

 **PIONEER®**



# Service Manual

STEREO TURNTABLE

# PL-2000

KUT, KCT

# PL-2000X

KU

For descriptions and adjustment methods of the D.D. motor and the mechanism employed in this model, refer to the Supplementary Service Manual (ART-467) for the PL-200, PL-255, PL-300, and PL-400 models.

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# 1. SPECIFICATIONS

## Motor and Turntable

Drive System	Direct-drive
Motor	DC servo motor
Turntable Platter	310mm diam. aluminum alloy die-cast
Moment of Inertia	150kg-cm <sup>2</sup> (including platter mat)
Speeds	33-1/3 and 45rpm
Speed Control Range	±2%
Wow and Flutter	Less than 0.025% (WRMS)
Signal-to-Noise Ratio	More than 75dB (DIN-B) (with Pioneer cartridge model PC-135)

## Tonearm

Type	Static-balance type, S-shaped pipe arm
Effective Arm Length	221mm
Overhang	15.5mm
Usable Cartridge Weight	4g (min.) to 9g (max.)

## Subfunctions

Auto return mechanism, Anti-skating force control, Stylus pressure direct-readout counterweight, Cueing device, Strobe light, Free stop hinges

## Semiconductors

ICs	2
Transistors	2
Diodes	2
Hall Elements	3

## Miscellaneous

Power Requirements	AC120V, 50, 60Hz
Power Consumption	7W
Dimensions	420(W) x 96(H) x 365(D)mm 16-1/2(W) x 3-13/16(H) x 14-3/8(D)in.
Weight	6kg/13 lb 4 oz

## Accessories

EP Adaptor	1
Cartridge mounting parts (KCT, KUT)	
Cartridge mounting screws	6
Cartridge mounting nuts	2
Cartridge mounting washers	2
Operating Instructions	1

## PC-135 Specifications (PL-200X KU)

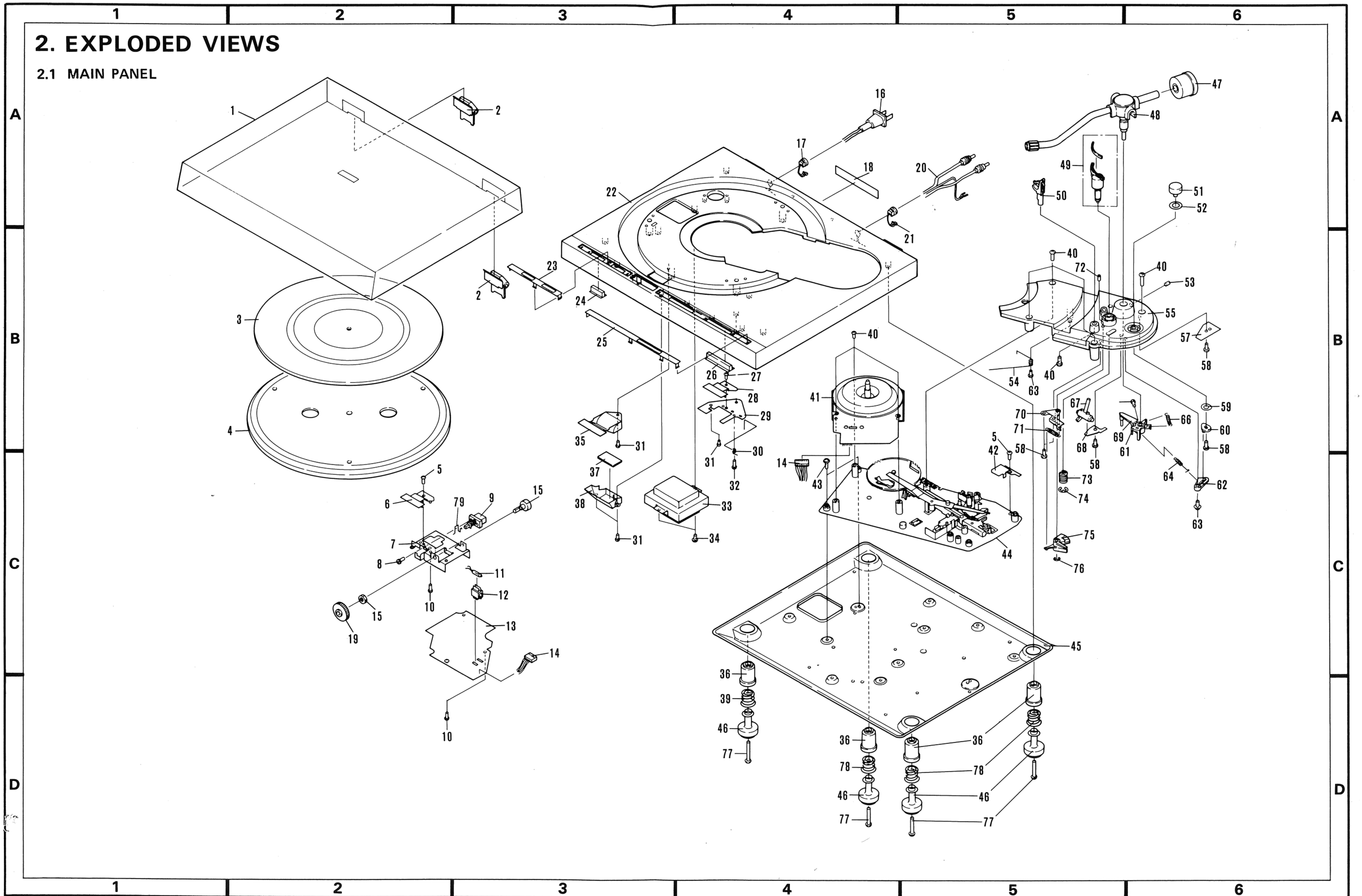
Type	Induced magnet type
Stylus	0.5 mil diamond (PN-135)
Output Voltage	3mV (1kHz, 50mm/s Peak velocity, LAT)
Tracking Force	1.5g to 2.3g (proper 2g)
Frequency Response	10 to 25,000Hz

### NOTE:

*Specifications and design subject to possible modification without notice, due to improvements.*

## 2. EXPLODED VIEWS

### 2.1 MAIN PANEL



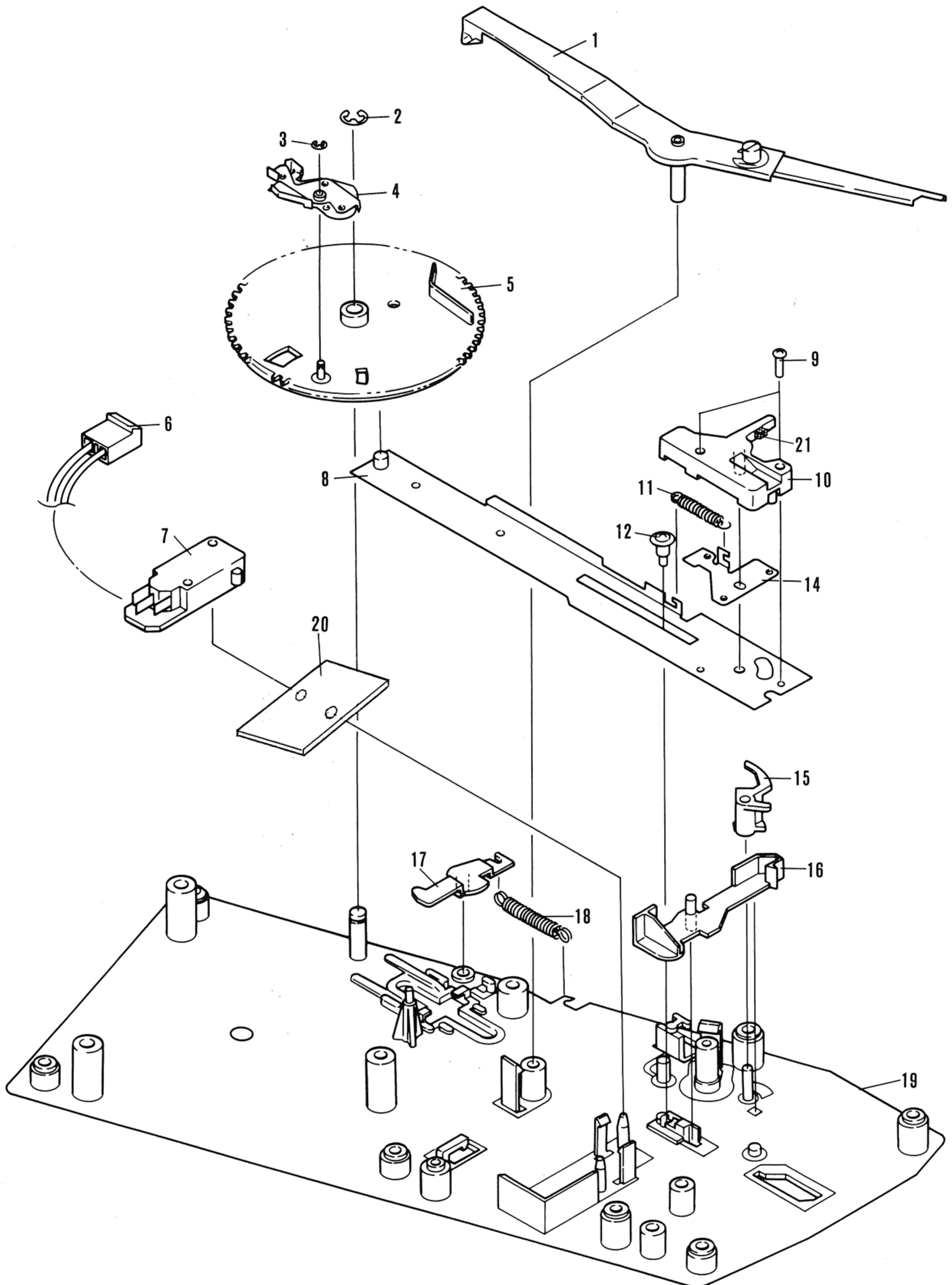
**Parts List of Main Panel**

**NOTE:**

- Parts without part number cannot be supplied.
- The **⚠** mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

Key No.	Part No.	Description	Key No.	Part No.	Description
1.	PNV-034	Dust cover	46.	PNX-062	Foot case
2.	PXB-155	Hinge assembly	47.	PXB-092	Weight assembly
3.	PEB-152 (KUT, KU) PEB-150 (KCT)	Rubber mat assembly	48.	PPD-598 (PL-200) PPD-590 (PL-200X)	Arm assembly
4.	PNR-114	Turntable platter	49.	PXB-107	EV sheet assembly
5.		Deltite screw 3 x 8	50.	PXB-094	Arm rest assembly
6.		Button guide C	51.	PAC-041 (PL-200X) PAC-045 (PL-200)	AS knob
7.		Angle			
8.		Semes A screw 3 x 5	52.	PBF-005	AS washer
9.	PSG-020	Push switch	53.		Hexagon socket headless set screw
10.		Taptite P screw 3 x 8	54.	PXB-152	Cut spring assembly
⚠ 11.	PEL-037	Neon lamp	55.	PNX-053 (PL-200) PNX-085 (PL-200X)	Arm base
12.		Neon lamp base	56.	PBA-108	Screw
⚠ 13.		Power supply assembly	57.		OUTPUT terminal
14.	PDE-061	Connector assembly	58.		Taptite P screw 3 x 8
15.	PCS-016	Variable resistor	59.	PBE-012	Washer
⚠ 16.	PDG-017	AC power cord	60.	PNX-054	AS adjusting plate
17.	PEC-058	Strain relief			
18.		Name plate	61.	PNX-061	PU plate B
19.	PAC-047	Knob	62.	PNX-055	Lever
20.	PDE-064	OUTPUT cord	63.		Washer faced taptite P screw 3 x 10
21.	PEC-056	Strain relief	64.	PBH-236	AS spring
22.	PNX-110 (PL-200) PNX-111 (PL-200X)	Panel	65.		-----
23.	PAM-061 (PL-200) PAM-065 (PL-200X)	Name plate	66.	PBH-259	PU plate spring
24.	PAC-043	Push button	67.	PXT-382	EV lever unit
25.	PAM-060 (PL-200) PAM-064 (PL-200X)	Name plate	68.	PBK-042	EV plate spring A
26.	PAC-044	Button	69.	PNX-060	PU plate A
27.		Deltite screw 3 x 8	70.	PXT-385	EV plate spring B unit
28.	PNX-052	Button guide A			
29.		Button base	71.	PBH-238	EV cam spring
30.	PXB-151	Cut spring A assembly	72.		Hexagon socket headless set screw 3 x 12
31.		Taptite P screw 3 x 8	73.	PBH-237	EV spring
32.	PBA-086	Screw	74.		E type washer 7
⚠ 33.	PTT-077 (KU, KUT) PTT-090 (KCT)	Power transformer Power supply assembly	75.	PNX-059	EV cam
34.		Taptite P screw 4 x 10	76.		E type washer 3
35.	PNX-051	Lens	77.	PBA-099	Screw
36.	PEB-163	Rubber cushion	78.	PBH-241	Foot spring B
37.		Mirror	79.	PBH-261	Spring
38.		Lens holder			
39.	PBH-240	Foot spring			
40.	PBA-108	Screw			
41.	PXM-074	Motor			
42.		Protector			
43.	PBA-109	Screw			
⚠ 44.		Subpanel assembly			
45.		Base			

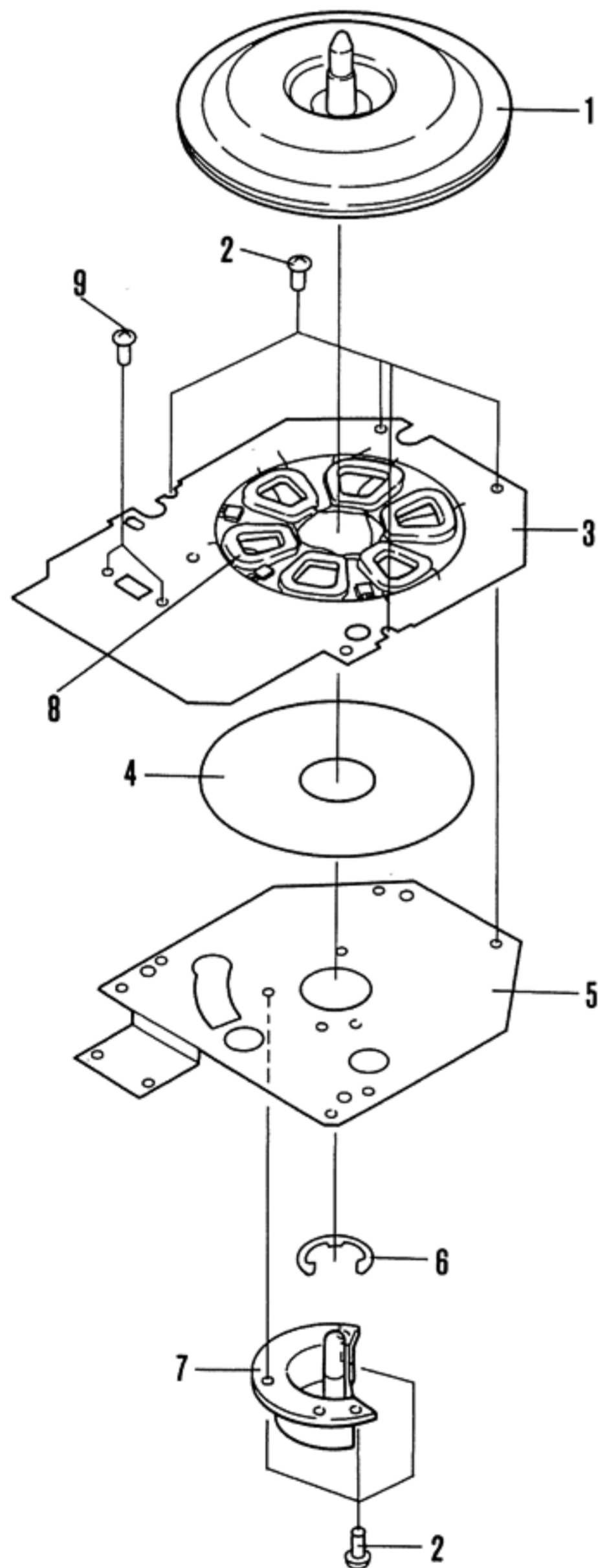
1 2 3  
2.2 SUB PANEL



**Parts List of Sub Panel**

Key No.	Part No.	Description	Key No.	Part No.	Description
1.	PXT-355	Detector lever unit	11.	PBH-224	Spring
2.		E type washer 4	12.	PBA-103	Screw
3.		E type washer 1.5	13.		
4.	PYY-058	Return signal unit	14.	PNC-126	START plate
5.	PNX-036	Cam	15.	PNX-031	Switch plate
⚠ 6.	PDE-070	Connector assembly	16.	PNX-030	Switch lever
⚠ 7.	PSF-006	Microswitch	17.	PNX-035	Plate
8.	PXT-356	Plate	18.	PBH-225	Spring
9.		+ Pan head screw 2.6 x 10	19.		Sub panel unit
10.	PNX-033	EV cam	20.	PEC-057	Insulator
			21.	PEC-065	EV cam cushion

**2.3 D.D. MOTOR**



Key No.	Part No.	Description
1.		Rotor unit
2.		Taptite screw 3x5
3.		Control assembly
4.		Insulator
5.		Base unit
6.		EW12
7.		Shaft holder
8.		Coil
9.		Taptite screw 3x12

# 3. SCHEMATIC DIAGRAM AND PARTS LIST

**NOTE:**

- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω — 56 × 10<sup>1</sup> — 561 . . . . . RD¼PS 561 J  
 47kΩ — 47 × 10<sup>3</sup> — 473 . . . . . RD¼PS 473 J  
 0.5Ω — 0R5 . . . . . RN2H 0R5 K  
 1Ω — 010 . . . . . RS1P 010 K

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ 562 × 10<sup>1</sup> 5621 . . . . . RN¼SR 5621 F

- The  $\triangle$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

## Parts List of D.D. motor (PXM-074)

### CAPACITORS

Part No.	Symbol & Description
CEA 101M 6.3NP	C1
CKDYF 403Z 50	C2
CKDYB 681Z 50	C3
CQMA 104J 50	C4
CSZA R47K 35	C5
CKDYF 103Z 50	C6, C13
CQMA 104K 50	C7
CEA 010P 50	C8
CEA 100P 16	C9
CEA 471P 16	C10—C12

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

### RESISTORS

Part No.	Symbol & Description
RD¼PS □□□J	R1—R6, R9—R12
RD½PS □□□J	R7, R8
PCP-040	VR1 (10k-B)
PCP-039	VR2 (6.8k-B)

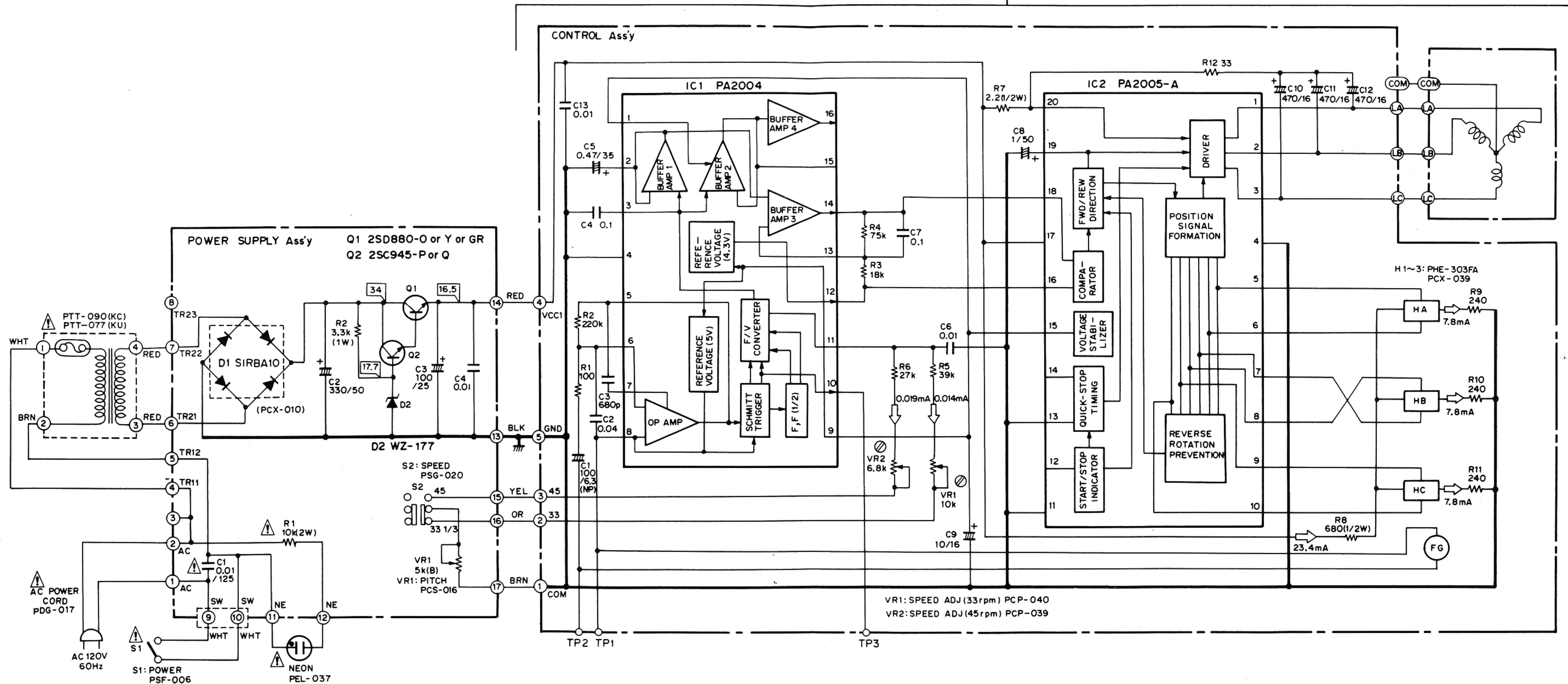
### SEMICONDUCTORS AND OTHERS

Part No.	Symbol & Description
PA2004	IC1
PA2005A	IC2
PHE-303FA	H1—H3 Hall element

## Parts List of Power Supply Assembly

Part No.	Symbol & Description
2SD880	Q1
2SC 945	Q2
PCX-010	D1
WZ-177	D2
CKDYF 103Z 50	C4
CEA 331M 50L	C2
CEA 101M 25L	C3
$\triangle$ PCL-036	C1
$\triangle$ RS2PF 103J	R1
RS1PF 332J	R2
PSG-020	S2
PCS-016 5k-B	VR1
PDE-061	Connector assembly
$\triangle$ PEL-037	Neon lamp
PNX-015	Insulator
PBH-261	Push button spring

D.D. MOTOR  
PXM-074



1. RESISTORS:  
Indicated in  $\Omega$ ,  $\frac{1}{4}W$ ,  $\pm 5\%$  tolerance unless otherwise noted k : k $\Omega$ , M : M $\Omega$ , (F) :  $\pm 1\%$ , (G) :  $\pm 2\%$ , (K) :  $\pm 10\%$  tolerance.
2. CAPACITORS:  
Indicated in capacity ( $\mu F$ )/voltage (V) unless otherwise noted p : pF  
Indication without voltage is 50V except electrolytic capacitor.

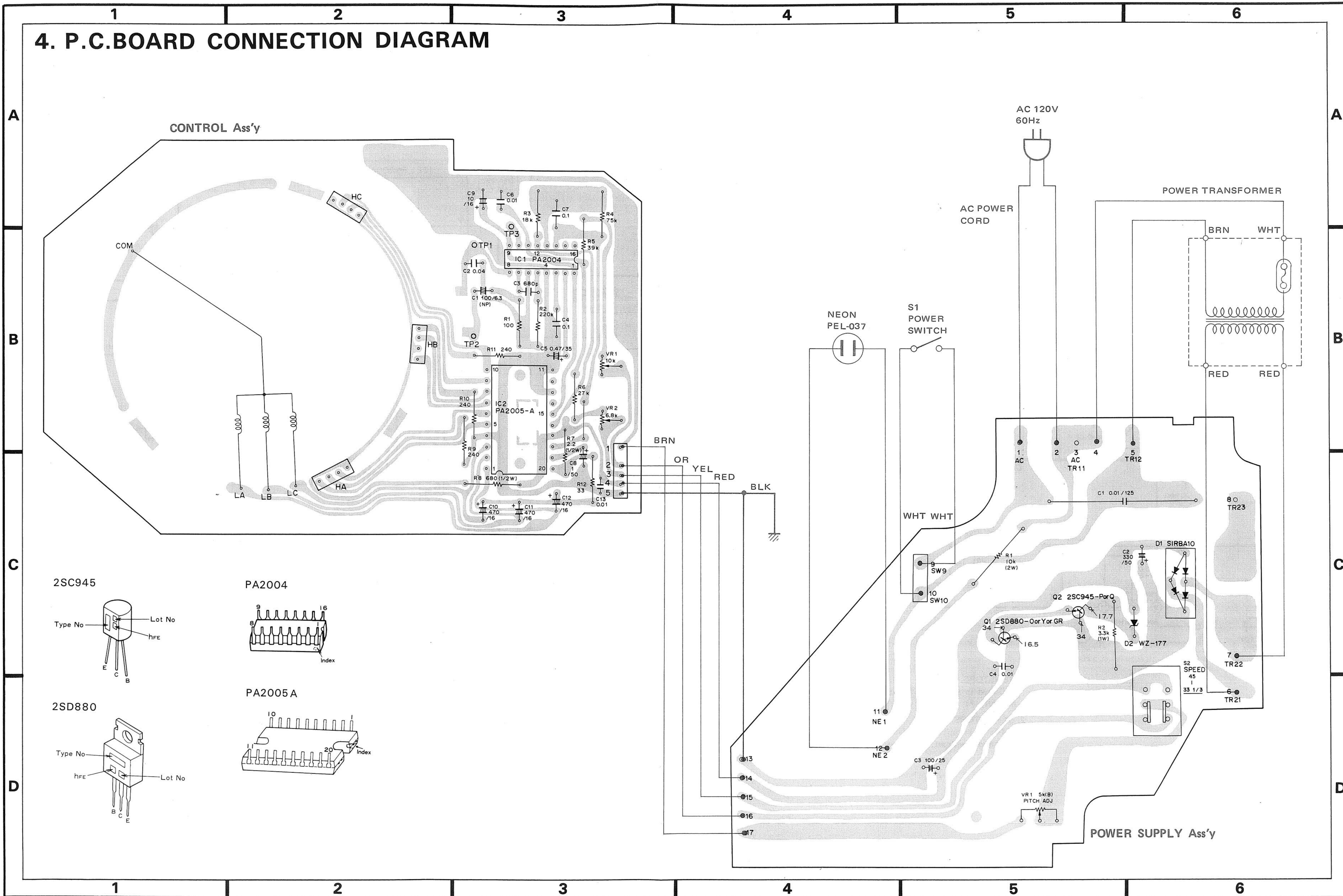
3. VOLTAGE, CURRENT:  
 : DC voltage (V) at no input signal  
 : DC current (mA) at no input signal
4. OTHERS:  
 : Adjusting point.  
 The mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

- SWITCHES:  
 S1: POWER ON — OFF  
 S2: SPEED 33 1/3rpm — 45rpm  
 The underlined indicates the switch position.

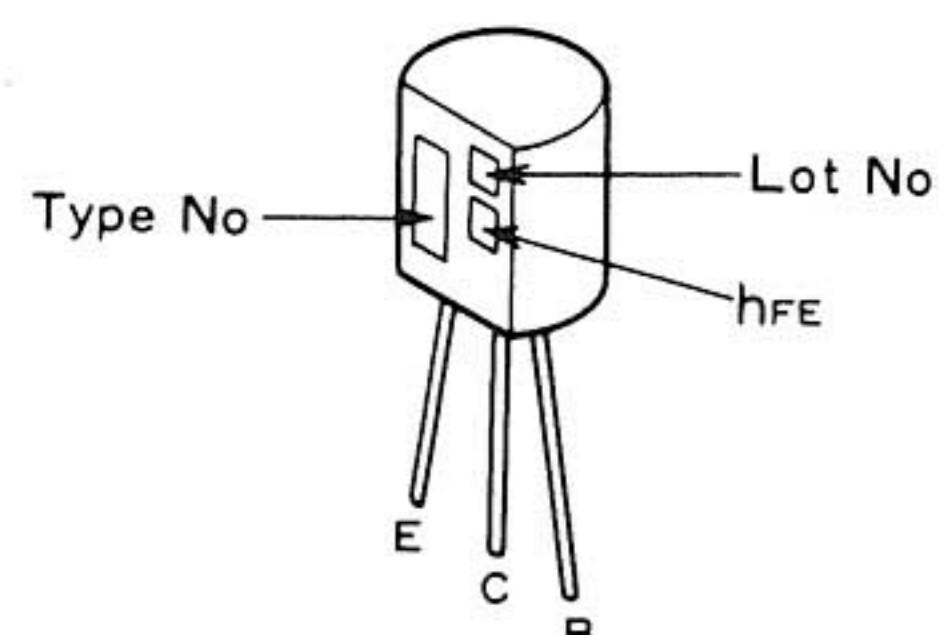
This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.



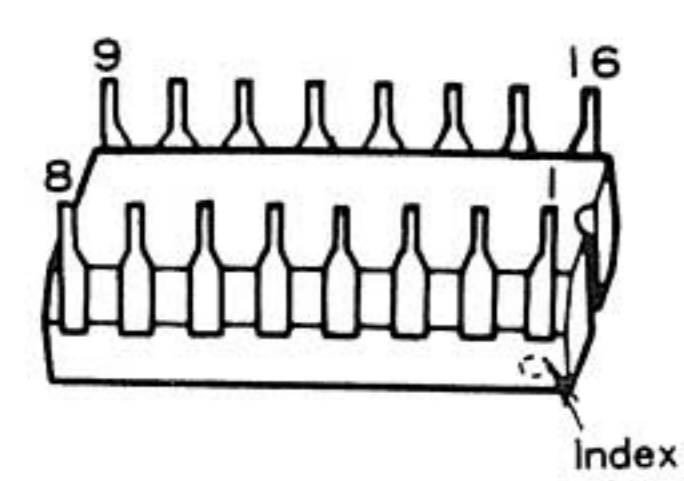
4. P.C.BOARD CONNECTION DIAGRAM



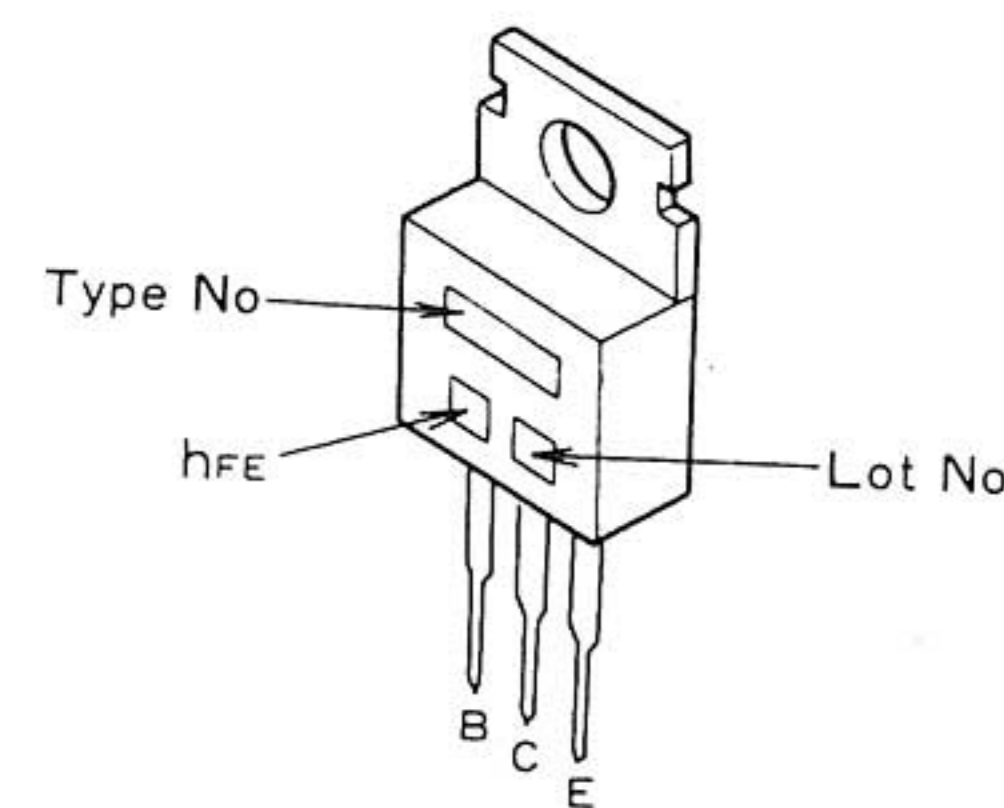
2SC945



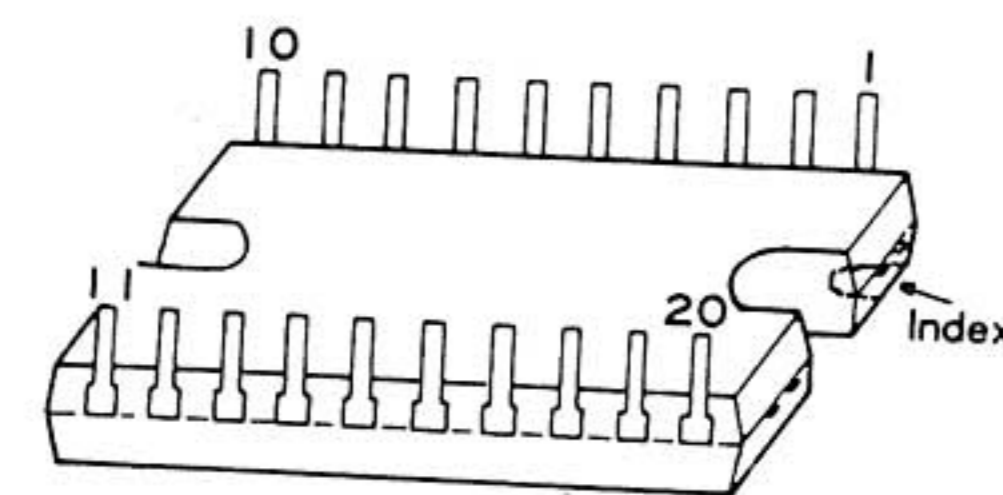
PA2004



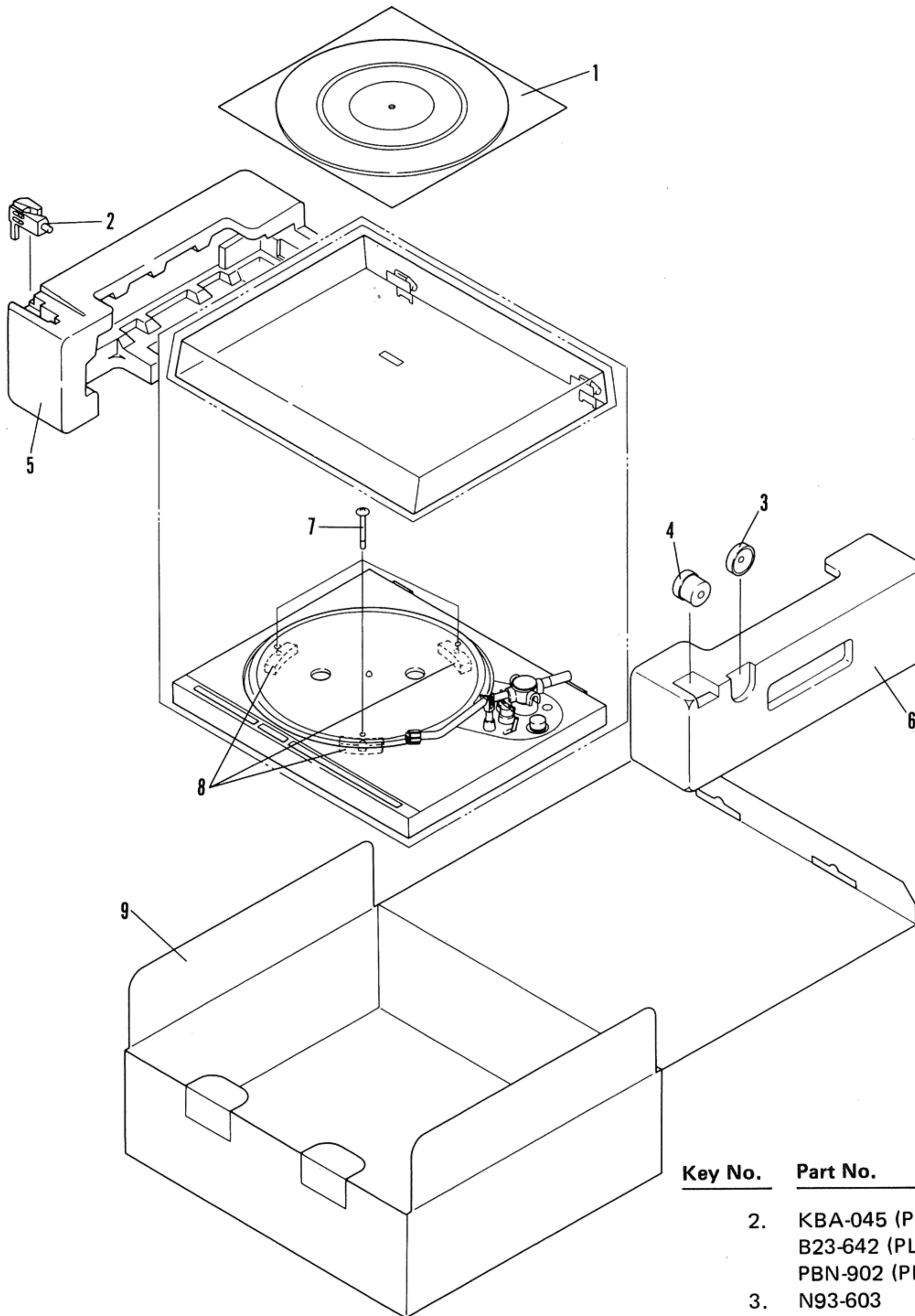
2SD880



PA2005 A



## 5. PACKING



### Parts List

Key No.	Part No.	Description
1.	PEB-150 (KCT) PEB-152 (KUT, KU)	Rubber mat assembly
2.	PXA-792 (PL-200) PXA-791 (PL-200X) PXT-941 (PL-200X)	Headshell assembly Cartridge assembly

Key No.	Part No.	Description
2.	KBA-045 (PL-200X) B23-642 (PL-200X) PBN-902 (PL-200X)	Cartridge mounting screw Cartridge mounting washer Cartridge mounting nut
3.	N93-603	45 adaptor
4.	PXB-092	Weight assembly
5.	PHA-107	Side protector L
6.	PHA-108	Side protector R
7.	PBA-100	Screw
8.	PNX-064	Turntable protector
9.	PHG-387 (PL-200/KCT) PHG-386 (PL-200/KUT) PHG-388 (PL-200X) PRB-141 (PL-200) PRB-142 (PL-200X) PXB-125 (PL-200)	Packing case Operating instructions Cartridge mounting screw as- sembly
	H56-603	Vinyl bag