

PIONEER
Service Manual

Work Order No.

ORDER NO. SMD81-066B

インフォメーション資料

No. _____

※係外持出厳禁(使用後は所定位置に戻して下さい)



Stereo Record Player

PL-70LII

価格 ¥

● Table of Contents

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パイオニア株式会社

〒153 東京都目黒区目黒1丁目4番1号 FU © 1981.9

How To Remove Each Part

1. Remove the Insulators, Remove the Screws, Then Remove the Bottom Plate

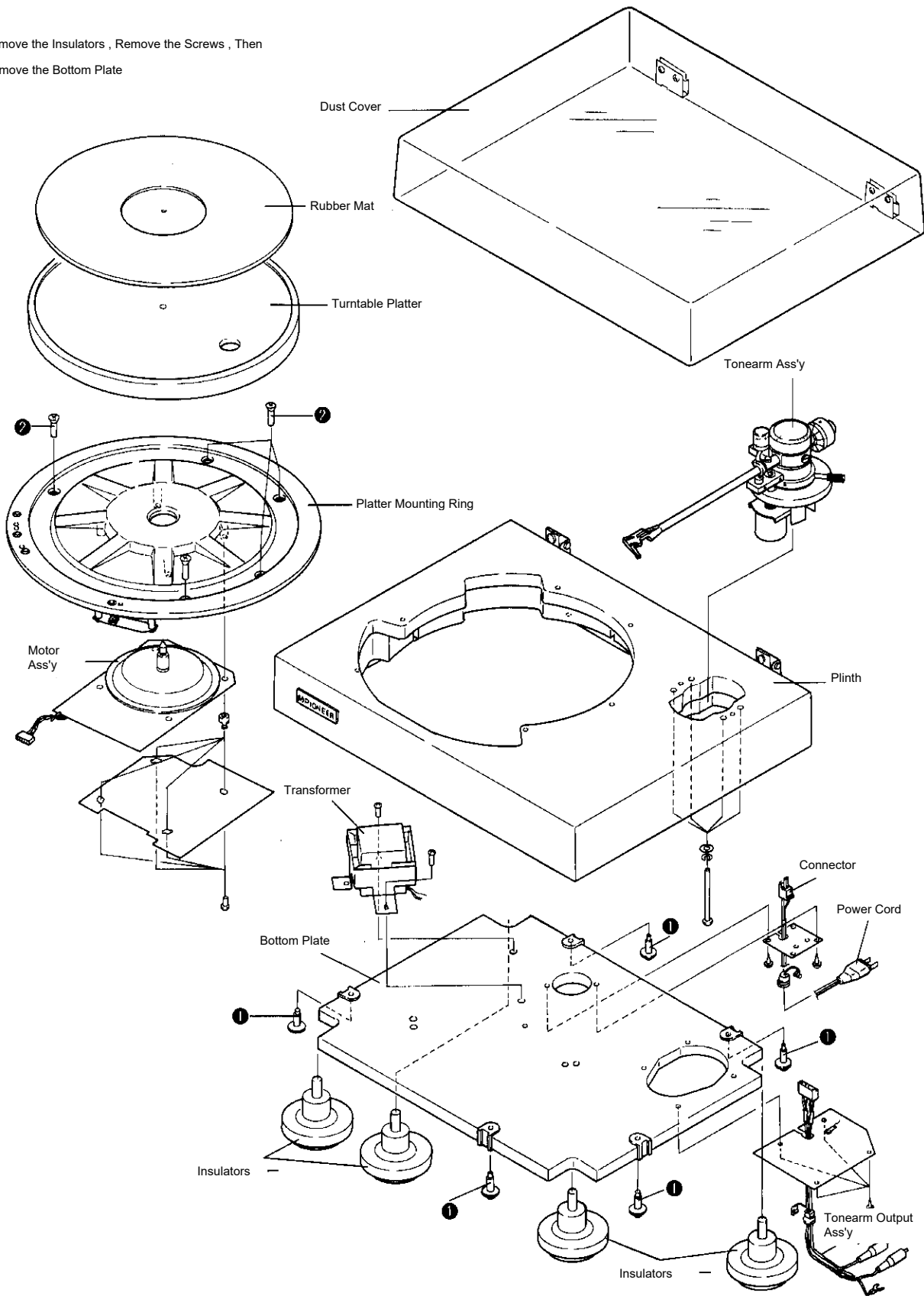
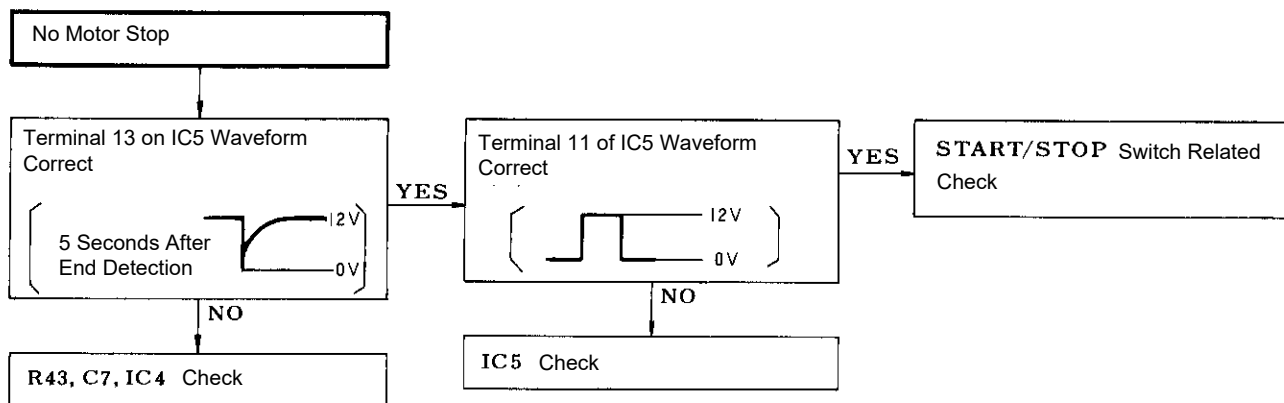
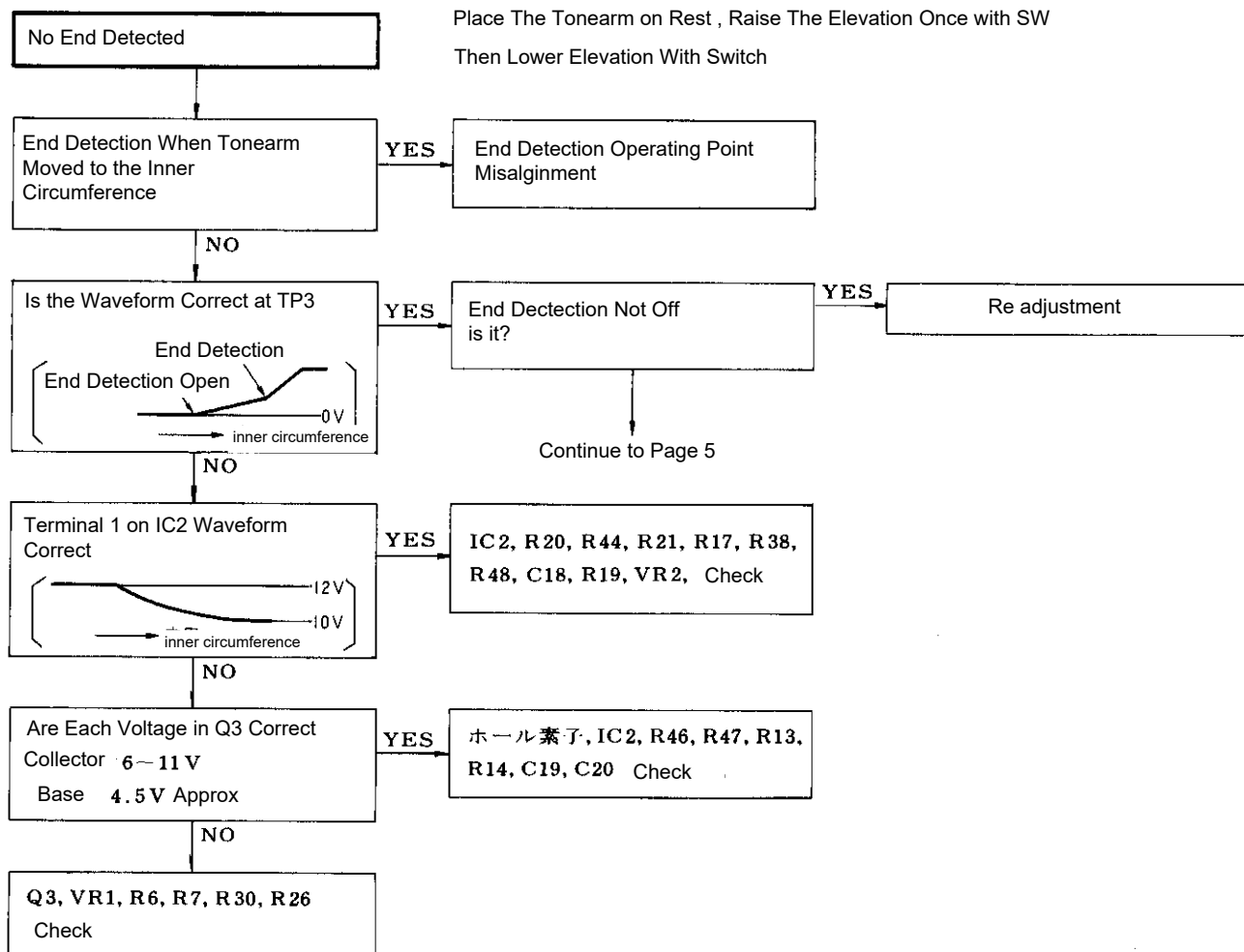


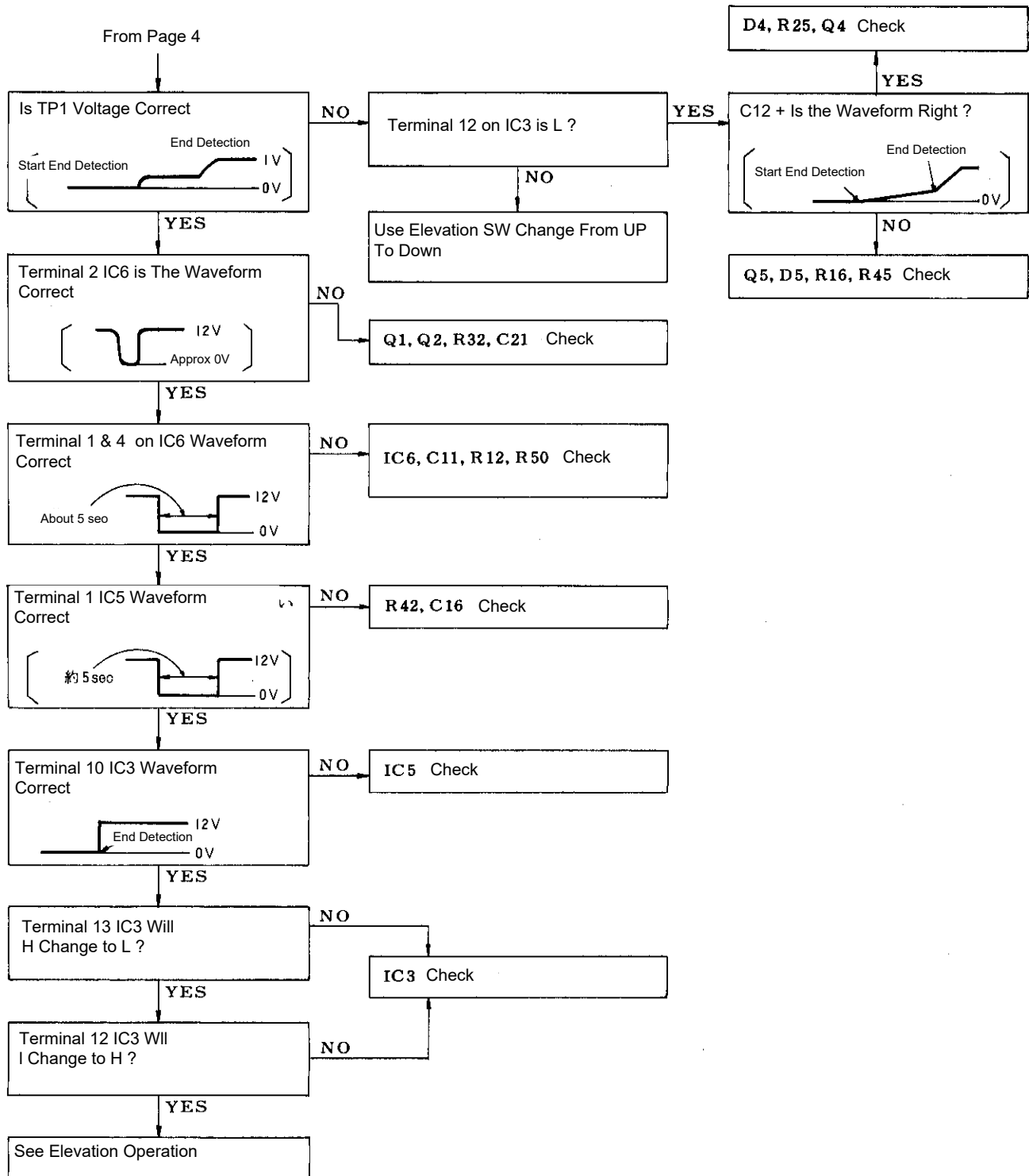
Figure 1.1 How To Remove Each Part

2. 2 No Motor Stop (End of Album Detection)

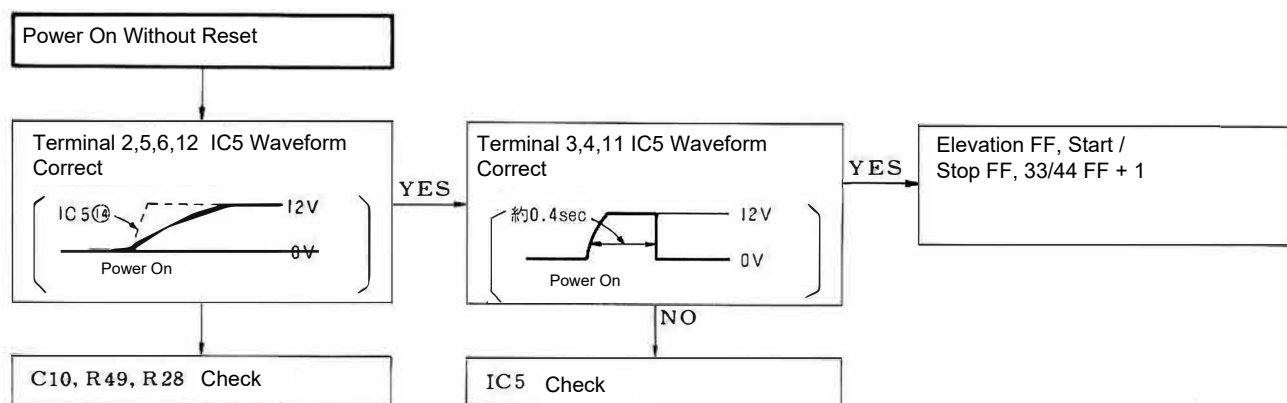


2. 3 No End Detected

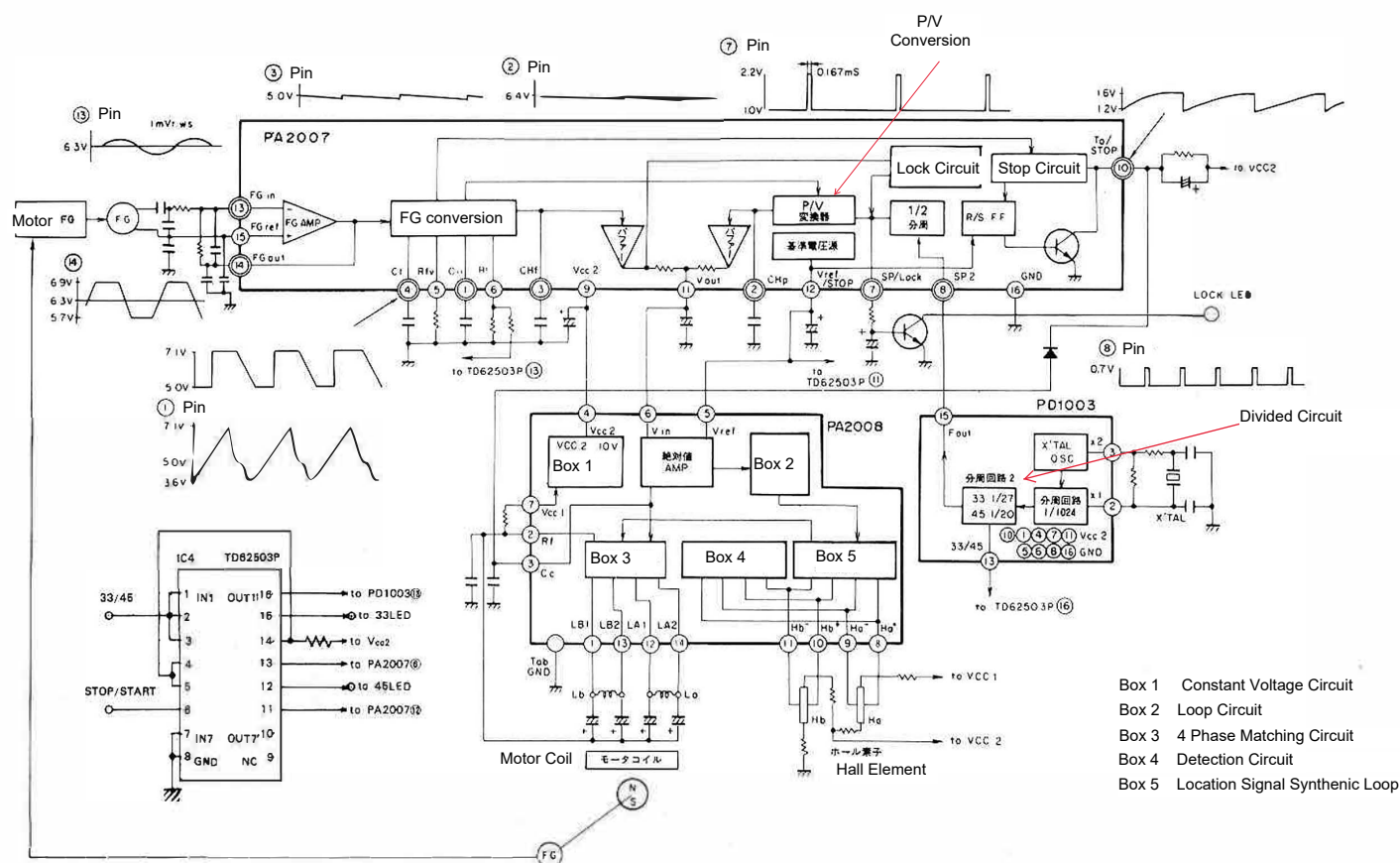




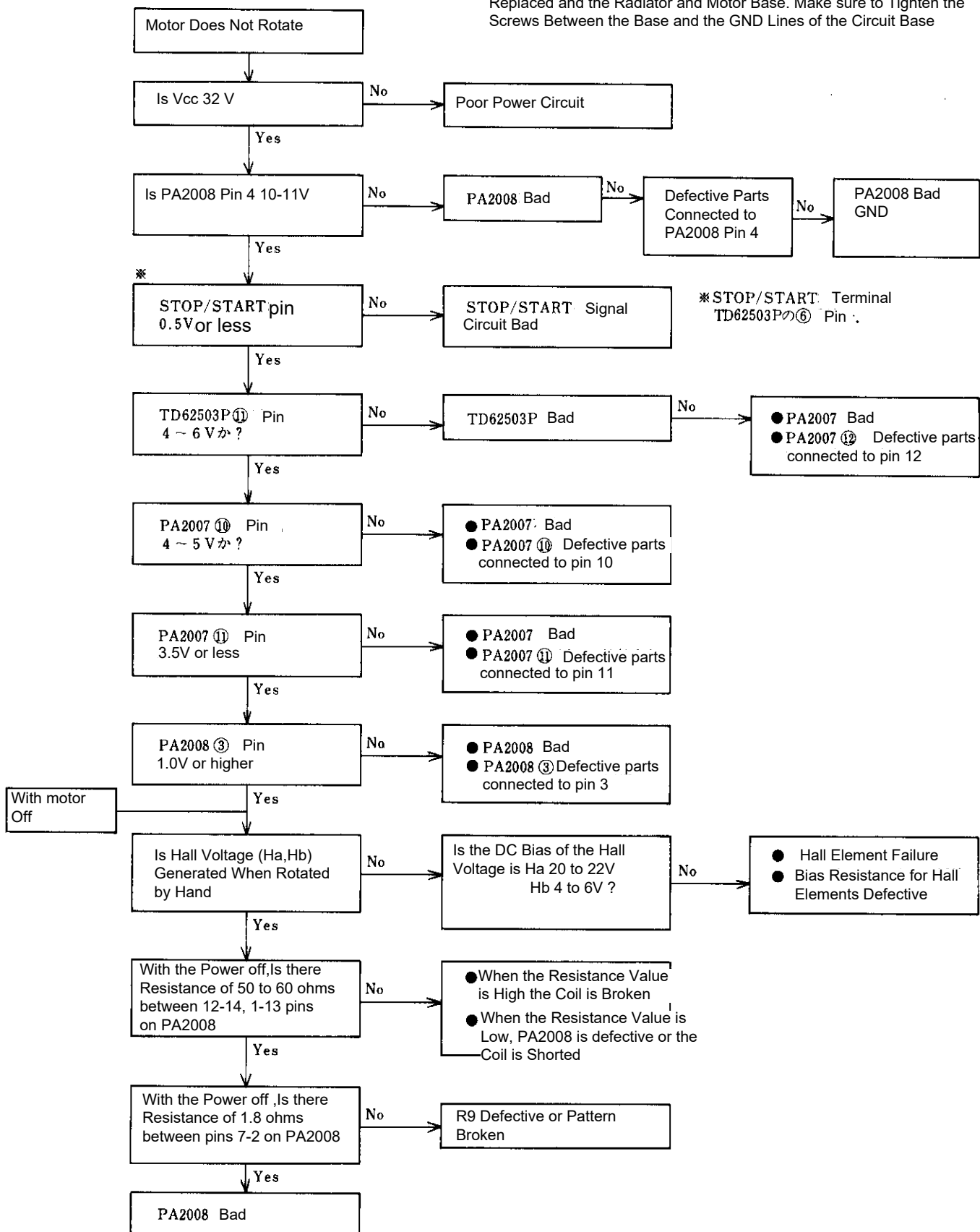
2. 4 Power on Without Reset

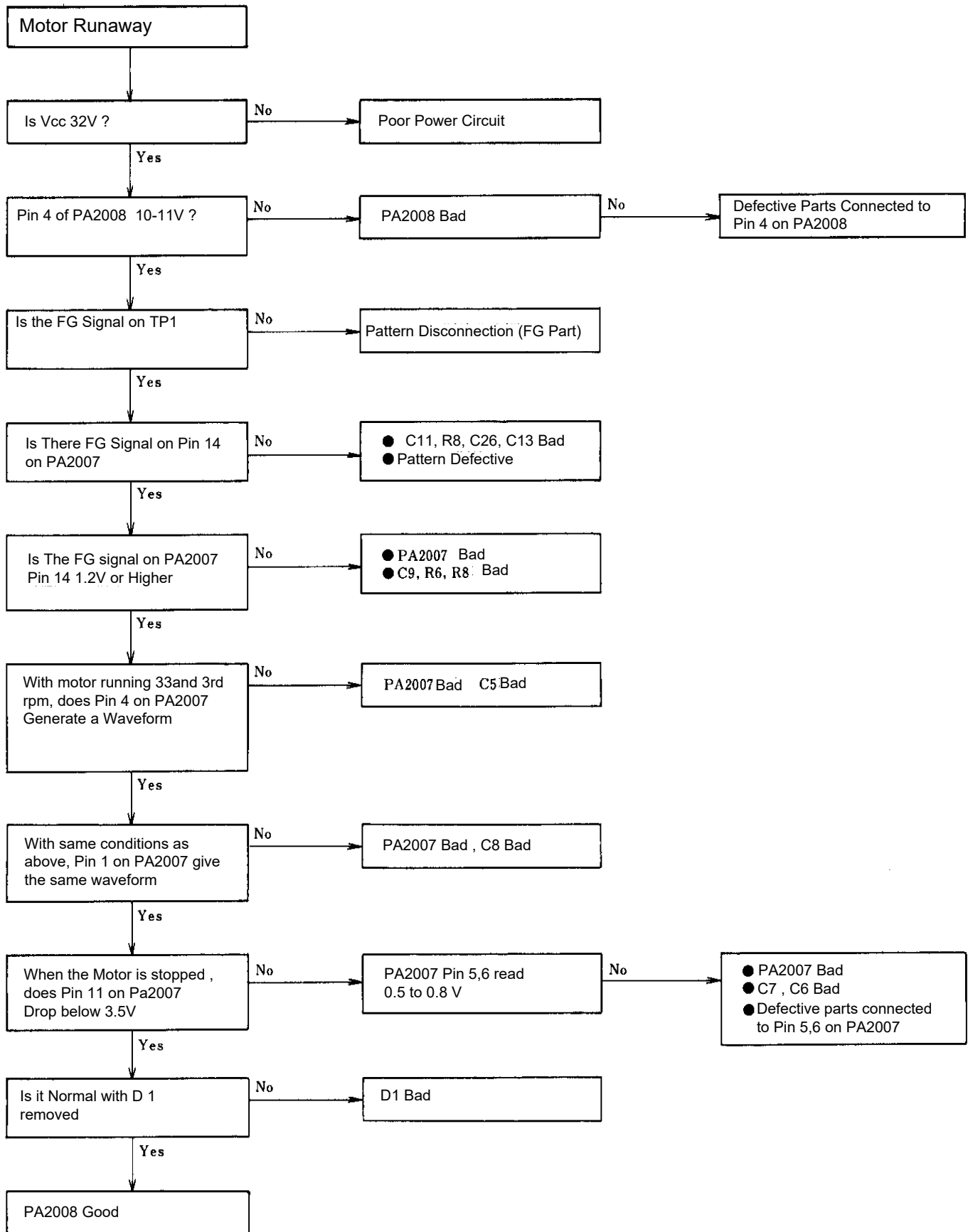


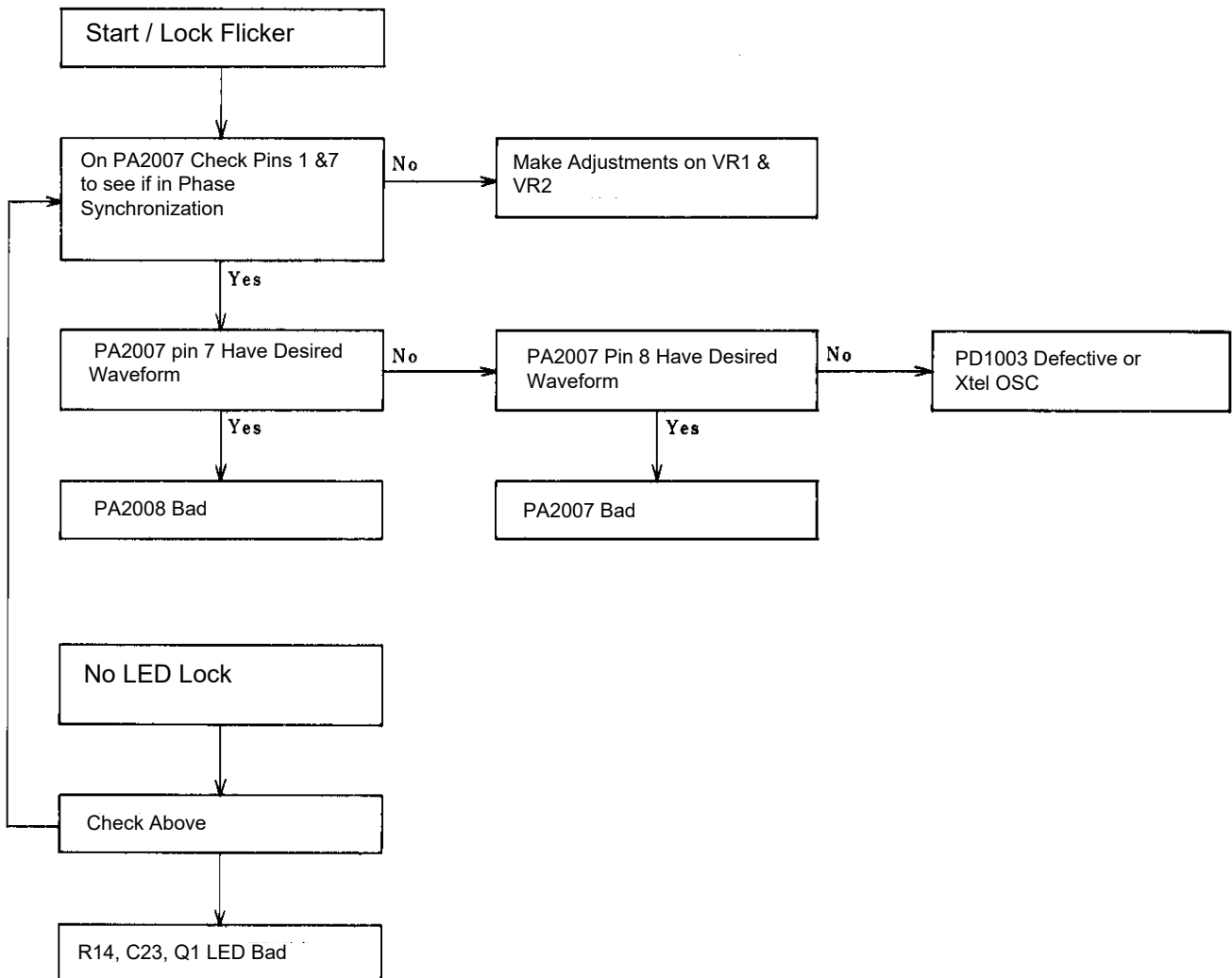
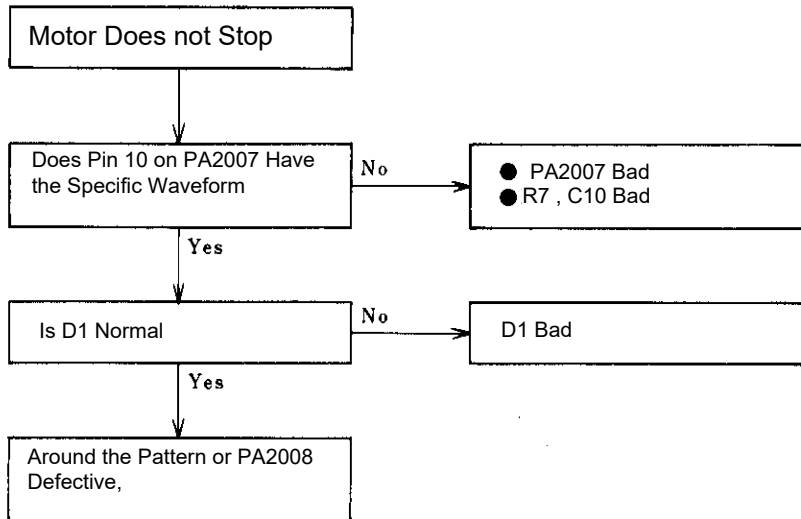
2. 5 Motor Ass'y Block Diagram



The IC PA2008 Used In This Motor uses Heat Dissipation Fins Instead of a Dedicated GND of the Internal Circuit. Therefore, When the IC is Replaced and the Radiator and Motor Base. Make sure to Tighten the Screws Between the Base and the GND Lines of the Circuit Base



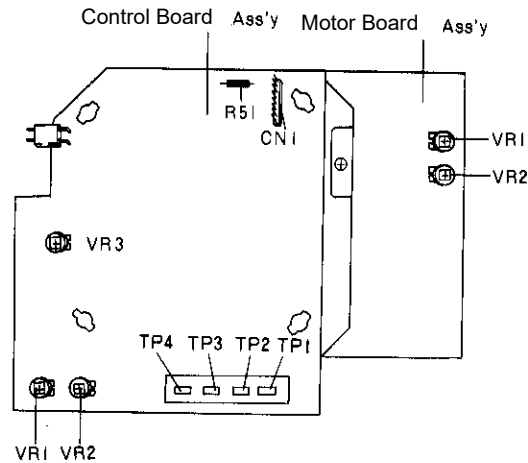




3. ADJUSTMENT METHOD

3.1 POWER SUPPLY VOLTAGE ADJUSTMENT

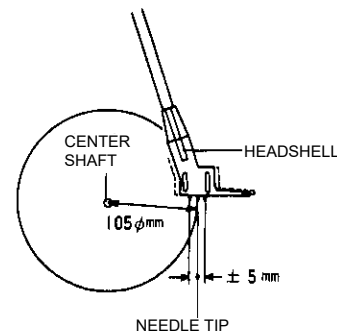
1. Remove the Bottom Plate of the Turntable and Turn the Power On
2. Turn on DC Voltmeter
Connect to positive CN1, negative on TP2
3. Adjust VR3 so that the Voltmeter reads $32V \pm 0.5V$



3.1 ADJUSTMENT

3.2 OPERATING ADJUSTMENT

1. Remove Bottom of the Turntable and Turn the Power On
2. Set the Test Points TP1 and TP2 GND Shown in Figure 3.1 to Prevent End Detection
3. Connect the Voltmeter to TP3 Positive and TP2 GND
4. Set the Needle Tip 105mm from Center of Spindle as per Figure 3.2
At This Time Adjust VR1 so the Voltmeter Reading is $12V \pm 0.5V$



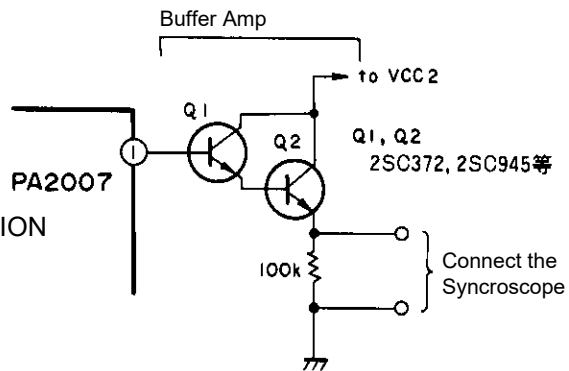
3.2 END DETECTION ADJUSTMENT

3.3 END DETECTION CIRCUIT

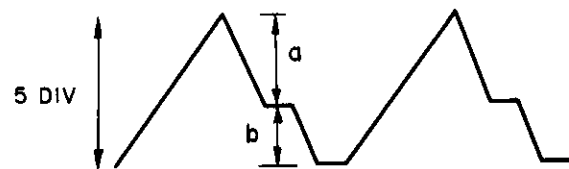
1. Move the Tonearm 5mm left and right from the 105mm Position. Adjust VR2 so that it reads $5 \pm 0.3V$ in each direction Figure 3.1,2

3.4 ADJUSTMENT OF THE MOTOR OPERATING POSITION

1. Set Rotation to 33 1/3 and Push Start Button
2. Connect the Buffer Amplifier to Pin 1 on IC PA2007. Connect the Output to the Syncroscope Figure 3.3
3. When the Waveform 3.4 Appears as shown, change the Sync Gain. Then Adjust the Sawtooth Wave to 5DIV, and Adjust VR1 so that $a:b=3:2$ in Fig 3.4. Watch for Servo Noise Fig 3.1
4. After 33 1/3 Is Adjusted, Adjust 45 speed with VR2 the same as 2 and 3. Make sure to Adjust 33 speed first. Always Adjust Both
5. Connect the Syncro to Pin 7 on PA2007. Confirm 33 speed is 111.1 Hz and 45 speed is 150Hz



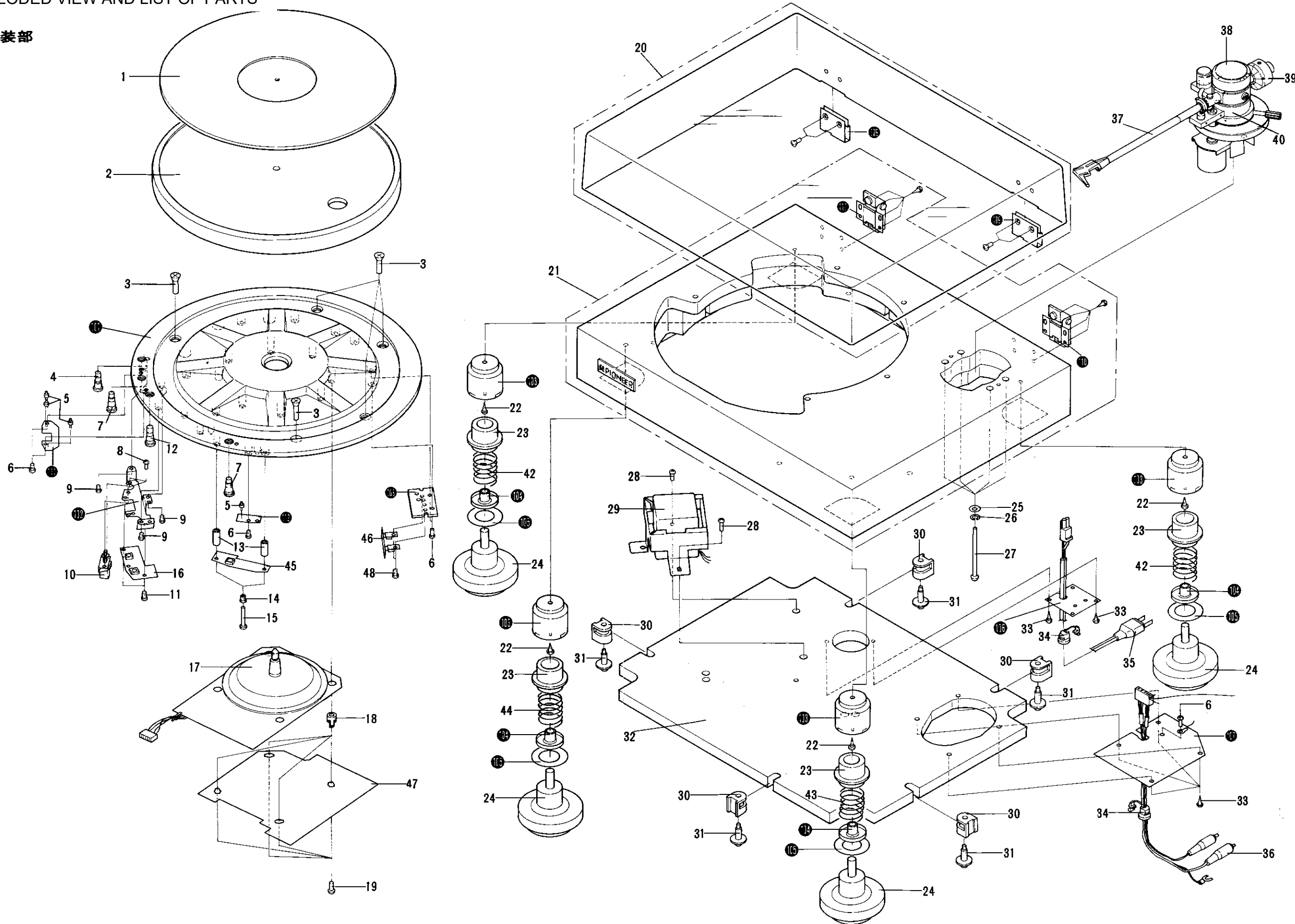
3.3 BUFFER AMPLIFIER



3.4 Adjustment Waveform

4. EXPLODED VIEW AND LIST OF PARTS

4.1 外装部



Parts List

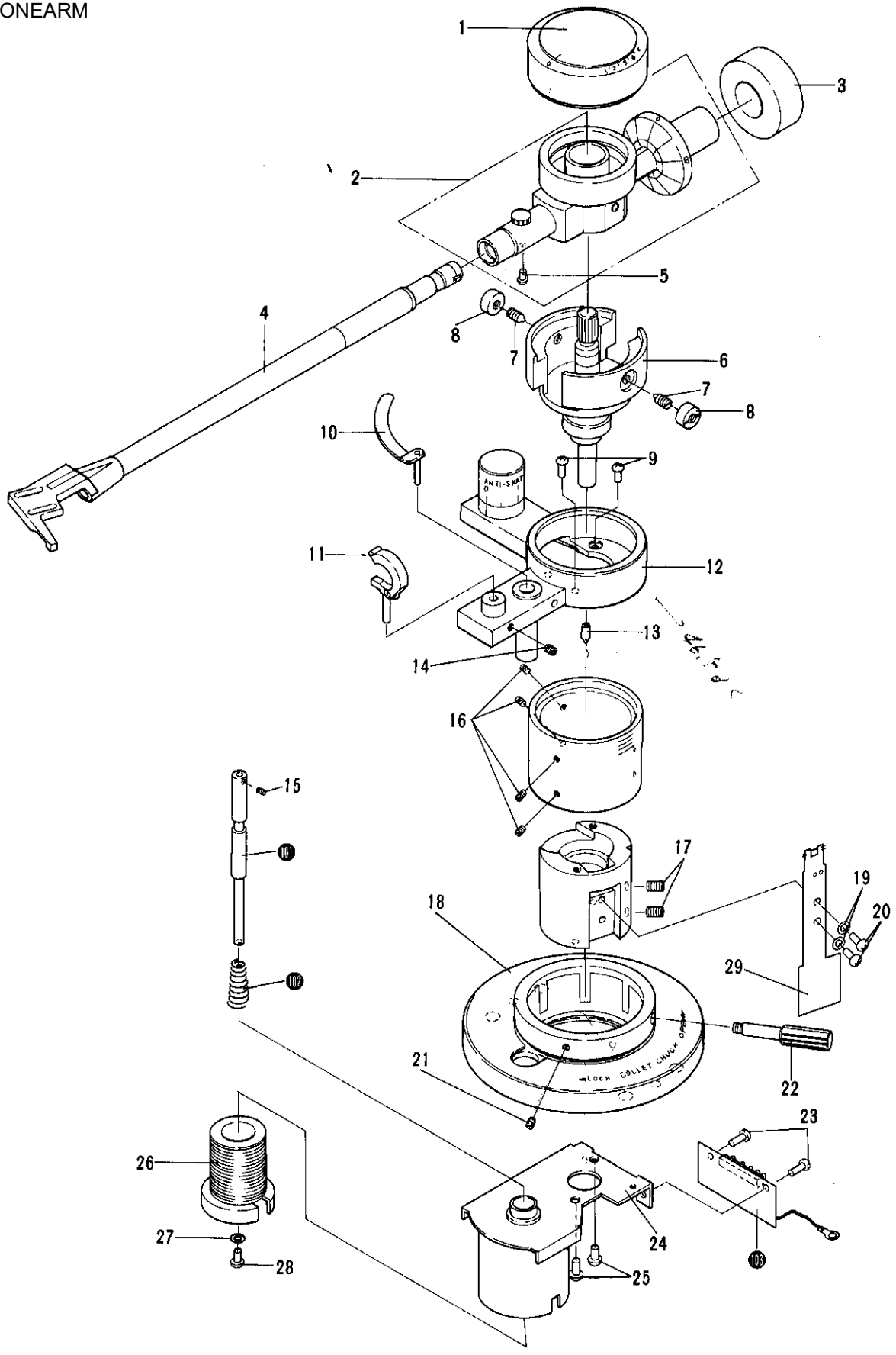
-  Parts List
- Some Part Numbers use the Letter O
- When Ordering Parts make clear distinction Between Number 1 and the Letter I
- Parts that are not in the table cant be Supplied

Parts List

2000

#	Part Name	Part #	備 考	#	Part Name	Part #	備 考
1	Rubber Sheet Ass'y	PEA-045	059 8.888.8	36	PU Ass'y	PDX-013	014
2	Platter	PNR-173	10	37	Straight Pipe Ass'y	PXB-512	
3	CMZ60P200FCR				S Arm Ass'y	PXB-513	
4	Push Button Unit (F)	PAD-057		38	Adjustment Ring Ass'y	PXB-517	
5	LED (Red)	GL-2PR1		39	Weight Ass'y	PXB-515	
6	PAZ30P060FMC				Weight Ass'y (Large)	PXB-535	
7	Push Button Unit (B)	PAD-053		40	Arm Ass'y	PPD-626	
8	PMA30P060FMC			41	Packing Cover (A)	PHL-025	
9	PAZ30P080FMC			42	Insulator Spring (B)	PBH-227	
10	Push Switch	PSG-024		43	Insulator Spring (C)	PBH-228	
11	PDZ30P060FMC			44	Insulator Spring (D)	PBH-229	
12	Push Button Unit (C)	PAD-054		45	S/W Substrate Ass'y	XWS-015	
13	Spacers	PNX-009		46	Transistor Board Ass'y	XWX-080	
14	Washer	PNX-008		47	Control Board Ass'y	XWM-082	
15	PBZ30P250FMC			48	Mounting Plugs	PBA-089	
16	Lower SW Ass'y	XWS-014		101	Panel		
17	Motor	PXM-106		102	Switch Base		
18	Stopper Washer	PNX-371		103	Spring Case (A)		
19	PMA40P150FMC			104	Spring Receiving Unit		
20	Dust Cover Ass'y	PXB-082		105	Spring Case (B)		
21	Plinth	PMM-192		106	Cord Holding Bracket		
22	RWC31P200FMC			107	底蓋		
23	Bushing	PEB-144		108	Heat Dissipation Plate	PNC-149	
24	Isolator Foot	PXB-078		109	Plate		
25	WC60FMC			110	Spring Hinge Ass'y	PXB-054	
26	WS60FMC			111	LED Light Ass'y (A)		
27	PMZ60P500FMC			112	LED Light Ass'y (B)		
28	PMB40P200FMC						
 29	Power Transformer Ass'y	PTX-027					
30	Rubber Spacer	PEB-201					
31	Screws	PBA-136					
32	Bottom Plate	PMS-015					
33	RWC31P130FZK						
34	P/W Cord Stopper	REC-049					
 35	P/W Cord Ass'y	PDF-139					

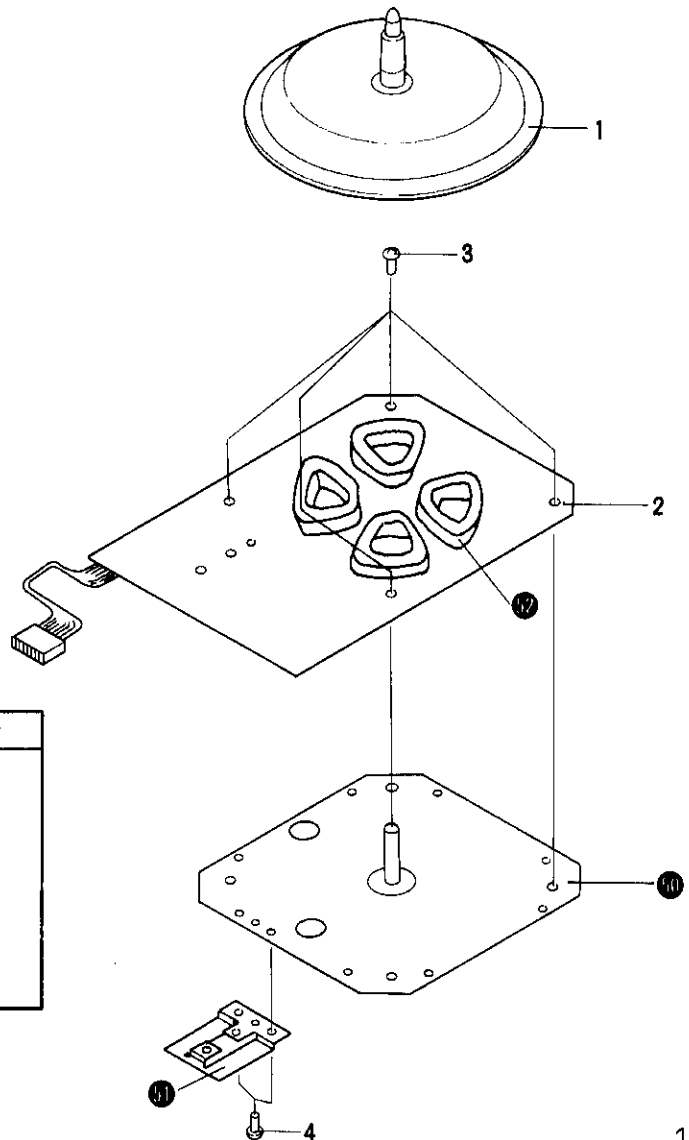
4.2 TONEARM



Parts List

#	Part Name	Part #	備考	#	Part Name	Part #	備考
1	Dampening Ass'y	PXB-517		20	PAZ30P080FMC		
2	Pipe Holder Ass'y	PYY-107		21	ZMK40M040FNI		
3	Weight Ass'y	PXB-515		22	Collet Locking Arm	PXT-604	
	Weight Ass'y (Large)	PXB-535		23	PDZ30P060FMC		
4	Straight Pipe Ass'y	PXB-512		24	Lifter Ass'y Plate	PXA-853	
	S Pipe Ass'y	PXB-513					
5	Rubber Bumper	PNT-563		25	PMB30P080FMC		
6	Outer Holder Ass'y	PXB-526		26	Lifter Coil	PXT-586	
7	Pivot Screws	PLB-771		27	WC26FMC		
8	Pivot Screw Locks	PLB-772		28	PMA26P060FMC		
9	PMZ30P160B			29	Detection Board Ass'y	PYY-072	
10	Lifter Arm	PXT-606		101	EV Shaft		
11	Arm Rest Ass'y	PXB-507		102	Spring		
12	Housing Plate Ass'y	PXB-527		103	Lifter Shaft		
13	Ground Lug	PDF-534					
14	ZMD30H060FBT						
15	ZMK26M025FNI						
16	ZMK30H030FBT						
17	ZMD40H080FBT						
18	Arm Base Ass'y	PXB-523					
19	WA30N060W050						

4. 3 Motor Ass'y



Part List

#	Part Name	Part #	備考
1	Rotor Unit	PXT-468	
2	Circuit Board Ass'y	PWM-087	
3	PCZ30P050FMC		
4	PCZ40P060FMC		
5			
50	Base		
51	Heat Sink		
52	Foam Coil		

5. List Of Electrical Parts

- 印の部品は、安全上重要な部品です。交換をする時は、安全および性能維持のため必ず指定の部品をご使用ください。
- 部品番号中“@”は、英字の“O”を表わします。部品発注の際は、注意してください。
- 部品を発注する際は、特に数字の“1”と英字の“I”との区別をはっきり記入してください。
- 部品番号を表示していない部品は、供給できません。

TRANSLATE WITH
GOOGLE LENS

注. 抵抗器は、○○○に抵抗値をコードで入れ、本来の部品番号に直して発注してください。

例 1 560 Ω, 47k Ω など, 0 以外の数字 (有効数字) が 2 桁の場合

(誤差が J = ± 5%, K = ± 10% などの抵抗器はすべて該当)

560 Ω → 56 × 10¹ → 561 RD 1/4 PS ⑤ ⑥ ① J

47k Ω → 47 × 10³ → 473 RD 1/4 PS ④ ⑦ ③ J

0.5 Ω → 0 R 5 RN 2H ① ⑤ K

1 Ω → 010 RS 1P ① ① ① K

例 2 有効数字が 3 桁の場合 (超精密級金属皮膜抵抗器)

5.62k Ω → 562 × 10¹ → 5621 RN 1/4 SR ⑤ ⑥ ② ① F

Circuit Board Ass'y

Wiring Symbols and Names	Part #
Control Board Ass'y	XWM-082
SW (A) Ass'y	XWS-014
SW (B) Ass'y	XWS-015
Transistor Board Ass'y	XWX-080
Disconnect Spacer	PNX-015
Insulation Spacer	PNM-013
Tapped Plug	PBA-089

Control Board Ass'y (XWM-082)

Capacitors

Wiring Symbols and Names	Part #
C1 Power Supply Capacitor	PCL-040
C2	CEA 470M 10L
C3	CEA 471M 80L
C4	CEA 101M 63L
C6	CEA 2R2M 50L
C7~C9	CEA 1R0M 50L
C10, C22	CEA R47M 50L
C11	CEANL 4R7M 25
C5	CEA 4R7M 50L
C12	CSZA 6R8K 35
C13~C17	CQMA 103K 50
C18	CKDYF 103Z 50
C19~C21	CKDYF 104Z 50

Resistor

Note :For Resistors enter the Resistance Value in 000 with a code and check it with Original

Wiring Symbols and Names	Part #
VR1 Semi Fixed Volume	PCP-009 (PCP-016)
VR2 Semi Fixed Volume	PCP-033 (PCP-020)
VR3 Semi Fixed Volume	PCP-070 (PCP-071)
R2, R52	RS2PF○○○J
R51	RS1PF391J
R53	RD1/2PS102J
Resistors Other Than Above	RD 1/4 PM○○○J

Semi Conductors

Wiring Symbols and Names	Part #
IC1	μPC78L12
IC2	μPC4558C (NJM4558D)
IC3, IC4	TC4013BP
IC5, IC6	TC4011BP (MB84011B)
Q1, Q2	2SC945-P
Q3~Q8	2SC1815-Y (2SC1815-GR) (2RC945-P) (2SC945-Q)
Q13	2SD571-L (2SD571-K)
D1	S2VB20
D3, D6	WZ-063
D4, D5	1S2473 (1S1555)

Other

Wiring Symbols and Names	Part #
Connector Ass'y	PDE-125

SW (A) Ass'y (XWS-014)

Wiring Symbols and Names	Part #
S1, S2	PSG-009

SW (B) Ass'y (XWS-015)

Wiring Symbols and Names	Part #
S3	PSG-009

Transistor Board Ass'y (XWX-080)

Wiring Symbols and Names	Part #
Q10	2SD718-Θ (2SD718-R)
Q11	2SD880-Y (2SD880-Θ)
Q12	2SC1627A-Y (2SC1627A-Θ)

Circuit Board Ass'y (PWM-087)

Capacitor

Wiring Symbols and Names	Part #
C1, C4, C12, C13, C25, C26, C27	CKDYF 103Z 50
C5	CQMA 822K 50
C8, C24	CQMA 333K 50
C6, C7	CQMA 104K 50
C2	CCDCH 330J 50
C3	CCDCH 560J 50
C9	CKDYF 472Z 50
C28	CKDYF 104Z 50
C10, C14, C15	CEA R47M 50L
C17	CEA 100P 16
C22	CEA 100M 35L
C23	CEA 330M 16L
C11	CEA 101M 10L
C18~C21	CEA 470M 35L
C16	CSZA R22M 35

Resistor

注. 抵抗器は, ○○○に抵抗値をコードで入れ
本来の部品番号に直して発注のこと.

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Wiring Symbols and Names	Part #
VR1 Semi Fixed Volume 22k (B)	PCP-020
VR2 Semi Fixed Volume 44k (B)	PCP-052
R9	RN2PF1R8J
R3	RN $\frac{1}{4}$ PR363G
R4	RN $\frac{1}{4}$ PR1103G
Resistors Other Than Above	RD $\frac{1}{4}$ PM○○○J

Semi Conductor

Wiring Symbols and Names	Part #
IC1	PA2007
IC2	PA2008
IC3	PD1003
IC4	TD62503P
Q1	2SC1815-GR (2SC945-P)
D1	1S2473

Other

Wiring Symbols and Names	Part #
HA, HB Hall Element Connector Ass'y	PSS-003 PCX-039 PDE-085

6. Comprehensive Pattern Diagram

Control Board Ass'y (XWX-082)

Circuit Board Ass'y (PWM-087)

A

B

C

D

Substate Board Ass'y
(PYY-072)

Transistor Board Ass'y
(XWX-080)

AC100V
50/60Hz

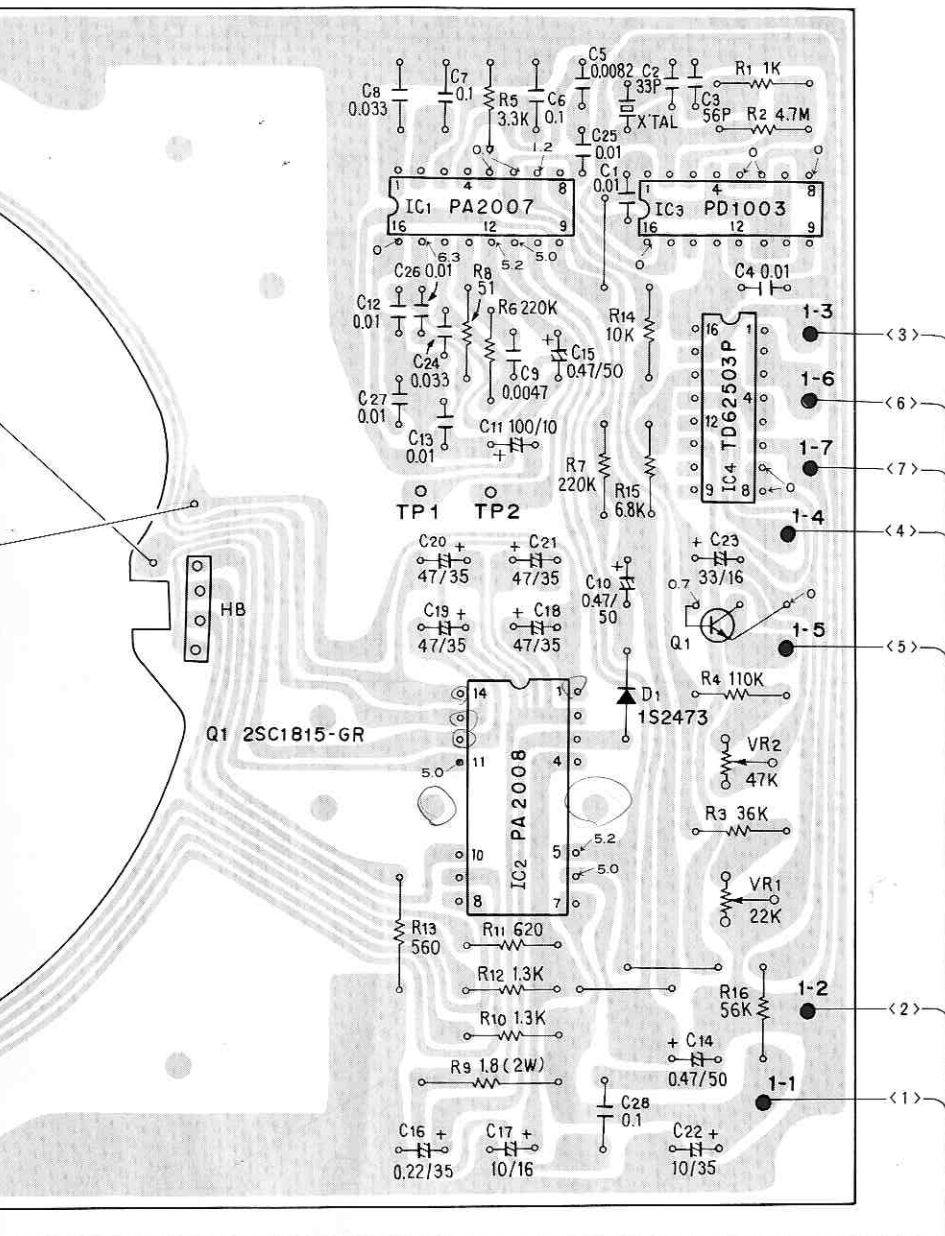
S4 : POWER

Power Transformer

LED (A) Ass'y

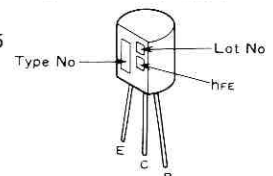
LED (B) Ass'y

Switch Board B Ass'y
(XWS-015)

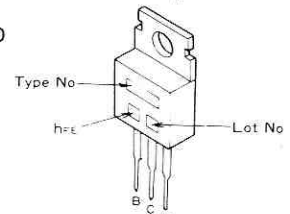


Outline of Transistor / IC

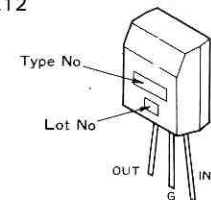
2SC945
2SC1815



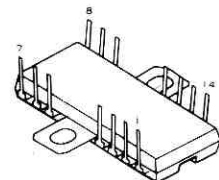
2SD880



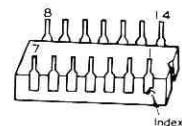
μPC78L12



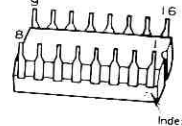
PA2008



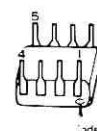
TC4013BP
TC4011BP
MB84011B



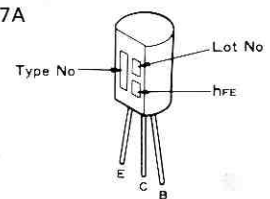
PA2007
PD1003
TD62503P



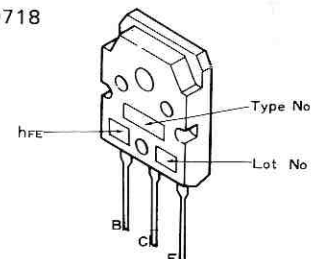
μPC4558C
NJM4558D



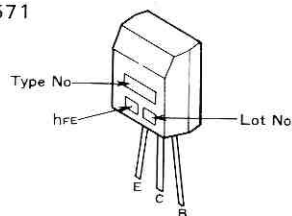
2SC1627A



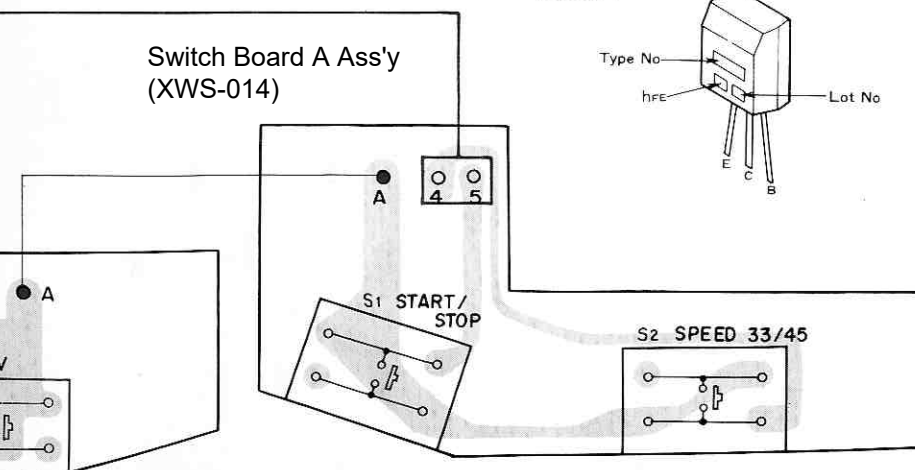
2SD718



2SD571



Switch Board A Ass'y
(XWS-014)



7. Comprehensive Circuit Diagram

A

A

B

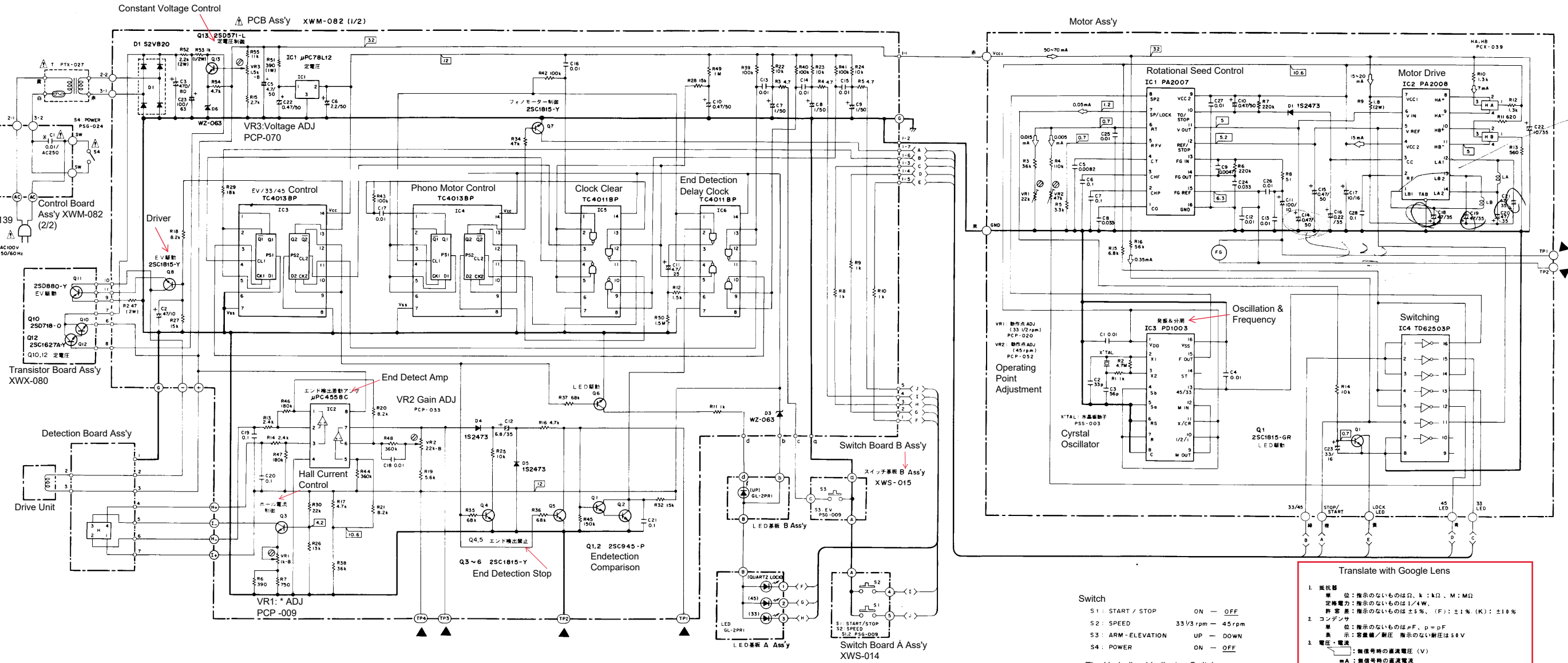
B

C

C

D

D



Switch
S1: START / STOP ON — OFF
S2: SPEED 33 1/3 rpm — 45 rpm
S3: ARM - ELEVATION UP — DOWN
S4: POWER ON — OFF

The Underlined Indicates Switch Position

Translate with Google Lens

1. 抵抗器
単位: 指示のないものはΩ, k: kΩ, M: MΩ
定格電力: 指示のないものは1/4 W
許容差: 指示のないものは±5%, (F): ±1%, (K): ±10%

2. コンデンサ
単位: 指示のないものはμF, p: pF
電圧: 指示のないものは50 V
表示: 電圧/耐圧 指示のない耐圧は50 V

3. 電圧・電流
単位: 電圧はV, 電流はmA

4. その他
△印は調整箇所を示す。
△印は指定部品を必ず採用すること。
△印のC, Rには部品番号があります。

8. Tonearm Assembly and Disassembly

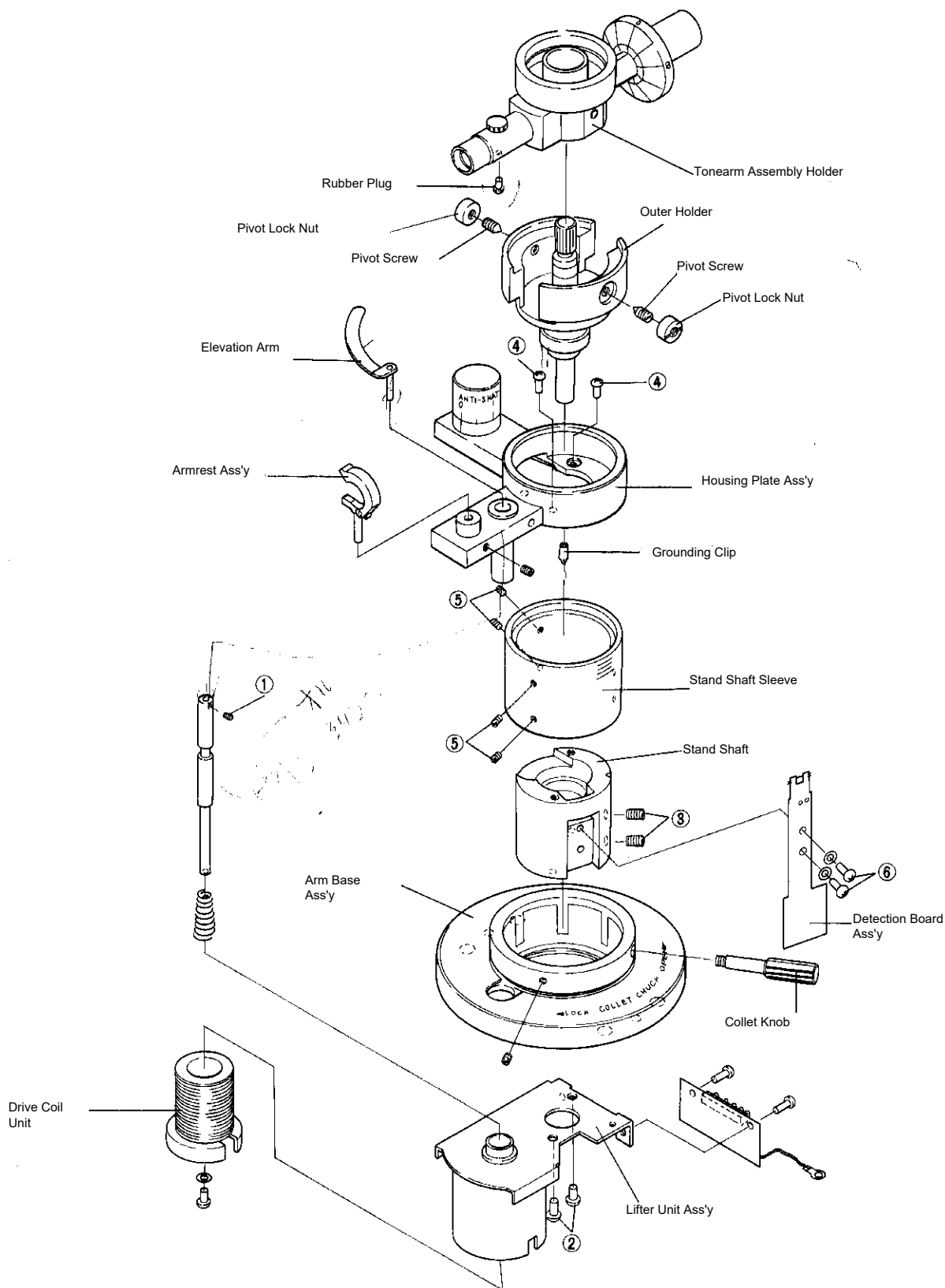


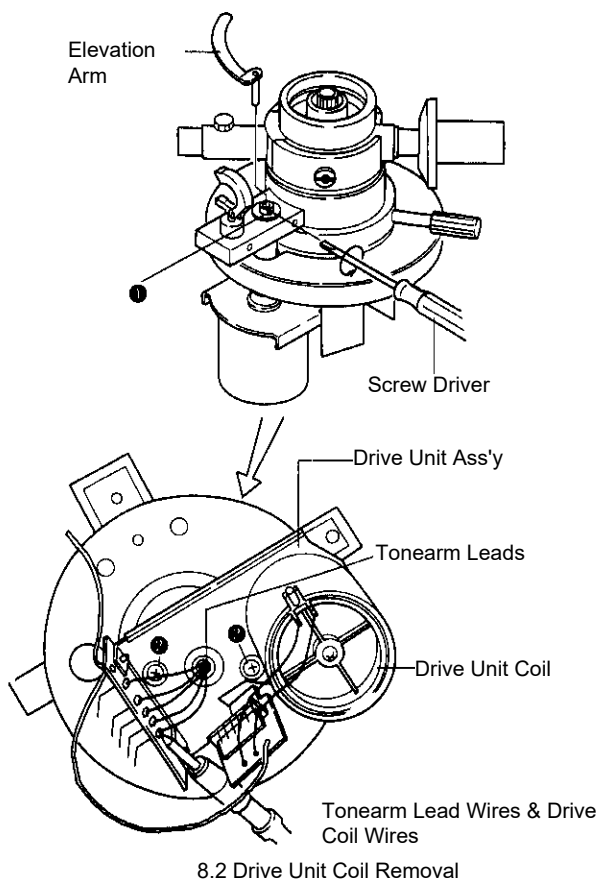
図8-1 Part Names

■Disassembly

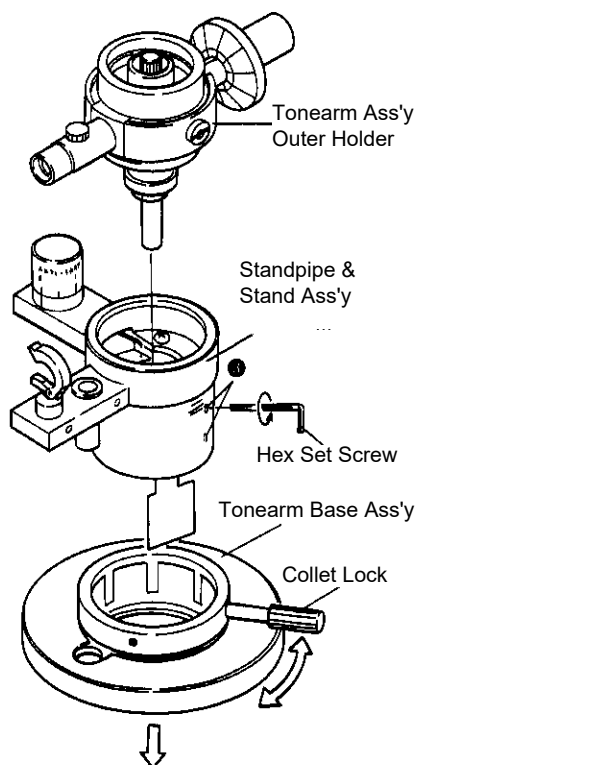
Set Damping Ring to Zero to Prevent Oil Loss.
After 30 Minutes Remove cap and Oil

■Removal

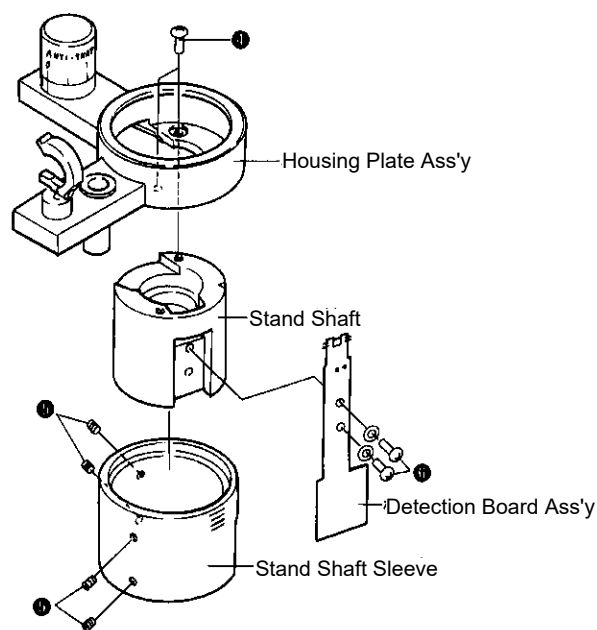
1. Desolder Tonearm Wires and Coil Lifter wires from PCB Boards
2. Loosen Set Screw and Remove the Elevation Arm
3. Remove Screw from Bottom of Lifter Drive unit and Remove Ass'y



4. Loosen the Collet Knob and Rotate and Pull Ass'y Down
5. Loosen the Set Screws on the Stand Pipe and Lift Tonearm Shaft out
6. Remove the Screws out of the Detection Board Ass'y

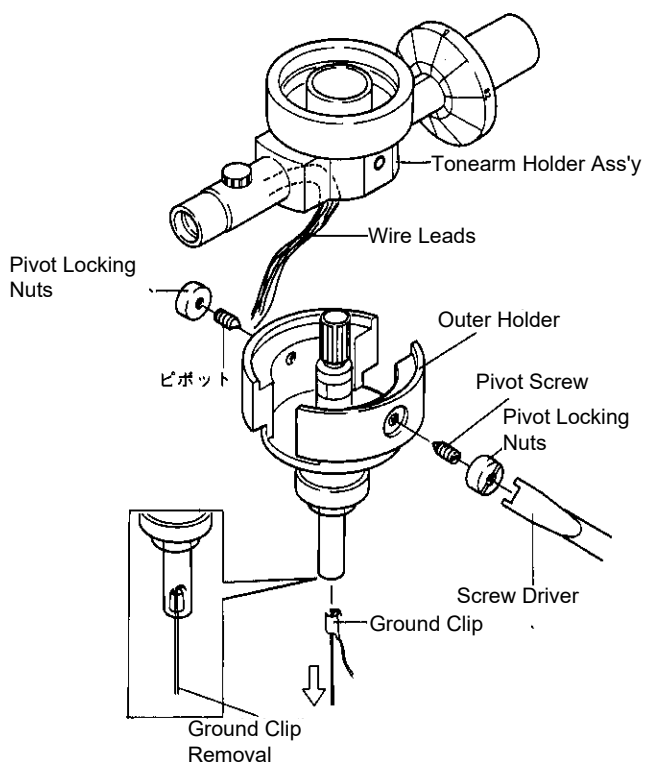


8-3 Arm Base Removal

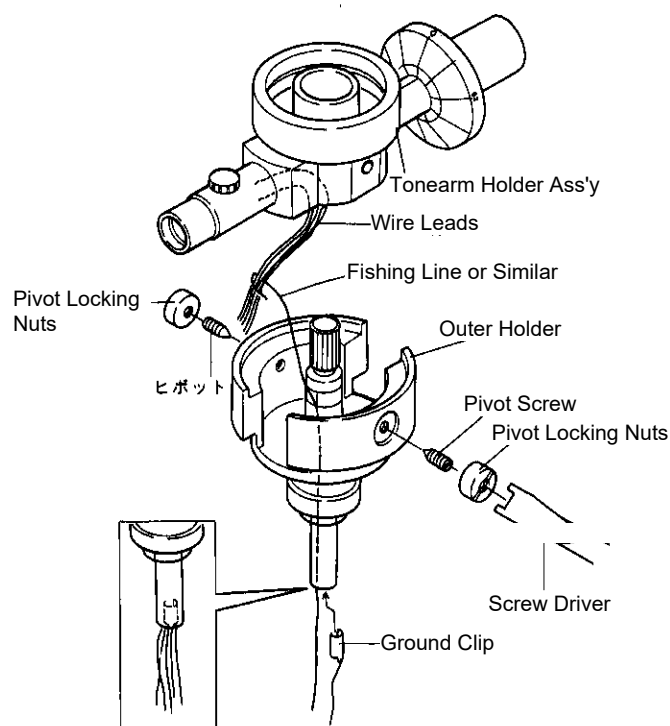


8.4 Removing the Housing Plate Ass'y

7. To Remove the Grounding Clip, make a hook to fit inside the Tube and Pull out with Breaking the Ground Wire
8. Remove the 2 Pivot Locking Screws and Slowly Pull the Tonearm out of the Holder. The lead Wires pass through the Center. Be Carefull



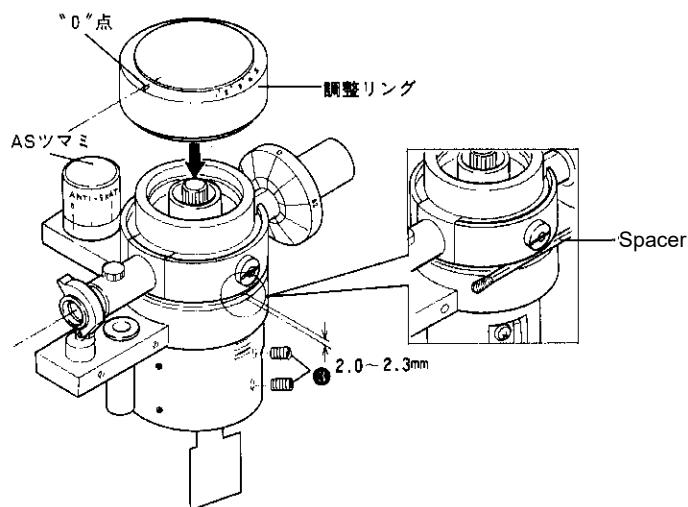
8.5 Tonearm Removal



8.6 Tonearm Assembly

Assembly

1. Wrap Wire Leads with Fishing Line and Feed Through Tube
2. Attach the Tonearm Assembly to the Outer Holder. Lock in Place with the Pivot Screws. Tighten just enough so there is no Play. Make sure Tonearm is Centered
3. Insert the Ground Clip. Do Not Pinch Lead Wires. Check Orientation of Grounding Lug
4. Tighten the 2 Set Screws for the Stand Shaft. Set With 2mm to 2.3mm of Spacing as Shown.

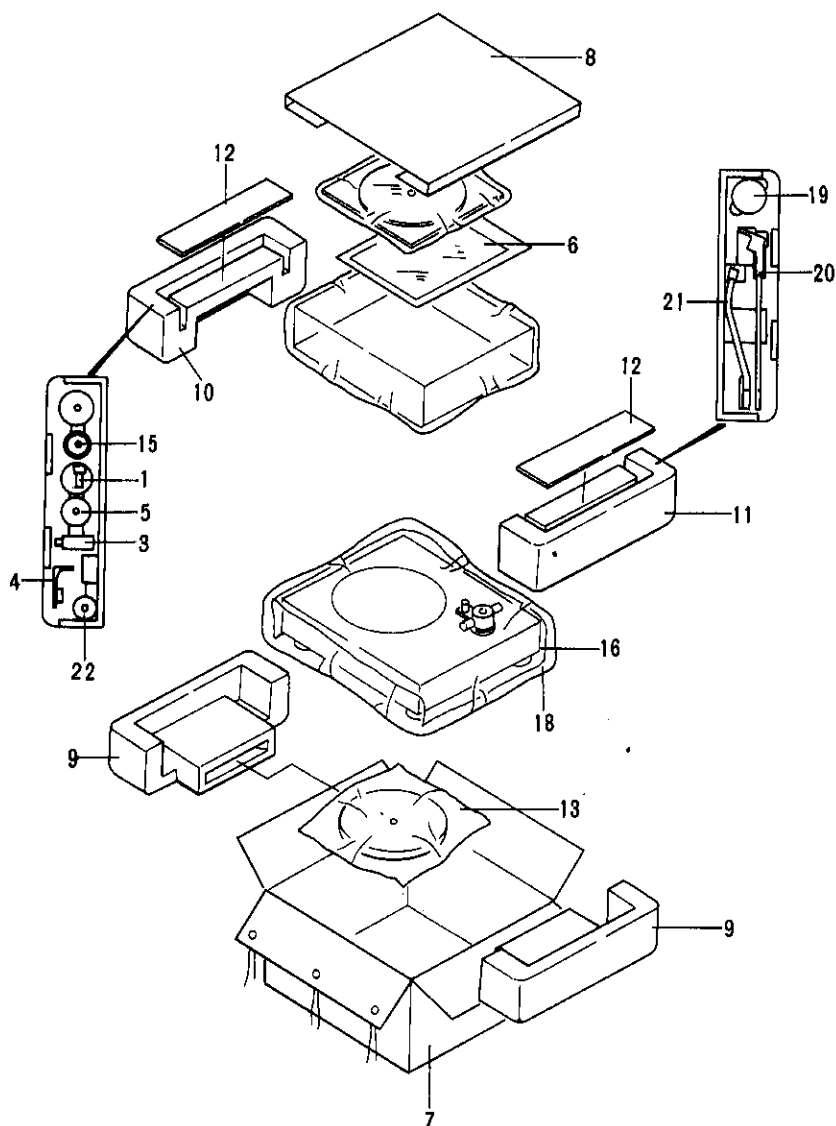


8.7 Tonearm Holder Ass'y

Checks After Assembly

1. Assemble with Counter Weight and Balance
2. Attach Cartridge and Check for Smooth Descent of Tonearm to Platter
3. With Tonearm Elevated Move Across the platter and Adjust the Anti Skate

9. Packing Method and Parts



Parts List

#	Part Name	Part #	Remarks	#	Part Name	Part #	Remarks
1	Counter Weight	PLB-146		11	Tone Arm Protector-(R)	PHA-136	
2				12	Accessories	PHN-028	
3	Damping Oil	PEM-004		13	Platter Packing Cover	PHL-012	
4	Over Hang Gauge	PEC-012		14			
5	45 Adapter	KNK-055		15	Damping Cap	PEB-169	
6	Instruction Manual	PRA-077		16	Packing Sheet	PHL-015	
7	Outer Box	PHG-486		17			
8	Top Cover	PHC-070		18	Packing Cover -(A)	PHL-025	
9	Platter Protector -(A)	PHA-141		19	Adjustment Ring Ass'y	PXB-517	
10	Platter Protector -(L)	PHA-135		20	Straight Pipe Ass'y	PXB-512	
				21	Arm Pipe Ass'y	PXB-513	
				22	Weight Ass'y	PXB-515	
				23	Weight Ass'y Large	PXB-535	