

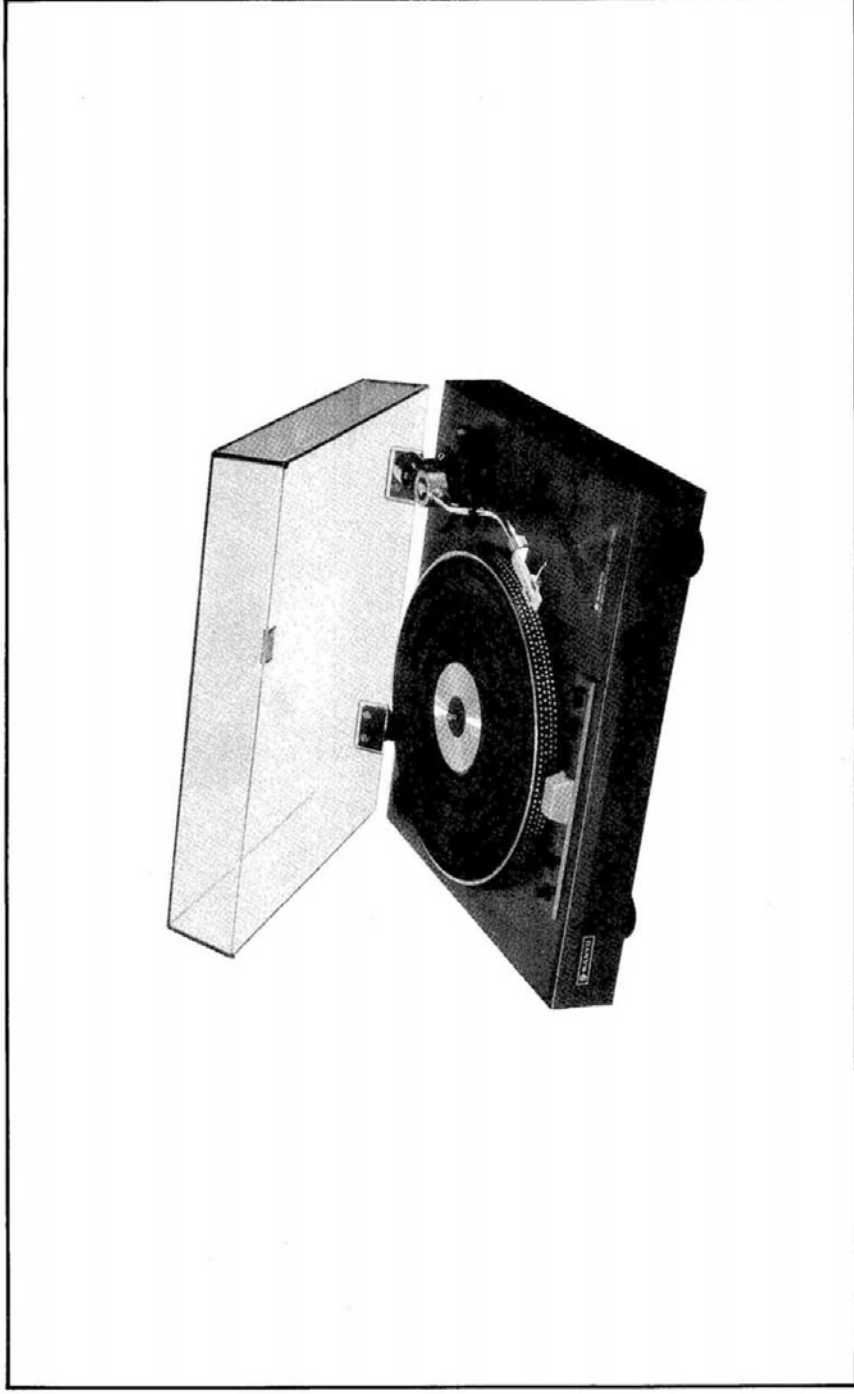
# SERVICE MANUAL



## STEREO TURNTABLE

# TP 727

(U.S.A.)



### SPECIFICATIONS

#### MOTOR & TURNTABLE SECTION

Motor DC Servo Motor  
Drive System Belt Drive  
Speeds 33-1/3 & 45 rpm  
Speed Change Electronic Control  
Turntable Platter Aluminum Alloy Die-Cast  
Diameter 308 mm  
Weight 0.7 Kg  
Wow & Flutter 0.05 %  
Signal to Noise Ratio 60 dB  
Speed Adjustment Range  $\pm 3.0$  %

#### TONARM SECTION

Type Static Balance Type (S-Shape)  
Effective Length 222 mm  
Cue Control Viscous Damped (Down only)  
Anti-Skating System Calibrated — Spring Type

Cartridge Weight Range 20 gr  
With Headshell  
Minimum Tracking Pressure 1.5 gr  
Tracking Error  $+3^{\circ}, -1^{\circ}$   
Counterweight Calibration 0 to 3.0 gr  
Antiskate Calibration 0 to 4.0 gr

#### GENERAL

Power Requirement AC: 120 V, 60 Hz  
Power Consumption 4.0 W

\*Specifications are subject to change without notice.

# BLOCK DIAGRAM OF THE DC SERVO

## Principle of Operation

The frequency generator is placed coaxially with the motor shaft. The output signal from the frequency generator is converted into a rectangular wave in the speed detecting circuit, which is then supplied to the differentiating circuit to obtain a differentiated wave form synchronized to the frequency of rotation.

The leading edge of the differentiated wave form is used for switching a transistor ON or OFF to obtain a saw-tooth wave whose wave peak is proportional to the frequency.

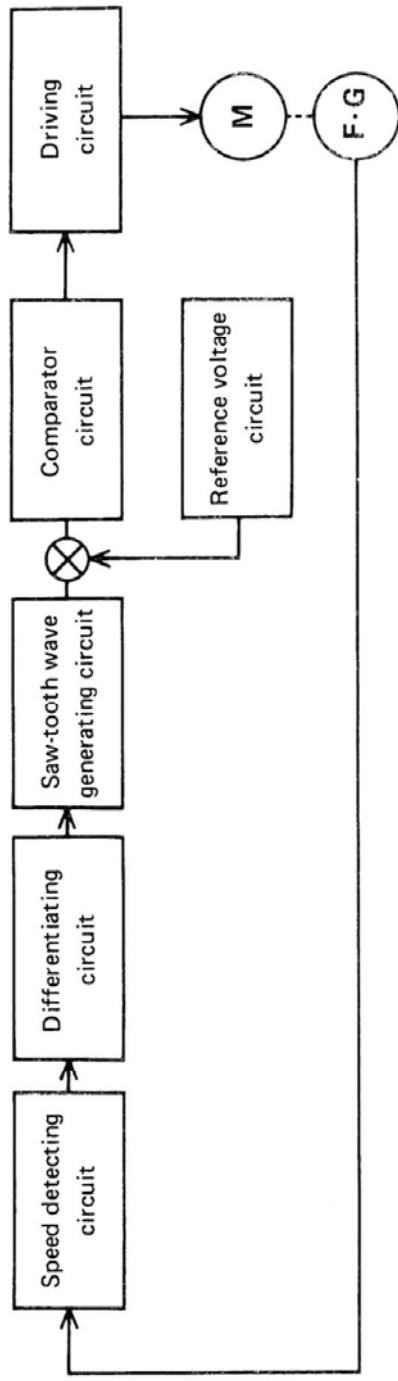
The saw-tooth wave thus generated is compared with a reference voltage obtained from a reference voltage circuit separately composed, and the portion of the saw-tooth wave exceeding the reference voltage is taken out as the control signal.

the driving signal for the motor is obtained by integrating the control signal (rectangular pulse).

Motor speed can be adjusted by changing the reference voltage.

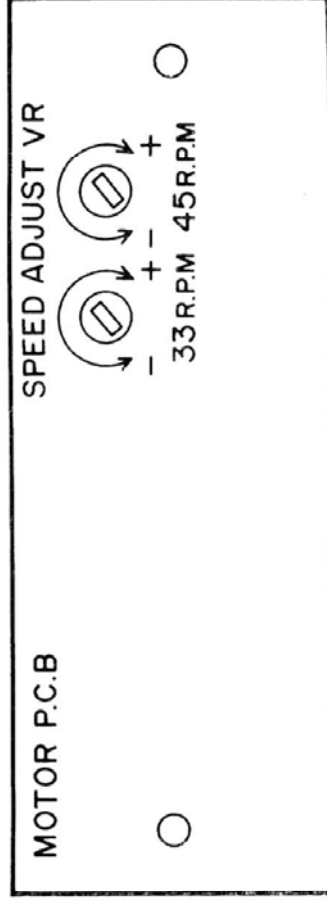
## Control frequency:

EP disk	motor speed 1520 rpm	.....	304 Hz
LP disk	motor speed 1130 rpm	.....	226 Hz



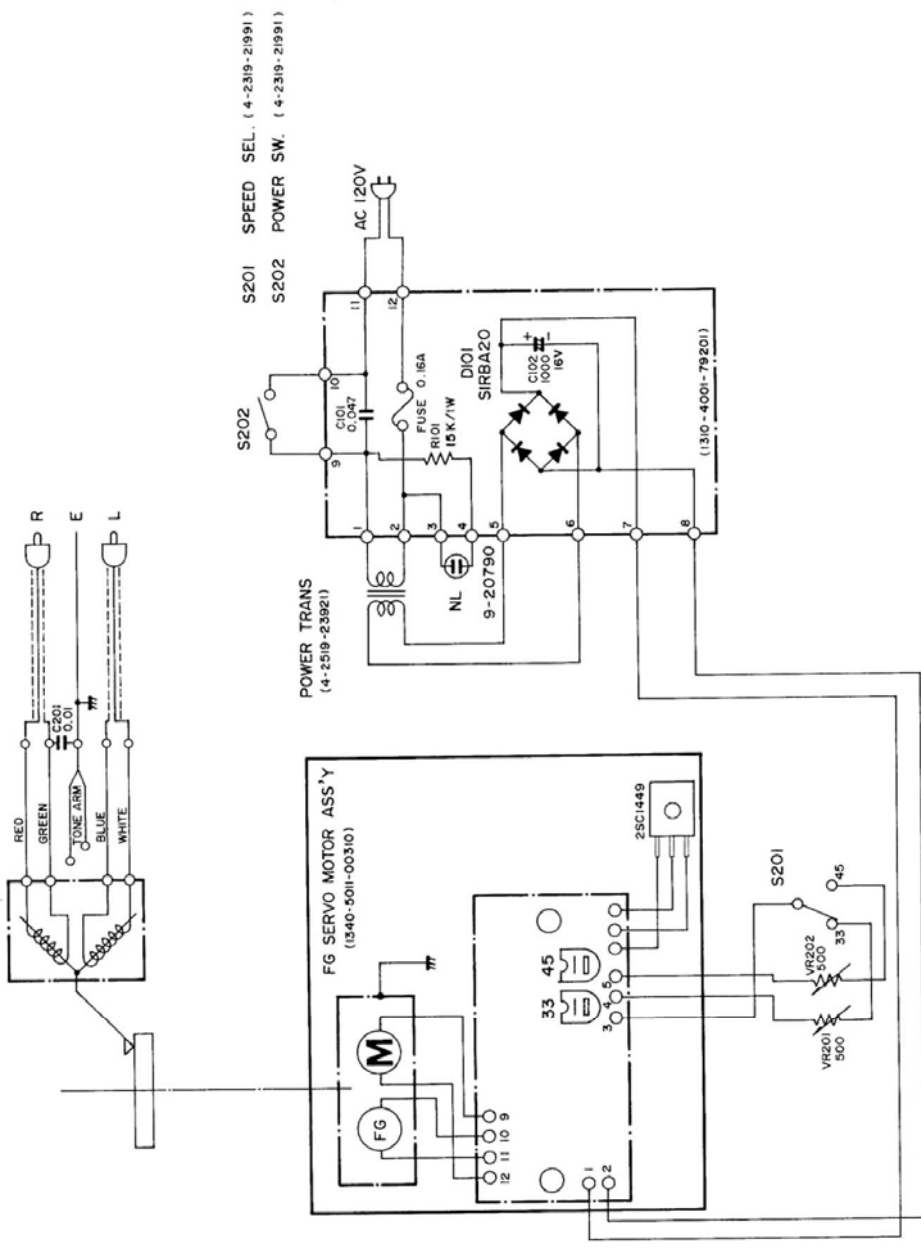
## SPEED ADJUSTMENT

- This unit is built-in F.G. SERVO circuit and the speed has been adjusted accurately in the factory.
- If, for any reason, when you change the speed, turn these volumes with the screwdriver to the “+” direction or “-” direction.  
 “+” direction ..... This increases the speed.  
 “-” direction ..... This decreases the speed.

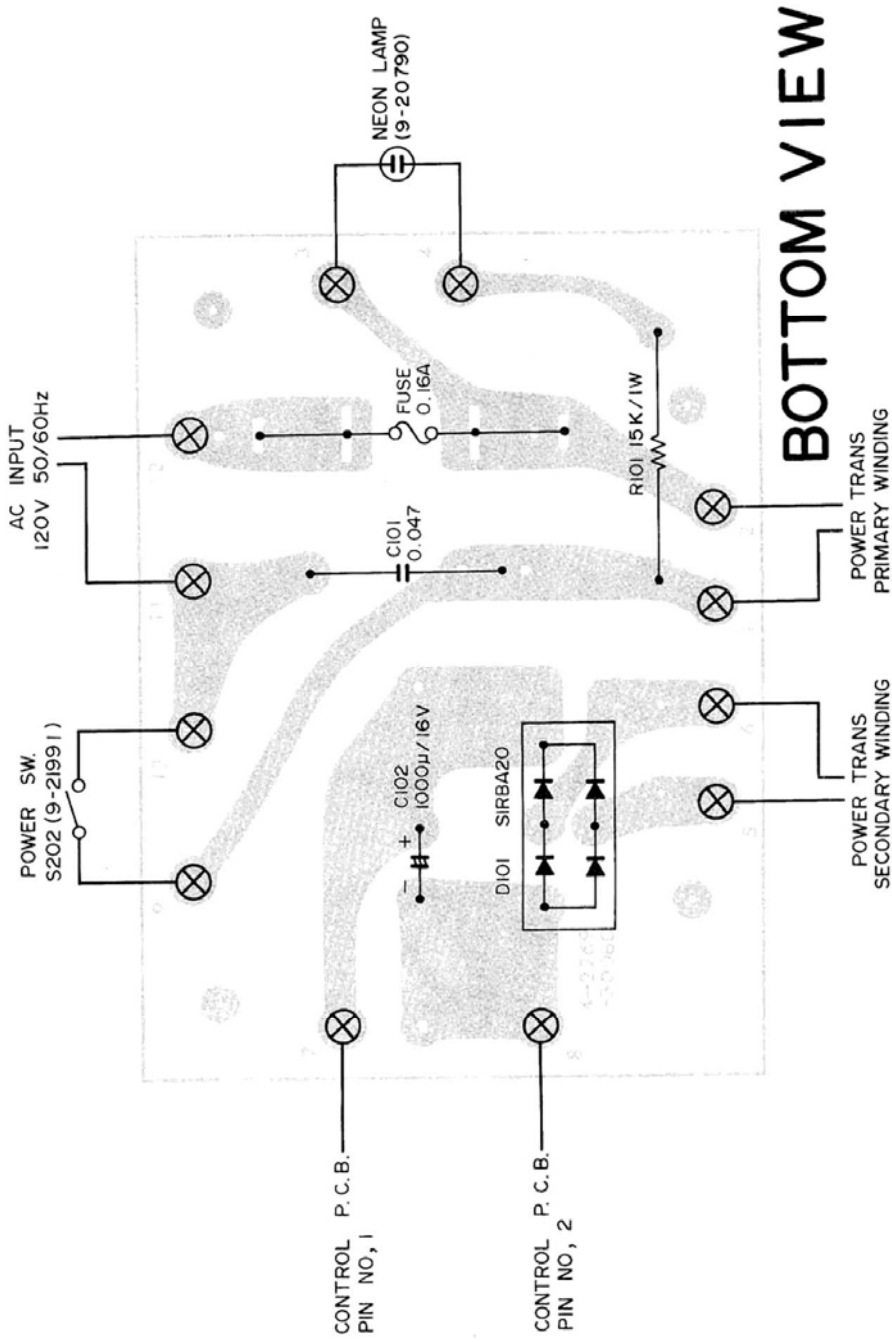


BOTTOM VIEW

# SCHEMATIC DIAGRAM



# POWER SUPPLY CIRCUIT BOARD



### PICK-UP ARM HEIGHT ADJUSTMENT

Loosen the pick-up arm height adjusting screw (A & B) and adjust the height by sliding the support arm (57) and secure the screw.

### PICK-UP RAISING POSITION ADJUSTMENT (Return point)

Turn screw (C) clockwise to move outwards, and counterclockwise to move inwards.

### CAUTION

Should the DC Servo motor, controlled PCB assembly or any of the transistors, diodes, volume controls, resistors, capacitors, etc. installed on the control PCB assembly develop trouble, do not replace only the faulty parts but the motor and the control PCB assembly as well. This is necessary because the control PCB assembly is finely adjusted to match the performance characteristics of the motor. If only the faulty parts have been replaced, we shall not be held responsible for deterioration in the performance of the unit.

### REPLACEMENT OF CARTRIDGE

Since the cartridge is incorporated into the head shell, it is recommended that the two be replaced together.

The new head shell-cartridge assembly can simply be attached to the tonearm.

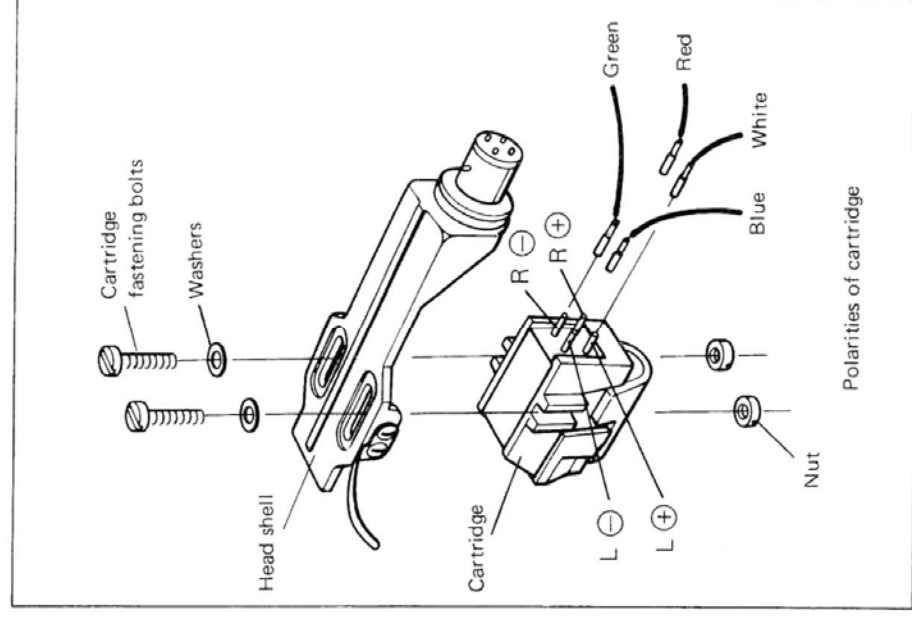
To replace the cartridge alone, go through the following steps:

- (1) Loosen the round collar on the tonearm and detach the head shell.
- (2) Disconnect the lead wires carefully from the cartridge pins, holding the metal tip of each lead wire with a pair of pliers.
- (3) Remove the bolts fastening the cartridge to the head shell.
- (4) Set a new cartridge into the head shell. Do not fasten the cartridge tightly since its overhang is to be adjusted later on.
- (5) Connect the four lead wires correctly to the cartridge pins. They are colored for ease of identification.

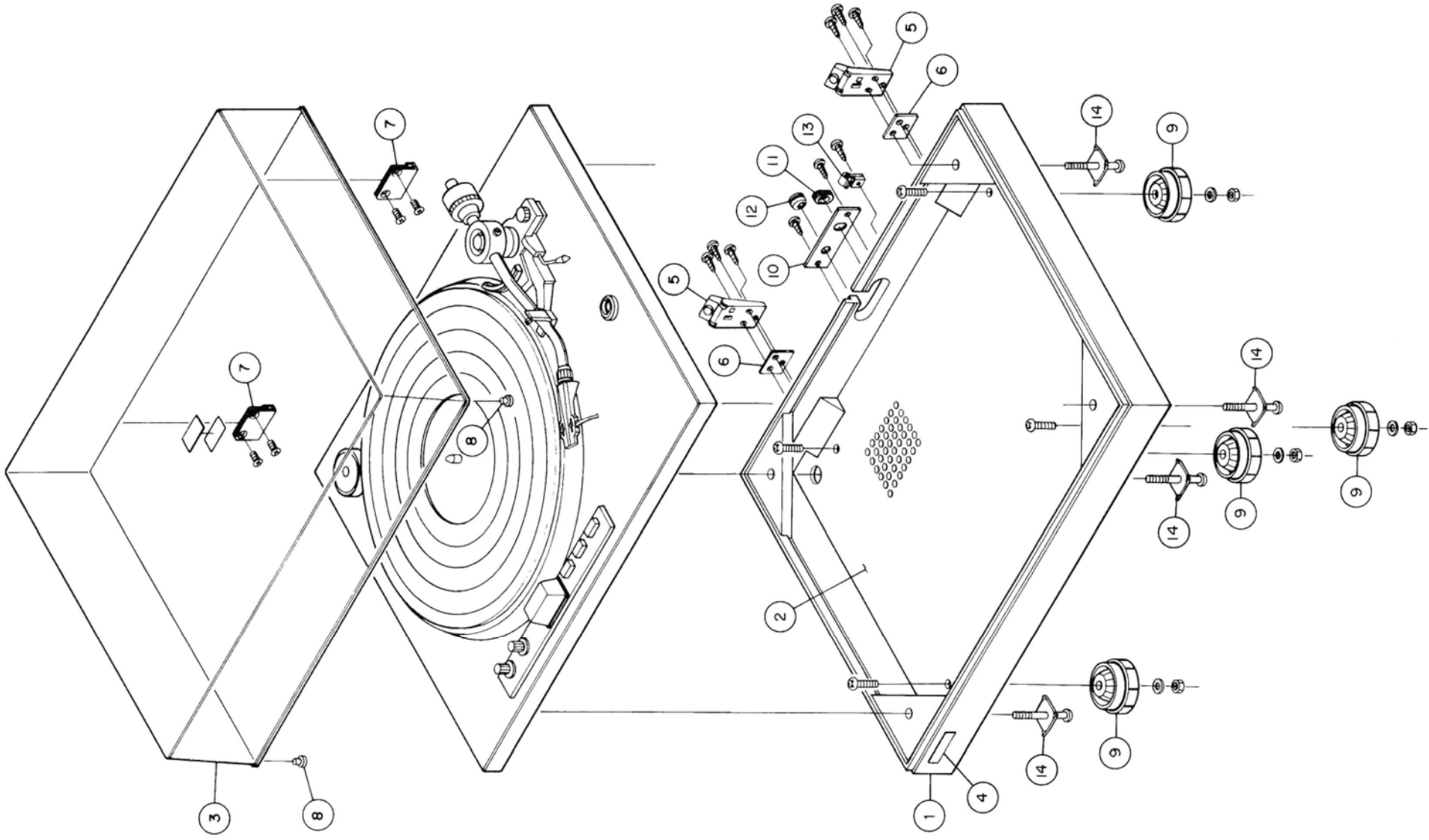
White lead wire	L (+) (Left channel (+))
Blue lead wire	L (-) (Left channel (-))
Red lead wire	R (+) (Right channel (+))
Green lead wire	R (-) (Right channel (-))
- (6) Adjust the cartridge for proper overhang. (cf. "Adjustment of overhang")

### Application of cartridge

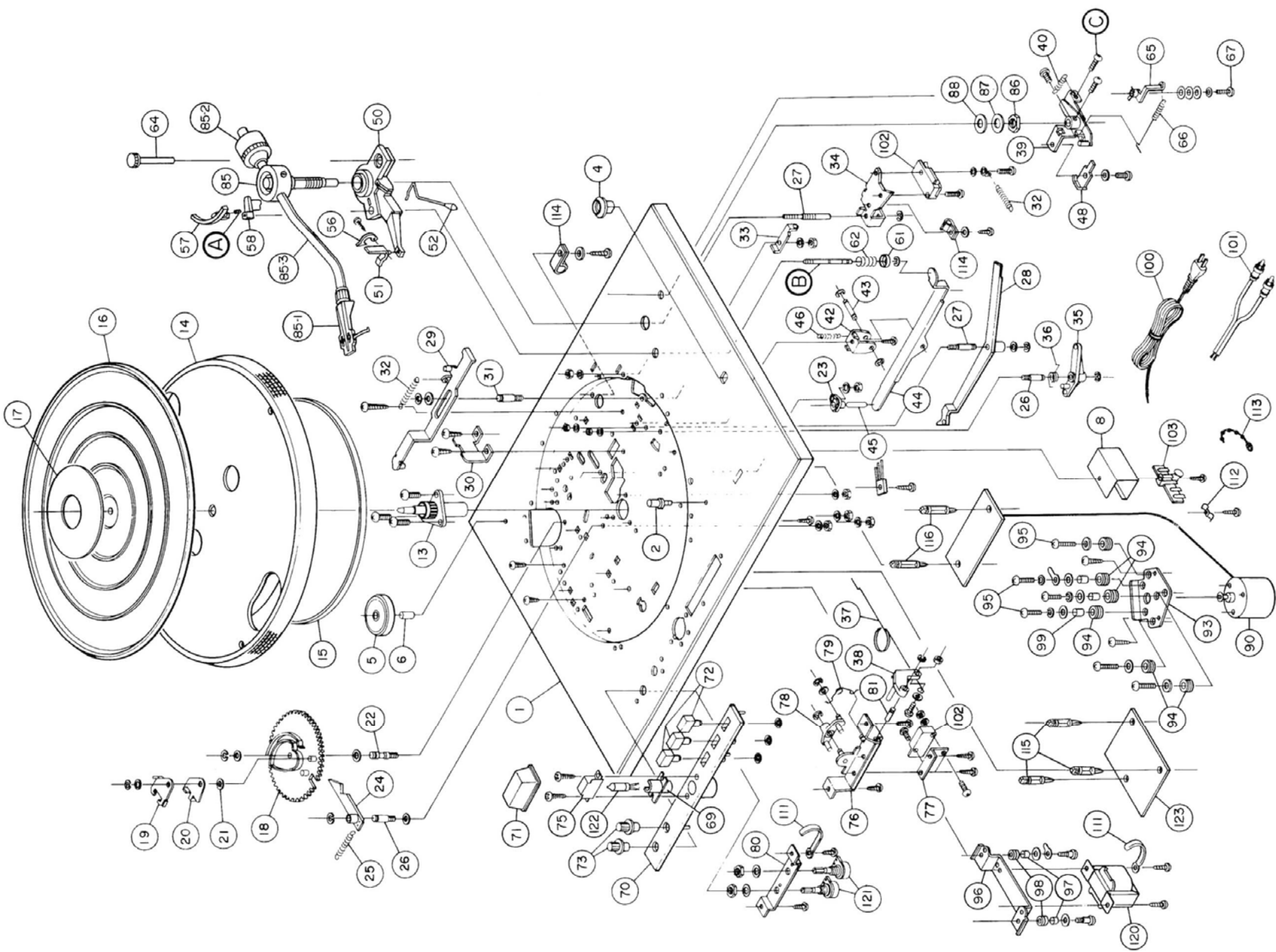
The tonearm of this automatic turntable has an adjustable counterweight which can offset the combined weight of the head shell and the cartridge within a range of 11 to 19 grams. Since the head shell alone weight 7 grams, the weight of the cartridge to be used must be 4 to 12 grams.




# EXPLODED VIEW OF CABINET



# EXPLODED VIEW OF TURNTABLE



# PARTS LIST

Ref.No.	Part No.	Description	Q'ty
<b>PACKING</b>			
	131 6 1139 60610	Box Corrugate-EXP	1
	131 6 3009 19520	Pad (Bottom T.T.)	1
	131 6 3009 19980	Pad (Top)	1
	131 6 3009 22070	Pad (Right, Left)	2
<b>ACCESSORIES</b>			
	131 6 4119 55101	Explanatory Booklet	1
	131 6 4159 23601	Notes	1
	131 6 4938 00100	Customer Card	1
	131 2 4201 11303	Screw  For using the cartridge	2
	134 2 4202 11301	Nut	2
	134 2 4203 01801	Washer	2
<b>CABINET</b>			
1	131 2 1101 34102	Cabinet	1
2	131 2 1105 18800	Plate Bottom	1
3	131 0 2022 90090	Lid Assy	1
4	131 2 1301 14400	Badge Sanyo	1
5	131 0 2002 14204	Hinge Assy	2
6	134 2 5205 11400	Cushion	2
7	131 2 2108 00900	Hinge	2
8	131 2 2904 12300	Pad Lid	2
9	131 0 1003 90010	Leg Assy	4
10	131 2 3101 39301	Metal Mount	1
11	131 2 6111 15800	Bushing Phono, Cord	1
12	131 2 6111 11300	Bushing AC, Cord	1
13	131 2 3608 11000	Cramp Wire	1
14	131 2 4202 12904	Nut 4x13 (Frang) (Cushion (Leg))	4
	101 3 1104 02003	Screw, Pan HD 4.0x20	4
	101 3 1204 01005	Screw, Flat HD 4.0x10 (Hinge)	4
	101 3 1504 01016	Screw, Truss HD 4.0x10 (Cushion (Leg))	4
	102 3 1103 01403	Screw, Pan HD Tapping 1 3.0x14 (Metal Mount)	2
	102 3 1103 01401	Screw, Pan HD Tapping 1 3.0x14 (Hinge Assy) (Plate Bottom)	16
	106 3 1102 71602	Screw, Round HD Wood + 2.7x16 (Cramp Wire)	1
	105 3 1204 00001	Washer, Spring 4.0x (Mount PL)	4
<b>TURNTABLE UNIT</b>			
1	134 0 6001 12902	Unit Plate Assy	1
2	131 2 1503 00101	Decorate Sign (Overhang point)	1
4	134 2 4118 16800	Boss	2
5	134 2 2901 10502	Adapter EP	1
6	134 2 2902 00302	Pin Adapter EP	1
8	131 2 6103 15000	Cover Shield	1
13	134 0 9902 11102	Assembly Plan	1
14	134 2 6101 11800	Turntable	1
15	134 2 6302 10800	Belt	1
16	134 2 6102 12701	Mat Turntable	1
17	134 2 6103 10000	Plate Decorate T.T.	1
18	134 2 4110 11200	Gear Cycling	1
19	134 2 4122 10800	Trip (A)	1
20	134 2 4122 11300	Trip (B)	1
21	134 2 4107 12600	Collar	1
22	134 2 4106 16700	Shaft	1
23	134 2 4118 14600	Boss	1
24	134 2 4120 14900	Lever	1
25	134 2 5101 27400	Spring	1
26	134 2 4106 16200	Shaft	2
27	134 2 4106 15500	Shaft	2
28	134 2 4123 12900	Arm	1
29	134 0 6035 11100	Arm Return Assy	1
30	134 2 4121 10602	Guide	1
31	134 2 4106 15700	Shaft	1
32	134 2 5101 26600	Spring	2
33	134 2 4108 18600	Plate	1
34	134 2 4108 19300	Plate	1
35	134 2 4120 16600	Lever	1
36	134 2 5101 26800	Spring	1

Ref.No.	Part No.	Description	Q'ty
<b>TURNTABLE UNIT</b>			
37	134 2 5101 26900	Spring	1
38	134 2 4120 16700	Lever	1
39	134 0 6022 11900	Plate PU Fix Assy	1
40	134 2 5101 20501	Spring	1
42	134 2 2403 16300	Angle Mount	1
43	134 2 4106 17200	Shaft	1
44	134 2 4123 15700	Arm	1
45	134 2 4106 21600	Shaft	1
46	134 2 5101 21200	Spring	1
48	134 2 4108 19500	Plate	1
50	134 2 3201 11000	Base Pick up	1
51	134 2 3301 12400	Arm Rest	1
52	134 0 6017 10800	Lifter Assy	1
56	134 2 3308 10501	Holder Pick up	1
57	134 0 6047 90010	Support Arm Assy	1
58	134 2 3310 11002	Support Arm	1
B	134 2 4116 12300	Spindle Lifting	1
61	134 2 4213 10800	Washer Bowl	1
62	134 2 5101 27300	Spring	1
A	134 2 4201 16102	Screw	1
64	134 2 1601 14400	Knob (Anti Skating Adjust Knob)	1
65	134 2 4123 15100	Arm	1
66	134 2 5101 27100	Spring	1
67	134 2 4201 16300	Screw	1
70	134 2 1404 10901	Housing	1
71	134 2 1101 10900	Case	1
72	134 2 1101 14001	Knob (33 rpm, 45 rpm, Reject Knob)	1
73	134 2 1601 14101	Knob (Speed Adjust Knob)	2
74	134 2 5101 26700	Spring	2
75	131 2 6110 26800	Shelter Light	1
76	134 0 5008 10800	Selector Speed Assy	1
77	134 2 4108 20000	Plate	1
78	134 2 4108 18800	Plate	1
79	134 2 5101 27200	Spring	1
80	134 2 4108 18900	Plate	1
81	134 2 4106 21800	Shaft	1
82	134 2 2106 10700	Holder	1
85	134 0 4001 05204	Tone Arm Assy	1
85-1	134 0 4002 10402	Arm Head Assy	1
85-2	134 0 4003 00202	Weight Assy	1
85-3	134 0 4004 00601	PU Arm Assy	1
86	134 2 4202 11501	Nut	1
87	134 2 4203 02301	Washer	1
88	134 2 5202 10900	Rubber Cushion	1

**NOTES:**

1. Part orders must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and/or resistors must be multiple of 10 pcs.



# PARTS LIST

Ref.No.	Part No.	Description	Q'ty
<b>TURNTABLE UNIT</b>			
90	134 0 5011 00310	Motor Assy	1
93	134 2 4108 20100	Plate	1
94	134 2 5202 11800	Rubber Cushion	3
95	131 2 4108 10300	Spindle Pulley	3
96	134 2 4108 19000	Plate	1
97	131 2 4209 10300	Sleeve	2
98	131 2 6111 15400	Bushing	2
99	134 2 4208 13800	Spacer	3
100	4 2439 20394	Power Cord	1
101	131 0 4004 14400	Wire Shield Assy	1
102	4 2319 21991	SW Micro (S201, 202)	2
103	4 2379 21500	Lug 1-4P	1
C201	C1HYDZ103A	Ceramic 0.01 $\mu$ F 50V +80,-20 %	1
111	131 2 3608 10200	Cramp Wire	4
112	131 2 3608 10300	Cramp Wire	1
113	131 2 3608 12401	Cramp Wire	1
114	131 2 3608 11000	Cramp Wire	1
115	131 2 3614 19400	Mount P.C. Bord (Power P.C.B.)	3
116	131 2 3614 19300	Mount P.C. Board (Motor P.C.B.)	2
120	4 2519 23921	Power Trans	1
121	4 2229 25710	VR B-500x1 VR201, 202	2
122	4 6129 20790	Neon Lamp	1
123	131 0 4001 79201	Power Supply P.C. Assy	1
	4 2349 21370	Fuse 0.16A	1
	4 2359 22930	Socket	2
	131 2 6108 11201	Cover Sever	2
C101	C2JNRM473C	Polypropylene 0.047 $\mu$ F 125V $\pm$ 20 %	1
C102	C1CRB-108A	Electrolytic 1000 $\mu$ F 16V	1
D101	DDD-S1RBA20	Diode Bridge SIRBA20	1
R101	R3AXBJ153A	Oxide Metal Film 15k 1W $\pm$ 5 %	1
	104 3 1203 00002	Nut Hex HD2 3.0mm	1
		⑬-3, ⑳-1, ㉔-1, ㉔-1, ㉔-1	
		⑬-1, ⑬-1, ⑬-1, ⑬-1, ⑬-1	
	131 2 4207 10000	Nut Lock (PSN-3)	5
		②-1, ⑩-4	
	131 2 4220 10502	CS Ring 3.0mm	2
		⑨-1, ⑨-1	
	131 2 4220 10503	CS Ring 6.0mm	3
		⑦-3	
	108 3 1102 00000	E ring 2.0mm	1
		⑥-1	
	108 3 1103 00007	E Ring 3.0mm	12
		⑤-2, ⑦-4, ⑧-1, ④-2	
		⑥-1, ⑦-2	
	108 3 1104 00006	E Ring 4.0mm	1
		②-1	
	102 3 1203 00602	Screw, Pan HD Tapping 3x6	23
		⑧-1, ⑤-2, ④-1, ④-1	
		⑤-2, ⑥-2, ⑦-2, ⑥-2	
		⑩-2	
	102 3 1202 60602	Screw, Pan HD Tapping 2.6x6	2
		⑩-2	
	102 3 1202 60601	Screw, Pan HD Tapping 2.6x6	1
		⑤-1	
	102 3 1203 00802	Screw, Pan HD Tapping 3x8	5
		⑥-1, ⑩-1 ⑤-3,	
	102 3 1203 01002	Screw, Pan HD Tapping 3x10	3
		③-1, ⑩-2	
	101 3 1103 01201	Screw, Pan HD 3x12	2
		⑩-2	
	101 3 1103 01602	Screw, Pan HD 3x16	2
		⑩-2	
	101 3 1102 60401	Screw, Pan HD 2.6x8	2
		Motor -2	

Ref.No.	Part No.	Description	Q'ty
<b>TURNTABLE UNIT</b>			
	101 3 1103 00802	Screw, Pan HD 3x8	2
		⑤-1, ⑦-1	
	101 3 1103 02501	Screw, Pan HD 3x25	1
		⑤-1	
	101 3 1104 00602	Screw, Pan HD 4x6	2
		⑤-2	
	134 2 2104 11600	Screw, Pan HD 4x10	2
		⑤-2	
	101 3 1104 05001	Screw, Pan HD 4x50	2
		①-2	
	131 2 4201 13502	Screw, Pan HD 3x8	3
		⑬-3	
	131 2 4201 13507	Screw, Pan HD 3x10	2
		⑩-2	
	102 3 1203 50601	Screw, Pan HD Tapping 3.5x6	3
		⑩-2	
	105 3 1202 60003	Spring Washer 2.6mm	3
		Motor -3	
	105 3 1203 00002	Spring Washer 3.0mm	11
		⑬-3, ⑳-1, ㉔-2, ㉔-2	
		⑬-1, ⑤-1, ⑩-1	
	131 2 4203 83200	Washer 3.2x8x0.5	9
		②-1, ③-1, ③-1, ⑩-1, ⑩-2	
		Motor -3	
	131 2 4203 83202	Washer 3.2x10x1	8
		②-1, ②-1, ③-1, ⑤-1	
		⑩-2, ⑩-1	
	131 2 4203 83201	Washer 3.2x10x0.5	1
		⑥-1	
	131 2 4203 84212	Washer 4.2x10x0.5	1
		③-1	
	131 2 4203 85200	Washer 5.2x10x0.3	1
		②-1	
	131 2 4203 82600	Washer 2.6x10x0.5	2
		Motor -2	
	131 2 4203 17100	Nylon Washer 0.5T	3
		②-1, ③-2	
	131 2 4203 84500	Washer 4.5x10x0.8	1
		⑩-1	

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