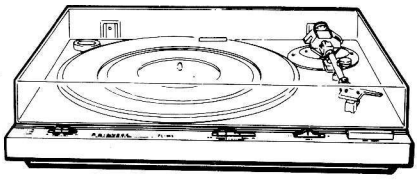
PIONEER®
The future of sound and vision.

Service Manual



ORDER NO.
ARP1553

STEREO TURNTABLE

PL-590
PL-333
PL-333-S

MODEL PL-590 AND PL-333 COMES IN FIVE VERSIONS DISTINGUISHED AS FOLLOWS:

Type	Applicable model			Power requirement	Destination
	PL-590	PL-333	PL-333-S		
KUC	○	—	—	AC120V	U.S.A. and Canada
WEM	—	○	○	AC220V–240V	Europen continent
WB	—	○	—	AC220V–240V	United Kingdom
RD	—	○	—	AC110V–127V,220V–240V	General export
WP	—	○	—	AC220V–240V	Australia

- **This manual is applicable to the PL-590/KUC,PL-333/WEM,WB,RD,WP and PL-333-S/WEM types.**
- **As to the PL-333/WEM,WB,RD,WP and PL-333-S/WEM types,refer to page 17.**
- **The PL-333-S is same as the PL-333 except the color.**
- **Ce manual pour le servise comprend les explications en français de réglage.**
- **Este manual de servicio trata del método ajuste escrito en español.**

CONTENTS

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PIONEER ELECTRONICS OF CANADA, INC. 505 Cochrane Drive, Markham, Ontario L3R 8E3 Canada
PIONEER ELECTRONIC [EUROPE] N.V. Keetberglaan 1, 2740 Beveren, Belgium
PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia TEL: [03] 580-9911

1. SPECIFICATIONS

PHONOGRAPH MOTOR AND PLATTER

Motor type ..... DC servo motor
Drive system ..... Belt drive system
Speed of rotation ..... 2 speeds: 33-1/3, 45 rpm
Wow and Flutter ..... No more than 0.06% WRMS
No more than 0.09% WTD Peak (DIN)
S/N ratio ..... More than 68 dB (DIN-B)
Platter ..... Diameter ø295 mm, aluminium die-cast

TONE ARM

Type ..... Static balance straight pipe arm

SUPPLIED CARTRIDGE

Type ..... MM type
Replacement stylus PN-240
Stylus ..... 0.6 mil diamond
Output voltage ..... 2.5 mV (1 kHz, 5.0 cm/s, LAT. Peak)
Suitable stylus pressure ..... 1.5 – 2.5 g
Frequency response ..... 10 Hz – 30,000 Hz
Installment ..... Universal type
Cartridge weight ..... 4 – 8 g

POWER SUPPLY, OTHER

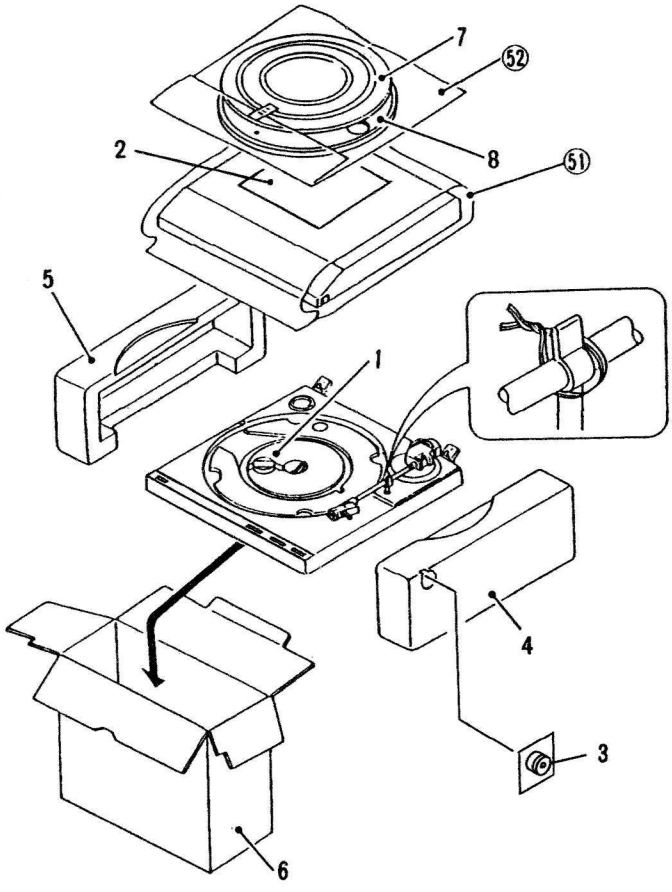
Power requirements
European, U.K., Australian models ..... a.c. 220 – 240 Volts ~ , 50/60 Hz
U.S., Canadian models ..... ~ AC 120 V, 60 Hz
Other destination models ..... a.c. 110 – 127 Volts/220 – 240 Volts ~ (switchable) 50/60 Hz
Power consumption 2W
External dimensions .....
420 (W) x 95 (H) x 356 (D) mm
16-9/16 (W) x 3-3/4 (H) x 14 (D) in
Netweight ..... 2.8 kg (6 lb 3 oz)

SUPPLIED ACCESSORIES

EP adaptor 1
Operating instructions 1

NOTE:
Specifications and design subject to possible modification without notice, due to improvements.

2. PACKING



Parts List of Packing

Mark	No.	Parts No.	Description
	1	PEC1002	45 adaptor
	2	PRB1073	Operating instructions
	3	PXA1133	Weight assembly
	4	PHA1063	Protector (R)
	5	PHA1064	Protector (L)
	6	PHG1214	Packing case
	7	PEB1059	Turntable sheet
	8	PNR1025	Turntable
	51		Mirror mat
	52		Vinyl bag

3. EXPLODED VIEWS AND PARTS LIST

NOTES:

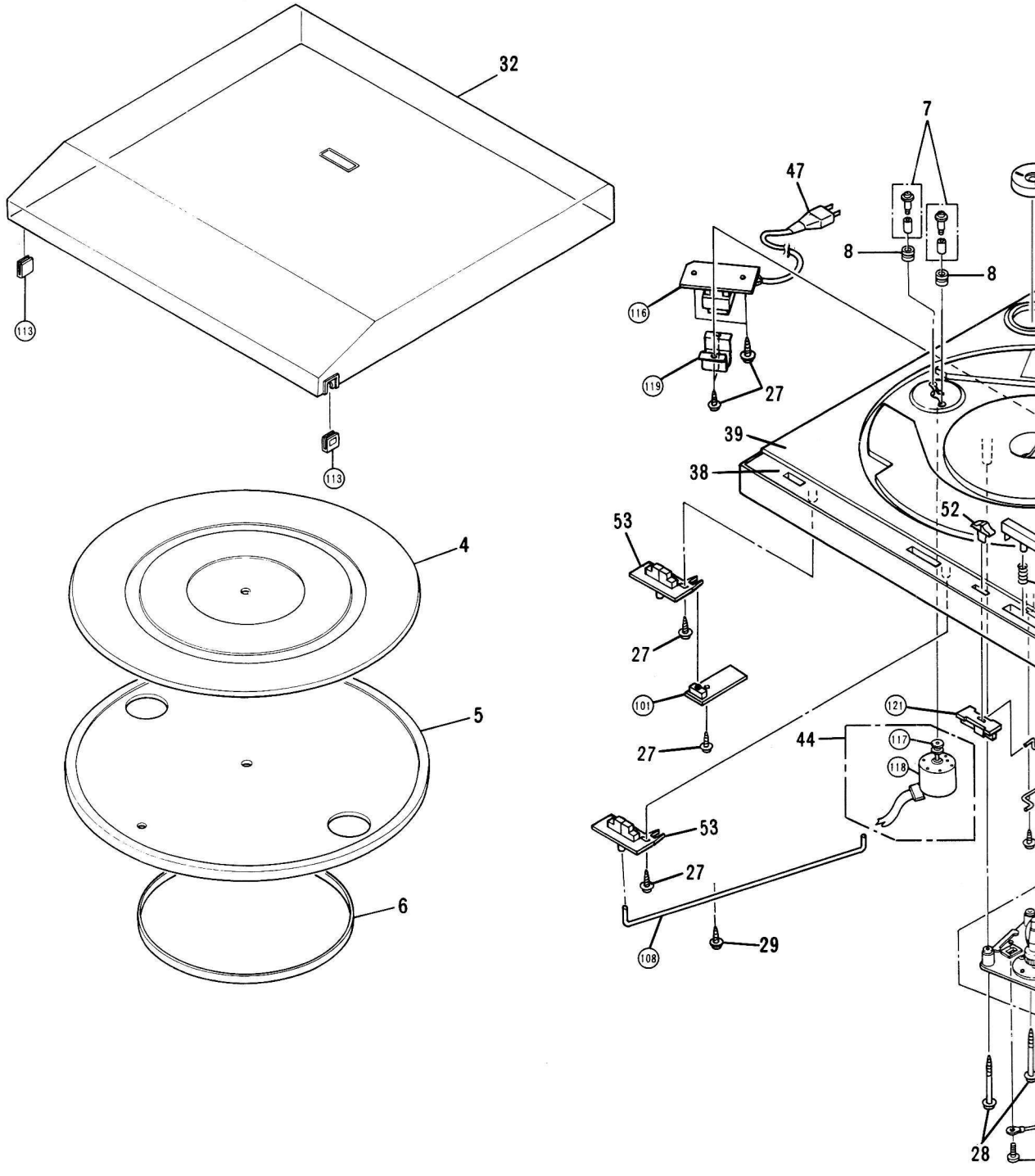
- *Parts without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *For your parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  ★★ GENERALLY MOVES FASTER THAN ★
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

3.1 EXTERIOR

Parts List of Exterior

Mark	No.	Parts No.	Description
	1	PXA1121	PU cord assembly
	2	.....	.....
	3	PPD1017	Arm assembly
★	4	PEB1059	Turntable sheet
	5	PNR1025	Turntable
★★	6	PEB1060	Belt
	7	PBA–112	Screw
	8	PEB1063	Rubber
	9	PBK1033	R clip
★	10	PNW1367	Arm rest
	11	PBF–020	Washer
	12	PBH1057	AS action spring
	13	PBH1046	EV spring
	14	PNW1290	EV sheet
	15	.....	.....
	16	PBH1061	EV lever spring
	17	PBH1051	Elevation cam spring
	18	PED–051	Washer
	19	PNW1371	Elevation cam
	20	PXT1017	EV plate spring (D) unit
	21	WT31D054D050	Washer
	22	PXA1139	PU plate assembly
	23	.....	.....
	24	.....	.....
	25	WC40FMC	Washer
	26	YS40FBT	Washer
	27	IPC30P100FMC	Screw
	28	IPC30P290FMC	Screw (3 × 29)
	29	PBA–159	Screw
	30	.....	.....
	31	PSZ30P060FMC	Screw (3 × 6)
	32	PNV1009	Dust cover
	33	PXA1132	Hinge assembly
	34	.....	.....
	35	PEB1061	Insulator
	36	YP40FBK	Nut
	37	BPZ26P120FZK	Screw (2.6 × 12)
	38	PAM1209	Front name plate
	39	PNW1366	Panel
	40	.....	.....
	41	.....	.....
	42	PAC1268	S/S button
	43	PEC1002	45 adaptor
	44	PYY1047	Motor assembly
	45	PNW1319	Styus cover
	46	PXV–950	Cartridge
⚠	47	PDG–045	AC power cord
	48	PBH1056	S/S spring
	49	PBK1043	AS plate spring
	50	.....	.....
	51	PAC1265	AS button
	52	PAC1267	Size button
	53	PAC1275	EV/SP button
	54	PEB–114	Rubber bush
	101		SW P.C. board assembly
	102		Sub–panel assembly
	103		PU Plate spring
	104		Screw
	105		PU Plate A
	106		PU Plate B
	107		PU Spring washer
	108		EV rod
	109		Size rod
	110		S/S rod
	111		.....
	112		.....
	113		Rubber
	114		Under base
	115		Start lever
	116		Power supply P.C. board assembly
	117		Motor pully
	118		Motor
	119		Trans cover
	120		AS plate
	121		Size plate

EXTERIOR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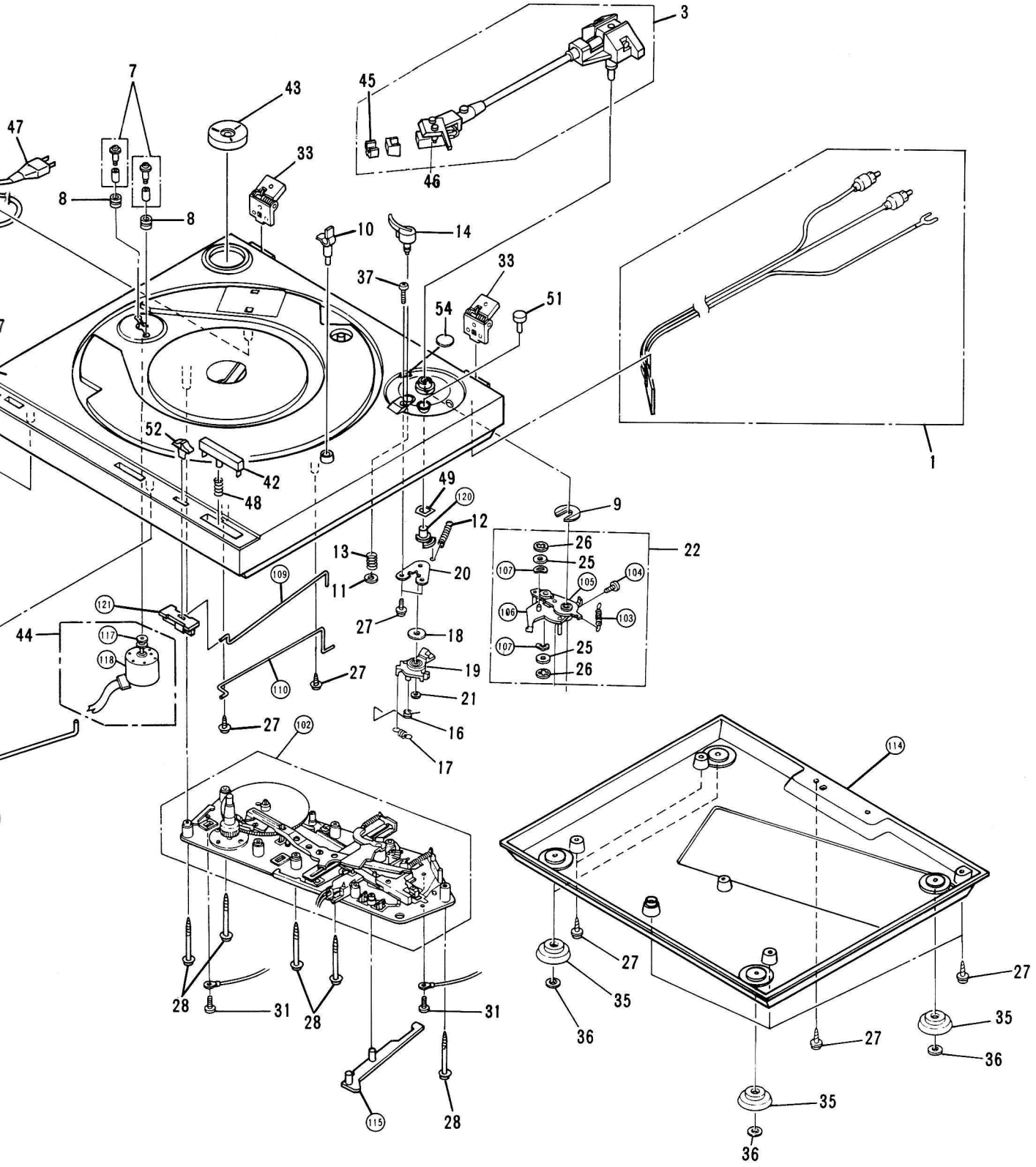
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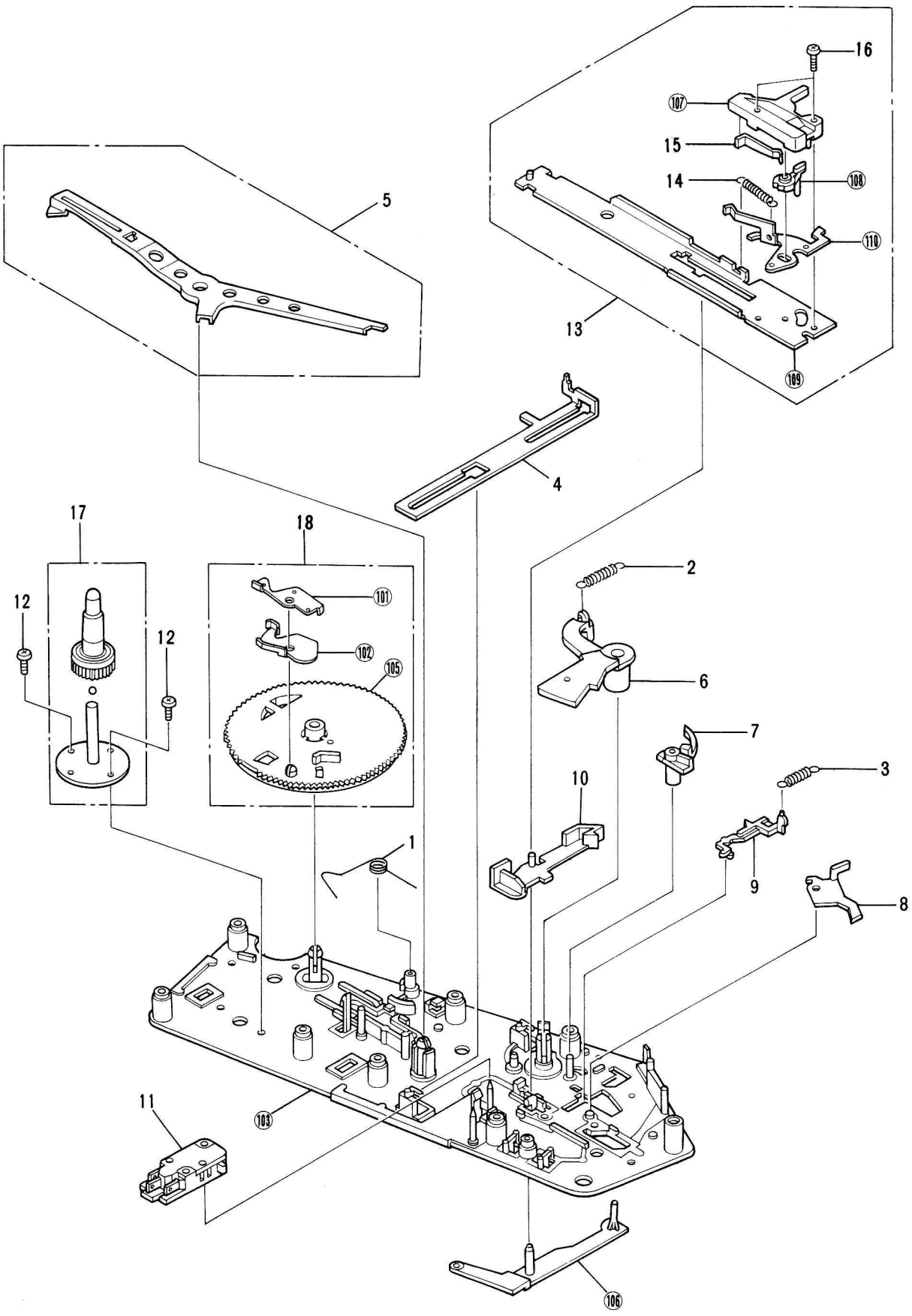
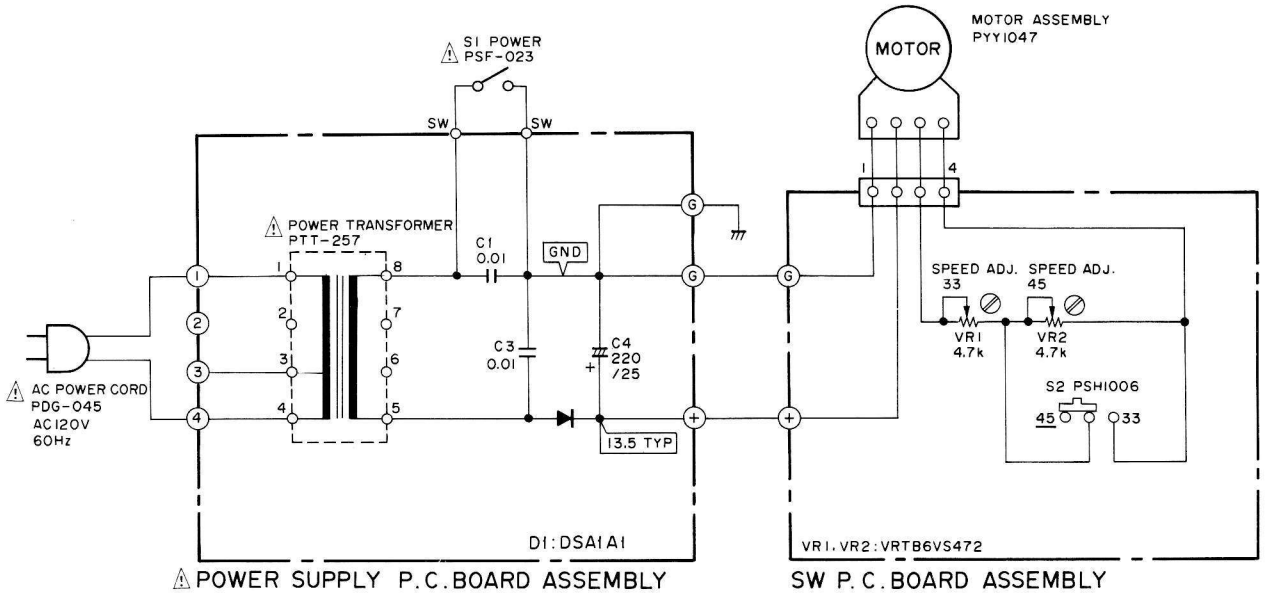
3.2 SUB-PANEL ASSEMBLY



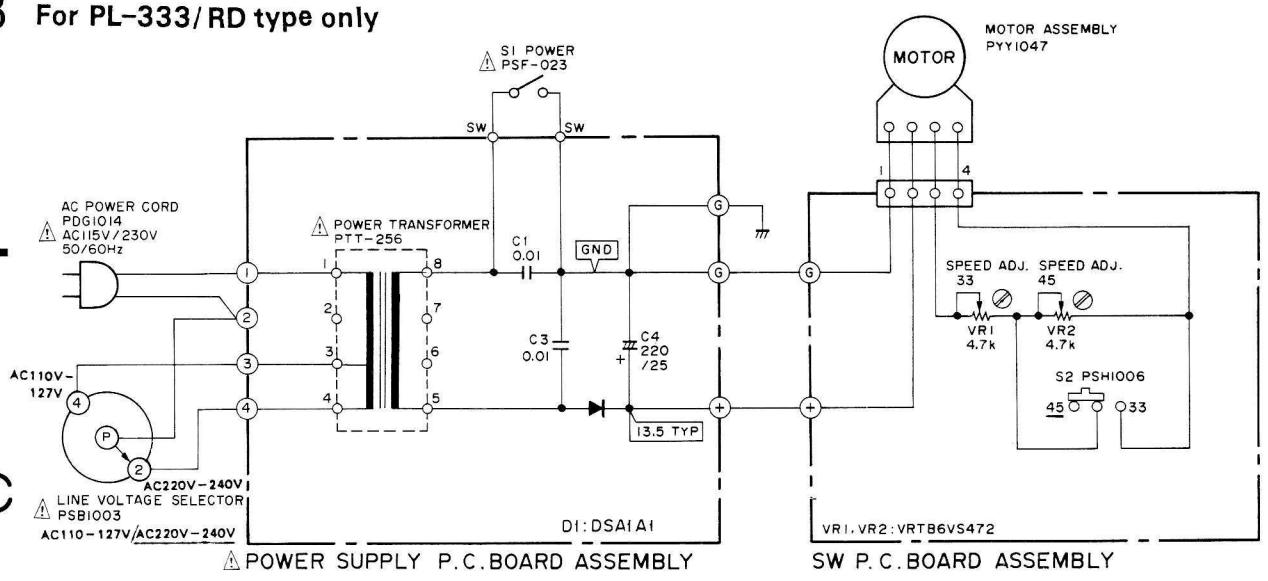
Parts List of Sub–panel

Mark	No.	Parts No.	Description
	1	PBH1063	Lock spring
	2	PBH1053	Select lever spring
	3	PBH1054	Reset plate spring
	4	PNB1096	Select lever
	5	PNB1098	Detector lever
	6	PNW1296	Index cam
	7	PNW1346	Switch locker
	8	PNW1312	Reset plate
	9	PNW1313	Selector
	10	PNW1314	Switch lever
⚠★★	11	PSF–023	Microswitch (POWER,S1)
	12	PSZ30P060FMC	Screw
	13	PXA1110	Drive plate assembly
	14	PBH–224	Start plate spring
	15	PBK–038	Click plate spring
	16	PSZ30P100FHC	Screw
	17	PXA1111	Shaft assembly
	18	PYY1046	Cam assembly
	101		Starting plate
	102		Signal plate
	103		Sub–panel
	104		.....
	105		Cam
	106		Start lever
	107		EV Cam
	108		Lead in ratch
	109		Drive plate unit
	110		Start plate

4. SCHEMATIC DIAGRAMS



For PL-333/RD type only



1. RESISTORS:
   Indicated in Ω, 1/8W & 1/4W, ±5% tolerance unless otherwise noted k; kΩ, M; MΩ, (F); ±1%, (G); ±2%, (K); ±10%, (M); ±20% tolerance

2. CAPACITORS:
   Indicated in capacity (μF)/voltage (V) unless otherwise noted p; pF. Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE, CURRENT:
   ▭; DC voltage (V) at no input signal
   Value in ( ) is DC voltage at rated power.
   mA; DC current at no input signal

4. OTHERS:
   ➡; Signal route.
   ⊘; Adjusting point.

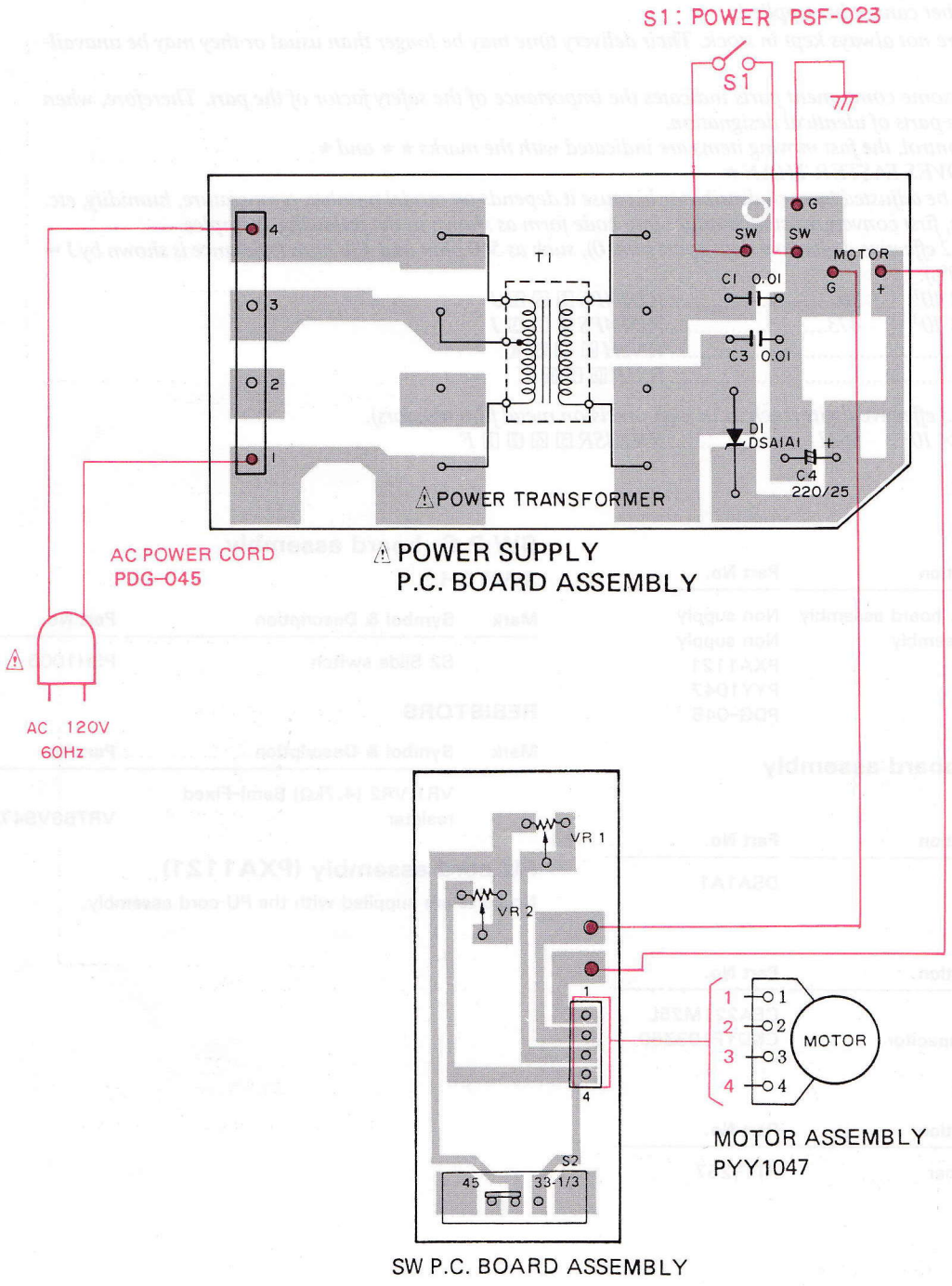
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
* marked capacitors and resistors have parts numbers.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

SWITCHES:
S1: POWER ON – OFF
S2: SPEED 33-1/3 rpm – 45 rpm

The underlined indicates the switch position.

5. P.C.BOARDS CONNECTION DIAGRAM



6. ELECTRICAL PARTS LIST

NOTES:

- *Parts without part number cannot be supplied.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *For your parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  ★★ GENERALLY MOVES FASTER THAN ★
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

  Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω	*56 × 10¹*	*561*	*RD1/4PS 5 6 1 J*
47kΩ	*47 × 10³*	*473*	*RD1/4PS 4 7 3 J*
0.5Ω	*0R5*		*RN2H 0 R 5 K*
1Ω	*010*		*RS1P 0 1 0 K*

  Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ	*562 × 10¹*	*5621*	*RN1/4SR 5 6 2 1 F*

Miscellaneous Parts

Mark	Symbol & Description	Part No.
⚠	Power supply P.C. board assembly	Non supply
	SW P.C. board assembly	Non supply
	PU cord assembly	PXA1121
★★	Motor assembly	PYY1047
⚠	AC power cord	PDG-045

Power supply P.C. board assembly

SEMICONDUCTOR

Mark	Symbol & Description	Part No.
★	D1	DSA1A1

CAPACITORS

Mark	Symbol & Description	Part No.
	C4 (0.22/25V)	CEA221M25L
	C1,C3 Ceramic capacitor	CKDYF103Z50

COIL,TRANSFORMER

Mark	Symbol & Description	Part No.
⚠	T Power transformer	PTT-257

SW P.C. board assembly

SWITCH

Mark	Symbol & Description	Part No.
	S2 Slide switch	PSH1006

RESISTORS

Mark	Symbol & Description	Part No.
	VR1,VR2 (4.7kΩ) Semi-Fixed resister	VRTB6VS472

PU cord assembly (PXA1121)

No parts are supplied with the PU cord assembly.

7. ADJUSTMENTS

7.1 MOTOR ADJUSTMENTS

Place the record player on blocks as shown in Fig. 7-1 and adjust the motor from the under base.

1. Turn the arm elevation lever up to raise the arm.
2. Place a strobo sheet on the turntable, move the arm to the turntable side, and rotate the turntable.
3. Adjust semifixed resistors VR1 and VR2 of the motor assembly so the 33-1/3 rpm and 45 rpm strobo of the strobo sheet appears to the static.
4. First adjust VR1 for 45 rpm and then the adjust VR2 for 33-1/3 rpm.

7.2 STYLUS LANDING POSITION ADJUSTMENT

When the tonearm doesn't land in the correct position during automatic playback, adjust according to the following procedure.

1. Place a 30cm record on the platter.
2. Press the START/STOP switch and start automatic playback. Note the landing position of the stylus. (How many mm to the inside or outside compared to the proper landing position on the platter.)
3. Depress the START/STOP switch to return the tonearm to the tonearm rest.
4. Press the arm elevation switch to raise the stylus.
5. With the adjustment hole visible, move the tonearm to the edge of the record by hand.
6. Turn the adjustment screw with a small screwdriver according to step 2 as follows:
   - When the stylus lands at the outside of the record, turn the adjustment screw clockwise.
   - When the stylus lands on the proper position toward the record center, turn the adjustment screw counterclockwise. One half turn of the adjustment screws moves the tonearm about 12mm.
7. After adjustment, press the START/STOP switch and check if the stylus landing point was correctly adjusted.
   If adjustment is incorrect, repeat steps 3 to 6.

Be careful not to damage the record and stylus when making this adjustment.

ADJUSTMENT USING A TEST RECORD

(Landing position adjustment cannot be done when the tonearm is on the record.)

30cm landing point ..... Lands between count 306 and 313.

17cm landing point ..... Lands between count 175 and 184.

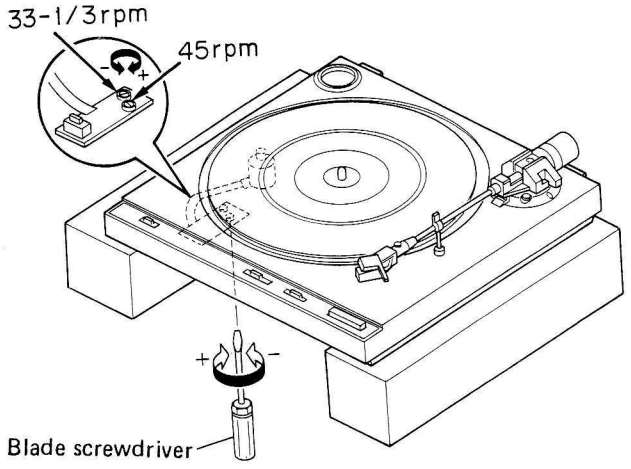


Fig. 7-1 Motor adjustment

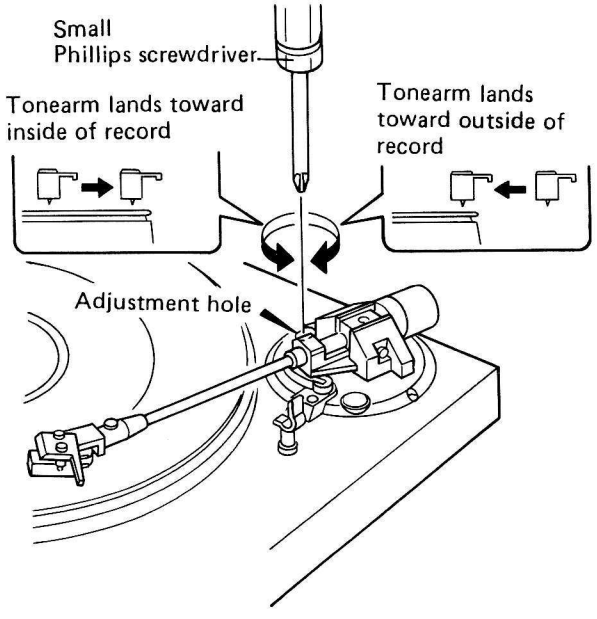


Fig. 7-2 Stylus landing point adjustment

7.3 AUTO-RETURN POSITION ADJUSTMENT

When the auto-return position is too near or too far, make the following adjustments.

1. Check the stylus landing position. If the stylus does not land at the correct position, adjust the landing position.
2. Set the arm elevation switch to UP and turn the auto-return adjustment screw fully counter-clockwise.
3. Move the tonearm as far as it will go toward the center.
4. When the auto-return adjustment screws is turned slowly clockwise, the tonearm will begin to move toward the center.
5. Stop turning the adjustment screw at the point at which there is a space of 32mm between the stylus of the cartridge and the center shaft. (Fig. 7-3)
6. After adjustment, check that auto-return is performed correctly and that the stylus landing position is correct.

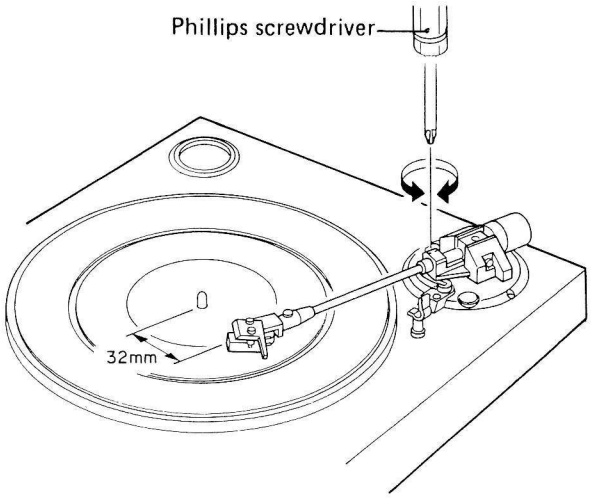


Fig. 7-3 Auto-return position adjustment

7.4 ARM ELEVATION HEIGHT ADJUSTMENT

1. Press the arm elevation switch to move the arm up.
2. Turn the height adjustment screw on the side of the arm elevation unit with a Phillips screwdriver so that the distance between the record and the stylus is 7±2mm. The arm moves up when the screw is turned counterclockwise.

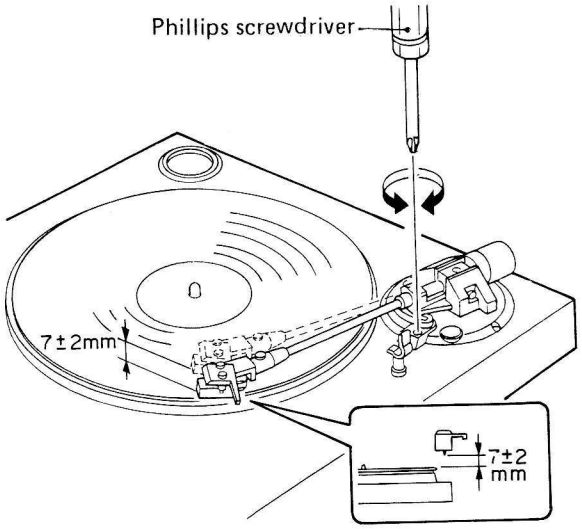


Fig. 7-4 Arm elevation adjustment

7.RÉGLAGE

7 .1 REGLAGE DU MOTEUR

Placer le tourne-disque sur des blocs, comme est montré dans la Fig. **7 -1** et régler le moteur depuis le dessous.

1. Tourner le levier de relevage du bras pour soulever le bras de lecture.
2. Placer une feuille stroboscopiques sur le tourne-disques; déplacer le bras jusqu'au côté du tourne-disque et le faire tourner.
3. Régler les résistances demi-fixes VR1 et VR2 de l'ensemble du moteur, jusqu'à ce que la feuille stroboscopique apparaisse immobile en 33-1/3 et 45 tr/min.
4. D'abord régler VR1 pour avoir la vitesse de 45 tr/min, ensuite, régler VR2 pour 33-1/3 tr/min.

7.2 REGLAGE DE LA POSITION DE DESCENTE DE LA POINTE DE LECTURE

Lorsque le bras de lecture ne descend pas sur la position correcte lors de la lecture automatique, réaliser le réglage en suivant la procédure suivante.

1. Placer un disque de 30 cm sur le plateau.
2. Appuyer sur la touche de marche/arrêt (START/STOP) et faire débuter la lecture automatique. Noter l'endroit du point de descente. (Nombre de mm vers l'intérieur ou vers l'extérieur par rapport au point de descente normal.)
3. Appuyer sur la touche START/STOP pour faire retourner le bras de lecture sur son support.
4. Appuyer sur la touche de relevage du bras pour soulever la pointe de lecture.
5. En ayant l'orifice de réglage visible, déplacer à la main le bras de lecture vers la périphérie du disque.
6. Tourner la vis de réglage à l'aide d'un petit tournevis, en fonction du point 2, comme suit:
   - Lorsque la pointe de lecture descend vers l'extérieur du disque, tourner la vis de réglage dans le sens des aiguilles d'une montre.
   - Lorsque la pointe de lecture descend vers l'intérieur du disque, tourner la vis de réglage dans le sens contraire des aiguilles d'une montre.

     Un demi-tour de la vis de réglage correspond à un déplacement d'environ 12mm du bras de lecture.
7. Après le réglage, appuyer sur la touche START/STOP et vérifier si le réglage de la position de descente a été correctement effectué.

   Si le réglage n'est pas correct, répéter les étapes 3 à 6.

Prendre soin de ne pas endommager le disque ni la pointe de lecture en réalisant ce réglage.

REGLAGE AU MOYEN D'UN DISQUE D'ESSAI

(Le réglage du point de descente ne peut être réalisé lorsque le bras de lecture est sur le disque.)

Point de descente
pour 30cm ..... Descente entre les valeurs 306 et 313.

Point de descente
pour 17cm ..... Descente entre les valeurs 175 et 184.

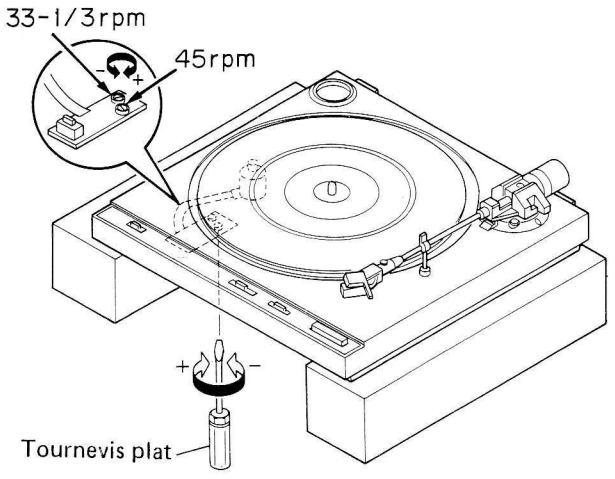


Fig. **7-1** Réglage du moteur

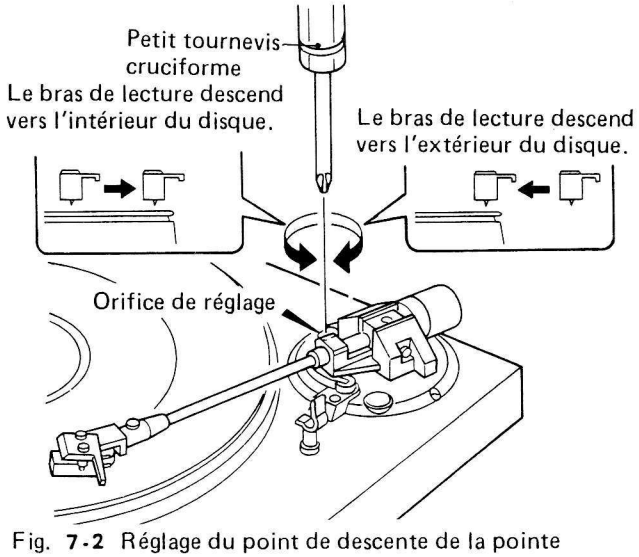


Fig. **7-2** Réglage du point de descente de la pointe de lecture

7 .3 REGLAGE DE LA POSITION DE RETOUR AUTOMATIQUE

Réaliser les réglages suivants lorsque la position de retour automatique se produit trop près ou loin.

1. Contrôler la position de descente de la pointe de lecture. Si la pointe de lecture ne descend pas sur la position correcte, ajuster la position de descente.
2. Régler la touche de relevage du bras sur la position "UP" et tourner la vis de réglage du retour automatique à fond dans le sens contraire des aiguilles d'une montre.
3. Déplacer le bras de lecture le plus possible vers l'intérieur.
4. Lorsque la vis de réglage du retour automatique est tournée lentement dans le sens des aiguilles d'une montre, le bras de lecture commence à se déplacer vers le centre.
5. Arrêter de tourner la vis de réglage sur le point pour lequel il y a un écart de 32mm entre la pointe de lecture et l'axe central. (Fig. 7 - 3)
6. Après le réglage, vérifier que le retour automatique se réalise correctement et que la position de descente de la pointe est correcte.

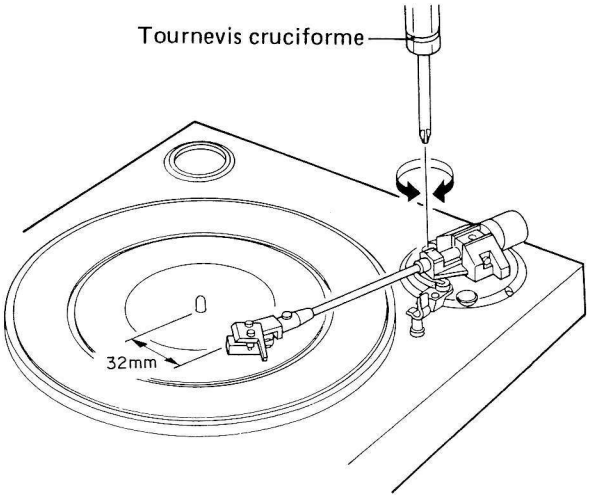


Fig. 7-3 Réglage de retour automatique

7.4 REGLAGE DE L'ELEVATION DU BRAS

1. Appuyer sur le commutateur d'élévation du bras pour déplacer le bras vers le haut.
2. Tourner la vis du côté du bloc d'élévation du bras au moyen d'un tournevis cruciforme, de telle sorte que la distance entre le disque et la pointe de lecture soit de 7±2mm. Le bras se déplace vers le haut lorsque l'on tourne la vis dans le sens contraire des aiguilles d'une montre.

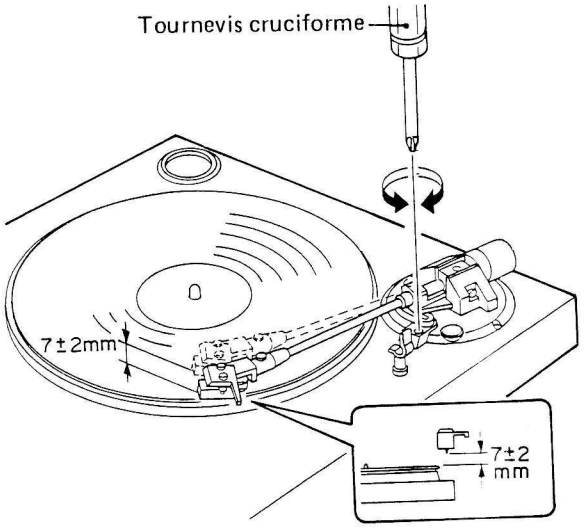


Fig. 7-4 Réglage de l'élévation du bras

7. AJUSTE

7.1 AJUSTES DEL MOTOR

Poner el giradiscos sobre bloques como se muestra en la Fig. **7-1** y ajustar el motor desde abajo.

1. Girar la palanca de elevación del brazo para elevar el brazo fonocaptor.
2. Poner una lámina estroboscópica sobre el plato, mover el brazo hacia el plato y hacer girar el plato.
3. Ajustar los resistores semifijos VR1 y VR2 del conjunto del motor de modo que el estrobo de 33-1/3 y 45 rpm y la lámina estroboscópica parezcan parados.
4. Primero ajustar VR1 a 45 rpm luego VR2 a 33-1/3 rpm.

7.2 AJUSTE DE LA POSICION DE DESCENSO DE LA AGUJA (Solo PL-Z91)

Cuando el brazo fonocaptor no desciende en la posición correcta durante la reproducción automática, ajustar de acuerdo con el procedimiento siguiente.

1. Poner un disco de 30cm sobre el plato.
2. Presionar el interruptor de inicio/parada (START/STOP) e iniciar la reproducción automática. Notar la posición de descenso de la aguja. (Cuántos mm hacia el interior o exterior de la posición de descenso apropiada de la aguja.)
3. Presionar el interruptor de inicio/parada (START/STOP) para hacer volver el brazo fonocaptor a su soporte.
4. Presionar el interruptor de elecación del brazo para hacer ascender la aguja.
5. Con el orificio de ajuste visible, desplazar el brazo fonocaptor hacia el borde exterior del disco con la mano.
6. Girar el tornillo de ajuste con un destornillador pequeño de acuerdo con el paso 2 del modo siguiente:
   - Cuando la aguja desciende fuera del disco, girar el tornillo de ajuste hacia la derecha.
   - Cuando la aguja desciende en el interior del disco, girar el tornillo de ajuste hacia la izquierda.

   Media vuelta de los tornillos de ajuste desplaza el brazo fonocaptor unos 10mm.
7. Después del ajuste, presionar el interruptor de reproducción/parada (PLAY/STOP) y comprobar si el punto de descenso de la aguja se ha ajustado correctamente.

   Si el ajuste es incorrecto, repetir los pasos 3 al 6.

Tener cuidado de no dañar el disco ni la aguja al efectuar este ajuste.

AJUSTE EMPLEANDO UN DISCO DE PRUEBA

(El ajuste de la posición de descenso no puede efectuarse con el brazo fonocaptor sobre su el disco.)

Punto de descenso
para 30cm ..... Desciende entre el cómputo 306 y 313.

Punto de descenso
para 17cm ..... Desciende entre el cómputo 175 y 184.

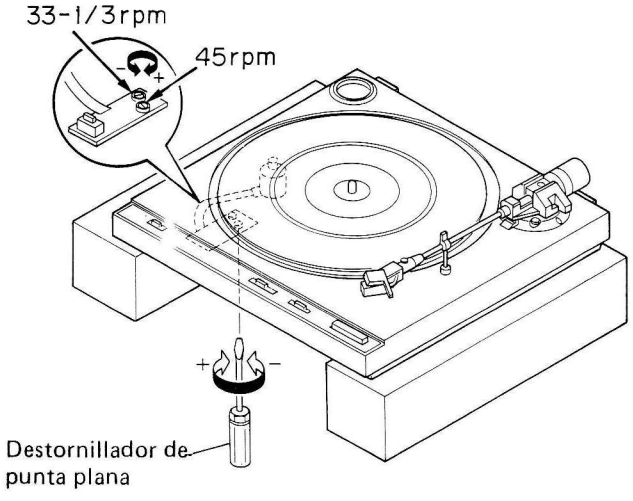


Fig. **7-1** Ajuste del motor

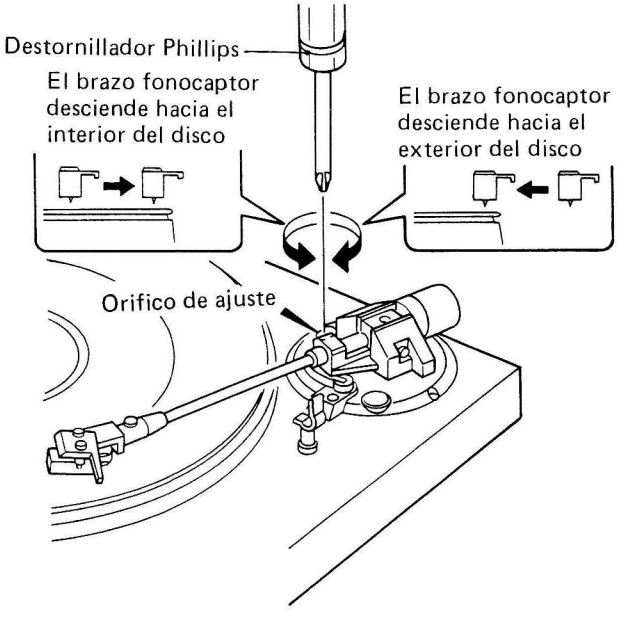


Fig. **7-2** Ajuste del punto de descenso de la aguja

7.3 AJUSTE DE RETORNO AUTOMATICO

Cuando la posición de retorno automático esté demasiado cerca o demasiado lejos, efectuar los ajustes siguientes.

1. Comprobar la posición de descenso de la aguja. Si la aguja no desciende en la posición correcta, ajustar la posición de descenso.
2. Ajustar el interruptor de elevación del brazo en la posición UP y girar el tornillo de ajuste de retorno automático completamente hacia la izquierda.
3. Desplazar el brazo fonocaptor hacia el centro.
4. Cuando se giran lentamente los tornillos de ajuste de retorno automático hacia la derecha, el brazo fonocaptor emplezará a moverse hacia el centro.
5. Dejar de girar el tornillo de ajuste en el punto en el que haya un espacio de 32mm entre la aguja de la cápsula y el eje central. (Fig. 10-3)
6. Después del ajuste, compronar que la operación de retorno automático se efectúe correctamente y que la posición de descenso de la aguja sea la correcta.

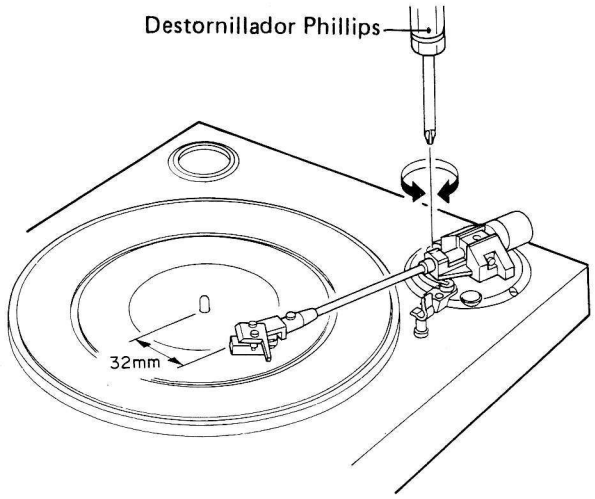


Fig. 7-3 Ajuste de retorno automático

7.4 AJUSTE DEL BRAZO DE FONOCAPTOR

1. Presionar el conmutador de elevación del brazo de fonocaptor para desplazar el brazo hacia arriba.
2. Girar el tornillo de ajuste en el lado de la unidad de elevación del brazo por medio de un destornillador Phillips, de modo que la distancia entre el disco y la aguja sea de 7±2mm. El brazo se desplaza hacia arriba girando el tornillo en sentido contrario al de las agujas del reloj.

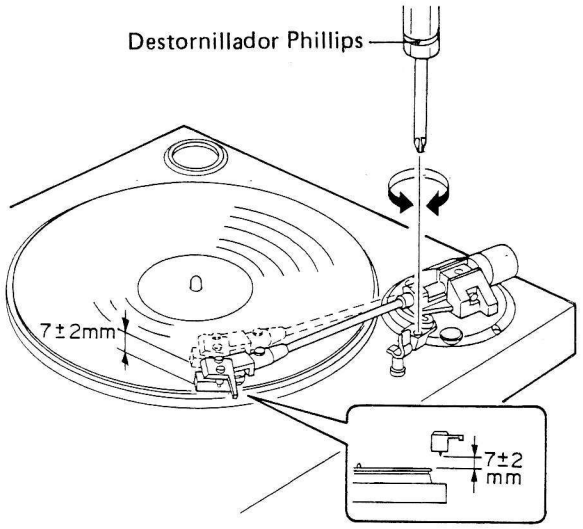


Fig. 7-4 Ajuste del brazo de fonocaptor

8. FOR PL-333/WEM, WB, RD, WP AND PL-333-S/WEM TYPES

NOTES:

- *Parts without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *For your parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  ★★ GENERALLY MOVES FASTER THAN ★
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

The PL-333/WEM, WB, RD, WP and PL-333-S/WEM, types are the same as the PL-590/KUC type with the exception of the following section.

Mark	Symbol & Description	Part No.						Remarks
		PL-590/ KUC type	PL-333/ WEM type	PL-333-S/ WEM type	PL-333/ WB type	PL-333/ RD type	PL-333/ WP type	
	Front name panel	PAM1209	PAM1198	PAM1198	PAM1198	PAM1198	PAM1198	
⚠	AC power cord	PDG-045	PDG1012	PDG1012	PDG-063	PDG1014	PDG-039	
	Rubber bush	PEB-114	.....	.....	.....	.....	.....	
	Power supply P.C. board assembly	Non supply	Non supply	Non supply	Non supply	Non supply	Non supply	
	Binder	.....	.....	.....	.....	PEC-030	.....	
	Panel	PNW1366	PNW1366	PNW1417	PNW1366	PNW1391	PNW1366	
⚠★★	Line voltage selector	.....	.....	.....	.....	PSB1003	.....	
	Packing case	PHG1214	PHG1192	PHG1219	PHG1192	PHG1213	PHG1192	
	Operating instruction (English)	PRB1073	PRB1053	PRB1053	PRB1053	PRB1053	PRB1053	
	Operating instruction (Spanish)	.....	.....	.....	.....	PRC1007	.....	
	AS button	PAC1265	PAC1265	PAC1297	PAC1265	PAC1265	PAC1265	

POWER SUPPLY P.C. BOARD ASSEMBLY

The Power supply P.C. board assembly (For PL-333/WEM, WB, RD, WP and PL-333-S WEM types) is the same as the Power supply P.C. board assembly (For PL-590/KUC type) with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		PL-590/KUC	PL-333/WEM, WB, RD, WP PL-333-S/WEM	
	Power transformer	PTT-257	PTT-256	

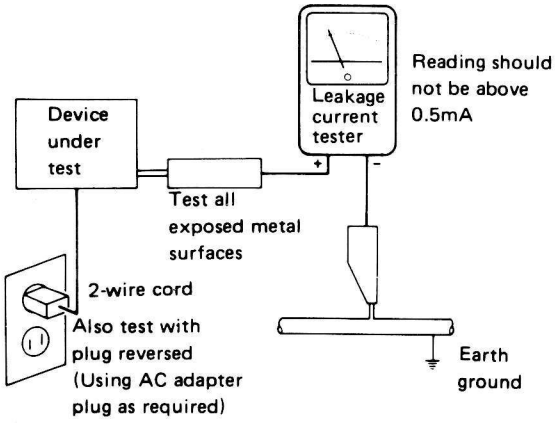
9. SAFETY INFORMATION

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which dose not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.