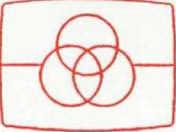




SERVICE MANUAL TURNTABLE

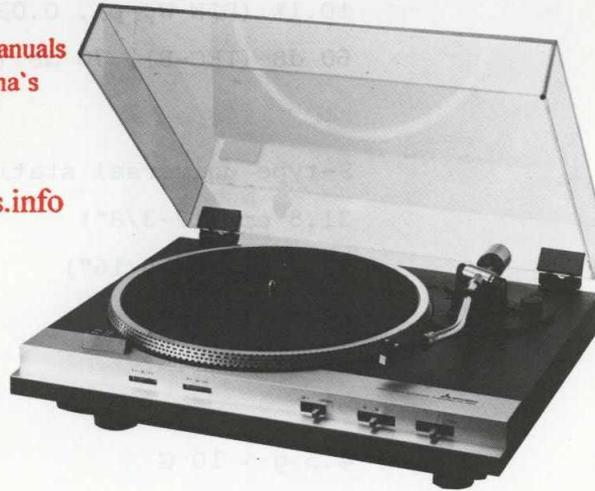
MODEL DP-84DA



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CONTENTS

SPECIFICATIONS	2
NOMENCLATURE	3
TRACKING FORCE ADJUSTMENT	4
STYLUS TIP HEIGHT ADJUSTMENT	4
ANTI-SKATING MECHANISM ADJUSTMENT	4
OPERATING THE TURNTABLE.....	4
REPLACING THE CARTRIDGE	6
LEAD-OUT ADJUSTMENT	6
T.T REVOLUTION ADJUSTMENT	7
FUNCTION OF MECHANICAL COMPONENT.....	7
FUNCTION DIAGRAM OF MECHANICAL COMPONENT	8
SCHEMATIC DIAGRAM	9
WIRING	11
PRINTED CIRCUIT BOARD.....	13
EXPLODED VIEW	14
PARTS LIST	15



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SPECIFICATIONS

1. PHONO MOTOR SECTION

Drive mechanism		Direct drive
Motor		4-phase 12-pole 24-slot brushless DC servo motor
Platter	Diameter	32.4 cm (12-3/4")
	Weight	1.3 kg (2-43/50 lb)
	Material	Aluminum diecast
Platter speed		33-1/3, 45 rpm
Speed adjustment		±3.0%
Wow and flutter		±0.1% (DIN Wp-p), 0.03% (Wrms)
Signal to noise ratio		60 dB (IEC-B), 70 dB (DIN-B)

2. TONEARM SECTION

Type		S-type universal static balance
Overall length		31.5 cm (12-3/8")
Effective length		22.7 cm (8-15/16")
Overhang		14 mm (9/16")
Tracking error (30 cm LP)		+2.9° ~ -1.5°
Offset angle		22°
Possible cartridge weight		4.5 g ~ 10 G
Tracking force adjustment		0 ~ 3 g (0.1 g step)

3. CARTRIDGE SECTION

Type		Moving magnet
Stylus		0.6 mil diamond
Recommended tracking force		2 g
Output level (1 kHz, 5 cm/sec)		3 mV
Channel separation (1 kHz)		30 dB

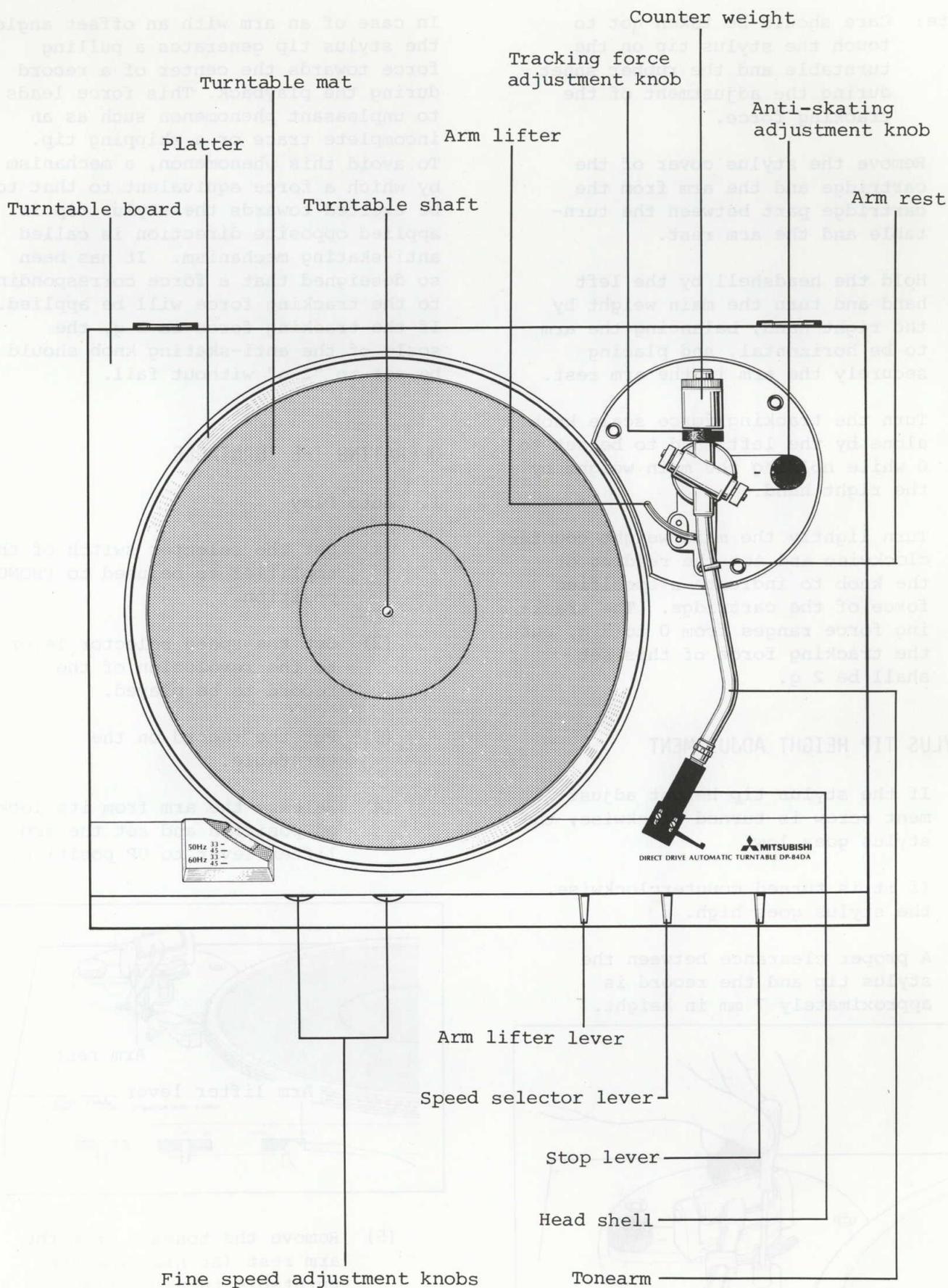
4. GENERAL

Power consumption		5 W
Dimensions (W x H x D)		47.8 x 14.9 x 38.3 cm (18-13/16 x 5-7/8 x 15-1/16")
Weight		9.5 kg (21 lb)

Design and specifications are subject to change without notice for improvement.

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NOMENCLATURE



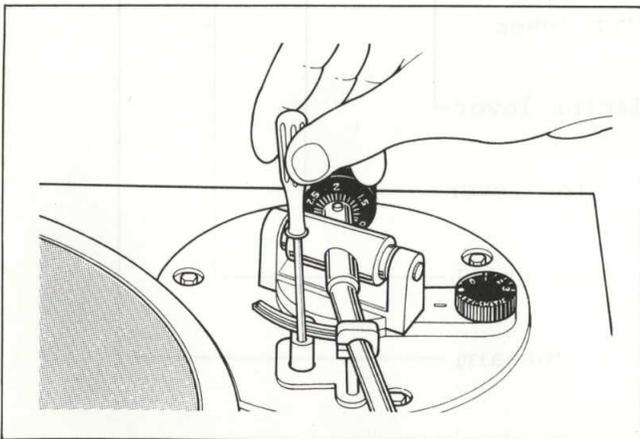
TRACKING FORCE ADJUSTMENT

Note: Care should be taken not to touch the stylus tip on the turntable and the rubber sheet during the adjustment of the tracking force.

1. Remove the stylus cover of the cartridge and the arm from the cartridge part between the turntable and the arm rest.
2. Hold the headshell by the left hand and turn the main weight by the right hand, balancing the arm to be horizontal, and placing securely the arm in the arm rest.
3. Turn the tracking force scale knob alone by the left hand to be set to 0 while holding the main weight by the right hand.
4. Turn lightly the main weight counterclockwise and set the reading of the knob to indicate a specified force of the cartridge. The tracking force ranges from 0 to 3 g, but the tracking force of this set shall be 2 g.

STYLUS TIP HEIGHT ADJUSTMENT

1. If the stylus tip height adjustment screw is turned clockwise, the stylus goes low.
2. If it is turned counterclockwise, the stylus goes high.
3. A proper clearance between the stylus tip and the record is approximately 7 mm in height.



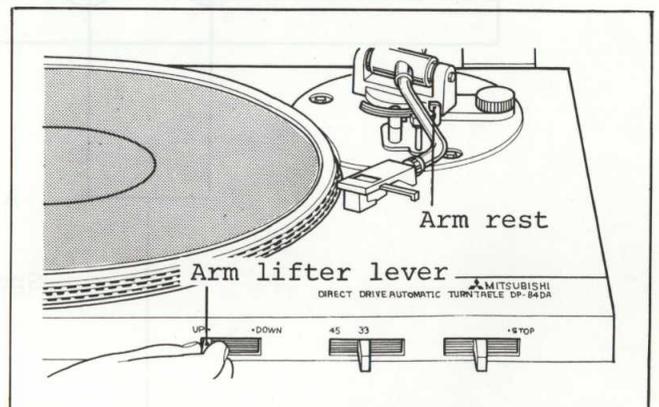
ANTI-SKATING MECHANISM ADJUSTMENT

In case of an arm with an offset angle, the stylus tip generates a pulling force towards the center of a record during the playback. This force leads to unpleasant phenomenon such as an incomplete trace or a skipping tip. To avoid this phenomenon, a mechanism by which a force equivalent to that to be exerted towards the stylus tip is applied opposite direction is called anti-skating mechanism. It has been so designed that a force corresponding to the tracking force will be applied. If the tracking force is 2 g, the scale of the anti-skating knob should be set to "2 g" without fail.

OPERATING THE TURNTABLE

1. Auto Play

- (1) Set the selector switch of the amplifier to be used to PHONO position.
- (2) Set the speed selector lever to the revolution of the record to be played.
- (3) Put the record on the turntable.
- (4) Release the arm from its locked position and set the arm lifter lever to UP position.

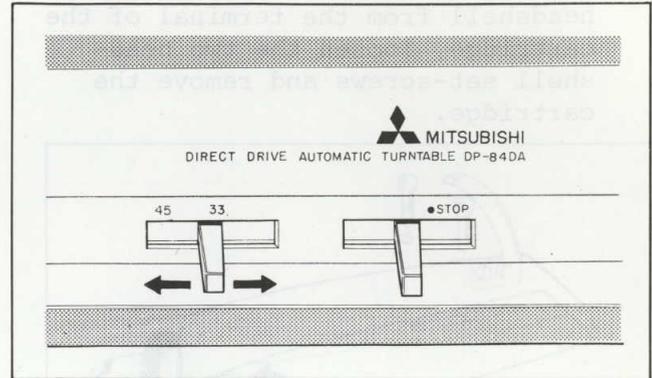
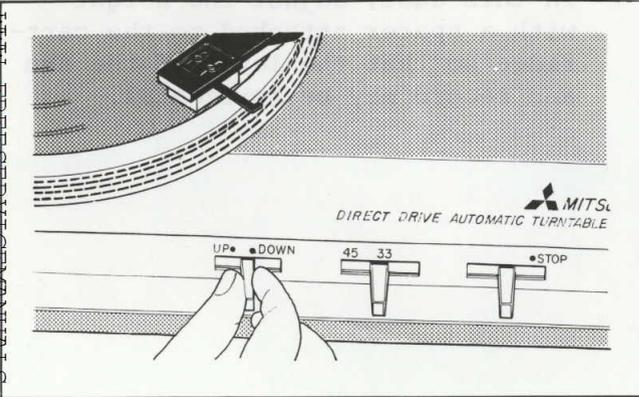


- (5) Remove the tonearm from the arm rest (At this time the turntable turns). Place it at any desired position of the record to be played.

- (6) The tonearm quietly descends to start the playback if the arm lifter lever is depressed to DOWN.

3. Selecting the Revolutions

The revolutions can be selected by depressing the speed selector lever.



- (7) When the playback is completed, the tonearm is automatically returned to the tonearm rest (auto return) and the power is turned off, which stops the revolution of the turntable.
- (8) If the tonearm is placed on the record when the arm lifter lever is in DOWN position, the playback is possible. Care should be taken in this case not to break the record with the stylus tip.

4. Fine Speed Adjustment

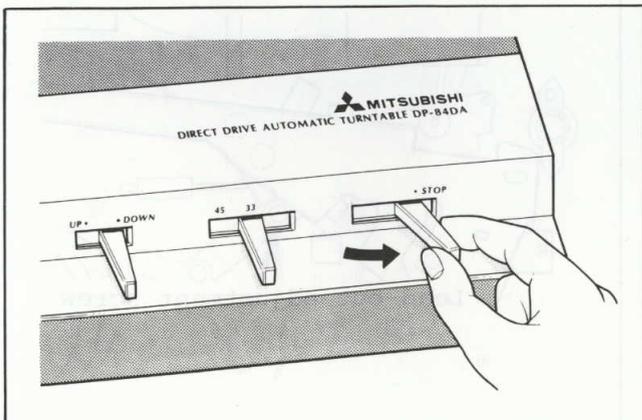
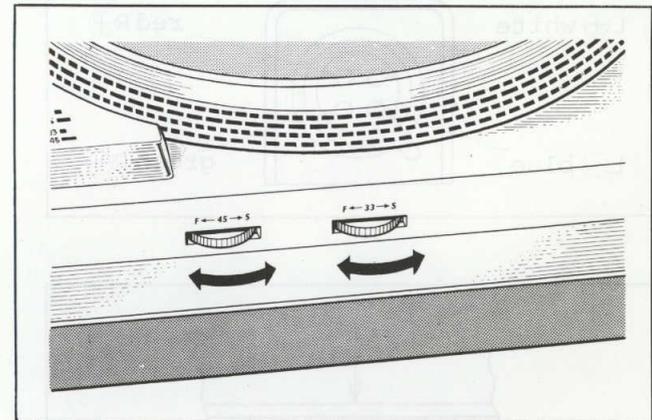
Adjust the fine speed adjustment knob so that the flow of the stripes of the stroboscope while watching it.

If the stripes flow towards the right, adjustment shall be made towards F direction.

If they flow towards the left, adjustment shall be made towards S direction.

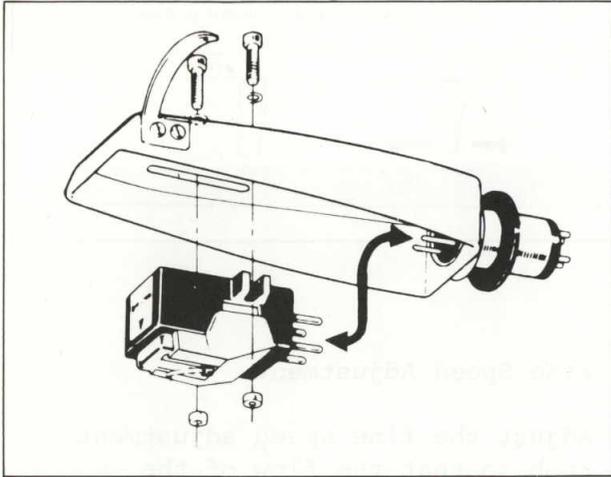
2. Stopping the Playback in the Middle

Depress the stop lever to STOP.

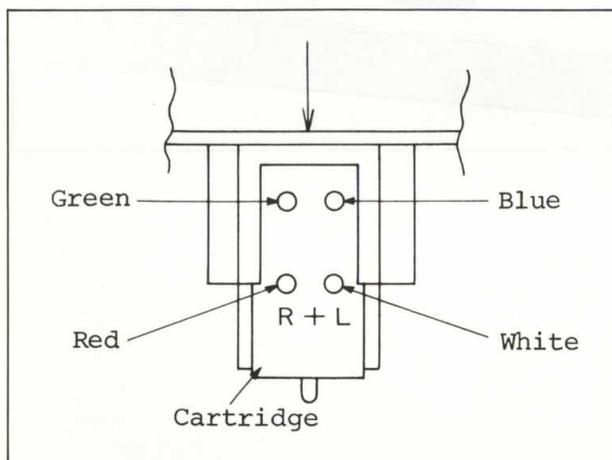
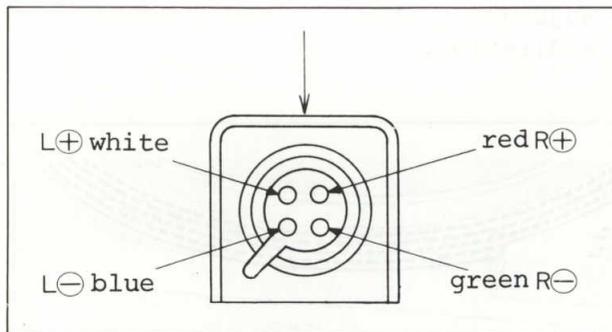


REPLACING THE CARTRIDGE

1. Loosen the lock nut and remove the headshell.
2. Remove the leading wire of the headshell from the terminal of the cartridge, loosen the two headshell set-screws and remove the cartridge.



3. Clamp the replaced cartridge temporarily with two screws and connect the leading wires as shown below.



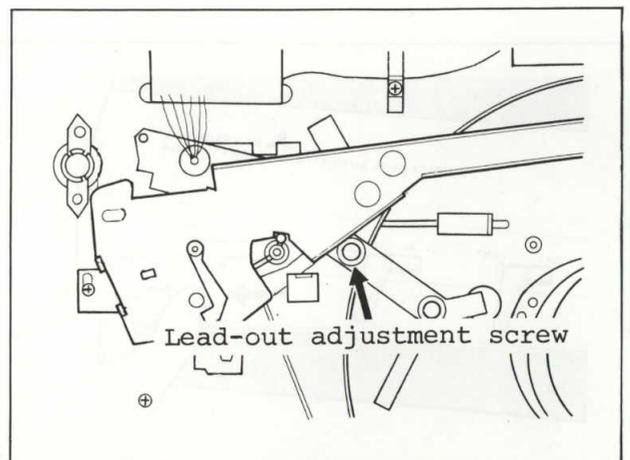
4. Mount the replaced cartridge.
5. Put gently the stylus tip on the record. (At this time the turntable shall be in a stopped state.) In this case, adjust the height with a spacer attached to the cartridge so that the level of the arm and record may be horizontal.

LEAD-OUT ADJUSTMENT

- (1) Turn over the set and remove the rear cover.
- (2) Adjustment is made with the adjusting screw attached to the return lever.

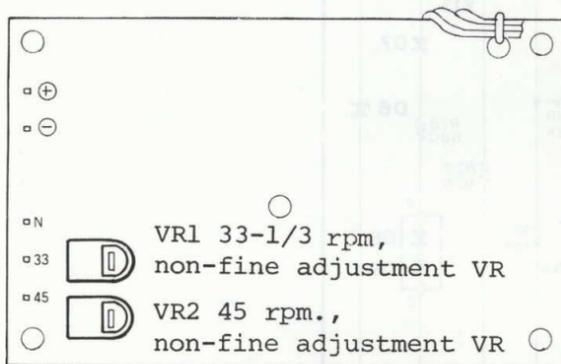
A clockwise turn of the knob makes the tonearm return to the arm rest fast.

A counterclockwise turn makes the tonearm return to the arm rest slow.



T.T REVOLUTION ADJUSTMENT

1. Set the fine speed adjustment VR (VR101 and 102) in front of the set to be about in the middle. If a record of 33-1/3 rpm. is used, adjust a semi-fixed resistor, VR, VR1 as specified by the storoboscope properly.
2. Adjust VR2 in case of a record of 45 rpm.
3. When no adjustment is possible even if the above adjustment steps are taken, set the VR101 and VR102 mechanically in the middle, adjust VR1 and VR2 in case of 33-1/3 and 45 rpm., respectively.



- (2) As soon as the trip is pushed out, the ratchet is also pushed out towards the center direction, which engages the rising part of the ratchet with the claws of the pinion gear to move the notch of the main gear, which engages the main gear with the pinion gear to rotate the main gear.

- (3) The adjust lever pin is pushed outside by the drive lever to move the PU arm to the arm rest.

Note: The groove pitch of the record is within 1 mm, the ratchet does not engage with the pinion gear. Therefore, no return is assured. If its pitch is over 2 mm, the return is assured since they engage with each other.

2. Up and Down of PU Arm

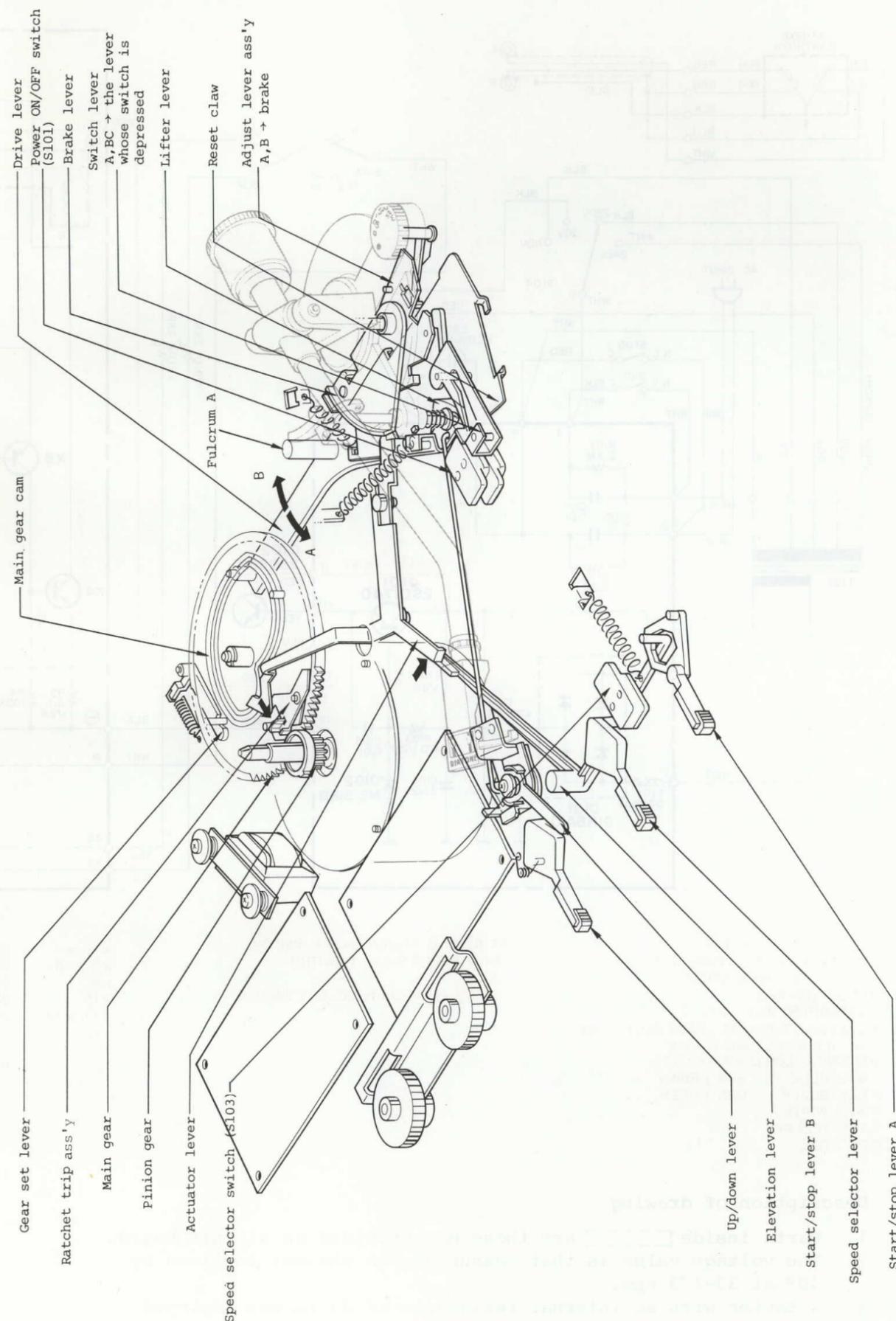
- (1) The PU arm is lifted up and down by moving the lifter lever by means of a reciprocating motion of the drive lever, that is, the tilt part of the lifter lever lifts up and down the arm lifter.
- (2) The elevation lever is actuated by operating the up/down lever to lift up and down the PU arm.

FUNCTION OF MECHANICAL COMPONENT

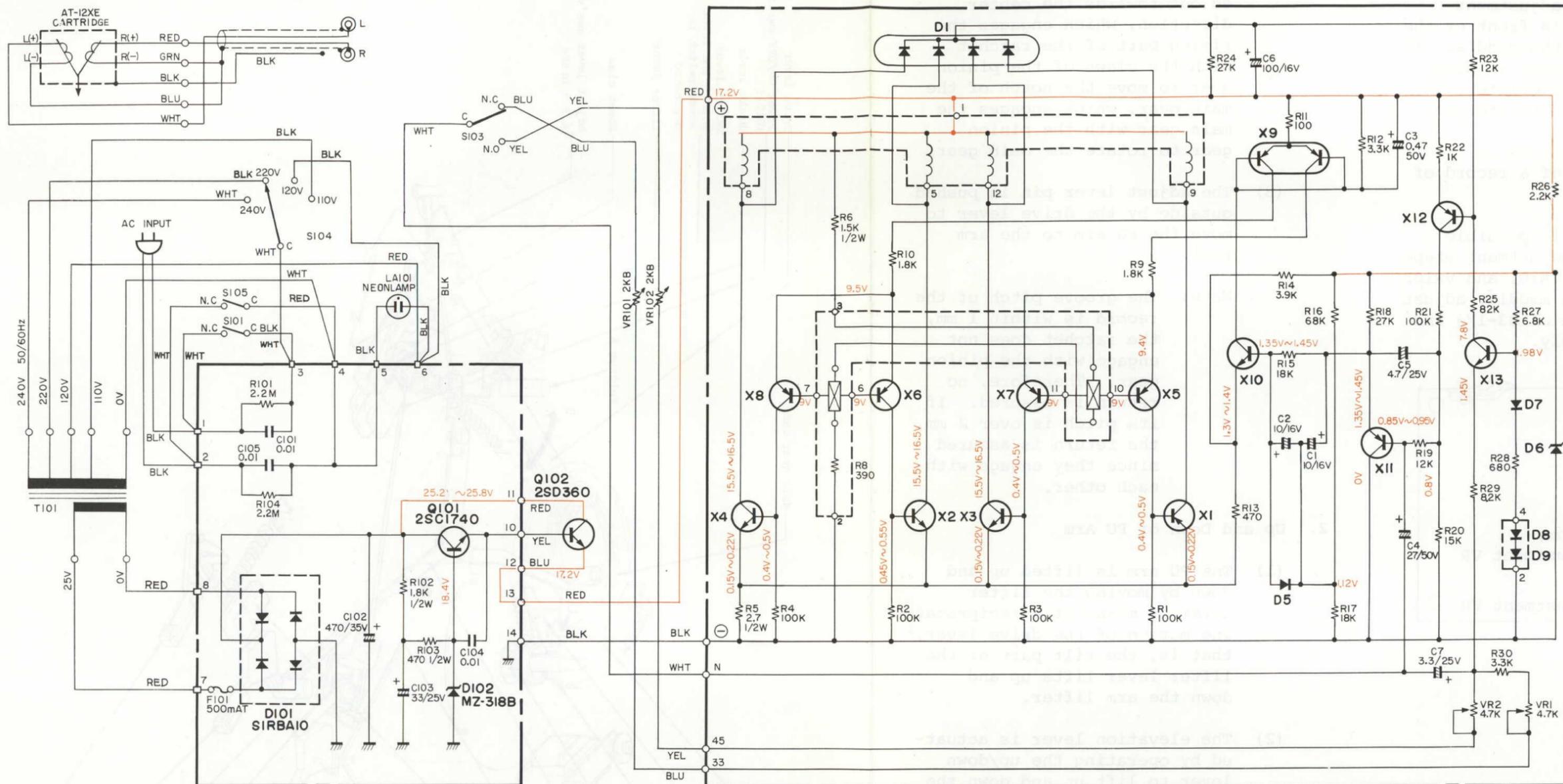
1. Lead-Out Position Detection

- (1) This set is so designed that the tonearm position can be detected by its speed like DP-66B and DP-200. If the PU arm moves towards the center, the trip is pushed out towards the center direction by depressing the actuator lever at a position in which the adjust lever has just risen.

FUNCTION DIAGRAM OF MECHANICAL COMPONENT



SCHEMATIC DIAGRAM

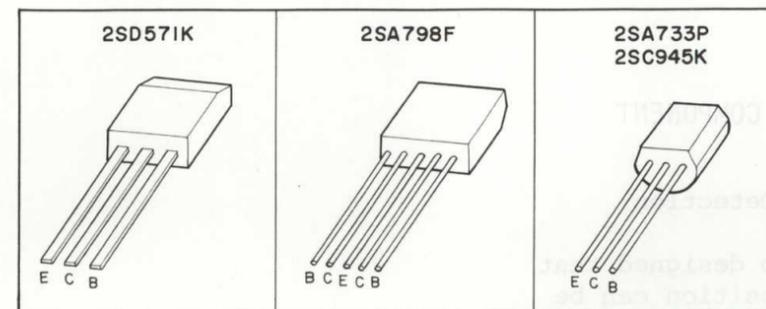


NOTICE

1. [] INSIDE OF MOTOR
2. TERMINAL NUMBER INDICATES CONNECTOR PIN NUMBER
3. RESISTORS IN Ω
4. CAPACITORS IN μF
5. UNLESS OTHERWISE SPECIFIED, RATING OF ALL RESISTORS IS 1/4W
6. WIRING COLOR IS AS FOLLOWS
 BLU: BLUE BRN: BROWN
 BLK: BLACK GRN: GREEN
 WHT: WHITE
 YEL: YELLOW
 RED: RED

7. S101, S105: POWER ON-OFF SWITCH.
 S102: SPEED SELECT SWITCH.
 S103:
 S104: LINE VOLTAGE SELECT SWITCH.

- X1 ~ X4 2SD571K
 X5 ~ X8 2SA733P
 X9 2SA798F
 X10 2SC945K
 X11, X12 2SA733K
 X13 2SC945K
 D1 μ PA54H
 D6 RD5.6EKM2 RD6.2EKVM2
 D7-D9 1S953C
 D5 VD1121

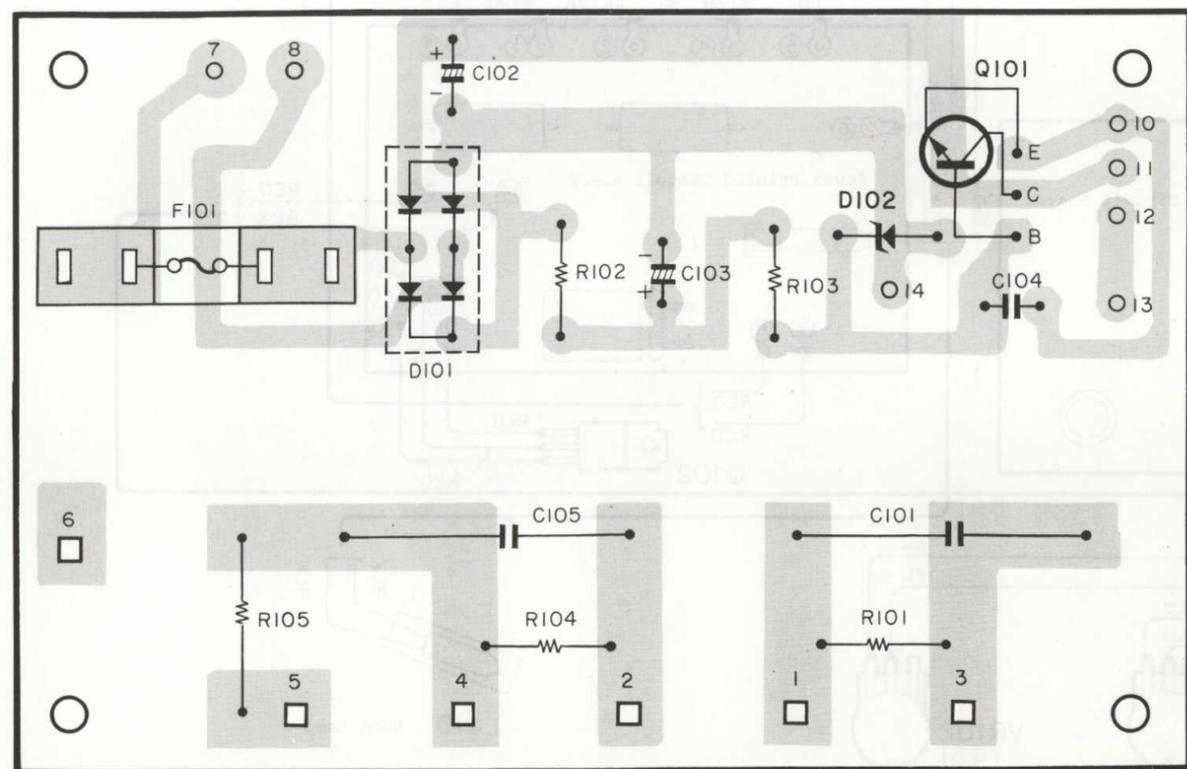
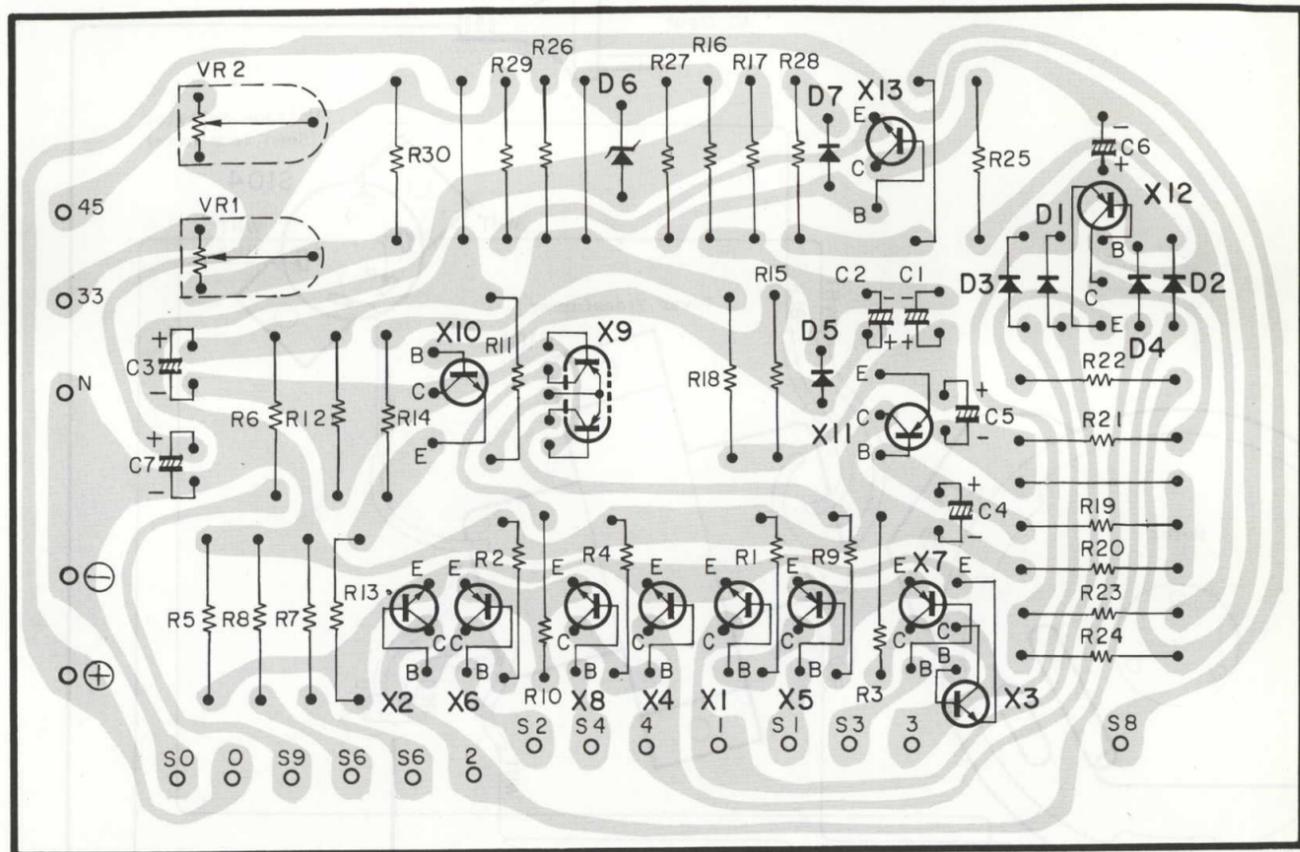


NOTES: Description of drawing

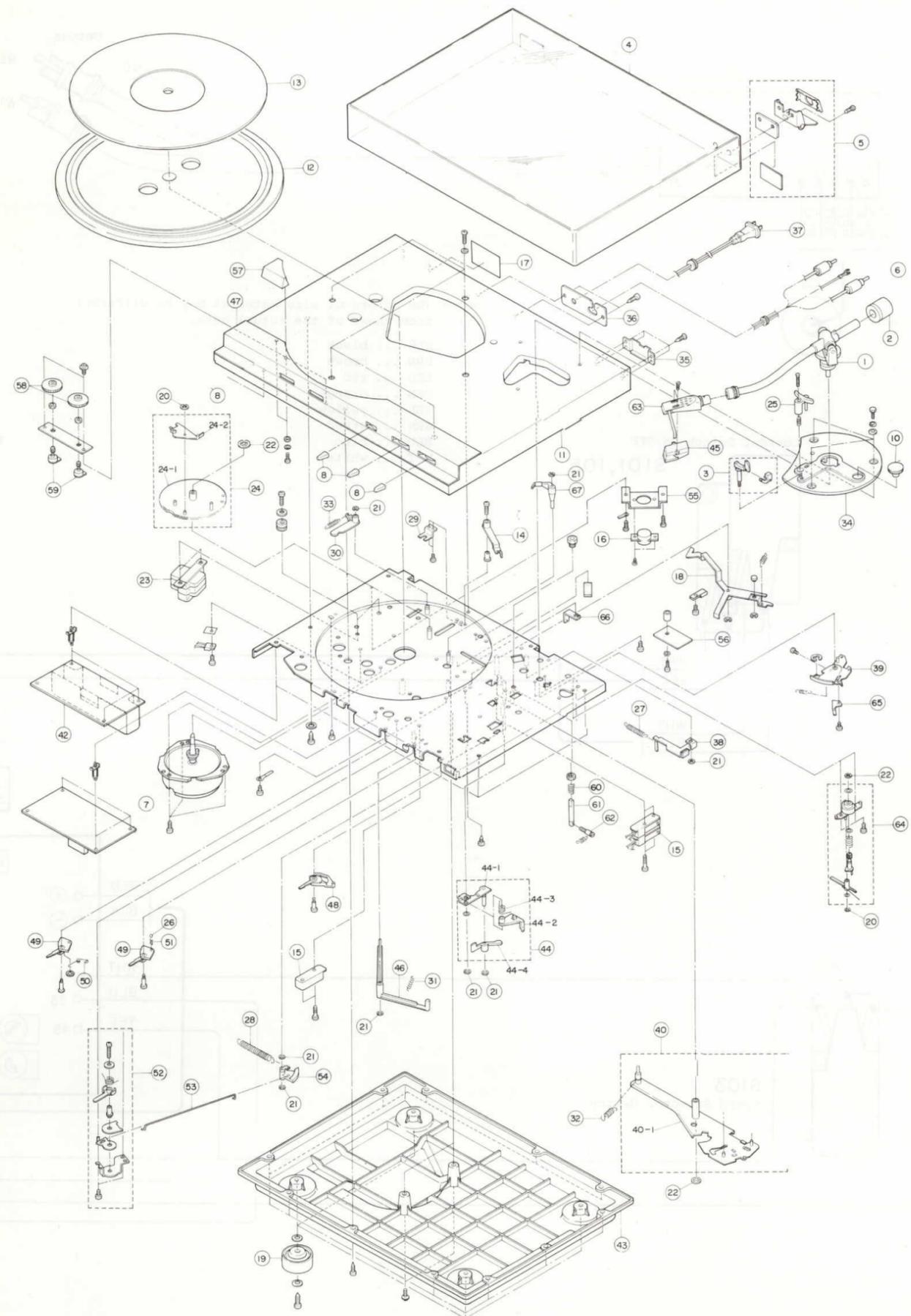
1. Parts inside [] are those not provided on circuit board.
2. The voltage value is that measured with the set inclined by 40° at 33-1/3 rpm.
3. A tester with an internal resistance of 33 k Ω was employed.
4. "1.3 ~ 1.4" denotes pulsating voltage.

5. The unit of the resistors and capacitors is μF .
6. If not otherwise specified, the resistance is 1/4 W.
7. S102 & S103 indicate the state at 33-1/3 rpm.
8. This circuit diagram is the basic circuit diagram. The constants are subject to change due to re-modelling, etc.

PRINTED CIRCUIT BOARD



EXPLODED VIEW



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PARTS LIST

SYMBOL NO.	PART NO.	DESCRIPTION
D101	M07151320	Diode (SLRBA10)
D102	M07151322	" (MZ318)
D1	M07328320	" (μ PA54H)
D5	M07243320	" (VD1211)
D6	M07243322	" (RD5.6EKVM)
D7	M07243323	" (LS953C)
D8	"	" "
D9	"	" "
Q101	M05104313	Transistor (2SC1740)
Q102	M05079311	" (2SD360)
X1	M07228303	" (2SD571)
X2	"	" (2SD571)
X3	"	" "
X4	"	" "
X5	M05071311	" (2SA733)
X6	"	" "
X7	"	" "
X8	"	" "
X9	M07133303	" (2SA798)
X10	M07229304	" (2SC945)
X11	M05071311	" (2SA733)
X12	"	" "
X13	M07229304	" (2SC945)
1	M07328610	Tonearm
2	M07243649	Counter Weight
3	M07243618	Arm Support
4	M07328690	Cover
7	M07243637	Motor
10	M07295651	Knob
12	M07243601	Platter
13	M07243757	Turntable Mat
15	M07243430	Micro Switch
15	M07328450	"
16	M07295450	Rotary Switch
19	M07296695	Leg
23	M07328549	Transpower
25	M07243619	Part Ass'y
45	M07179760	Cartridge
58	M07243651	Knob
59	M07243400	Volume
63	M07295734	Head Shell
	M07179613	Stylus Ass'y (3D42M)
	M07328490	Fuse (500MA)
	M07191603	Plug
	M07295250	Neon Lamp

DESCRIPTION	PART NO.	QTY
Locals (ALUMIN)	NO732130	0101
(MSTLN)	NO732131	0102
(F-PAPER)	NO732132	01
(VOLVIL)	NO732133	02
(RDR. (EXVM)	NO732134	05
(L2550)	NO732135	07
"	"	18
"	"	19
Transistor (4007)	NO732136	0101
(L2501)	NO732137	0102
(L2502)	NO732138	01
(L2503)	"	02
"	"	03
"	"	04
"	"	05
(L2507)	NO732139	02
"	"	06
"	"	07
"	"	08
(L2509)	NO732140	01
(L2510)	NO732141	01
(L2511)	NO732142	01
"	"	012
(L2512)	NO732143	013
"	"	1
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