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SONY

STEREO TURNTABLE SYSTEM

PS-8750

OWNER'S INSTRUCTION MANUAL

OWNER'S RECORD

For your convenience, record the model number and serial number (you will find them on the rear of your unit) in the space provided below. Please refer to them when you contact your Sony dealer in case of difficulty. This will be a great help to you in getting better and more satisfactory service on your unit

Model No. PS-8750 Serial No. _____

TABLE OF CONTENTS

Warning	2
Precautions	2
Notes on Location	2
Location of Controls	3
Turntable Assembly	4
Cartridge Installation	5
Tonearm Assembly and Adjustments	5
Connections	8
Tips on Record Handling	8
Record Playing	8
Lubrication and Maintenance	9
Trouble Checks	9
Specifications	10
Features	10
PS-8750 Block Diagrams	11
Repacking for Shipment	back cover

WARNING

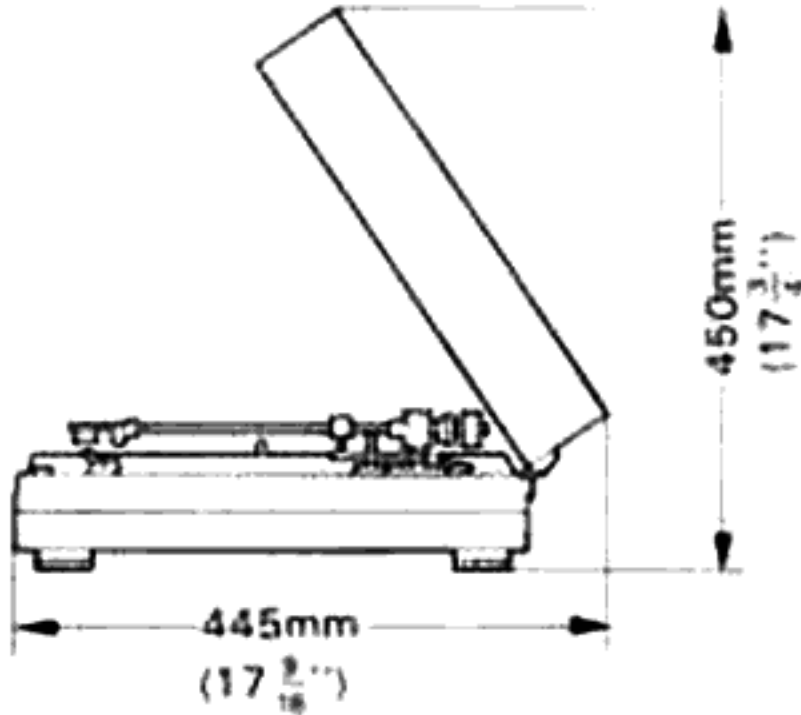
- To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.
- To prevent fire or shock hazard, do not expose the set to rain or moisture.

PRECAUTIONS

- Operate the set only on 120 V ac, 60 Hz.
- Should any liquid or solid object fall into the cabinet, unplug the set and have it checked by qualified personnel before operating it any further.
- Unplug the set from the wall outlet when it will not be used for an extended period of time.
- To disconnect the power cord, pull it out by the plug. Never pull it by the cord.

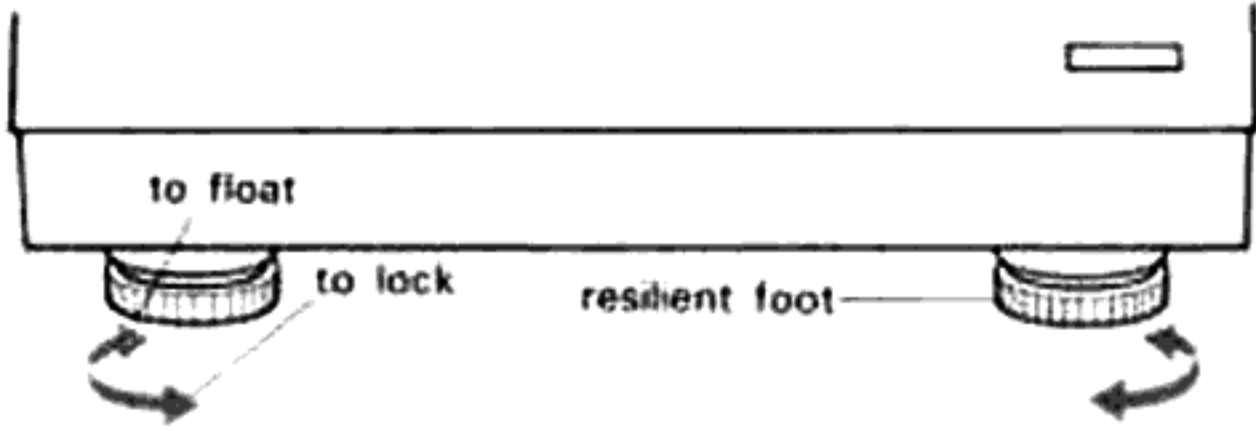
NOTES ON LOCATION

- Place the turntable on a level surface.
- Avoid placing the set near electrical appliances (such as television, hair dryer, fluorescent lamp) which may cause hum or noise.
- Avoid any vibration (such as from speakers, slamming of doors, etc.).
- Keep the set away from direct sunlight, extreme of temperature, or excessive dust and moisture.
- Allow five inches clearance behind the set so that the cover can be opened.



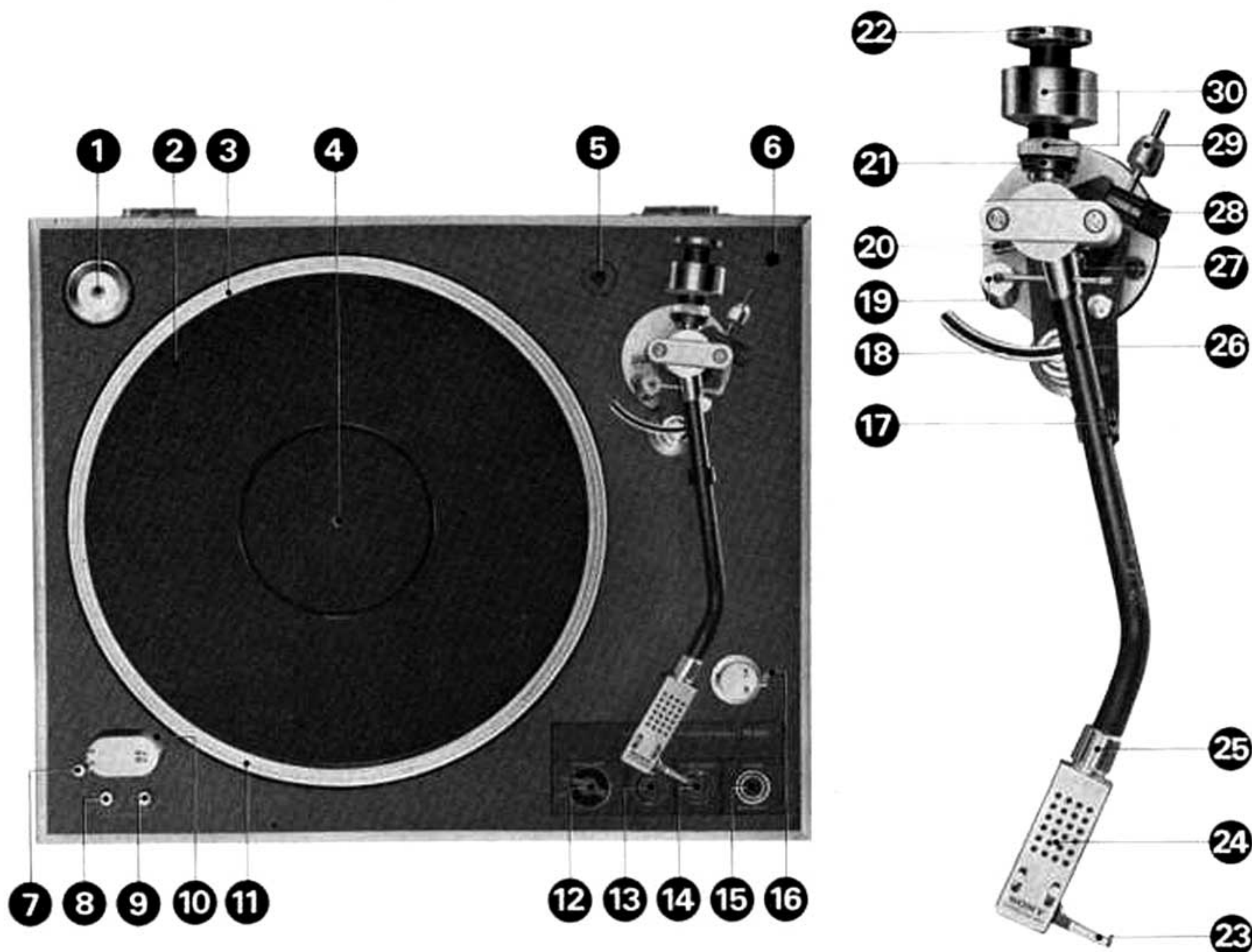
- The turntable has integral bases supported by resilient feet that isolate the mechanism from external shock and vibration. These feet are also adjustable in height for leveling the turntable.

Adjust the feet as follows.
To reduce the effect of mechanical shock and vibration
Turn the feet counterclockwise and float the turntable.
Uneven surface Turn each foot counterclockwise until the set is level.



LOCATION OF CONTROLS

Your record player must be assembled as described here before it can be used for record playing. The picture below shows the appearance of the assembled player.

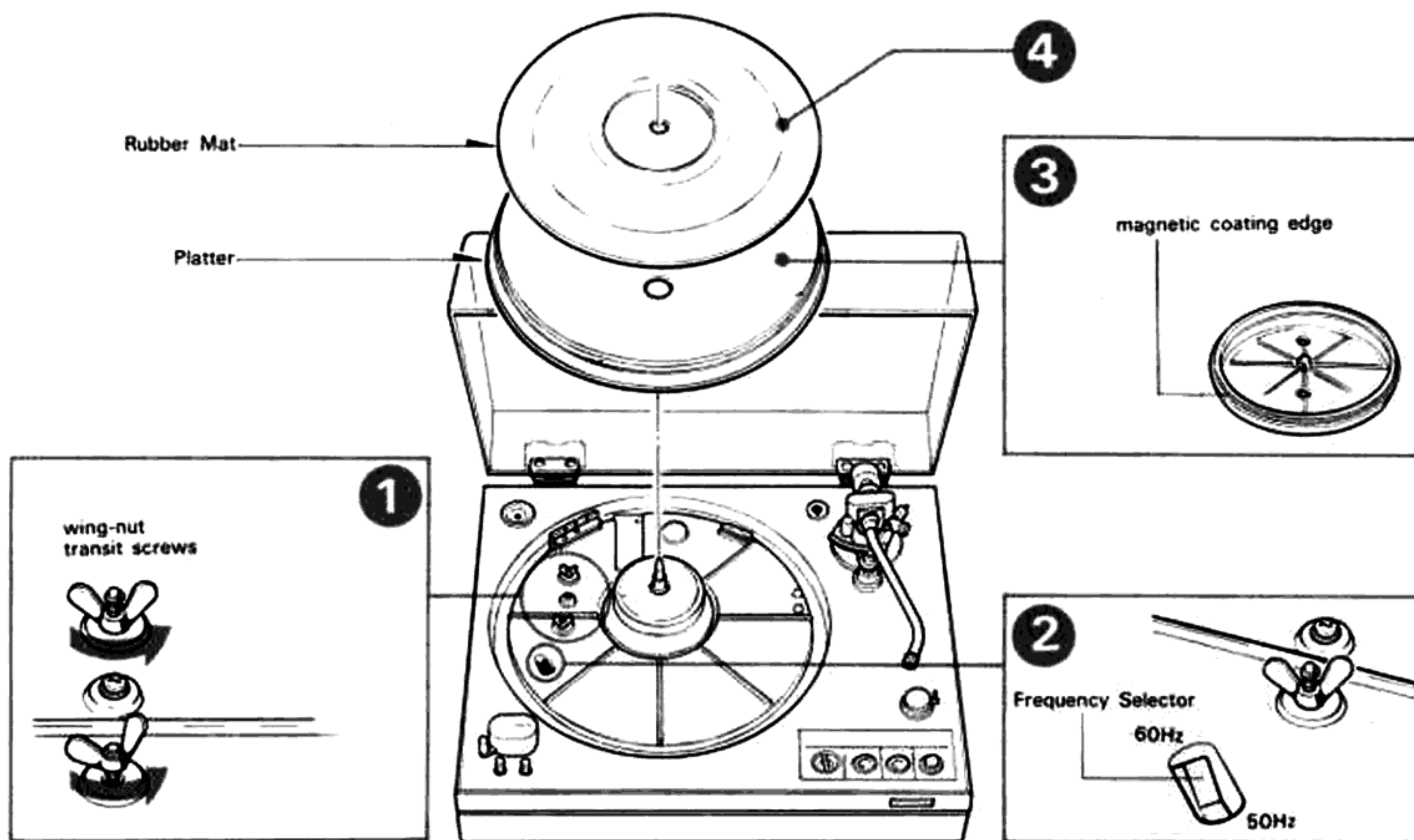


- ① 45-rpm Adaptor
- ② Rubber Mat
- ③ Platter
- ④ Center Spindle
- ⑤ Shell Stand
- ⑥ Tonearm Height Adj. Lever/Stand
- ⑦ Speed Selector
- ⑧ 45-rpm Pitch Control
- ⑨ 33-rpm Pitch Control
- ⑩ Neon Lamp
- ⑪ Stroboscope
- ⑫ Crystal Lock Switch
- ⑬ REJECT Button
- ⑭ START/STOP Button
- ⑮ POWER Switch
- ⑯ Cueing Lever
- ⑰ Arm Rest
- ⑱ Arm Lifting Bar
- ⑲ Lateral Balancer
- ⑳ Tonearm Height Adj. Hole

- ㉑ Tracking-force Ring
- ㉒ Extra Weight*
- ㉓ Finger Lifter
- ㉔ Shell
- ㉕ Locking Collar
- ㉖ Cueing Height Adj. Screw
- ㉗ Arm Locking Knob (for transportation)
- ㉘ Anti-skating Compensator Locking Knob (for transportation)
- ㉙ Anti-skating Compensator
- ㉚ Counterweight and Counterweight Ring

* If your cartridge is heavier than 10 grams, insert the supplied extra weight into the arm pipe end.

TURNTABLE ASSEMBLY



Do not connect the power cord or the connecting cords until completing the assembly and adjustments.

Remove all packing material and clean the cabinet.

① Turn the two wing-nut transit screws fully counterclockwise until they are locked.

(At the time of repacking, turn the screws clockwise. See the "Repacking instructions" on the back cover.)

② Confirm that the Frequency Selector is placed at the "60 Hz" position.

③ Carefully place the platter on the motor board by matching the center hole and the center spindle.

Be careful not to damage the magnetic coating edge of the turntable with your finger tips.

④ Place the rubber mat on the platter.

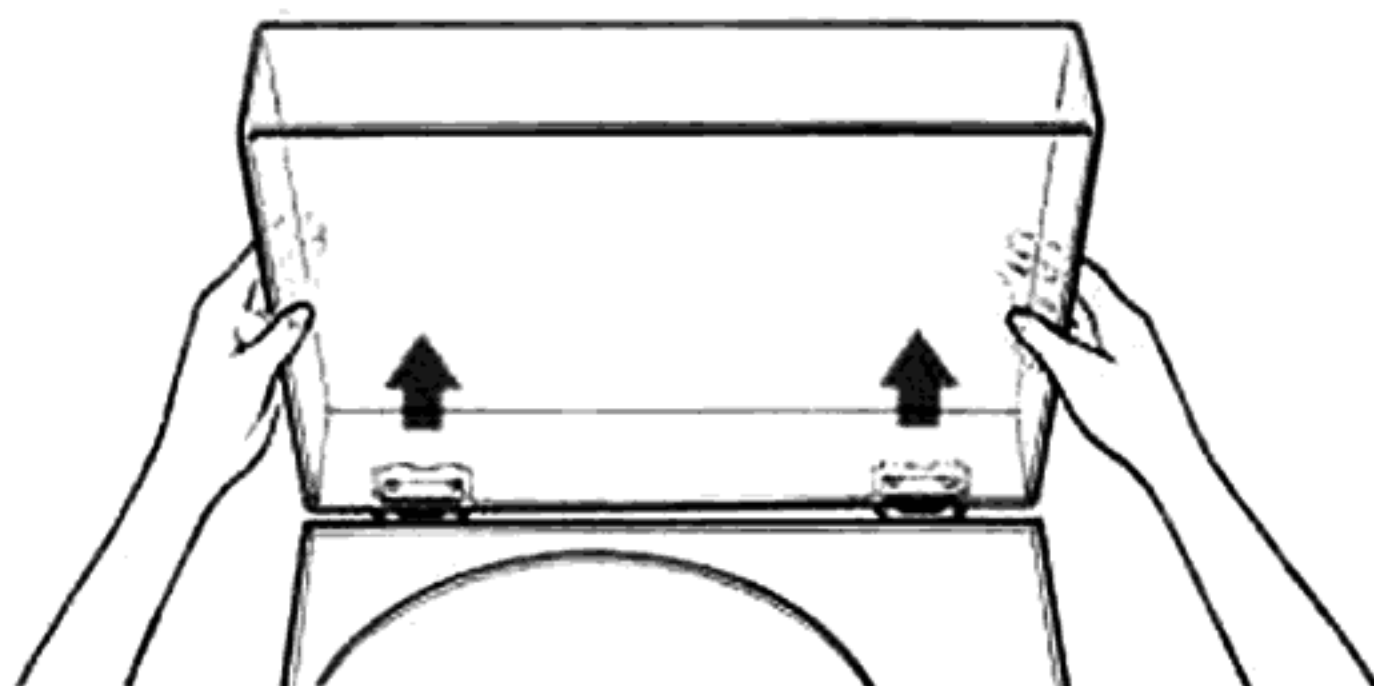
● Never connect the power cord when the platter is not installed. Otherwise the servo-motor will turn erratically since the servo control mechanism does not operate.

● Be careful that no foreign objects lodge under the turntable.

● Don't attempt to turn the turntable counterclockwise by hand.

To remove the dust cover

Open the dust cover by holding with both hands and lift it upwards.



CARTRIDGE INSTALLATION

A cartridge weighing between 3-10g can be mounted with the supplied shell. For heavier cartridge of from 8-14g or 13.5-19.5g, use the Extra Weight.

Note on shell

The carbon fiber shell SH-160 (12.5 grams) is supplied on the PS-8750. Avoid using other lightweight shells (less than 12.5 grams), since they will make the longitudinal (tracking-force) adjustment difficult.

If some other shell is installed, use one whose weight and height are the same as that of the supplied shell.

1. Select the most suitable length of cartridge mounting screws according to the height of your cartridge. (Four pairs of screws of various lengths are supplied.)

If necessary, insert the supplied spacer to adjust the total cartridge height.

2. Install the cartridge with the selected screws so that the length between the shell end and the stylus tip is 52.5 mm ($2\frac{1}{16}$ "). The temporary overhang adjustment is then complete. More precise adjustment should be made later.

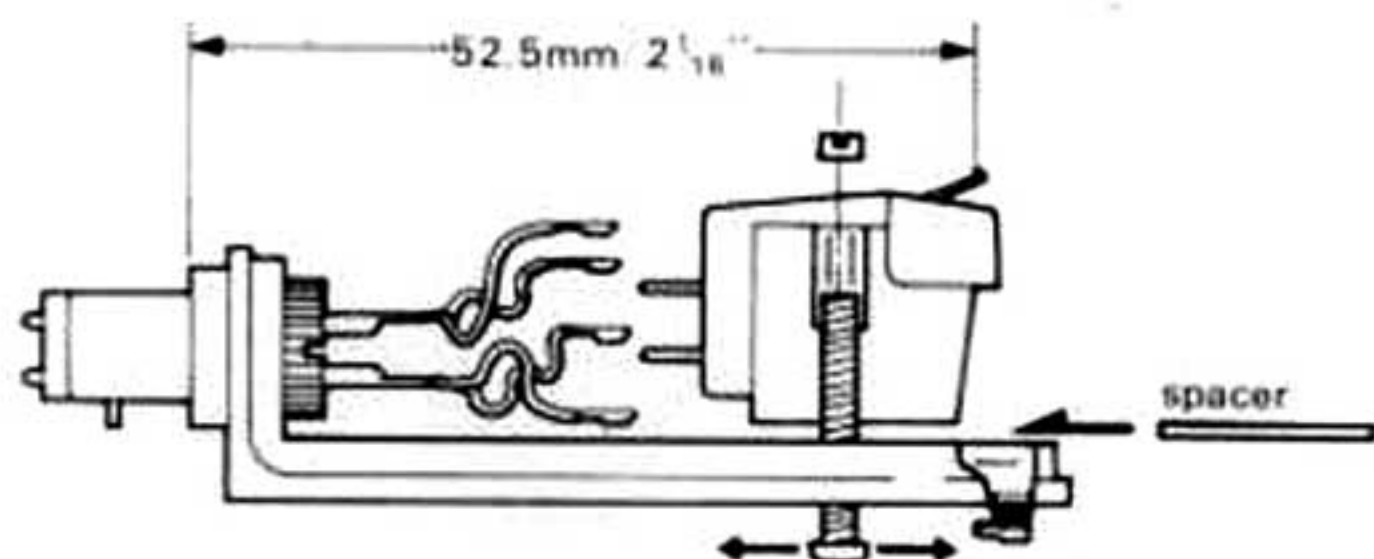
3. Connect the lead wires of the shell to the corresponding pins on the cartridge.

White wire L (left channel signal)

Blue wire LE or G (left channel ground)

Red wire R (right channel signal)

Green wire RE or G (right channel ground)



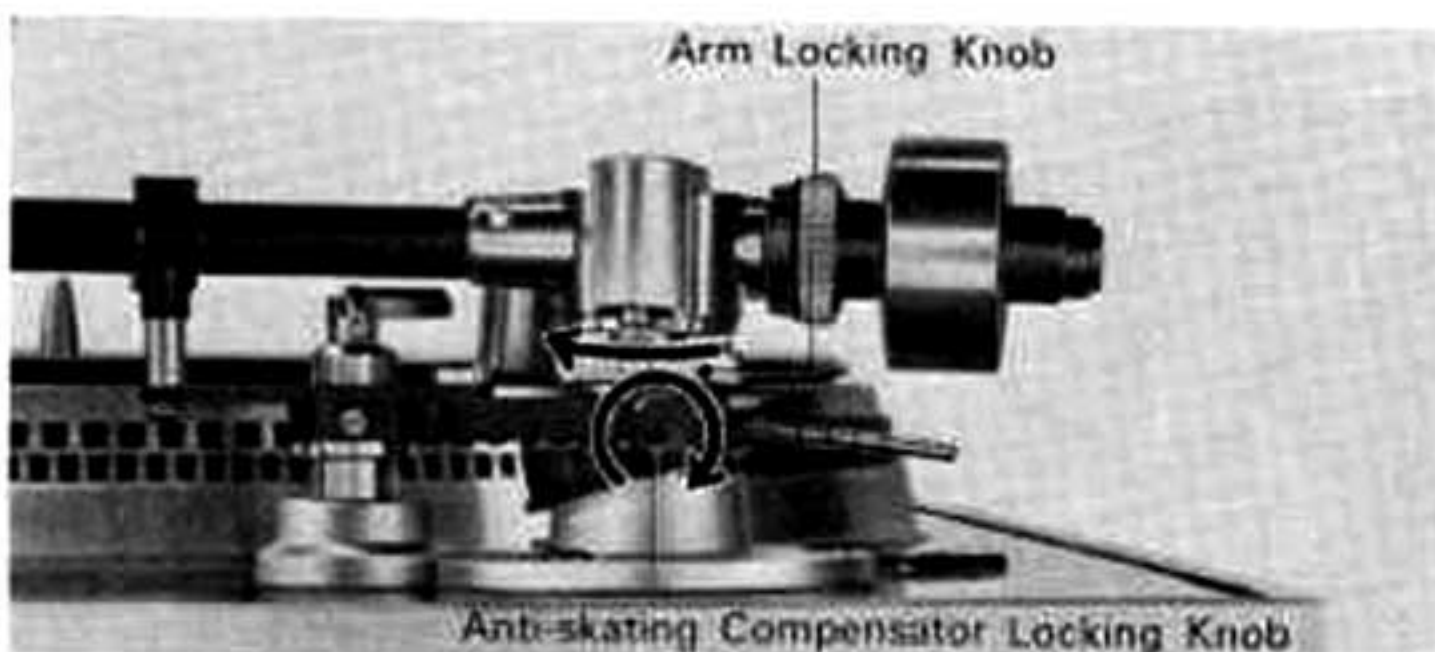
● A shell stand is provided on the base of the turntable for an extra mounted cartridge.

TONARM ASSEMBLY AND ADJUSTMENTS

The following procedures should be performed on a firm and level surface. When you change the cartridge, the operating steps after "Longitudinal balance adjustment" will be required.

Preparation

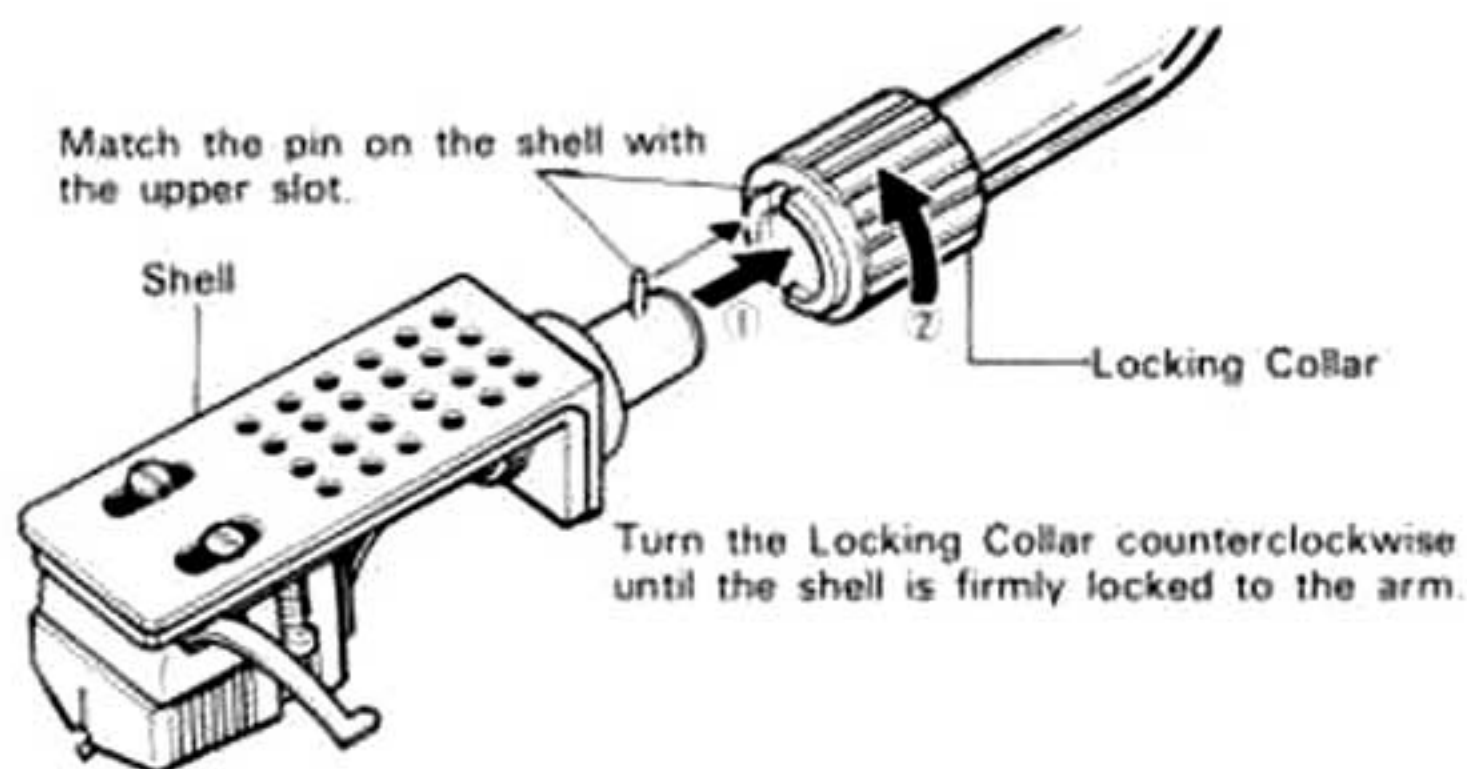
1. Release the Arm Locking Knob and the Anti-skating Compensator Locking Knob by turning them clockwise. Turn them fully until they are locked.



2. Secure the tonearm to the Arm Rest and place the Cueing Lever at the forward (\blacktriangledown) position.



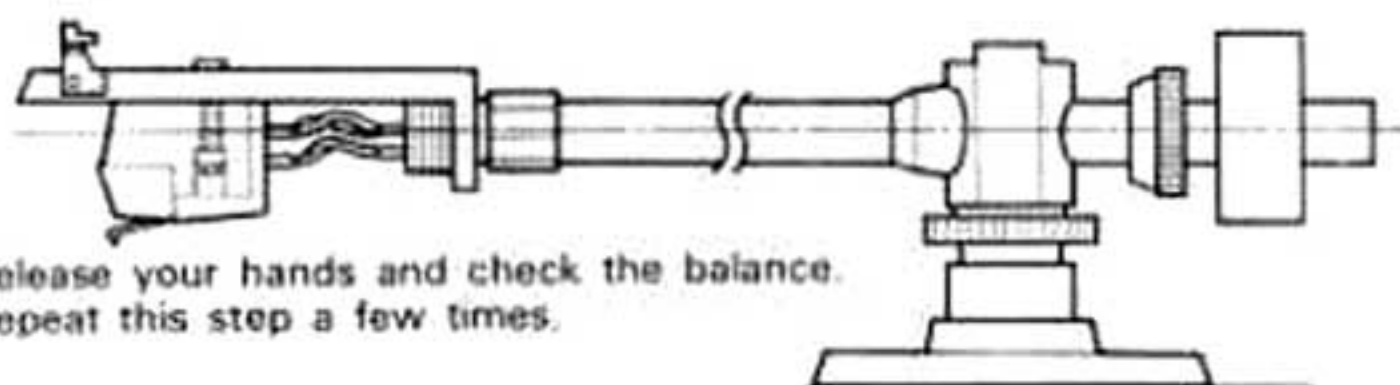
3. Plug the Shell into the tonearm.



4. Remove the stylus guard.

Longitudinal balance adjustment

1. If the cartridge weight is between 8-14 or 13.5-19.5 grams, add the supplied Extra Weight at the arm pipe end.
2. Release the tonearm from the Arm Rest.
- (At this time, be careful not to damage the stylus tip by bumping against the turntable etc.)
3. Turn the Counterweight until the tonearm is in the horizontal balanced position. (The Tracking-force Ring turns simultaneously.)



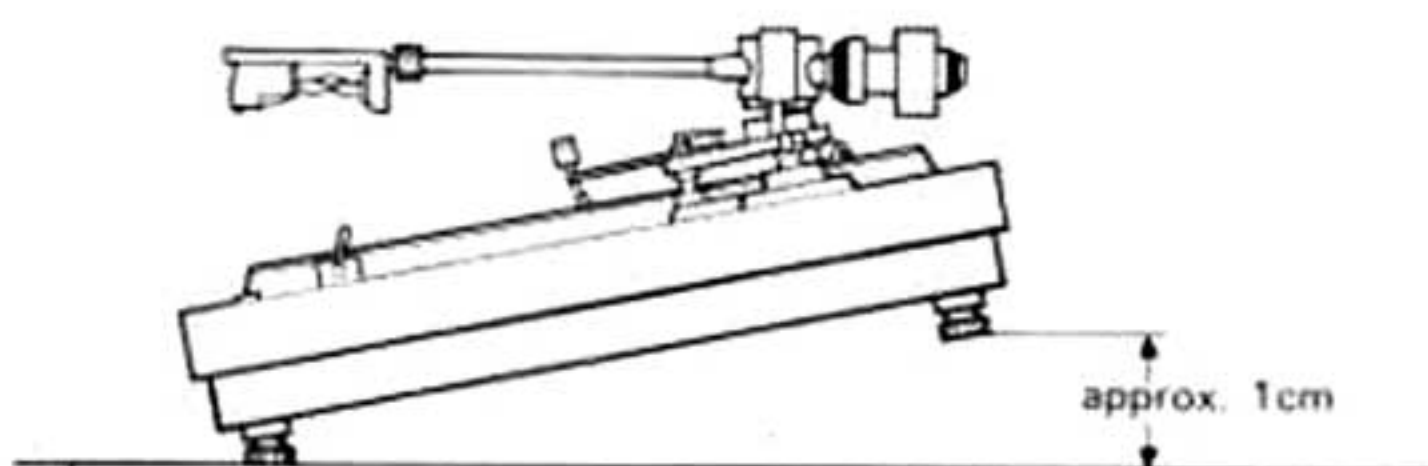
4. Secure the tonearm to the Arm Rest again.
- While holding the Counterweight at the balanced position, separately turn the Tracking-force Ring (black ring) until the "0" indication meets the center line on the arm.**



Turn only the Tracking-force Ring.

Lateral balance adjustment

1. Slant the turntable as illustrated and lift the tonearm upwards.



2. While positioning the tonearm between the Arm Rest and the turntable, adjust the Lateral Balancer.

- When released, if the tonearm moves in the "A" direction . . . Push the Lateral Balancer rod in the "a" direction.
 - When released, if the tonearm moves in the "B" direction . . . Pull out the Lateral Balancer rod in the "b" direction.
- Repeat this procedure until the tonearm does not move when released.



3. After adjustment, lower the raised side and place the arm in its rest.

Tracking-force adjustment

Turn the Counterweight Ring counterclockwise so that the recommended tracking-force figure (as shown on the Tracking-force Ring) for your cartridge is aligned with the center line on the arm. (The Tracking-force Ring will turn at the same time.) Each graduation on the ring represents 0.25 gram. One counterclockwise rotation provides a 2.5-gram tracking force.

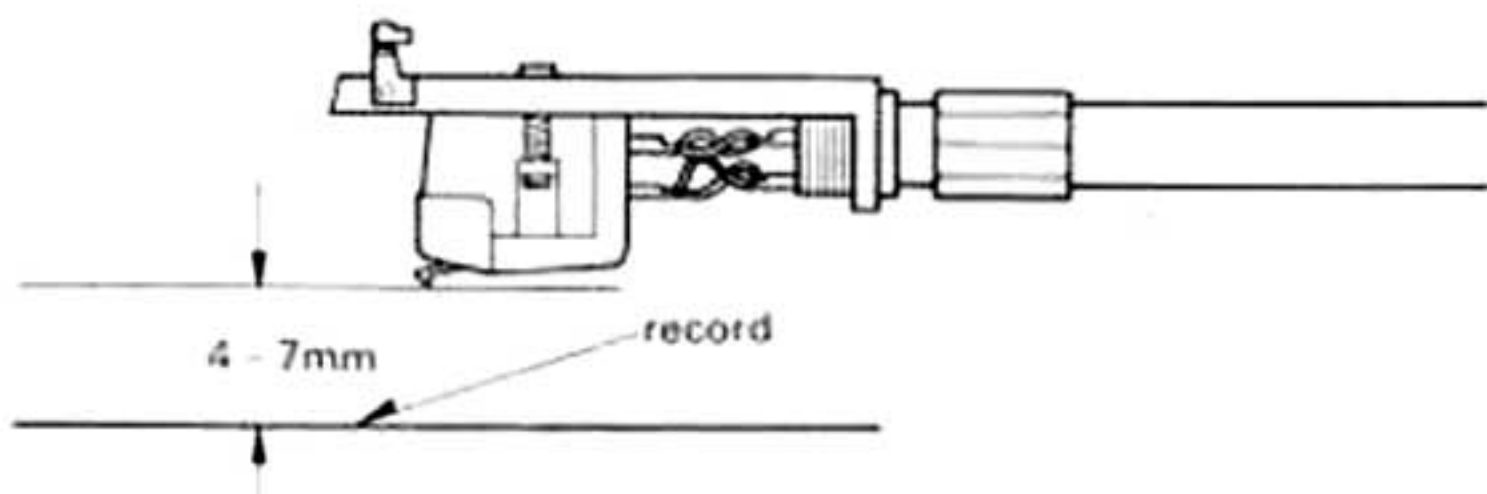


Arm height adjustment

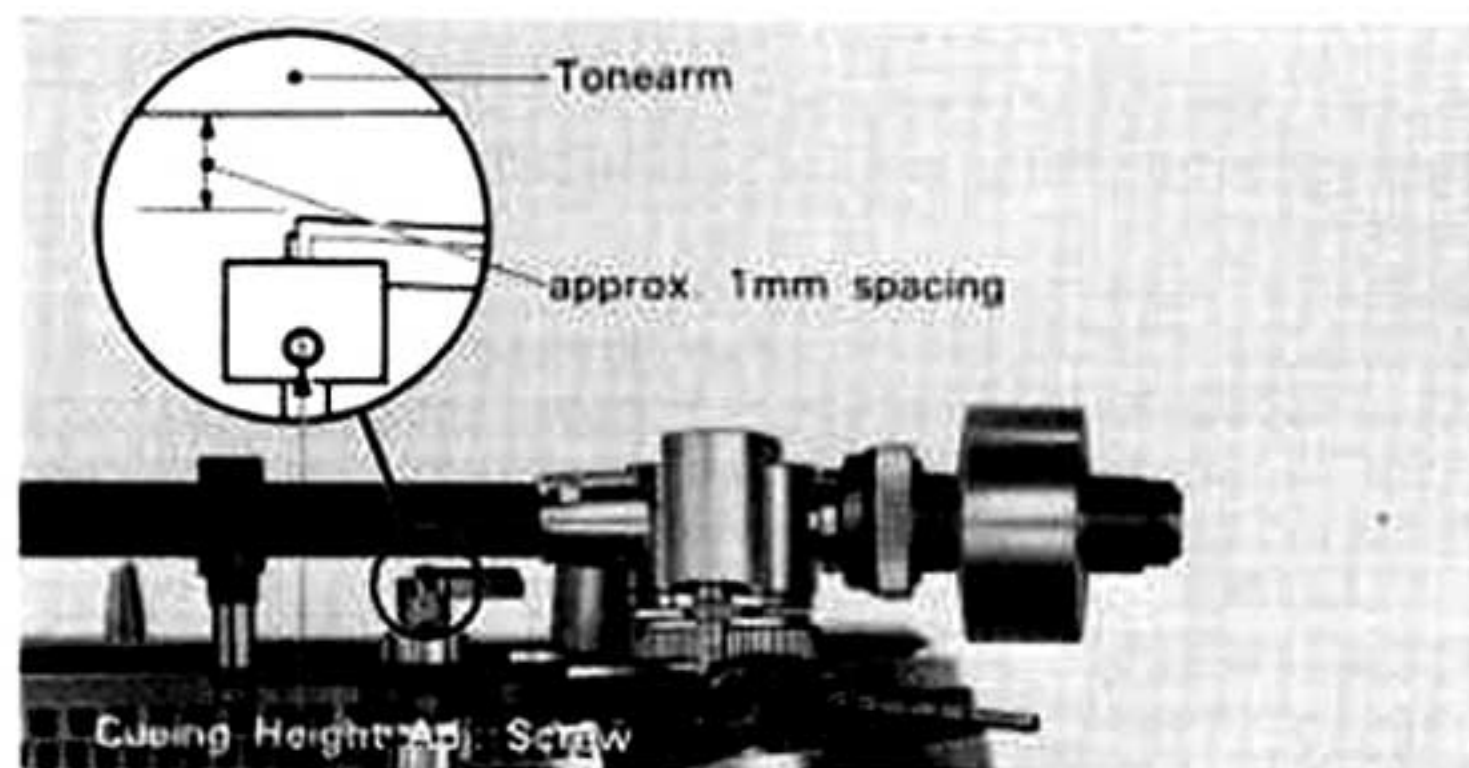
1. Place the Cueing Lever to the up (∇) position. Release the arm from its rest and bring it over the lead-in groove of the record on the turntable.
2. Insert the Tonearm Height Adj. Lever into the Tonearm Height Adj. Hole.
3. While holding the arm base with your hand, loosen the knob as illustrated.



4. Tighten the Tonearm Height Adj. Knob at the point where the stylus tip is 4 – 7 mm above the record surface.



5. Place the Cueing Lever at the (∇) position, and check that the stylus tip will fall on the lead-in groove of the record. Also, check that a slight space remains as illustrated.

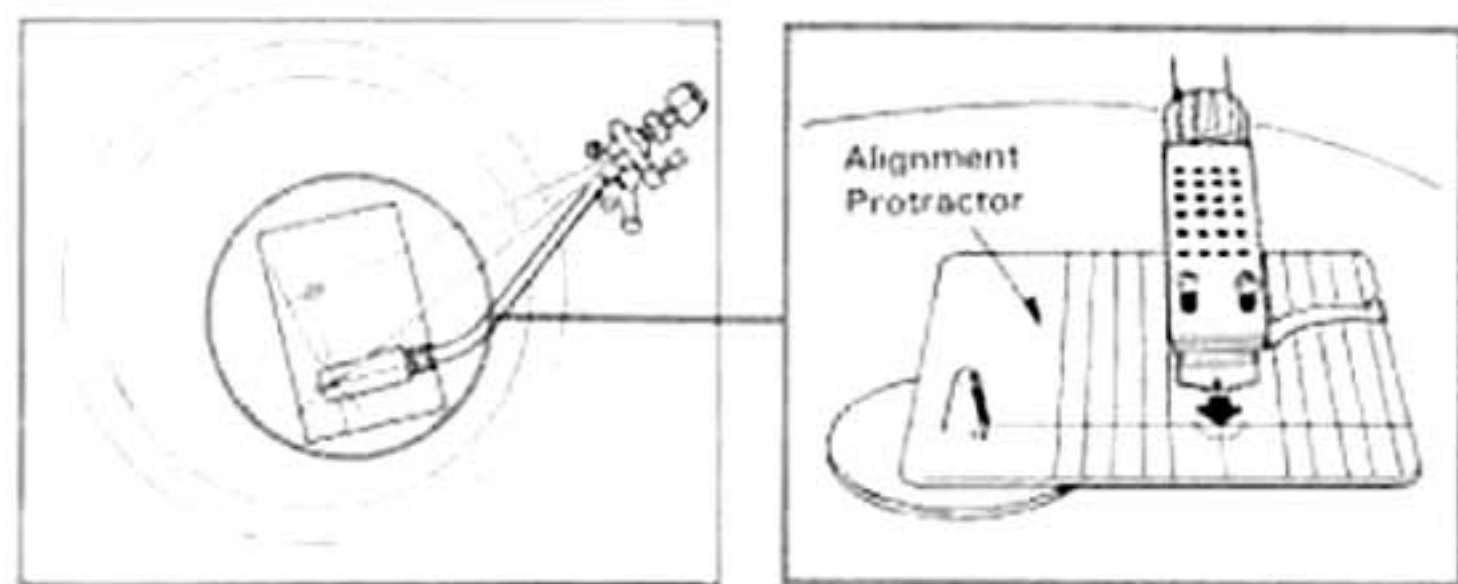


- The cueing height can be adjusted (within a 4 – 7 mm range) with the Cueing Height Adj. Screw located at the side of the Arm Lifting Bar.

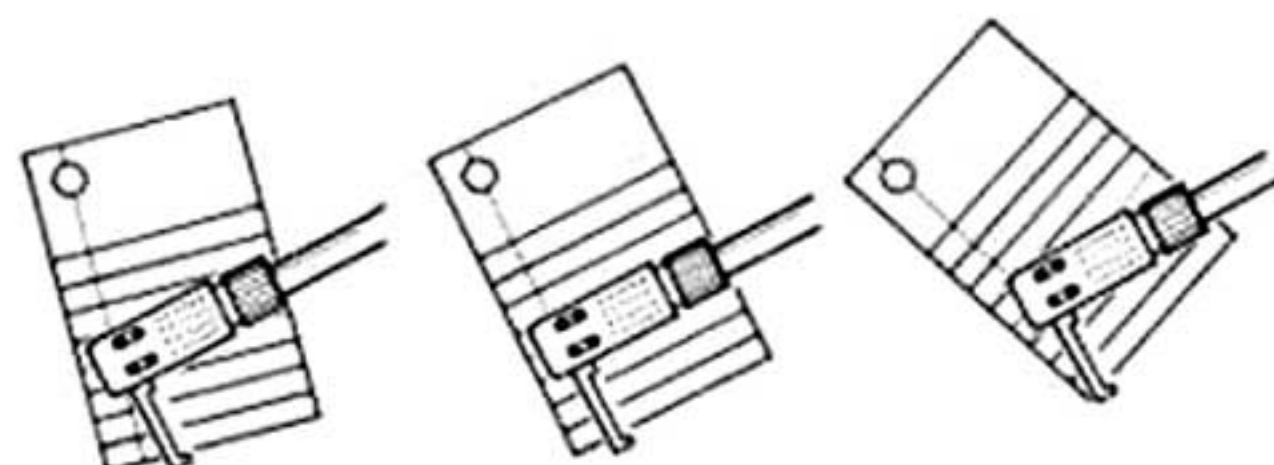
Overhang adjustment

Check that the stylus overhang is set correctly. Use the Alignment Protractor (supplied).

1. Insert the Alignment Protractor into the spindle through the hole on its corner.
2. Bring the tonearm above the cross point of the two fine lines, and carefully lower the stylus on the cross point with the Cueing Lever.



3. Check to see that the shell is parallel to the thick lines drawn on the Alignment Protractor as illustrated. If they are parallel, the stylus overhang is set correctly.
4. If the shell is not parallel, loosen the cartridge screws and adjust the stylus overhang until the Shell is parallel.



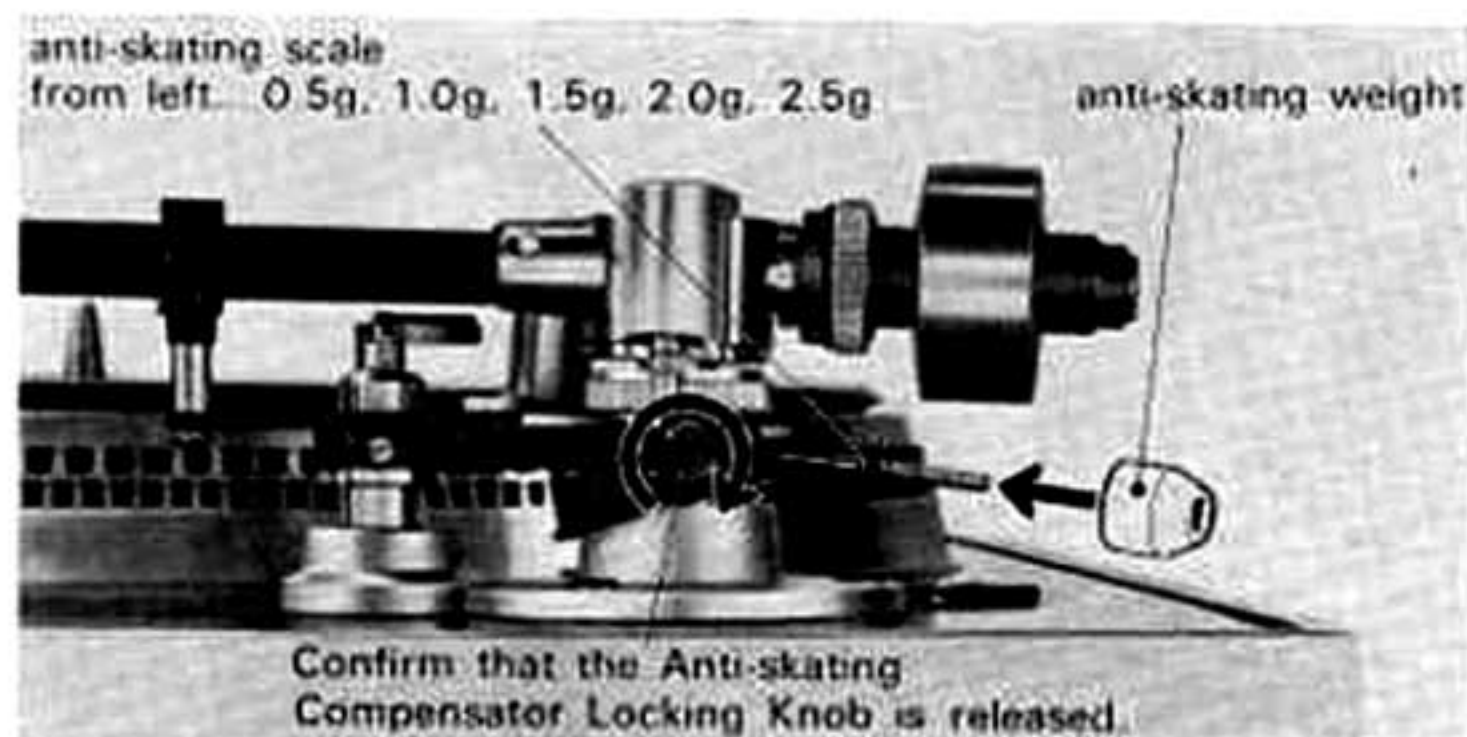
Overhang is too long. Slide the cartridge backward.

Overhang is too short. Slide the cartridge forward.

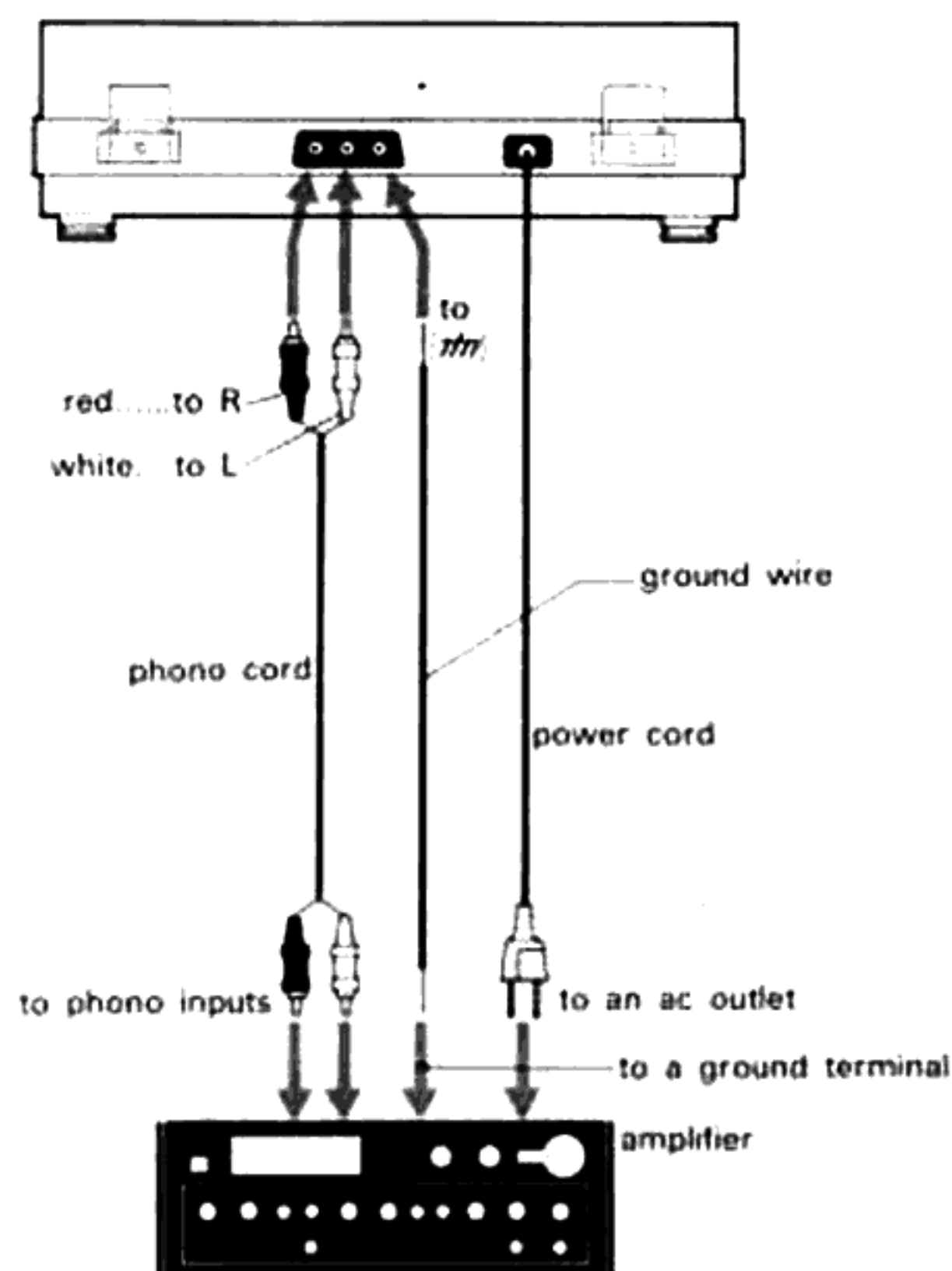
- After doing the above, adjust the tonearm according to the procedures given in the "Longitudinal" and "Lateral" balance adjustments.

Anti-skating compensation

1. Insert the Anti-skating weight onto the Anti-skating scale.
2. Match the metal side of the weight to the line on the scale according to the recommended tracking-force of your cartridge.



CONNECTIONS



- Check that the phono cord and power cord are not caught under any foot of the case.
- Leave a little slack in the connecting cord to allow for inadvertent shock or vibration.

TIPS ON RECORD HANDLING

Before playing

- For cleaning the stylus, use a soft brush (stylus brush, artist's paint brush, etc.). Never clean the stylus with your finger tip.
- For routine cleaning of records, the use of a barely damp soft cloth (gauze, etc.) or a fluid type cleaner will be effective. If a spray type record cleaner is used, make sure that the cleaner has dried completely before playing the records. Record playing while the fluid is still wet may damage the records. It is a good idea to clean the record again before putting it away.
- Handle a record by its edges and don't touch the music grooves. Finger prints on the record surface may induce an accumulation of dust, resulting in impaired tone.

When record playing

- It is recommended that you reduce the amplifier volume before you lower the tonearm onto the record.
- While the turntable is energized, don't attempt to stop or reverse the turntable by hand.
- During play, be sure to close the dust cover. Don't place anything on the dust cover.
- While playing, never attempt to move the player or touch the tonearm.

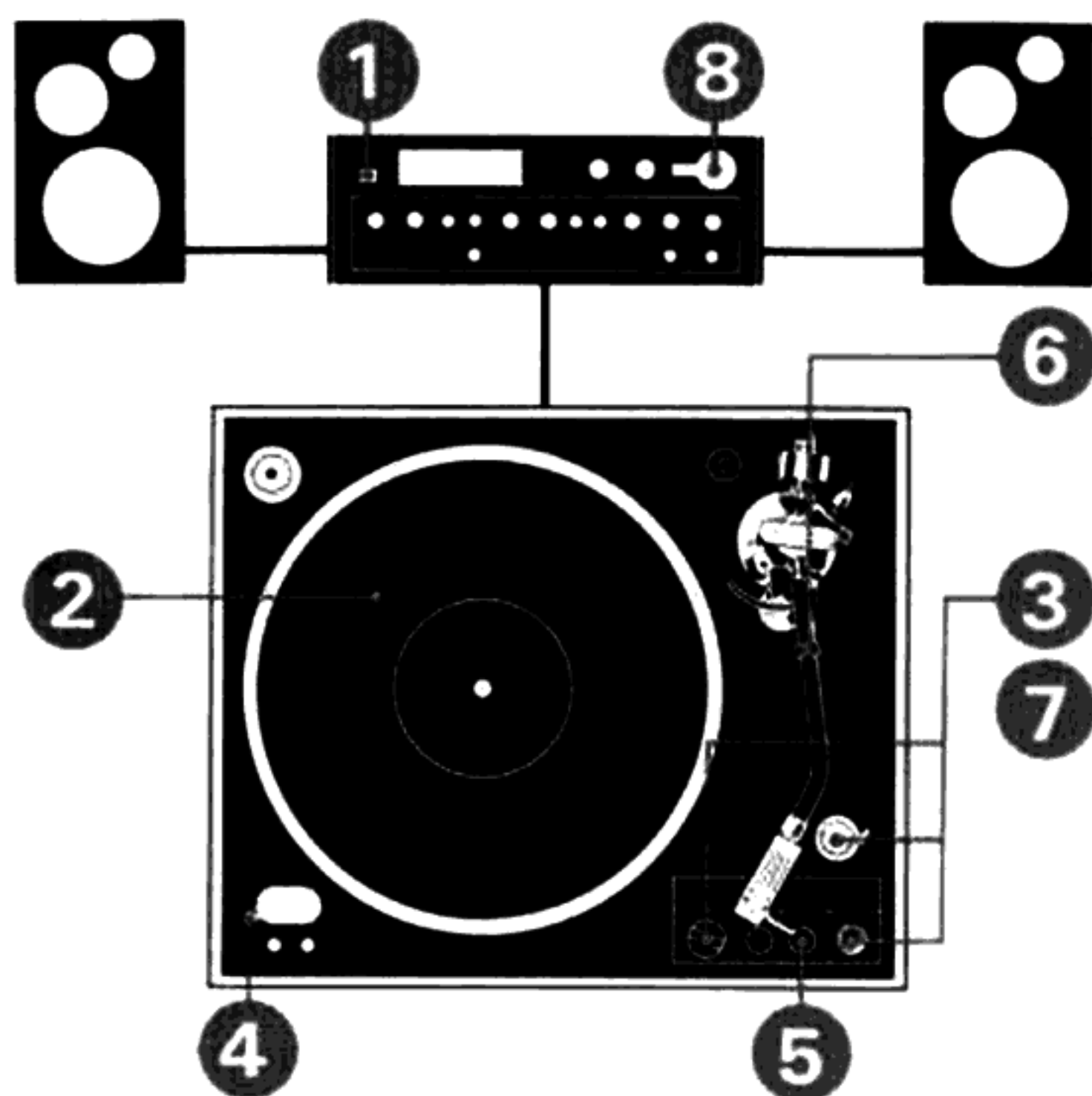
After playing

- Avoid exposing records to any source of heat, such as direct sunlight, a hot-air duct, etc...
- Store records vertically without applying any pressure or inclining to either side. This will minimize any warpage.
- When not using the player, close the dust cover.

Other precautions

- Don't put anything but records on a turntable.
- Don't place anything but the spare cartridge and 45-rpm Adaptor on the cabinet.

RECORD PLAYING



- 1 Lower the amplifier volume. Turn on the amplifier and set the amplifier input selector to PHONO.
- 2 Place a record on the turntable.
- 3 Push the POWER Switch. (The Neon Lamp will light.) Place the Cueing Lever to the "X" position. Place the Crystal Lock Switch to ON position.*
- 4 Set the Speed Selector according to the record speed that you wish to play.
- 5 Push the START/STOP Button and the turntable will begin to turn.
- 6 Bring the tonearm above the lead-in groove of the record.
- 7 Place the Cueing Lever to the "X" position. The tonearm will automatically lower onto the record.
- 8 Adjust the sound level, stereo balance and tone quality of the amplifier according to your preference.

* Note on the Crystal Lock Switch

With the Crystal Lock Switch in ON position, the crystal-controlled circuits operate to maintain the selected nominal rotational speed of the turntable. The strobe pattern then appears stationary. The variations in the drive motor speed which occur in the conventional servo-controlled motor are not present on the PS-8750.

LUBRICATION AND MAINTENANCE

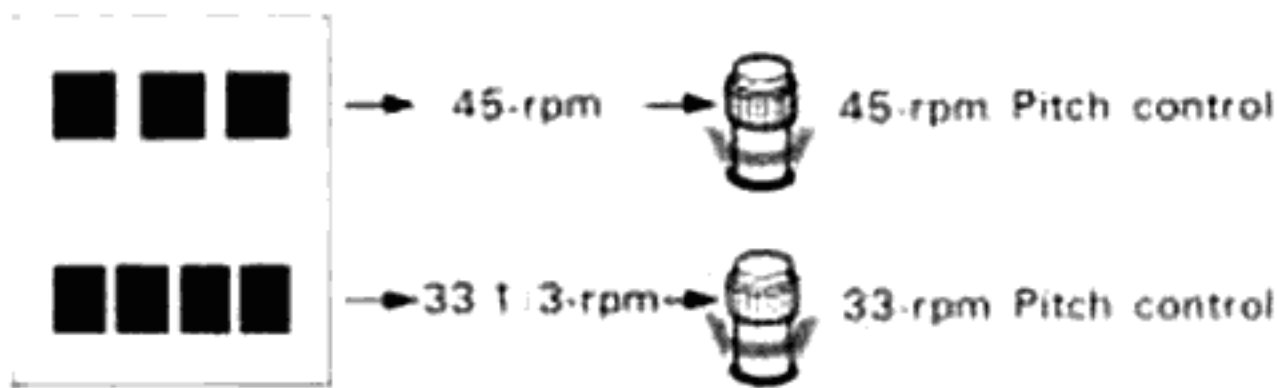
In this mode, the Pitch Controls (33 or 45-rpm) are automatically cut off and do not affect the rotational speed.

● If the semi-fixed pitch control adjustment screws (bottom) should be turned fully to the "F" or "S" directions, the strobe pattern will not stop when the Crystal Lock Switch is placed to the ON position.

In this case, set the Crystal Lock Switch to OFF, and perform the manual pitch control adjustment as described below. Then reset the Crystal Lock Switch to the ON position, and the strobe pattern will appear stationary.

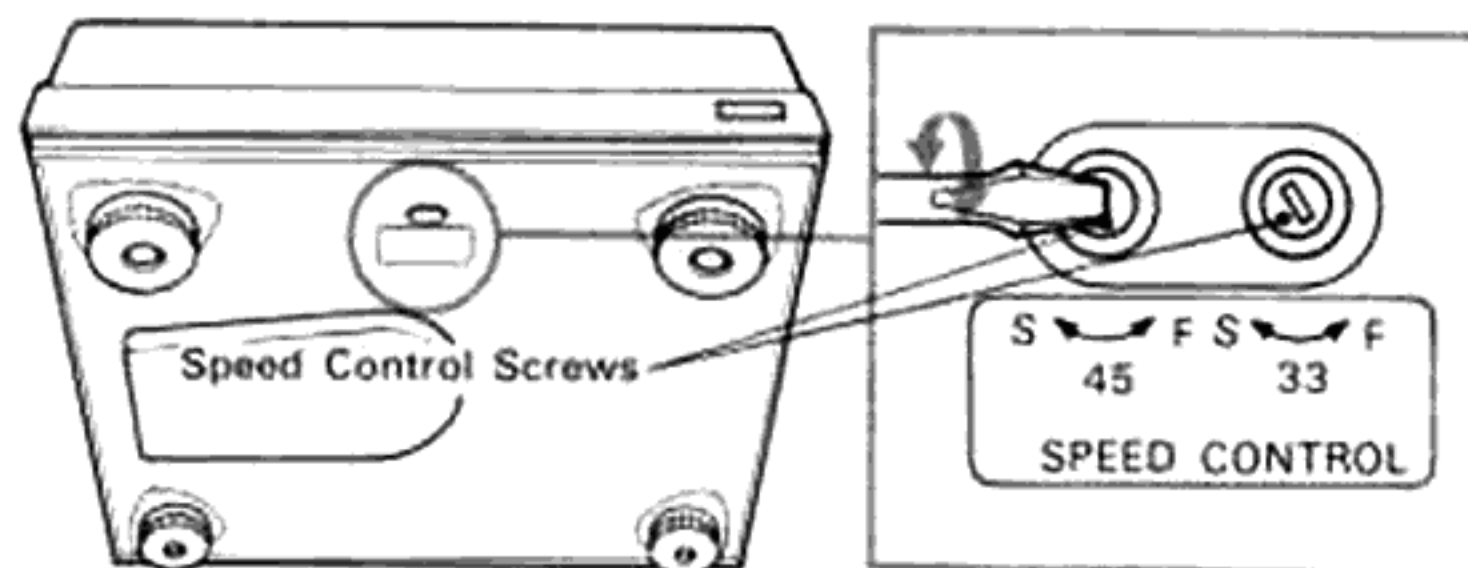
If the Crystal Lock Switch is in the OFF position, the speed can be adjusted manually.

By viewing the stroboscope, adjust the speed with the appropriate Pitch Control so that the pattern appears stationary.



- If the pattern moves to the right... Turn the control in the "F" (fast) direction.
- If the pattern moves to the left... Turn the control in the "S" (slow) direction.

If correct speeds cannot be obtained by adjusting the Pitch Controls, readjust the semi-fixed Speed Control Screws at the bottom of the case.



1. Place the POWER Switch to ON.
 2. Center the Pitch Controls (top) within their rotational range. The Crystal Lock Switch should be set to OFF.
 3. Start the turntable with the START/STOP Button.
 4. Set the Speed Selector to the desired position.
 5. Turn the Speed Control Screws (bottom) so that the stroboscope pattern appears stationary.
- Check the speed by using the Neon Lamp. Never use a power-line operated fluorescent lamp, as the pattern may be seen moving despite a correct speed setting.

● For 7-inch records, put the 45-rpm Adaptor (supplied) over the spindle.

● To stop the turntable during play, push the REJECT Button. The tonearm will automatically return to its rest and the turntable will stop.

To stop manually, set the Cueing Lever to the "▼" position and the tonearm will automatically rise. Then bring the tonearm to the rest and stop the turntable with the START/STOP Button.

● No lubrication is required for this player, since it employs a motor shaft of self-lubricating metal.

● The rubber mat is a precise and delicate device. Handle it carefully and take care never to bend it.

If the surface of the mat is not level, place it on a level surface until it becomes level.

When the rubber mat is dirty, wipe it gently with a soft cloth slightly dampened with hot water.

● Clean the cabinet and dust cover periodically with a soft dry cloth. Do not use solvents such as alcohol, benzine or thinner since they will damage the finish.

TROUBLE CHECKS

The following chart will help correct most troubles which may occur with the PS-8750. If the trouble persists after you have checked these items, consult your Sony dealer.

Impaired tone quality

- Turntable not level
- Incorrectly placed on or near a speaker
- Dusty stylus
- Worn stylus or defective record (The stylus life is approx. 400 hours of playing time.)
- Incorrect cartridge installation
- Improper tonearm balance (See "Longitudinal balance adjustment" on page 6.)
- Improper tracking-force (See "Tracking-force adjustment" on page 6.)
- Improper setting of the Anti-skating Compensator (See "Anti-skating compensation" on page 7.)
- Improper speed (See "Note on the Crystal Lock Switch" on page 8.)

No audio from one channel

- Loose attachment of the Shell to the tonearm (See "Preparation" on page 5.)
- Loose connection of phono cord
- Low volume level setting for one channel of the amplifier
- Incorrect connection of the shell lead wires

Groove skipping, tonearm tends to skate out, tonearm does not advance (record repeats).

- Turntable not level
- Improper tracking-force
- Improper setting of the Anti-skating Compensator
- Defective record
- Incorrect adjustment of the resilient feet

Steady low pitched sound (ac hum)

- Loose ground wire to the amplifier
- Loose connection between the Shell and the tonearm
- Incorrect connection of the cartridge lead wires

Correct tonearm balance cannot be obtained.

- Arm Locking Knob and the Anti-skating Compensator Locking Knob are locked. (See "Preparation" on page 5.)

SPECIFICATIONS

Turntable	Semi-auto player
Platter	32 cm (12 5/8"), Aluminum-alloy diecast
Motor	Ac servo-controlled motor
Semiconductors	8 ICs, 35 diodes, 49 transistors
Drive system	Direct drive, crystal lock control system
Speed	33 1/3 rpm, 45 rpm
Pitch control range	±4% (Crystal Lock Switch OFF)
Starting characteristics	at nominal speed within a half revolution (33 1/3 rpm)
Wow and flutter	0.025% WRMS
S/N ratio	70 dB DIN-B

Position of the Crystal Lock Switch

	ON	OFF
Initial drift	within 0.0005%	within 0.1%
Load characteristics (at 3 g tracking-force)	0%	less than 0.05%
Speed deviation	within 0.003%	variable

Tonearm	
Type	Statically balanced, universal
Pivot to stylus length	237 mm (9 3/8")
Overall arm length	320 mm (12 5/8")
Overhang	15 mm (0.590")
Tracking error	+2° 30' -1°
Tracking-force adj. range	0 - 2.5 g (calibrated every 0.25 g)
Tonearm height adj. range	7 mm (0.276")
Shell weight	12.5 g (SH-160)
Cartridge weight range	3 - 10 g 8 - 14 g (with Extra Weight) 13.5 - 19.5 g (with Extra Weight)

General	
Power requirements	120 V ac, 60 Hz
Power consumption	25 W
Dimensions	458×184×395 mm (w/h/d) (18 1/16×7 1/4×15 9/16")
Weight	14.2 kg, net (31 lb 5 oz) 19 kg, in shipping carton (41 lb 14 oz)
Supplied accessories	45-rpm Adaptor Spacer for cartridge installation Four pair of screws for cartridge installation Two pieces of Extra Counterweight Lever for arm height adj. Screw for cueing height adj. Alignment Protractor Shell SH-160 Phono Cords

Design and specifications subject to change without notice.

Optional accessory	Shell SH-160
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FEATURES

● Direct drive servo motor brings the turntable to nominal speed within a half revolution and provides an excellent signal-to-noise ratio.

Built-in brake circuits stop the turntable quickly when the STOP and REJECT buttons are activated.

● Two separate circuits are included in the servo control system of the turntable; one is the innovative CRYSTAL LOCK, and other is a conventional servo system.

The crystal control is not affected by voltage and temperature variations under varying conditions, or aging, and maintains a precise nominal (determined) frequency. The CRYSTAL LOCK system shows excellent Initial Drift and Load/Speed characteristics. However, manual pitch control range adjustment is available for the PS-8750 when desired, by using the alternate conventional servo system.

● The Frequency Generator (F.G.) is composed of a magnetic coating inside the platter. This design feature contributes to exceptionally low degree of wow-and-flutter.

● The tonearm employs a highly sensitive jewelled trunnion mount for longitudinal and lateral support.

● An arm pipe and shell made of carbon fiber suppresses resonance interference.

● The photoelectric circuits employed in the PS-8750 eliminates the usual impact on the tonearm caused by a conventional auto-stop mechanism and permit the use of a more sensitive tonearm.

● Static-insulated dust cover for correct trace of light tracking force cartridges.

● Resilient feet absorb external vibration and prevent audio feedback.

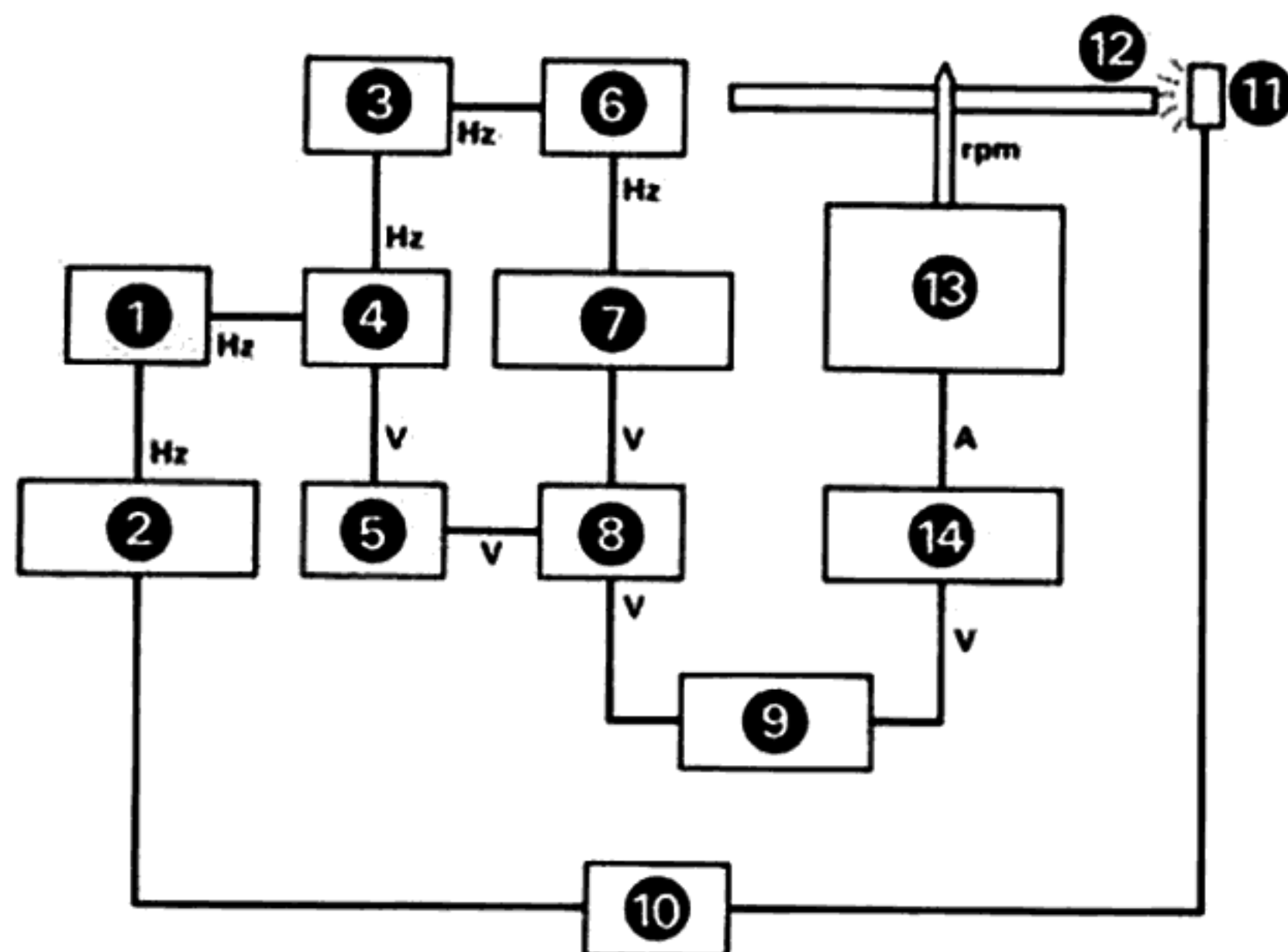
● The cabinet is made from the new acoustic material SBMC (Sony Bulk Mould Compound), and anti-vibration material is used inside the cabinet, minimizing cabinet resonances and vibration, and preventing any degradation of tone quality.

● Newly-developed rubber mat absorbs any disc vibration.

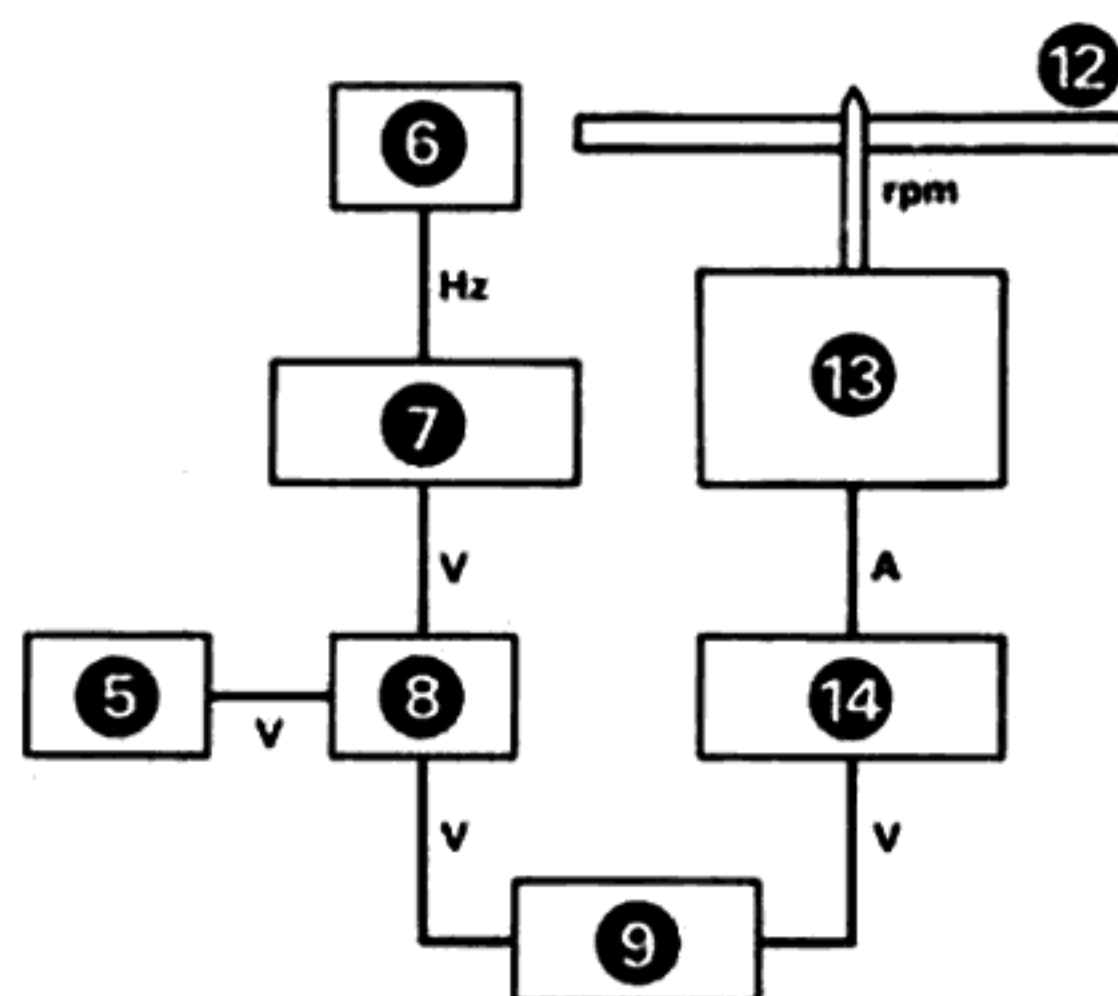
● Tonearm height adjustment enables the use of various styles of cartridge.

PS-8750 BLOCK DIAGRAMS

CRYSTAL LOCK System

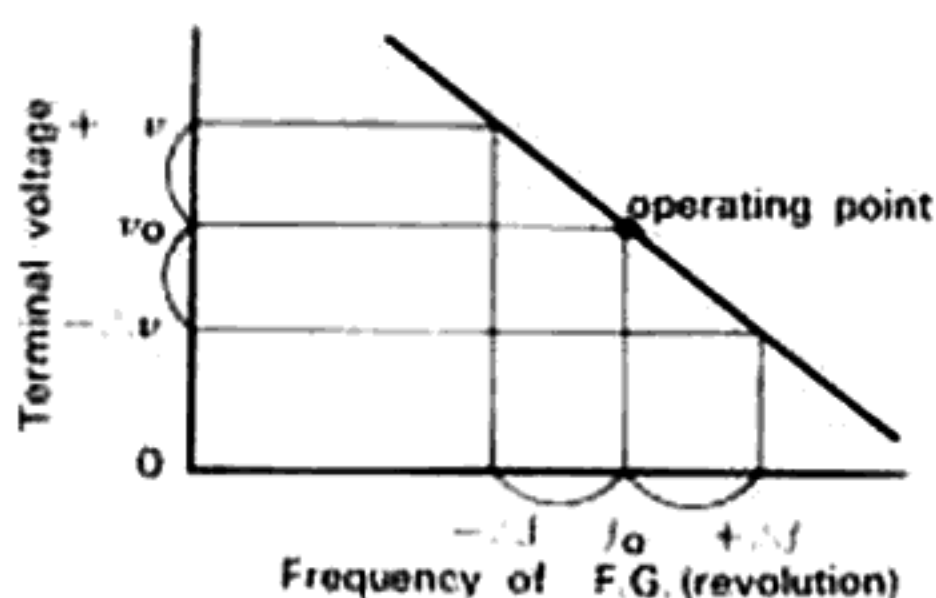


Alternate Conventional Direct-drive System



- ① Frequency dividing circuits ② Crystal oscillator circuits ③ Frequency dividing circuits ④ Phase comparator circuits ⑤ Nominal voltage
 ⑥ F.G. ⑦ Frequency to voltage conversion circuits ⑧ Comparator circuits ⑨ DC servo amplifier
 ⑩ Frequency dividing circuits ⑪ Strobe neon lamp ⑫ Turntable ⑬ Servo motor ⑭ Motor driving circuits

The servo-controlled system used in the alternate conventional direct drive system consists of a Frequency Generator (F.G.) incorporated in the platter itself, and the several circuits used as the regulating device, as shown in the block diagram, so that the speed can be maintained constant at any predetermined value.



If the motor speeds up, the output of the F.G. increases $+\Delta f$. This decreases the motor voltage to $-V$ to decrease the motor speed until the F.G. frequency returns to the nominal value. On the other hand, if the motor slows down, the output of the F.G. decreases $-\Delta f$. This increases motor voltage $+V$ to increase the motor speed until the F.G. frequency returns to the nominal value.

Thus, the servo-controlled system in a direct drive record player maintains an equilibrium condition at a pre-set nominal speed and the motor maintains its selected speed under varying conditions.

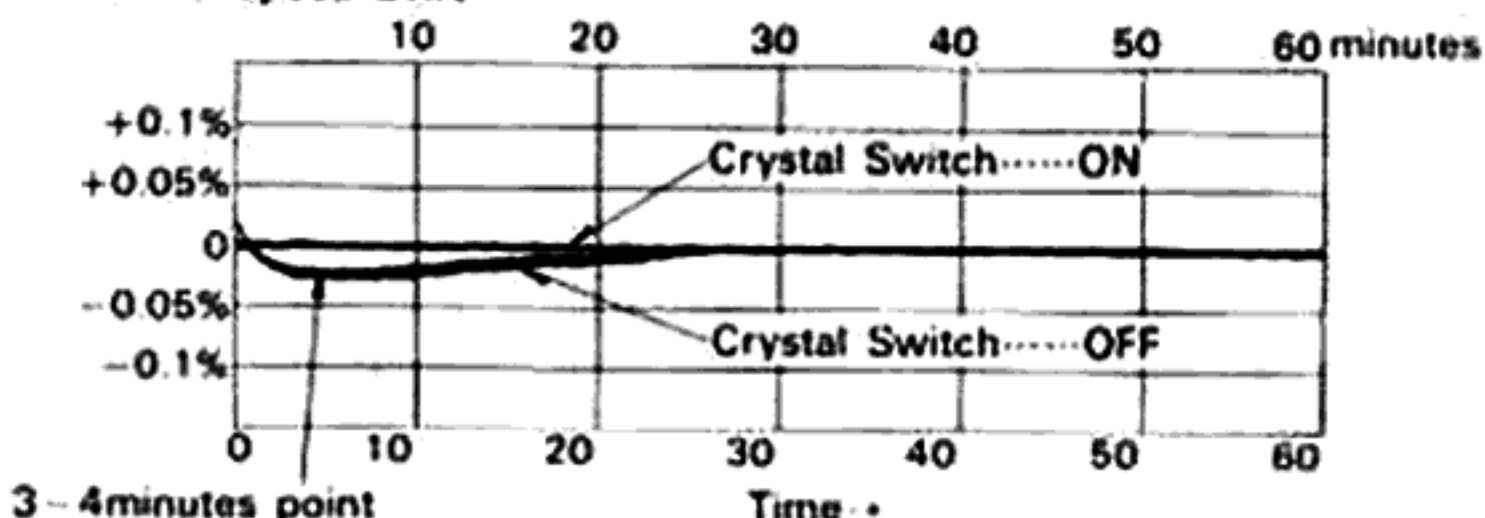
However, because of natural aging effects in the electronic components, as well as the result of temperature and line voltage variations, the equilibrium operating point may shift slightly, causing a slight deviation of the turntable speed.

To compensate for any such slight deviations, the CRYSTAL LOCK system, as developed in the PS-8750, utilizes the well-known characteristics of a quartz crystal, which oscillates at a precise nominal frequency without perceptible changes caused by variations in line voltage, line frequency, ambient temperature or the passage of time.

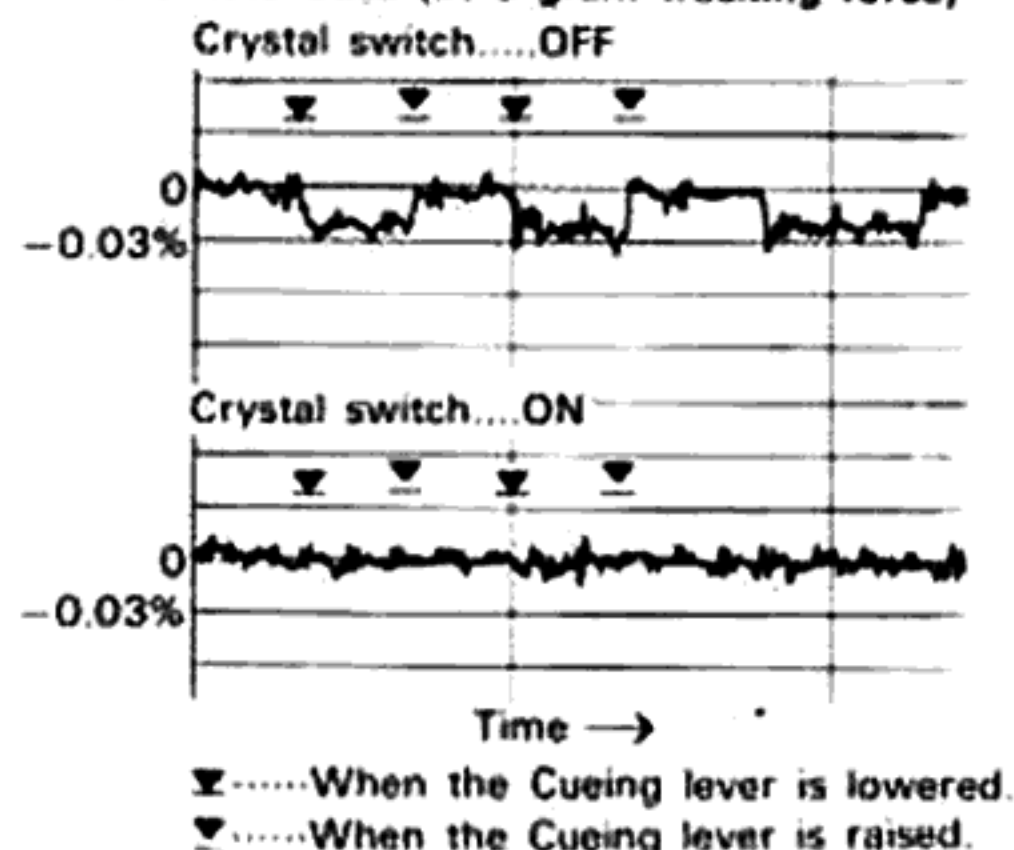
When the CRYSTAL LOCK Switch is in the ON position, the crystal oscillator circuit generates a 3.96 MHz fundamental control frequency. This 3.96 MHz control frequency is divided down

to a 30 Hz operating frequency through the IC processing circuits and compared with the turntable's F.G. frequency. The most important factor in the CRYSTAL LOCK system is a "phase comparison" which synchronizes the two frequencies. Since the crystal oscillator frequency is constant, as described before, the F.G. frequency will inevitably stabilize. Accordingly the turntable speed of the PS-8750 will be more precise and show practically no error as compared to the conventional servo-controlled direct-drive system.

Turntable Speed Drift



Load Characteristics (at 3-gram tracking-force)



REPACKING FOR SHIPMENT

The original shipping carton and packing material (which we asked you to save) is the ideal container for use in shipping the PS-8750 for repair work, or to another location. However, to secure the maximum protection, it must be repacked in this material precisely as before. The proper repacking procedure is shown in the illustration.

● Turn the two wing-nut transit screws fully clockwise to fasten the turntable to the cabinet.

