ORDER NO. HAD8606575C0
A2

Service Manual

SL-J11D

DC Servo Automatic
Turntable System

1784

Turntable System

SL-J11D

Color

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

Color	Areas
(K)	[M] ..... U.S.A.
(K)	[MC] ... Canada.
(S) (K)	[E] ..... Switzerland and Scandinavia.
(S) (K)	[EK] .... United Kingdom.
(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.

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

SPECIFICATIONS

■ TURNTABLE SECTION

Type: Automatic turntable
Features: Auto-start, Auto-stop
Auto-return, Record detector
Repeat, Manual
Drive method: Belt drive
Motor: DC motor
Drive control method: DC servo control
Turntable platter: Aluminum die-cast
Diameter 300 mm (12")
Turntable speeds: 33-1/3 rpm and 45 rpm
Wow and flutter: 0.045% WRMS (JIS C5521)
±0.06% weighted zero to peak
(IEC 98A weighted)
Rumble: −70 dB DIN-B
(IEC 98A weighted)
−45 dB DIN-A
(IEC 98A unweighted)

■ TONEARM SECTION

Type: Static-balanced, Linear tracking tonearm
Plug-in-connector type
Effective length: 105 mm (4-1/8")
Tracking error angle: Within ±0.1°
Tonearm drive motor: DC motor

■ CARTRIDGE SECTION

Type Moving magnet stereo cartridge
Frequency response 10 Hz~35 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 45 000])
Channel separation 22 dB at 1 kHz
Channel balance Within 2 dB at 1 kHz
Recommended load impedance 47 kΩ~100kΩ
Compliance (dynamic) 12×10^{-6} cm/dyne at 100 Hz
Stylus pressure range 1.25±0.25 g
Weight 6 g (cartridge only)
Replacement stylus EPS-24CS

Technics

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Secaucus, New Jersey 07094

Panasonic Sales Company, Division of Matsushita Electric of Puerto Rico, Inc.
Ave. 65 De Infanteria, KM 9.7
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5770 Ambler Drive, Mississauga,
Ontario, L4W 2T3

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

■ GENERAL

Power supply: For U.S.A. and Canada:
AC 120V, 60 Hz
For United Kingdom:
AC 240V, 50 Hz
For Continental Europe:
AC 220V, 50 Hz

Power consumption: 8 W

Dimensions (W×H×D): 315×88×315 mm
(12-1/2"×3-1/2"×12-1/2")

Weight: 3.3 kg (7.4 lb.)

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

■ CONTENTS

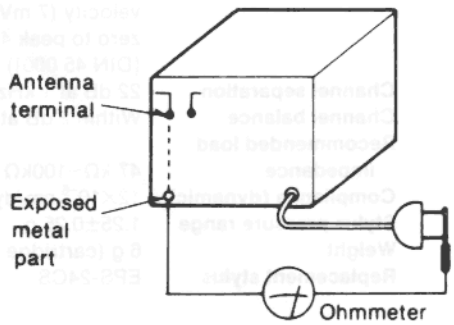
■ SAFETY PRECAUTION (This "safety precaution" is applied only in U.S.A.)

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

• INSULATION RESISTANCE TEST

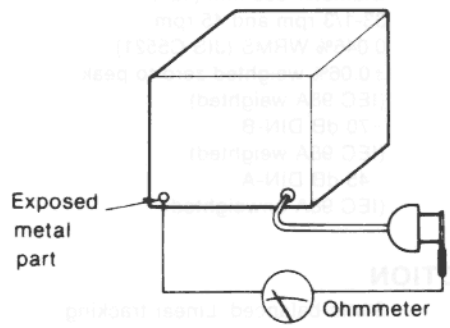
1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads antenna, control shafts, handle brackets, etc. Equipment with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

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



(Fig. A)

Resistance = 3MΩ—5.2MΩ

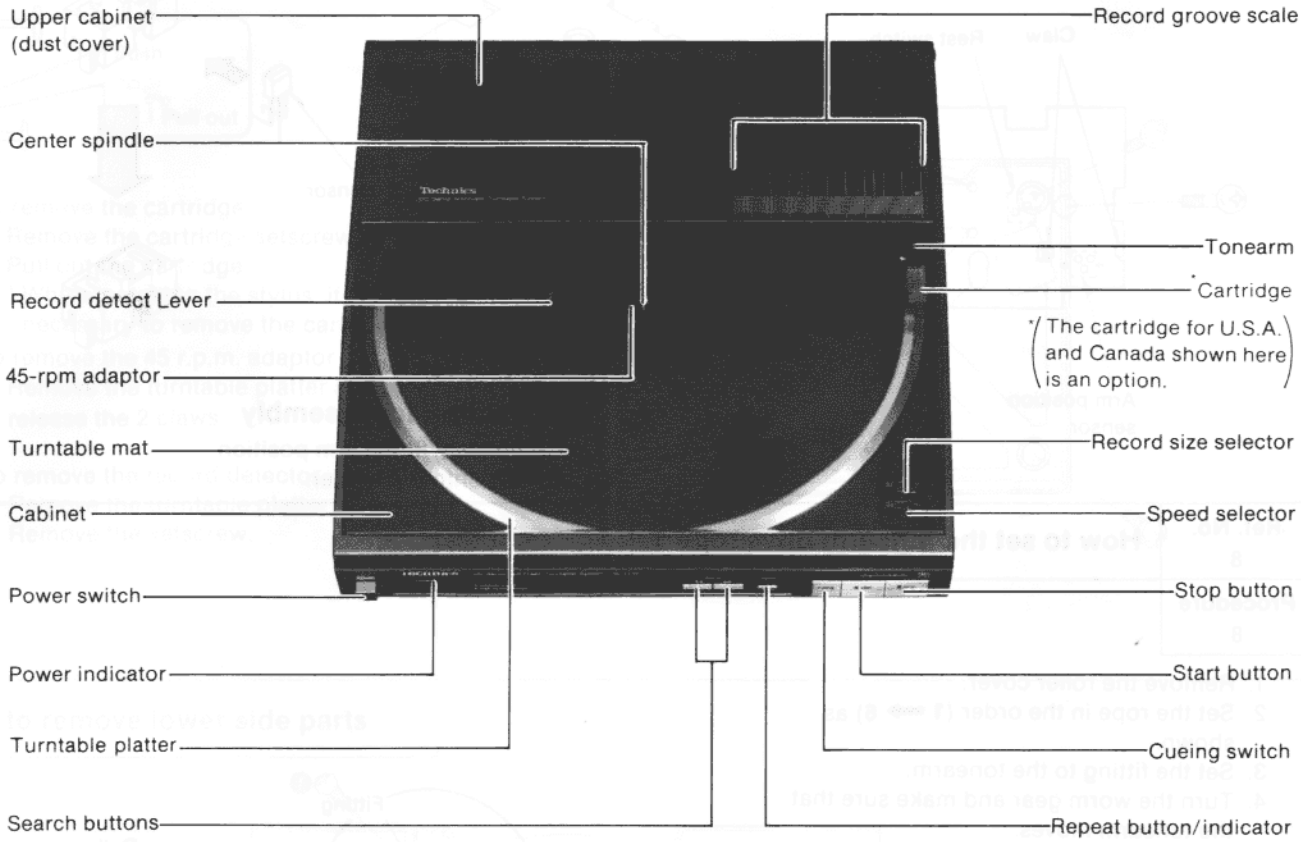


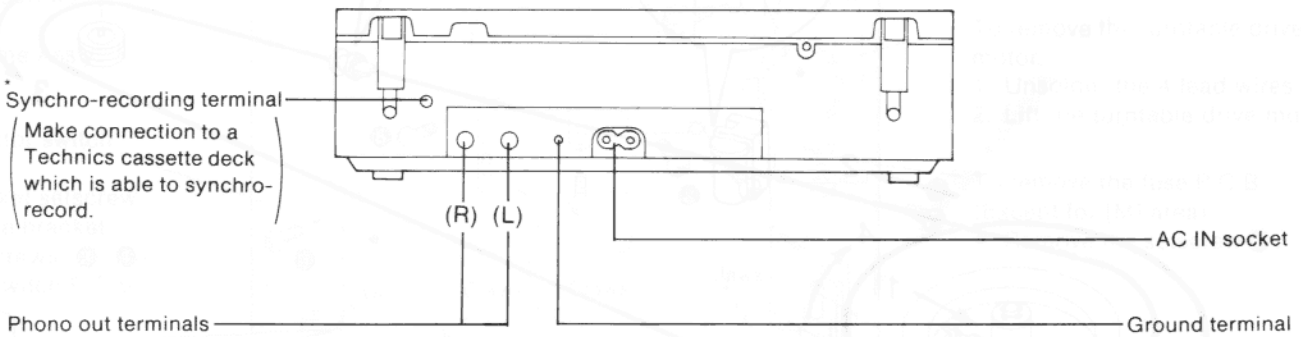
(Fig. B)

Resistance = Approx ∞

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

■ LOCATION OF CONTROLS





*The product for the U.S.A. and Canada is not provided with the synchro-recording terminal.

■ DISASSEMBLY INSTRUCTIONS

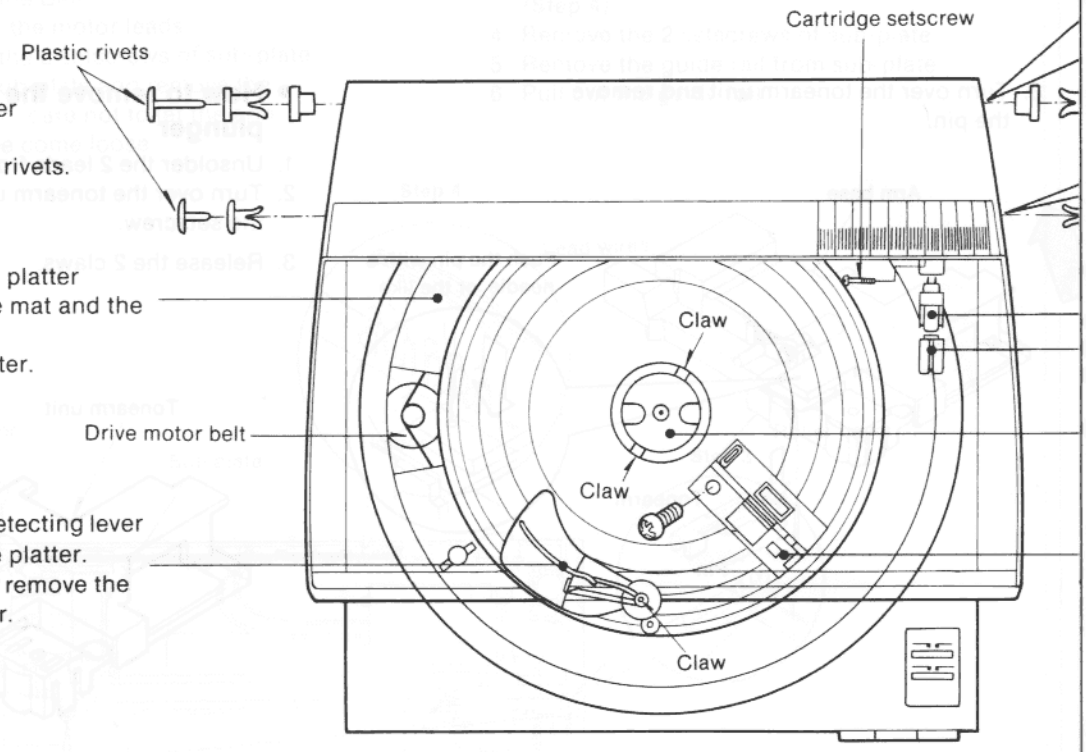
Ref. No. 1	How to remove upper side parts

Procedure 1

To remove the dust cover
1. Open the dust cover.
2. Remove the 4 plastic rivets.

To remove the turntable platter
1. Remove the turntable mat and the drive motor belt.
2. Lift the turntable platter.

To remove the record detecting lever
1. Remove the turntable platter.
2. Release the claw and remove the record detecting lever.

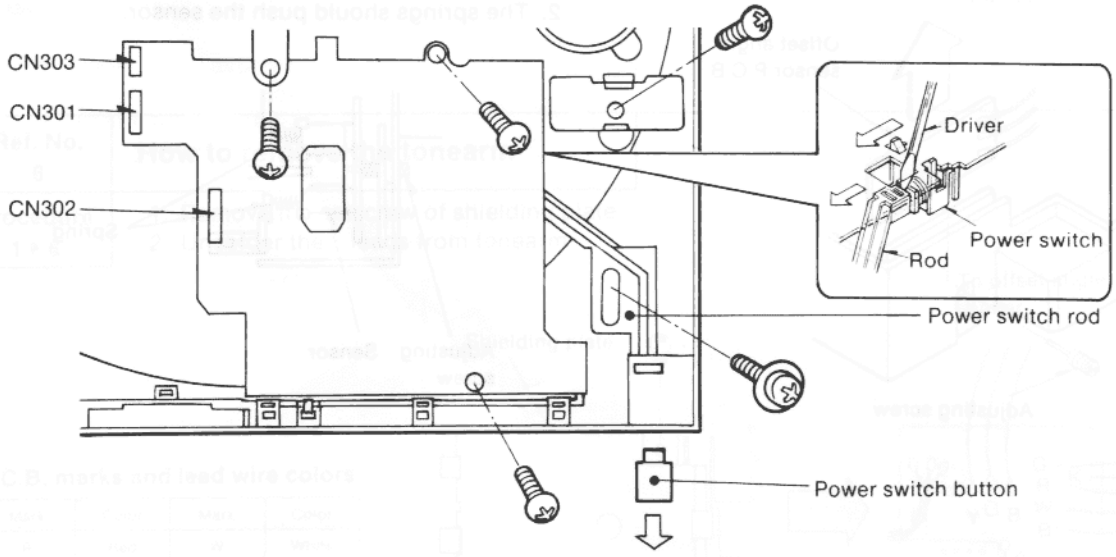


Ref. No. 3	How to remove the main P.C.B.

Procedure 2 ➧ 3

1. Pull off the power switch button.
2. Remove the 3 connectors (CN301~CN303).
3. Remove the 4 setscrews.
4. Lift the main P.C.B. with the power switch rod.

Note: When removing the power switch rod from the main P.C.B., be sure to turn off the power switch. Otherwise the power switch may be damaged.



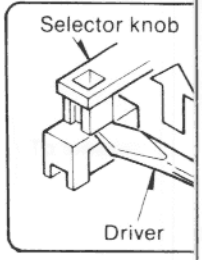
Ref. No. 4	H

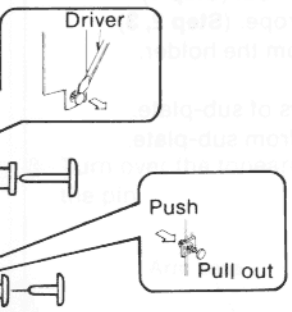
Procedure 2 ➧ 3 ➧ 4

To remove the s
P.C.B. (Except f
1. Remove the s
2. Slide up the s
P.C.B. with th

To remove the s
1. Remove the 3
(❻~❽).
2. Lift the stator

To remove the s
P.C.B.
1. Remove the b
❷ and remov
2. Remove the s
3. Lift the select



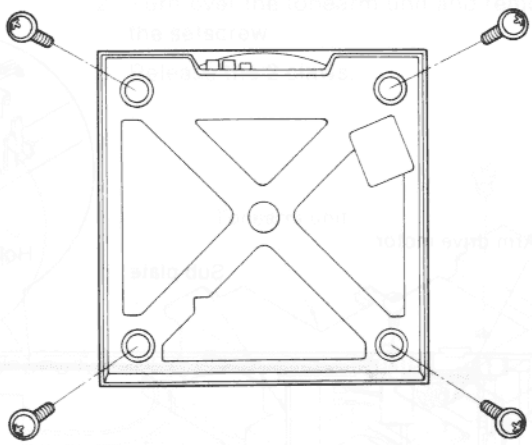


To remove the cartridge
1. Remove the cartridge setscrew.
2. Pull out the cartridge.
   * When removing the stylus, it is not necessary to remove the cartridge.

To remove the 45 r.p.m. adaptor
- Remove the turntable platter and release the 2 claws.

To remove the record detector
1. Remove the turntable platter.
2. Remove the setscrew.

Ref. No. 2	**How to remove the bottom board**
Procedure 2	1. Remove the turntable platter. 2. Remove the 4 setscrews.



ow to remove lower side parts

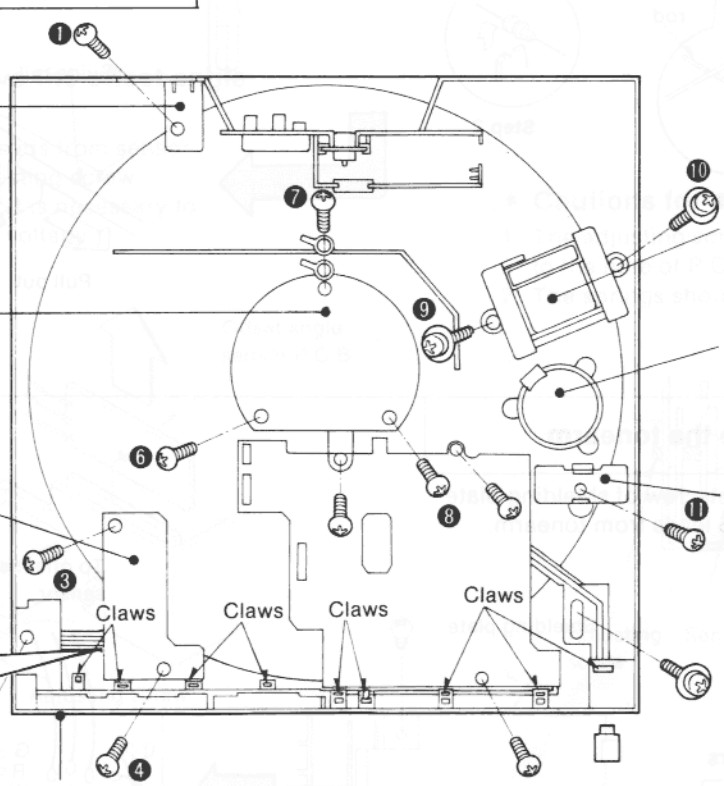
ynchro-rec. jack
r [M, MC] areas)
etscrew ❶.
ynchro-rec. jack
e cover.

ator frame Ass'y
setscrews

frame Ass'y.

elector switch

racket setscrew
e the bracket.
etscrews (❸, ❹).
or switch P.C.B.



❿ To remove the power transformer.
1. Remove the 2 setscrews (❾, ❿).
2. Lift the power transformer.

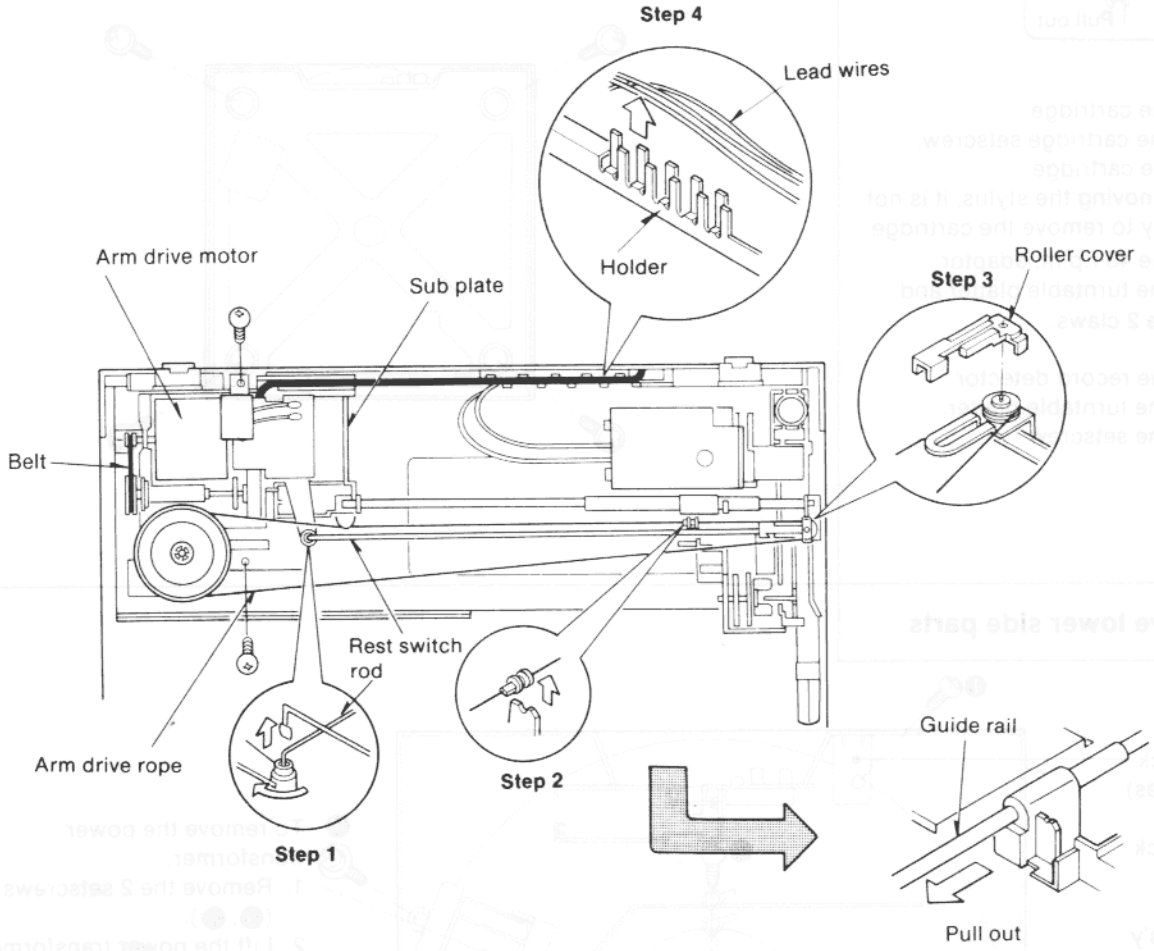
To remove the turntable drive motor.
1. Unsolder the 4 lead wires.
2. Lift the turntable drive motor.

⓫ To remove the fuse P.C.B. (Except for [M] area)
- Remove the setscrew ⓫.

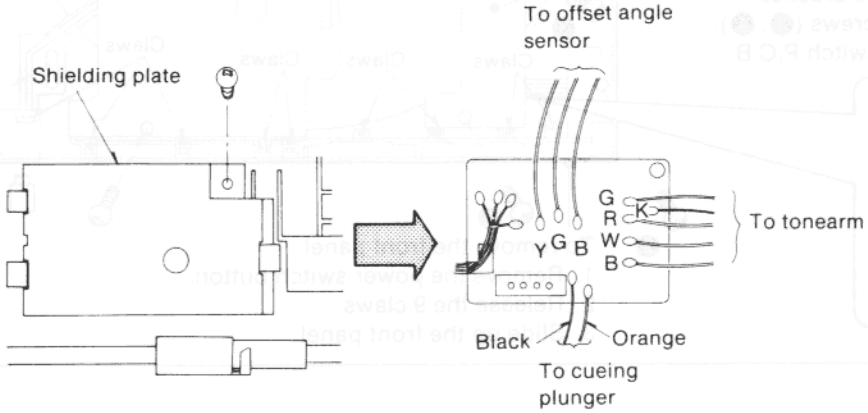
❷ To remove the front panel.
1. Remove the power switch button.
2. Release the 9 claws.
3. Slide up the front panel.

Ref. No. 5	How to remove the tonearm unit
Procedure 1 ➧ 5	• To remove the arm drive motor. 1. Remove the Belt. 2. Unsolder the motor leads. 3. Remove the 2 setscrews of sub-plate. 4. Lift the sub-plate and remove the motor with care not to let the arm drive rope come loose.

1. Remove the rest switch rod. (**Step 1**)
2. Remove the arm drive rope. (**Step 2, 3**)
3. Disconnect the lead from the holder. (**Step 4**)
4. Remove the 2 setscrews of sub-plate.
5. Remove the guide rail from sub-plate.
6. Pull out the guide rail.



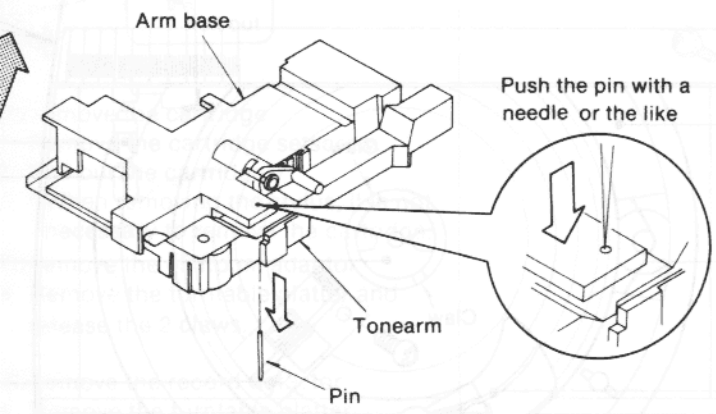
Ref. No. 6	How to remove the tonearm
Procedure 1 ➧ 6	1. Remove the setscrew of shielding plate. 2. Unsolder the 5 leads from tonearm.



P.C.B. marks and lead wire colors

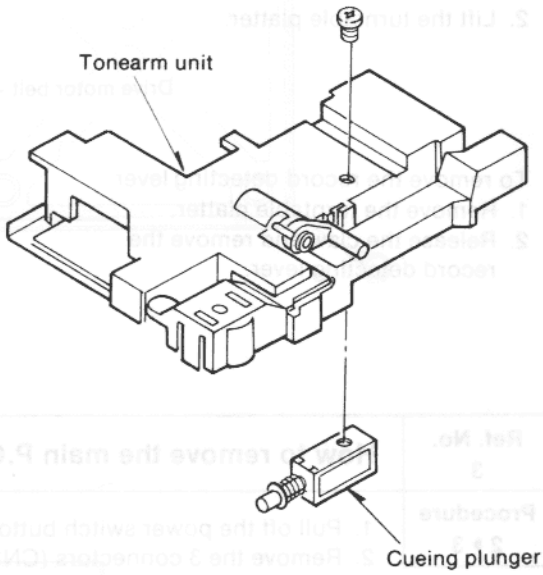
Mark	Color	Mark	Color
R	Red	W	White
G	Green	B	Blue
K	Black	Y	Yellow

3. Turn over the tonearm unit and remove the pin.



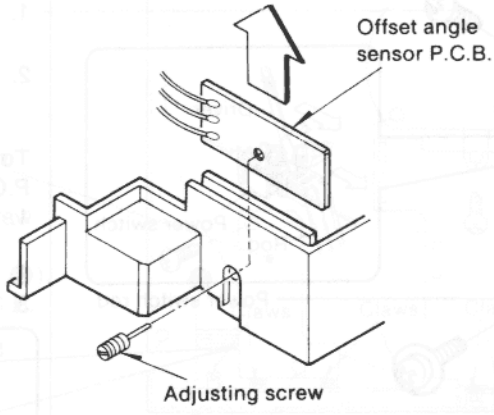
• How to remove the cueing plunger

1. Unsolder the 2 leads from plunger.
2. Turn over the tonearm unit and remove the setscrew.
3. Release the 2 claws.



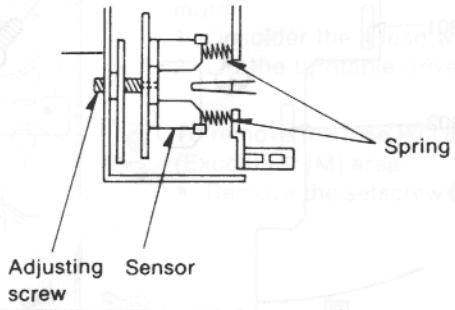
• How to remove the offset angle sensor

1. Unsolder the 3 leads from sensor.
2. Remove the adjusting screw. (After assembly, it is necessary to adjust the offset voltage.)



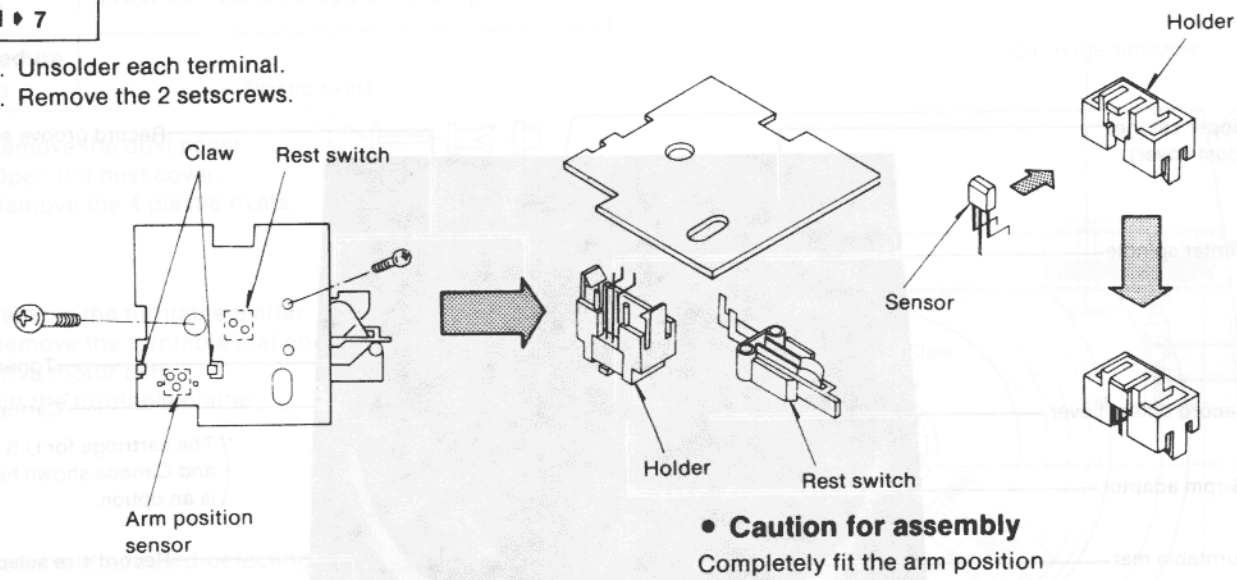
• Cautions for assembly

1. The adjusting screw should be aligned to the hole of P.C.B.
2. The springs should push the sensor.



Ref. No. 7	How to remove the rest switch and arm position sensor
Procedure 1 ➧ 7	

1. Unsolder each terminal.
2. Remove the 2 setscrews.

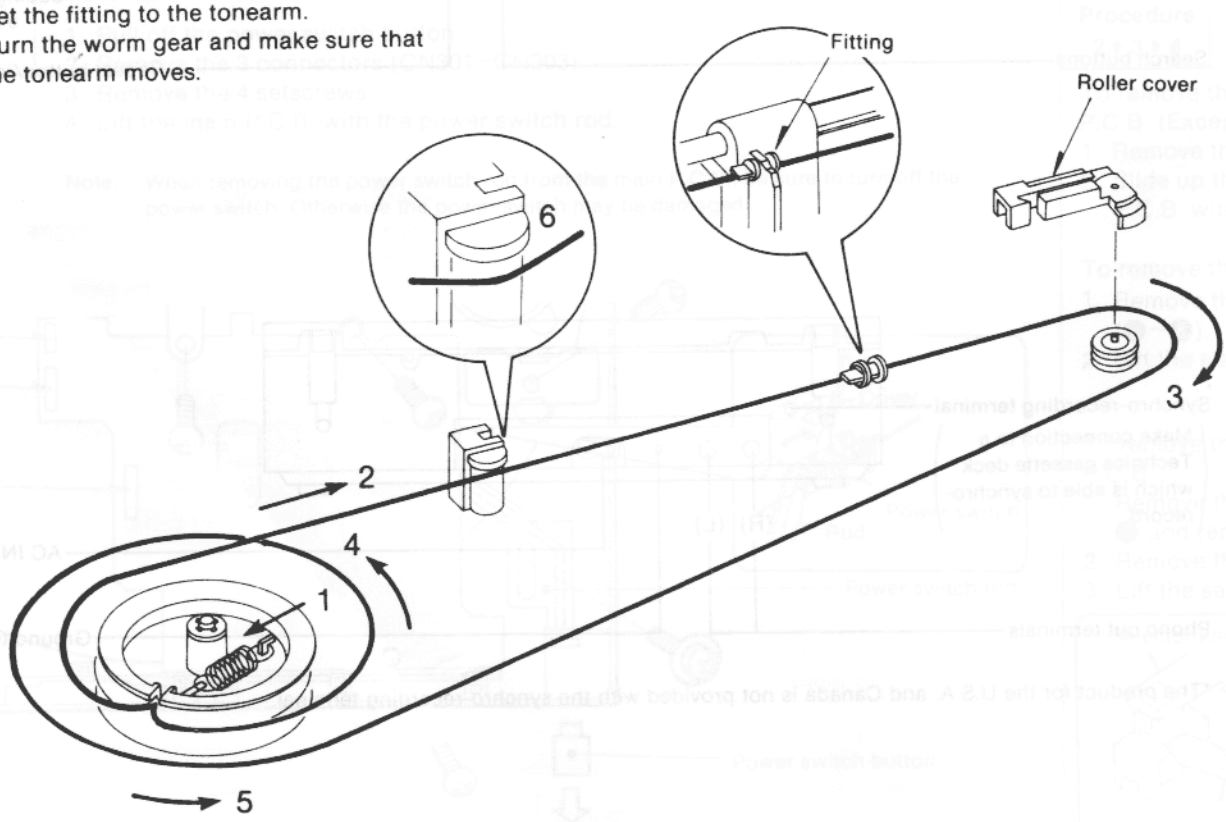


• Caution for assembly

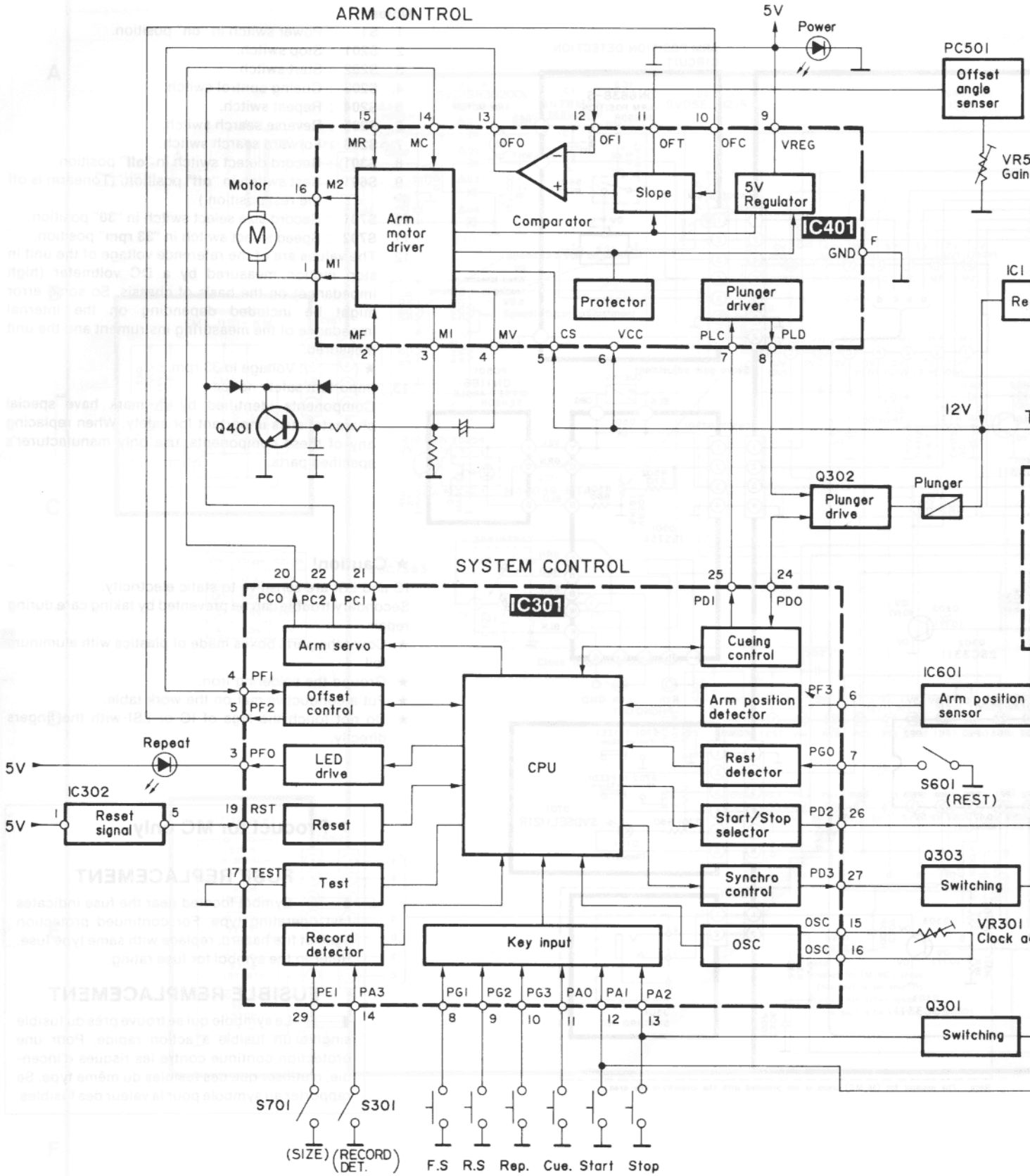
Completely fit the arm position sensor onto the holder.

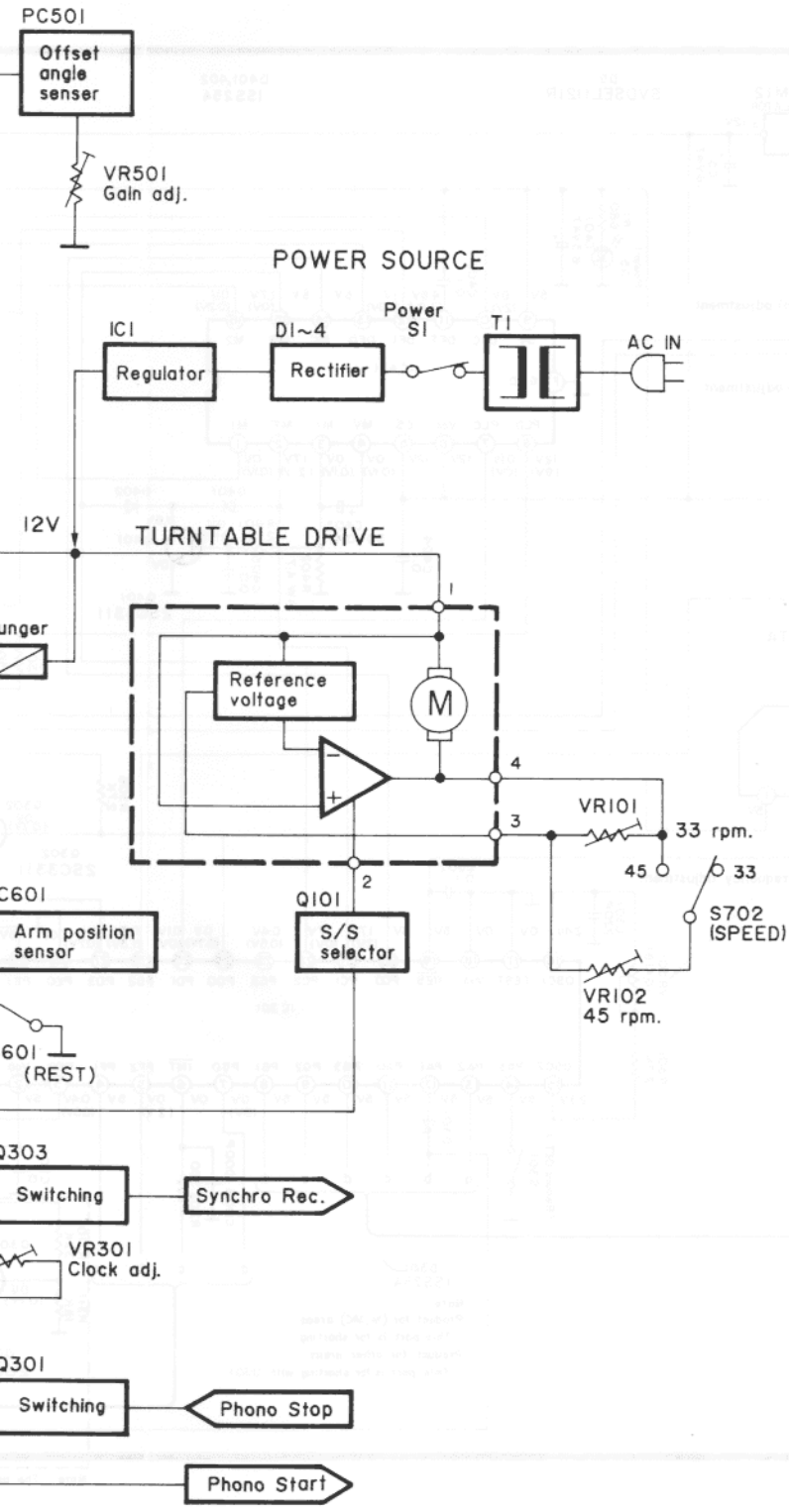
Ref. No. 8	How to set the tonearm drive rope
Procedure 8	

1. Remove the roller cover.
2. Set the rope in the order (**1** ➡ **6**) as shown.
3. Set the fitting to the tonearm.
4. Turn the worm gear and make sure that the tonearm moves.



■ BLOCK DIAGRAM

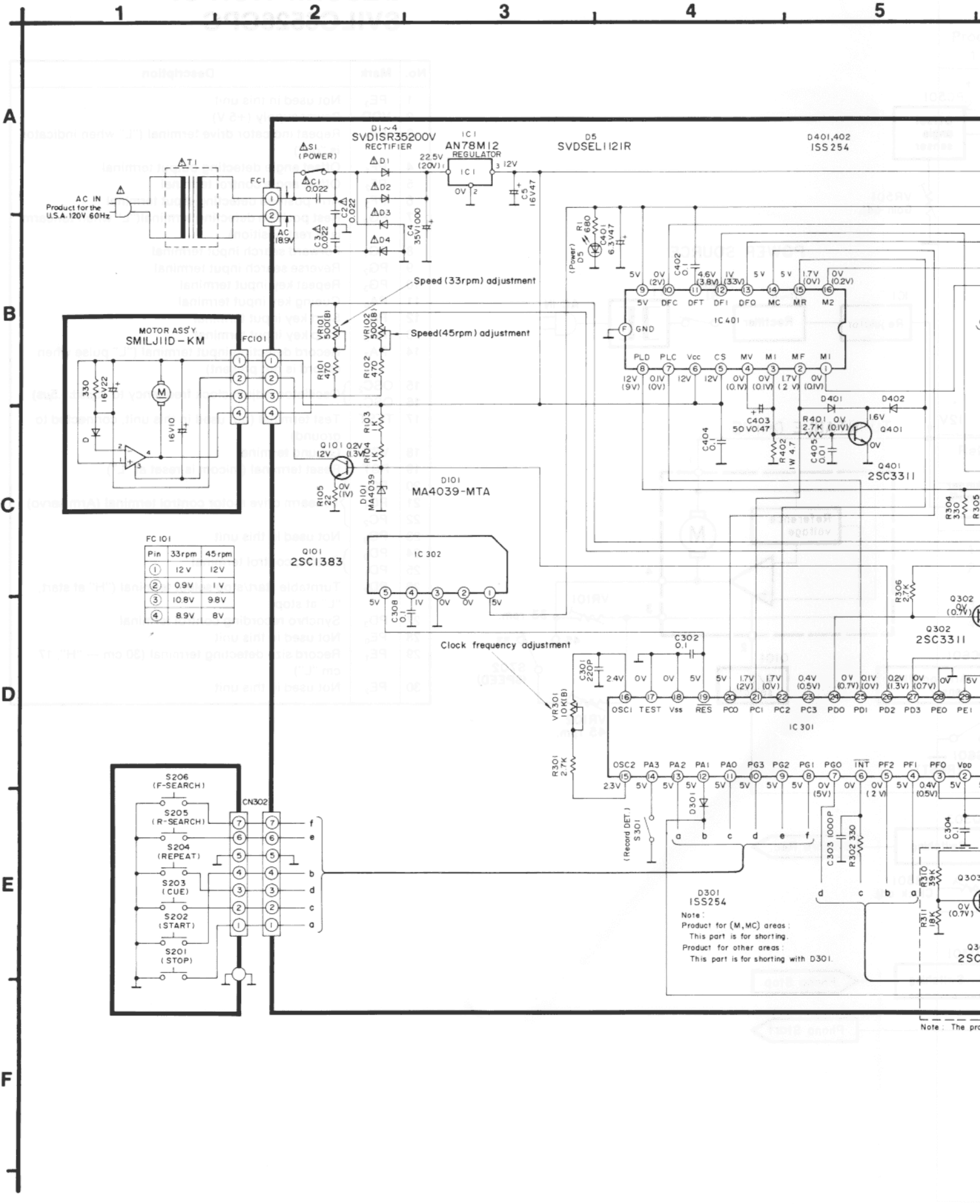




■ DESCRIPTION OF SVILC6526CPC

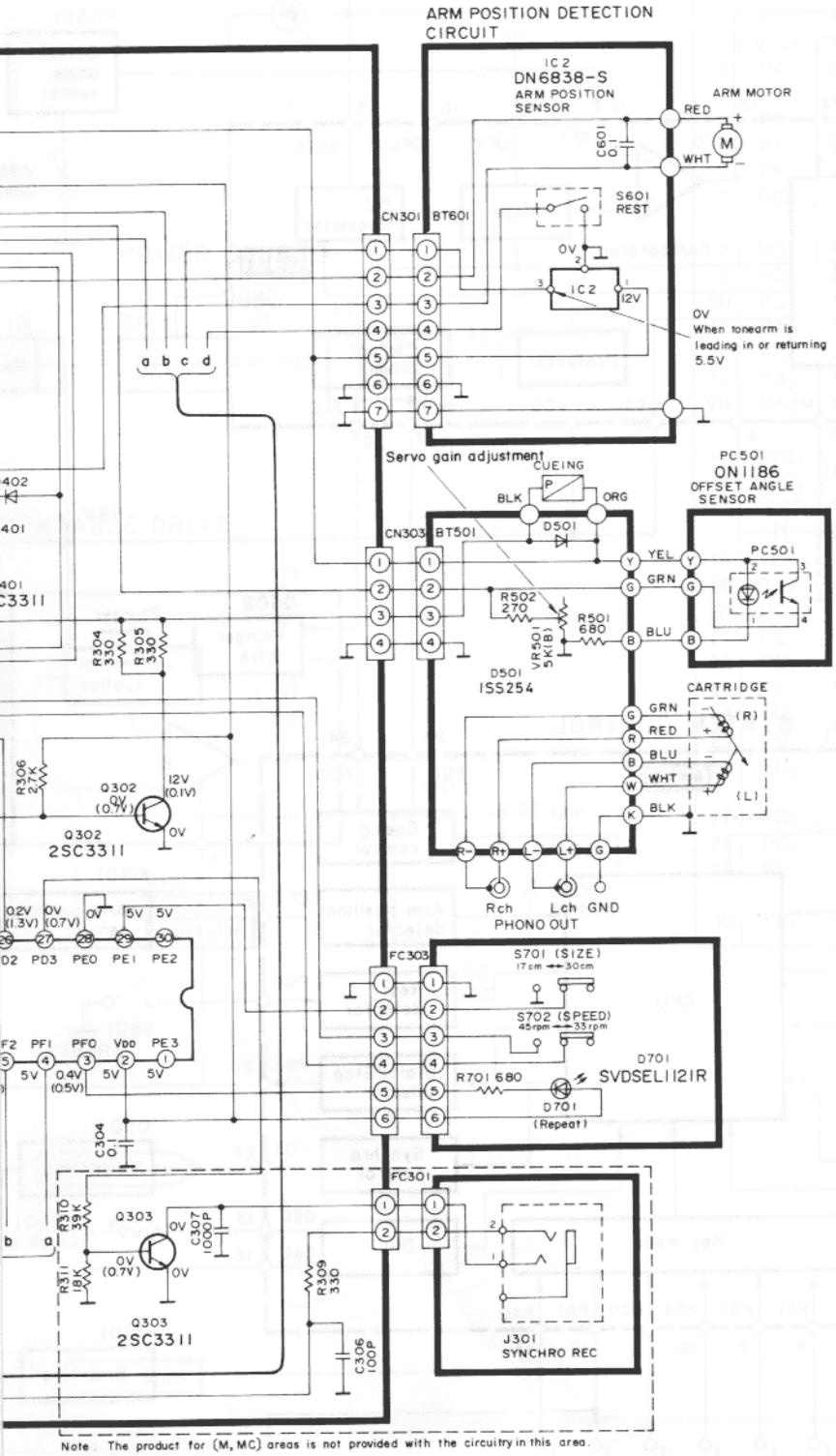
No.	Mark	Description
1	PE_3	Not used in this unit
2	VDD	Power supply (+5 V)
3	PF_0	Repeat indicator drive terminal ("L" when indicator is "on")
4	PF_1	Offset angle detecting output terminal
5	PF_2	Offset angle control terminal
6	PF_3	Arm position detecting input terminal
7	PG_0	Rest position detecting terminal("L" when tonearm is at rest position)
8	PG_1	Forward search input terminal
9	PG_2	Reverse search input terminal
10	PG_3	Repeat key input terminal
11	PA_0	Cueing key input terminal
12	PA_1	Start key input terminal
13	PA_2	Stop key input terminal
14	PA_3	Record detecting input terminal ("L" pulse when record is not present)
15	OSC_2	Oscillator (adjust clock frequency to 45μs±1.5μs)
16	OSC_1	
17	TEST	Test terminal (not used in this unit, connected to ground)
18	VSS	Ground terminal
19	RST	Reset terminal (micom is reset at "L")
20	PC_0	Tonearm drive motor control terminal (Arm servo)
21	PC_1	
22	PC_2	
23	PC_3	Not used in this unit
24	PD_0	Cueing control terminal
25	PD_1	
26	PD_2	Turntable start/stop select terminal ("H" at start, "L" at stop)
27	PD_3	Synchro recording control terminal
28	PE_0	Not used in this unit
29	PE_1	Record size detecting terminal (30 cm — "H", 17 cm "L")
30	PE_2	Not used in this unit

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



ology.)

6 7 8 9



Note : The product for (M, MC) areas is not provided with the circuitry in this area.

Notes:

1. **S1** : Power switch in "**on**" position.
2. **S201** : Stop switch.
3. **S202** : Start switch.
4. **S203** : Cueing control switch.
5. **S204** : Repeat switch.
6. **S205** : Reverse search switch.
7. **S206** : Forward search switch.
8. **S301** : Record detect switch in "**off**" position.
9. **S601** : Rest switch in "**off**" position. (Tonearm is off the rest position.)
10. **S701** : Record size select switch in "**30**" position.
11. **S702** : Speed select switch in "**33 rpm**" position.
12. The values are of the reference voltage of the unit in stop motion measured by a DC voltmeter (high impedance) on the basis of chassis. So some error might be included depending on the internal impedance of the measuring instrument and the unit measured.
    ★ ( ): Voltage in 33 rpm.
13. Important safety notice:
    Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

★ 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

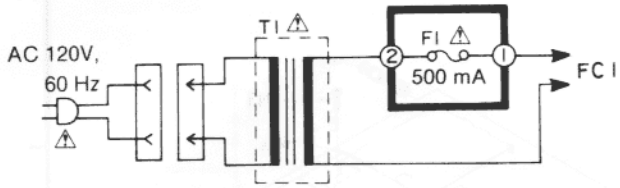
Symbol located near the fuse indicates fast operating type. For continued protection against fire hazard, replace with same type fuse. Refer to the symbol for fuse rating.

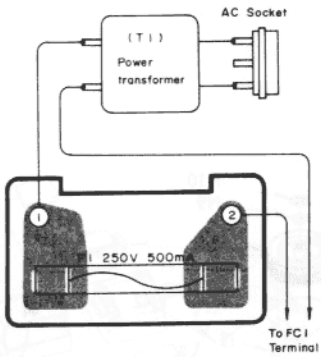
FUSIBLE REMPLACEMENT

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.

■ POWER SOURCE CIRCUIT

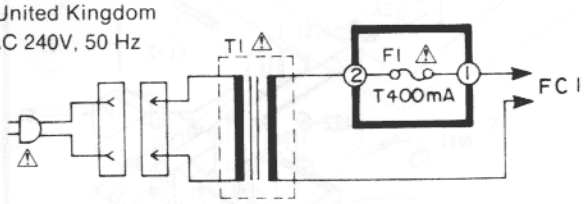
Product for Canada ([MC] area.)

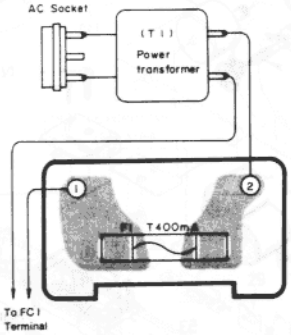




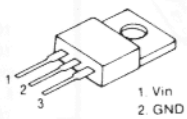
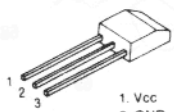
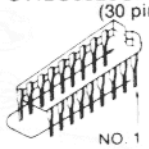
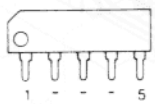
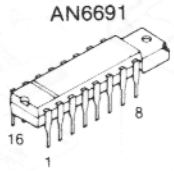
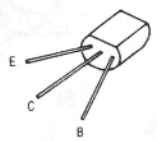
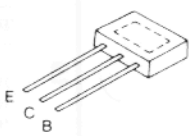
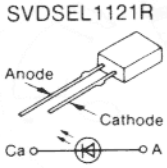
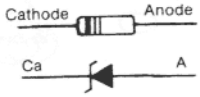
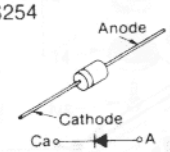
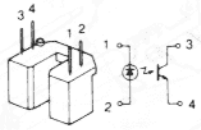
Product for other areas ([E], [EK], [EG], [EB], [EH], [EF], [Ei] and [EC] areas.)

For continental Europe
: AC 220V, 50 Hz
For United Kingdom
: AC 240V, 50 Hz



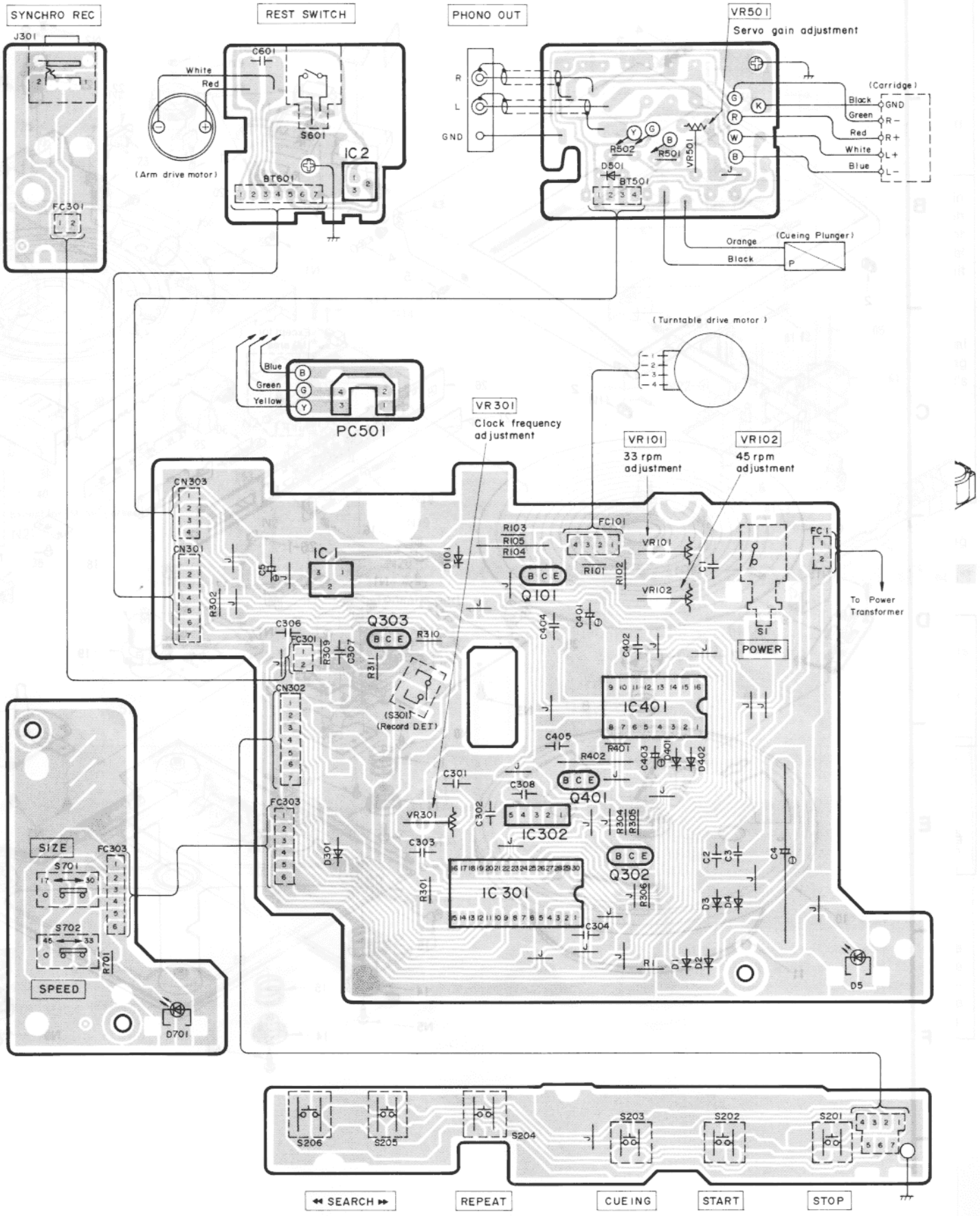


■ TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

AN78M12  	DN6838-S  	SVILC6526CPC (30 pin)  	SVIM51953BL  	AN6691  	2SC1383 
2SC3311  	SVDSEL1121R  	MA4039  	SVD1SR35200V 1SS254  	ON1186  	

■ CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM

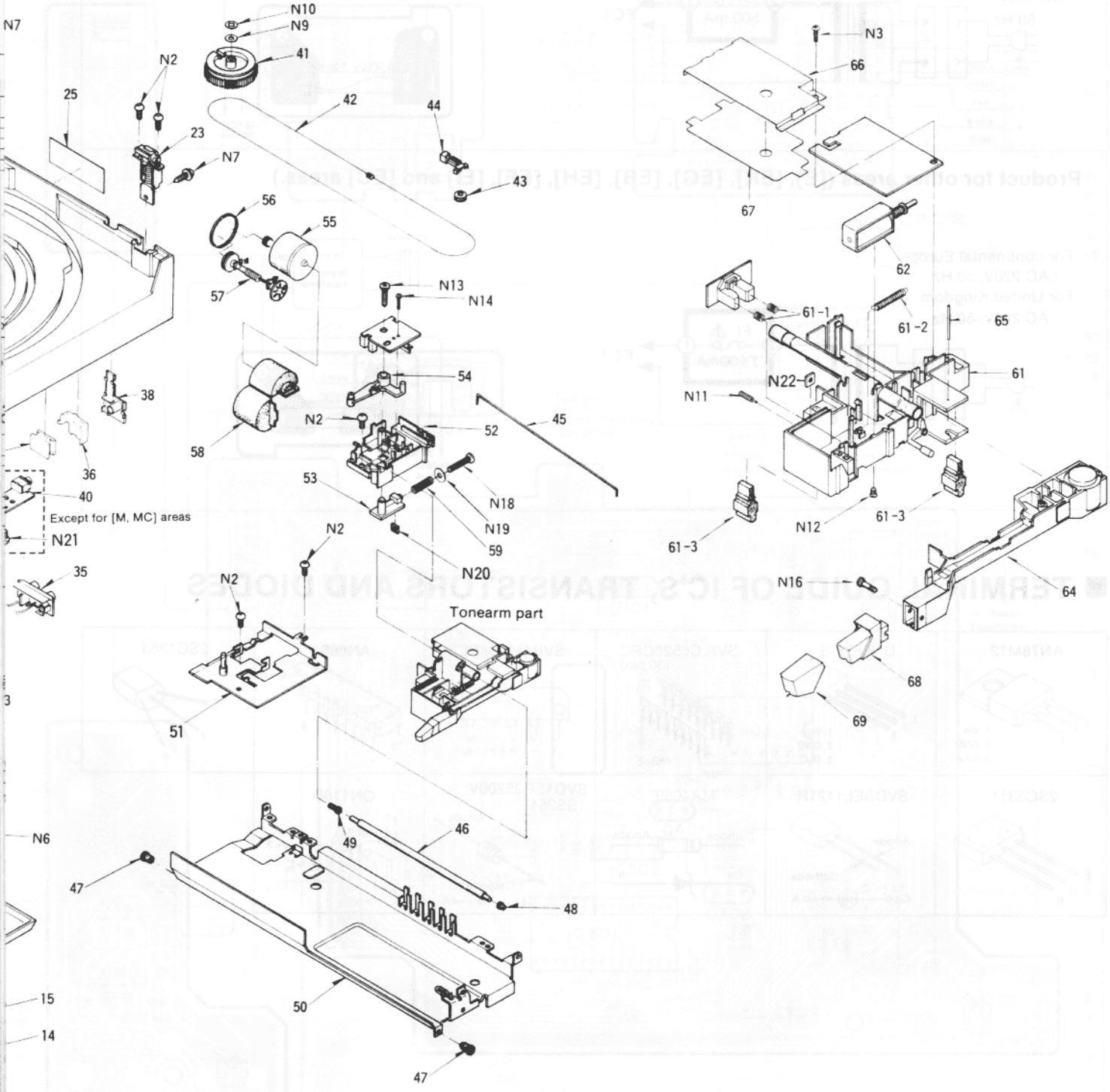
Note: The product for the U.S.A. and Canada is not provided with the synchro-recording circuit (refer to SCHEMATIC DIAGRAM on page 11).



■ EXPLODED VIEW

• **Cabinet and Chassis parts**

• Tonearm parts



■ REPLACEMENT PARTS LIST

Notes:
1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. Important safety notice:
   Components identified by ⚠ mark have special characteristics important for safety.
   When replacing any of these components, use only manufacturer's specified parts.
3. Ⓚ-marked parts are used for black type only, while ◯-marked parts are used for silver type only.
4. Parts other than Ⓚ- and ◯-marked are used for both black and silver types.
5. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.
6. The parenthesized numbers in the column of description stand for the quantity per set.

Color	Areas
(K)	[M] ..... U.S.A.
(K)	[MC] ... Canada.
(S) (K)	[E] ..... Switzerland and Scandinavia.
(S) (K)	[EK] .... United Kingdom.
(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.

Ref. No.	Part. No.	Description
INTEGRATED CIRCUITS		
IC1	AN78M12	Integrated Circuit
IC2	DN6838-S	Integrated Circuit
IC301	SVILC6526CPC	Integrated Circuit
IC302	SVIM51953BL	Integrated Circuit
IC401	AN6691	Integrated Circuit
TRANSISTORS		
Q101	2SC1383Q	Transistor
Q302	2SC3311-Q	Transistor
Q303 [except M, MC]	2SC3311-Q	Transistor
Q401	2SC3311-Q	Transistor
DIODES		
D1~4	⚠SVD1SR35200V	Rectifier
D5	SVDSEL1121R	LED
D101	MA4039-M	Zener
D301 [except M, MC]	1SS254	Diode
D401	1SS254	Diode
D402	1SS254	Diode
D501	1SS254	Diode
D701	SVDSEL1121R	LED
SWITCHES		
S1	⚠SFDSC02N02	Power Switch
S201~206	EVQQS205K	Operation Switch
S301	SSPB4	Record Detector
S601	SFDSJ22N02	Rest Switch
S701, 702	SSSB6	Selector
POWER TRANSFORMER		
T1 [M]	⚠SLT48DTL3A	Power Source
T1 [MC]	⚠SLT48DT11C	Power Source
T1 [EK]	⚠SLT48DT4E	Power Source
T1 [other]	⚠SLT48DT3E	Power Source

Ref. No.	Part. No.	Description
VARIABLE RESISTORS		
VR101, 102	EVN61AA00B52	Variable Resistor, 500Ω (B)
VR301	EVN61AA00B14	Variable Resistor, 10kΩ (B)
VR501	EVN61AA00B53	Variable Resistor, 5kΩ (B)
FUSE		
F1 [MC]	⚠XBA2F05NU100	250V, 500mA
F1 [except M, MC]	⚠XBAS2C04TB0	250V, T400mA
PHOTO INTERRUPTER		
PC501	ON1186	Photo Interrupter
RESISTORS		
R1	ERDS2TJ681	Carbon, 1/4W, 680Ω, ±5%
R101, 102	ERDS2TJ471	Carbon, 1/4W, 470Ω, ±5%
R103, 104	ERDS2TJ102	Carbon, 1/4W, 1kΩ, ±5%
R105	ERG1ANJ220	Metal film, 1W, 22Ω, ±5%
R301	ERDS2TJ272	Carbon, 1/4/W, 2.7kΩ, ±5%
R302	ERDS2TJ331	Carbon, 1/4/W, 330Ω, ±5%
R304, 305	ERDS2TJ331	Carbon, 1/4W, 330Ω, ±5%
R306	ERDS2TJ272	Carbon, 1/4W, 2.7kΩ, ±5%
R309 [except M, MC]	ERDS2TJ331	Carbon, 1/4W, 330Ω, ±5%
R310 [except M, MC]	ERDS2TJ393	Carbon, 1/4W, 39kΩ, ±5%
R311 [except M, MC]	ERDS2TJ183	Carbon, 1/4W, 18kΩ, ±5%

Ref. No.	Part. No.	Description
R401	ERDS2TJ272	Carbon, 1/4W, 2.7kΩ, ±5%
R402	ERX1ANJ4R7	Metal Film, 1W, 4.7Ω, ±5%
R501	ERDS2TJ681	Carbon, 1/4W, 680Ω, ±5%
R502	ERDS2TJ271	Carbon, 1/4W, 270Ω, ±5%
R701	ERDS2TJ681	Carbon, 1/4W, 680Ω, ±5%
CAPACITORS		
C1	⚠ECQG1223KZ	Polyester, 100V, 0.022μF, ±10%
C2, 3	⚠ECKR1H223ZF	Ceramic, 50V, 0.022μF, $^{+80}_{-20}$ %
C4	ECEB1VU102	Electrolytic, 35V, 1000μF
C5	ECEA1CU470B	Electrolytic, 16V, 47μF
C301	ECCD1H221K	Ceramic, 50V, 220PF, ±10%
C302	ECFR1H104ZF	Ceramic, 50V, 0.1μF, $^{+80}_{-20}$ %
C303	ECKD1H102ZF	Ceramic, 50V, 1000PF, $^{+80}_{-20}$ %
C304	ECFR1H104ZF	Ceramic, 50V, 0.1μF, $^{+80}_{-20}$ %
C306, 307 [except M, MC]	ECKD1H102ZF	Ceramic, 50V, 1000PF, $^{+80}_{-20}$ %
C308	ECQG1H104KZT	Polyester, 50V, 0.1μF, ±10%
C401	ECEA0JU470B	Electrolytic, 6.3V, 47μF
C402	ECQG1H104KZT	Polyester, 50V, 0.1μF, ±10%
C403	ECEA1HUR47B	Electrolytic, 50V, 0.47μF
C404	ECFR1H104ZF	Ceramic, 50V, 0.1μF, $^{+80}_{-20}$ %
C405	ECFR1V103KD	Ceramic, 35V, 0.01μF, ±10%
C601	ECFF1C104ZFM	Ceramic, 16V, 0.1μF, $^{+80}_{-20}$ %

Ref. No.	Part. No.	Description
CABINET AND CHASSIS PARTS		
1 ○	SGDB60-0SA	Dust Cover (1)
1 Ⓚ	SGDB60-0KA	Dust Cover (1)
2	SFGZJ02N01	Cushion Rubber (2)
3	SFGZC02N01	Rubber, Lutch (2)
4	SFUMC02N14	Lutch, Dust Cover (2)
5	SFUMQ06N22	Lutch, Dust Cover (2)
6	SHOB2	Turntable Mat (1)
7	SFWEN05N01	Adaptor, 45 rpm (1)
8	SFQAN05N01	Spring, 45 rpm Adaptor (1)
9	SFUMC05N11A	Record Size Detector (1)
10	SDOB2	Turntable Platter (1)
11	SJY90080-1	Belt, Turntable Drive (1)
12	SKUB5	Bottom Cover (1)
13	SFUMC02N33	Lever, Detector (1)
14	SFGAJ02N01	Insulator (4)
15	SFQCC05N01	Spring, Insulator (4)
16	SFUMJ11N07	Rod, Power Switch (1)
17	SFKTJ11N03	Knob, Selector Switches (2)
18	SMILJ11D-KM	Motor Ass'y, Turntable Drive (1)
19	SHGB12	Cushion Rubber, Drive Motor (1)
20 ○	SKMB610-0S	Cabinet (1)
20 Ⓚ	SKMB610-0K	Cabinet (1)
21	SFGCC02N03	Cushion Rubber (1)
22	⚠SJSB4	AC Socket (1)
23	SFATJ11N01A	Hinge (2)
24 ○	SFKKJ11N03	Label, Selector Switches (1)
24 Ⓚ	SGKB50	Label, Selector Switches (1)
25 [M]	SGTB106	Name Plate (1)
25 [MC]	SGTB107	Name Plate (1)
25 [E, EC]	SGTB108	Name Plate (1)
25 [EK]	SGTB114	Name Plate (1)
25 [EG]	SGTB110	Name Plate (1)
25 [other]	SGTB111	Name Plate (1)
26 ○	SFULJ11D-SE	Front Panel (1)
26 Ⓚ [M, MC]	SFULJ11D-KM	Front Panel (1)
26 Ⓚ [other]	SFULJ11D-KE	Front Panel (1)
26-1	SFKKJ11N02	Label, T4P (1)
27 ○	SGXB260-0SA	Ornament Plate (1)
27 Ⓚ	SGXB260-0KA	Ornament Plate (1)
29 ○	SBCB190-0SA	Button, Operation (1)
29 Ⓚ	SBCB190-0CA	Button, Operation (1)
30 ○	SBCB200-0S	Button, Search (1)
30 Ⓚ	SBCB200-0C	Button, Search (1)
31 ○	SFKTC06N04	Button, Power Switch (1)
31 Ⓚ	SBCB220-0C	Button, Power Switch (1)
32	SFGCQ06N02	Cushion Rubber, power Transformer (2)

Ref. No.	Part. No.	Description
33	SFUKJ01N01A	Stator Frame Ass'y (1)
35	SFDJJ11N03E	Jack, Phono Output (1)
36 ○	SKMB620-0S	Cover, Voltage Selector Switch (1)
36 Ⓚ	SKMB620-0K	Cover, Voltage Selector Switch (1)
37 ○	SKMB630-0S	Clamper, Lead Wires (1)
37 Ⓚ	SKMB630-0K	Clamper, Lead Wires (1)
38 ○	SKMB640-0S	Cover, Lead Wires (1)
38 Ⓚ	SKMB640-0K	Cover, Lead Wires (1)
39	SFUMJ11N02	Holder, LED (2)
40 [except M, MC]	SFDJC01N01	Jack, Synchro Rec (1)
41	SFUML11R03	Wheel, Tonearm Drive (1)
42	SFUZC05N02E	Rope Ass'y, Tonearm Drive (1)
43	SFUMC05N22	Pulley (1)
44	SFUMV05N23	Cap, Pulley (1)
45	SFUZC02N01	Rod, Rest Switch (1)
46	SFXJQ06N01	Guide Rail (1)
47	SFGCQ06N03	Cushion Rubber (2)
48	SFGCC05N05	Cushion Rubber, Guide Rail (1)
49	SFGCQ06N01	Cushion Rubber, Guide Rail (1)
50	SUWB18E	Base, Tonearm Drive Motor (1)
51	SUWB19E	Plate, Tonearm Drive Motor (1)
52	SFUMJ11N04	Base, Rest Switch (1)
53	SFUMJ11N03	Base, Adjustment Screw (1)
54	SFUMJ11N05	Lever, Rest Switch (1)
55	SMNLJ11D-KM	Motor Ass'y, Tonearm Drive (1)
56	SFGBC10-01	Belt, Tonearm Drive (1)
57	SFUML11R02A	Worm Gear Ass'y (1)
58	SHRB52	Case, Tonearm Drive Motor (1)
59	SFQA913-01	Spring (1)
TONEARM PARTS		
61	SFPKDJ1101E	Base, Tonearm (1)
61-1	SFPSP00302	Spring (2)
61-2	SFPSP00504	Spring (1)
61-3	SFPGML1101	Rubber Cushion (2)
62	SFDZJ11N02E	Plunger Ass'y (1)
64	SFPAMJ1101A	Tonearm Ass'y (1)
65	SFPJKJ1102	Shaft (1)
66	SFPABJ1101	Shield Plate (1)
67	SFPZBJ1101	Sheet (1)
68 [except M, MC]	EPC-P24S	★ Cartridge (1)
69 [except M, MC]	EPS-24CS	★ Stylus (1)
SCREWS, WASHERS AND NUTS		
N1	SFXGQ06N01	Screw (3)
N2	XTV3+6J	Screw, ⊕3×6 (8)
N3	XTV3+8G	Screw, ⊕3×8 (7)
N4 [except M]	XTV3+8G	Screw, ⊕3×8 (1)
N5	XTW3+14QFYR	Screw, ⊕3×14 (4)

Ref. No.	Part. No.	Description
N6	XYE3+EG10	Screw, ⊕3×10 (1)
N7	XTW3+14TFZ	Screw, ⊕3×14 (2)
N8	XTW3+10Q	Screw, ⊕3×10 (1)
N9	XWE3A8BW	Washer (1)
N10	CSTW-3	Ring (1)
N11	SFPTN00301	Screw, Adjustment (1)
N12	XYN2+C4FZ	Screw, ⊕2×4 (1)
N13	XYC3+EJ20	Screw, ⊕3×20 (1)
N14	XTN2+12J	Screw, ⊕2×12 (1)
N15	XTN3+6JFZ	Screw, ⊕3×6 (1)
N16	SFPEV0Q601	Screw, Cartridge (1)
N17	XYN3+C5S	Screw, ⊕3×5 (1)
N18	XSN3+20S	Screw, ⊕3×20 (1)
N19	XWE3D10	Washer (1)
N20	XNC3HS	Nut (1)
N21 except [M, MC]	XTV3+8G	Screw, ⊕3×8 (1)
N22	SFXN623-1	Nut (1)
ACCESSORIES		
A1 [M]	SQX53978	Instruction Book (1)
A1 [MC]	SQXLJ11D-KMC	Instruction Book (1)
A1 [EK]	SQX53982	Instruction Book (1)
A1 [EG]	SQX53984	Instruction Book (1)
A1 [EF]	SQX53983	Instruction Book (1)
A1 [Ei]	SQX53985	Instruction Book (1)
A1 [other]	SQXLJ11D-KE	Instruction Book (1)
A2	SFDHEQ1N01	Output Cord (1)
A3	SFDLJ11N01E	Ground Wire (1)
A4 [M, MC]	⚠SJA170	AC Cord (1)
A4 [EK]	⚠SFDAC05G02	AC Cord (1)
A4 [other]	⚠SFDAC05E02	AC Cord (1)
PACKING PARTS		
P1 [EF] ○	SPGB102	Carton Box (1)
P1 ○ [other]	SPGB101	Carton Box (1)
P1 Ⓚ [MC, EF]	SPGB84	Carton Box (1)
P1 Ⓚ [other]	SPGB83	Carton Box (1)
P2	SFHHJ11N01	Pad, Front (1)
P3	SFHHJ11N02	Pad, Rear (1)
P4	SFHDD05N01	Pad, Turntable Mat (1)
P5	SFHKJ01N01	Clamper, Turntable Platter (2)
P6	SFHKJ22N01	Spacer, Tonearm (1)
P7	SFYP41D32	Sheet, Dust Cover (1)
P8	SFYF32B35	Polyethylene Bag, Turntable Mat (1)
P9	SFHSC06N01	Spacer, Dust Cover (1)
P10	SFYH45X60	Polyethylene Bag, Unit (1)
P11	SFYH17X16	Polyethylene Bag, Cords (1)

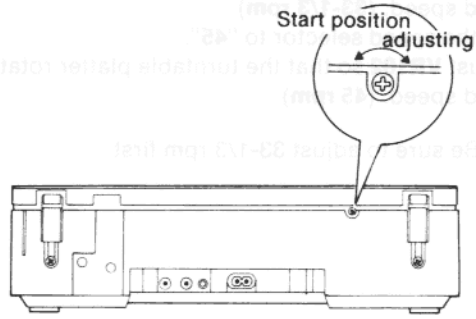
■ MEASUREMENTS AND ADJUSTMENTS

Control position and equipment used

- Size selector.....30
- Oscilloscope
- DC electronic voltmeter
- 30 cm record

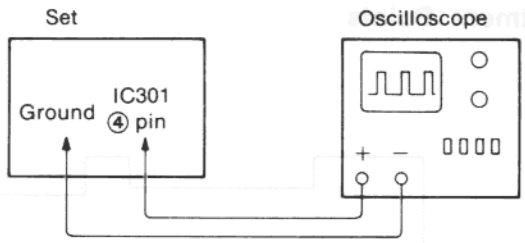
START POSITION ADJUSTMENT

1. Put on a 30 cm record.
2. Turn the power switch "on", and press the start button.
3. If the stylus drops too much inside or outside the record, adjust the start position by turning the adjusting screw.
   - **Clockwise**..... Stylus drop position is shifted inside.
   - **Counterclockwise** ..... Stylus drop position is shifted outside.



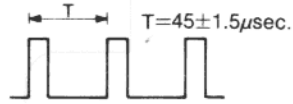
CLOCK FREQUENCY ADJUSTMENT

1. Remove the bottom board.
2. Connect IC301 pins 11, 12, 13, 14 to ground. Connect IC301 pin 19 to ground for more than 15 msec; then, disconnect it.
3. Connect the oscilloscope to IC 301 pin 5 (+) and ground (−).
4. Turn the power switch "on" and adjust **VR301** so that the output waveform cycle is **45±1.5μsec.**



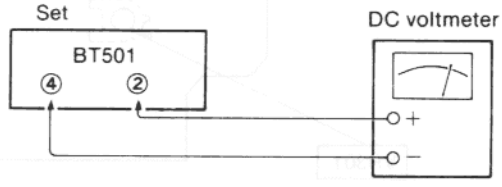
- Oscilloscope setting
  VOLT.....1V
  SWEEP.....10μsec.
  INPUT.....DC

- Waveform

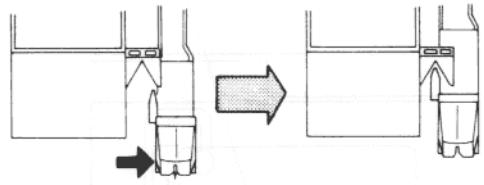


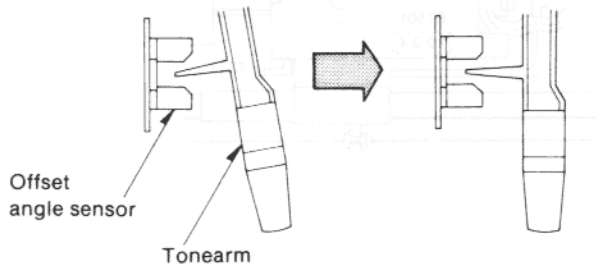
SERVO GAIN AND OFFSET VOLTAGE ADJUSTMENT

1. Remove the dust cover.
2. Connect DC voltmeter to BT501 pin 2 and pin 4.
3. Turn the power switch "on".
4. Turn the **VR501** so that the voltage is **3.6V** with tonearm completely turned to the right (offset angle sensor "open"). (**Servo gain adjustment**)
5. Return the tonearm to the center and make sure that the voltage is **1.8V**.
6. If the voltage is not **1.8V**, adjust it by turning the offset voltage adjusting screw. (**Offset voltage adjustment**)



- Tonearm turns to the right
- Tonearm at center

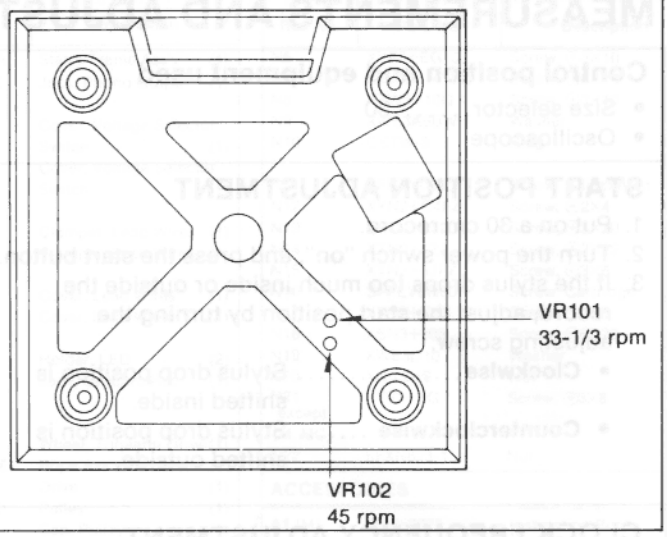




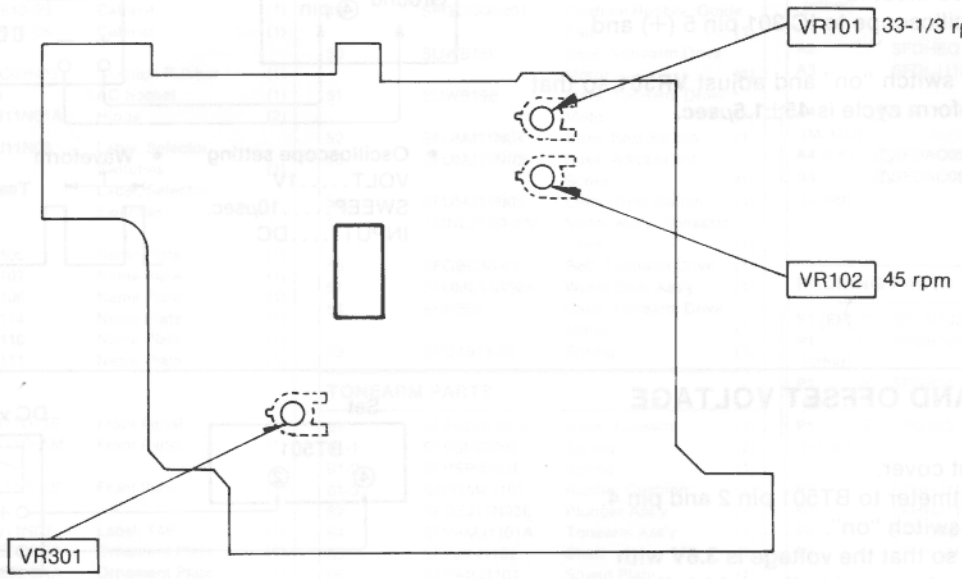
ROTATING SPEED ADJUSTMENT

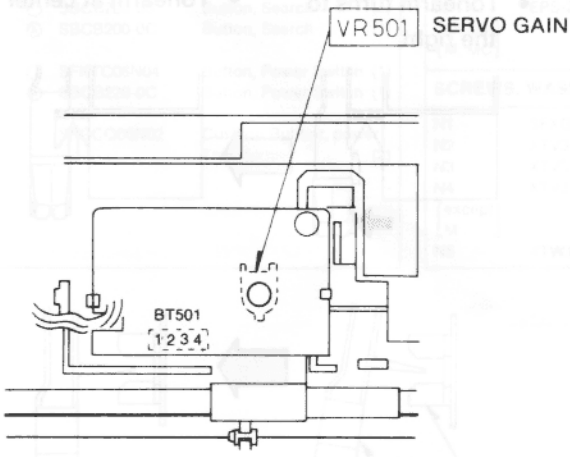
1. Open the dust cover.
2. Set the speed selector to "**33**".
3. Turn the power switch "on" and press the start button.
4. Adjust **VR101** so that the turntable platter rotates at the rated speed. (**33-1/3 rpm**)
5. Set the speed selector to "**45**".
6. Adjust **VR102** so that the turntable platter rotates at the rated speed. (**45 rpm**)

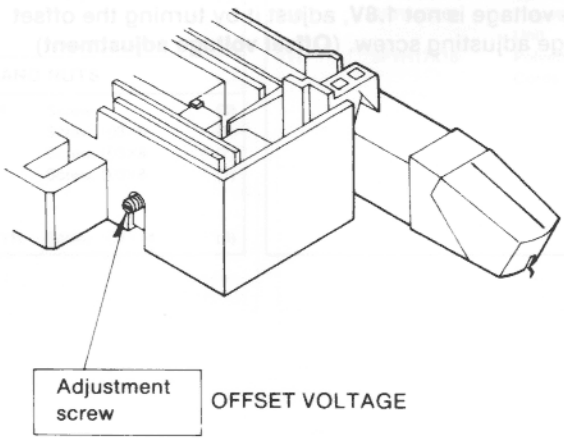
Note: Be sure to adjust 33-1/3 rpm first.



• Adjustment Points







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DC Servo Automatic Turntable System

SL-J11D

DEUTSCH

■ MESSUNGEN UND JUSTIERUNGEN

Verwendete Geräte und Zustand des Gerätes

- Plattengröße-Wahlschalter.....30
- Oszilloskop
- Gleichstrom-Voltmeter
- 30cm-Schallplatte

STARTPOSITION

1. Ein 30 cm-Schallplatte auflegen.
2. Den Netzschalter auf "On" stellen und die Start-Taste drücken.
3. Wenn die Nadel zu weit innen oder zu weit außen auf der Platte aufsetzt, ist die Startposition durch Drehen der Justierschraube zu justieren.
   - **Im Uhrzeigersinn** ..... Der Nadelaufsetzpunkt wird nach innen verschoben.
   - **Entgegen dem Uhrzeigersinn** ..... Der Nadelaufsetzpunkt wird nach außen verschoben.

UHRFREQUENZ

1. Die Bodenabdeckung entfernen.
2. Die Stifte 11, 12, 13 und 14 vom IC301 an Masse schließen.
   Den Stift 19 vom IC301 für mindestens 15 msec an Masse schließen und danach wieder lösen.
3. Das Oszilloskop am Stift 5 (+) vom IC301 und an der Masse (−) anchließen.
4. Den Netzschalter auf "On" stellen und **VR301** so justieren, daß der Ausgangswellenform-Zylus **45±1,5μsec** beträgt.

SERVO-VERSTÄRKUNG UND OFFSETSPANNUNG

1. Die Staubabdeckhaube entfernen.
2. Das Gleichstrom-Voltmeter an BT501, Stift 2 und Stift 4 anschließen.
3. Den Netzschalter auf "On" stellen.
4. **VR501** so justieren, daß die Spannung bei vollständig nach rechts gedrehtem Tonarm (Offsetwindel-Sensor "offen") **3,6 V** beträgt. (**Servo-Verstärkungs-Justierung**)
5. Den Tonarm in die Mitte zurückstellen und überprüfen, ob die Spannung **1,8 V** beträgt.
6. Falls die Spannung nicht **1,8 V** beträgt, so ist sie durch Drehen der Offsetspannungs-Justierschraube zu justieren. (**Offsetspannungs-Justierung**)

DREHZAHL

1. Den Drehzahl-Wahlschalter auf "**33**" U/min einstellen.
2. Den Netzschalter auf "On" stellen und die Start-Taste drücken.
3. **VR101** so justieren, daß der Plattenteller sich mit der Nenndrehzahl dreht. (**33-1/3 U/min**)
4. Den Drehzahl-Wahlschalter auf "**45**" U/min einstellen.
5. **VR102** so justieren, daß der Plattenteller sich mit der Nenndrehzahl dreht. (**45 U/min**)

Anmerkung: Die Justierung für 33-1/3 U/min muß unbedingt zuerst durchgeführt werden.

FRANÇAIS

■ MESURAGES ET RÉGLAGES

Équipement utilisé et conditions de service de l'appareil

- Sélecteur du diamètre de disques.....30
- Oscilloscope
- Voltmètre à C.C.
- Disque de 30 cm

POSITION DE DÉMARRAGE

1. Placer un disque de 30 cm.
2. Tourner l'interrupteur d'alimentation sur "on" (en circuit), et appuyer sur la touche de démarrage.
3. Si la pointe de lecture s'abaisse trop à l'intérieur ou à l'extérieur du disque, régler la position de démarrage en tournant la vis de mise au point.
   - **Sens des aiguilles d'une montre** ..... La position de descente de la pointe de lecture se déplace vers l'intérieur.
   - **Sens inverse des aiguilles d'une montre** ... La position de descente de la pointe de lecture se déplace vers l'extérieur.

FRÉQUENCES DES IMPULSIONS DE RYTHME

1. Retirer le panneau de la face inférieure.
2. Connecter les fiches 11, 12, 13, 14 de IC301 à la masse.
   Connecter la fiche 19 de IC301 à la masse pendant plus de 15 msec, puis la déconnecter.
3. Connecter un oscilloscope à la fiches 5 (+) de IC301 et à la masse (−).
4. Tourner l'interrupteur d'alimentation sur "on" (en circuit) et régler **VR301** de telle sorte que le cycle de la forme d'onde de sortie soit de **45±1,5 μsec**.

AMPLIFICATION SERVO-MÉCANIQUE ET TENSION D'ÉCART DE RÉGLAGE

1. Retirer le couvercle protège-poussière.
2. Raccorder un voltmètre à C.C. à la broche 2 et à la broche 4 de BT501.
3. Tourner l'interrupteur d'alimentation sur "on" (en circuit).
4. Régler **VR501** de telle sorte que la tension soit de **3,6 V** avec le bras de lecture complètement tourné à droite (dispositif de détection de l'angle de décalage "ouvert"). (**Réglage de l'amplification servo-mécanique**)
5. Faire revenir le bras de lecture vers le centre et s'assurer que la tension soit de **1,8 V**.
6. Si la tension n'est pas de **1,8 V**, la régler en tournant la vis de mise au point de tension de décalage. (**Réglage de la tension de décalage**)

VITESSE DE ROTATION

1. Régler le commutateur-sélecteur de vitesse sur "**33**" t/p.m.
2. Tourner l'interrupteur d'alimentation sur "on" (en circuit) et appuyer sur la touche de démarrage.
3. Régler **VR101** de telle sorte que le plateau de lecture tourne à la vitesse nominale de rotation (**33-1/3 t/p.m.**).
4. Régler le commutateur-sélecteur de vitesse sur "**45**" t/p.m.
5. Régler **VR102** de telle sorte que le plateau de lecture tourne à la vitesse nominale de rotation (**45 t/p.m.**).

Nota: S'assurer d'effectuer tout d'abord le réglage pour 33-1/3 t/p.m.

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