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STEREO TURNTABLE

PL-600

OPERATING INSTRUCTIONS

KUT
KCT



Thank you for buying this Pioneer stereo turntable. Please read through these operating instructions and then you will know how to operate your model properly. After you have finished reading the instructions, put them away in a safe place for future reference.

IMPORTANT NOTICE

The serial number for this equipment is located on the rear panel.

Please write this serial number on your enclosed warranty card and keep in a secure area. This is for your security.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

 **PIONEER**[®]

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FEATURES

Electronic Full Auto Mechanism

The model's full auto mechanism is based on optical, and therefore no-contact, detection principles so that force is not needlessly exerted on the tonearm. When the switch is depressed, the tonearm automatically swings over to the record and play begins.

Quartz PLL Brushless DC Hall Motor

The model adopts a quartz PLL system which compares the waveforms of the high-precision reference oscillator employing a quartz crystal with the output waveforms of the frequency generator built into the rotor of the motor, and thereby controls the rotational speed of the motor.

Precision-engineered Parts for an Excellent Speed Performance

The precision-finished center shaft and bearings (with a circularity of less than 0.2μ) and the platter with its high inertial mass of $330\text{kg}\cdot\text{cm}^2$ prove to be a winning combination in this model. Together with the quartz PLL brushless Hall motor, they yield such top-notch characteristics as a wow and flutter of less than 0.025% (WRMS) and a signal-to-noise ratio of better than 78dB (DIN-B). This is a truly professional performance.

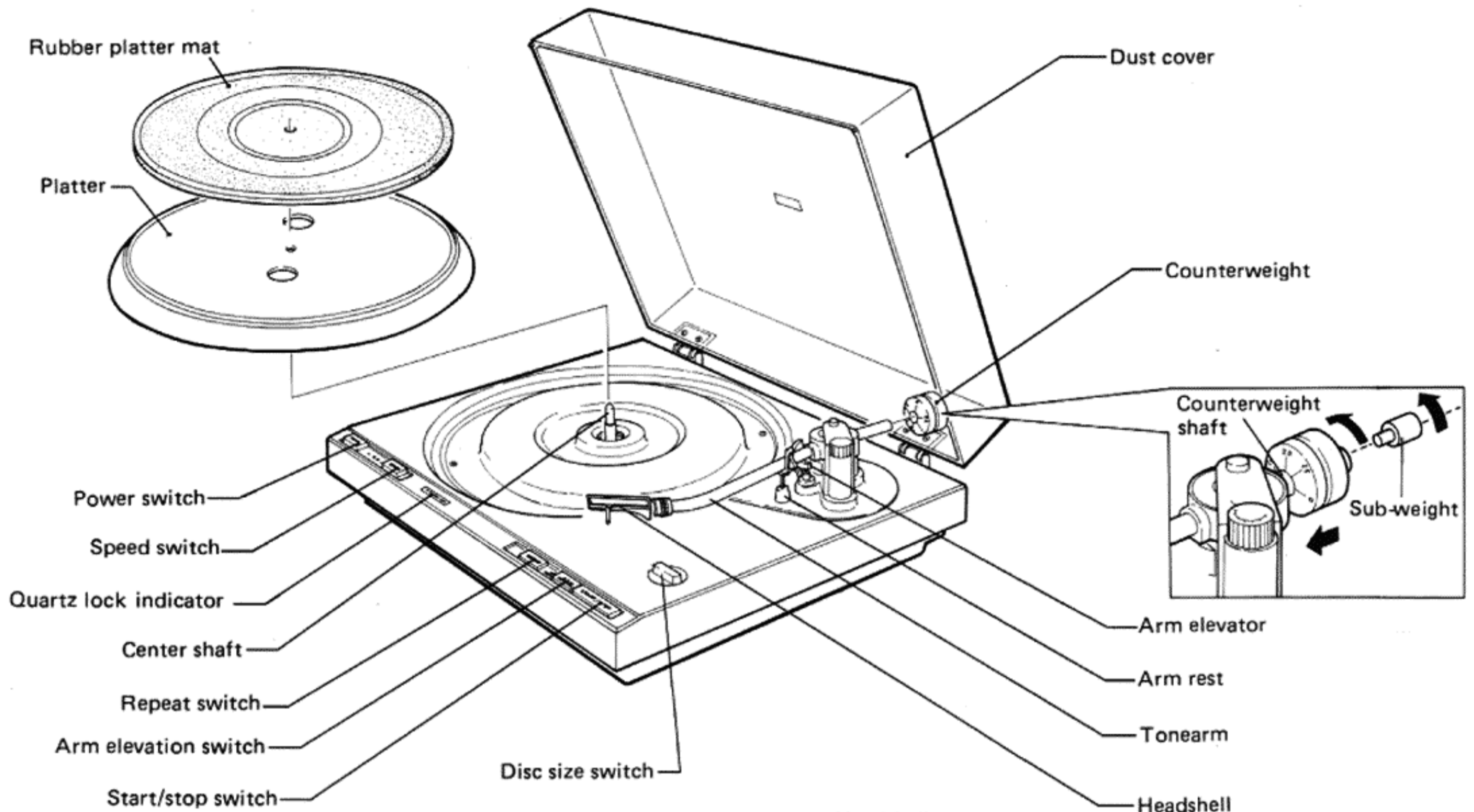
All-electronic Durable Quick Stop Function

The model incorporates an all-electronic brake to bring the platter to a halt instantly. When the tonearm swings back to the arm rest, a current flows in the opposite direction to the platter rotation and passes to the motor drive coil and, in an instant, the platter is stopped rotating.

No-howl, Vibration-resistant Coaxial Suspension System

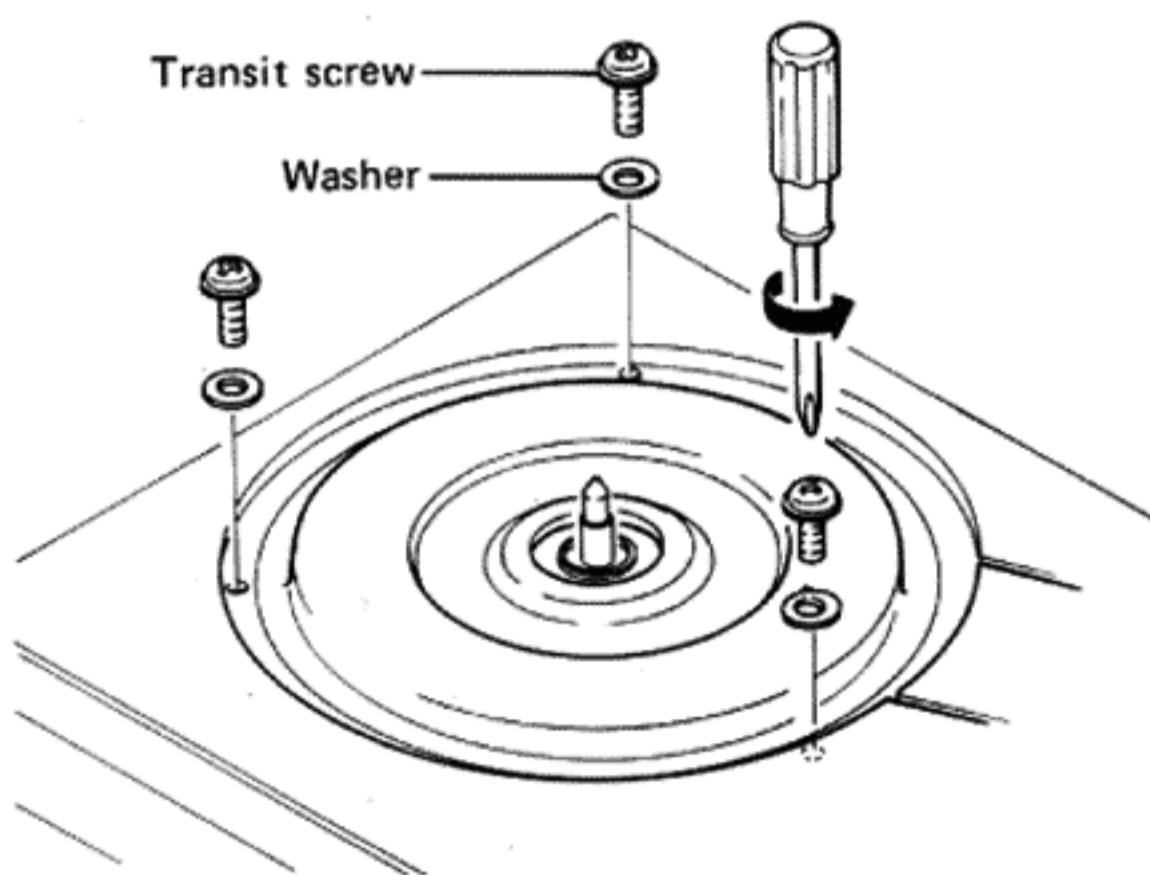
The platter and the tonearm are secured to the base board, and the base board is spring-mounted and separated from the cabinet with what Pioneer calls the coaxial suspension construction. This cuts out virtually all of the vibrations transmitted from the floor, and greatly reduces the chances of howl.

ASSEMBLY PROCEDURE



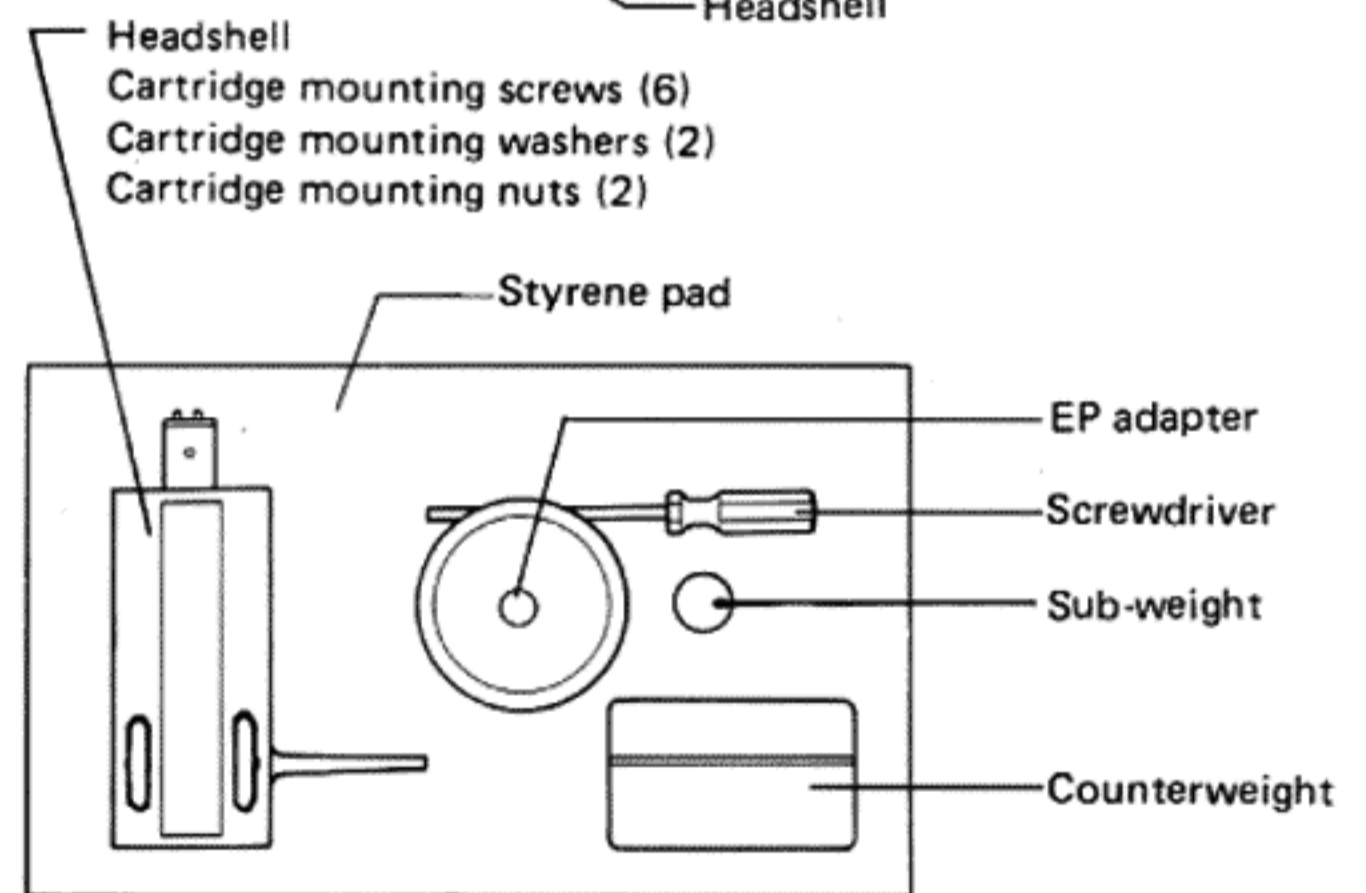
1. REMOVE THE TRANSIT SCREWS

As shown in the figure, use a Phillips screwdriver to remove the three screws used when transporting the turntable.



2. CHECK THE ACCESSORIES

The styrene pad contains the parts shown in the figure. Check that they are all inside. The EP adapter is used for records with a large center hole, and the screwdriver is required for adjustments. Store these parts safely.



3. MOUNTING THE PLATTER AND THE RUBBER PLATTER MAT

Refer to the assembly figure, and place both the platter and the rubber platter mat down over the center shaft. The platter is heavy, so use both hands to lift it horizontally over the shaft and into position.

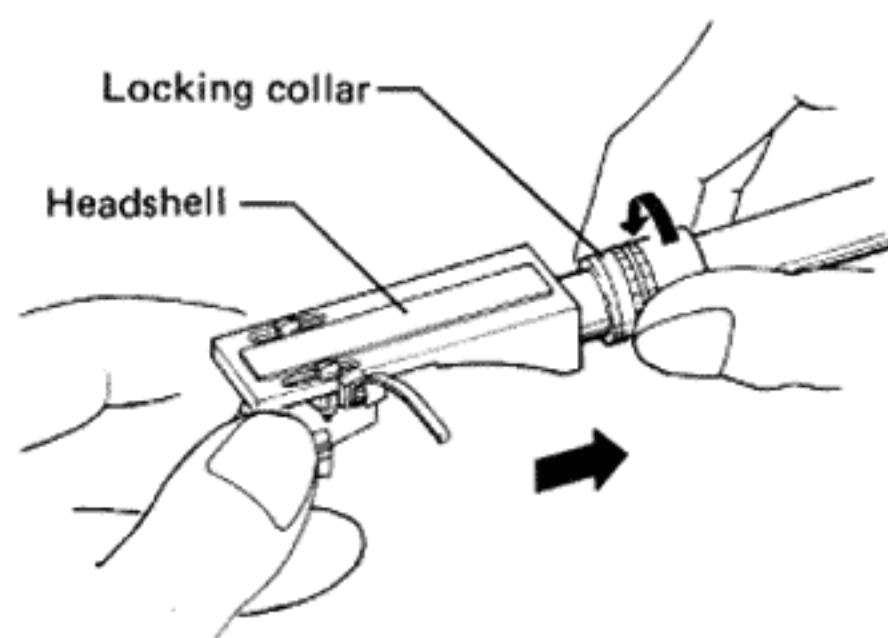
4. MOUNTING THE COUNTERWEIGHT

Slide the counterweight onto the counterweight shaft on the rear of the tonearm and push it forward. Then rotate it two or three times in the direction of the arrow.

If the cartridge is too heavy and the horizontal balance cannot be attained, attach the accessory sub-weight to the tonearm's counterweight shaft as shown in the figure.

5. MOUNTING THE HEADSHELL

Insert the headshell into the end of the tonearm, and rotate the locking collar in the direction indicated by the arrow in the figure until it stops. Then secure it.

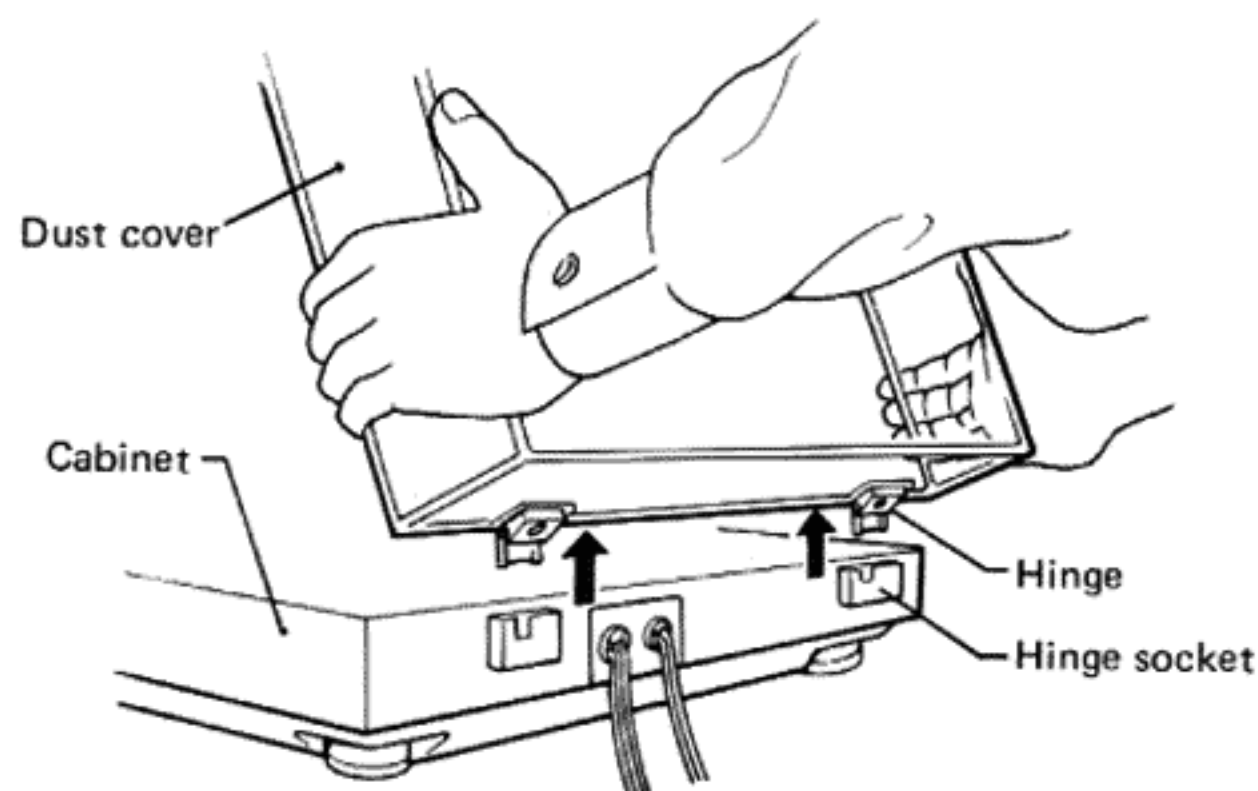


REMOVING DUST COVER

If the turntable cannot be positioned with the dust cover attached, remove the dust cover from the cabinet, proceeding as follows:

1. Fully open the dust cover.
2. Hold the dust cover as shown, and lift it off by pulling it straight upward.

To install, insert the hinges of the dust cover into the hinge sockets of the cabinet, and push the dust cover downward.



ATTACHING THE CARTRIDGE

You can attach any cartridge to this turntable weighing between 4g and 12.5g on condition that only the accessory headshell is used with it. Follow the procedure outlined below for attaching the cartridge to the headshell.

1. Take out the headshell, cartridge mounting screws, nuts, washers and small screwdriver from the styrene pad. The screws come in three different lengths so choose the screws according to the height of the cartridge you intend to attach.
2. The terminals on the accessory headshell are aligned as shown in Fig. A. Check the location and polarity of each of the cartridge's terminal pins and then connect the lead wires, taking care not to get the polarities mixed up.
3. Attach the cartridge lightly to the headshell using the screws, nuts and washers (Fig. A).
4. Adjust the position of the cartridge so that the stylus and the connector section of the headshell are 49mm apart and tighten up the screws. Make sure that the cartridge does not tilt to one side when you attach it (see Fig. B).

Be careful so that the cartridge mounting nut does not come into contact with the cartridge body. When contacting, hum (buzzing noise) may be generated.

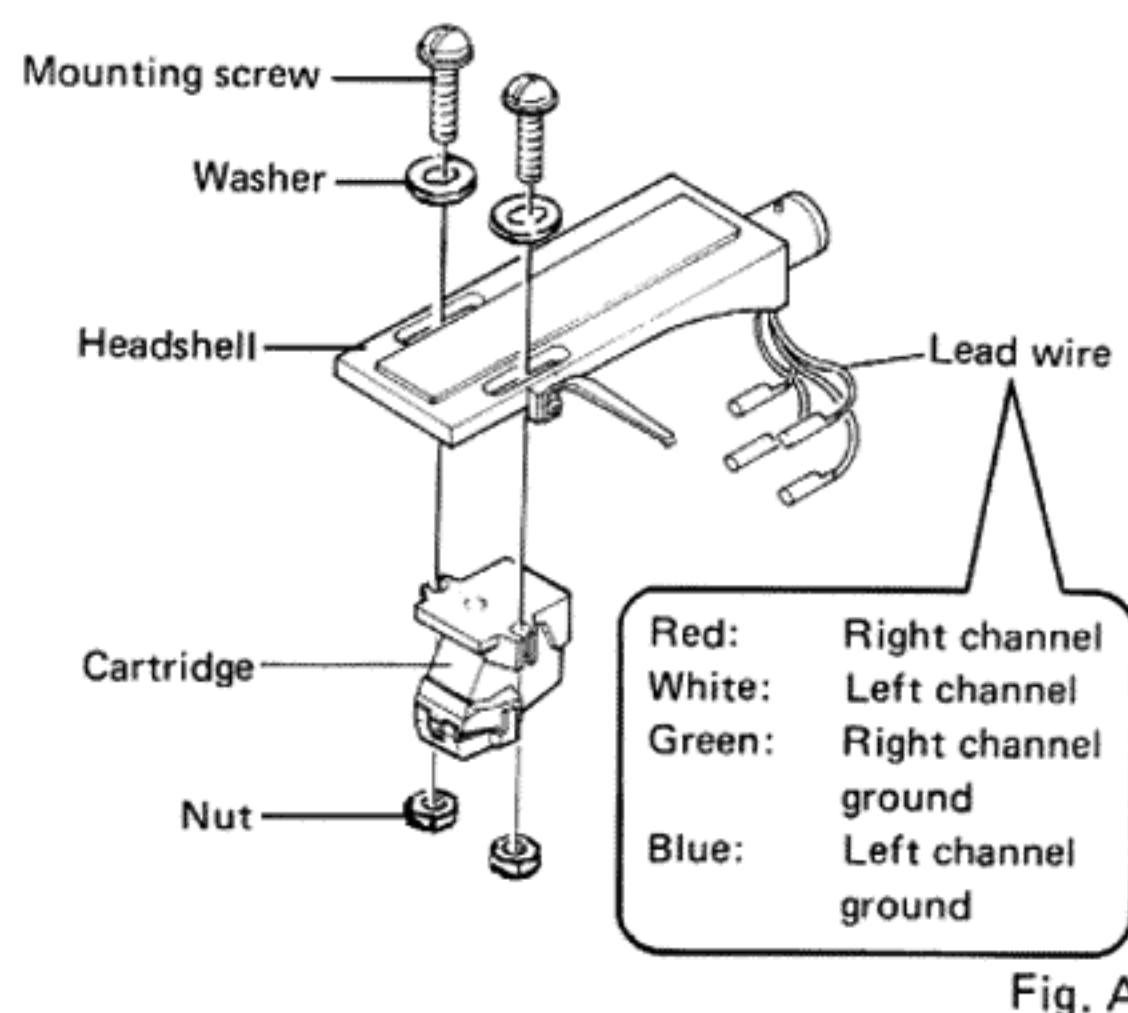


Fig. A

NOTE:

Do not solder when you connect the lead wires to the cartridge. If the lead wire lugs are loose, use a pair of tweezers or a similar object to pinch in the end lightly.

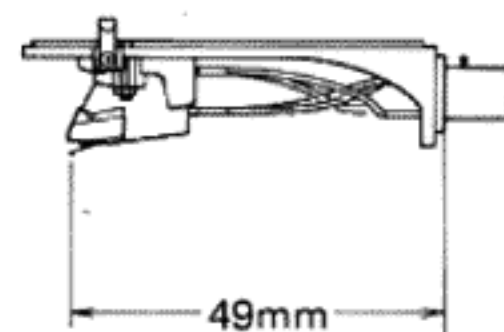


Fig. B

INSTALLATION PRECAUTIONS

When installing this turntable, make sure that you avoid the following conditions:

Conditions to be avoided	Possible problems caused
(1) Exposure to direct sunlight, high temperatures or high humidity.	(1) Can cause rust or interfere with insulation.
(2) Unstable surfaces.	(2) Will interfere with normal operation of turntable (stylus will jump, etc.).
(3) Dirty or dusty locations.	(3) Can cause scratches.
(4) Exposure to heavy vibrations, such as on the top of speakers.	(4) Can cause howl.
(5) Proximity to power transformer of the amplifier.	(5) Can cause hum.
(6) Locations where alcohol, insecticides, or flammable substances are frequently used.	(6) Can corrode dust cover or outside of cabinet.

If the turntable is brought into a warm room from previously cold surroundings, or if the room temperature rises suddenly, moisture will form on the operating sections and the turntable will not be able to display its performance to the full.

In a situation like this, leave the turntable in its new environment for about an hour, or try and increase the room temperature gradually, before operation.

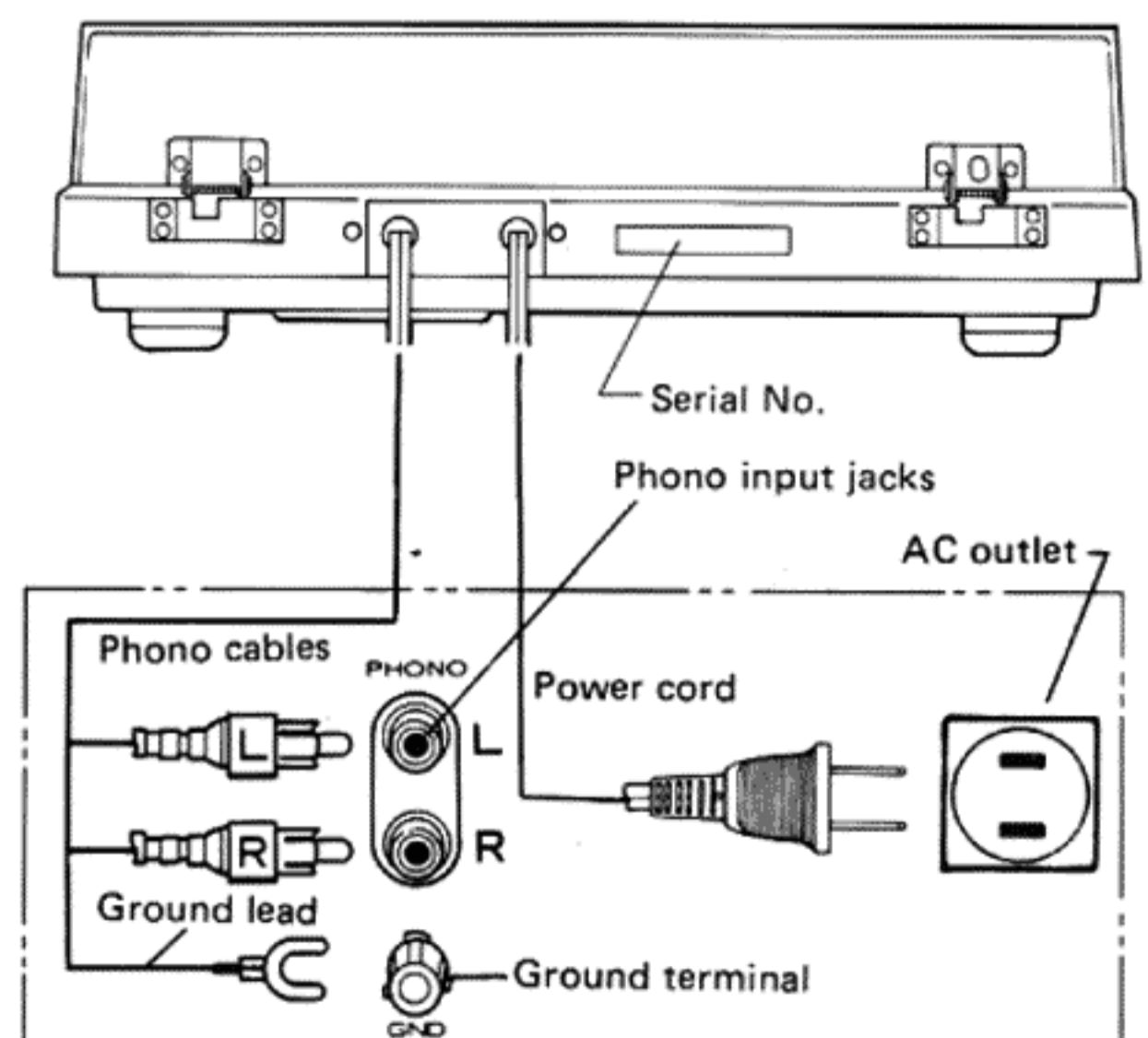
CONNECTIONS TO STEREO AMPLIFIER

BEFORE CONNECTING, CHECK THE FOLLOWING;

- Switch the power to the amplifier off to prevent damage to the speaker system.
- If you are using a low-output moving coil (MC) cartridge, you will need a special MC transformer or a head amplifier, or a stereo amplifier with a built-in MC amplifier.

CONNECTION PROCEDURE

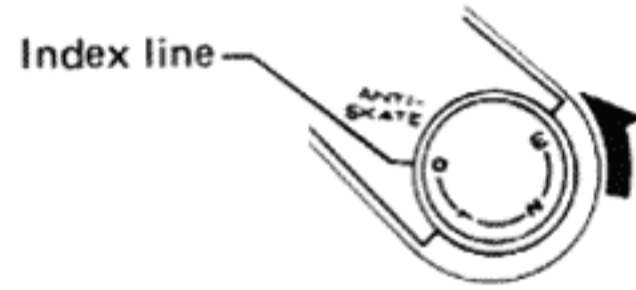
1. Insert the phono cables (white and red) into the PHONO input jacks of the stereo amplifier (white for left channel into L jack, and red for right channel into R jack).
2. Connect the ground lead with the Y-shaped connector at the end to the ground terminal.
3. Insert the power plug into the convenience AC outlet of the amplifier or a wall outlet.



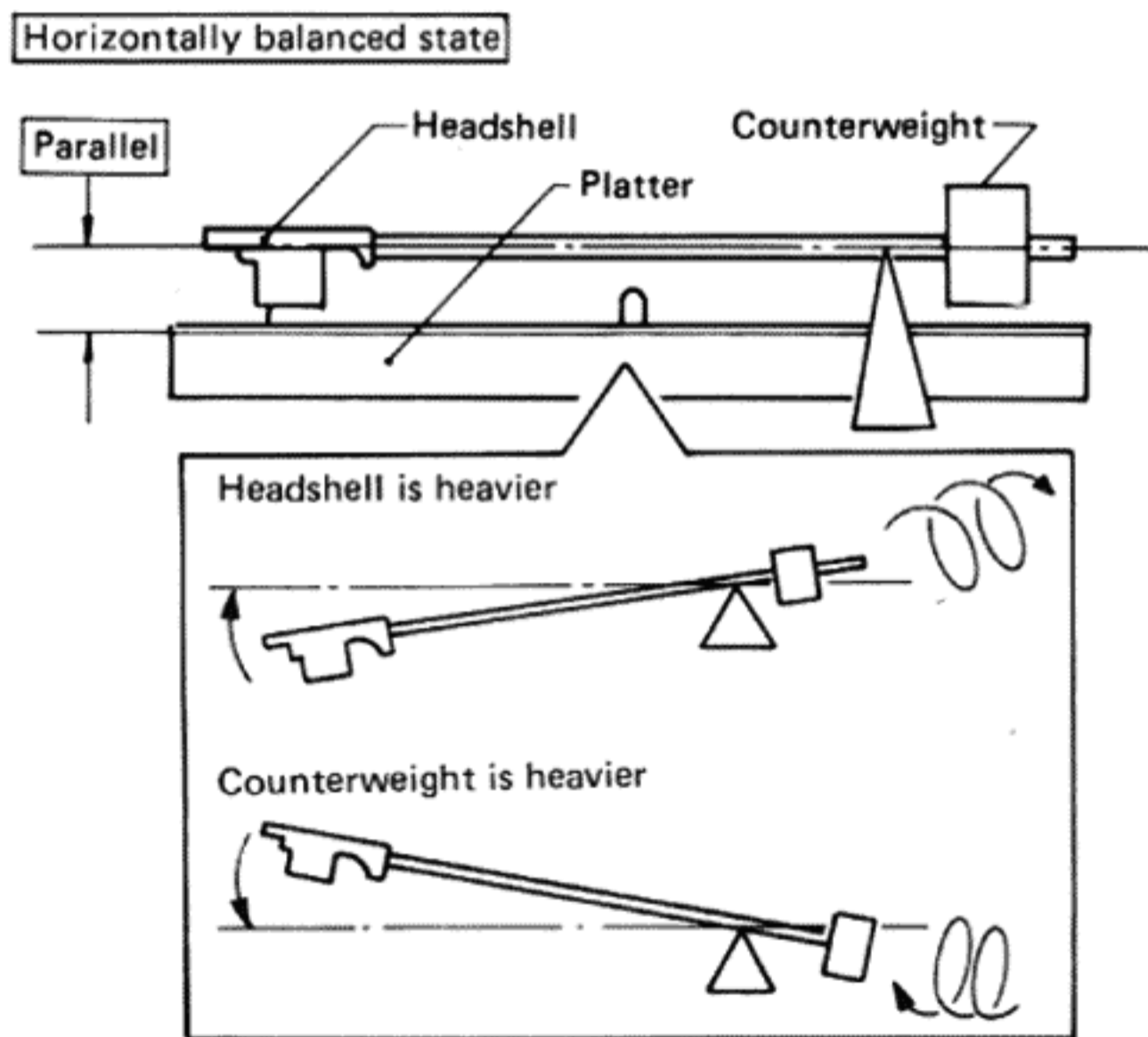
ADJUSTING THE TONEARM

TRACKING FORCE ADJUSTMENT

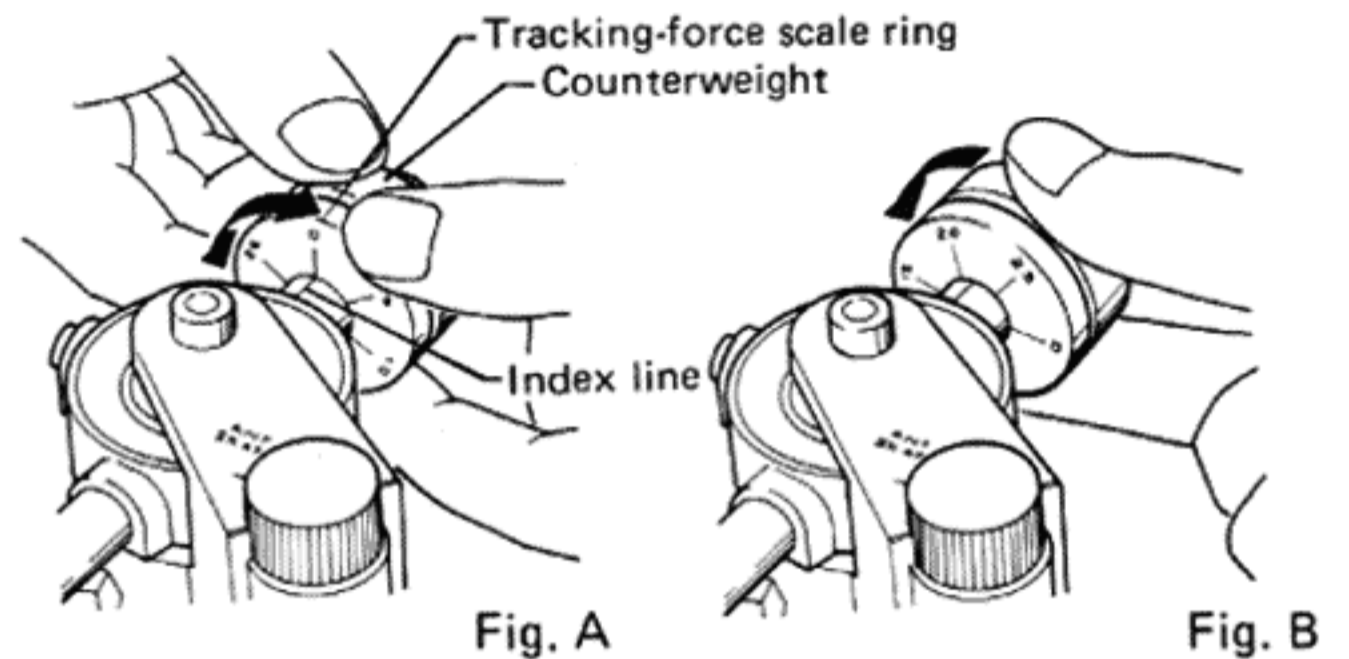
1. Set the POWER switch to ON.
2. Set the ANTI-SKATE knob to "0".



3. Remove the cartridge stylus cover.
4. Set the POWER switch to OFF.
5. Release the arm clamp and move the tonearm to the space between the arm rest and the platter, taking care not to damage the stylus.
6. Support the headshell's finger lift with one hand and attain the horizontal balance by turning the counterweight either clockwise or counterclockwise. "Horizontal balance" means that the tonearm is parallel to the record on the platter, and that the tonearm pipe, therefore, should not tilt toward the counterweight side or the headshell side (See figure).



9. Since the tracking force is zero when the tonearm is balanced horizontally, turn just the tracking-force scale ring in front of the counterweight, and set the "0" on the scale to the index line on the counterweight shaft (Fig. A).
10. Turn the counterweight until the index line is correctly aligned with the scale which corresponds to the specified tracking force of the cartridge to be used (Fig. B). The tracking-force scale ring has 0.5g steps, and one full turn of the counterweight will yield a tracking force of 3g.

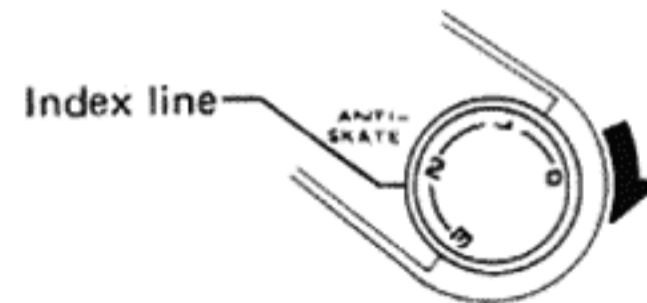


NOTE:

When playing records at low temperatures or when playing records where the stylus is made to jump or the reproduced sound is distorted (records where part of the recording level is set at an extremely high level), adjust the tracking force to the optimum value across the suitable range.

ANTI-SKATING ADJUSTMENT

To adjust the anti-skating mechanism, turn the ANTI-SKATE knob so that the number corresponding to the required tracking force comes to the index line. The numbers on the ANTI-SKATE knob correspond to the same number of the tracking force.



NOTE:

When the ANTI-SKATE knob is at the "0" position, the tonearm may move a little to the left or right. This is due to the enhanced sensitivity of the rotating section of the tonearm designed so that the tonearm traces the sound grooves on the record more efficiently during record play. This does not, therefore, interfere with play at all.

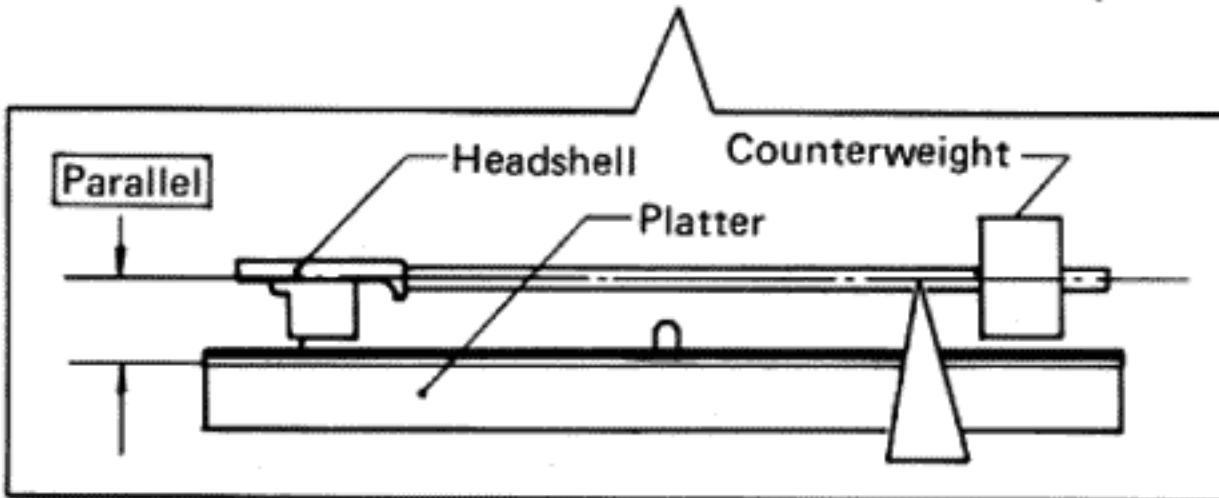
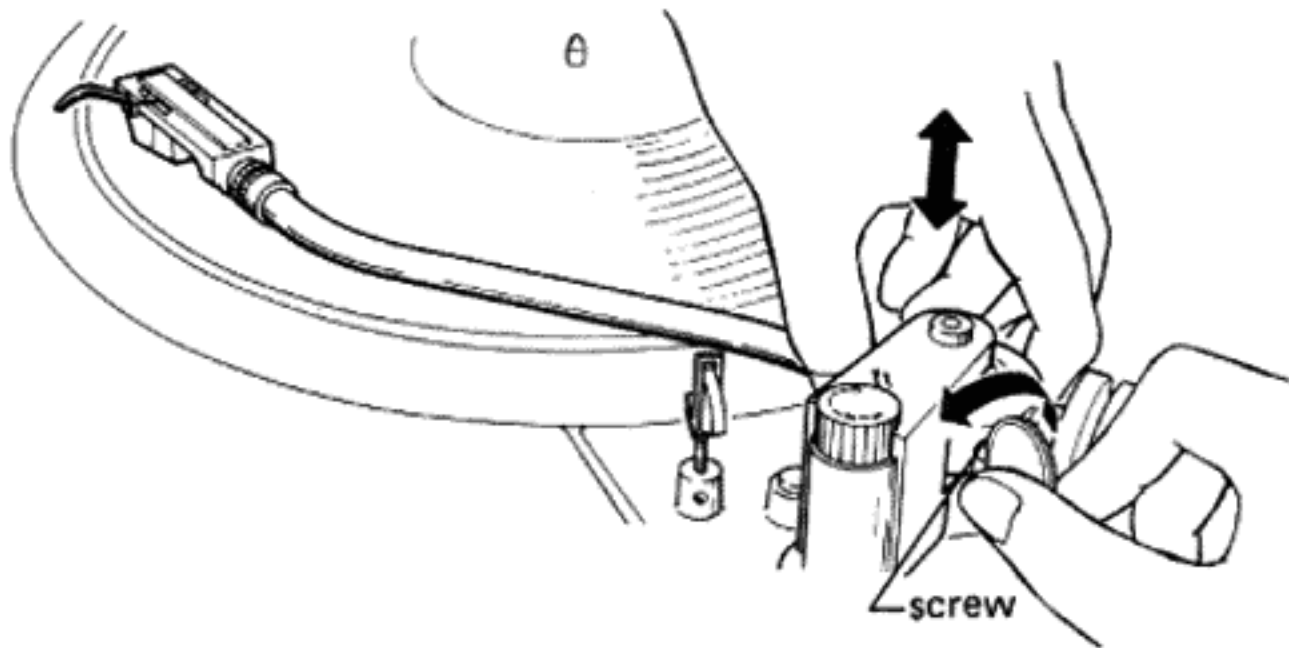
7. Return the tonearm to the arm rest and fasten the arm clamp.
8. Attach the stylus cover to protect the stylus.

TONARM HEIGHT ADJUSTMENT

If the tonearm and the platter are not both parallel when a record is being played, the cartridge stylus will not come into contact with the sound grooves on the record at the right angle and this may result in distortion of the reproduced sound. Perform the adjustments below as follows;

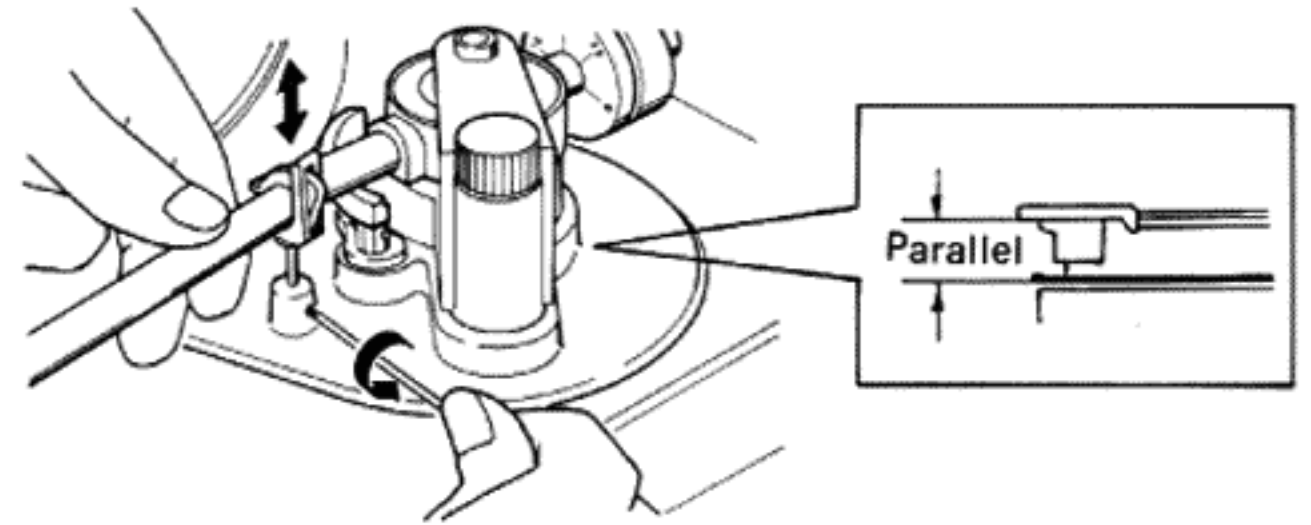
Adjusting the tonearm height

1. Place a record on the platter.
2. Use one hand to support the tonearm, and the other hand to loosen the adjustment screw with the coin. Place the stylus on the record lightly not to damage, and adjust the tonearm so that it is parallel to the record on the platter and then tighten the adjustment screw.



Adjusting the arm rest height

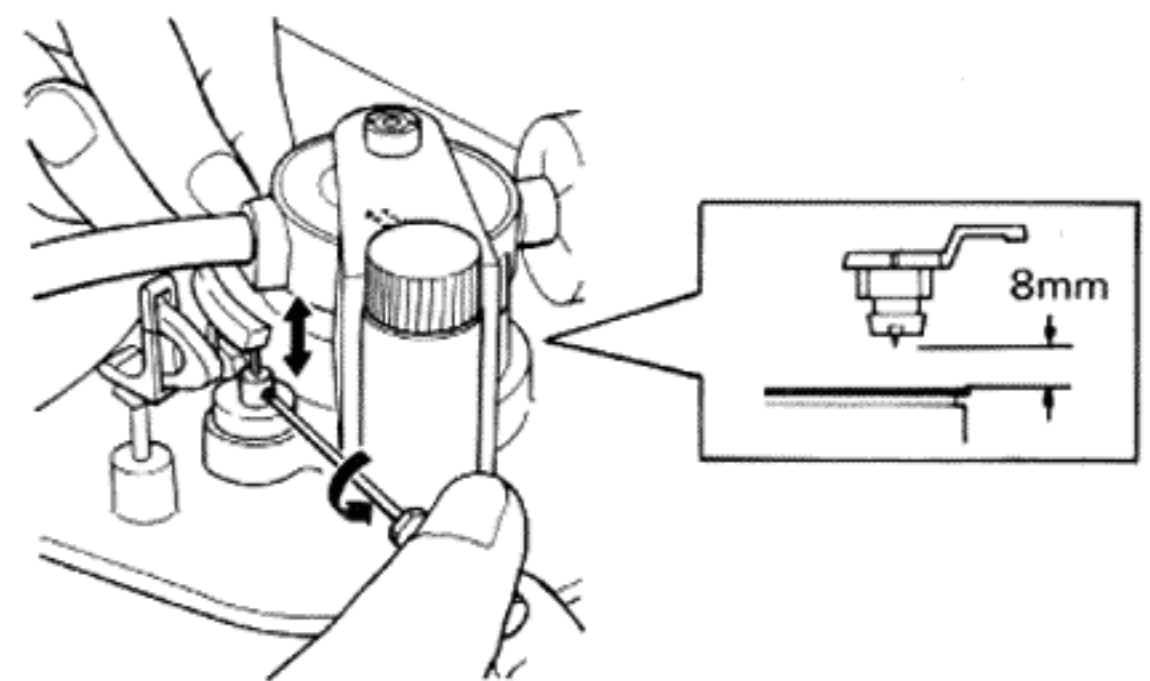
Use the accessory screwdriver to loosen the arm rest's set screw. Adjust the arm rest so that the tonearm and the panel are parallel, and then tighten the set screw.



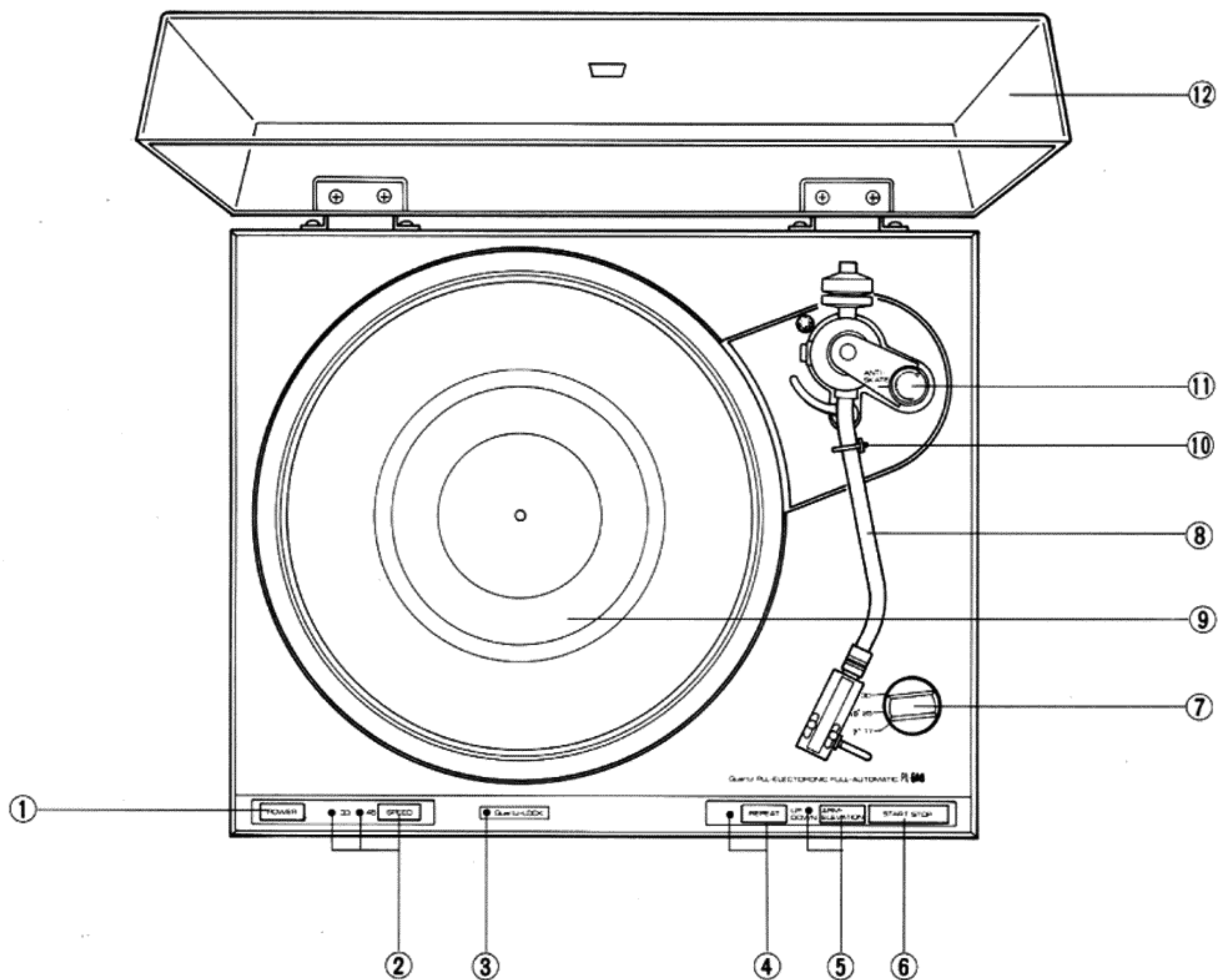
Adjusting the arm lifter height

Set the POWER switch to ON, press the ARM ELEVATION switch and cause the UP indicator to light up.

As in the figure, loosen the arm lifter set screw with the accessory screwdriver, adjust for a clearance between the record and stylus of about 8 mm when the tonearm moves over the platter, and then tighten the set screw.



PANEL FACILITIES



① POWER SWITCH

ON.... Press this switch and the power will come on. The SPEED switch indicator (45 or 33) will light up.

OFF... The power will be cut off when this switch is released, and the indicator will go off.

NOTES:

- The platter will not rotate when the tonearm is on the arm-rest even when the POWER switch is set to ON.
- Always set the POWER switch to OFF when you do not intend to use your turntable.

② SPEED SWITCH

33..... Set the switch to this position when playing a 33-1/3rpm record such as an LP. When it is depressed, the 33 indicator lights up, and the platter rotates at a speed of 33-1/3 rpm.

45..... Set the switch to this position when playing a 45rpm record like an EP. When it is depressed, the 45 indicator lights up, and the platter rotates at a speed of 45rpm.

③ QUARTZ LOCK INDICATOR

This indicator illuminates when the platter is revolving at the specified rate of 33 1/3 or 45 rpm.

NOTE:

If the platter speed varies, such as when the speed switch is changed from one position to another or when you press momentarily on the platter, the indicator will go off. As the platter revolution returns to the specified speed, the indicator will illuminate again.

④ REPEAT SWITCH

Press this switch for repeat play. When pressed, the indicator will light up, and the record will be played again (refer to page 10 for further details on repeat play). Press this switch again to release it. The indicator will go off and the repeat play function will be released.

NOTE:

- This switch cannot be operated even if depressed while the tonearm is moving out of contact with the record.

⑤ ARM ELEVATION SWITCH

Use this switch to interrupt play temporarily or to perform manual play.

When the DOWN position, the tonearm will descend and when the UP position, the tonearm will rise. These two operations will be performed alternately every time the switch is pressed.

NOTES:

- When the POWER switch is set to ON, the tonearm will descend and the DOWN position.
- Always set the switch to DOWN for auto play.
- When the switch is at UP, the auto return cancelling mechanism is actuated and so there will be no auto return or auto cut.

⑥ START/STOP SWITCH

Press this switch for auto play. The platter will start to rotate, the tonearm will automatically move over to the edge of the record and play will begin (auto lead-in).

If this switch is pressed during play, the tonearm will automatically return to the arm rest, the platter will stop rotating and play will be suspended (auto cut).

NOTE:

- This switch's STOP function has no effect on tonearm movement unless the tonearm is in contact with the record.

⑦ DISC SIZE SWITCH

Selects the switch that corresponds to the size of the record you want to hear for auto play operations.

12"30..... For 30cm records

10"25..... For 25cm records

7"17..... For 17cm records

⑧ TONEARM

This tonearm is designed to apply the correct tracking force to the cartridge and to keep this force at the precise level for faithful tracking of the record grooves. It also has the job of switching the power on to the turntable.

- When the tonearm is moved from the arm rest to the platter, the power comes on, the platter rotates.
- When the tonearm is returned to the arm rest, the power to the turntable is cut off, the platter stops rotating.

⑨ PLATTER/RUBBER PLATTER MAT

When the tonearm is moved and power is supplied to the turntable, the platter will start rotating at the set rotation speed. The rubber platter mat stabilizes the records and also absorbs external vibration.

⑩ ARM REST/CLAMPER

The arm rest supports the tonearm when it is not being used. Set the tonearm on its rest when it is not playing records. Clamp it into position if you don't have any immediate plans to play records.

⑪ ANTI-SKATE KNOB

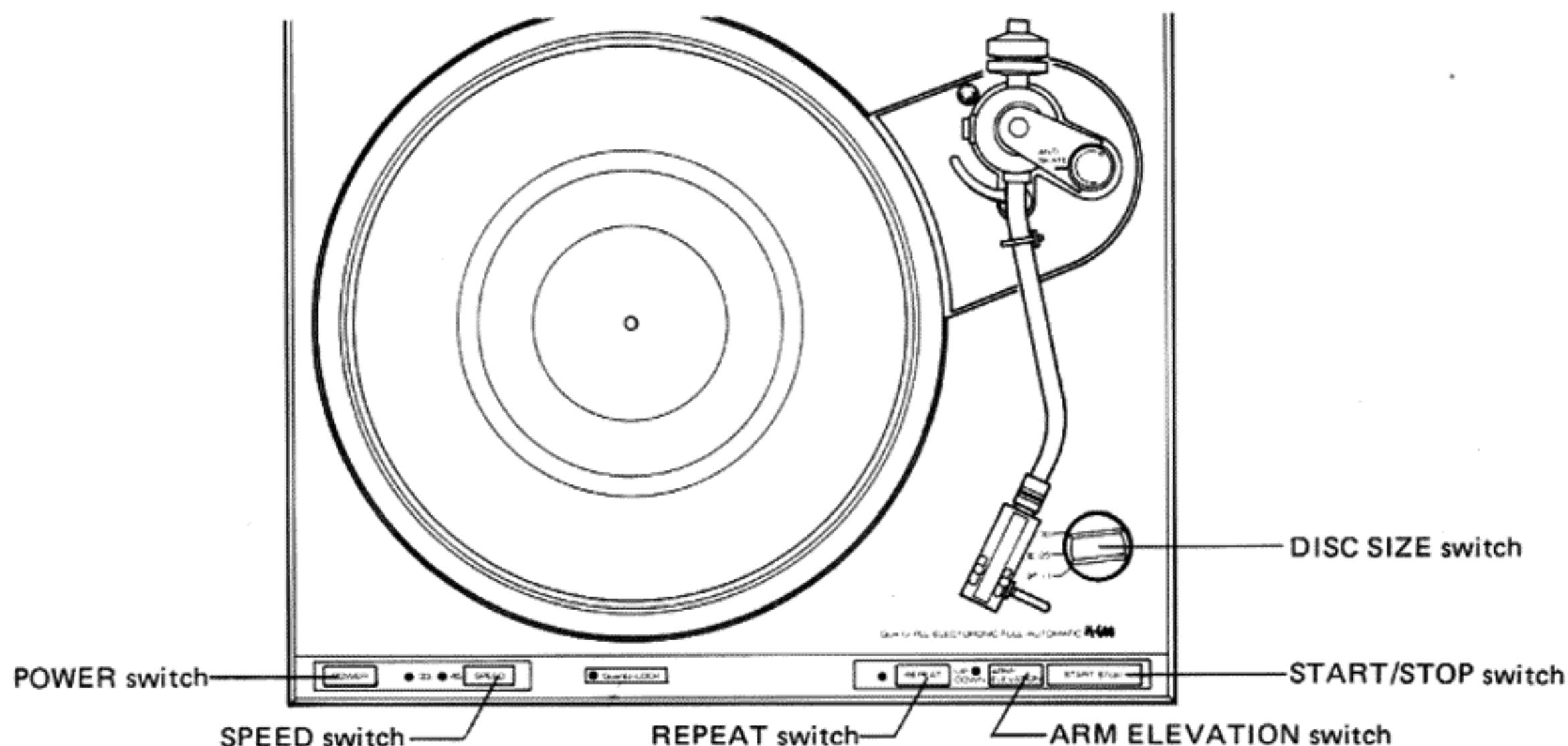
This knob is used to cancel out the harmful skating force which is generated during record play.

For further details, see "ANTI-SKATING ADJUSTMENT."

⑫ DUST COVER

Keep this closed unless operating the controls or tonearm, or changing over records. This serves to keep dust from adhering to the records during record play. When fully opened and pulled straight up, this dust cover can be removed from the cabinet.

OPERATION



BEFORE PLAY

Always perform the following operations before play.

1. Set the volume control on the stereo amplifier to its lowest position, and then set the power switch to ON. Set the function switch to PHONO.
2. Set the turntable's POWER switch to ON.
3. Raise the dust cover, and release the arm rest clamp.
4. Place a record on the platter.
5. Select the SPEED switch in accordance with the record.
6. Lower the dust cover.

AUTO PLAY

Procedure

1. Selects the DISC SIZE switch that corresponds to the size of the record which you have placed on the platter.
2. Press the START/STOP switch. The platter starts rotating, and after the tonearm has moved from the arm rest to the lead-in groove on the record, the stylus will drop gently onto the record and play will commence (auto-lead-in).
3. Adjust the volume and tone to the preferred levels using the controls on the stereo amplifier.

Completion

1. When the last track on the record has been played, the tonearm will rise automatically and return to the arm rest. The platter will then stop (auto-return).
2. Secure the tonearm to the arm rest with the clamp.
3. Set the POWER switch to OFF.

NOTE:

The START/STOP, DISC SIZE, ARM ELEVATION and REPEAT switches will not function during the auto-return operation. Operate any of these switches after the tonearm has returned to the arm rest.

Suspension of play

Proceed as follows if you want to suspend play during a performance.

- Press the START/STOP switch and the tonearm will return automatically to the arm rest, and the platter will stop rotating (auto cut).

NOTE:

There will be no auto cut operation when the ARM ELEVATION switch is at UP.

- To suspend play temporarily, press the ARM ELEVATION switch. The UP indicator will light up, the tonearm will rise, and play will be suspended. When the ARM ELEVATION switch is pressed again, the tonearm will descend, and play will commence at that position on the record where play was suspended.

REPEAT PLAY

Proceed as follows if you want to listen to the same record again and again:

1. Press the REPEAT switch.
2. Press the START/STOP switch and play will begin.
3. When the last track on the record has been played, the tonearm will rise, return to the arm rest. A few seconds later the tonearm moves over to the record again, and play begins.

Press the REPEAT switch again to release the repeat play function. The function can also be released by pressing the START/STOP switch and suspending play or by setting the POWER switch to OFF.

MANUAL PLAY

Manual play is convenient in the following instances.

- For playing tracks midway through a record
- For playing just one track on an LP
- For repeatedly playing the last tracks of an LP.

Procedure

1. Follow the instructions under "BEFORE PLAY" of the previous section.
2. Press the ARM ELEVATION switch and set it to UP.
3. Move the tonearm to immediately above the track on the record you want to hear, and the platter will now start to rotate.
4. Press the ARM ELEVATION switch and set it to DOWN. The tonearm will now descend onto the record, and play will begin as soon as the stylus starts tracing the grooves.
5. Adjust the volume and tone to the preferred levels using the controls on the stereo amplifier.

TIMER PLAY

If you use a timer and set it as instructed below, the turntable will play a record automatically at the preset time.

1. Follow the instructions under "BEFORE PLAY" of the previous section.
2. Press the ARM ELEVATION switch and set it to UP.
3. Move the tonearm over the record by hand.
4. Set the timer switch as instructed in the timer's "Operating Instructions" so that the turntable and stereo amplifier will operate at the time you want to listen to the record.

When the timer is actuated, and the POWER switches of the amplifier and turntable are set to ON, the tonearm will automatically descend and play will begin.

OPERATION PRECAUTIONS

- Always clean the stylus both before and after playing a record with a soft brush and make it a rule to clean the records with a good quality cleaner.
- When changing over the headshell, clamp the tonearm to the arm rest so that the tonearm shaft is not strained in any way.
- Be careful not to make the turntable vibrate while a record is playing since this can result in damage to the stylus and record.
- Place only one record at a time on the platter. If two or more records are stacked on the platter, the stylus will not make proper contact with the grooves, and this will impair the quality of reproduction.
- Do not disconnect the power cord while the stylus is still in a record groove as this may damage the stylus and record.
- Never obstruct the platter with the hand while it is rotating. This may cause damage.

ADJUSTING THE STYLUS DESCENT POSITION

If the stylus does not descend properly onto the record during auto play, perform the following adjustments:

1. Place a 30cm LP on the platter.
2. Commence play by following the procedure on page 10. Check the direction and extent of the stylus deviation.
3. Support the tonearm with one hand, remove the rubber plug and check the head of the adjustment screw from above the hole. If the head of the screw has shifted slightly from the hole, move the tonearm a little to the inside or outside.
4. Rotate the adjustment screw with the accessory screwdriver as follows and adjust.

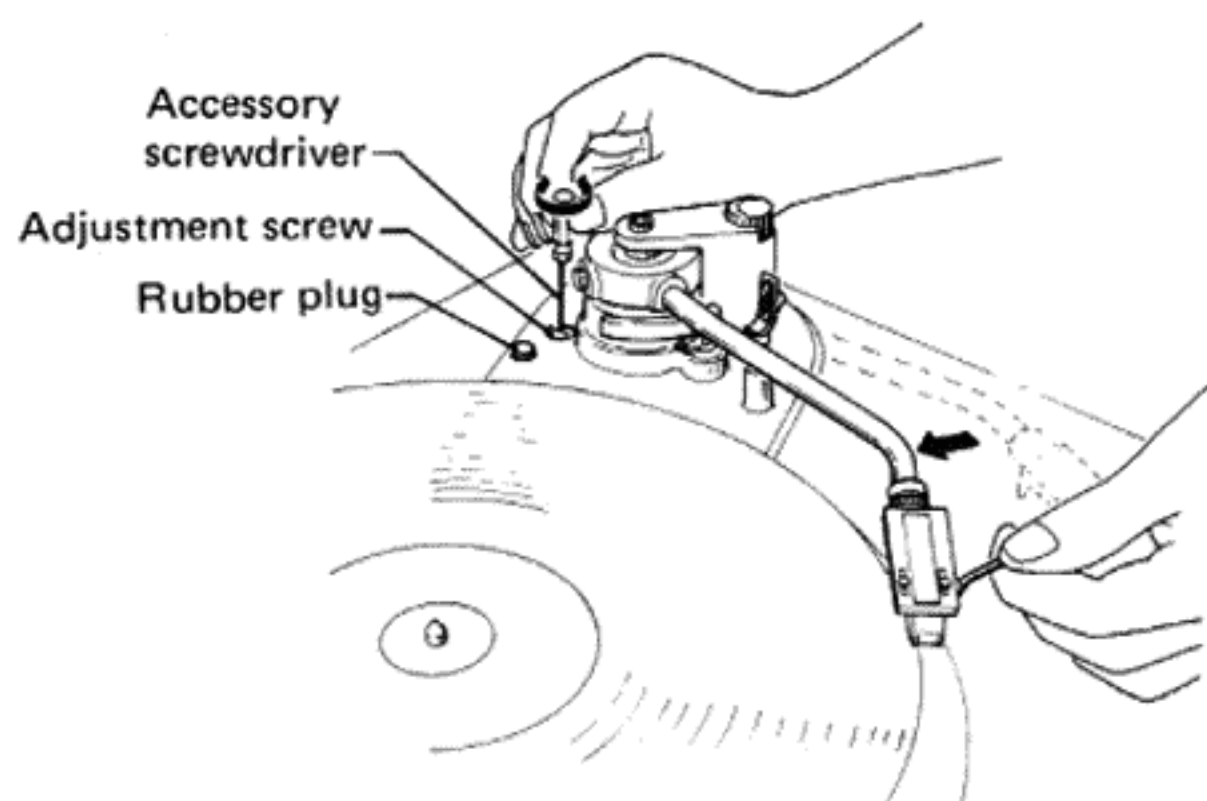
Stylus descends outside of lead-in groove: turn adjustment screw clockwise.

Stylus descends inside of lead-in groove: turn adjustment screw counterclockwise.

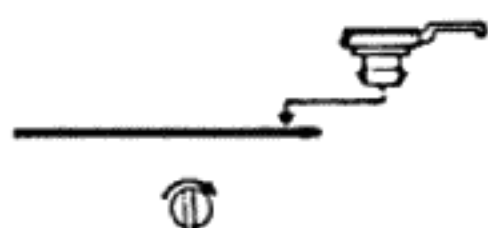
5. After the adjustment, return the tonearm to the arm rest manually, proceed with record play again, and check that the descent position has been adjusted properly.

NOTE:

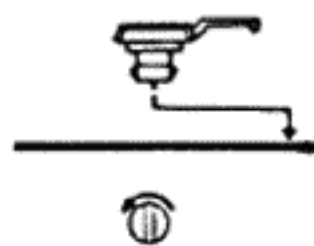
Take every precaution not to damage the record or stylus when performing these adjustments.



Stylus descends outside the groove



Stylus descends inside the groove



MAINTENANCE

CABINET AND DUST COVER

When the cabinet or dust cover becomes dusty or dirty, wipe it clean with a soft dry cloth. Remember that the surfaces can be corroded by furniture wax, thinner, and benzine and also by insecticide sprays. The dust cover can be detached and cleaned.

RUBBER PLATTER MAT

When the rubber platter mat is dirty, apply a sponge containing one part neutral cleanser to 5 or 6 parts water and wash. After rinsing well, leave to dry in a well-ventilated location. Never leave it to dry in the sun or in front of a heater since its shape and color will be changed.

LUBRICATION

The motor shaft and bearings of this turntable employ oil-less bearings and so there is no need for lubrication. There is no need to lubricate the tonearm bearings, either.

STYLUS

If the stylus tip is clogged with dust, the reproduced sound quality will be impaired. Use a soft brush to keep the stylus clean at all times. Be careful not to touch the tip since this may damage it. When using stylus cleaner (organic solvent), benzine or thinner to clean the stylus top, take care not to allow any of the liquid to come into contact with the stylus holder. This may change the material.

TROUBLESHOOTING

Sometimes, an operational fault can be mistaken for a malfunction or failure. Check the following points and see if you can find the symptoms of the trouble below before you get in touch with the serviceman. If you cannot locate the symptoms, contact your nearest Pioneer dealer.

Symptom	Possible trouble	Remedy
Platter does not rotate.	Power cord is unplugged.	Plug cord securely into wall outlet.
No sound.	<ol style="list-style-type: none"> 1. Phono cables are not connected properly. 2. Headshell is not properly attached. 3. Cartridge lead wires are loose. 4. Amplifier is not being operated properly. (Function switch, tape monitor switch, speaker switches, etc. are not set correctly). 	<ol style="list-style-type: none"> 1. Connect cables securely to the PHONO input jacks on the amplifier (see page 5). 2. Firmly secure tonearm locking collar (see page 4). 3. Attach lead wires inside headshell properly (see page 4). 4. Read the operating instructions that come with amplifier.
Excessive noise.	<ol style="list-style-type: none"> 1. Ground lead is not connected. 2. Tracking force is not correct. 3. Dust or dirt has collected on the stylus tip. 4. Dust or dirt has collected on the record. 	<ol style="list-style-type: none"> 1. Connect properly to the amplifier's ground terminal (see page 5). 2. Refer to tracking force adjustment on page 6. 3. Clean the stylus tip with a soft brush. 4. Clean the record with a good quality cleaner.
Sound is distorted.	<ol style="list-style-type: none"> 1. Dust or dirt has collected on the stylus tip. 2. Tracking force is not correct. 3. Stylus is worn. 4. Amplifier's tone controls are set too high. 	<ol style="list-style-type: none"> 1. Clean the stylus tip with a soft brush. 2. Refer to tracking force adjustment on page 6. 3. Replace with new stylus. 4. Set tone controls to lower position.
Tonearm does not descend with auto play.	Tracking force is not correct.	Refer to tracking force adjustment on page 6.
Tonearm does not move with auto play.	1. Arm clamp is still fastened.	1. Release arm clamp.
Intermittent sound.	<ol style="list-style-type: none"> 1. Tracking force is not correct. 2. Stylus is worn. 3. Record is scratched or warped. 	<ol style="list-style-type: none"> 1. Refer to tracking force adjustment on page 6. 2. Replace with new stylus. 3. Replace record.
Stylus does not descend to correct position with auto-play.	_____	See stylus descent-position adjustment on page 12.
<p>If you detect any trouble when playing records, the fault may not lie with the turntable but with another hi-fi component. Be sure to check the amplifier, speaker system, and any other electrical equipment which you are using in the vicinity of the turntable.</p>		

SPECIFICATIONS

Motor and Turntable

Drive System	Direct-drive
Motor	Quartz PLL Hall motor
Turntable Platter	330mm diam. aluminum alloy die-cast
Inertial Mass	330kg-cm ² (including platter mat mass)
Speeds	33-1/3 and 45rpm
Wow and Flutter	Less than 0.025% (WRMS)
Signal-to-Noise Ratio	More than 78dB (DIN-B) (with Pioneer cartridge model PC-200)

Rotational Characteristics

Build-up Time	Within 90° rotation at 33-1/3 rpm
Speed Deviation	Less than 0.002%
Speed vs. Load Characteristics	Stable up to 200 grams drag load
Speed Drift	Less than 0.00008%/h at 33-1/3rpm Less than 0.00003%/degree temp. change at 33-1/3rpm

Tonearm

Type	Static-balance type, S-shaped pipe arm
Effective Arm Length	237mm
Overhang	15mm
Usable Cartridge Weight	4g (min.) to 12.5 (max.) (For cartridge weights over 9g, attach the sub weight)
Arm Height Adjust Range	±3mm
Headshell weight	10.5g

Subfunctions

Auto lead-in
Auto-return
Auto cut
Quick play
Anti-skating force control
Stylus pressure direct-readout counterweight
Arm height adjusting device
Cueing device
Free stop hinges

Semiconductors

ICs	7
Transistors	17
Diodes	5
Hall Elements	3
LED	6
Photo Transistors	2
CdS	1

Miscellaneous

Power Requirements	AC120V, 50, 60Hz
Power Consumption	22W
Dimensions	456(W) x 140(H) x 384(D)mm 18(W) x 5-1/2(H) x 15-1/8(D) in.
Weight	11kg/24lb 4oz.

Accessories

EP Adapter	1
Screwdriver	1
Sub weight	1
Cartridge mounting parts	
Cartridge mounting screws	6
Cartridge mounting nuts	2
Cartridge mounting washers	2
Operating instructions	1

NOTES:

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

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