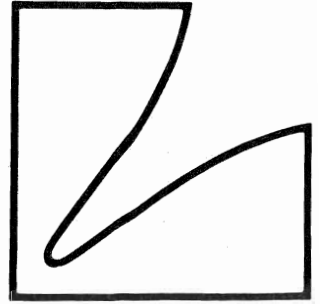


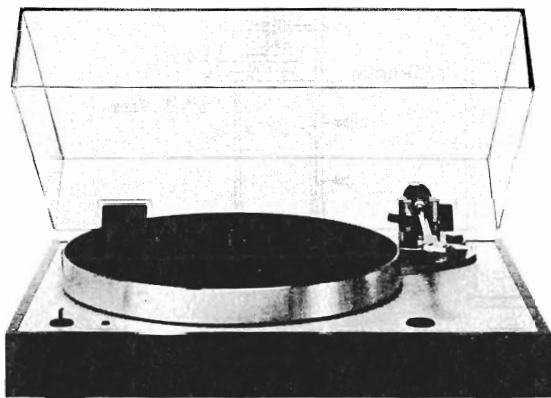
SERVICE MANUAL



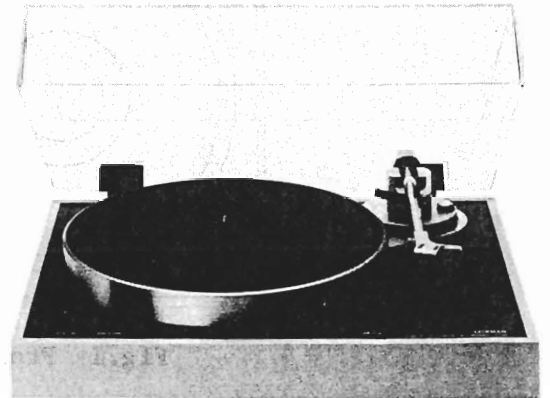
Direct-Drive Semi-Automatic
Quartz Locked Turntable

PD290/PX99

PD290



PX99



Contents

Alignment Procedure.....	1
Packing Material Parts List.....	2
Destination's Parts List.....	2
Exploded View.....	3
Exploded View Parts List.....	4
Control PCB (1) Parts List.....	5
Control PCB (2)-(7) Parts List.....	6
Wiring Diagram.....	7
Schematic Diagram.....	8
Motor Circuit.....	9
IC Handling Guide.....	10
Specifications.....	11

Alignment Procedure

1. Adjustment of auto-up position

Adjust the auto-up position rotating the hexahead bolt as illustrated (Fig.1).

- In case the auto-up position is found too late, rotate the hexahead bolt counter-clockwise.
- In case the auto-up position is found too fast, rotate the hexahead bolt clockwise.
- In case the motor doesn't stop even after the auto-up completes its operation, turn the hexahead bolt a little, clockwise-whereas the motor stops.

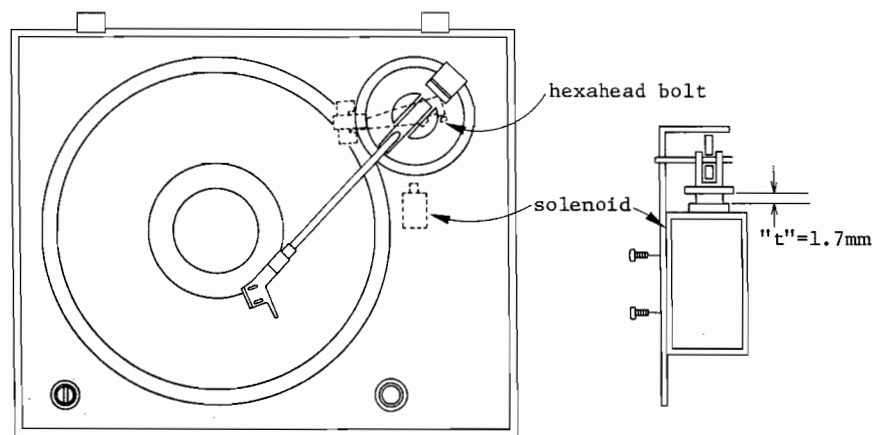


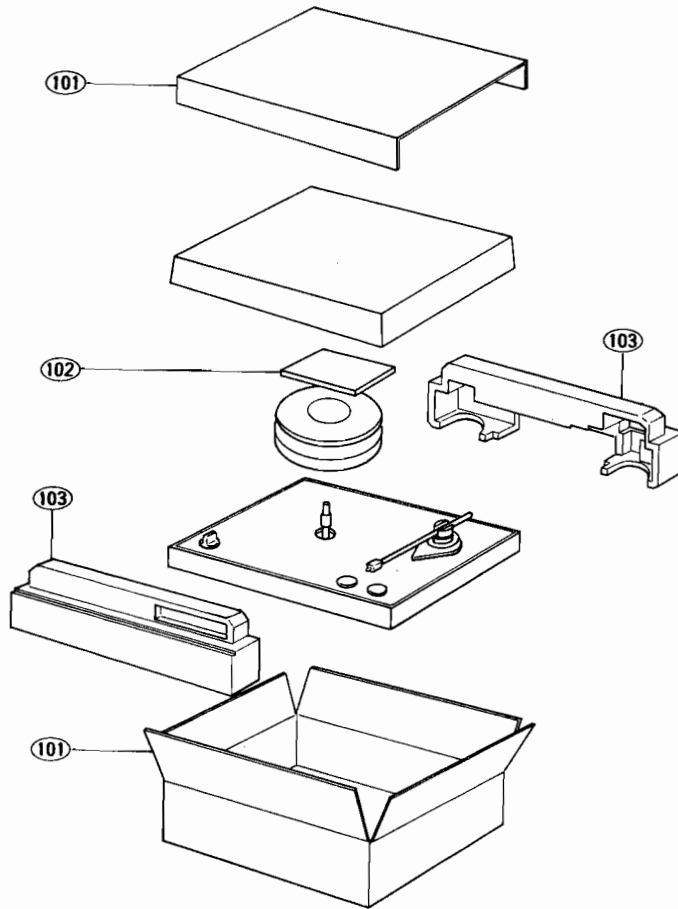
Fig.1 From top view

Fig.2 From bottom view

2. Adjustment of the solenoid placement

Fix the solenoid in the position where the "t" in the Fig.2 is 1.7mm.

Packing Material Parts List



Symbol No.	Stock No.		Description
	PD-290	PX-99	
101	XAQ0018	XAQ0019	Packing Case
102	ME0263	ME0265	Owner's Manual
103	XBQ0015	XBQ0015	Pad (Styrol)

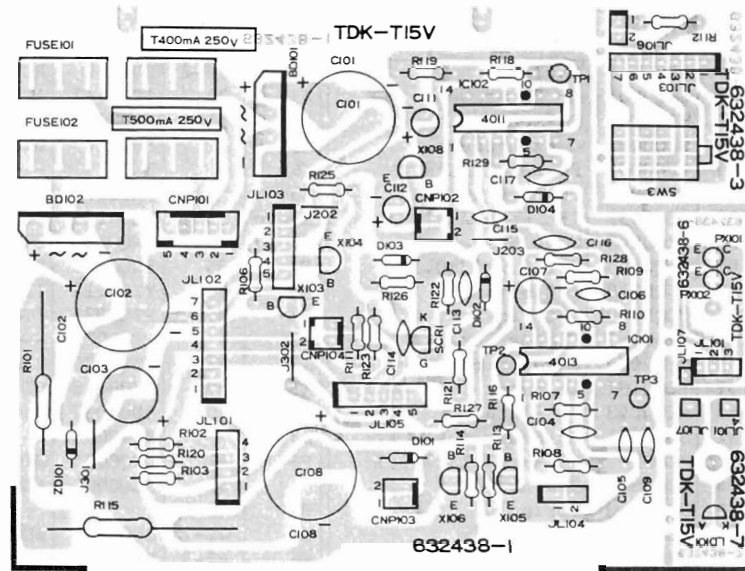
Destination's Parts List

Symbol No.	Description	PD-290				PX-99	
		AK 220V Europe etc	BK 220V France etc	AG 240V England Australia	UQ 120V Canada	UC 120V U.S.A.	UQ 120V Canada
1	Cabinet	WBQ0012	WBQ0012	WBQ0012	WBQ0012	WBQ0010	WBQ0010
29	Micro SW Ass'y	SPQ0015	SPQ0015	SPQ0015	SPQ0015	SPQ0041	SPQ0041
32	AC Cord	BK0022	BK0022	BK0023	BK0018	BK0018	BK0018
37	Trans Ass'y	PTQ0025	PTQ0025	PTQ0025	PTQ0024	PTQ0024	PTQ0024
40	Cord Bushing	BUQ0008	BUQ0008	BUQ0008	BUQ0007	BUQ0007	BUQ0007
49	Control Ass'y	PCQ0136	PCQ0136	PCQ0136	PCQ0135	PCQ0135	PCQ0135

Exploded View Parts List

Index	Symbol No.	PD-290 Stock No	PX-99 Stock No	Description	Index	Symbol No.	PD-290 Stock No	PX-99 Stock No	Description
A3	1	WBQ0012	WBQ0010	Cabinet	F4	29-2	BU0082	BU0082	Wire Fastener
A3	2	WDQ0001	WDQ0001	SP Escutcheon	A3	30	ATQ0112	ATQ0112	Terminal Plate
D4	3	WDQ0002	WDQ0002	P Escutcheon	A2	31	CUQ0011	CUQ0011	Condensor
C3	4	WDQ0003	WDQ0003	C Escutcheon	A6	32	BK0018	BK0018	AC Cord (UC,UQ)
	5	ADQ0005	ADQ0005	PU Base Ass'y	A6		BK0022	-----	AC Cord (AK,BK)
F3	5-1	WZQ0048	WZQ0048	PU Base Ass'y	A6		BK0023	-----	AC Cord (AG)
F2	5-2	WZQ0057	WZQ0057	IFC Knob Ass'y	A3etc	33	YZQ0123	YZQ0123	Flange Scr,3x8
F2	5-3	YZQ0508	YZQ0508	Wave Washer	F4	34	UWQ0010	UWQ0010	Insulator Sheet
F2	5-4	YWQ0005	YWQ0005	Wsr,6.2x12x0.5	F4	35	BUQ0005	BUQ0005	Bush
F3	5-5	UUQ0019	UUQ0019	IFC Spring	F5	36	YZQ0118	YZQ0118	Scr,2x18
F3	5-6	UOQ0019	UOQ0019	IFC Cam	A2	37	PTQ0024	PTQ0024	Trans Ass'y (UC,UQ)
F3	5-7	YZQ0133	YZQ0133	Flange Scr,3x8	A2		PTQ0025	-----	Trans Ass'y (AK,BK,AG)
E2	5-8	UUQ0005	UUQ0005	Cam Spring	A2	38	UZQ0039	UZQ0039	Trans Holder
E2	5-9	YZQ0101	YZQ0101	EL Nut	A1	39	UZQ0038	UZQ0038	Trans Rubber
E2	5-10	WZQ0043	WZQ0043	EL Plate	D3	40	BUQ0007	BUQ0007	Cord Bushing (UC,UQ)
E3	5-11	UZQ0051	UZQ0051	EL Shaft Ass'y 1	D3		BUQ0008	-----	Cord Bushing (AK,BK,AG)
E3	5-12	YZQ0507	YZQ0507	BS Wsr,3.15x7x0.5	F6	41	UKQ0004	UKQ0004	Shield Plate
E3	5-13	YZQ0604	YZQ0604	E-Ring 2φ		42	AGQ0005	AGQ0005	5P Lug Ass'y
E3	5-14	UUQ0020	UUQ0020	Spring	F6	42-1			Tube
E2	5-15	WZQ0058	WZQ0058	Rest Ass'y	E6	42-2	BUQ0082	BUQ0082	Fastener
F3	5-16	YZQ0502	YZQ0502	TOW-3	F6	42-3	BKQ0002	BKQ0002	Shield Wire Ass'y
F3	5-17	YZQ0702	YZQ0702	Flange Nut 3φ	F6	42-4	AGQ0004	AGQ0004	5P Lug Plate
F2	5-18	YZQ0129	YZQ0129	Set Scr,4x10	F6	43	YZQ0502	YZQ0502	TOW 3φ
F1	6	WZQ0059	WZQ0059	PU Ass'y	E6	44	YZQ0120	YZQ0120	Scr,3x8
E5, F5	7	YZQ0126	YZQ0126	FMT 3x12	D3, E3	45	UZQ0107	UZQ0107	Hinge Ass'y
F5	8	UKQ0006	UKQ0006	Shield Plate Ass'y 2	D3, E3	46	UZQ0130	UZQ0130	Wood Scr,3.1x12
D4	9	UAQ0005	UAQ0005	Sub Chassis Ass'y		47	BKQ0010	BKQ0010	Pin Jack Ass'y
A2etc	10	YZQ0703	YZQ0703	Flange Nut	E3	47-1	ATQ0111	ATQ0111	Pin Jack Ass'y
F4	11	URQ0012	URQ0012	SW Angle	D3	47-2	ASQ0013	ASQ0013	Pin Jack
F4	12	YZQ0143	YZQ0143	Flange Scr,3x6	C4	48	WJQ0002	WJQ0002	P Button
	13	UZQ0109	UZQ0109	Lifter Mecha.Ass'y		49	PCQ0135	PCQ0135	Control Ass'y (UC,UQ)
E6	13-1	UZQ0032	UZQ0032	Solenoid Angle Ass'y			PCQ0136	-----	Control Ass'y (AK,BK,AG)
D6	13-2	UUQ0021	UUQ0021	Coil Spring	B5	49-1	PCQ0135A	PCQ0135A	Control Ass'y
D5	13-3	UZQ0033	UZQ0033	EL Lever	B4	49-2	PCQ0135B	PCQ0135B	Control Ass'y
D5	13-4	YZQ0603	YZQ0603	E-Ring 2φ	A3, A4	49-3	PCQ0135C	PCQ0135C	Control Ass'y
D6	13-5	AYQ0007	AYQ0007	Solenoid Ass'y	B4	49-4	PCQ0135D	PCQ0135D	Control Ass'y
E6	13-6	YZQ0125	YZQ0125	Flange Scr,3x4	C5	49-5	PCQ0135E	PCQ0135E	Control Ass'y
E6	14	YZQ0122	YZQ0122	Scr,2.6x5	D5	49-6	PCQ0135F	PCQ0135F	Control Ass'y
A5	15	AMQ0008	AMQ0008	Motor DDM-522-QM40	C5	49-7	PCQ0135G	PCQ0135G	Control Ass'y
B4	16	UTQ0003	UTQ0003	Motor Column	C5	50	BU0082	BU0082	Fastener
A5	17	UTQ0004	UTQ0004	Motor Column 1	4, F5	51	AGQ0007	AGQ0007	Lug
A5	18	UTQ0005	UTQ0005	Motor Column 2	E4, F5	52			Tube
A5	19	YZQ0504	YZQ0504	Filter Wsr,3.2x8x1	A6	53	WBQ0106	WBQ0106	Bottom Plate
A5	20	YZQ0701	YZQ0701	Nut 3φ	A6	54	WNQ0003	WNQ0003	Foot
A5, D5	21	BKQ0012	BKQ0012	Earth Wire Ass'y	A6	55	YZQ0131	YZQ0131	Scr,4x10
C5	22	UZQ0055	UZQ0055	Sensor Holder	A6	56	YZQ0145	YZQ0145	Flange Scr,3x16
C5	23	YZQ0121	YZQ0121	Scr,3x6	B2	57	UZQ0052	UZQ0052	Turn Table
C5, D5	24	YZQ0144	YZQ0144	Scr,3x10	B2	58	WZQ0047	WZQ0047	Turn Table Sheet
A4	25	UZQ0060	UZQ0060	SW Plate	A1	59	WZQ0206	WZQ0206	Dust Cover
A3	26	WJQ0004	WJQ0004	Changeover Knob	D3	60	WZQ0302B	WZQ0302B	EP Adupter
A3	27	YZQ0505	YZQ0505	Himeron Wsr.	A2	61	BUQ0008	BUQ0008	Bush
A4	28	YZQ0119	YZQ0119	Scr,3x12	A2	62	YWQ0007	YWQ0007	Wsr,3.2x10x1.0
	29	SPQ0015	SPQ0041	Micro SW Ass'y	E5	64	BUQ0009	BUQ0009	Bush
F4	29-1	SPQ0040	SPQ0040	Micro SW					

Control PCB(1)Parts List

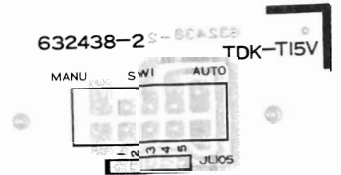


Symbol No.	Stock No	Description
(Fuse)		
Fuse101	BF0075	1A 250V (UL,CSA)
	BF0205	T400mA 250V (Semko)
Fuse102	BF0075	1A 250V (UL,CSA)
	BF0206	T500mA 250V
(IC)		
IC101	TCQ0075	upD4013BC
	TCQ0076	or HD14013BP
IC102	TCQ0044	uPD4011BC
	TCQ0077	or HD14011BP
(Bridge Diode)		
BD101	TD0137	S1VB-10
BD102	TD0137	S1VB-10
(Resistor)		
R101	RS2942	390 2W Rm
R102	RD0467	820 1/4W Rd
R103	RD0434	470K 1/4W Rd
R106	RD0446	47K 1/4W Rd
R107	RD0436	330K 1/4W Rd
R108	RD0442	100K 1/4W Rd
R109	RD0445	56K 1/4W Rd
R110	RD0442	100K 1/4W Rd
R111	RD0454	10K 1/4W Rd
R113	RD0457	5.6K 1/4W Rd
R114	RD0457	5.6K 1/4W Rd
R115	RGQ0011	82 5W Rc
R116	RD0450	22K 1/4W Rd
R118	RD0454	10K 1/4W Rd
R119	RD0454	10K 1/4W Rd
R120	RD0434	470K 1/4W Rd
R127	RD0436	330K 1/4W Rd
R128	RD0440	1.5M 1/4W Rd

Symbol No.	Stock No	Description
(Transistor)		
X103	TR0029	2SC945K,P,Q
	TR0198	or 2SC1815Y,GR
X104	TR0029	2SC945K,P,Q
	TR0198	or 2SC1815Y,GR
X105	TR0043	2SA733K,P,Q
	TR0087	or 2SA1015Y,GR
X106	TRQ5016	2SD882E,P,Q
X108	TR0029	2SC945K,P,Q
	TR0198	or 2SC1815Y,GR
(Zener Diode)		
ZD101	TD0081	RD12EB1
(Diode)		
D101	TDQ0522	F14C
	TDQ0536	or EM-1
D104	TD5012	1S953
	TD#003	or 1S1588
(Capacitor)		
C101	CE0847	1000uF 35V E1
C102	CE0861	470uF 50V E1
C103	CE0089	470uF 25V E1
C104	CK0004	0.01uF Ce
C105	CC0092	220pF 50V Ce
C106	CK0004	0.01uF 50V Ce
C107	CE0171	4.7uF 16V E1
C108	CE1748	2200uF 35V E1
C109	CK0004	0.01uF 50V Ce
C111	CE0056	10uF 16V E1
C112	CE0045	1uF 50V E1
C115	CK0004	0.01uF 50V Ce
C116	CK0142	0.1uF 50V Ce
C118	CE0171	4.7uF 16V E1

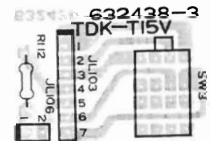
Control PCB(2)Parts List

Symbol No.	Stock No	Description
(Switch, Slide)		
SW1	SS8001	SSB0222 Manu/Auto



Control PCB(3)Parts List

Symbol No.	Stock No.	Description
(Switch, Rotary)		
SW3	SRQ0011	SRU1022 33/off/45
(Resistor)		
R112	RD0043	1K 1/4W Rd



Control PCB(4)Parts List

Symbol No.	Stock No	Description
(LED)		
LD102	TD5028	SEL2310G Quartz Lock



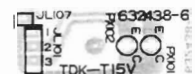
Control PCB(5)Parts List

Symbol No	Stock No	Description
(Switch, Tact)		
SW2	SPQ0025	Cue



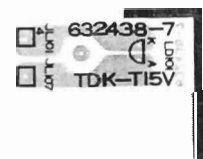
Control PCB(6)Parts List

Symbol No.	Stock No	Description
(Photo Transistor)		
PX101	TRQ0008	PN120S
PX102	TRQ0008	PN120S



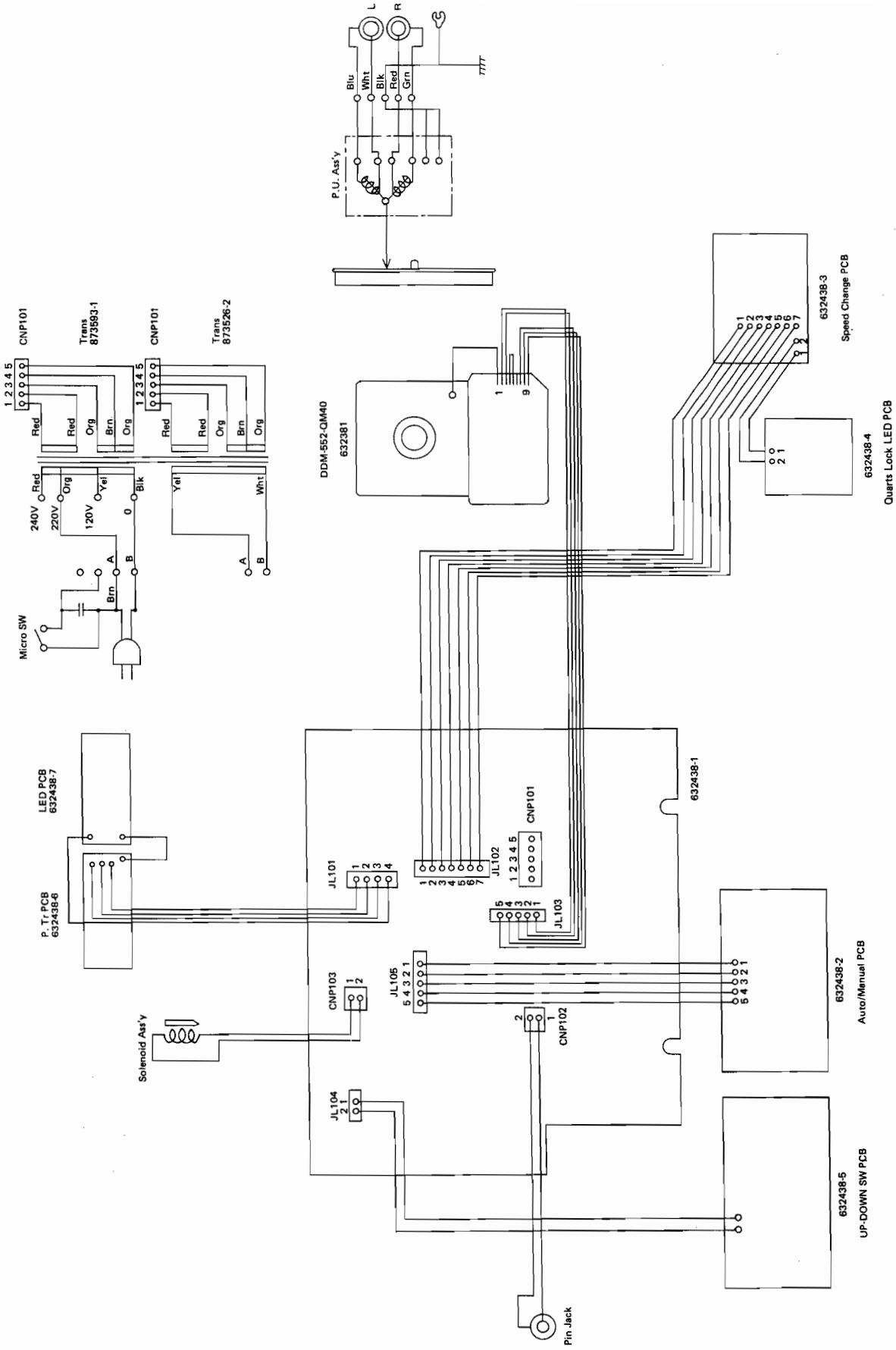
Control PCB(7)Parts List

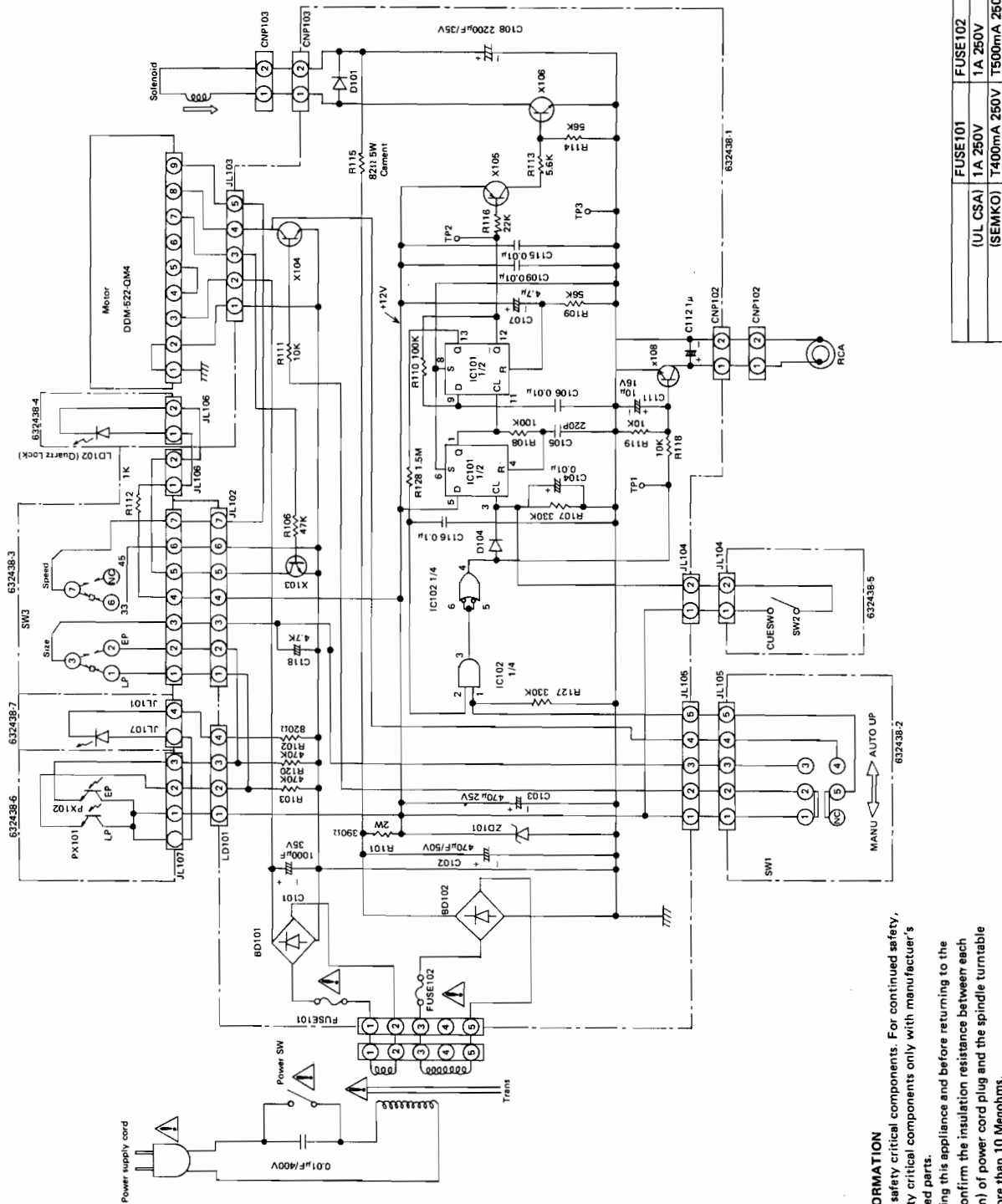
Symbol No.	Stock No	Description
(LED)		
LD101	TDQ0023	EBR3432S



Remarks

Resistor; Rd...Carbon, Rm...Metal Film, Rc...Cement
Capacitor; El...Electrolytic, Ce...Ceramic





SERVICE INFORMATION

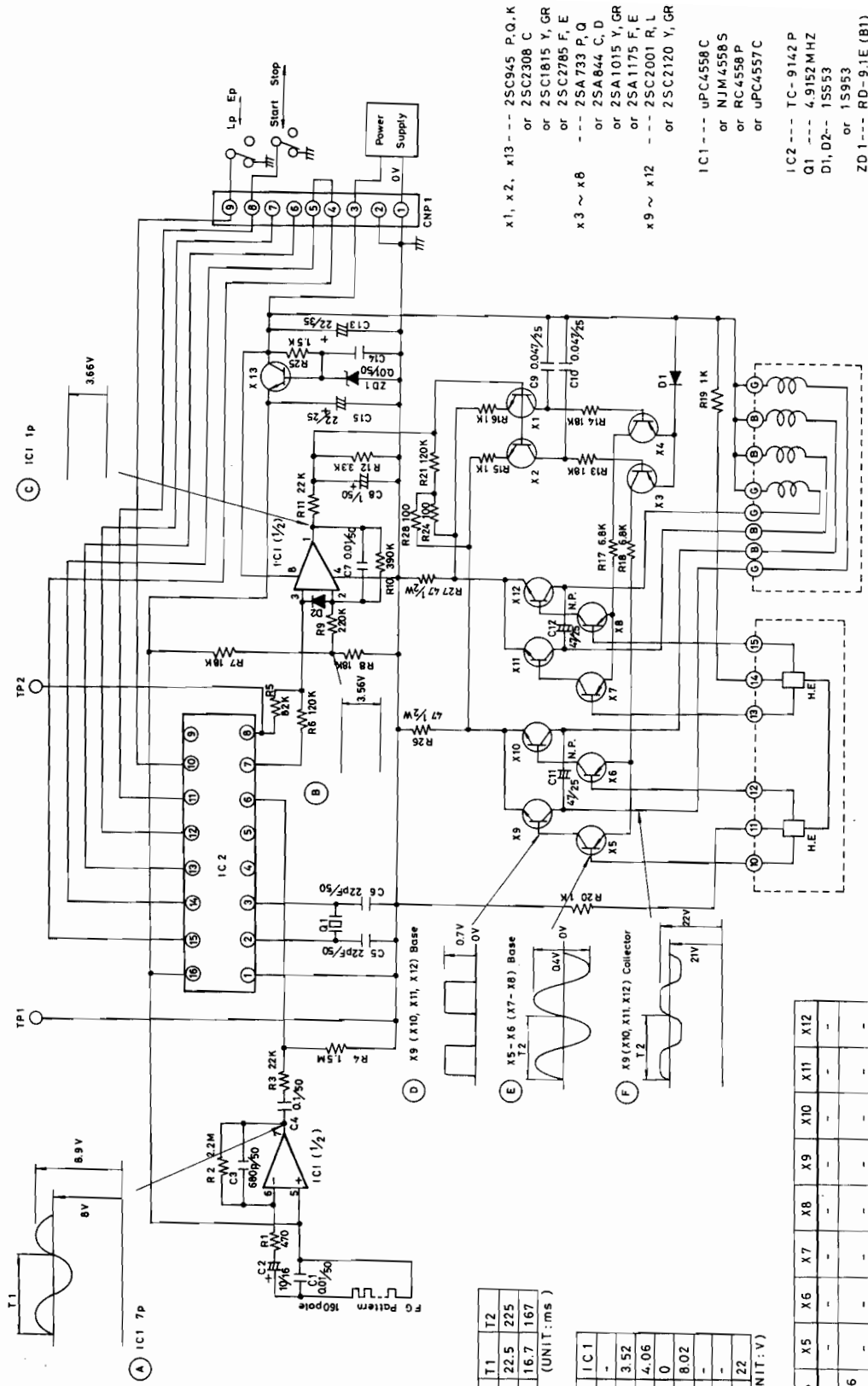
- 1 Δ indicates safety critical components. For continued safety, replace safety critical components only with manufacturer's recommended parts.
- 2 After servicing this appliance and before returning to the customer, confirm the insulation resistance between each blade (for pin) of power cord plug and the spindle turntable platter is more than 10 Megohms.

LD102	1	SEL2310GT
LD101	1	EBR3432S
D104	OR	TST1688
D101	OR	1S953
D101	OR	EM-1
ZD101	1	F14C
BD101,102	1	RD12E(B,)
PX101,102	2	STV8-10
X106	1	PN120S USL
X105	OR	2SD8820.P.E.
X103,104,108	1	2SA1015Y.GR
X102	OR	2SA733K.P.Q
IC102	OR	28C1815Y.GR
IC101	OR	28C945P.O.K.
	OR	HD140118P
	OR	HD140118B
	OR	HD140138P
	OR	µPD40138C

FUSE101	1A 250V
FUSE102	1A 250V
(UL CSA)	1A 250V
(SEMKO)	1400mA 250V T500mA 250V

PD-290/PX-99

SCHEMATIC DIAGRAM



- x1, x2, x13 --- 2SC945 P,Q,K
or 2SC2308 C
or 2SC1815 Y, GR
or 2SC2785 F, E
- x3 ~ x8 --- 2SA733 P,Q
or 2SA844 C, D
or 2SA1015 Y, GR
or 2SA1175 F, E
- x9 ~ x12 --- 2SC2001 R, L
or 2SC2120 Y, GR
- IC1 --- UPC4558C
or NJM4558S
or RC4558P
or UPC4557C
- IC2 --- TC-9142 P
Q1 --- 4.9152MHZ
D1, D2 --- 1SS53
or 1S953
- ZD1 --- RD-9.1E (B1)

Pin No.	IC1	UNIT: V
1	0	
2	0	
3	3.52	
4	0	
5	8.02	
6	0	
7	3.58	
8	4.1	
9	0	
10	0	
11	0	
12	8.02	
13	0	
14	0	
15	0	
16	8.02	

T1	T2	UNIT: ms
Lp	22.5	225
Ep	16.7	167

Pin No.	IC1	UNIT: V
1	0	
2	3.52	
3	4.06	
4	0	
5	8.02	
6	0	
7	0	
8	22	

Transistor	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12
Base	-	-	-	-	-	-	-	-	-	-	-	-
Collector	-	-	12.86	12.86	-	-	-	-	-	-	-	-
Emitter	0.08	0.08	21.48	21.48	12.40	12.40	12.40	12.40	0.08	0.08	0.08	0.08
	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

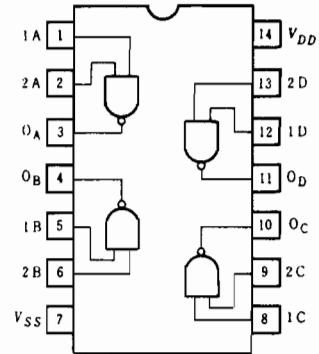
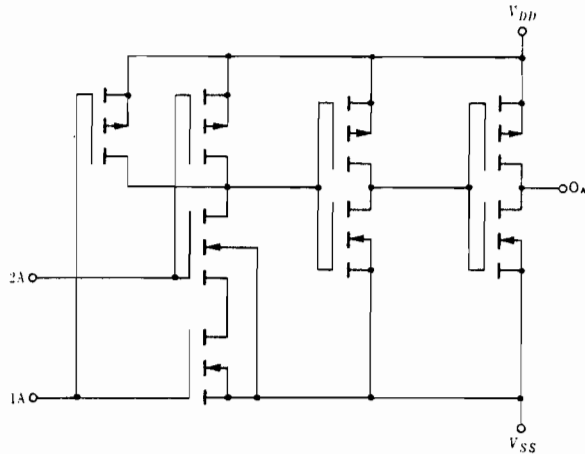
Remarks: Unless otherwise specified, all resistors are in OHM.
Unless otherwise specified, all capacitors are uF/V.

PD-290/PX-99

μ PD4011BC or HD14011BP

Quadruple 2-input NAND Gate

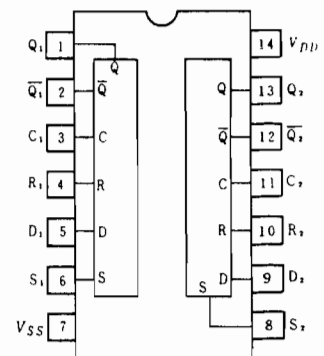
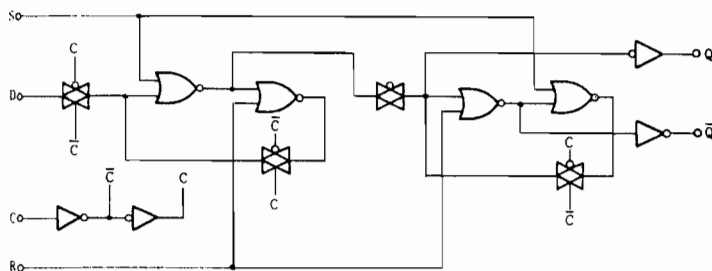
Block Diagram



μ PD4013BC or HD14013BP

Dual D-type Flip Flop

Block Diagram



Specifications

[Phono Motor Section]

Drive System: Direct-Drive System
Motor: Brushless & slotless DC servo quartz-locked motor
Turntable platter: 30cm aluminum die-cast
(weight 1.6kgs including platter mat)
Rotation: 33-1/3rpm, 45rpm (2-speed)
S/N Ratio: better than 70dB (DIN-B)
Wow & Flutter: no more than 0.03% W.R.M.S.

[Tonearm Section]

Tonearm: Stright Arm of static balance type
Effective Length: 214mm
Tracking Error: +3 02', -1 34'
Overhang: 15mm
Cartridge Weight: 4g-1-.5g
Stylus Pressure: 0-3g (direct reading)
Accessories: Anti-skate adjustment

[Additional Features]

Dust Cover: Detachable with semi-free-stop hinge
Quartz-lock indicator

[General]

Power Consumption: 9W
Dimensions: 440(W)x148(H)x360(D)mm
(17.6"x(5.9")x(14.4")
Weight: Net 6.5kgs (14.3lbs)
Gross 8kgs (17.6lbs)

Specifications and appearance design subject to change without notice.

PD290/PX99



LUX CORPORATION, JAPAN

1-1, 1-CHOME, SHINSENRI-NISHIMACHI, TOYONAKA-SHI, OSAKA 565
PHONE 06-834-0004 CABLE LUXMAN TOYONAKA TELEX 5287106 LUXELE J