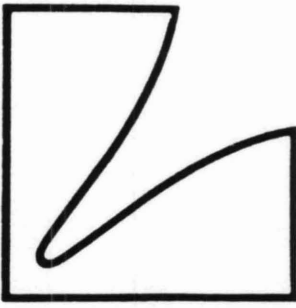
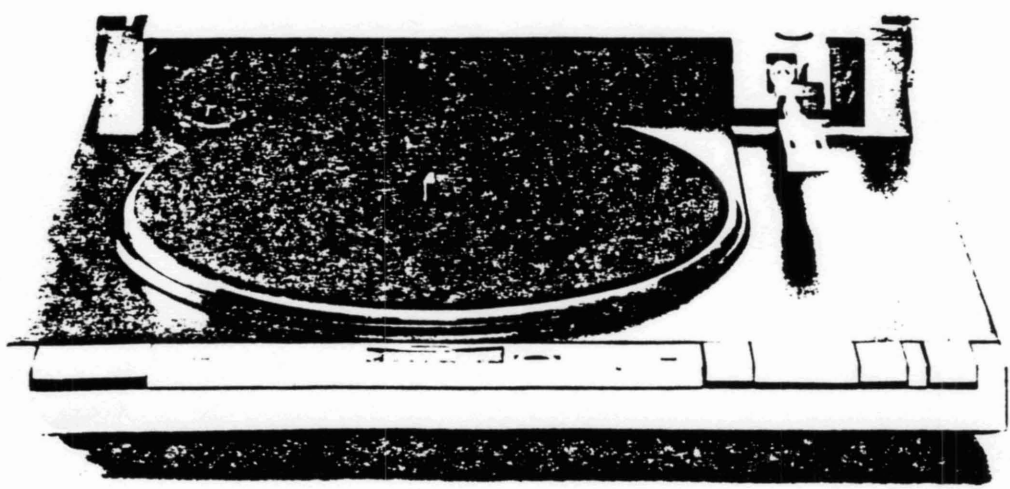


SERVICE MANUAL



PX-101

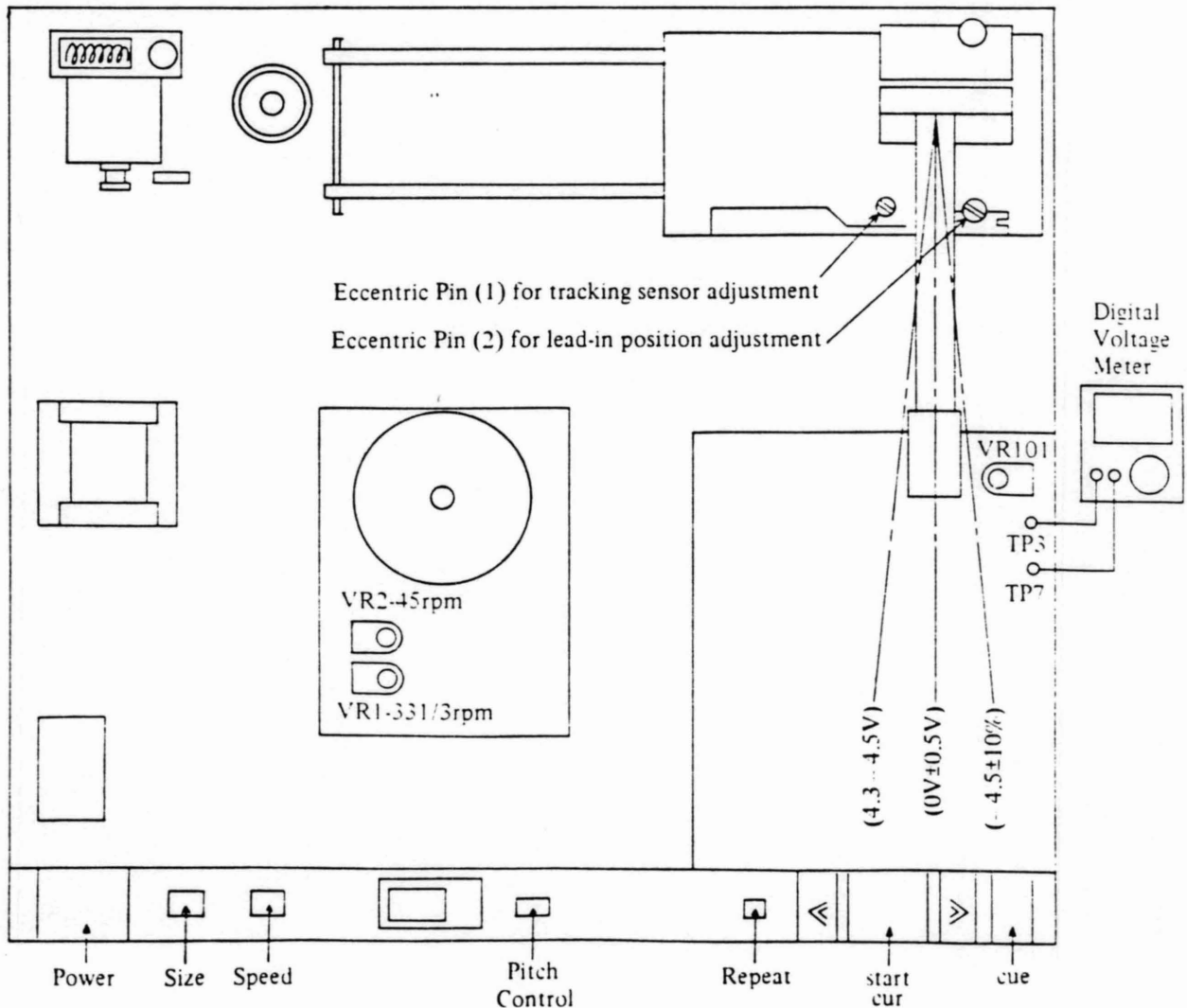
Fully Automatic Tangential Tracking Turntable



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Adjustment Locations



Adjustment Procedures

1. Adjustment of Tracking Sensor

- a. Set the digital voltage meter to DC 20V range.
Connect + pin to TP3, and - pin to TP7.
- b. Adjust the VR101 so that voltage becomes 4.3-4.5V when the tonearm is swung to left side end by hand.

(Voltage gradually increases + by rotating the VR101 to clockwise direction)

- c. Move the tonearm inward so that the main motor starts rotation.
Then lower the tonearm by cue switch.
Adjust the eccentric pin (1) left side, on the tonearm base so that voltage becomes $0V \pm 0.5V$.

(Voltage increases + by rotating the eccentric pin to clockwise direction)

- d. Lift the tonearm by cue switch.
Check that voltage deviation should be within 0.5V against voltage of above c. ($0V \pm 0.5V$).

2. Adjustment of lead-in position.

- a. The tonearm should perform lead-in motion and descend at 30cm position by pushing the start switch on with setting size selector to 30cm.
- b. For a dislocation of the descending position.
Adjust the eccentric shaft (2) on the tonearm base so that lead-in position enters within the following figures.

30cm. Lead-in count : 8-28 count (Test record NEC ES-1008)

 Descending position: 148mm-146mm (from main motor shaft)

17cm. Lead-in count : 16-33 count

 Descending position: 85.5mm-83.8mm

The same adjustment procedure as that for 30cm should be taken for 17cm.

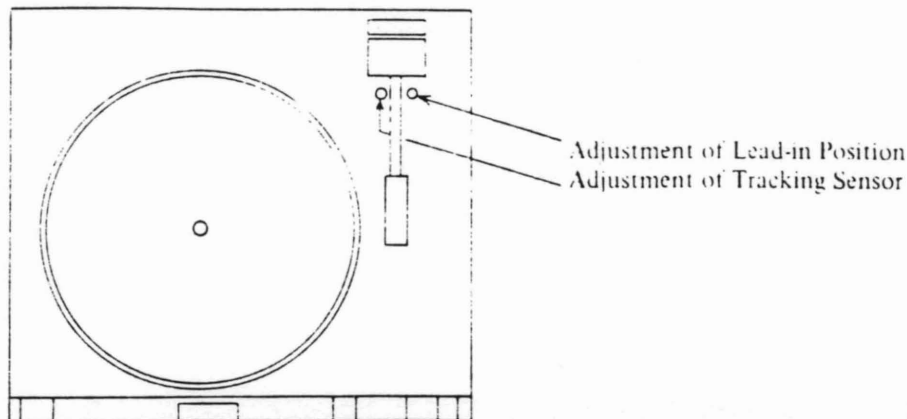
(Lead-in position moves gradually outward by rotating the eccentric pin (2) to clockwise direction)

3. Adjustment of speed of direct drive motor.

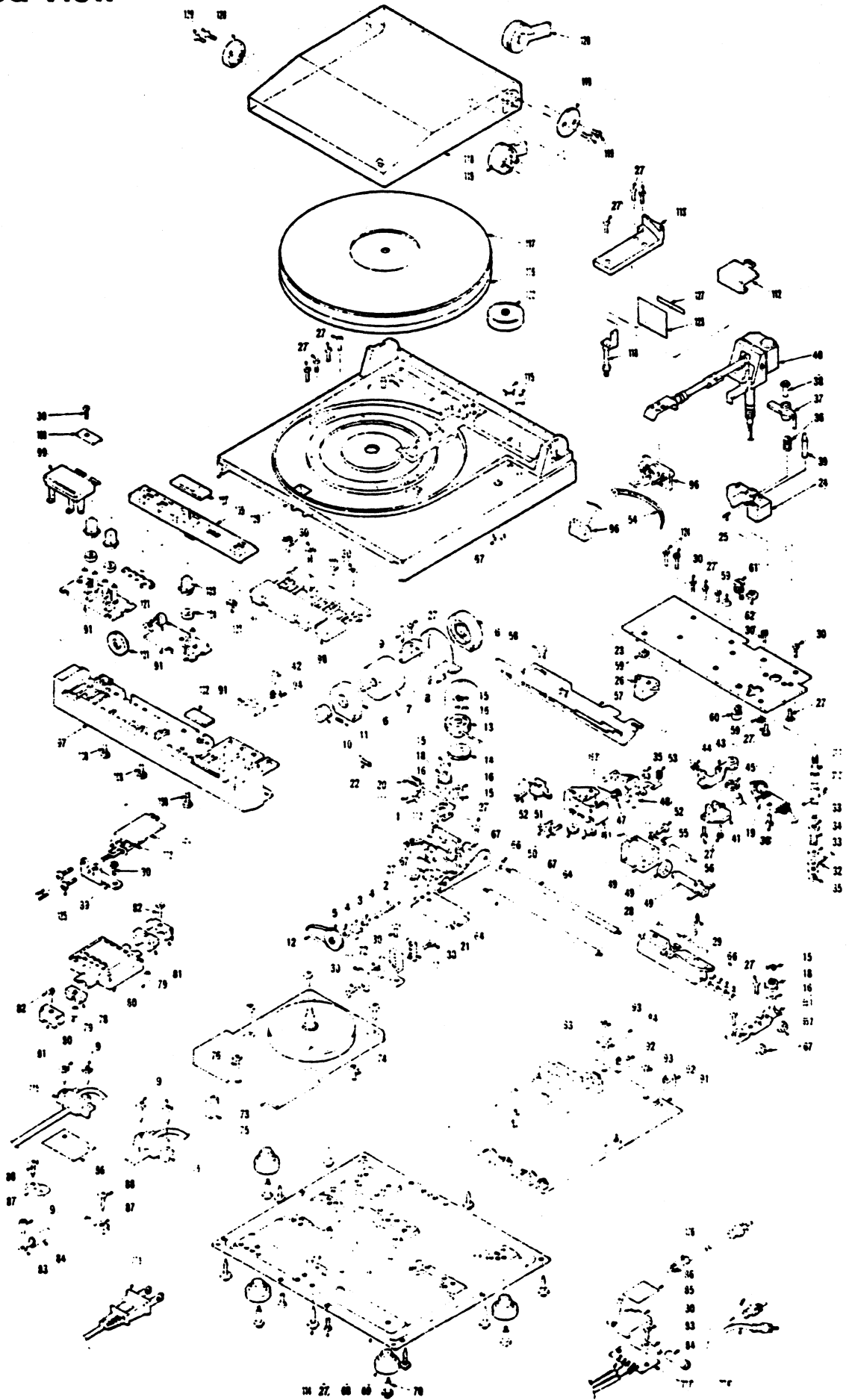
Set the speed to 45 rpm and adjust a semi-fixed resistor VR1 so that the appropriate set of bars for 45 rpm becomes stationary.

Then set the speed to $33\frac{1}{3}$ rpm and proceed the same adjustment as that for 45 rpm by adjusting a semi-fixed resistor VR2.

(Speed fast by rotating the semi-fixed resistors clockwise direction from the reverse side)



Exploded View



Exploded View Parts List

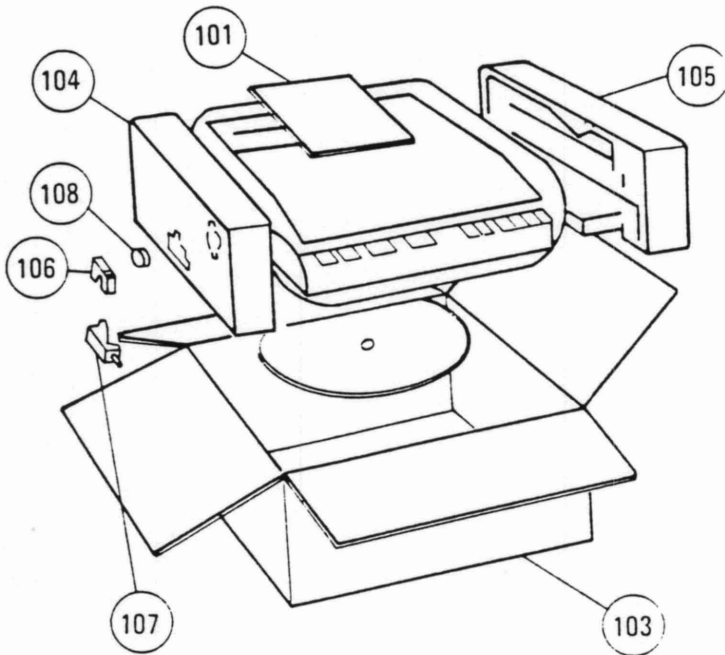
Remarks: Stock No...Important parts in stock

Symbol No.	Stock No.	Part No.	Description	Symbol No.	Stock No.	Part No.	Description
1		911619-1	Mecha. Angle Ass'y	51	SPQ0018	911667-1	Leaf Switch Ass'y
2	UOQ0017	911597	Worm Ass'y	52		Y01300501	Scr. FM +3x5
3	UZQ0023	897675	Bearing (1)	53	UUQ0012	911826	Spring
4	YWQ0001	YP2104005	Polyslider Wsr. 2.1x4x0.5	54		894408	Wire Fastener
5	BXQ0005	897677	Pulley (2)	55		888750	Lug
6	UZQ0024	873145-1	Motor Rubber	56		U01200353	UL Tube
7	AMQ0005	706443	Motor Ass'y DML-148U-51S1	57	URQ0005	911420	Slit Plate
8	URQ0004	911354	Motor Holder	58	YZQ0107	911827	Guide Pin
9		Y09300602	Scr. TPT +3x6	59		Y34000302	C Ring
10	BXQ0004	897813	Pulley (1)	60	YZQ0108	911997	Eccentric Pin
11		Y13200301	Scr. FT -2x3	61	YZQ0109	911828	Eccentric Pin
12	UZQ0025	911598	Belt	62	YZQ0110	Y34000501	E Ring E-5
13	BXQ0007	911328-1	Drum Pulley	64	UZQ0034	911603	Guide Bar
14	UOQ0018	911327	Worm Wheel	65	UZQ0035	911823	Guide Angle Ass'y (1)
15		Y34000301	E Ring E-3	65-1		911421	Guide Angle
16	YWQ0002	YP4610005	Polyslider Wsr. 4.6x1x0.5	65-2		911535	Pulley Shaft
17	UZQ0020	911600	Pulley Angle Ass'y (1)	66	YWQ0004	911646	Rubber Washer
17-1		911332	Pulley Angle	67		Y22000301	Flange Nut M3
17-2		911535	Pulley Shaft	68	UEQ0005	852833	Main Chassis Ass'y(1)
18	BXQ0006	911329	Pulley	69	WNQ0004	911520-1	Foot
19	PCQ0020	911606	T Sensor PCB	70	YZQ0111	911634	Special Screw
20	UUQ0009	911601	Spring	71	APQ0017	911658-1	Sensor PCB Ass'y
21	UNQ0011	911355	Rubber Plate	71-1	TCQ0025	911605	Sensor PCB
22	YZQ0103	Y21301601	Scr. FM Hexagon 3x16	71-2	TCQ0025	911605	Sensor PCB
23		873168-1	PU Chassis ..	72	UZQ0036	911346	Sensor Holder
24	WZQ0029	911418	PU Base	73	AMQ0006	632171	Motor Ass'y
25	YZQ0104	Y13300401	Scr. FT -3x4	74		Y01401002	Scr. FM +4x10
26	UZQ0027	911417	Guide	75	UZQ0037	912758	PC Support
27	YZQ0113	Y10300801	Scr. +3x8	76		Y10303501	Scr. BT +3x25
28	UTQ0001	911762	Guide Pipe Ass'y	77	PCQ0021	873525	PWH PCB Ass'y (U)
29	UZQ0028	911515-1	Wire Rope Ass'y	77-1	PCQ0022	873264	PWH PCB Ass'y (AK)
30		Y10300601	Scr. +3x6	77-2	PCQ0024	911593A	PWH PCB
31	UZQ0029	911820	EL Shaft Ass'y (1)	77-3	SPQ0019	910673-2	Power Switch (U)
31-1		911819	EL Shaft		SPQ0020	910673	Power Switch (AK)
31-2		Y42161601	Spring Pin 1.66			892435-1	Power Cord Ass'y
32		910075-2	Earth Lead Ass'y			895617-1	Power Cord Ass'y (AK)
33		912113	BS Washer	77-4	BKQ0006	871474	Shield Wire Ass'y
34	UUQ0013	910073	Spring	77-5	BUQ0001	912509	Cord Stopper (1) (U)
35		Y3400201	E Ring E-2		BUQ0003	911362	Cord Stopper (AK)
36	UUQ0014	287680	Cam Spring	77-6	BUQ0002	912594	Cord Stopper (2) (U)
37	WZQ0030	912381	EL Plate		BUQ0003	911362	Cord Stopper (2) (AK)
38	YZQ0105	911822	EL Nut	77-7	PCQ0023	911593B	PWH PCB
39	UZQ0030	911825	Lock Shaft	78	PTQ0019	873526-1	Trans. Ass'y(U)
40	WZQ0031	852818	PU Ass'y		PTQ0020	873593	Trans Ass'y (A)
41	APQ0016	911999	T Sensor Ass'y (1)	79	UZQ0038	911348	Trans Rubber
42	YZQ0106	Y10301801	Scr. BT3x18	80	UTQ0002	Y99000402	Pipe Spacer
43	UZQ0031	911351	T Sensor Holder	81	UZQ0039	911349	Trans Holder
44	UUQ0010	911609	Spring	82		Y10402002	Scr. CT +4x20
45	YWQ0003	Y93500020	CS Ring	83		890755	Lug
46	UZQ0032	911611	Solenoid Angle Ass'y	84		U10300602	UL Tube (Black)
46-1		911331	Solenoid Angle	85	UJQ0004	911554	Shield Cover
46-2		899992	Shaft	86		Z70300302	UL Tape
47	UUQ0011	911521	Twist Coil Spring	87		811466	Nylon Clip
48	UZQ0033	911333-1	EL Lever	88		Y09300801	Scr. TPT +3x8
49	AYQ0006	911612-1	Solenoid Ass'y	89		912874	Power Switch Bracket
50		Y01300404	Scr. TP +3x4				

Symbol No.	Stock No.	Part No.	Description
90			Scr. TP +3x6
91	PCQ0023	632213	Control Circuit Ass'y
92	UZQ0040	911344-2	PC Support
93		Y10302201	Scr. BT +3x22
94	UZQ0041	911344	PC Support
95		Y1030181	Scr. BT +3x18
96	ASQ0010	912991	Jack Plate Ass'y
97	WAQ0010	849186	Front Panel (1)
98	WHQ0001	912940	Operation Button Ass'y
99	WHQ0002	912985	Power Switch Ass'y
100	UZQ0042	911408	Power Button ANG
101	WJQ0010	910568-1	Volume Knob
102	UMQ0005	898529-4	Mirror
103	WJQ0011	912850	Button
104	UWQ0003	912900	Rubber
105	WAQ0011	852804	Front Panel (2)
106			Non Use
107	WEQ0016	912851	Strobo Window

Symbol No.	Stock No.	Part No.	Description
108		Y10301201	Scr. BT +3x12
109	WAQ0012	849206	Cabinet
110	WZQ0032	911380-1	Rest Stand
111		911530	Cabinet Shield (2)
112	WEQ0017	912846	Cabinet Cover (1)
113	WEQ0018	912847	Cabinet Cover (2)
114	YZQ0112		Scr. TP +3x16
115	UZQ0043	911639	Hole Cover
116	UZQ0046	620100-2	Turn Table
117	WZQ0033	873562	TT Sheet
118	WZQ0205	852796	Dust Cover Ass'y
119	UZQ0044	911622-7	Hinge Ass'y
120	UZQ0045	911622-8	Hinge Ass'y
121	WEQ0019	912848	LED Cover
122	WZQ0302-2	890876	EP Adapter
123	WSQ0002	912986	Rated Label
124		Y10300803	Scr. CT 3x8
125			Scr. TP +3x6
126	BKQ0005	913093	Pin Plug Cord

Packing Material Parts List

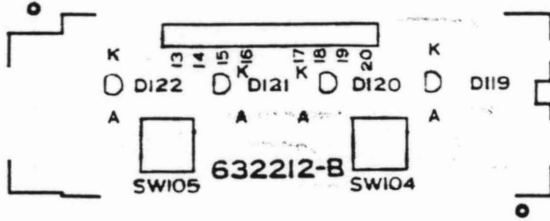


Symbol No.	Stock No.	Part No.	Description
101	ME0245	912988	Owner's Mnuai
102	WZ1169	912989	Cartridge Spacer
103	XAQ0014	852817	Carton
104	XBQ0013	852816	Pad L
105	XBQ0014	852816	Pad R
106	WZQ0034		Main Weight
107	WZQ0035		Head Shell
108	WZQ0302B	890876	EP Adapter

- U- UZ(UC) : 120V for USA
- U- UP(UQ) : 120V for Canada
- A- AK : 220V for Europe, South-East Asia(Changeable 120V, 220V, 240V)
- A- AG : 240V for England, Australia, South-East Asia(Changeable 120V, 220V, 240V)
- A- AZ : 120V for South-East Asia (Changeable 120V, 220V, 240V)

Control PCB (B) Parts List

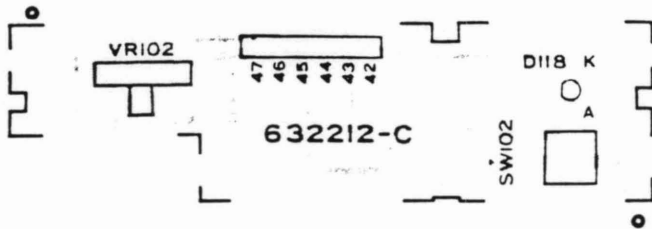
Control PCB (B)



Symbol No.	Stock No.	Part No.	Description
(Switch)			
SW104	SPQ0021	913004	Tact SW KEF10902 speed
SW105	SPQ0021	913004	Tact SW KEF10902 size
(LED)			
D119	TDQ0017	913015	LED SEL221 OR size 30(12")
D120	TDQ0017	913015	LED SEL221 OR size 17(7")
D121	TDQ0017	913015	LED SEL221 OR speed 33 1/3
D122	TDQ0017	913015	LED SEL221 OR speed 45

Control PCB (C) Parts List

Control PCB (C)



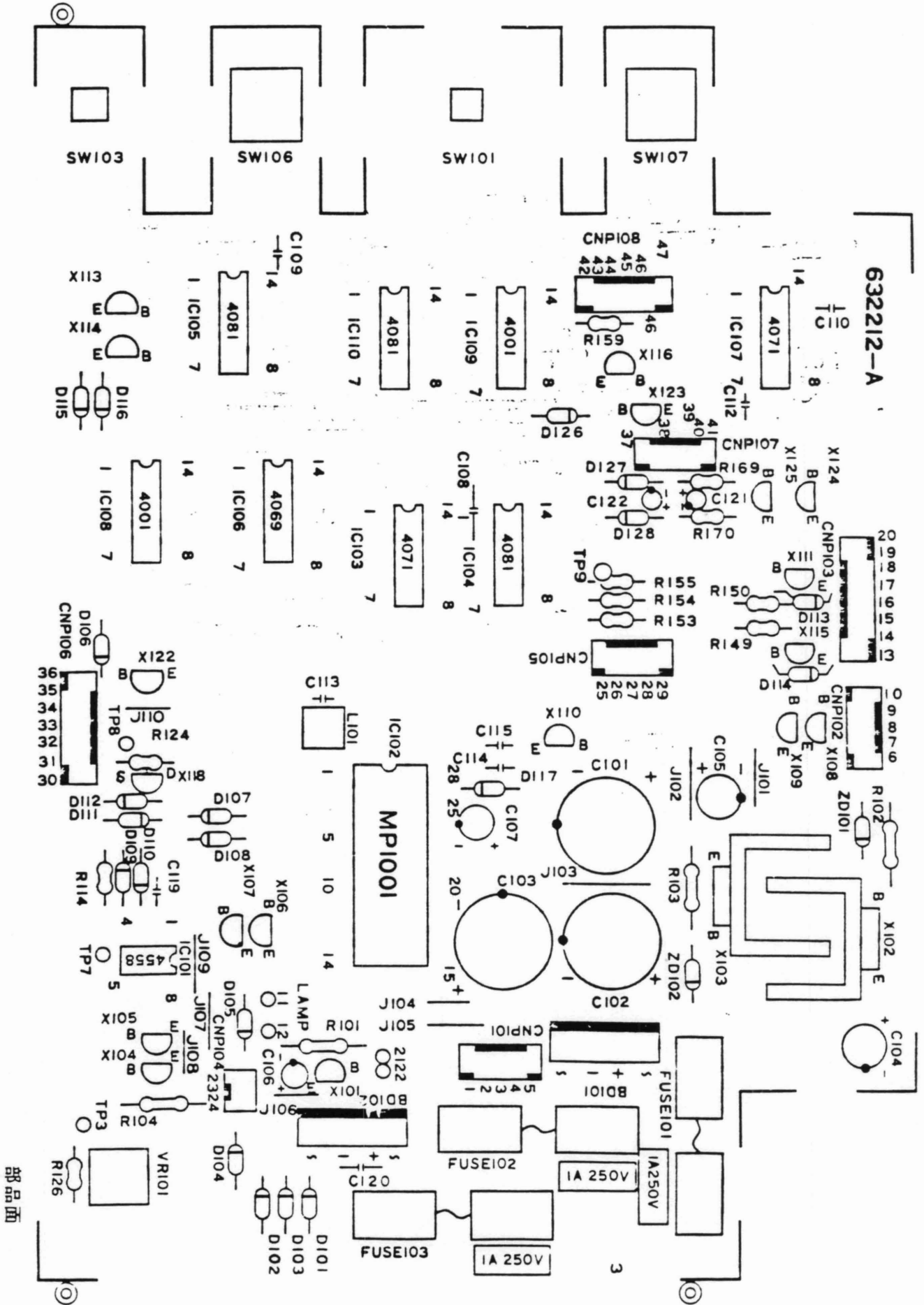
Symbol No.	Stock No.	Part No.	Description
(Switch)			
SW102	SP5034	911739	Tact SW KEC10901 repeat
(Variable Resistor)			
VR102	RVQ0005	910961-1	60KB Pitch Control
(LED)			
D118	TDQ0017	913015	LED SEL221 OR Repeat

Control PCB (D) Parts List

Control PCB (D)

Symbol No.	Stock No.	Description
(LED)		
D123	TD0232	EAA5534S Strobo
D124	TD0232	EAA5534S Strobo





632212-A

632212-A

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Control PCB (A) Parts List

Remarks: Stock No...Important Parts in stock

Symbol No.	Stock No.	Part No.	Description
(Switch)			
SW101	SP5034	911739	Tact SW KEC10901 start/cut
SW103	SP5034	911739	Tact SW KEC10901 cue
SW106	SPQ0022	911740	2 Action Tact SW return
SW107	SPQ0022	911740	2 Action Tact SW forward
(Variable Resistor)			
VR101	RTQ0013	Z4060015	10KB 1/4W VZ083L1

Symbol No.	Stock No.	Part No.	Description
(Fuse Holder)			
	AH0028	893395	5 (S)
	AH0029	893395-1	6 (U)
(Fuse)			
Fuse101	BF0205	893791-1	T400mA (S)
	BF0075	704395-2	1A 250V 6 ϕ (U)
Fuse102	BF0206	892171	T500mA 250V (S)
	BF0075	704395-2	1A 250V 6 ϕ (U)
Fuse103	BF0206	892171	T500mA 250V (S)
	BF0075	704395-2	1A 250V 6 ϕ (U)
(Coil)			
L101	LAQ0028	706295	400 kHz

Symbol No.	Stock No.	Description
(IC)		
IC101	TC5002 TC5006	NJM4558D or uPC4558C or RC4558P or uPC4557C or NJM4559D
IC102	TCQ0040	MP1001
IC103	TCQ0041	uPD4071C or uPD4071BC or MSM4071RS
IC104	TCQ0042	uPD4081C or uPD4081BC or MSM4081RS
IC105	TCQ0042	uPD4081C or uPD4081BC or MSM4081RS
IC106	TCQ0043	uPD4069UBC or MSM4069RS
IC107	TCQ0044	uPD4011BC or MSM4011RS
IC108	TCQ0045	uPD4001BC or MSM4001RS
IC109	TCQ0045	uPD4001BC or MSM4001RS
IC110	TCQ0042	uPD4081C or uPD4081BC or MSM4081RS
(Transistor & FET)		
X101	TRQ4004 TR0029	2SC923E,F or 2SC8280 or 2SC945P,Q,R or 2SC2785F,E,I,K
	TR0362 TR04017	or 2SC1815Y,GR or 2SC2308B,C
X102	TR05016	2SD9820,P,E

Symbol No.	Stock No.	Description
X103	TR0256	or 2SD612E,F 2SB772Q,P,E, or 2SB632E,F
X104	TR05016	2SD882Q,P,E
	TR0194	or 2SD667C,D
X105	TR0256	2SB772Q,P,E
	TR0195	or 2SB647C,D
X106	TR0194	2SD667D
-X107	TR0136	or 2SD571L,K
X108		2SC923E,F
-X116	TRQ4004 TR0029	or 2SC828Q or 2SC945P,Q,K or 2SC2785F,E,I,K
	TR362	or 2SC1815Y,GR
	TRQ4017	or 2SC2308B,C
X117	Non Use	
X118		2SK68L,K
	TF0016	or 2SK68A L,K
	TF0009	or 2SK106A,B
X119	Non Use	
X120	Non Use	
X121	Non Use	
X122		2SC923E,F
-X123	TRQ4004 TR0029	or 2SC828Q or 2SC945P,Q,K or 2SC2785F,E,I,K
	TR0362	or 2SC1815Y,GR
	TR04017	or 2SC2308B,C
X124	TR0043	2SA733K,P,Q
-X125		or 2SA1175H,F,E
	TR0087	2SA1015Y,GR
(Diode)		
D101	TD5012	1SS53 or 1S953 or 1S1788

Remarks: Resistor: Rd...Carbon, Rm...Metal Film,
Capacitor: El...Electrolytic, Ce...Ceramic,

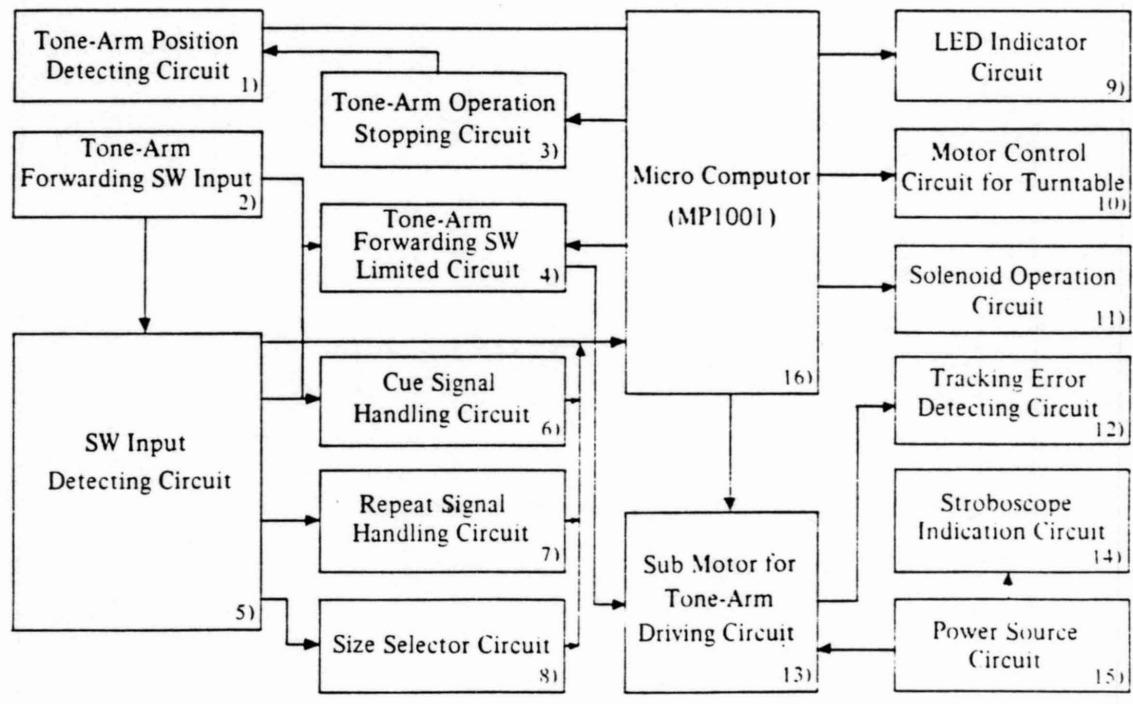
Symbol No.	Stock No.	Description
D102	TD5012	1SS53 or 1S953 or 1S1588
D103		1SS53 or 1S953 or 1S1588
D104	TD5012	1SS53 or 1S953 or 1S1588
D105	TDQ0521	1S1887 or F14C or EM-1
D106	TDQ0521	1S1887 or F14C or EM-1
D107	TD5012	1SS53 or 1S953 or 1S1588
D108	TD5012	1SS53 or 1S953 or 1S1588
D109	TD5012	1SS53 or 1S953 or 1S1588
D110	TD5012	1SS53 or 1S953 or 1S1588
D111	TD5012	1SS53 or 1S953 or 1S1588
D112	TD5012	1SS53 or 1S953 or 1S1588
D113	TD5012	1SS53 or 1S953 or 1S1588
D114	TD5012	1SS53 or 1S953 or 1S1588
D115	TD5012	1SS53 or 1S953 or 1S1588
D116	TD5012	1SS53 or 1S953 or 1S1588
D117	TD5012	1SS53 or 1S953 or 1S1588
(Diode)		
BD101	TDQ0520	RB-151
BD102	TDQ0520	RB-150

Symbol No.	Stock No.	Description
(Capacitor)		
C101	CE0460	1000uF 35V E1
C102	CE0836	1000uF 25V E1
C103	CE0836	1000uF 25V E1
C104	CE0443	100uF 16V E1
C105	CE0443	100uF 16V E1
C106	CE0129	10uF 25V E1
C107	CE0346	3.3uF 50V E1
C108	CK0140	0.047uF 50V Ce
C109	CK0109	470pF 50V Ce
C110	CK0138	0.01uF 50V Ce
C112	CK0138	0.01uF 50V Ce
C113	CK0138	0.01uF 50V Ce
C114	CK0138	0.01uF 50V Ce
C115	CK0138	0.01uF 50V Ce
C119	CK0138	0.01uF 50V Ce
C120	CK0142	0.1uF 50V Ce
C121	CE0786	1uF 50V E1
C122	CE0786	1uF 50V E1
C123	CE0817	10uF 16V E1
C124	CE0817	10uF 16V E1
C125		1uF 50V E1
(Resistor)		
R101	RD2578	330 1/2W Rd
R102	RD2578	680 1/2W Rd
R103	RD2578	680 1/2W Rd
R104	RS00002	27 1W Rm
R114	RB0450	1.8M 1/4W Rd
R124	RB0450	1.8M 1/4W Rd
R126	RD2049	390 1/4W Rd
R149	RD0052	220 1/4W Rd
R150	RD0052	220 1/4W Rd
R153	RD0450	1.8M 1/4W Rd
R154	RD0450	1.8M 1/4W Rd
R155	RD0450	1.8M 1/4W Rd
R159	RD0052	220 1/4W Rd
R160	RD0043	1K 1/4W Rd
R161	RD0043	1K 1/4W Rd
R162	RD0030	10K 1/4W Rd
R163	RD0030	10K 1/4W Rd
R164	RD0030	10K 1/4W Rd
R165	RD0030	10K 1/4W Rd
R166	RD0030	10K 1/4W Rd
R167	RD0030	10K 1/4W Rd
R168	RD0030	10K 1/4W Rd
(Zener Diode)		
ZD101	TD5011	RD5.6EB2
ZD102	TD5011	RD5.6EB2
(Lamp Pilot)		
PL-01	AL00002	Lamp Pilot

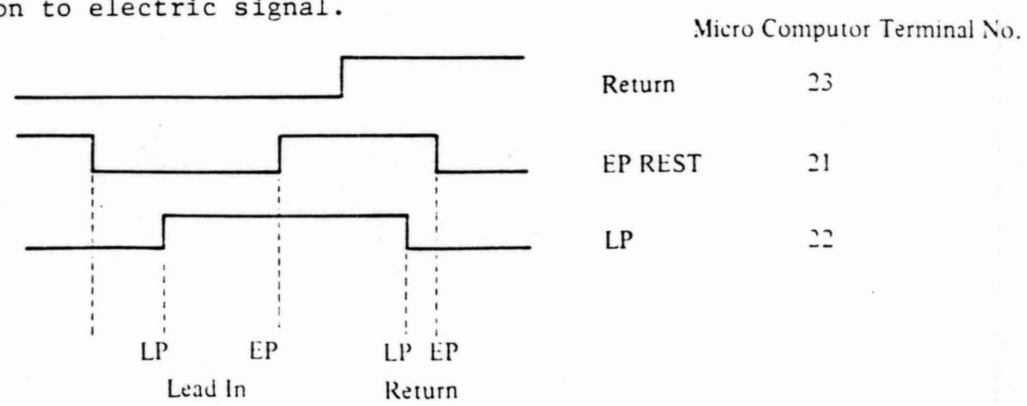
Control Circuit Operation

1. Operation
 This circuit is to control this turntable with judgement and order through the micro computer incorporated upon receipt of SW input and tone-arm positioning signal.

2. Block Diagram



1) Tone-arm Position Detecting Circuit is consisting of LED and a photo transistor and to convert tone-arm position to electric signal.



2) Tone-arm Forwarding SW Input
 Detects inside & outside forwarding and first forwarding signal by input through the 2-step SW.

3) Tone-arm Operation Stopping Circuit

In case that the Tone-arm Forwarding Sw is input while in automatic operation, this circuit makes tone-arm positioning signal rested compulsorily and automatic operation stopped.

- * No. 11 pin of IC103 is H (+5V) when tone-arm forwarding signal is sent from the micro computer, except for which it is L (-5V).
- * No. 3 pin of IC103 is H (+5V) when tone-arm forwarding signal is sent from the forwarding Sw, except for which it is L (-5V).
- * When No. 3 pin of IC104 becomes H, tone-arm positioning signal to the micro computer comes to be REST (21-H, 22-L, 23-L) for a few micro seconds.

4) Tone-arm Forwarding Sw Limited Circuit

makes no forwarding signal to be sent until the tone-arm goes up.

- * No. 4 pin of IC105 is H (+5V) while the tone-arm is up and L (-5V) while in play.

5) Sw Input Detecting Circuit

Outputs H (+5V) in compliance with Sw input. But in case that the forwarding Sw is used, this forbides input of Play/Cut, Cue and Repeat.

6) Cue Signal Handling Circuit

Makes the tone-arm up in compliance with tone-arm forwarding Sw input during play.

- * No. 11 pin of IC108 is L (-5V) while the Forwarding Sw is being used. So, no other Sw input is possible when the Forwarding Sw is used.
- * No. 4 pin of IC104 outputs H (+5V) upon forwarding Sw input during play.

7) Repeat Signal Handling Circuit

Makes impossible to accept repeat input during Cut operation.

- * No. 10 pin of IC108 is H (+5V) when the tone-arm is kept up and not operated (viz. at the arm-rest), except for which it is L (-5V).
- * No. 18 pin of the micro computer (MP1001) is H (+5V) during Play operation, and is L (-5V) during Cut operation
- * No. 3 pin of IC108 is H (+5V) only in Cut operation, and is L (-5V) in Repeat operation.

8) Size Selector Circuit

Functions to select disc size according to Sw input and forbides input of disc size change during play.

- * IC107 composes T-shape flip-flop and turns over output (No. 3 & 4 pins) whenever input (No. 2 & 6 pins) becomes H (+5V).
- * When No. 6 pin of the micro computer is H (+5V), it is judged to be LP (30cm), and EP (17cm) in case of L (-5V).
- * No. 10 pin of IC105 follows Size Sw input only when the tone-arm is kept up, but in down position it is L (-5V).
- * Pulse input is given to No. 9 & 12 pins of IC107 whenever No. 10 pin of IC105 becomes H (+5V).
- * The initial value of flip-flop is set up by R131.

9) LED Indicator Circuit

Changes LED indication depending on output of the micro computer (MP1001).

1. ON/OFF Indication

- * When No. 17 pin of the micro computer (MP1001) is H (+5V), X116 becomes ON and LED (D118) lights up.

2. Change Indication

- * When No. 20 pin of the micro computer (MP1001) is H (+5V), X112 becomes ON and D119 lights up.
- * When No. 20 pin of the micro computer (MP1001) is L (open), X111 becomes OFF and D119 is turned off. In this case D113 becomes ON and D120 lights up.
- * No. 20 pin of MP1001 is 45rpm at H (+5V) while 33rpm at L (open).
- * Size indicator circuit operates same.

10) Motor Control Circuit for Turntable

In accordance with the output of MP1001 this circuit gives instruction for ON/OFF and rotation speed.

1. ON/OFF Control

- * The motor for turntable stops its rotation by grounding of No. 6 terminal.
- * MP1001 outputs H (+5V) to No. 16 pin when the motor is ON. (Open when the motor is OFF.)
- * When No. 16 pin of MP1001 becomes H (+5V), X109 and X108 come to be ON and OFF respectively. At this time No. 6 terminal of the motor becomes OPEN and the motor rotates.
- * When No. 16 pin of MP1001 becomes OPEN, X109 comes to be OFF and X108 to be OFF by R145. Therefore, terminal No. 6 is grounded and the motor stops its rotation.

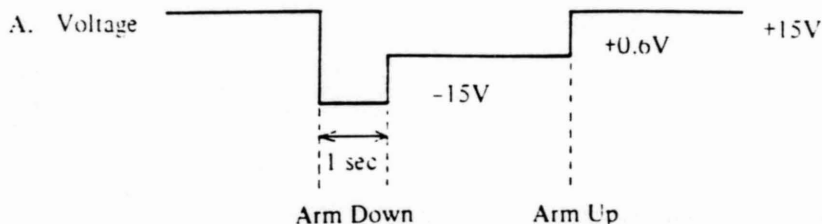
2. Rotation Speed Control

- * The motor for turntable rotates at 45rpm with grounding of Terminal No. 5.
- * MP1001 outputs H (+5V) to No. 20 pin at 45rpm, while open at 33rpm.
- * When No. 20 pin of MP1001 is at H (+5V), X110 comes to be ON and terminal No. 5 of the motor is grounded so that rotation of the motor will be 45rpm.

11) Solenoid Operation Circuit

The circuit which makes the solenoid ON/OFF according to order from MP1001 and the tone-arm UP/DOWN.

- * No. 10 pin of MP1001 is H (+5V) when the tone-arm is down and open at up position. No. 11 pin outputs H (+5V) for the first 1 sec. when the tone-arm is down.
- * When No. 10 pin of MP1001 comes to be H (+5V), X107 becomes ON and 15V is added to the solenoid.
- * The tone-arm goes down when the solenoid is ON.



12) Tracking Error Detecting Circuit

detects right and left tilting of the tone-arm (tracking error) by a photo-sensor and converts it into voltage. But this prevent output when the tone-arm is kept UP.

- * When the tone-arm tilts inside, the sensor receives light and voltage at A point becomes low (-).
- * VR101 is for sensitivity adjustment of the photo sensor and when the tone-arm tilts maximum toward inside, it should be adjusted to make voltage at A point almost saturated.
- * X118 works as analog Sw and when X122 is ON, gate voltage will be negative and no signal is transferred.
- * X122 will be ON when No. 10 pin of MP1001 becomes L (-5V) or No. 11 pin does H (+5V) or Up Sw 2 (Sw by elevation plate) comes to be ON.
- * D111 and 112 are for weakening sensitivity of the tracking sensor at around center position.
- * IC104 constitutes a turn-over amplifier and its gain is one time.
- * D109 and 110 give bias by 0.6V to output of Op. Amp. (IC101).
- * It is possible that output is leaked when sensor output varies greatly toward negative even if X122 becomes ON, but it is not abnormal.
- * Output at tone-arm Up position is $0V+0.6V$.

13) Sub-motor for Tone-arm Driving Circuit

The circuit which drives the sub-motor for transportation of the tone-arm upon reception of output from, MP1001, Transportation Sw and tracking error detecting circuit.

- * Electric potential of TP.4 makes the tone-arm forward and return. Namely, high electric potential is for forwarding and low for returning.
- * Quick transportation signal for the tone-arm is H (+5V) only in case of quick transportation operation by the forward or return buttons, except for which it is open.
- * No. 1 pin of IC101 (1) is $0V+0.6V$ except for play mode.
- * When No. 13 pin of MP1001 becomes H (+5V) viz. (forward), TP.5 will be 4.4V and IC101 (2) works as a turn-over amplifier and voltage from -10V to -11V shall be built-up to the sub-motor.
- * When No. 4 pin of IC105 becomes H (+5V), TP.5 will be about 1.4V. In this case IC101 (2) works as a gurn-over amplifier and voltage to be built-up to the sub-motor will be about -4V.
- * When No. 3 pin of IC105 becomes H (+5V), TP.4 will be about 1.4V. In this case IC101 (2) works as a gurn-over amplifier and voltage to be built-up to the sub-motor will be about 4V.
- * When quick transportation signal (+5V) is created, the transistor (X113 or X114) feeding transportation signal will be ON and TP.4 or TP.5 will be 4.4V same as output of MP1001.
- * When No. 3 & 11 pins of IC105 simultaneously become H (+5), Electric potential of TP.4 & TP.5 will be same and output to the sub-motor will be 0V with or without quick transportation signal.
- * It is also same when No. 12 & 13 pins of MP1001 simultaneously become H (+5V).
- * R104 is a protection resistor for X104 & X105.
- * When output of IC101 (1) becomes low, TP4 also becomes low and negative voltage is built-up to the sub-motor and the tone-arm gets forwarded. While output of IC101 (1) becomes high, TP4 also becomes high and positive voltage is built-up to the sub-motor and the tone-arm gets returned.

14) Stroboscope Indication Circuit

This makes the stroboscope LED's flicker in accordance with mains frequency.

* Voltage wave form at point A becomes as follows:

* X101 will be ON and makes LED's (D123 & 124) flicker when voltage divided by R106 and R105 becomes higher than 1.2V.

* D101 & C107 are the power source for the stroboscope LED's.

15) Power Source Circuit

This diverts AC mains from the transformer to DC mains +15V and +5V (stabilized).

16) Micro Computer (MP1001)

1. Pin Position

* All output terminals are open-drain.

2. Function of Each Pin

(1) Clock

Input signal of the clock from the micro computer and oscillation frequency is about 400KHz.

(2) Play/Cut Sw Input

(3) Cue Sw Input

Up or Down operation of the tone-arm is switched over upon every input, H (+5V). But no input is accepted either at the rest position or during transportation.

(4) Repeat Sw Input

Repeat ON/OFF is switched over upon every input, H (+5V).

(5) Speed Sw Input

Rotation speed of the turntable is switched over upon every input, H (+5V). Input is always acceptable.

(6) Size Selector Sw Input

It is judged as LP with input H (+5V) and as EP with input L (-5V). But input is acceptable only when the tone-arm leaves the arm-rest upon play input or goes down.

(7) Unused and fixed at H (+5V).

(8) Unused and fixed at H (+5V).

(9) Unused and fixed at H (+5V).

(10) Solenoid Output (1)

H (+5V) is output when the tone-arm goes down. But it is open when the tone-arm goes up.

(11) Solenoid Output (2)

H (+5V) is output for first 1 sec. when the tone-arm is made down, except for which it is always open.

(12) Tone-arm Return Output

H (+5V) is output when the tone-arm is returned at auto mode. Also H (+5V) is output as a brake when the forward transportation is stopped or the tone-arm goes down.

(13) Tone-arm Forward Output

H (+5V) is output at auto mode when the tone-arm is forwarded. Also H (+5V) is output as a brake when the return transportation is stopped or the tone-arm goes down.

(14) Power Source (+)

+5V is used as 10V power source.

(15) Unused and fixed at H (+5V).

(16) Turntable ON/OFF Output

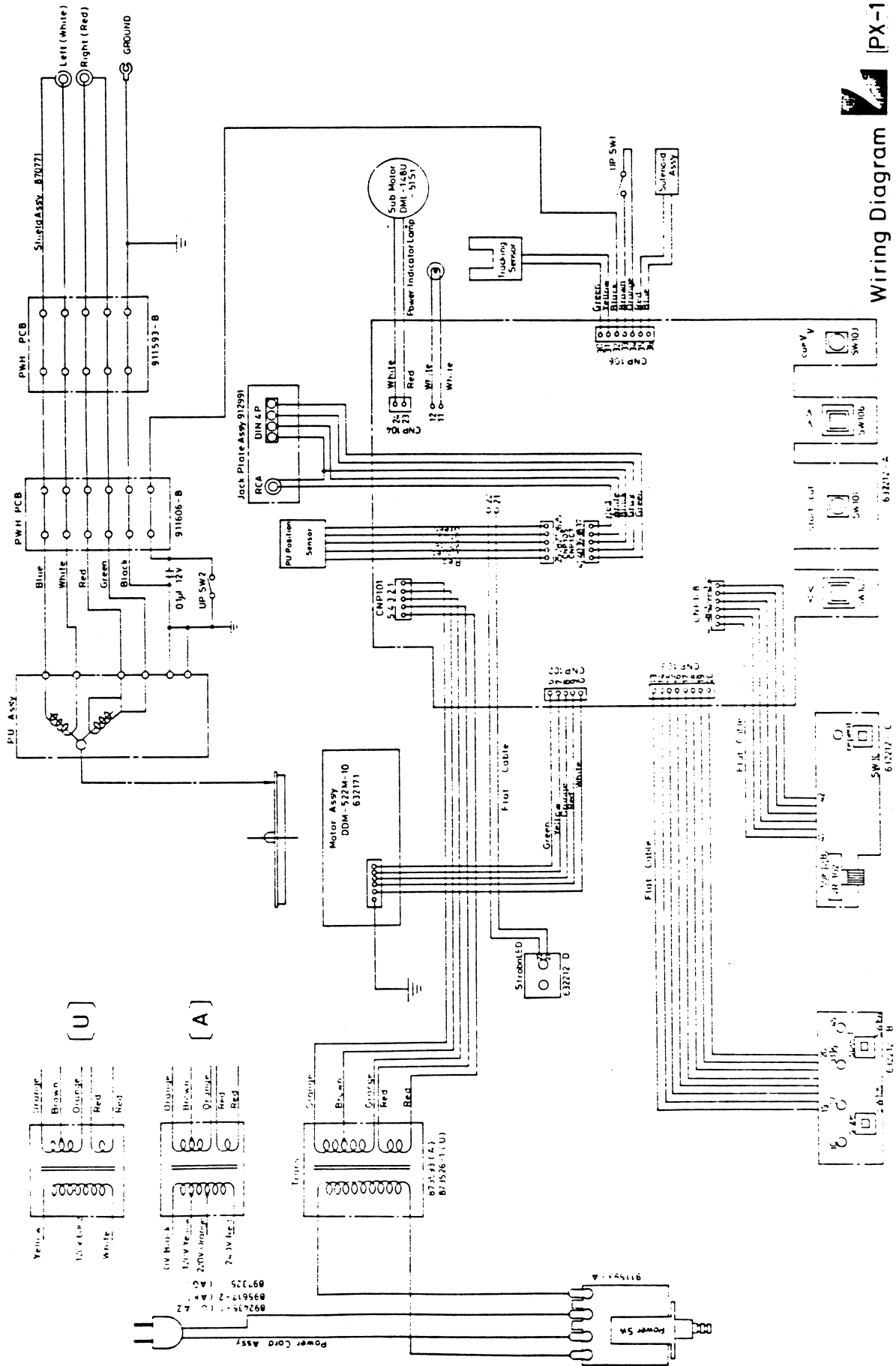
H (+5V) is output when Play input is made or the tone-arm is not at the arm-rest.

- (17) Repeat Signal
H (+5V) is output when Repeat Sw is ON, and it will be open when Repeat Sw is OFF.
- (18) Play Signal Output
H (+5V) is output when the tone-arm leaves the arm-rest. But it is open at out mode.
- (19) Unused and to be made open.
- (20) Turntable Rotation Speed Output
Output is open or H (+5V) respectively at 33rpm or 45 rpm
Initial value is 33rpm (open).
- (21) Tone-arm Positioning Signal is judged as per 2 - 1.
- (22) Tone-arm Positioning Signal is judged as per 2 - 1.
- (23) Tone-arm Positioning Signal is judged as per 2 - 1.
- (24) Up Signal Input
It is judged with input, H (+5V) that the tone-arm is completed to be up.
- (25) Unused and fixed at L.
- (26) Reset Signal Input
Output is brought back to the initial stage upon input, H (+5V).
Initial stage means that the tone-arm is kept up at the arm-rest and that the turntable rotation speed is 33rpm.
- (27) Power Source (-)
+5V is used 10V power source.
- (28) Clock
This is clock input signal of the micro computer and its oscillating frequency is about 400KHz.

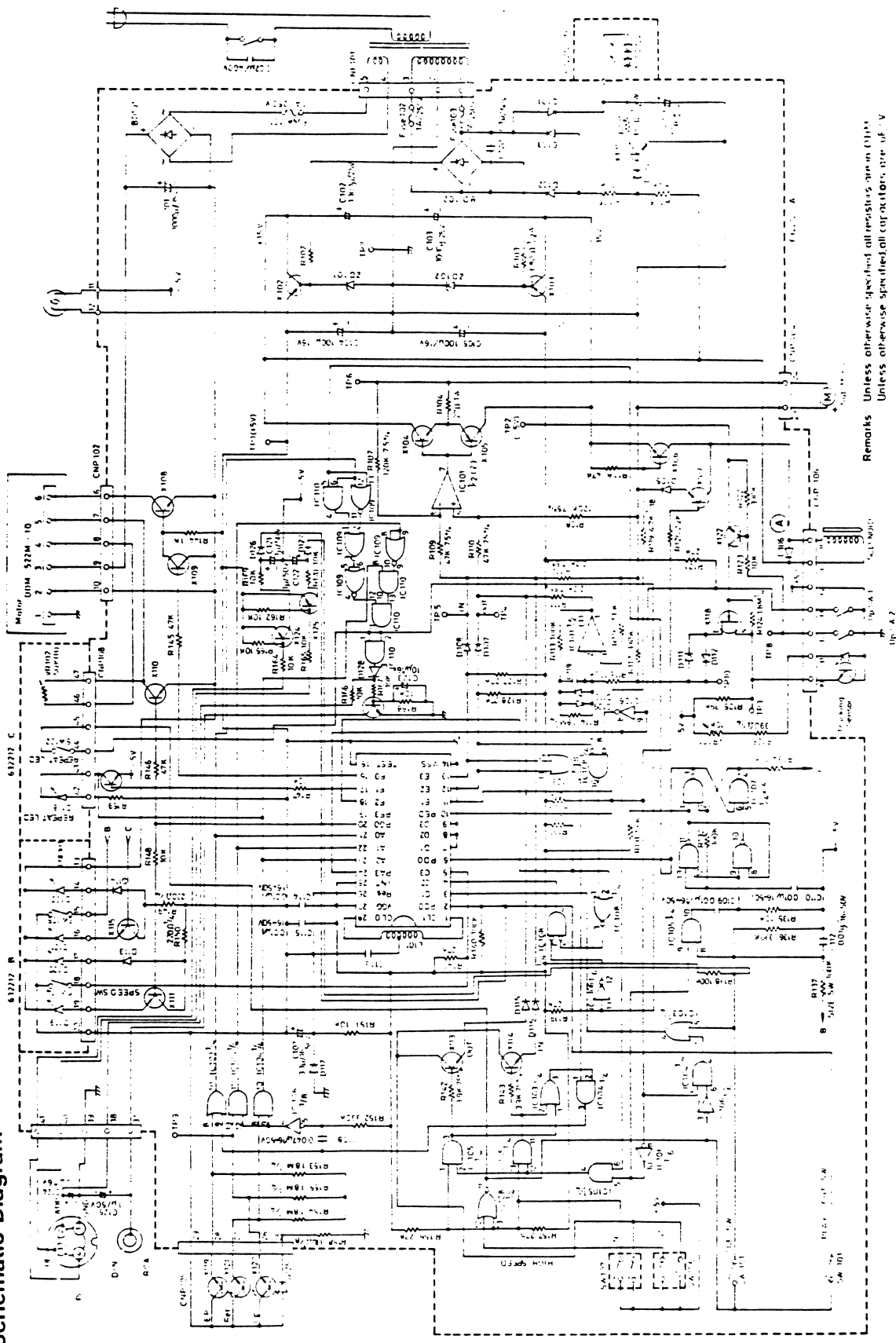
3. Ratings

- * Mains Voltage 10V \pm 10%
- * Input Terminals H over 8V
 L less than 5.7V
- * Output Terminals all open drain
 pull down resistors to be outside-fixed at
 necessary position.

Wiring Diagram



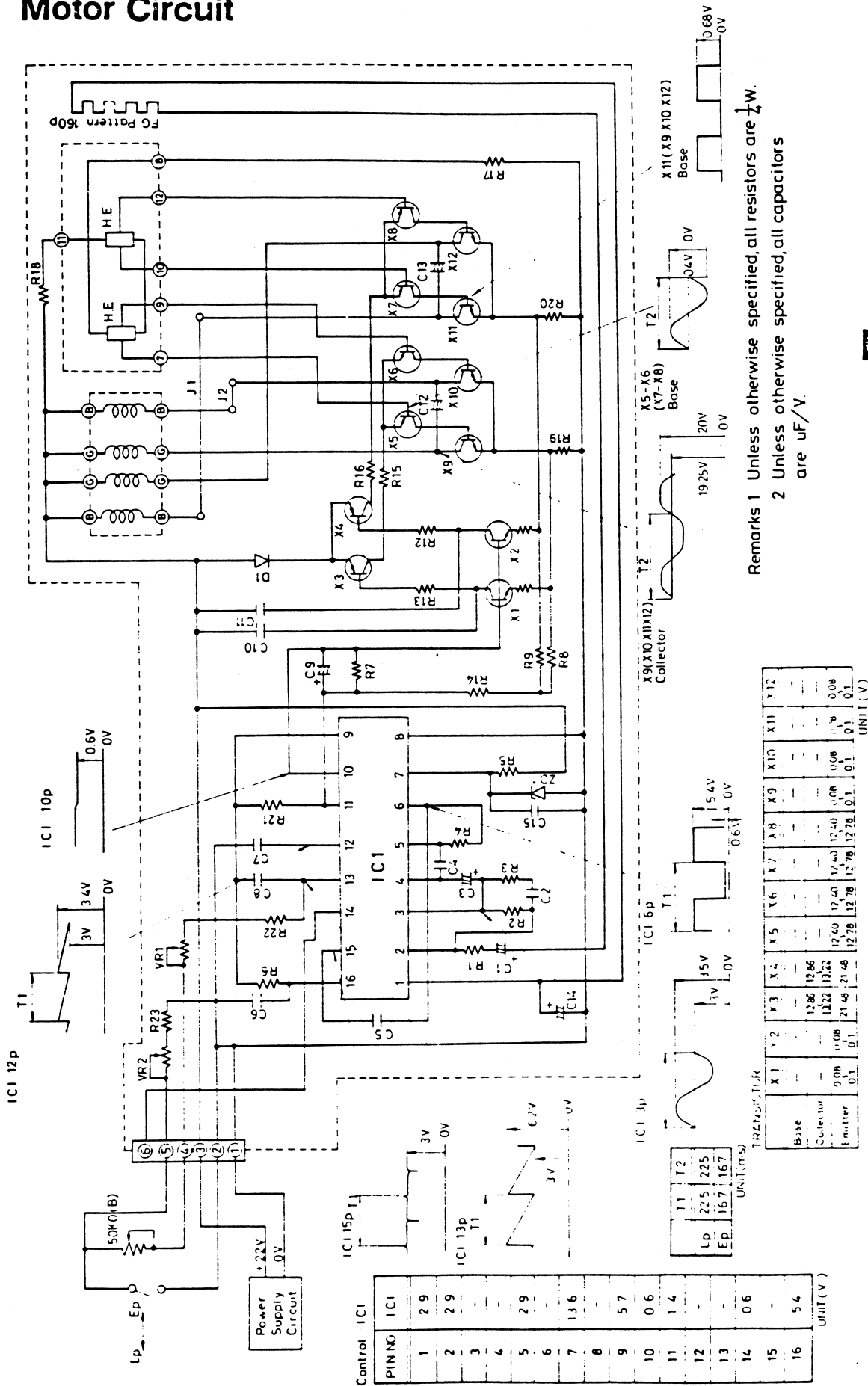
Schematic Diagram



Remarks Unless otherwise specified all resistors are in Ohms
Unless otherwise specified all capacitors are in pF

Schematic Diagram 'PX-101'

Motor Circuit



Remarks 1 Unless otherwise specified, all resistors are $\frac{1}{4}$ W.
 2 Unless otherwise specified, all capacitors are uF/V.

TRANSISTOR		X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	UNIT (V)
Base		-	-	-	-	-	-	-	-	-	-	-	-	-
Collector		0.08	12.86	12.22	12.40	12.40	12.40	12.40	12.40	12.40	12.40	12.40	12.40	0.08
Emitter		0.1	0.1	21.48	12.78	12.78	12.78	12.78	12.78	12.78	12.78	12.78	12.78	0.1

UNIT (ms)		T1	T2
Lp		22.5	22.5
Ep		16.7	16.7

Control	IC1	PIN NO	IC1	UNIT (V)
1	2.9	1	2.9	5.4
2	2.9	2	2.9	5.4
3	-	3	-	-
4	-	4	-	-
5	2.9	5	2.9	5.4
6	-	6	-	-
7	13.6	7	13.6	5.4
8	-	8	-	-
9	5.7	9	5.7	5.4
10	0.6	10	0.6	5.4
11	1.4	11	1.4	5.4
12	-	12	-	-
13	-	13	-	-
14	0.6	14	0.6	5.4
15	-	15	-	-
16	5.4	16	5.4	5.4

Motor Circuit **PX-101**

Specifications

[Phono Motor Section]

Driving System:	Direct-Drive System
Motor:	Brushless & slotless DC servo motor
Turntable Platter:	29.5cm aluminium die-cast
Rotation:	33-1/3rpm, 45 rpm (2-speed)
Pitch Control:	+3%
S/N Ratio:	better than 70 dB (DIN-B)
Wow & Flutter:	no more than 0.045% W.R.M.S.

[Tonearm Section]

Tonearm:	Straight Arm of static balance type
Effective Length:	165 mm
Tracking Error:	+0.2
Cartridge Weight:	5.5g-10g
Cartridge Height:	16 mm-19 mm (by use of spacers)
Stylus Pressure:	0-3g (direct reading)

[Additional Features]

Dust Cover:	Detachable with semi-freestop side hinge
Stroboscope:	Mirror-reflex type
Automatic Function:	Auto-Lead-in (Auto Start) 30 cm, 17 cm Auto-Repeat
Remote Controls:	DIN 4p Terminal RCA type 1P

[General]

Power Consumption:	17W (CSA rated)
Dimensions:	440(W) x 115(H) x 405(D) mm (17.3" x 4.5" x 15.9")
Weight:	Net 8.5 kgs(18.7 lbs.) Gross 10.5 kgs(23.1 lbs.)

Specifications and appearance design subject to change without notice.

LUXMAN

DIVISION OF ALPINE ELECTRONICS OF AMERICA, INC.

SERVICE BULLETIN

LSP-83-01

TO: ALL AUTHORIZED SERVICE FACILITIES AND DEALERS

FROM: LUXMAN SERVICE DEPARTMENT

DATE: SEPTEMBER 5, 1984 (SUPERCEDES APRIL 18, 1983)

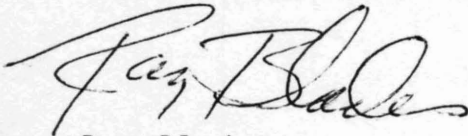
SUBJECT: PX101 "POP" NOISE WHEN ARM IS CUED

CAUSE: IMPROPER CARTRIDGE INSTALLATION/INSUFFICIENT TONE ARM HEIGHT

REMEDY: Because of different cartridge sizes the tone arm height might have to be adjusted by the user. If, when cued, the tone arm travels slightly to the outside causing the stylus to scratch across the disc (3 or 4 grooves) then the cue height must be adjusted. This problem can be eliminated by following the directions in the owners manual (see pg. 2-14) or by turning the tone arm lift adjuster clockwise to raise the height of the tone arm.

****NOTE****

THIS IS AN EXTERNAL USER ADJUSTMENT AS SUCH, IT IS NOT CONSIDERED A "REPAIR" AND NO WARRANTY CLAIMS WILL BE HONORED FOR THIS ADJUSTMENT.



Ray Blades
National Service Manager



F.Y.I.



SUGGESTED



MANDATORY