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Service Manual

Turntable System

SL-B30

[M], [MC]

SL-B30A

[M]



Areas

- * [M] is available in U.S.A.
- * [MC] is available in Canada.

Specifications

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

■ General

Power supply:	120 V AC, 60 Hz
Power consumption:	3 W
Dimensions:	43×11×37.5 cm
(W×H×D)	(16-15/16"×4-11/32"×14-3/4")
	Maximum height when top (dust cover) is open.
	43×37×42.5 cm
	(16-15/16"×14-9/16"×16-23/32")
Weight:	4.2 kg (9.3 lb.)

■ Turntable section

Type:	Fully automatic turntable
	Auto start
	Auto return
	Auto stop
	Repeat play
	Manual play
Drive method:	Belt drive
Motor:	DC motor
Drive control method:	F-G servo control
Turntable platter:	Aluminum die-cast
	Diameter 30.4 cm (12 inches)
Turntable speeds:	33-1/3 rpm and 45 rpm
Pitch control:	6% adjustment range
Wow and flutter:	0.045% WRMS (JIS C5521)
	±0.06% peak
	(IEC 98A Weighted)
Rumble:	-70 dB (IEC 98A Weighted)

■ Tonearm section

Type:	Statically-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 the outer groove of 30 cm (12") record
	Within 0°32' at the inner groove of 30 cm (12") record
Effective mass:	7.5 g (without cartridge)
Stylus pressure adjustment range:	1.25±0.25 g
Applicable cartridge weight range:	6 g
Phono cable capacitance:	100 pF

■ Cartridge section

Type:	(For SL-B30A) Moving magnet stereo cartridge
Magnetic circuit:	All laminated core
Frequency response:	10 Hz~30 kHz
	20 Hz~10 kHz ±1 dB
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:	22 dB at 1 kHz
Channel balance:	Within 2 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-28ES

Technics

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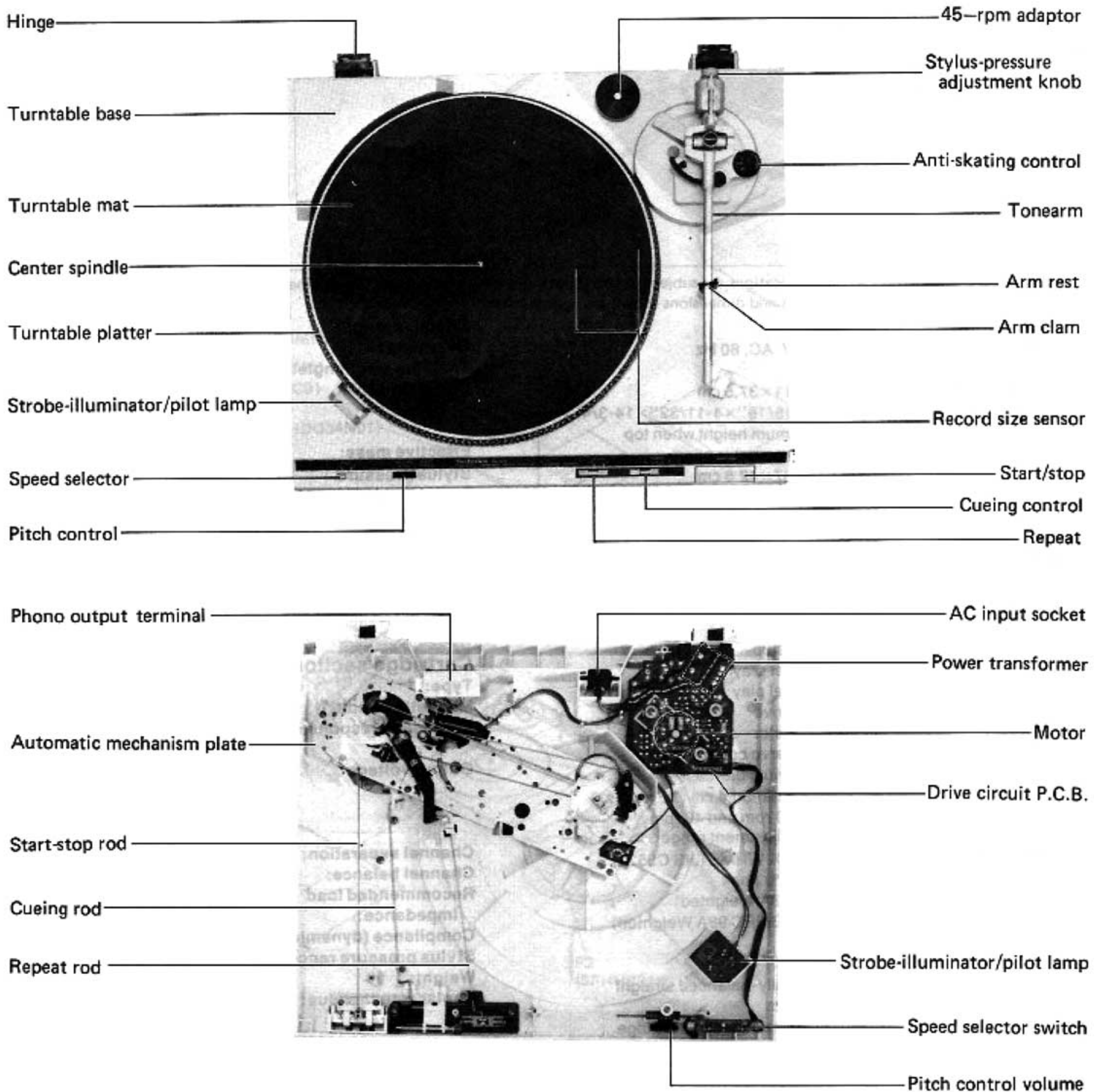
Panasonic Sales Company,
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of Puerto Rico, Inc.
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Victoria Industrial Park
Carolina, Puerto Rico 00630

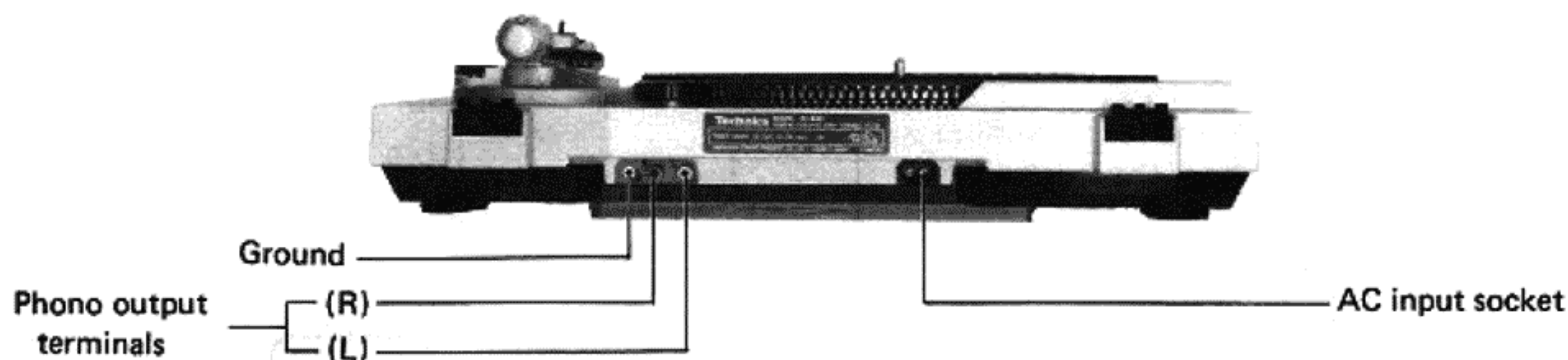
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LOCATION OF CONTROLS

* SL-B30 is not provided with cartridge.
SL-B30A is provided with cartridge.





DISASSEMBLY INSTRUCTIONS

• How to remove the bottom board

1. Fix the tonearm on the rest.
2. Remove the turntable.
3. Close the dust cover, and turn over the unit, taking care not to scratch it.
4. Remove the 6 setscrews (Fig.1 : ①~⑥) on the bottom board.

• How to remove the drive circuit P.C.B. and motor

1. Remove the bottom board.
2. Remove the 3 setscrews (Fig.2 : ⑦~⑨). Then the drive circuit P.C.B. can be detached.
3. Disengage the motor bracket fitting screws ⑩, ⑪ and disconnect the soldered motor terminals ⑫, ⑬ then the motor can be detached. (See Fig.3)

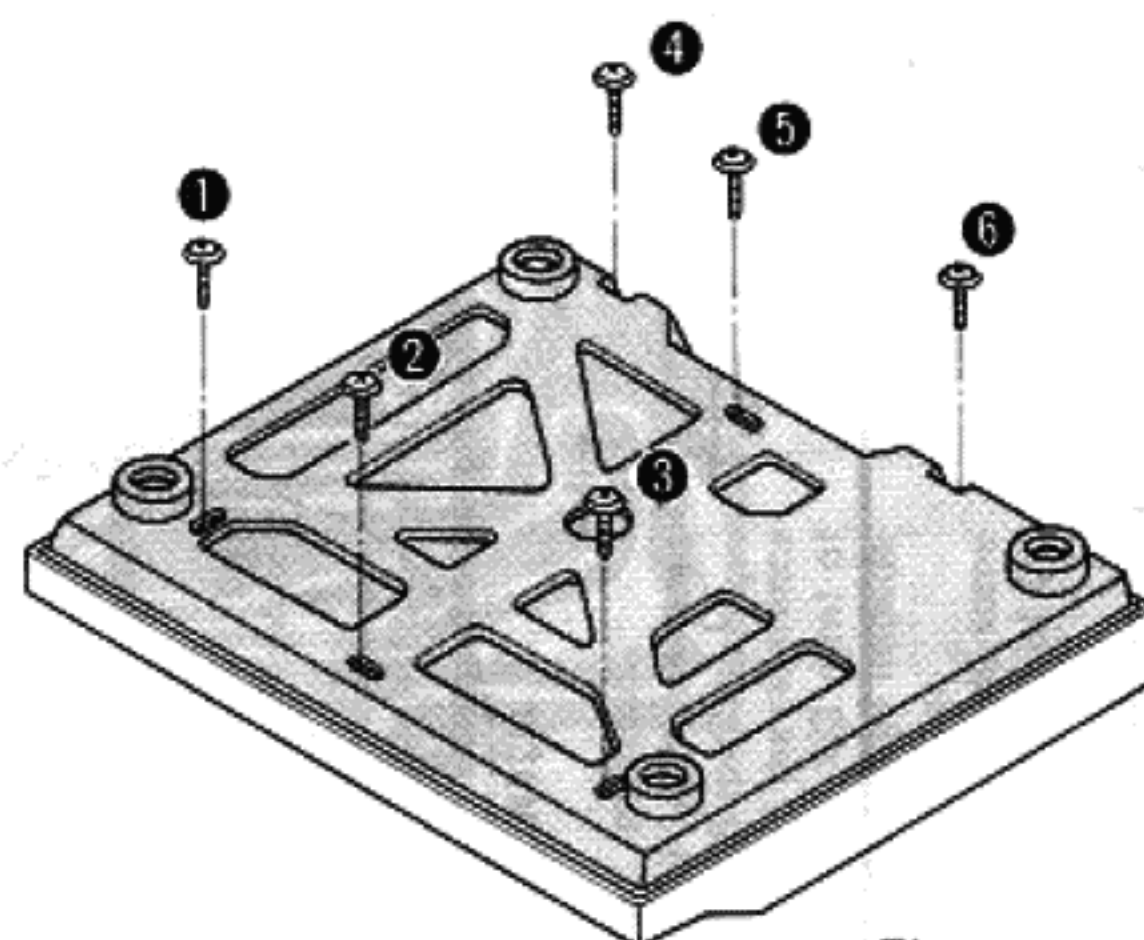


Fig. 1

• How to remove the automatic mechanism plate

1. Remove the bottom board.
2. Remove the 7 setscrews (⑭~⑳) of the automatic mechanism plate, the setscrew ㉑ of the output terminal shielding plate, the setscrew ㉒ of the earth terminal, and ㉓ of the earth circuit P.C.B. (Fig. 4).
3. Remove the start/stop rod and lift the mechanism plate.
4. When mounting the mechanism plate, check the following points.
 - (1) Turn the shaft to rotate the main gear until no remaining of the gear.
 - (2) The brake lever boss of the lift base should be inside the brake plate (cuing up). (Fig. 5)

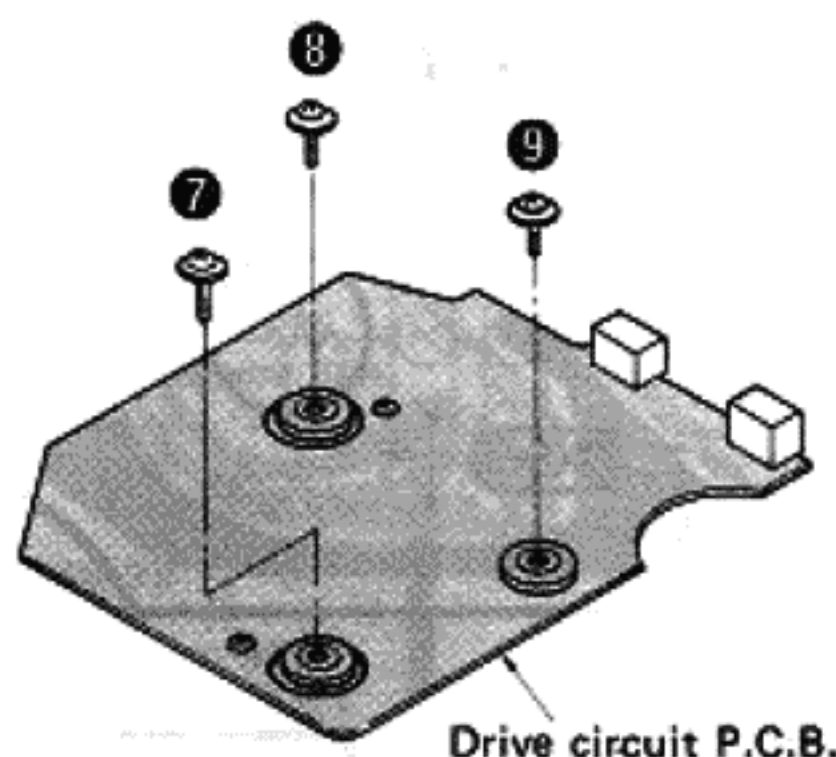


Fig. 2

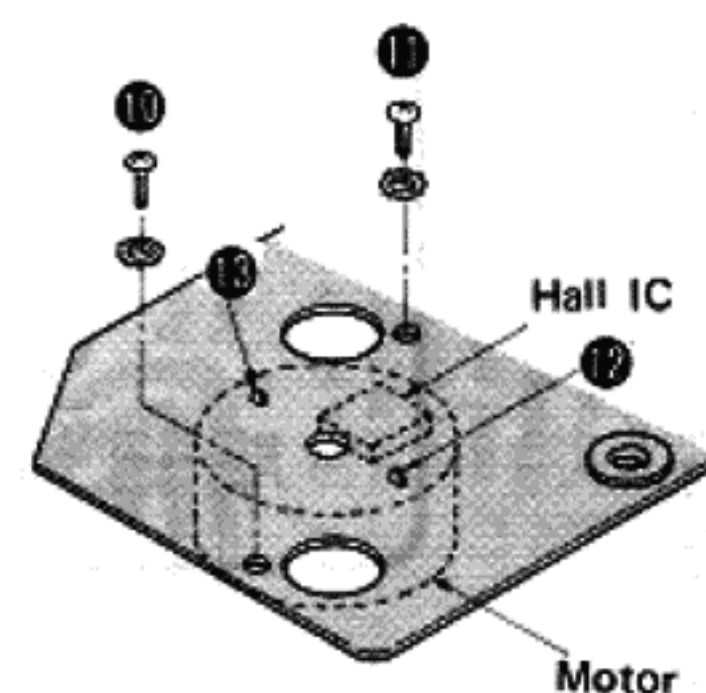


Fig. 3

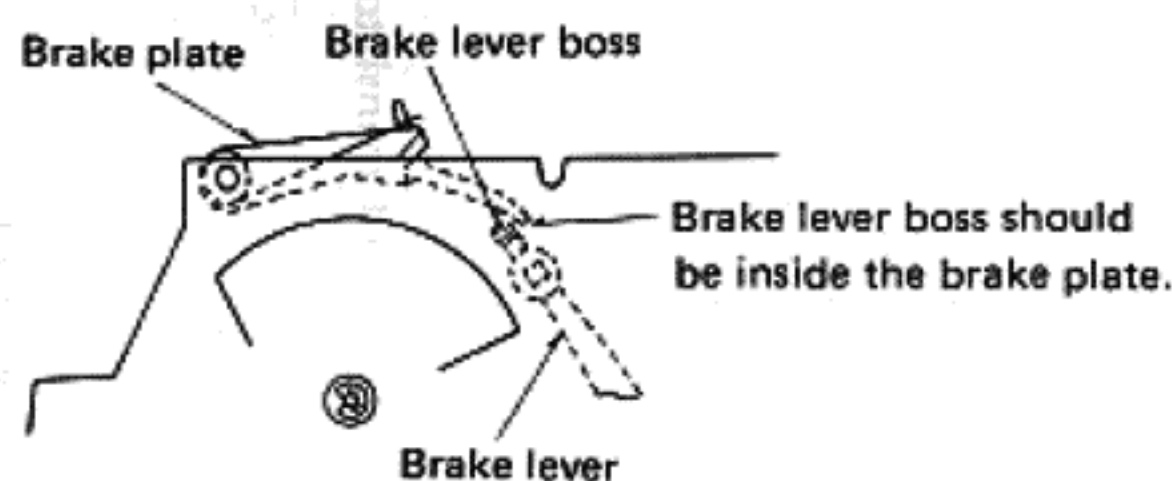


Fig. 5

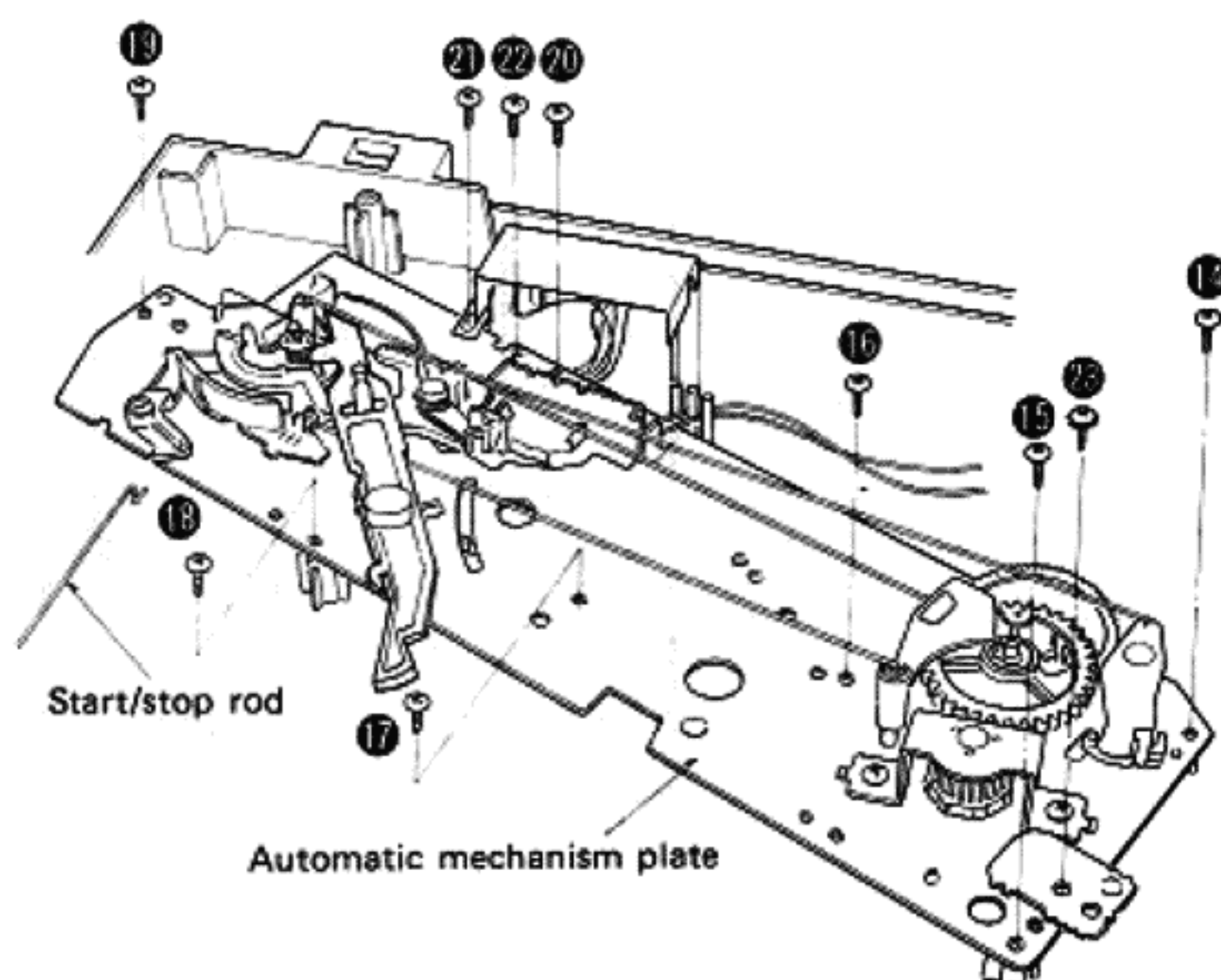


Fig. 4

● How to remove the PU fixing plate

1. Remove the bottom board and automatic mechanism plate.
2. Remove the canceller spring from the PU fixing plate, and loosen the screw ④ with a hexagonal wrench. (Fig. 6)
3. When fitting the PU fixing plate, match the PU fixing plate with the projection of the cabinet and tighten the screw ④. (Fig. 7)
4. After fitting the canceller spring, set the anti-skating control knob to zero and shift the tonearm to the innermost periphery. Then make sure that the clearance between the canceller spring and canceller operation plate is 0~0.3 mm. (Fig. 7)

● How to remove the tonearm

1. Remove the anti-skating control knob. (Fig. 8)
2. Remove the PU fixing plate.
3. Unsolder the 5 lead wires of output terminals.
4. Remove the PU lead wire arranging plate setscrew (Fig. 6: ⑤) and stopper (Fig. 6: ⑥). Then the tonearm can be removed.

● How to remove the lift base

1. Remove the arm lift setscrew and springs (Fig. 9: ⑦, ⑧) to detach the arm lift.
2. Remove the anti-skating control knob.
3. Remove the PU fixing plate.
4. Remove the 3 setscrews (Fig. 6: ⑨~⑪) of the lift base.

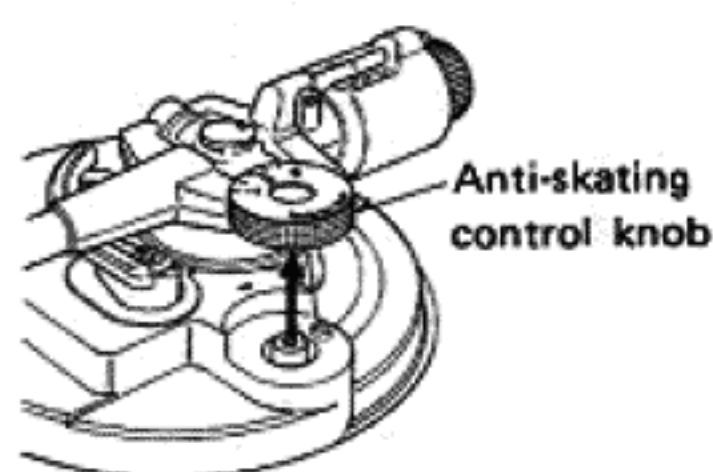


Fig. 8

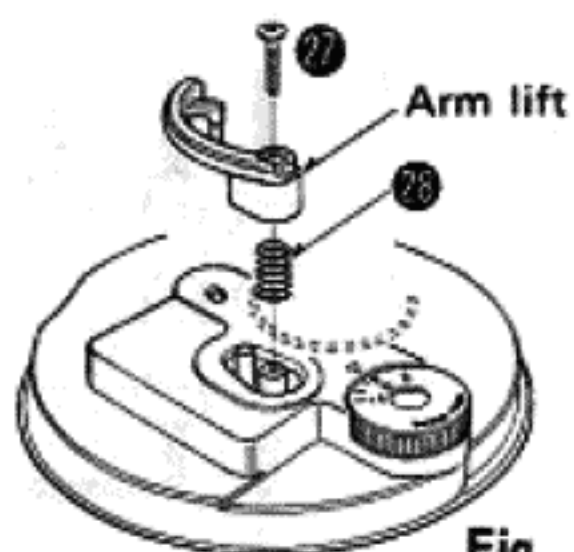


Fig. 9

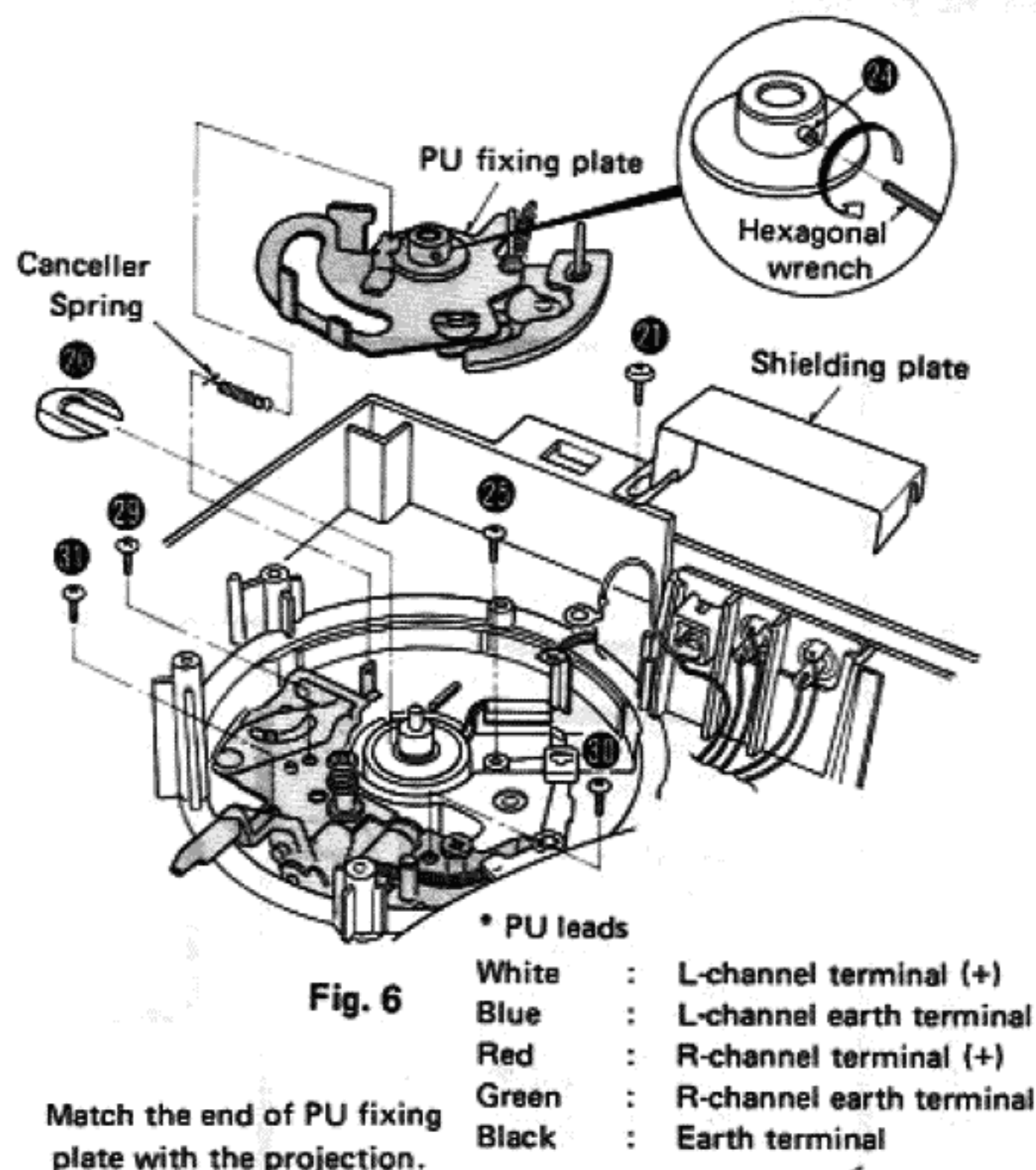


Fig. 6

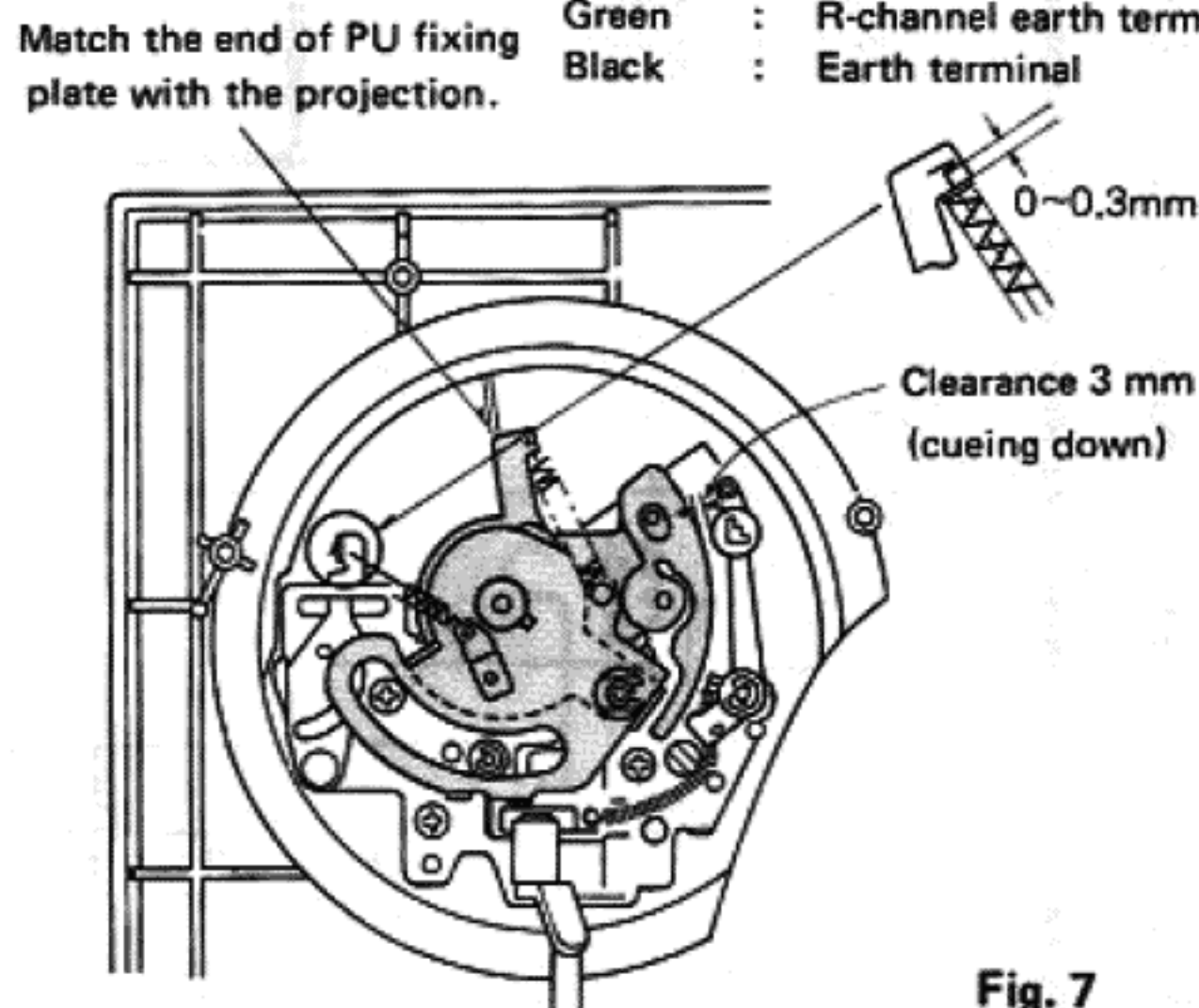


Fig. 7

■ HOW TO APPLY SILICON OIL (CUEING)

1. Remove the lift base.
2. Remove the brake cam spring (Fig. 10), pressing it in the direction of the arrow.
3. Move the brake cam in the direction of the arrow A. (Fig. 11)
4. Apply silicon oil (SH097) to the outer surface and groove of the brake cam shaft. (Fig. 11)
5. Apply grease (Grease 320, Part No. Grease 1) to the lift rod.

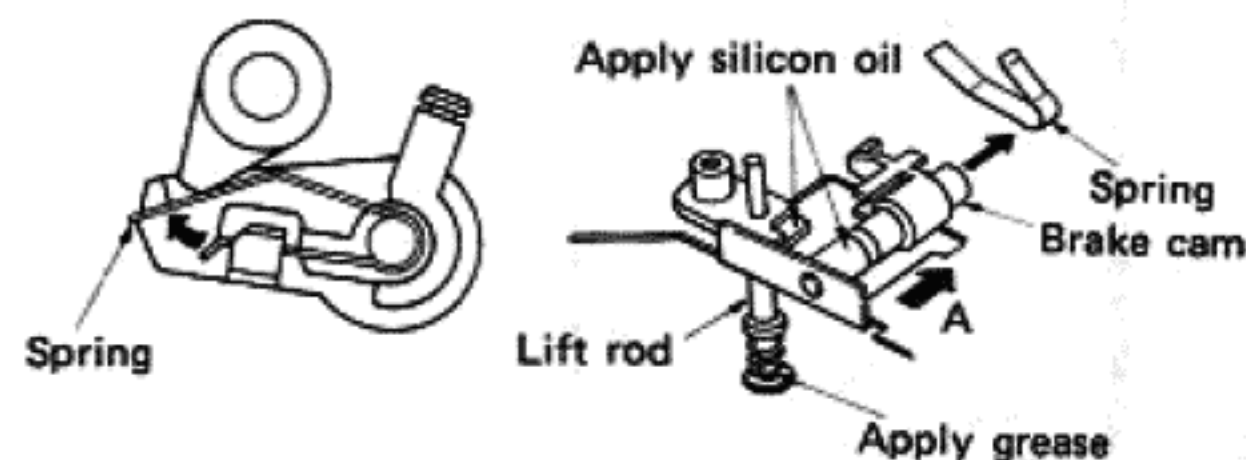


Fig. 10

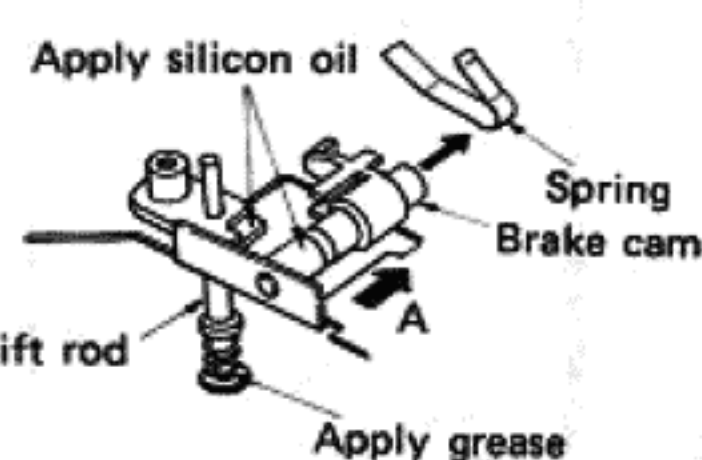


Fig. 11

■ EXCHANGE OF HALL IC

In exchanging the hall IC, be sure to check that the spacer is placed under the IC and to solder the IC exactly since the mounting height of hall IC is limited. (See Fig. 12)

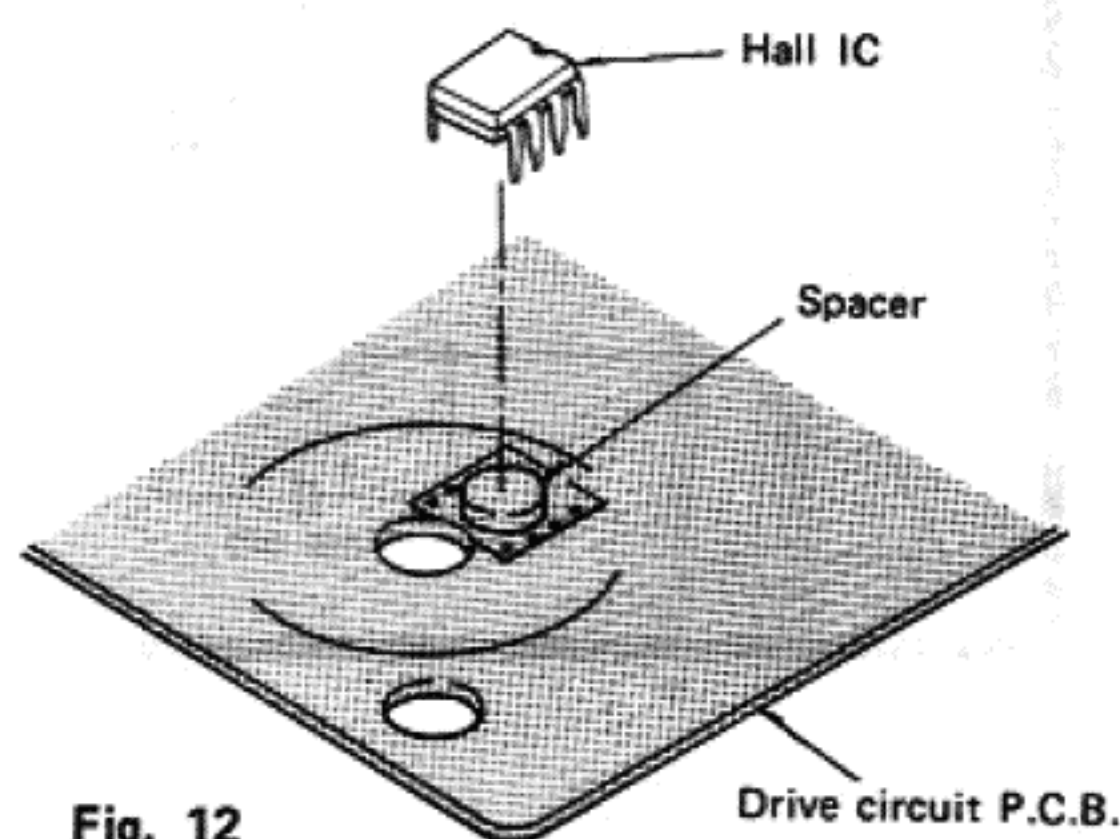
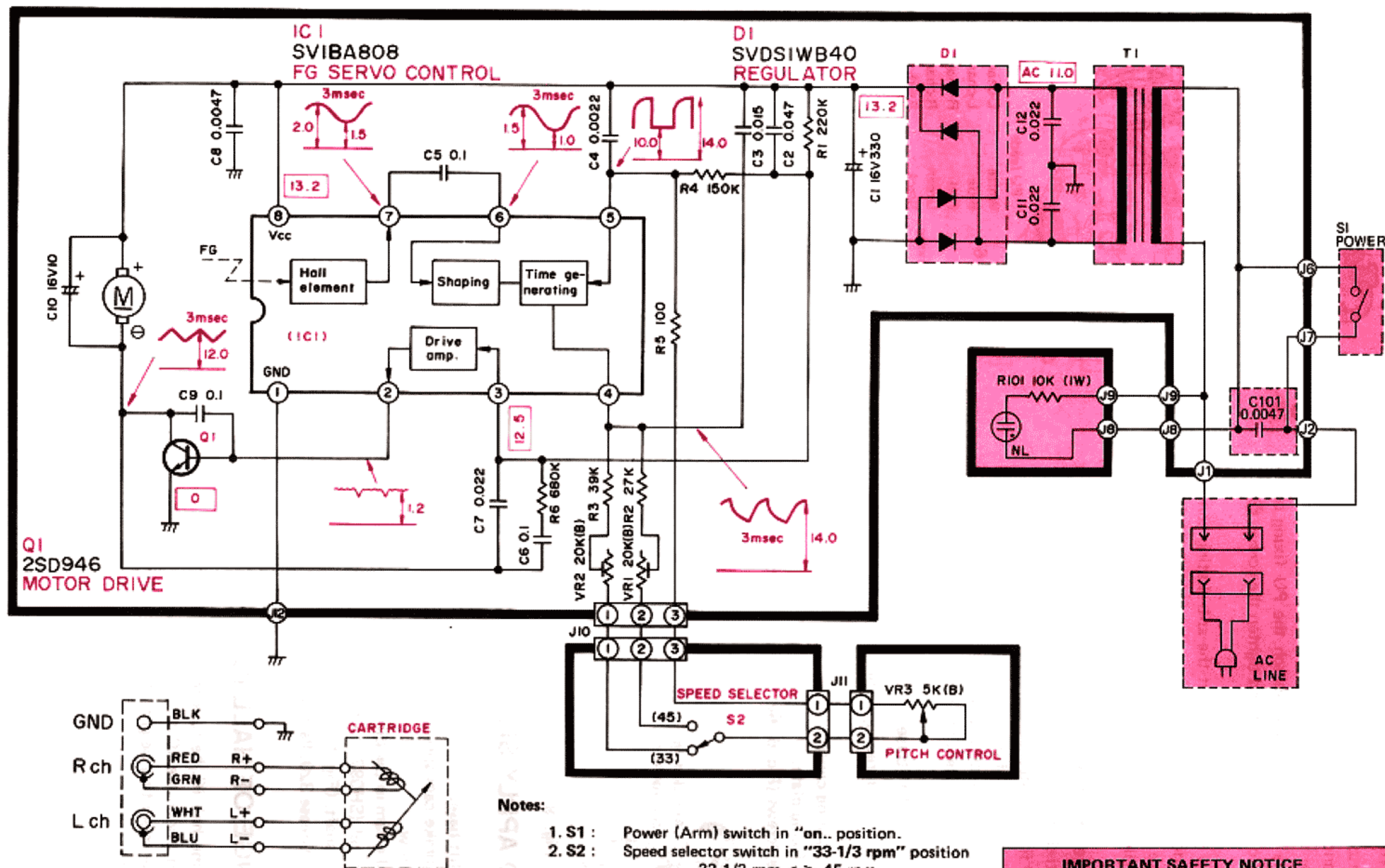


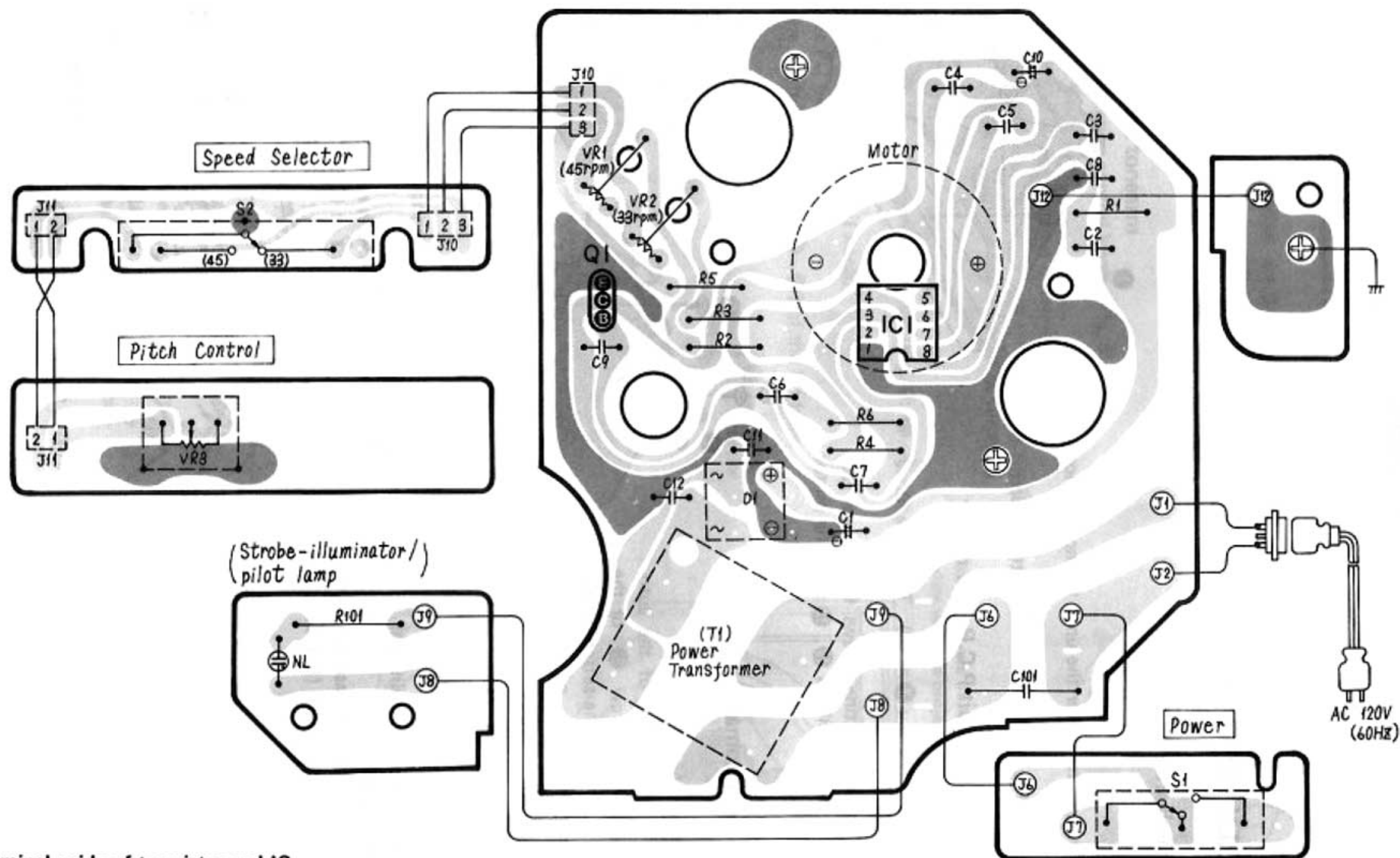
Fig. 12

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

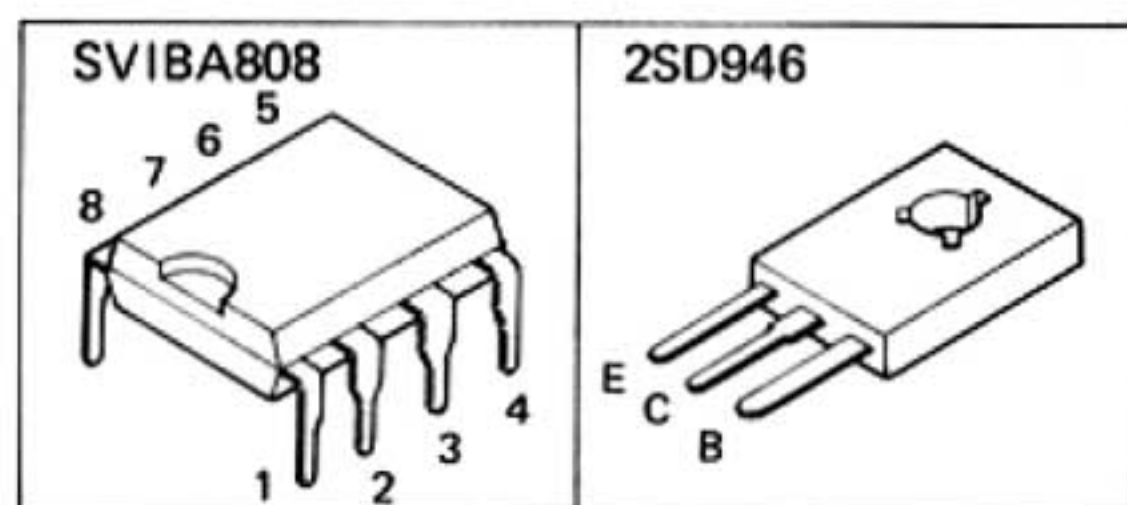


IMPORTANT SAFETY NOTICE

The shaded area on this schematic diagram incorporates special features important for protection from fire and electrical shock hazards. When servicing it is essential that only manufacturer's specified parts be used for the critical components in the shaded areas of the schematic.



• Terminal guide of transistor and IC



■ MEASUREMENTS AND ADJUSTMENTS

● Arm-lift height adjustment

The arm-lift height (distance between the stylus tip and the record surface when the cueing control is at the "▼" position) has been adjusted at the factory to approximately 5 to 8 mm (3/16"~5/16"). (Fig. 13)

If the clearance is too narrow or too wide, turn the adjustment screw clockwise or counterclockwise. (Fig. 14)

Clockwise rotation

—distance between the record and stylus tip is decreased.

Counterclockwise rotation

—distance between the record and stylus tip is increased.

● Adjustment of automatic start position

Note:

The auto-start and auto-return adjustment screws are located together.

When the tonearm is in or near the arm rest the auto-start adjustment screw is visible (Fig. 15); when the tonearm is near the center of a record, the auto-return adjustment screw is visible. (Fig. 16)

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

1. Clamp the tonearm to the arm rest.
2. Remove the rubber cap. (Fig. 15)
3. Turn the screw with a screwdriver, clockwise or counterclockwise as necessary.

If the stylus tip sets down too far in the recorded groove,
—turn counterclockwise.

If the stylus tip sets down outside of the record,
—turn clockwise.

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

● Adjustment of automatic return position (Fig. 16)

(Remove the rubber cap.)

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

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

If the tonearm fails to return after the final groove.
—turn clockwise.

● Speed adjustment (pitch control) (Fig. 17)

There are strobe-lines cut on this turntable platter to indicate correct rotational speed.

If the strobe-line appears to be moving as the turntable rotates, adjust while playing a record.

1. Set the speed selector to the speed to be adjusted.
2. Watch the dot pattern on the side of the platter. Turn the pitch control one way or the other until the dots appear to stand still. This is the correct speed.
3. Turning the pitch control in the "+" direction increases the speed.
4. Turning the pitch control in the "-" direction decreases the speed.

Note:

Strobe dot pattern

This unit's strobe illuminator operates at the AC line frequency which generally has a 0.2% fluctuation.

This fluctuation, when present, may make the strobe pattern appear to change. However, actual turntable speed does not change, because the DC motor is not affected by AC power line frequency.

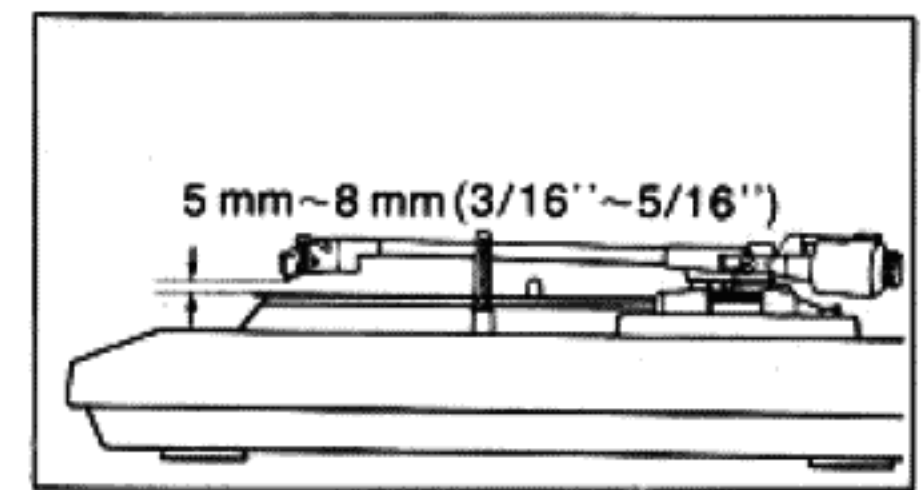


Fig. 13

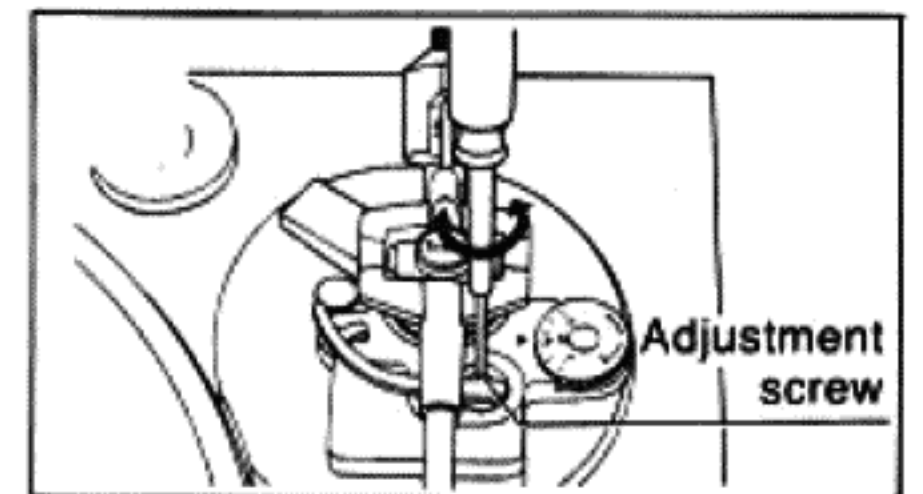


Fig. 14

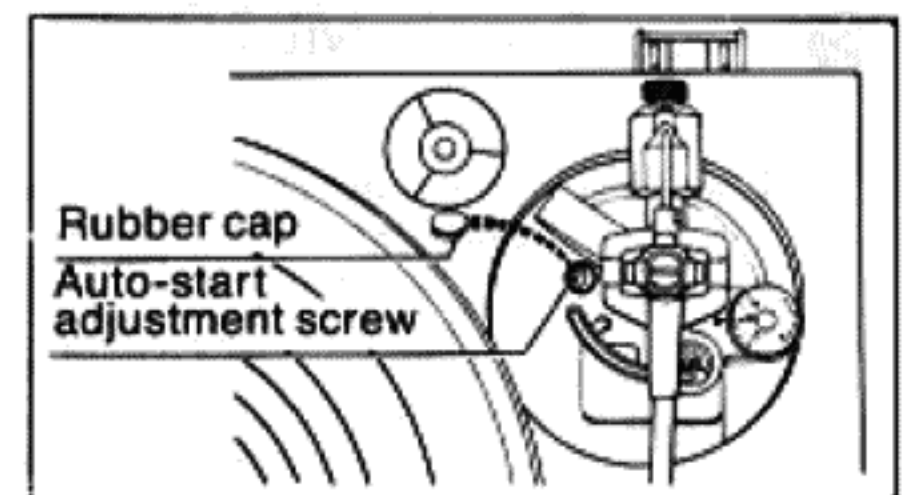


Fig. 15

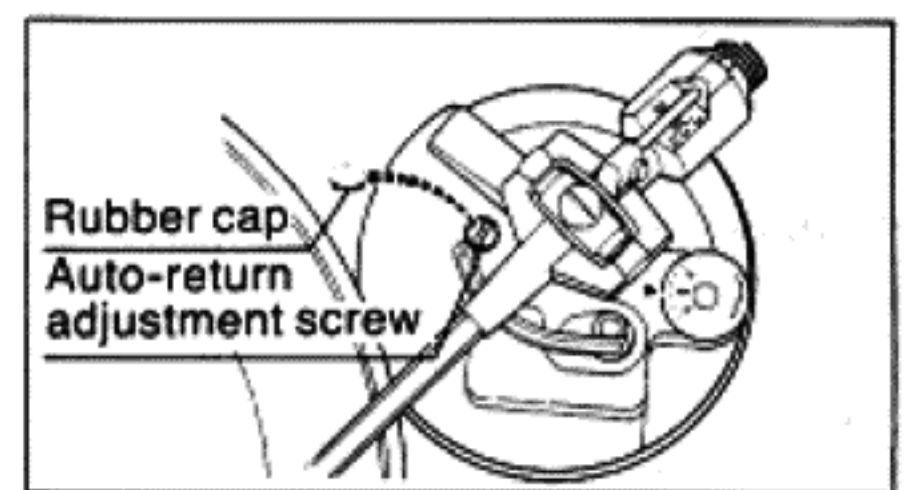


Fig. 16

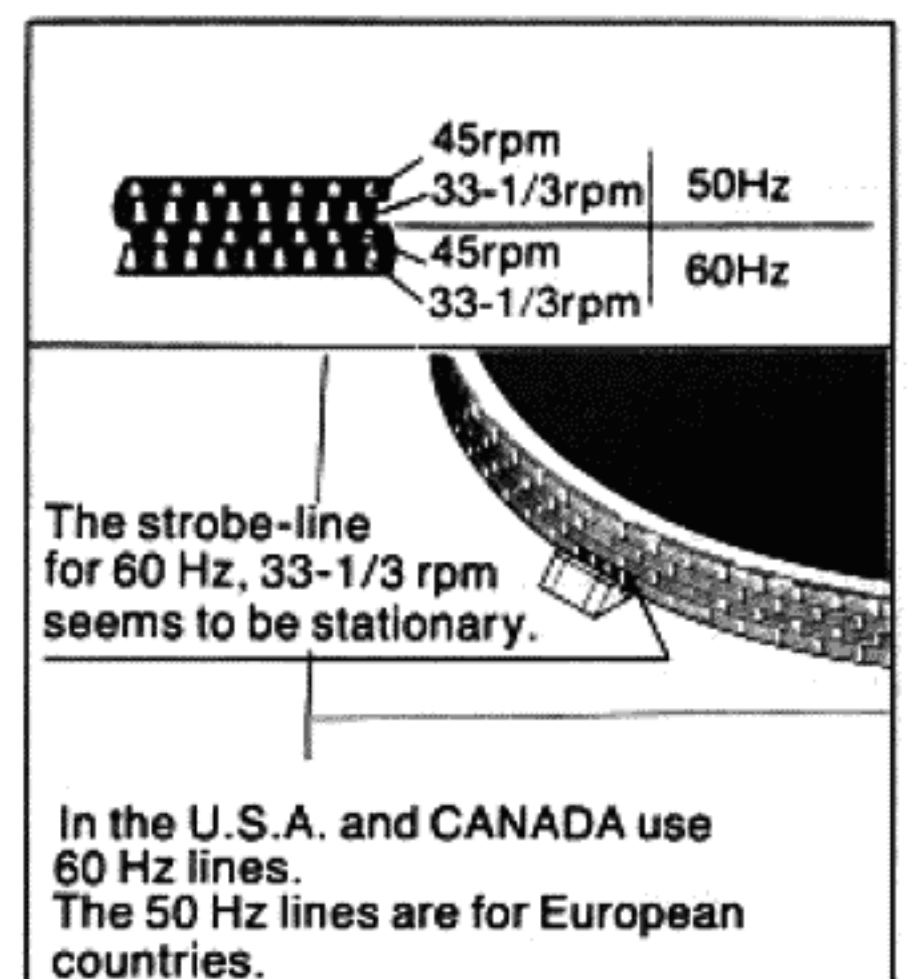


Fig. 17

• Adjustment of rotational speed

When the hall IC (IC101) or the variable resistors (VR1, 2) are changed, or if the rated rotation is not reached even when the pitch control knob is turned, adjust the rotational speed in the following procedure.

1. Place the set on a player repair bench.
2. Turn the pitch control knob to the center position, and put on a record disc for playing.
3. Set the speed selector to the "33" position.
4. Turn the VR2 with a screw driver from the lower part of the set to the rated rotation (33—1/3 r.p.m.) and check the rotation with a strobe while adjusting the speed. (See Fig. 18)
5. Set the speed selector to the "45" position.
6. Turn the VR1 with a screw driver from the lower part of the set to the rated rotation (45 r.p.m.) and check the rotation with a strobe while adjusting the speed. (See Fig. 18)
7. As the more simple method, it is also possible to adjust VR1 and VR2 by removing the turntable mat. (See Fig. 19)

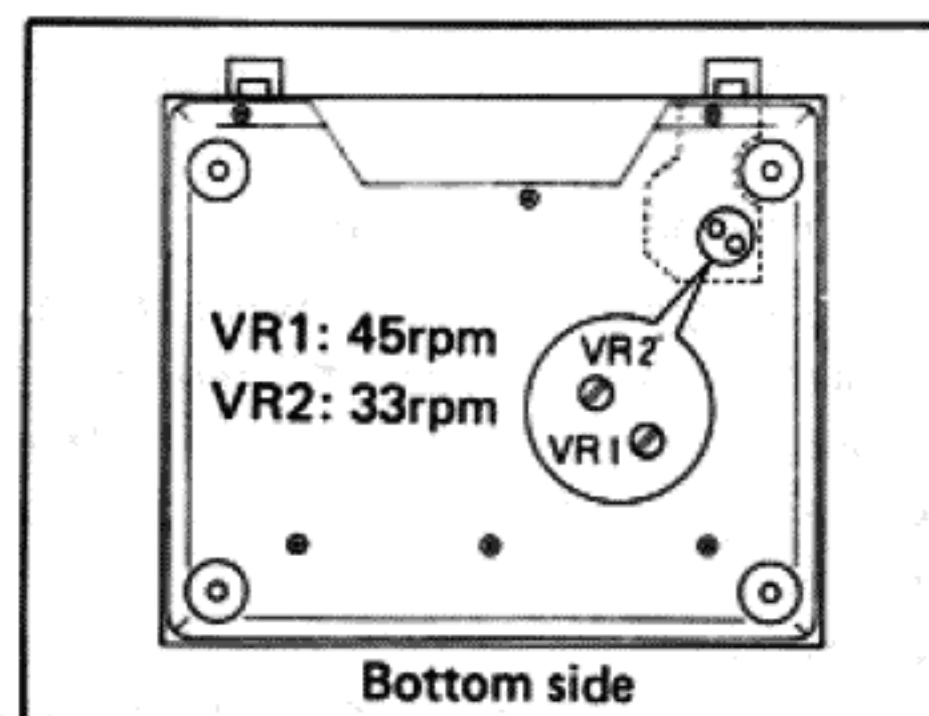


Fig. 18

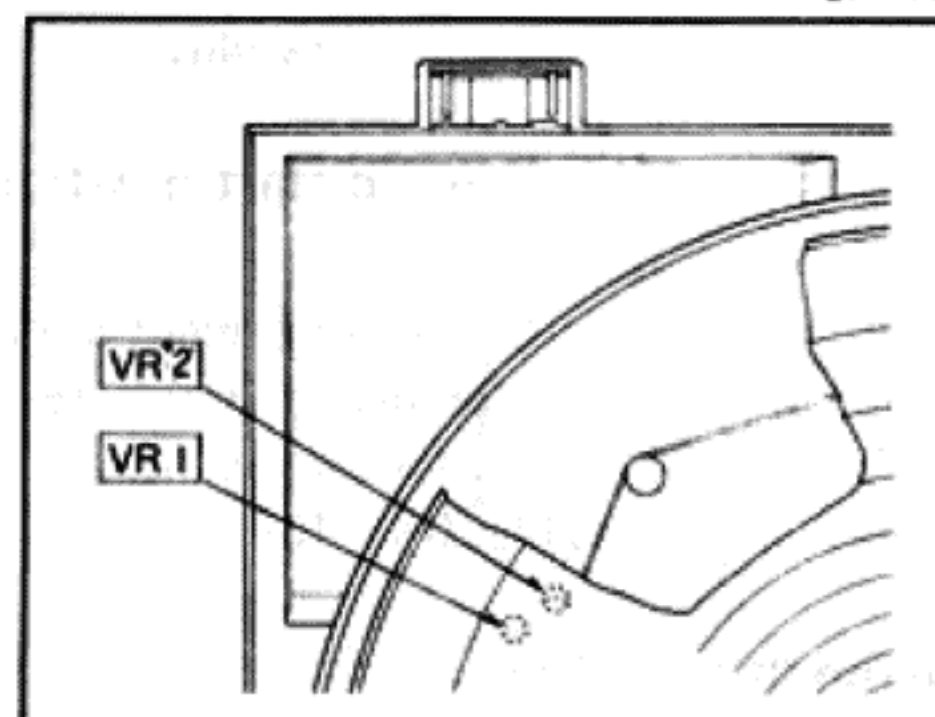


Fig. 19

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 Δ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
 3. Bracketed indications in Ref. No. columns specify the area.
Parts without these indications can be used for all areas.
 4. The "S" mark is service standard parts and may differ from production parts.

Areas

- * [M] is available in U.S.A.
- * [MC] is available in Canada.

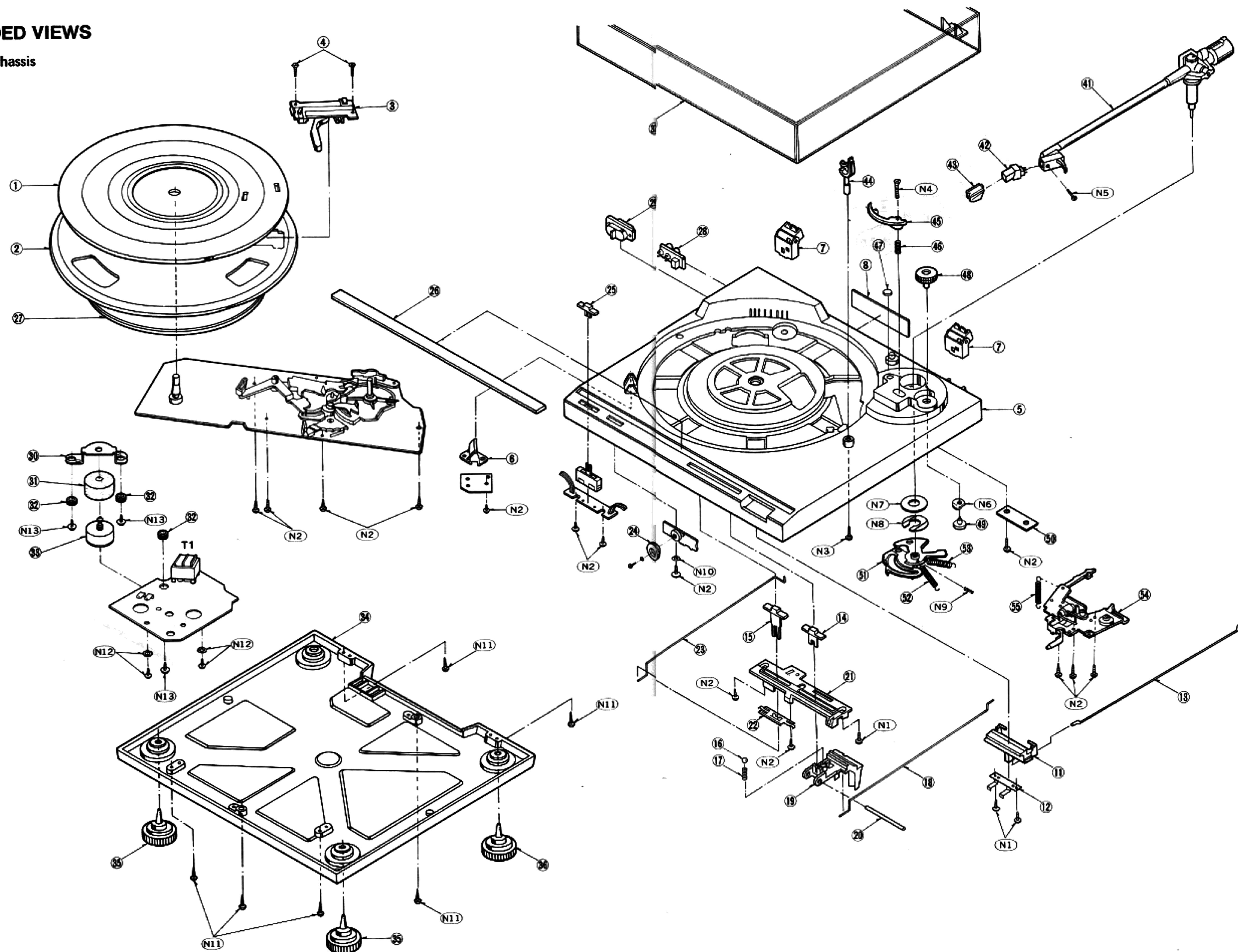
Ref. No.	Part No.	Description
INTEGRATED CIRCUIT		
IC1	SVIBA808A-1	Hall IC (Speed Detector)
TRANSISTOR		
Q1	2SD549	
DIODE		
D1 Δ	SVDSIW840	Rectifier
VARIABLE RESISTORS		
VR1, 2	EVNM6AA00B24	Speed Adjustment, 20k Ω (B)
VR3	EVLE5AT12B53	Pitch Control, 5k Ω (B)
SWITCHES		
S1 Δ	SFDSS55GLP1	Power Source
S2	SFDSB03M01	Speed Selector
LAMP		
NL1 Δ	SFDNE2HU	Strobe
POWER TRANSFORMER		
T1 [M] Δ	SLT35KL1B	Power Source
T1 [MC] Δ	SLT35KL1A	Power Source
Ref. No.	Part No.	Value
RESISTORS		
R1	ERD25TJ224	220k Ω
R2	ERO25CKF2702	27k Ω

Ref. No.	Part No.	Value
R3	ERO25CKF3902	39k Ω
R4	ERD25TJ154	150k Ω
R5	ERD25FJ101	100 Ω
R6	ERD25TJ684	680k Ω
R101 Δ	ERGIANJ103	10k Ω
CAPACITORS		
C1 Δ	ECEA1CS331	330 μ F
C2	ECFB1E473MRM	0.047 μ F
C3 Δ	ECQM1H153JZ	0.015 μ F
C4 Δ	ECKD1H222ZF	0.0022 μ F
C5, 6	ECFB1B104ZRM	0.1 μ F
C7	ECFB1E223MRM	0.022 μ F
C8 Δ	ECKD1H472ZF	0.0047 μ F
C9	ECFB1B104ZRM	0.1 μ F
C10 Δ	ECEA1HS100	10 μ F
C11, 12 Δ	ECKD1H223MD	0.022 μ F
C101 [M] Δ	ECQF1A472MD	0.0047 μ F
C101 [MC] Δ	ECQU1A472MF	0.0047 μ F
Ref. No.	Part No.	Description
CABINET and CHASSIS PARTS		
1	SFTGDP3N01	Turntable Mat (1)
2	SFTB33N01	Turntable (1)
3	SFUMB33N20A	Base, Disc Size Sensor (1)
4	SFUZD33-01E	Latch, Disc Size Sensor Base (2)
5	SFACB03M01	Cabinet (1)
6	SFUM212-07	Cover, Strobe (1)
7	SFATB33N02A	Hinge (2)
8 [M]	SFNNB03N01	Name Plate (1)
8 [MC]	SFNNB03C01	Name plate (1)
11	SFKTDP3N02	Button, Start, Stop (1)
12	SFQDP3N01	Spring, Start, Stop Button (1)

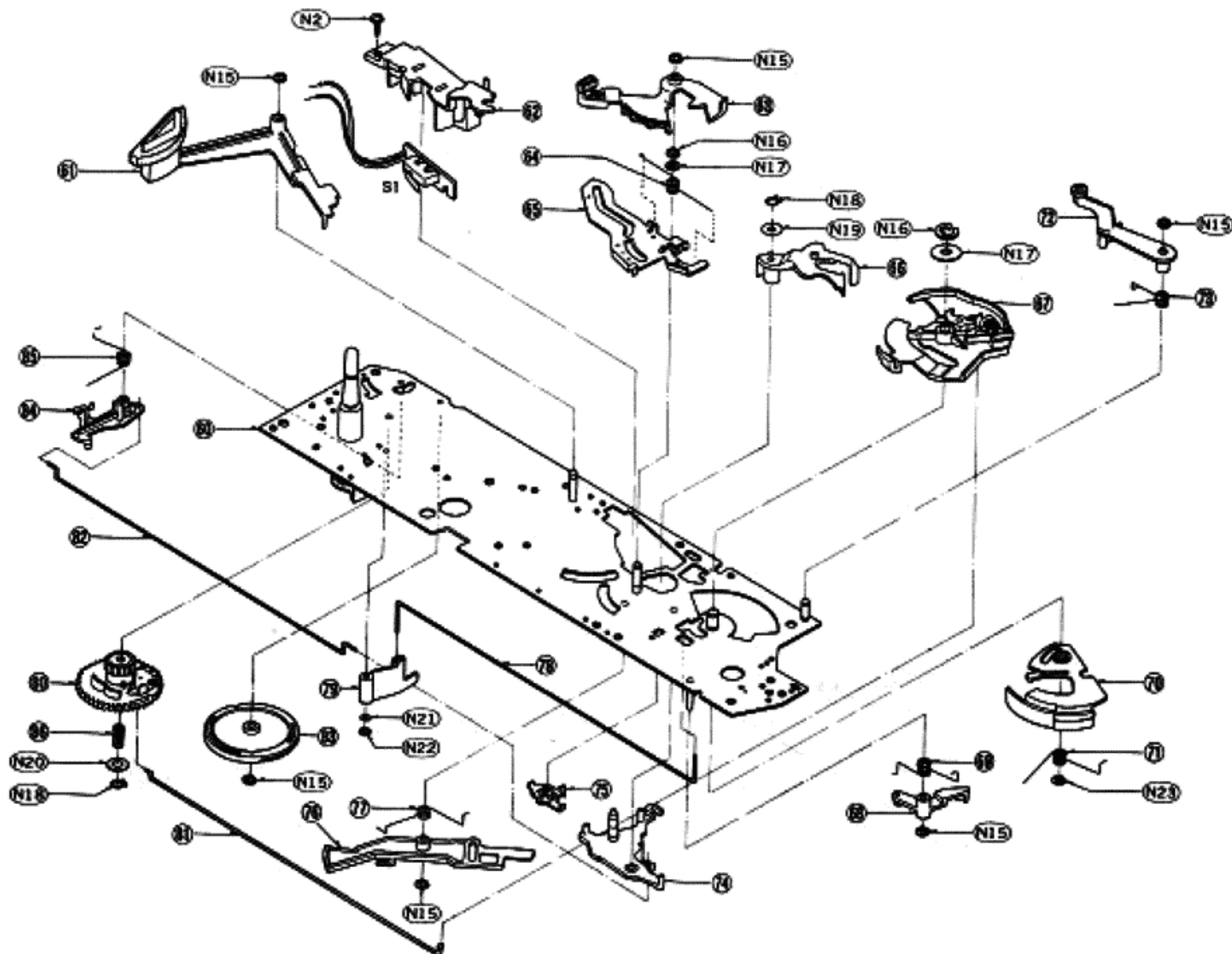
Ref. No.	Part No.	Description
13	SFUZBP3N02	Rod, Start, Stop (1)
14	SFKTDP3N01	Knob, Cueing (1)
15	SFKTB03M01	Knob, Repeat (1)
16	SFYB-5-32	Ball, Cueing (1)
17	SFOA130-11	Spring, Cueing (1)
18	SFUZB31S01	Rod, Cueing (1)
19	SFUMB31S03	Slider, Cueing (1)
20	SFXJQ34N01	Shaft, Cueing (1)
21	SFUMB03M01	Guide, Cueing, Repeat (1)
22	SFQPB03M01	Spring, Repeat (1)
23	SFUZB03M01	Rod, Repeat (1)
24	SFKTD11N01	Knob, Pitch Control (1)
25	SFKTDP3N03	Knob, Speed Selector (1)
26	SFKKB03M01	Surface Plate (1)
27	SFGB321-1	Belt (1)
28	SFOJDP3N02	Socket, Phono Input (1)
29 Δ	SFDJHSC0491	Socket, AC Power (1)
30	SFUPB03M01	Plate, Motor (1)
31	SFGHB33N01	Rubber Cushion, Motor (1)
32	SFGZB33N01	Rubber Cushion, Motor & P.C.B. (3)
33	SFMHB33N01E	Motor Ass'y (1)
34	SFAUDP3N01	Bottom Board (1)
35	SFGAD31S01	Insulator, Front (2)
36	SFGAD31S02	Insulator, Rear (2)
37	SFADB31S01A	Dust Cover (1)

EXPLODED VIEWS

Cabinet and chassis



• Automatic mechanism plate



Ref. No.	Part No.	Description
TONE ARM and ARM BASE		
41	SFPAMOP201A	Tonearm (1)
42 [A-[M] only]	EPC-P2B	* Cartridge (1)
43 [A-[M] only]	EPS-28ES	* Stylus (1)
44	SFCNC0231	Cover, Stylus (1)
45	SFKUDP3N01E	Arm Rest (1)
46	SFPRT30302E	Arm Lift (1)
47	SFPSP30304	Spring, Arm Lift (1)
48	SFGK170-01	Rubber Cap (1)
49	SFPJKOP301	Knob, Cancellor (1)
50	SFPJK30302	Cam, Cancellor (1)
51	SFUPBP3N02	Plate, Phono Cord (1)
52	SFUPBP3N01A	Clamper (1)
53	SFQHP3N01	Arm Base (1)
54	SFPSP3030B	Spring (1)
55	SFUPB31S01A	Spring (1)
56	SFPSP30305	List Plate Ass'y (1)
AUTOMATIC MECHANISM ASS'Y		
60	SFUKB33N21R	Plate, Automatic Mechanism (1)
61	SFUMB33N08E	Plate, Disc Size Sensor (1)
62	SFUMQ34N36	Case, Switch (1)
63	SFUMQ34N34E	Index Plate Ass'y (1)
64	SFUPQ34N22	Spring, Index (1)
65	SFUPQ34N23E	Index Sub Plate (1)

Ref. No.	Part No.	Description
66	SFUMQ34N38	Lever, Stop (1)
67	SFUMQ34N39E	Cam, Drive (1)
68	SFUMB33N01	Lever, Start (1)
69	SFQSB33N02	Spring, start (1)
70	SFUMQ34N35	Lever (1)
71	SFQSQ34N24	Cam, Start (1)
72	SFUMQ34N43	Spring, Start (1)
73	SFQSQ34N28	Plate, Brake (1)
74	SFUMQ34N44	Spring, Brake (1)
75	SFUMQ34N32	Lever Switch (1)
76	SFUMQ34N41	Support, Actuating Rod (1)
77	SFQSQ34N25	Lever, Repeat (1)
78	SFQSQ34N23	Spring, Repeat (1)
79	SFUMQ34N42	Lever (1)
80	SFQSQ34N23	Rod, Actuating (1)
81	SFUMQ34N42	Connector, Actuating (1)
82	SFUGQ34N21E	Main Gear Ass'y (1)
83	SFQSQ34N22	Rod, Actuating (1)
84	SFQSQ34N26	Rod, Switch (1)
85	SFUGQ34N22	Gear, Drive (1)
86	SFUMQ34N31	Plate, Stop Gear (1)
87	SFQSQ34N21	Spring, Stop Gear (1)
88	SFQSQ34N21	Spring, Main Gear (1)
SCREWS, WASHERS and CIRCLIPS		
N1	\$	XTV3+10BFN Tapping, #3 x 10 (2)
N2	\$	XTV3+8BFN Tapping, #3 x 8 (13)
N3	\$	XTW3+10Q Tapping, #3 x 10 (1)

Ref. No.	Part No.	Description
N4	\$	XTS3+16BFZ Tapping, #3 x 16 (1)
N5	\$	SFPEVOP301 Tapping, Cartridge (1)
N6	\$	SFPEW13005 Tone arm (1)
N7	\$	SFXWH31-01 Tonearm (1)
N8	\$	SFXW301-02 Tonearm (1)
N9	\$	XXES3D5FZ-1S Tonearm (1)
N10	\$	XWE3 φ 3 (1)
N11	\$	XTW3+14QFYR Tapping, #3 x 14 (6)
N12	\$	SFXGB33N01 Motor (2)
N13	\$	XYE3+EJ10 Motor (2)
N14	\$	XUC3FT φ 3 (6)
N15	\$	XUC5FT φ 5 (2)
N16	\$	SFXWQ30-11 (2)
N17	\$	XUB4FT (2)
N18	\$	SFXWQ34N26 (1)
N19	\$	XWE4 (1)
N20	\$	SFXWQ34N21 (1)
N21	\$	XUC2FT φ 2 (1)
N22	\$	XUC25FT φ 2.5 (1)
ACCESSORIES		
A1 [M]	SFNUB03M01	Instructions Book, Printed Matter (1)
A1 [MC]	SFNUB03C01	Instructions Book, Printed Matter (1)
A2	SFWE212-01	45 Adaptor (1)
A3	SFDLC05N01	Ground Wire (1)
A4	SFDHC05N01	Phono Cord (1)
A5 [A-[M] only]	SFNUB03M05	Cartridge Instruction (1)
A6	RJA22Y	AC Cord (1)

- P1 [M]
- P1 [MC]
- P1 [A-[M] only]

