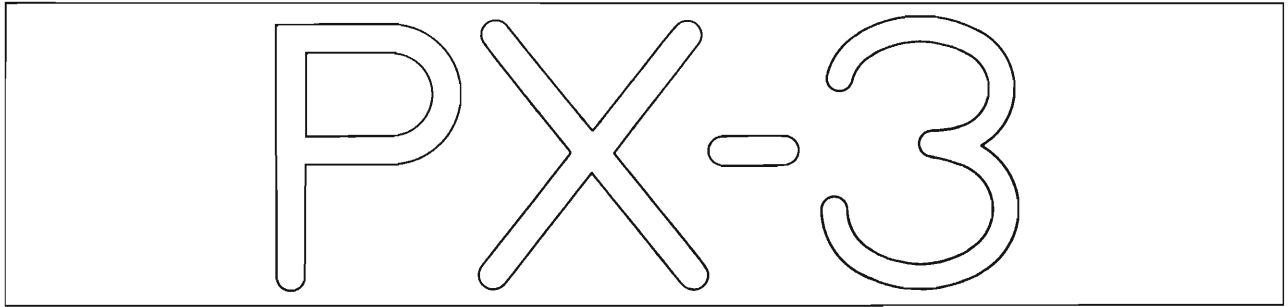
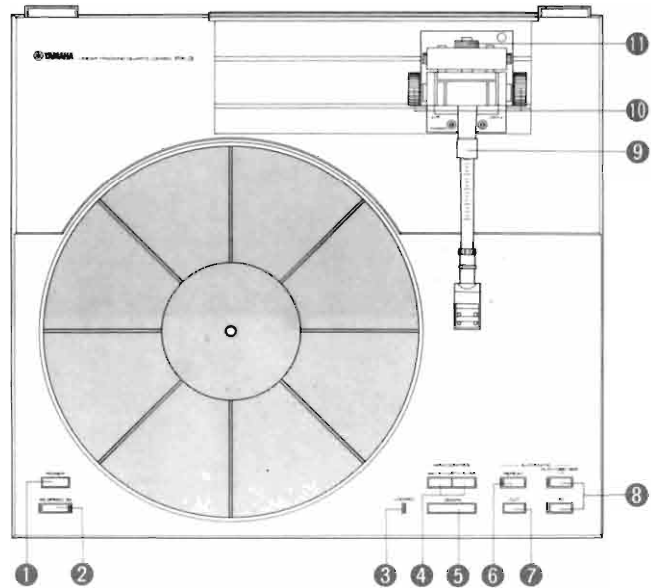


# STEREO TURNTABLE



## SERVICE MANUAL

### ■ PANEL CONTROLS



① Power Switch (POWER)

② Speed Selector Switch (SPEED)

③ Quartz Locked Indicator (LOCKED)

– TONEARM CONTROL – ◀◀/◀ – UP – ▶/▶▶

④ Tonearm UP Leftward Feed/UP Rightward Feed Switch

⑤ Cueing Down Switch (DOWN)

– AUTOMATIC – (AUTO PLAY)

⑥ Repeat Switch (REPEAT)

⑦ Play Cut Switch (CUT)

⑧ Play/Disc Size Switch (PLAY/DISC SIZE)

⑨ Tracking Force Control Weight

⑩ Arm Height Adjusting Knob


⑪ Main Weight & Balance Control Knob

### ■ CONTENTS

INTERNAL VIEW .....	1
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WIRING DIAGRAM .....	10
SCHEMATIC DIAGRAM .....	11

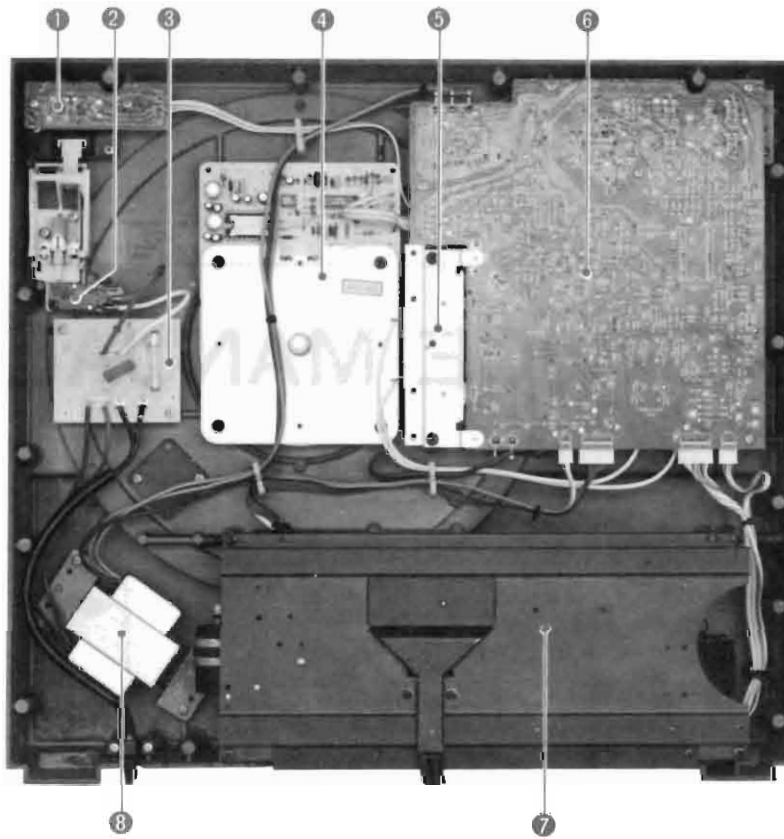
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SINCE 1887  **YAMAHA**  
NIPPON GAKKI CO., LTD. HAMAMATSU, JAPAN

'81. 7 2.5K. K.T.  Printed in Japan

# PX-3

## INTERNAL VIEW



- ① Control C. Board 2
- ② Power Switch
- ③ Power Supply C. Board
- ④ Phono Motor/Motor Drive C. Board
- ⑤ Heat Sink (IC4, IC5, R64 Cement Resistor)
- ⑥ Control C. Board
- ⑦ Tonearm Unit (YA-32)
- ⑧ Power Transformer

## ■ SPECIFICATIONS

### TONARM SECTION

Arm type	Linear tracking arm
Servo system	Photo-electric tracking sensor plus servo motor
Total length	236 mm (9-9/32")
Effective length	190 mm (7-15/32")
Tracking force device	Static balance type sliding weight system 0~2.5g, in 0.1g steps
Effective mass	Proportional type to tracking force 17.0g (When tracking force 1.5g) (in cartridge-less state.)
Applicable cartridge weight range	5~11g (Using sub-weights) 10~16g
Maximum horizontal tracking error angle	±0.15°
Arm lifter	Oil damp type cueing
Adjustable range of arm height	±4.0 mm
Head shell	Pure, forged aluminum, Weight: 8.0g Plug-in type conforming to EIA Standards
PU Cable	NEGLEX 2496 Low-impedance, double cylindrical cord Capacitance: 130pF Resistance: 1 ohm
Cartridge (Not provided)	Replaceable

### ROTARY SECTION

Motor	DC, 4-phase, 8-pole coreless Hall motor
Drive system	Direct drive
Servo system	Quartz PLL
F.G.	Total circumference integrating type
Speed (With Lock Indicator)	33-1/3 r.p.m. 45 r.p.m.
Platter	30cm (12") diameter, aluminum die-cast Weight 1.6kg (3.8 lbs) (Including rubber mat)
Moment of inertia	210kg·cm <sup>2</sup> (Including rubber mat)

### EXTERNAL DESIGN

Cabinet	BMC (Bulk Molding Compound)
Dust cover	Acrylic, 4mm thick, weighing 1.1kg Front operating type
Hinges	Detachable type
Insulator	Combination of spring-and-rubber type with height adjustment

### CONTROL SECTION

Automatic functions	AUTO-LEAD-IN AUTO-RETURN AUTO-REPEAT AUTO-CUT AUTO-UP (During Power-OFF)
Size selector	17/30 cm (7"/12")
Manual functions	Arm-up Arm-down Left & Right 2-speed feeding

### GENERAL

S/N ratio	77 dB (IEC 98A Weighted)
Wow and flutter	0.015% WRMS (FG direct)
Power supply and consumption	
U.S.A & Canadian Models	120V AC, 60Hz ... 27W
European Model	220V AC, 50Hz ... 27W
Australian & British Models	240V AC, 50Hz ... 27W
General Model	110/120/220/240V AC, 50/60Hz
Dimensions (W x H x D) mm	469 x 149 x 428 18-1/2" x 5-7/8" x 16-27/32"
Total weight	12kg (26.4 lbs)

Specifications are subject to change without notice.

■ DISASSEMBLY PROCEDURE

BEFORE DISASSEMBLY

Turn over the set by removing the turntable and cartridge first and by bringing up the back side of the body. Do not bring up the set sideways as it will cause the tonearm to move, leading to an unexpected accident. To protect such components as the tonearm, center spindle and operating switches from damage, the set is to be placed so that its flat portions will rest on supports formed by piling up magazines on both sides.

■ Disassembly of Main Unit

1. Removal of Bottom Cover

With the body turned upside down, take off screws ① through ④ shown in Photo 1. Remove bottom cover.

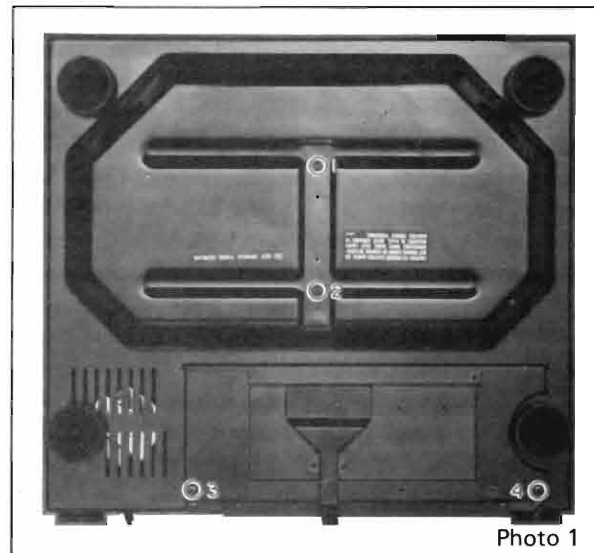


Photo 1

2. Removal of Tonearm Unit (YA-32)

- a) Take off rear cover by removing screws ① and ② shown in Photo 2.
- b) Disconnect the connectors leading out from the tonearm unit. Lift up the tonearm unit and remove it.

3. Removal of Control C. Board 1

- a) After disconnecting the connectors and wiring connected to the c. board, remove screws ⑦ through ⑬. The control c. board can be removed in this condition.

**CAUTION:** Before setting to work, move the tonearm to the neighborhood of the center.

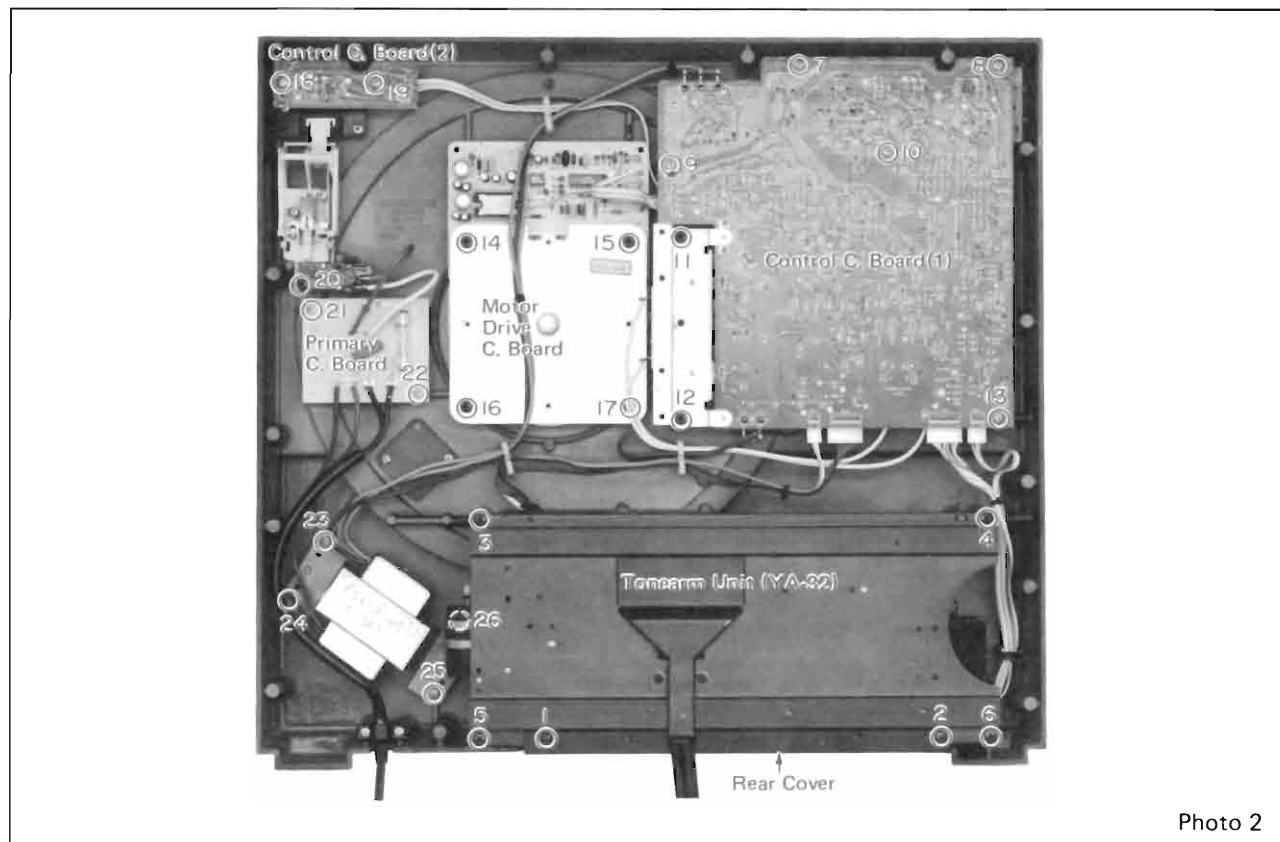


Photo 2

**4. Removal of Motor Drive C. Board**

- a) The motor drive c. board and phono motor can be dismantled by removing screws ⑭ through ⑰ shown in Photo 2 and disconnecting the connectors.

**5. Removal of Control C. Board**

- a) The control c. board will come off when screws ⑱ and ⑲ shown in Photo 2 are removed.

**6. Removal of Power Switch and Power Supply C. Board**

- a) To take off power switch, remove screw ⑳ shown in Photo 2.
- b) To take off power supply c. board, remove screws ㉑ and ㉒ also shown in Photo 2.

**7. Removal of Power Transformer**

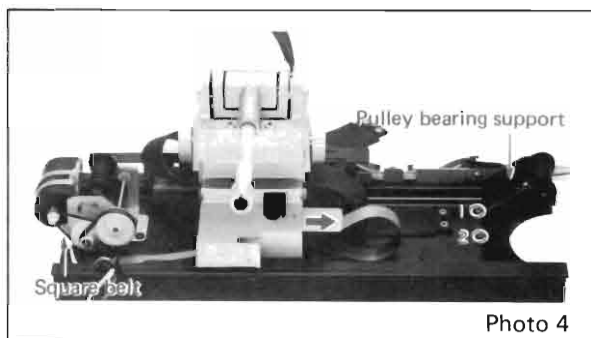
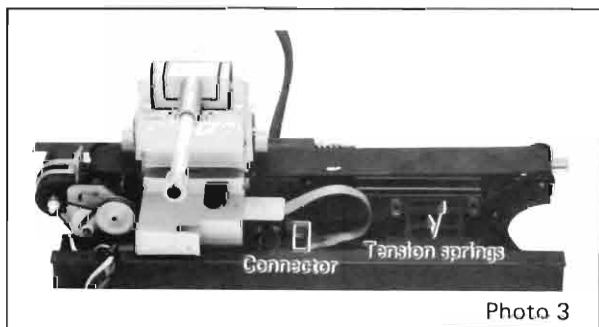
- a) The power transformer can be dismantled by undoing screws ㉓ through ㉖

■ **Disassembly of Tonearm Unit**

This is performed after dismantling the tonearm unit from the body in accordance with the instructions given in Step 2.

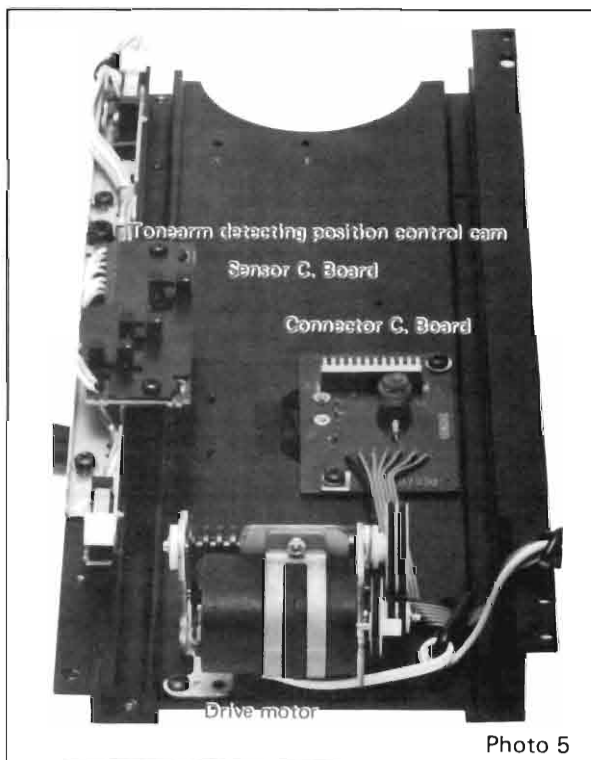
**1. Removal of Tonearm**

- a) Remove the tension spring shown in Photo 3. Disengage the flat belt from the pooley pedestal on the left and right sides.
- b) Dismount the pooley pedestal by unhooking the connector shown in Photo 3 and loosening screws ① and ② shown in Photo 4.
- c) Remove the tonearm from the rear base, sliding it in the direction indicated by an arrow.



**2. Removal of Drive Motor**

- a) Disconnect the square belt shown in Photo 4.
- b) When screw ① shown in Photo 5 is removed, the drive motor can be dismantled together with the motor cover.



## ADJUSTMENT CHECKING SPECIFICATIONS

### BEFORE PERFORMING ADJUSTMENTS

1. Be sure to place the set on a level surface. Any slope, especially in the transverse directions will adversely affect adjustments and, therefore, should be avoided.
2. All adjustments for the phono motor system should be performed with the turntable properly installed. (Do not turn the phono motor without placing the turntable on top.)
3. The working range of the power supply voltage is within AC 100V ± 10%.
4. The tracking force of the standard cartridge (AUDIO TECHNICA CG-6700) is 2 g.
5. Confirm proper and positive operation of each switch, using the Operator's Manual.

### GENERAL ADJUSTMENTS

Step	Adjustment	Adjustment Conditions	Adjustment Points	Test Points	Rating	Measuring Equipment
1	Synchronizing phase adjustment for phono motor	To be measured by way of the buffer circuit shown in Fig. 1. (33-1/3 rpm)	Adjusted with the value of R9 on the motor servo c. board set within 2.2kΩ ~ 4.7kΩ	Refer to Fig. 1	T = 9 ~ 17ms (33-1/3 rpm)	Oscilloscope
2	DC balance adjustment		VR1 on control c. board	Test pin	0V ± 20mV	Digital volt-meter (Multimeter)
3	Stylus height adjustment	The height of the stylus tip from the disc surface with tonearm in "UP" condition.	UP, DOWN screw of tonearm		7 ± 2 mm	Gauge
4	AUTO LEAD-IN adjustment	Test record NEC ES-1008, Side 1 (45 rpm)	Cam for adjusting tonearm sensing position		30 cm: 17±10 (Count) 17 cm: 22±10 (Count)	

### Synchronization Adjustment for Phono Motor

1. Synchronization Adjustment for Quartz
  - 1) Connect buffer amplifier to motor drive c. board as shown in Fig. 1.
  - 2) Set speed selector switch to 33 (33-1/3 rpm).
  - 3) With the oscilloscope connected to the two ends of the source resistor (10kΩ), adjust R9 so that the "t" of the observed sawtooth waveform will be within 9 ~ 17ms.

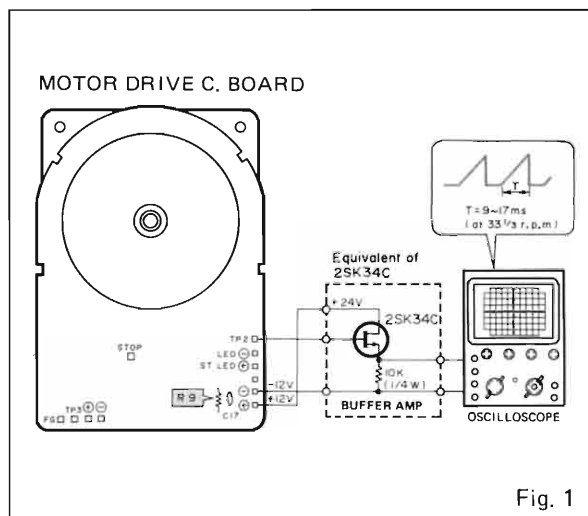


Fig. 1

■ **Adjustment of Control C. Board and Tonearm Unit**

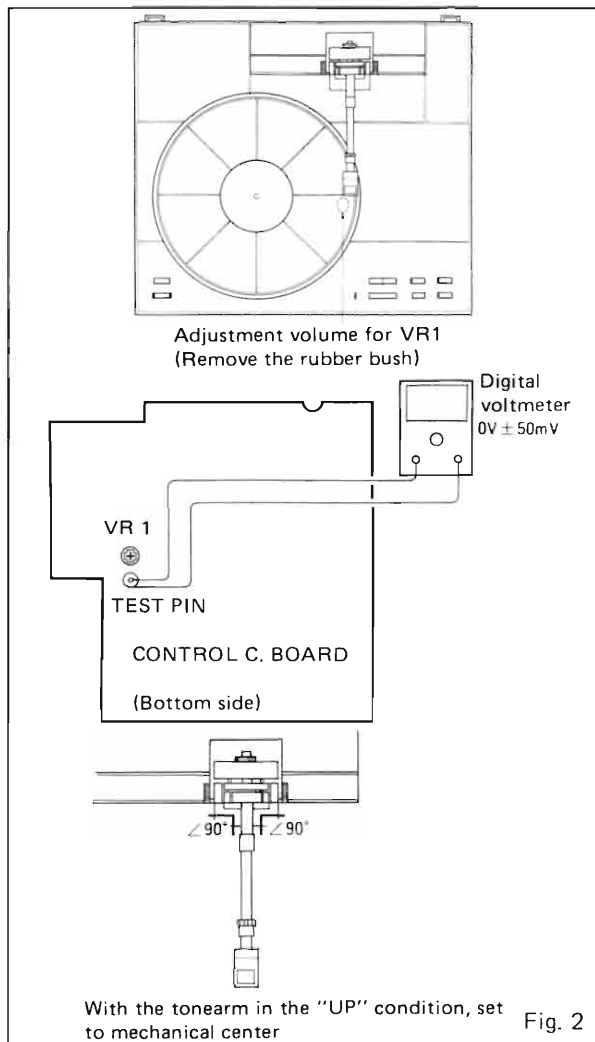
\* Adjustments for the control c. board and tonearm unit should be performed in the condition with the bottom board and rear cover of the PX-3 removed.

■ **Tonearm Angle Adjustment**

The following adjustments should be performed when some deviation has generated between the left and right angles of the tonearm, causing the tonearm to descend on the disc surface slantingly, or to skid.

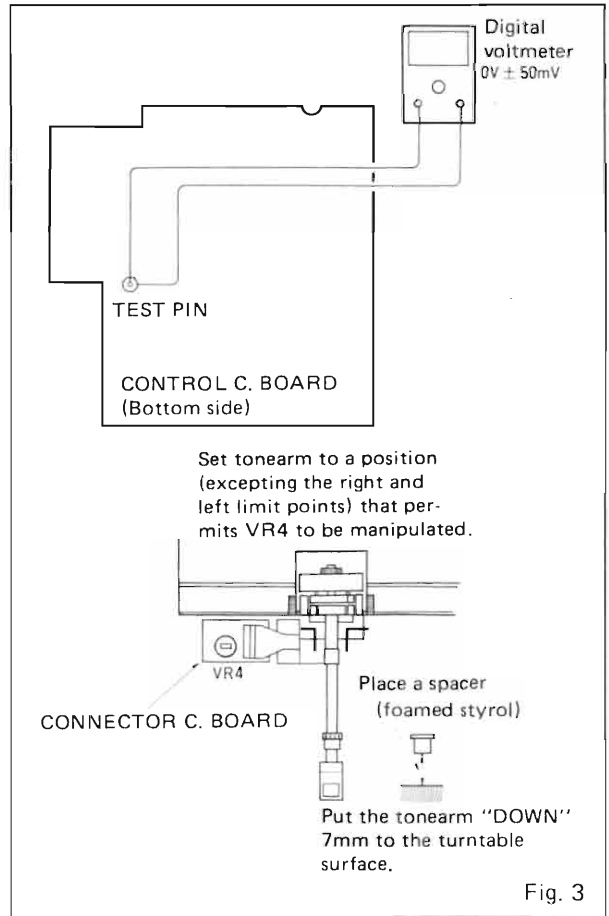
1. **Adjustment with tonearm in the "UP" condition**

- 1) With the tonearm in the "UP" condition, set it to the mechanical center as shown in Fig. 2. Turn on the power switch. (Fig. 2)
- 2) With a digital voltmeter connected to the test pin on the control c. board, adjust the knob of VR1 (2.2kΩ) so as to obtain 0V ± 50mV on the voltmeter. (Fig. 2)



2. **Adjustment with tonearm in the "DOWN" condition**

- 1) Using the DOWN switch, set the tonearm to a position brought down about 7 mm, as shown in Fig. 3.
- 2) With a digital voltmeter connected to the test pin on the control c. board, adjust the knob of VR4 (4.7kΩ) for a voltage reading of 0V ± 50mV on the voltmeter.
- 3) Bring the tonearm to the UP and DOWN positions, alternately and repeatedly, and confirm that the voltage remains within 0V ± 50mV.



■ **Adjustment of Tonearm Sensing Position**

This adjustment should be performed when any deviation has generated in the tonearm sensing position (when the point at which the tonearm descends shifts from the proper one) after a 30 cm, or 17 cm disc size is selected.

When the descending position, either for a 30-, or 17-size disc, differs from the proper one, loosen screw A, or B, and turn the adjusting cam with a ⊖ screwdriver. (Fig. 4)

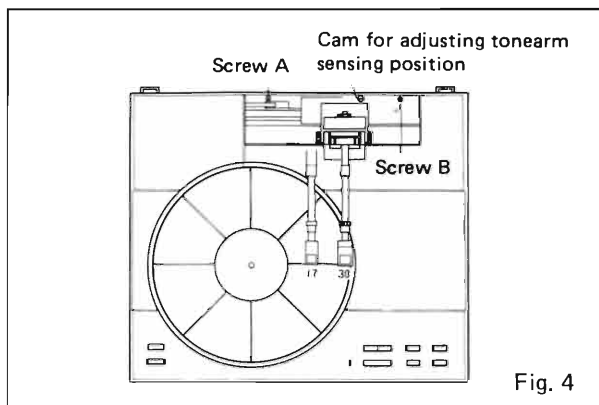


Fig. 4

■ Adjustment of AUTO-UP from tonearm's LEAD-OUT groove

When the tonearm enters the final groove on the disc surface, AUTO-UP is sensed based on the pitch (speed) of the LEAD-OUT groove. Therefore, for some discs, AUTO-UP may not take place. If this should be the case, the following adjustment is needed.

1. With a frequency counter and oscilloscope connected to Pin 24 of IC-2 as shown in Fig. 5, confirm that the frequency is within  $128\text{Hz} \pm 1\text{Hz}$  and that a sawtooth waveform is obtained. (This condition will be considered the "specified condition".)
2. When, depending on the disc, AUTO-UP does not take place, this value can be changed to match the particular disc in use. (When the LEAD-OUT groove has a narrow pitch, perform adjustment so as to raise the frequency.)

REFERENCE: Using the NEC test record ES-1008, confirm that the AUTO-UP position conforms to that described below (when the PX-3 is set to the "specified condition").

- When P (pitch) = 3mm AUTO-UP takes place (at 33-1/3 rpm) within the count of 21.
- When P (pitch) = 1mm AUTO-UP does take place (at 45 rpm) within the count of 21.

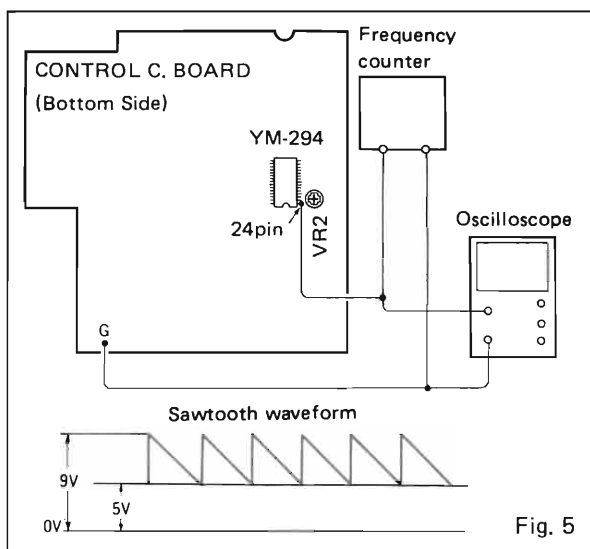


Fig. 5

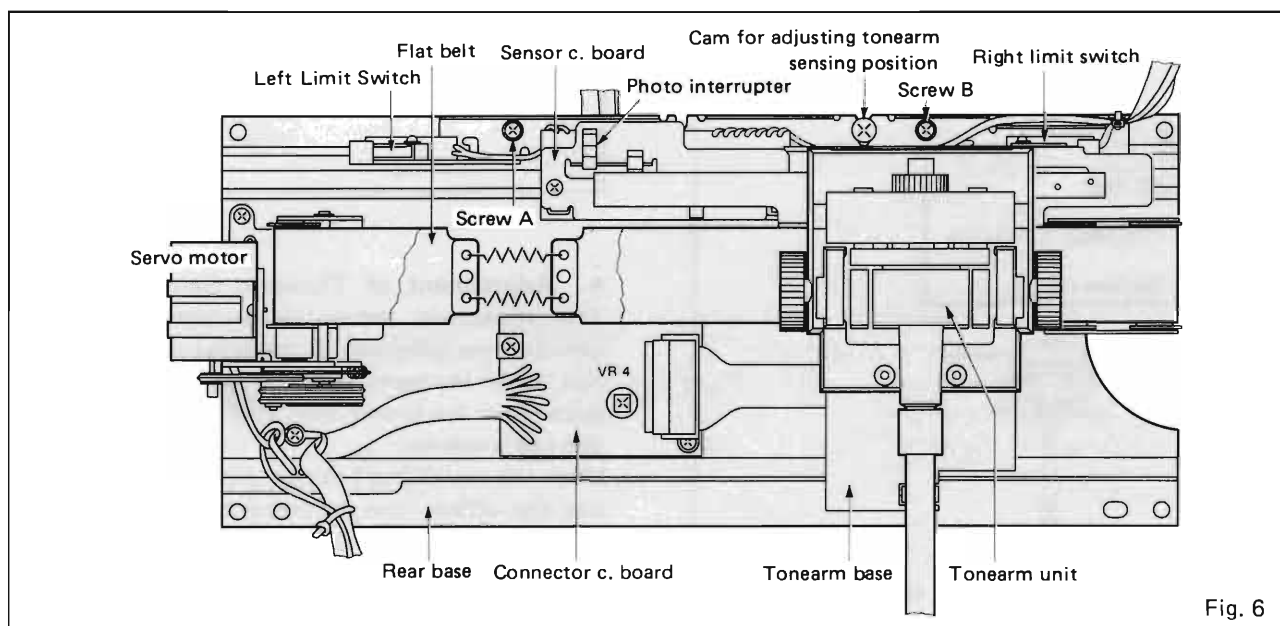
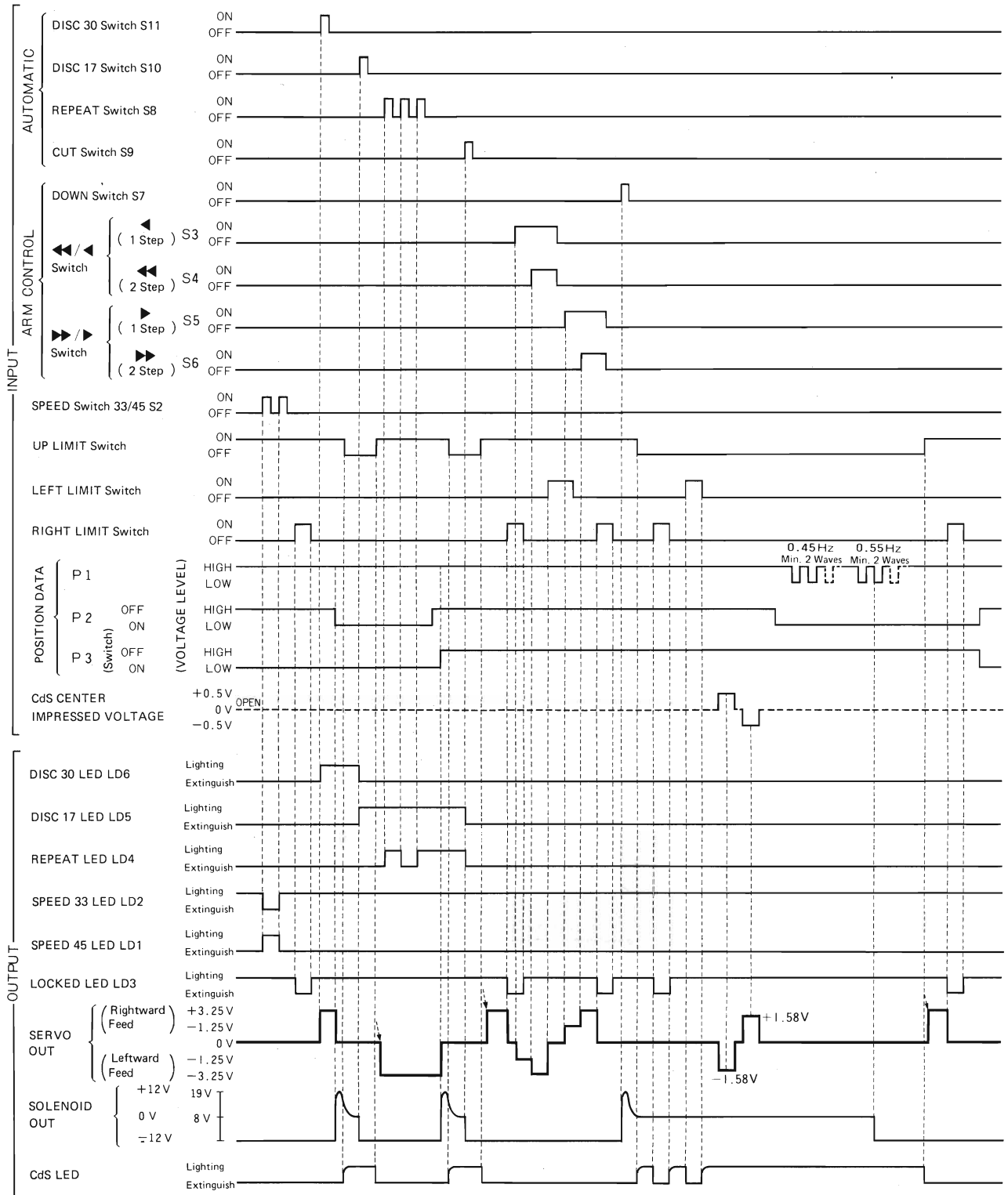


Fig. 6

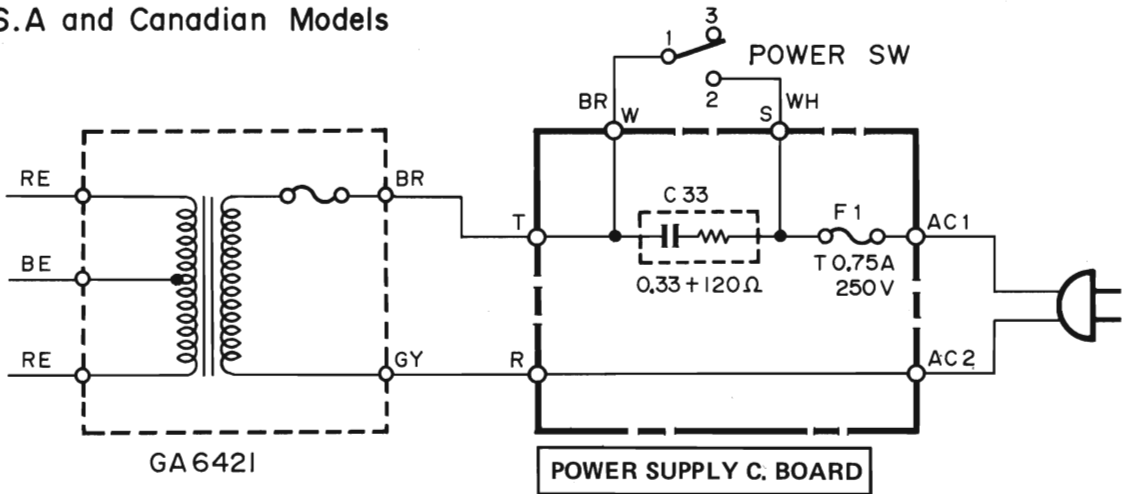


# TIMING CHART

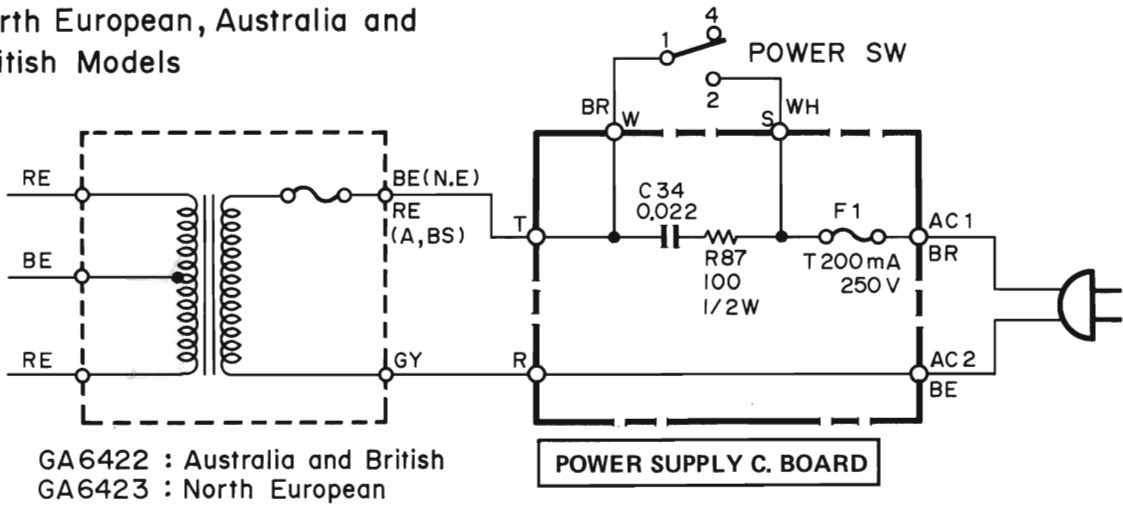


■ SCHEMATIC DIAGRAM BY EXPORT ZONE

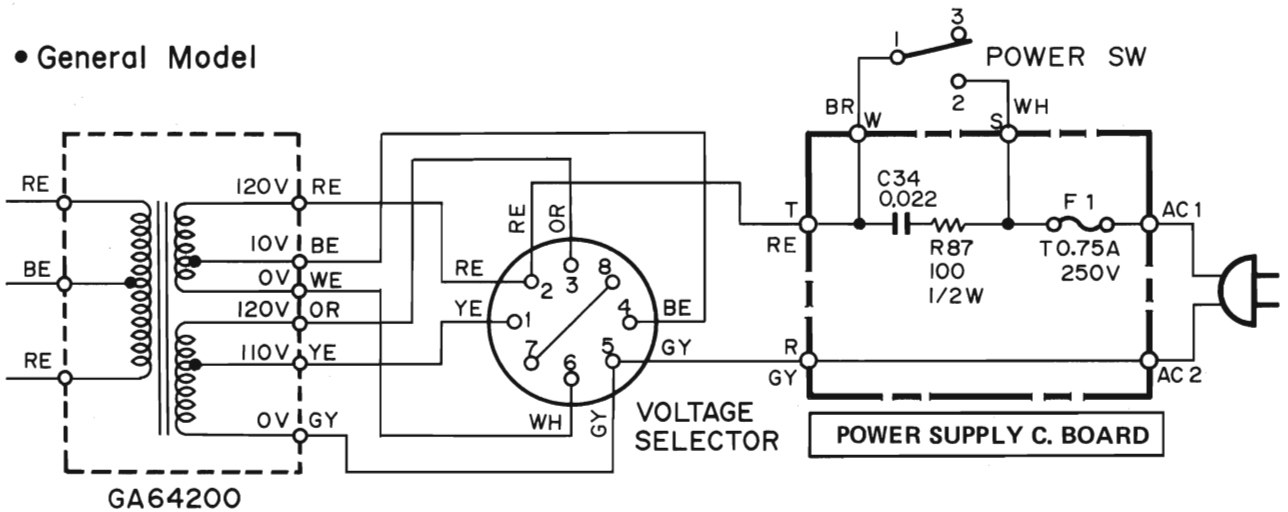
• U.S.A and Canadian Models



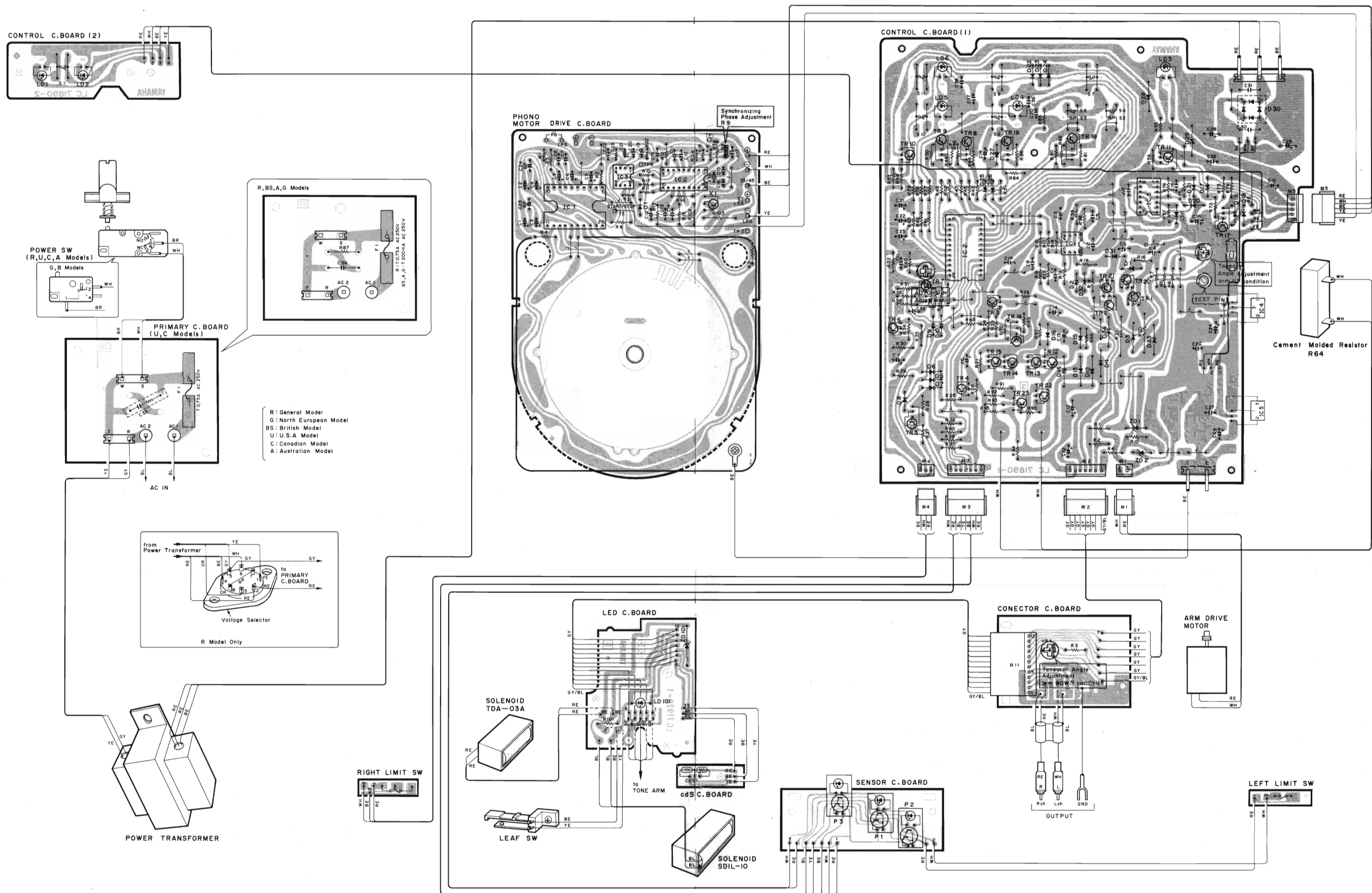
• North European, Australia and British Models



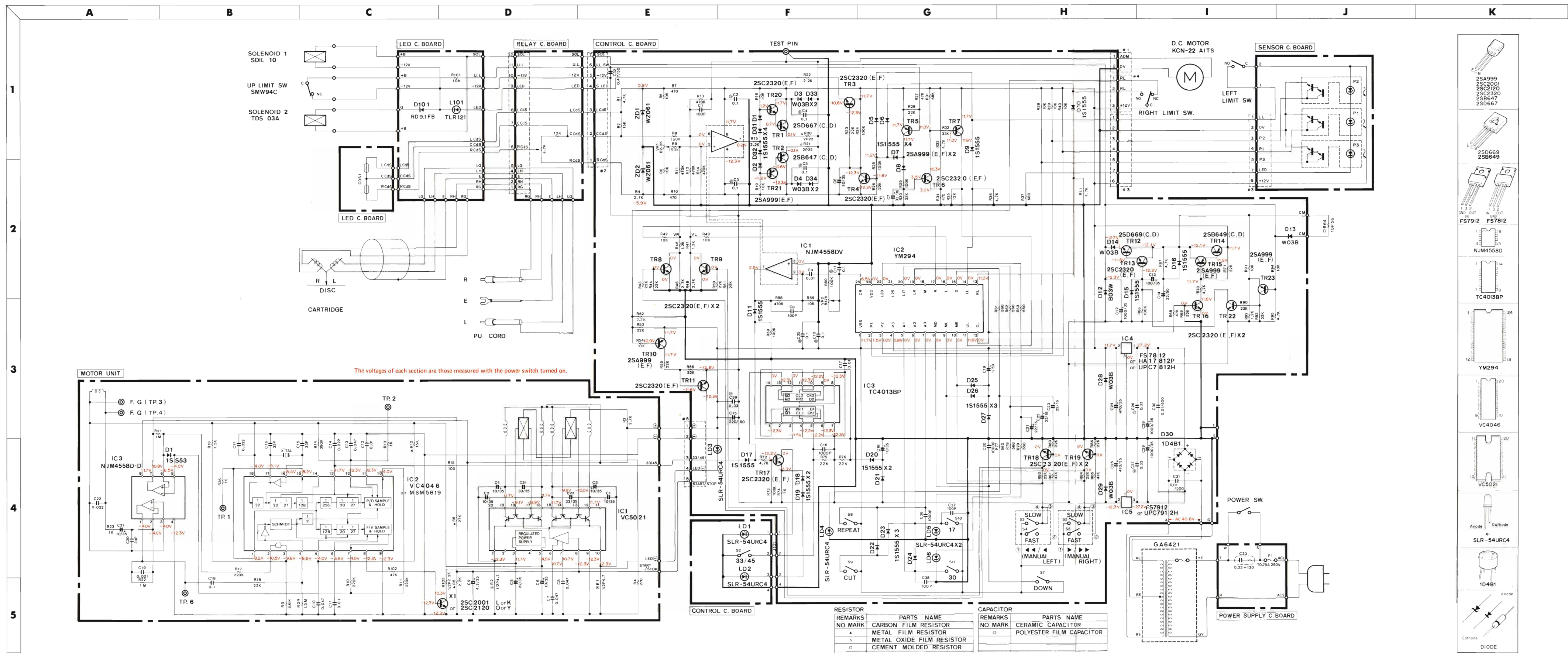
• General Model



WIRING DIAGRAM



SCHEMATIC DIAGRAM



REMARKS	PARTS NAME	REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR	NO MARK	CERAMIC CAPACITOR
△	METAL FILM RESISTOR	⊗	POLYESTER FILM CAPACITOR
▲	METAL OXIDE FILM RESISTOR		
□	CEMENT MOLDED RESISTOR		
*	FUSIBLE RESISTOR		

- 2SA999  
2SC2001  
2SC2120  
2SC2320  
2SB647  
2SD667
- 2SD669  
2SB649
- FS7912 FS7812
- NJM4558D
- TC4013BP
- YM294
- VC4046
- VC5021
- Anode Cathode  
SLR-54URC4
- 104B1
- Anode Cathode  
DIODE

# PARTS LIST

## PX-3

### STEREO TURNTABLE

■ CONTENTS	
■ EXPLODED VIEW (All over).....	1
■ PARTS LIST (All over).....	2
■ EXPLODED VIEW (Tonearm Unit) .....	4
■ PARTS LIST (Tonearm Unit) .....	5
■ PARTS LIST (Circuit Board)	
Power/Control C. Board .....	6
LED/Sensor C. Board .....	9

The symbol in Markets is abbreviation shown for destination.


U .....	U.S.A model
C .....	Canadian model
R .....	General model
A .....	Australian model
B .....	British model
G .....	North European model
J .....	Japan model

SINCE 1887



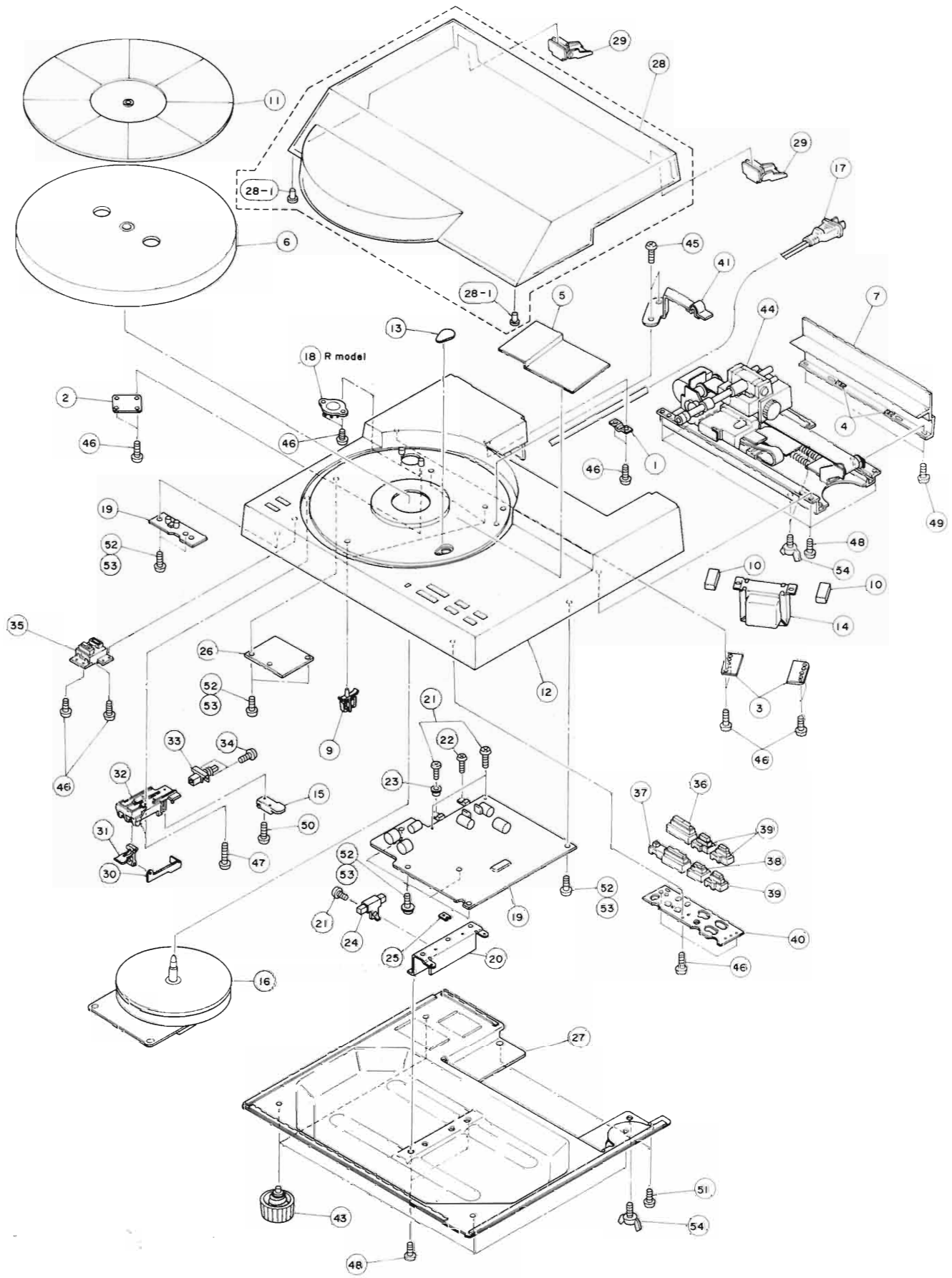
**YAMAHA**

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# PX-3 ■ EXPLODED VIEW (All over)



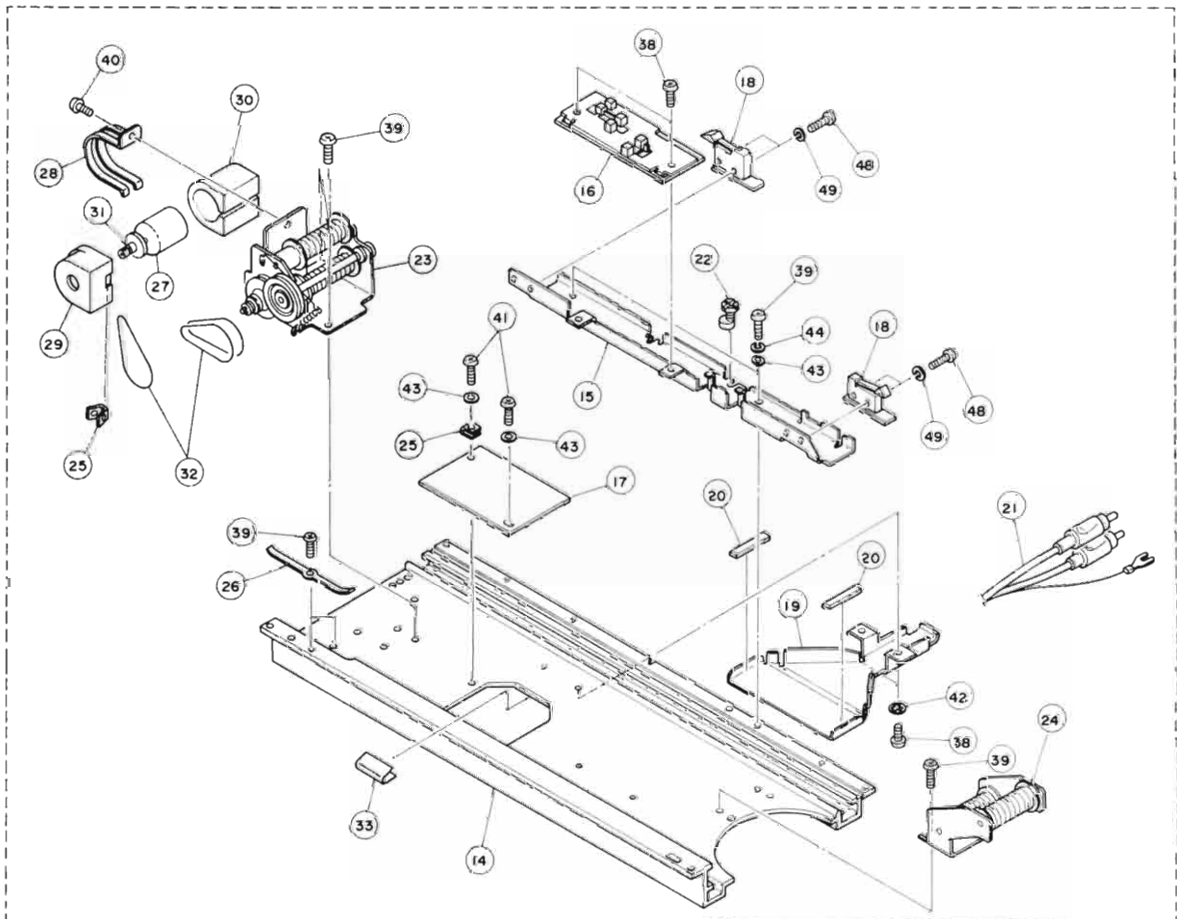
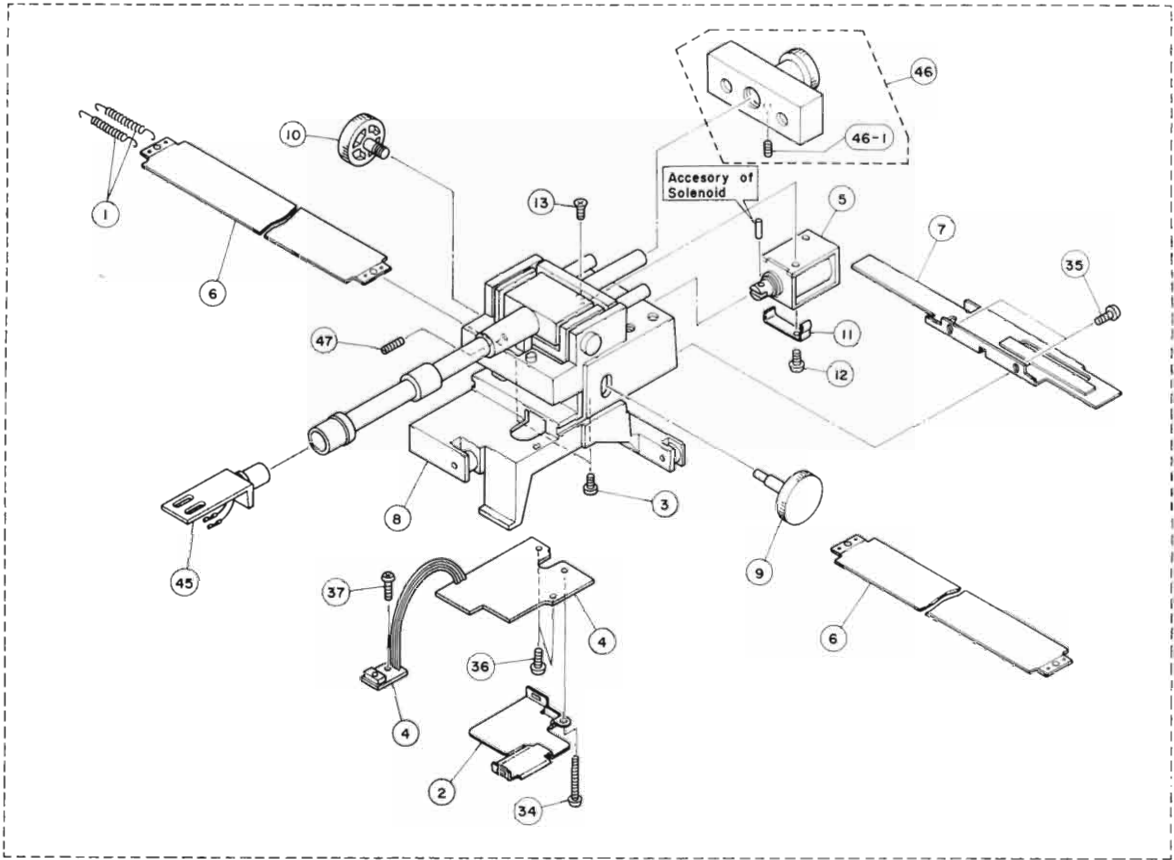
Ref. No.	Part No.	Description	(部 品 名)	Remarks	Common model	Markets
1	AA 06 42 40	Cord Stopper	コードストッパー			
※	2	AA 60 68 50	Cover for Selector	切り換えカバー		
※	3	AA 60 29 30	Holder, Transformer	トランス押エ		
4	AA 60 08 10	Spacer for Rear Cover	リヤカバースペーサー			
※	5	AA 60 83 80	Shield Plate	シールド板		
6	BA 07 77 90	Turntable	ターンテーブル			
※	7	BA 08 04 00	Rear Cover	リヤカバー		
8	CA 06 90 60		固定ビスシート	アーム固定用		
9	CB 09 26 70	Wire Clip	ワイヤークリップ			
10	CB 07 85 80	Cushion, Transformer	トランスクッション			
11	CB 60 51 50	Turntable Sheet	ターンテーブルシート			R, A, G, C, B
"	CB 60 01 80	"	"			U
※	12	CB 60 19 90	Panel	パネル		
※	13	CB 60 33 00	Cap. Adjusting	調整キャップ		
※	14	GA 64 19 10	Power Transformer	電源トランス		J
※	"	GA 64 21 20	"	"		U, C
※	"	GA 64 23 10	"	"		G
※	"	GA 64 22 10	"	"		A, B
※	"	GA 64 20 10	"	"		R
※	15	KA 60 04 90	Micro Switch	XGC3-Z81	マイクロスイッチ	G, B
※	"	KA 60 05 00	"	AH41009	"	R, U, A, C
※	16	JC 00 06 70	Motor Unit		モーターユニット	
17	MG 00 04 10	Power Cord			電源コード	J
"	MG 00 08 40	"			"	R, U, C
"	MG 00 09 20	"	SAA2P		"	A
"	MG 00 09 50	"			"	G
"	MG 00 10 00	"			"	B
18	LB 20 14 80	Voltage Selector			電圧切換器	R
19	NA 07 61 90	Control C.Board			コントロールシート	
※	20	BA 08 02 80	Heat Sink		放熱器	
21	Ei 03 00 80	Bind Head Tapping Screw	3×8 (ZMC2-Y)		バインドタッピングネジ	
22	EK 01 00 20	Pan Head Semes Screw	2.6×8 (ZMC2-Y)		セムスナベ小ネジ	
23	CB 07 28 80	Isolation Bush			絶縁ブッシュ	
※	24	HM 87 45 60	Cement Resistor	RGN10HS 10W 56Ω	セメント抵抗	R64
25	i L 00 02 70	Mica Base	AC229		マイカベース	
※	26	NA 07 61 10	Power Supply C.Board		電源シート	J
※	"	NA 07 61 30	"		"	U
※	"	NA 07 61 60	"		"	C
※	"	NA 07 61 40	"		"	A, G, B
※	"	NA 07 61 20	"		"	R
27	NB 09 74 30	Bottom Cover Ass'y			底板 Ass'y	
※	28	NB 09 74 40	Dust Cover Ass'y		上蓋 Ass'y	
28-1	CB 09 17 90	Cushion for Dust Cover			上蓋クッション	PX-2
※	29	PB 06 17 00	Hinge Ass'y		オートヒンジ Ass'y	
30	AA 60 07 40	Selector Switch Rod			切換スイッチロッド	
※	31	CB 60 32 90	Lever		レバー	
32	CB 09 53 40	Base			ベース	
33	KA 80 14 10	Push Switch	SUE 12		プッシュスイッチ	R, U, A, G, C, B

※ : New Part (新部品)





# PX-3 ■ EXPLODED VIEW (Tonearm Unit)



**PX-3 ■ PARTS LIST(Tonearm Unit)**

Ref. No.	Part No.	Description	(部 品 名)	Remarks	Common model	Markets
*	SS 06 02 70	Tone Arm Unit	YA-32	YA-32トーンアームユニット		
*	1 AA 60 68 60	Tension Spring		テンションスプリング		
*	2 AA 60 64 70	Shiled Cover		シールドカバー		
*	3 BB 06 94 90	Screw, Belt Stopper		ベルト止メネジ		
*	4 NA 07 62 30	LED C.Board		LEDシート		
*	5 JF 00 03 20	Solenoid	TDS03A	ソレノイド		
*	6 NB 60 02 20	Flat Belt Ass'y		平ベルト Ass'y		
*	7 NB 60 03 10	Shutter plate Ass'y		シャッタープレート Ass'y		
*	8 PB 06 19 60	Pick Up Ass'y		ピックアップ Ass'y		
*	9 XX 60 03 90	Lock Knob Unit		ロックつまみユニット		
*	10 XX 60 04 00	Up-Down Knob Unit		上下つまみユニット		
*	11 XX 60 04 20	Stopper Spring	t0.3	回転止メバネ		
*	12 EA 03 00 40	Pan Head Screw	3×4(ZMC2-Y)	ナベ小ネジ		
*	13 EB 23 00 60	Flat Head Screw	3×6(FCRM3-3g)	皿小ネジ		
*	14 BA 08 15 60	Rear Base		リヤベース		
*	15 AA 60 66 40	Sensor Angle		センサーアングル		
*	16 NA 07 62 50	Sensor C.Board		センサーシート		
*	17 NA 07 33 00	Relay C.Board		中継シート		
*	18 KA 60 03 80	Micro Switch	AH3442	マイクロスイッチ		
*	19 AA 60 66 20	Shield Case		シールドケース		
*	20 CB 60 31 30	Cushion Rubber		ラバークッション		
*	21 MZ 07 59 70	PU Cord Ass'y		P.Uコード Ass'y		
*	22 CB 60 31 00	Eccentric Cam		偏芯カム		
*	23 NB 60 01 80	Bearing Base Ass'y(L)		軸受台(L) Ass'y		
*	24 NB 60 02 00	" (R)		" (R) "		
*	25 BB 06 94 30	Speacer		アース用スペーサー		
*	26 AA 07 39 20	Binding tie		束線止メ		
*	27 JC 00 06 80	DC Motor		DCモーター		
*	28 AA 60 65 90	Stopper, Motor		モーター止メ		
*	29 CB 60 30 60	Motor Cover(A)		モーターカバー(A)		
*	30 CB 60 30 70	" (B)		" (B)		
*	31 BB 06 97 20	Motor Pulley		モータープーリー		
*	32 CB 60 30 40	Drive Belt		ドライブベルト		
*	33 CB 07 71 40	Adhesive Tape	Black H = 19	アセテートクロステープ(黒)		
	34 EA 12 02 00	Pan Head Screw	M2×20(FNM3-3g)	ナベ小ネジ		
	35 EA 03 00 80	"	M3×8(ZMC2-Y)	"		
	36 Ei 03 00 80	Bind Head Tapping Screw	3×8( " )	バインドタッピングネジ		
	37 Ei 03 00 60	"	3×6( " )	"		
	38 Ei 33 00 60	"	3×6(ZMC2-BI)	"		
	39 Ei 33 00 80	"	3×8( " )	"		
	40 EA 03 00 60	Pan Head Screw	M3×6(ZMC2-Y)	ナベ小ネジ		
	41 EZ 00 04 60	Bonding Tapping Screw	3×8(ZMC2-BI)	ボンディングタッピングネジ		
	42 EV 41 00 30	Toothed Lock Washer	φ3	歯付座金		
	43 EV 20 00 30	Plain Washer	φ3	平座金		
	44 EV 30 13 00	Spring Washer	φ3	バネ座金		
*	45 PB 06 19 70	Head Shell Ass'y		シェル Ass'y		
*	46 XX 60 04 10	Main Weight Ass'y		メインウエイト Ass'y		
	46-1 EE 00 04 50	Set Screw		スリ割付止メネジ		
	47 EZ 00 10 90	Cup Screw	M2×5(FCM3-BI)	取メネジ		
	48 EA 02 31 00	Pan Head Screw	M2.3×10	ナベ小ネジ		
	49 EV 30 02 60	Spring Washer	M2.6	バネ座金		

\* : New Part (新部品)

Ref. No.	Part No.	Description	(部 品 名)	Remarks	Common model	Markets
※	NA 07 61 30	Power Supply C. Board	電源シート			U
	NA 07 61 60	"	"			C
	NA 07 61 40	"	"			A, G, B
	NA 07 61 20	"	"			R
C33	FZ 00 01 10	Spark-Killer Capacitor	120Ω + 0.33125VAC	スパークキラーコン		J, U
"	FZ 00 11 20	"	"	"		C
C34	FZ 00 22 50	"	Rifa 0.022 250V	"		R, G, A, B
R87	HG 30 51 00	Carbon Resistor	1/2P 100Ω	カーボン抵抗		"
	LA 00 21 40	Wrapping Terminal	2P P=10	i型ラッピング端子板		
	LA 00 05 30	Press Terminal		ハネ付ハトメ		
	LB 20 09 00	Fuse Holder Pin		ヒューズホルダーピン		J, R, U, C
	LB 20 10 60	"		"		A, G, B
F 1	KB 00 03 20	Fuse	T 0.75A 250V	ヒューズタイラッシュ		J, R
※	KB 00 26 70	"	ASG3 0.75A 250V	ULヒューズ		U, C
"	KB 00 07 00	"	200mA 250V	ヒューズタイムラグ		A, G, B
	NA 07 61 90	Control Circuit Board	コントロールシート			
R1	HJ 35 64 70	Carbon Resistor	4.7KΩ RD25,SM-8	カーボン抵抗		
R2	HJ 35 71 50	"	15KΩ "	"		
R4	HJ 35 62 70	Carbon Resistor	2.7KΩ RD25,SM-8	カーボン抵抗		
R5 R6	HJ 35 71 00	"	10KΩ "	"		
R7	HJ 35 54 70	"	470Ω "	"		
R10	HJ 35 54 70	Carbon Resistor	470Ω RD25,SM-8	カーボン抵抗		
R11 R14	HJ 35 84 70	"	470KΩ "	"		
R15	HJ 35 62 20	"	2.2KΩ "	"		
R16	HJ 35 71 00	"	10KΩ "	"		
R19	HJ 35 71 00	Carbon Resistor	10KΩ RD25,SM-8	カーボン抵抗		
※ R20 R21	HL 72 42 20	Metal Oxide Resistor	2P 22Ω	酸化抵抗		
R22	HJ 35 62 20	Carbon Resistor	2.2KΩ RD25,SM-8	カーボン抵抗		
R23	HJ 35 72 20	"	22KΩ "	"		
R24 R25	HJ 35 81 00	"	100KΩ "	"		
R26	HJ 35 72 20	"	22KΩ "	"		
R27	HJ 35 74 70	"	47KΩ "	"		
R28	HJ 35 72 20	"	22KΩ "	"		
R29	HJ 35 81 00	"	100KΩ "	"		
R30	HJ 35 73 30	"	33KΩ "	"		
R31	HJ 35 76 80	"	68KΩ "	"		
R32	HJ 35 73 30	"	33KΩ "	"		
R33	HJ 35 64 70	"	4.7KΩ "	"		
R34	HJ 35 54 70	"	470Ω "	"		
R35	HJ 35 71 20	"	12KΩ "	"		
R36	HJ 35 64 70	"	4.7KΩ "	"		
R37	HJ 35 56 80	"	680Ω "	"		
R38 R40	HJ 35 71 00	"	10KΩ "	"		
R41	HJ 35 64 70	"	47KΩ "	"		
R42	HJ 35 71 00	"	10KΩ "	"		
R43 R44	HJ 35 72 20	"	22KΩ "	"		
R45	HJ 35 61 20	"	1.2KΩ "	"		
R46	HJ 35 62 70	"	2.7KΩ "	"		
R47	HJ 35 61 20	"	1.2KΩ "	"		
R48	HJ 35 62 70	"	2.7KΩ "	"		

※ : New Part (新部品)

Ref. No.	Part No.	Description	(部 品 名)	Remarks	Common model	Markets
R49	HJ 35 71 00	Carbon Resistor	10KΩRD25,SM-8	カーボン抵抗		
R50 R51	HJ 35 72 20	"	22KΩ "	"		
R52	HJ 35 62 20	"	2.2KΩ "	"		
R53	HJ 35 72 20	"	22KΩ "	"		
R54	HJ 35 71 00	"	10KΩ "	"		
R55 R56	HJ 35 72 20	"	22KΩ "	"		
R57	HJ 35 81 00	"	100KΩ "	"		
R58	HJ 35 84 70	"	470KΩ "	"		
R59	HJ 35 71 00	"	10KΩ "	"		
R60	HJ 35 81 00	"	100KΩ "	"		
R61 63	HJ 35 55 60	"	560Ω "	"		
R66	HJ 35 81 00	Carbon Resistor	100KΩRD25,SM-8	カーボン抵抗		
R67	HJ 35 64 70	"	4.7KΩ "	"		
R68	HJ 35 74 70	"	47KΩ "	"		
R69	HJ 35 72 20	"	22KΩ "	"		
R70	HJ 35 64 70	"	4.7KΩ "	"		
R71	HJ 35 72 20	"	22KΩ "	"		
R72	HJ 35 64 70	"	4.7KΩ "	"		
R73	HJ 35 81 00	"	100KΩ "	"		
R74	HJ 35 61 00	"	1KΩ "	"		
R75 R76	HJ 35 72 20	"	22KΩ "	"		
R77 79	HJ 35 55 60	"	560Ω "	"		
R80	HJ 35 72 20	"	22KΩ "	"		
R81	HJ 35 74 70	"	47KΩ "	"		
R83 R84	HJ 35 72 20	Carbon Resistor	22KΩ RD25,SM-8	カーボン抵抗		
R85	HJ 35 74 70	"	47KΩ "	"		
R86	HJ 35 72 20	"	22KΩ "	"		
R89	HJ 35 81 20	Carbon Resistor	120KΩRD25,SM-8	カーボン抵抗		
R90	HJ 35 72 20	"	22KΩ "	"		
R91	HJ 35 71 00	"	10KΩ "	"		
R92	HJ 35 61 20	"	1.2KΩ "	"		
R93	HJ 35 72 20	"	22KΩ "	"		
R94	HJ 35 71 00	"	10KΩ "	"		
R95	HJ 35 64 70	"	47KΩ "	"		
VR1	HT 41 00 30	Semi Variable Resistor	B2.2KΩ SR19R	ソリッドボリューム		
VR2	HT 41 01 40	"	B47KΩ "	"		
C1	FG 51 21 00	Ceramic Capacitor	100PF 50V SLO(K)	セラコン		
C2 5	UA 55 51 00	Mylar Capacitor	0.1 <sub>μ</sub> F 50V(J)	マイラーコン		
C6	UW 85 71 00	Electrolytic Capacitor	10 <sub>μ</sub> F 35V	ケミコン(M)RE		
C7 C8	UW 83 73 30 FG 51 21 00	Ceramic Capacitor	33 <sub>μ</sub> F 16V 100PF 50V SL(K)	セラコン		
C9	FG 54 41 00	"	0.01 <sub>μ</sub> F 50VF(Z)	"		
C10 C11	UA 55 51 00	Mylar Capacitor	0.1 <sub>μ</sub> F 50V(J)	マイラーコン		
C12	UJ 45 91 00	Electrolytic Capacitor	1000 <sub>μ</sub> F 35V	ケミコン(M)RE		
C13	UW 85 81 00	"	100 <sub>μ</sub> F 35V	"		
C14	UW 86 72 20	"	22 <sub>μ</sub> F 50V	"		

※ : New Part (新部品)

Ref. No.	Part No.	Description	(部 品 名)	Remarks	Common model	Markets
C15	UJ 46 82 20	Electrolytic Capacitor	220 $\mu$ F 50V	ケミコン(M)RE		
C16	FG 51 31 00	Ceramic Capacitor	1000PF50V(B)K	セラコン		
C17	FG 54 41 00	"	0.01 $\mu$ F50VF(Z)	"		
C18	UW85 71 00	Electrolytic Capacitor	10 $\mu$ F 35V	ケミコン(M)RE		
C19	UW86 61 00	"	1 $\mu$ F 50V	"		
C20	FG 51 31 00	Ceramic Capacitor	1000PF 50V(B)K	セラコン		
C21 23	UW83 72 20	Electrolytic Capacitor	22 $\mu$ F 16V	ケミコン		
C24 C25	UJ 45 84 70	"	470 $\mu$ F 35V	"		
C26 C27	UA 55 53 30	Mylar Capacitor	0.33 $\mu$ F 50V (K)	マイラーコン		
C28 C29	UJ 45 91 00	Electrolytic Capacitor	1000 $\mu$ F 35V(M)RE	ケミコン		
C30 C31	FH 23 41 00	Ceramic Capacitor	0.01 $\mu$ F 500VYZ(P)	セラコン		
C32	UW86 54 70	Electrolytic Capacitor	0.47 $\mu$ F 50V(M)RE	ケミコン		
C35	UA 55 51 00	Mylar Capacitor	0.1 $\mu$ F 50V(J)	マイラーコン		
C36	FG 51 31 00	Ceramic Capacitor	1000PF 50V(B)K	セラコン		
C37 C38	FG 51 21 00	"	100 PF 50V(B)K	"		
C39	UA 55 53 30	Mylar Capacitor	0.33 $\mu$ F 50V (K)	マイラーコン		
IC1	iG 00 13 90	IC	NJM4558DV	IC		
IC2	iT 29 40 00	"	YM294	"		
IC3	iG 00 11 80	"	TC4013 D-FF	"		
IC4	iG 03 70 00	"	FS7812 +12V 1A	"	} Inter-changeable	
"	iG 03 32 50	"	UPC7812H	"		
IC5	iG 03 80 00	"	FS7912-12V 1A	"	} "	
"	iG 03 80 50	"	UPC7912H	"		
TR1	iD 06 67 00	Transistor	2SD667(C,D)	トランジスタ		
TR2	iB 06 47 30	"	2SB647(C,D)	"		
TR3 TR4	iC 23 20 10	"	2SC2320(E,F)	"		
TR5	iA 09 99 10	"	2SA999(E,F)	"		
TR6	iC 23 20 10	"	2SC2320(E,F)	"		
TR7	iA 09 99 10	"	2SA999(E,F)	"		
TR8 TR9	iC 23 20 10	"	2SC2320(E,F)	"		
TR10	iA 09 99 10	"	2SA999(E,F)	"		
TR11	iC 23 20 10	"	2SC2320(E,F)	"		
TR12	iD 06 69 00	"	2SD669(C,D)	"		
TR13	iC 23 20 10	"	2SC2320(E,F)	"		
TR14	iB 06 49 00	"	2SB649(C,D)	"		
TR15	iA 09 99 10	"	2SA999(E,F)	"		
TR16 20	iC 23 20 10	"	2SC2320(E,F)	"		
TR21	iA 09 99 10	"	2SA999(E,F)	"		
TR22	iC 23 20 10	"	2SC2320(E,F)	"		
TR23	iA 09 99 10	"	2SA999(E,F)	"		
ZD1 ZD2	iF 00 03 20	Zener Diode	WZ061	ツェナーダイオード		
D1 D2	iF 00 00 40	Diode	1S1555	ダイオード	} Inter-changeable	
"	iF 00 06 70	"	1S2473	"		
D3 D4	iH 00 07 20	"	W03B	"	} "	
D5 D11	iF 00 06 70	"	1S2473	"		
"	iF 00 00 40	"	1S1555	"		
D12 D14	iH 00 07 20	"	W03B	"		

※ : New Part (新部品)

Ref. No.	Part No.	Description	(部 品 名)	Remarks	Common model	Markets
D15 -27	iF 00 00:40	Diode	1S1555	ダイオード	} Inter changeable (併用)	
"	iF 00 06:70	"	1S2473	"		
D28 D29	iH 00 07:20	"	W03B	"		
D30	iH 00 04:70	Bridge Diode	1D4B1	ダイオードブリッジ		
D31 D32	iF 00 00:40	Diode	1S1555	ダイオード		
D33 D34	iH 00 07:20	"	W03B	"		
L1 -6	iF 00 24:20	LED(Red)	SLR-54URC4	LED(赤)		
	CB 60 14:70	Holder, LED		LEDホルダー		
	LB 20 14:10	Base Pin	BS2P-SHF 2.5Pitch	2.5ピッチベースピン		
	LB 30 07:50	"	BS3P-SHF	"		
	LB 60 25:00	"	BS7P-SHF	"		
	LB 50 03:70	"	BE5P-SHF	"		
	LA 00 24:80	Wrapping Terminal	2P P=10 U type	U型ラッピング端子板		
	LA 00 24:90	"	3P P=10	"		
	LB 10 00:90	Pin Jack	1P SQ3055	基板型ピンジャック		
S2	KA 90 16:60	Tact Switch	KHC10902	タクトSW		
* S3 -6	KA 90 15:70	"	KHF10902	"		
S7 -11	KA 90 16:60	"	KHC10902	"		
	BB 06 83:70	Ground Metal		アース金具		
	NA 07 62:30	LED Circuit Board		LEDシート		
L101	iF 00 12:50	LED	TLR121	LED		
D101	iF 00 29:20	Zener Diode	RD9.1 FB	ツェナーダイオード		
R101	HJ 35 71:00	Carbon Resistor	10KΩ RD25 SM-8	カーボン抵抗		
CDS1	iK 00 02:40	Dual CDS	P1234	デュアルCDS		
	LA 00 04:30	Press Terminal		ハトメ		
	NA 07 62:50	Sensor Circuit Board		センサーシート		
* KA 60 05:30	Micro Switch			マイクロスイッチ	Left Limit Right Limit	
P1-3	iK 00 02:50	Opto Isolator		フォトインタラプタ		
* CB 60 30:90	Actuator			アクチュエータ		
	NA 07 33:00	Relay Circuit Board		中継シート		
* LB 60 34:50	Connector		BS12P SHF-1AA-B	NHコネクタ サイド型ベース付ポスト		
R3	HK 35 71:20	Carbon Resistor FCR25(J)	12KΩ	カーボン抵抗		
VR4	HY 00 03:70	Semi Variable Resistor	CR19R B4.7KΩ	メタルグレースVR		

\* : New Part (新部品)

