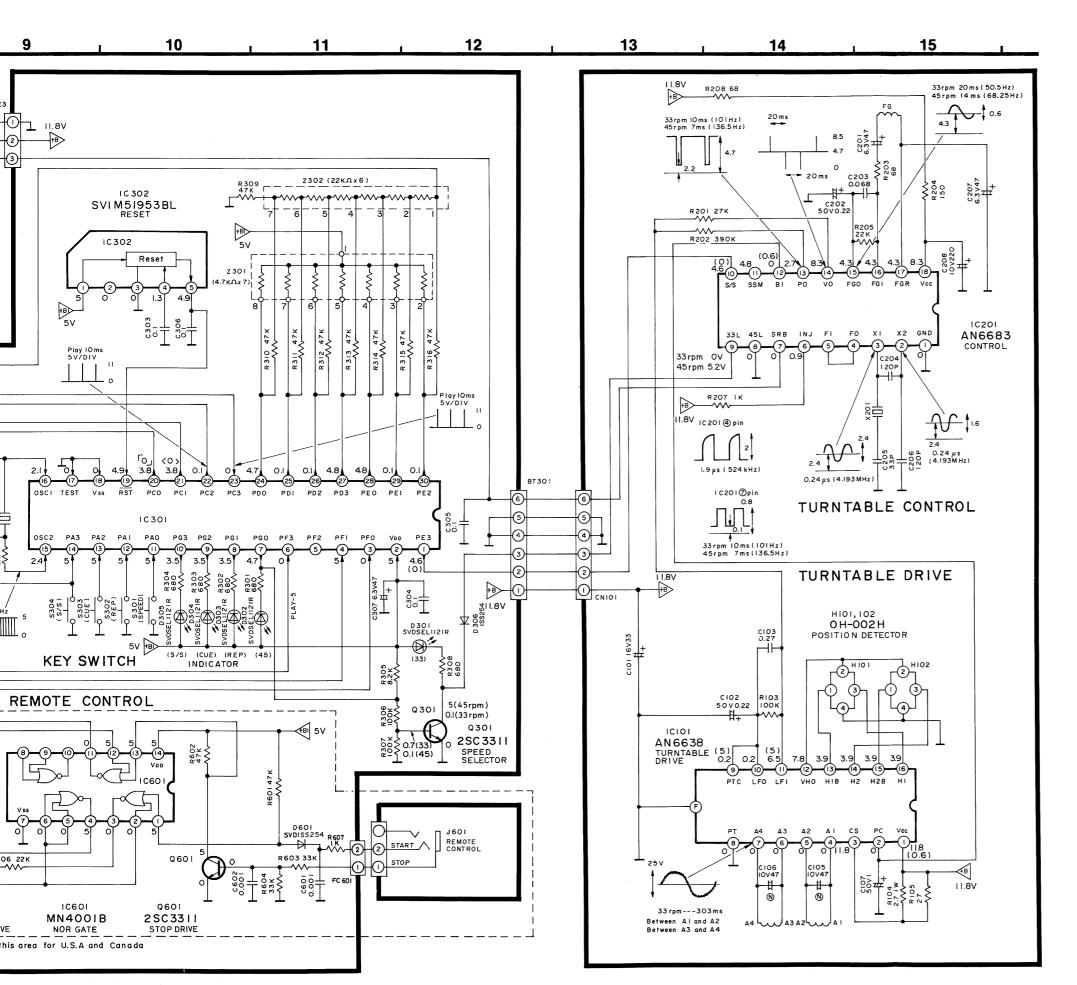
Pin No.	Mark	Description		
1	PE3	Turntable start/stop command output terminal ("L" at start, "H" at stop.)		
2	VDD	Power supply terminal (+5V)		
3	PF0	Mechanism condition detecting switch (Down SW) input terminal. (Mechanism condition is detected in up switch combination.)		
4	PF1	Mechanism condition 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. [Openfull-auto (SL-QD33), Groundsemi-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 (800 k	oscillation Hz)	n input t	erminal.		
16	OSC1	Clock (800 k	oscillation Hz)	n input t	erminal.		
17	TEST	1	erminal sed, conn	ected to	ground	l.)	
18	vss	Groun	d termina	I			
19	REST		terminal computer	r is reset	at "L".)		
20	PG0	Tonearm motor drive control output terminal.					minal.
			Part		Motor co	onditions	
21	PG1		D00	Braked	Free	Normal	Reverse
			PG0 PG1	H	L	H	H L
22	PG2	Strobe output terminal. (Strobe is output during detection sensor automatic output adjustment and end detection.					
23	PG3	and er	tion senso nd detection ads the time rise of pu stment an	on input ne from i Ise inpu	termina rise of s t during	l. trobe of automa	PG2 \
24	PD0	LSB					
25	PD1	1	7-bit dig	jital outp	out term	inal.	
26	PD2	1	/7-bit pu	lses are	outnut t	o I FD o	f \
27	PD3	1 }	detectio	n senso	r until th	ne outpu	t of
28	PE0	1	detection input of				
29	PE1	\left\ input of PG3Automatic output \left\ adjustment of detection sensor.				1	
30	PE2	мѕв					

■ BLOCK DIAGRAM







Notes:

1. S1 : Power switch in "on" position.

: Voltage selector switch in "220-240V" position 2. S2

(For [XA] area only)

3. S301 : Speed select switch.

4. S302 : Repeat switch.

5. S303 : Cueing switch. 6. S304 : Start/stop switch.

7. S305 : Rest position detection switch in "on" position.

(Tonearm is in the rest position.)

8. S306: Mechanism position detection (up) switch in "off" position. (Tonearm is in the rest position.)

9. S307: Mechanism position detection (down) switch in "on" position

(Tonearm is in the rest position.)

10. 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.

 $^{\star} \; \square \;$ is the voltage when arm motor is in normal rotation mode.

 $^{\star} < \; > \;$ is the voltage when arm motor is in reverse rotation mode.

11. Important safety notice:

Components identified by A 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**

■ 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.

OUTPUT

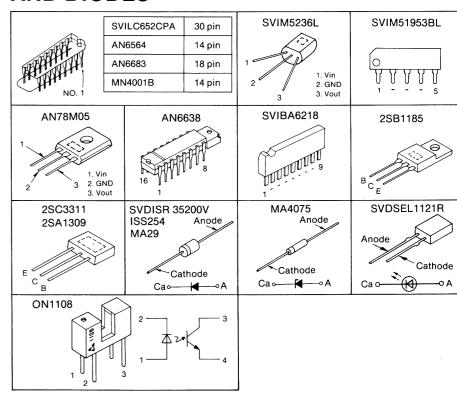
(0)

-0

FUSIBLE REMPLACEMENT

Le symbole qui se trouve près du fusible singifie 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 vàleur des fusibles

■ TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES



■ REPLACEMENT PARTS LIST

Notes:

Ref. No.

IC201

IC302

IC501

IC502

IC601

Q2, 3

Q301

Q403

[M,MC] only DIODES

[M,MC]

TRANSISTORS

Q401, 402 2SC3311

Q601, 602 2SC3311

Part. No.

INTEGRATED CIRCUITS
IC1 SVIM5236L

AN6638

AN6683 IC SVILC6526CPA IC

AN78M05

SVIBA6218

2SB1185DEF

2SC3311

2SC3311

2SA1309

MA4075 SVDBR5505SA

1SS254

MN4001B

IC

IC

Transistor

Transistor

Transistor

Transistor

Transistor

Transistor

LED

SVIM51953BL AN6564

- 1. Part numbers are indicated on most mechanical parts. Please use this part number for parts order.
- Important safety notice:
 Components identified by
 <u>↑</u> mark have special characte
 - ristics important for safety.

 When replacing any of these components, use only manufacturer's specified parts.
- 3. (R)-marked parts are used for black type only, while \(\)-marked parts are for silver type only.
- 4. Parts other than ®-and O-marked are used for both black and silver type.

Description

- Bracketed indications in Ref. No. columns specify the area.
 Parts without these indications can be used for all areas.
- The "(§)" mark is service standard parts and may differ from production parts.
- 7. The parenthesized numbers in the column of description stand for the quantity per set.

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.

ef. No.	Part. No.	Description	Ref. No.	Part. No.	Descriptio
301~305	SVDSEL1121R	LED	SWITCHE	S	
D306	1SS254	Diode			
D401	MA29TA	Diode		SFDSF01N02	Power
D402	1SS254	Diode	11 ' '	SFDSHXW225-3	Voltage Selector
D601	SVD1SS254	Diode		EVQQS405K	Operation
[M,MC]			S305~307	SSHB1	Rest & Mechanisr
only					Position Det.
OSCILLA	TORS		POWER T	RANSFORMER	
X201	SVQNR41TR	Crystal, 4.193 MHz	T1 [M] /	SLT48DTL3A	Power Source
X301	SVFCSB800D	Ceramic, 800 kHz	T1 [MC] <u> </u>	SLT48DT11C	Power Source
			_ T1	SLT48DTE13E	Power Source
VARIABL	E RESISTOR		[EK, XL]		
VR401	EVN61AA00B54	Variable Resistor, 50kΩ		SLT57DT7E	Power Source
		(B)	I T1 [Other]/	ASLT48DT10E	Power Source
VR402	EVN61AA00B23	Variable Resistor, 2kΩ	FUSES		
		(B)	EL IMCL A	XBA2F08NU100	250V, 800mA
рното ІІ	NTERRUPTOR		only		
PC401	ON1108	End Position Sensor	F1 /	XBA2C05TB0	250V, T500mA
COMPON	IENT COMBINA	TION	[M]		
Z301	EXBP87472KR	4.7kΩ×7	F902 [XA]/	XBA2C016TB0	250V, T160mA
Z302	EXBS86223KR	22kΩ×6	only '		
HALL ELE	MENT				
H101, 102	OH-002	Hall Element	71		

Resistors and Capacitors

⚠SVD1SR35200V Rectifier

Numbering System of Resistor

Example

ERD	S2	T	J	101
Type (Carbon)	Wattage (1/4W)	Shape	Tolerance (±5%)	Value (100Ω)
ERG	1	AN	J	2R2
Type (Metol Oxide)	Wattage (1W)	Shape	Tolerance (±2%)	Value (2.2Ω)
ERD	2	FC	G	101
Type	Wattage	Shape	Tolerance	Value
(Carbon)	(1/4W)	Peculiarity	$(\pm 2\%)$	(100Ω)

Numbering System of Capacitor

Example

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

Ref. No.	Part No.	Value	Ref. No.	Part No.	Value
RESISTORS			R205	ERDS2TJ223	22K
			R207	ERDS2TJ102	1K
R1	ERDS2TJ181	180	R208	ERDS2TJ680	68
R2	ERDS2TJ333	33K	R301, 302	ERDS2TJ681	680
R3	ERDS2TJ392	3.9K	R303, 304	ERDS2TJ681	680
R4	ERDS2TJ102	1K			
R5	ERDS2TJ682	6.8K	R305	ERDS2TJ822	8.2K
R6	ERDS2TJ820	82	R306, 307	ERDS2TJ104	100K
R7	ERG1ANJ331	330	R308	ERDS2TJ681	680
R8	ERDS2TJ102	1K	R309, 310	ERDS2TJ473	47K
R103	ERDS2TJ104	100K	R311, 312	ERDS2TJ473	47K
R104	ERX1ANJ2R7	2.7	R313, 314	ERDS2TJ473	47K
			R315, 316	ERDS2TJ473	47K
R105	ERDS2TJ270	27	R317	ERDS2TJ222	2.2K
R201	ERDS2TJ273	27K	R401	ERDS2TJ103	10K
R202	ERDS2TJ394	390K	R403	ERDS2TJ222	2.2K
R203	ERDS2TJ680	68			
R204	ERDS2TJ151	150	R404	ERDS2TJ103	10K
			R405	ERDS2TJ183	18K

Toras	v	Tolerance	
Туре	ECE Type	Others	Tolerance
ECE : Electrolytic ECK)	0J : 6.3V 1A : 10V	1C : 16V DC 1E : 25V DC	K : ±10% Z : +80 %
ECF : Ceramic	1C : 16V 1E : 25V	05 : 50V DC 1H : 50V DC	20
ECQ : Plastic Film	1V : 35V 1H : 50V	1 : 100V DC	
	1J : 63V		L

Part No.	Value	Ref. No.	Part No.	Value
ERDS2TJ103	10K	R417.	ERDS2TJ101	100
ERDS2TJ102	1K			
ERDS2TJ102	1K	R418	ERDS2TJ472	4.7K
ERDS2TJ822	8.2K	R419	ERDS2TJ821	820
ERDS2TJ103	10K	R601, 602	ERDS2TJ473	47K
ERDS2TJ103	10K	R603, 604	ERDS2TJ333	33K
ERDS2TJ102	1K	R605, 606	ERDS2TJ223	22K
ERDS2TJ151	150	R607	ERDS2TJ102	1K
	ERDS2TJ103 ERDS2TJ102 ERDS2TJ102 ERDS2TJ822 ERDS2TJ103 ERDS2TJ103 ERDS2TJ102	ERDS2TJ103 10K ERDS2TJ102 1K ERDS2TJ102 1K ERDS2TJ302 8.2K ERDS2TJ303 10K ERDS2TJ103 10K ERDS2TJ103 1K	ERDS2TJ103 10K ERDS2TJ102 1K ERDS2TJ102 1K R418 ERDS2TJ102 1K R419 ERDS2TJ103 10K R601, 602 ERDS2TJ103 10K R603, 604 ERDS2TJ102 1K R605, 606	ERDS2TJ103 10K R417 ERDS2TJ101 ERDS2TJ102 1K R418 ERDS2TJ472 ERDS2TJ102 1K R418 ERDS2TJ472 ERDS2TJ822 8.2K R419 ERDS2TJ821 ERDS2TJ103 10K R601, 602 ERDS2TJ473 ERDS2TJ103 10K R603, 604 ERDS2TJ333 ERDS2TJ102 1K R605, 606 ERDS2TJ223

Ref. No.		Part No.	Value		
CAPACITORS					
C1	Λ	ECQG1223KZ	0.022		
C2, 3	<u>^</u>	ECKR1H223ZF	0.022		
C4		ECEB1EU222	2200		
C5		ECFR1H104ZFM	0.1		
C7		ECEA1CU470	47		
C8		ECEA1HU2R2	2.2		
C9		ECEA1CU220	22		

ĺ	C101	ECEA1CU330	33	C204
	C102	ECEA50ZR22	0.22	C205
	C103	ECQV05274JZ	0.27	C206
	C105, 106	ECEA1AN470S	47	C207
				C208
	C107	ECEA1HU010	1	C301,
	C201	ECEA0JU470	47	
	C202	ECEA50ZR22	0.22	C303
	C203	ECQM1H683KZ	0.068	C304,

	C205	ECCD1H330JC	331
	C206	ECCD1H121KC	120
	C207	ECEA0JU470	47
	C208	ECEA1AU221	220
	C301, 302	ECCR1H151K	150
	C303	ECQG1H104KZT	0.1
3	C304, 305	ECFR1E104ZFM	0.1
_			

Part No.

Ref. No.

Part No.	value	Het. No.	Part No.	valu
ECCD1H121KC	120P	C306	ECFR1E104ZFM	0.1
ECCD1H330JC	33P	C307	ECEA0JU470	47
ECCD1H121KC	120P	C401	ECQG1H104KZT	0.1
ECEA0JU470	47	C402	ECQG1H224KZW	0.22
ECEA1AU221	220	C403, 404	ECFR1E104ZFM	0.1
ECCR1H151K	150P	C501	ECEA0JU470	47
		C502	ECFR1E104ZFM	0.1
ECQG1H104KZT	0.1	C601, 602	ECKR1H102ZF	0.00
ECFR1E104ZFM	0.1			
		L		

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Ref. No.	Part. No.	Description		
CABINET	AND CHASSIS	PARTS		30
1	SFADZ15R01E	Dust Cover	(1)	e
1-1	SFGZD04N01	Rubber Cushion	(2)	30
2	SHOB5	Turntable Mat	(1)	l e
3	SHRB15E	Base,	`] [
		Disc Size Sensor	(1)	31
4	SFTEQD3N01	Turntable Platter	(1)	32
5	SFTMC07-01E	Magnet	(1)	33
6	SFMGQ34N01	Cover, Stator Coil	(1)	34
7	SFMZQ63M53A	Stator Flame Ass'y	(1)	0
8 [XA]	SFGCC05X01	Cushion Rubber	(2)	Т
8 [Other]	SFGCC05N02	Cushion Rubber	(2)	-
- []			(-)	41
9	SFGZC05N03	Cushion Rubber	(1)	42
10	SFUPC05N02	Shield Plate	(1)	е
			` /	[
11 0	SKMB36-0S	Plate	(1)	43
11 ®	SKMB36-0K	Plate	(1)	е
				[]
12 🔾	SBCB100-0S	Button	(1)	44
12 ®	SBCB100-0C	Button	(1)	e
13	SUWB9	Lever, Button	(1)	45
14	SHRB40	Bracket	(1)	46
15	SFUMBD2N07	Strobe Cover	(1)	47
16	SFUMBD2N06	Holder	(1)	48
				49
17 [M,MC]	SGXB130-00D	Ornament Plate	(1)	50
17 [Other]	SGXB130-00E	Ornament Plate	(1)	
				51
18	SBCB120-0S	Button	(1)	52
18 K	SBCB120-0C	Button	(1)	53
				55
19	SHRB41	Holder	(1)	55
20	SKUB3-1	Bottom Cover	(1)	56
21	SFQCQD3N01	Spring, Insulator	(4)	57
22	SKLB2	Insulator	(4)	58
	0501/170.01	D 0		-
23	SFGK170-01	Rubber Cap	(2)	M
23 ®	SFGK171F01	Rubber Cap	(2)	T.
	014000	Object Diete		61
24	SMCB2	Shield Plate	(1)	62
25	SFDJBD2N03	Terminal Plate	(1)	64
ac 0	CKMI ODGG CM	Cohinet	(4)	65
26 (K	SKMLQD33-SM SKMLQD33-KM	Cabinet Cabinet	(1)	66
20 (6)	SKIVILQDSS-KIVI	Capillet	(1)	67
27 [84]	SGTB52	Name Plate	(1)	68
27 [M] 27 [MC]	SGTB53	Name Plate		69
27 [E,EC]	SGTB54	Name Plate	(1)	70
27 [EG]	SGTB55	Name Plate	(1)	- '`
27 [EG]		Name Plate	111	7-
27 [XA]	SGTB57 SGTB67	Name Plate	(1)	72
27 [XL]	SGTB98	Name Plate	(1)	73
27 [Other]		Name Plate	(1)	L
[0000]	-4.500	. samo i iuto	('')	s
28	SGXB230	Plate	(1)	-
	- 3/12200		`''	N
29 🔾	SKMB55-0S	Cover	(1)	N
except			`''	N
[M, MC]				N
	SKMB55-0K	Cover	(1)	N
except			`''	N
[M, MC]				N
• • •				N N
			İ	1
			- 1	

				ì	ſ			
Ref. No.	Part. No.	Description			Ref. No.	Part. No.	Description	
xcept	SKMB35-0S	Cover	(1)		N10	XWC3B	Washer, ϕ 3	(2
KA]					N11	SFXGQ34N02	Screw	(1
(K)	SKMB35-0K	Cover	(1)		N12	XUC3FY	Washer, ϕ 3	(2
xcept					N13	XYN26+C5	Screw, ⊕2.6×5	(3
XA]					N14	XTV3+35J	Screw, ⊕3×35	(1
	SFKUMA1N01E	Tonearm Rest	(1)		N15	XTV3+8J	Screw, ⊕3×8	(2
2	SFATZ15R01A	Hinge	(2)		N16	XTV3+8G	Screw, ⊕3×8	(5
	∑SJSB4	AC Socket	(1)		N17	SNSB5	Screw	(2
[M,MC] nly	SJJ130-1	Jack, Remote control	(1)		ACCESSO	DRIES		
ONEAR	M PARTS			١	A1 [M]	SQX54018-1	Instruction Book	(1
				H	A1 [MC]	SQXLQD33-KMC	Instruction Book	(1
	SFPAMQD201A	Tonearm Ass'y	(1)	П	A1 [EK]	SQX54020	Instruction Book	(1
	EPC-P30	★ Cartridge	(1)	П	A1 [EG]	SQX54021	Instruction Book	(1
xcept				П	A1 [EF]	SQX54022	Instruction Book	(1
M, MC]	ED0 00E0	A Objective	(4)	П	A1 [EI]	SQX54023	Instruction Book	(1
	EPS-30ES	★Stylus	(1)	П	A1	SQX54024	Instruction Book	(1
xcept				П	[XL, XA] A1	SQXLQD33-KE	Instruction Book	/1
M, MC]	SFCNC03301	Cover	(1)	-	[Other]	3QXLQD33-NE	INSTRUCTION BOOK	(1
xcept	01 014000001	00101	(1)		[Other]			
M, MC]				l٢	A2 /	\SJA170	AC Cord	(1
i.,,	SUXB4	Shaft	(1)	Н	[M, MC]	20011110	710 0010	١.
S	SFUMBD2N51	Lift Arm	(1)	П		SFDAC05G02	AC Cord	(1
,	SUWLQD33-KM	Arm Base	(1)	П		SJA163	AC Cord	(1
3	SUSB1	Spring	(1)	П		SJA168-1	AC Cord	(1
)	SHRB48	Lever	(1)	П		SFDAC05E02	AC Cord	(1
)	SFGZN05N51	Cushion Rubber	(1)	-	[Other]			
ı	SUSB14	Spring	(1)		A3	SFDHBD2N01	Output Cord	(1
2	SHRB12	Plate, Index	(1)		A4	SFDLJ11N01E	Ground Wire	(1
3	SHRB38	Sub Plate, Index	(1)		A5	SFWE212-01	45 Adaptor	(1
Į.	SUSB42	Spring	(1)		A6 [XA] <u></u>		Adaptor	(1
5	SUWB10E	Plate, Pidk-up Fixing	(1)	1	only		•	•
5-1	SUSB22	Spring	(1)	l	A7	SJP2257K	Remoto Control Cord	(1
6	SFGZZ15R02	Spacer	(2)	1	[M, MC]			
7	SHRB32-1	Holder	(1)		only			
3	SHRB43-1	Pin	(1)		PACKING	PARTS		
ECHAN	ISM PARTS			ŀ	P1 [M] ()	SPGB26	Carton Box	(1
l	SUKB6E	Mechanism Plate	(1)	П	P1 [M] ®	SPGB47	Carton Box	(1
2	SDGB3	Main Gear	(1)	П	P1 [MC]	SPGB27	Carton Box	(1
3	SFUMB63M51	Movable Piece	(1)	П	P1 [MC] (S	SPGB48	Carton Box	(1
1	SFGZB63M51	Cushion Rubber	(1)	П	P1 [EF] ()	SPGB54	Carton Box	(1
5	SUSB31	Spring	(1)	П	P1 [EF] ®		Carton Box	(1
6	SHRB47	Lever	(1)	Н	P1 (SPGB53	Carton Box	(1
7	SMNLQD33-KM	Motor Ass'y	(1)		[Other]			
3	SHGB11	Cushion Rubber	(1)	Į L		SPGB68	Carton Box	(1
)	SDGB6	Wheel	(1)		[Other]			
)	SHRB62	Holder	(1)			OF HURDONIO	D-11-0	,_
	CHDDCA	Din	(2)		P2	SFHHBD3N01	Pad, Left	(1
l 1	SHRB64 SHRB63	Pin Lever	(2)		P3	SFHHBD3N02	Pad, Right	(1
2	SUSB42	Spring	(1) (1)		P4 P5	SFHZBD2N01 SFHZB63M01	Pad, Tonearm Weight	
,	303042	- opinig	('')]	P6	SPEB3	Clamper, Tonearm Clamper, Turntable	(1
CREWS	AND WASHERS	3			P7	SFYH60X60	Polyethylene Bag,	
1	XTV3+10G		(17)		Do.	CDDD1	Unit	(1
2	SFXWC06N02	Washer	(1)		P8	SPPB1	Polyethylene Bag,	/+
3	XTN3+6J	Screw, ⊕3×6	(3)		P9	SEAE33V3E	Dust Cover Polyethylene Bag,	(1
4	XYN3+C8S	Screw, ⊕3×8	(1)		1 9	SFYF32A35	Turntable Mat	11
5	XTV3+6J	Screw, ⊕3×6	(4)		P10	SPSB10	Pad, Turntable Mat	(1
6	SNSB4	Screw	(4)		10	5. 5510	rau, rumable wal	(1
7	XTW3+14QFYR	Screw, ⊕3×14	(1)					
8	SFPEV0Q601	Screw	(1)					
9	SNSB1	Screw	(2)					
				J	L			

■ EXPLOD

SL-QD33 **■ EXPLODED VIEW** Part No. ECFR1E104ZFM 0.1 ECEA0JU470 ECQG1H104KZT 0.1 ECQG1H224KZW 0.22 ECFR1E104ZFM 01 Except for [XA] ECEA0JU470 47 ECFR1E104ZFM 0.1 ECKR1H102ZF 0.001 Except for [M, Washer, ϕ 3 Screw Washer, ϕ 3 Except for [M], Screw, $\oplus 2.6 \times 5$ 28 [MC] 52 Screw, ⊕3×35 Screw, ⊕3×8 (2) (5) Screw, ⊕3×8 Screw Instruction Book 1-1—►� Instruction Book AC Cord AC Cord AC Cord AC Cord AC Cord **⊸**N15 Output Cord D Ground Wire (1) N17 45 Adaptor (1) Adaptor Remoto Control Cord (1) N14 Carton Box Carton Box Carton Box 0 Carton Box Carton Box Carton Box Carton Box Pad, Right Pad, Tonearm Weight (1) Clamper, Tonearm Clamper, Turntable Polyethylene Bag, Polyethylene Bag, Dust Cover Polyethylene Bag, Turntable Mat Pad, Turntable Mat (1) Printed in Japan - 26 -

860512000 (§) TK/HY