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STEREO TURNTABLE SYSTEM

PS-T33



OPERATING INSTRUCTIONS

Before operating the unit, please read this manual thoroughly.
This manual should be retained for future reference.

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WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

FEATURERS

- Magedisc Servo System for high precision speed monitoring.
- Direct drive system with the Sony's unique linear BSL (brushless and slotless) motor, resulting in extremely smooth torque and start-up characteristics.
- Automatic control switches located on front of base, permit dust cover to remain closed during operation.
- Automatic turntable lead-in, return, reject and repeat functions are activated by merely pushing the START/STOP button and the REPEAT button.
- The low-mass tonearm and cartridge allow the stylus to track with greater accuracy.
- A built-in safety mechanism guards against accidental switching of the speed selector while record is playing and accidental interference with the movement of the tonearm in the auto start and auto return modes.
- Acoustic Material SBMC (Sony Bulk Molding Compound) is used in the construction of the frame, to reduce outside vibration to a minimum and to prevent any degradation of tone quality.

OPERATING VOLTAGE

Before connecting the unit to the power source, check that the operating voltage of your unit is the same as the local power line voltage.

The model in European countries (type 1) operates only on 220 V ac. The model in United Kingdom (type 2) operates only on 240 V ac. The model in other countries and PX models (type 3) operates on either 110-120 or 220-240 V ac. The voltage selector is located on the rear panel. If the selector must be reset, disconnect the ac power cord and slide the selector to the proper voltage figures.

For the Customers in the United Kingdom

Important

The wires in the mains lead are coloured in accordance with the following code :

Blue : Neutral

Brown : Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows :

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

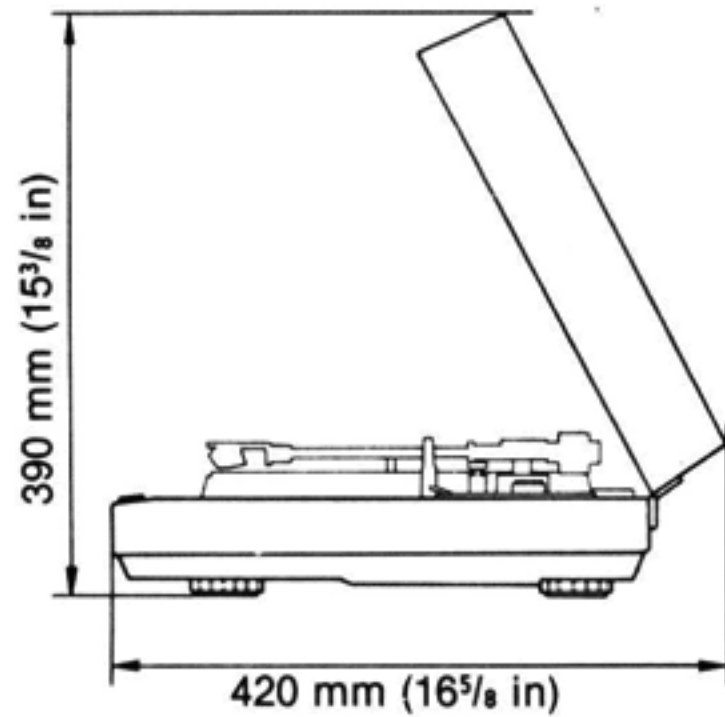
PRECAUTIONS

On safety

- Before operating the unit, be sure that the operating voltage of your unit is identical with that of your local power supply.
- Should any liquid or solid object fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Unplug the unit from the wall outlet if it is not to be used for an extended period of time. To disconnect the cord, pull it out by the plug. Never pull the cord itself.

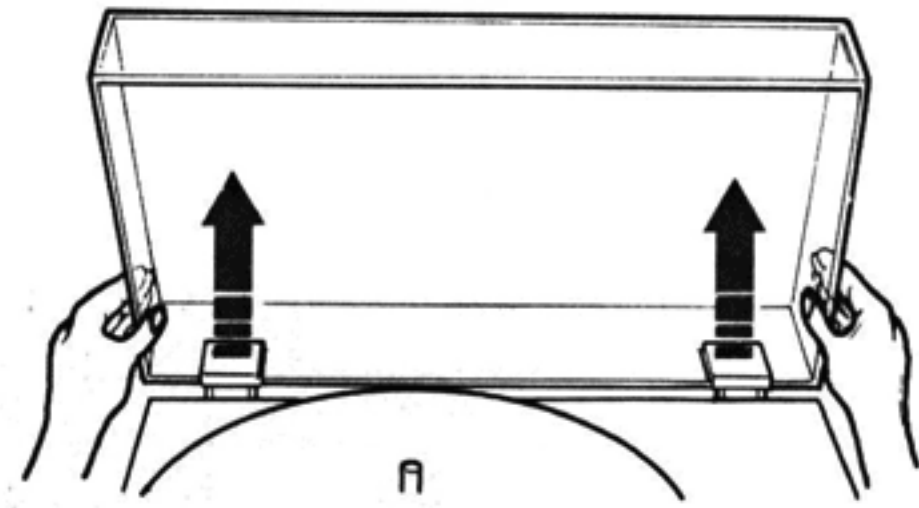
On installation

- Place the turntable on a level surface.
- Avoid placing the unit near electrical appliances (such as a television, hair dryer, or fluorescent lamp) which may cause hum or noise.
- Avoid any vibration such as from speakers, slamming of doors, etc.
- Keep the unit away from direct sunlight, extremes of temperature, or excessive dust and moisture.
- Allow 10 cm (4 inches) clearance behind the unit so that the cover can be opened.



On dust cover removal

Open the dust cover fully and slide it upward while holding it with both hands.

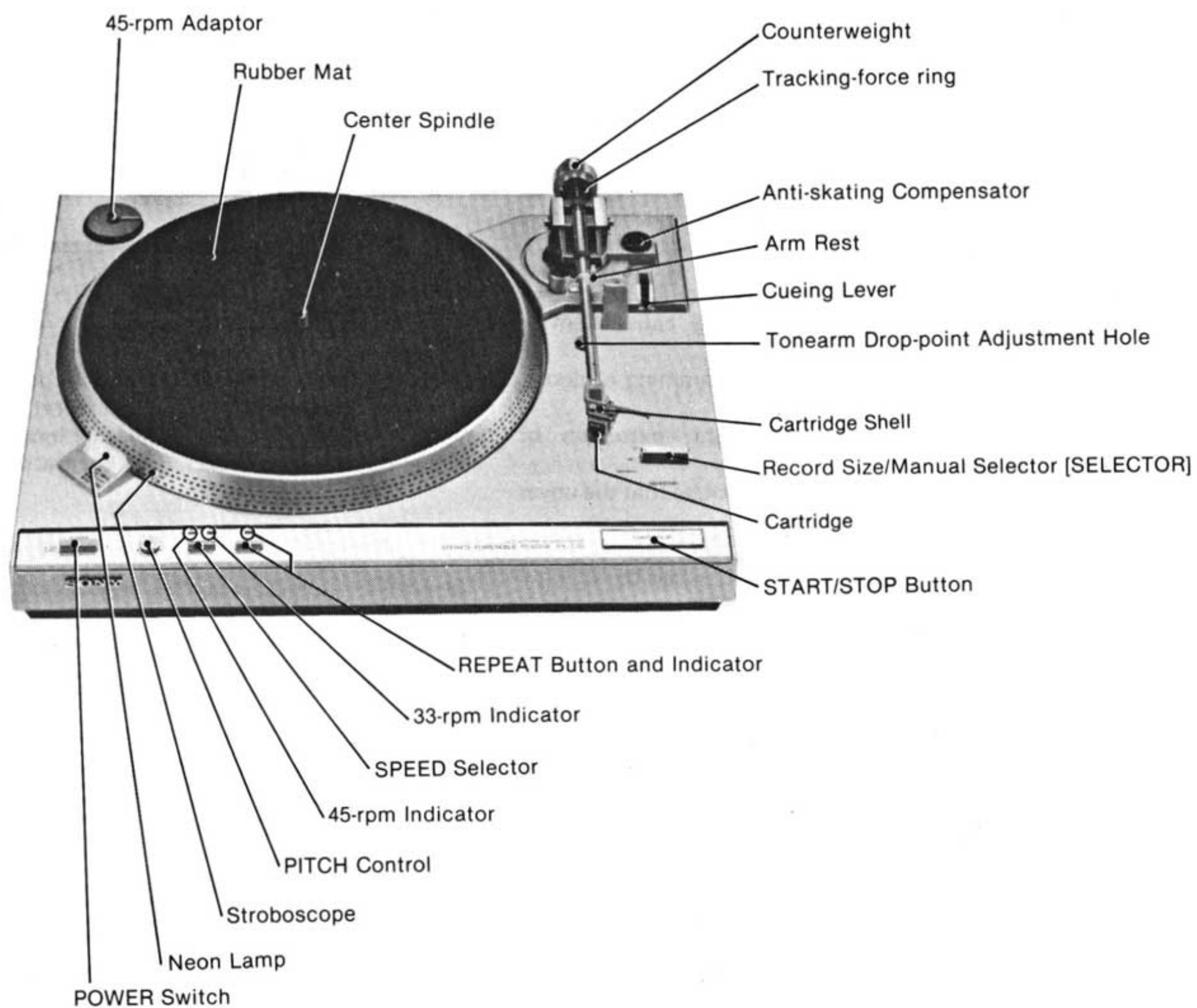


On repacking

Do not throw away the carton and its packing material. It makes an ideal container in which to transport the unit. When shipping the unit for repair work or to another location, secure the tonearm to the arm rest and repack it as illustrated on the carton box.

LOCATION OF CONTROLS

The picture below shows the appearance of the assembled turntable.



TURNTABLE ASSEMBLY

Do not connect the power cord or the connecting cords until the assembly is complete.

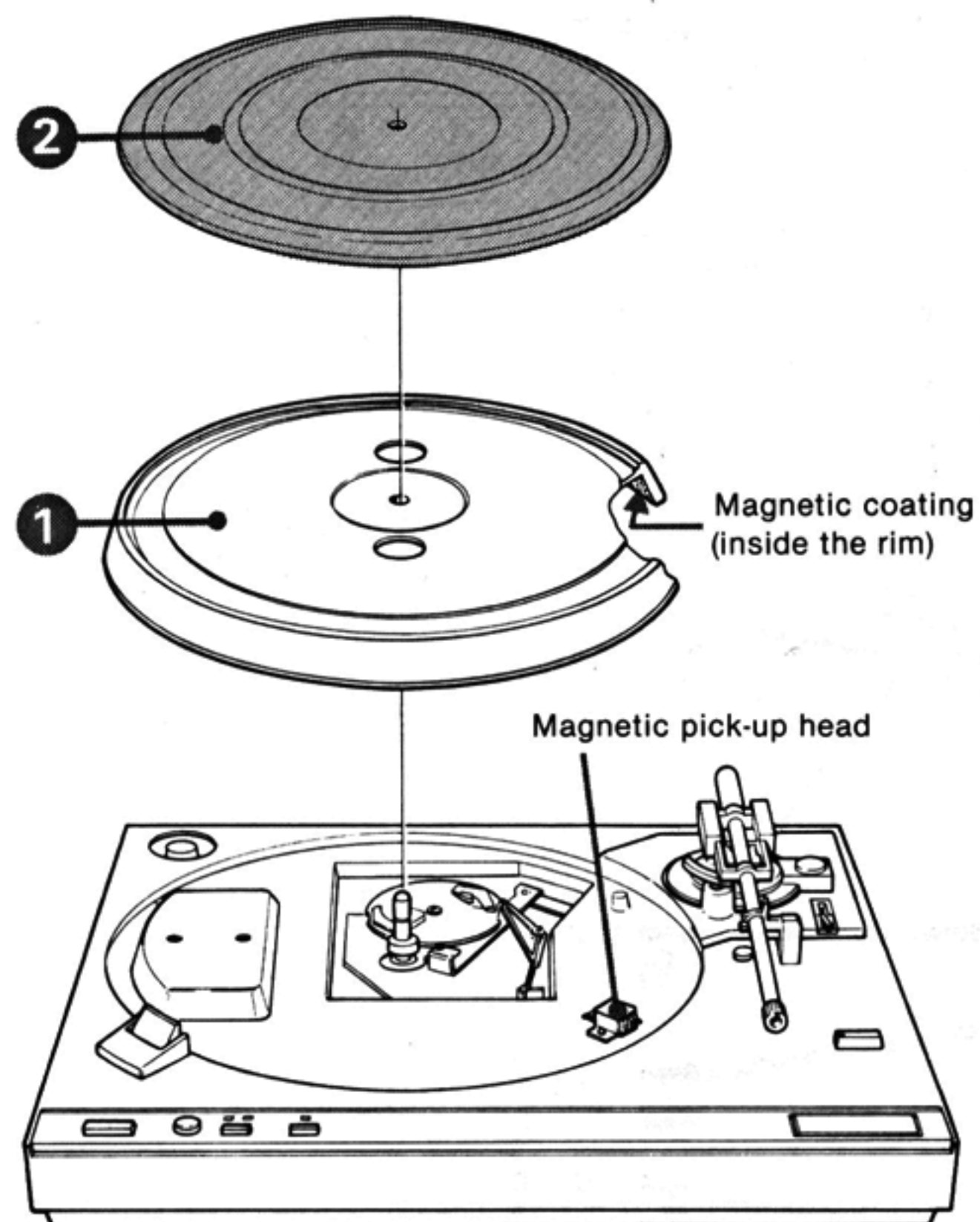
Remove all packing material and clean the cabinet.

Save the packing box and materials for possible future use.

❶ Carefully place the platter on the motor board by matching the center hole and the center spindle. Be careful that no foreign objects lodge under the platter.

● Do not touch the magnetic coating or the magnetic pick-up head.

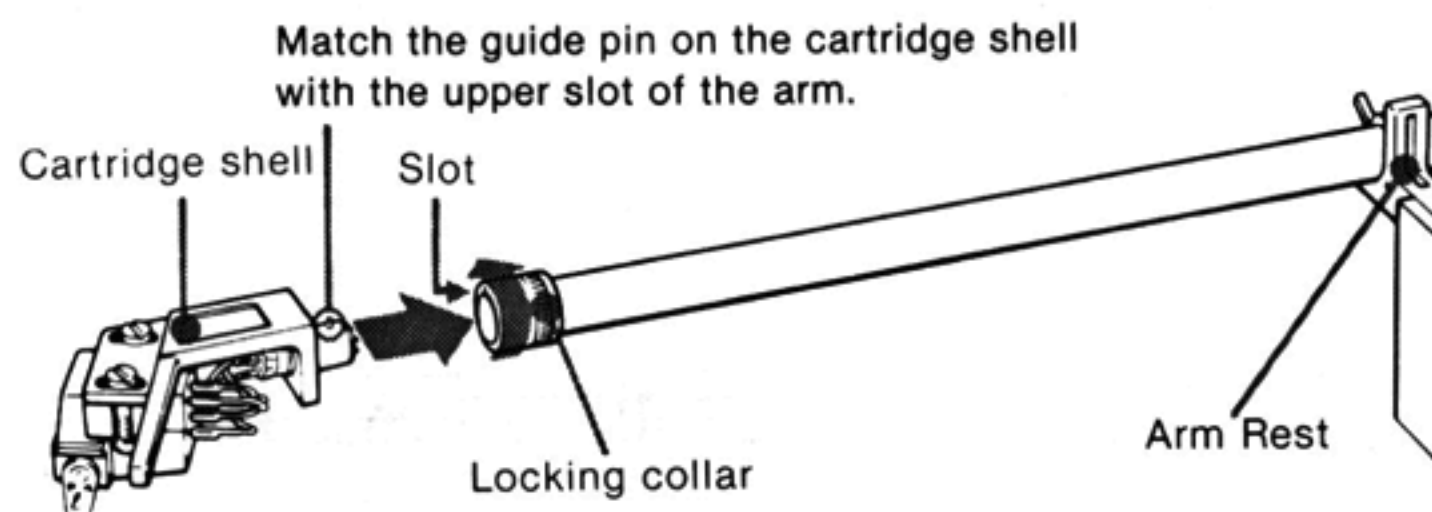
❷ Place the rubber mat on the platter.



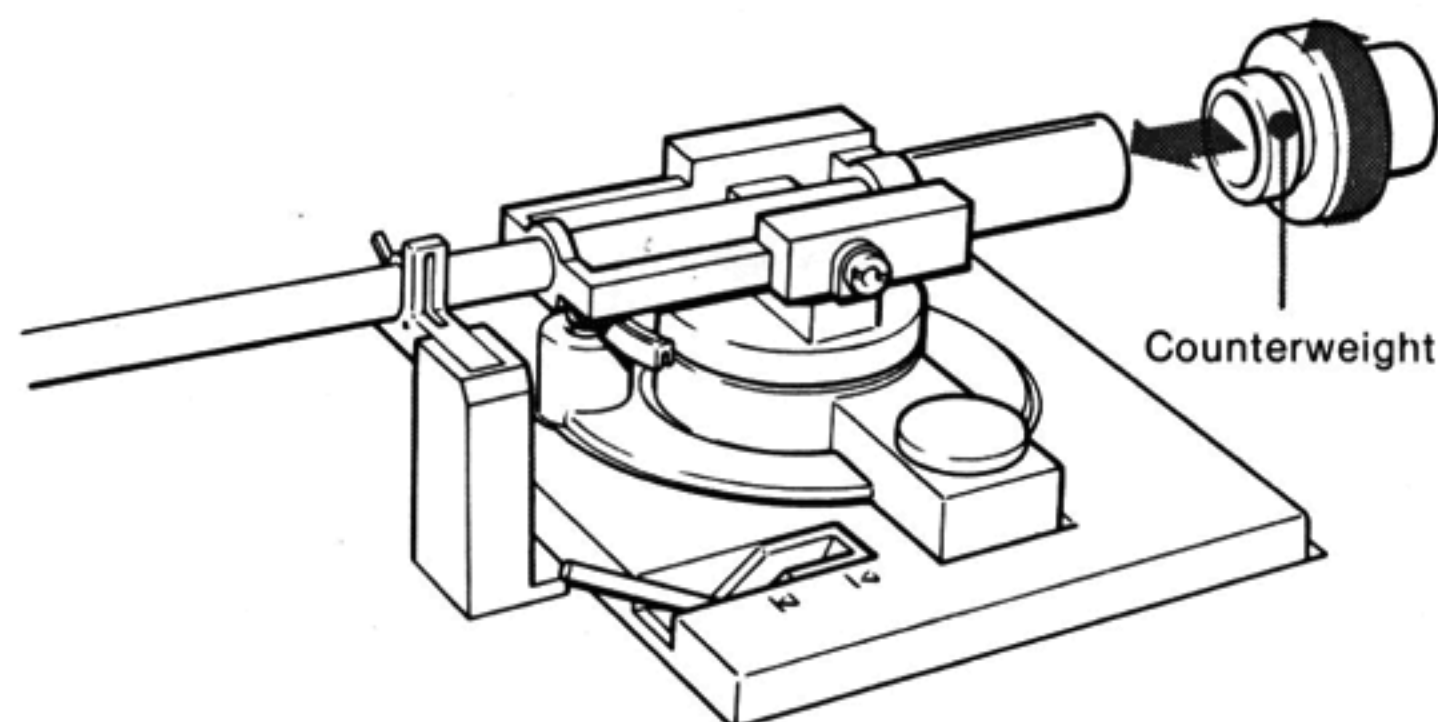
ONEARM ASSEMBLY

❶ Secure the tonearm to the arm rest.

❷ Plug the supplied cartridge shell into the tonearm and turn the locking collar counterclockwise until the shell is firmly locked.



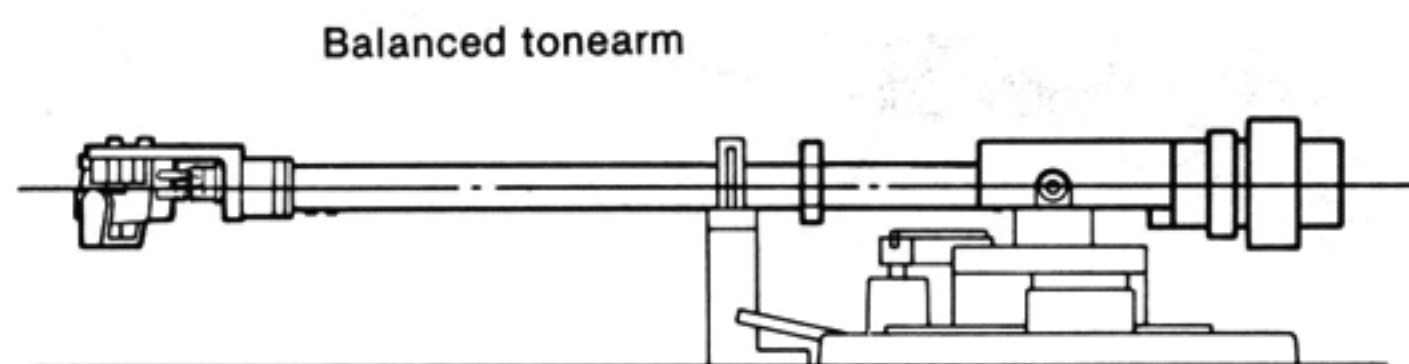
❸ Insert the counterweight by turning it.



TONEARM ADJUSTMENT

TONEARM BALANCE ADJUSTMENT

It is critically important for good sound reproduction that the stylus traces the record groove accurately and with the proper tracking force. To do this, the tonearm must first be balanced so that the proper tracking force can be applied.

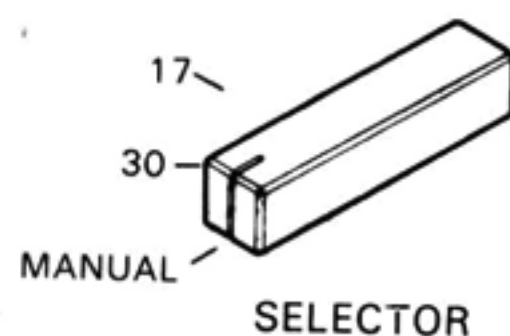


To balance the tonearm, proceed as follows:

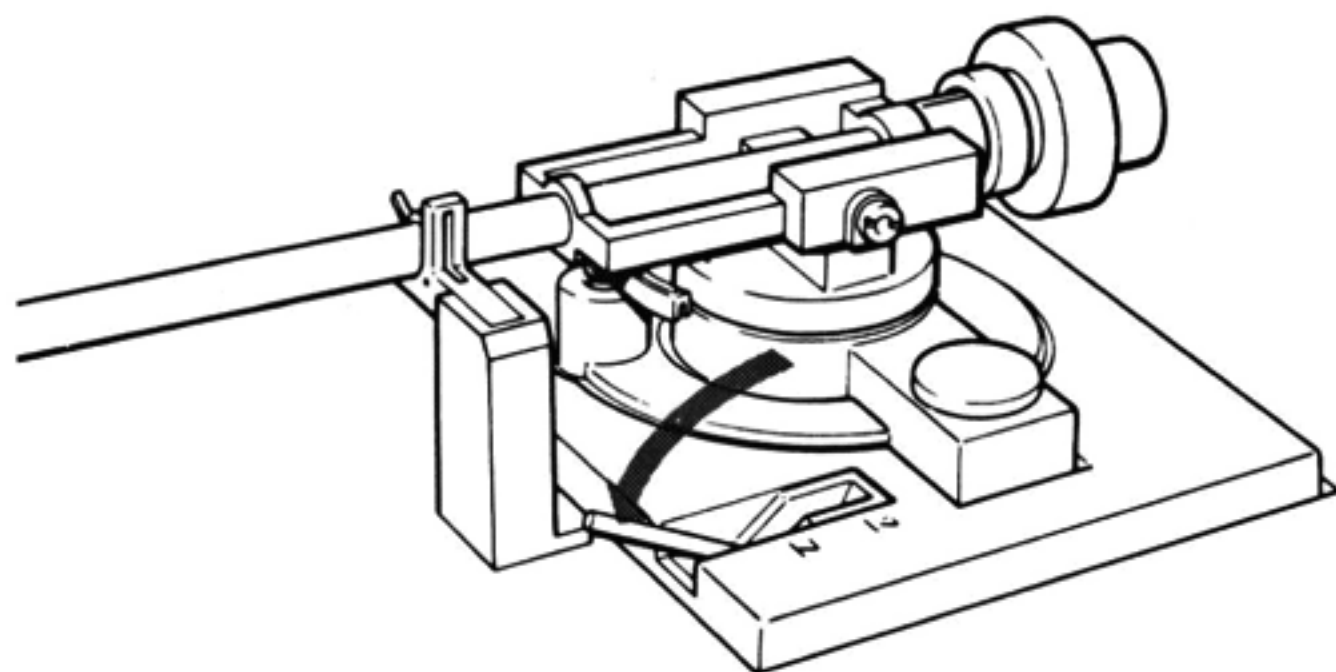
- 1 Set the anti-skating compensator to "0".



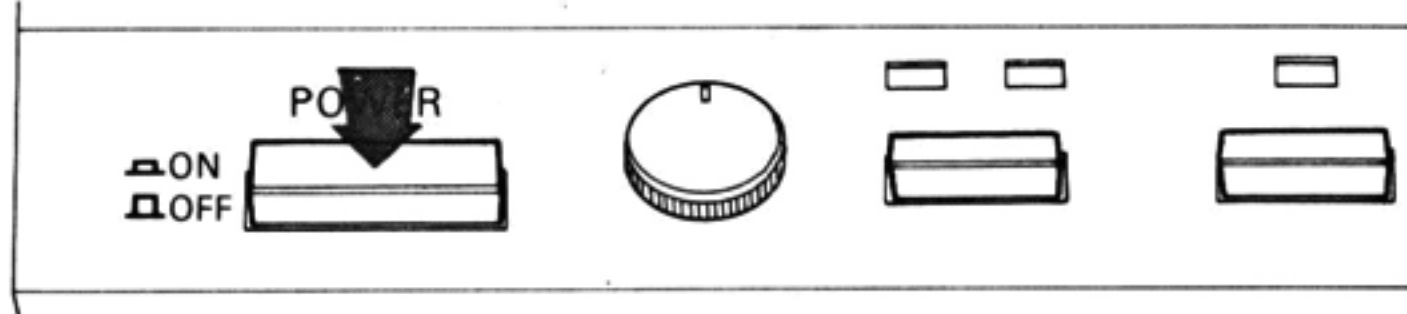
- 2 Set the record size/manual selector to MANUAL.



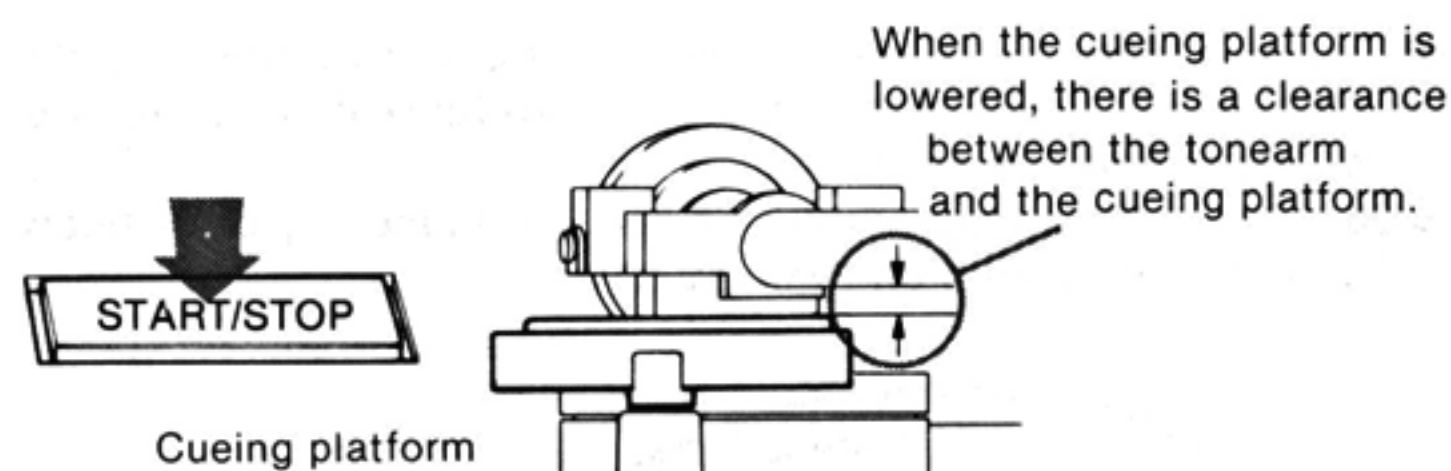
- 3 Set the cueing lever to ∇ position.



- 4 Connect the power cord to an ac outlet and press the POWER switch (ON).

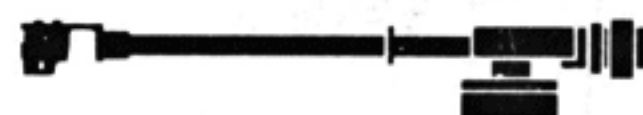
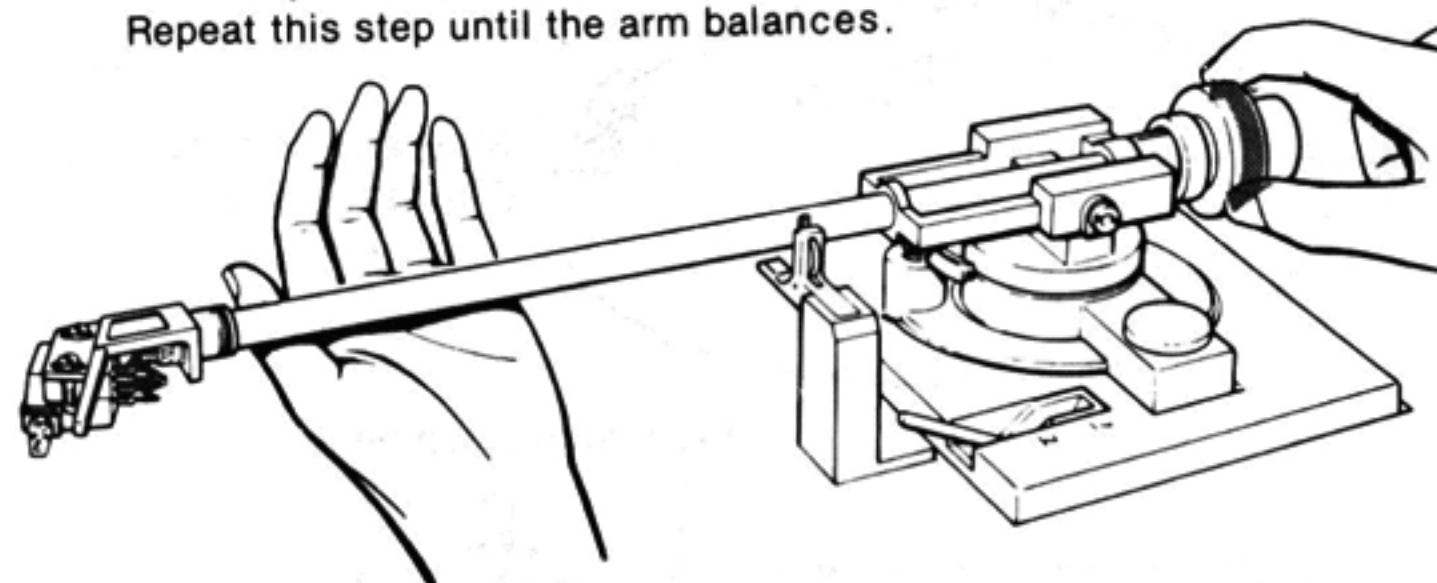


- 5 Press the START/STOP button. This will cause the turntable to rotate and the cueing platform to lower. After the cueing platform is lowered, press the POWER switch again to turn the unit off and stop the turntable by hand.



- 6 Release the tonearm from the arm rest.
- 7 Move the counterweight forward or backward until the tonearm is balanced.

Release your fingers and check the balance. Repeat this step until the arm balances.



Correct balance



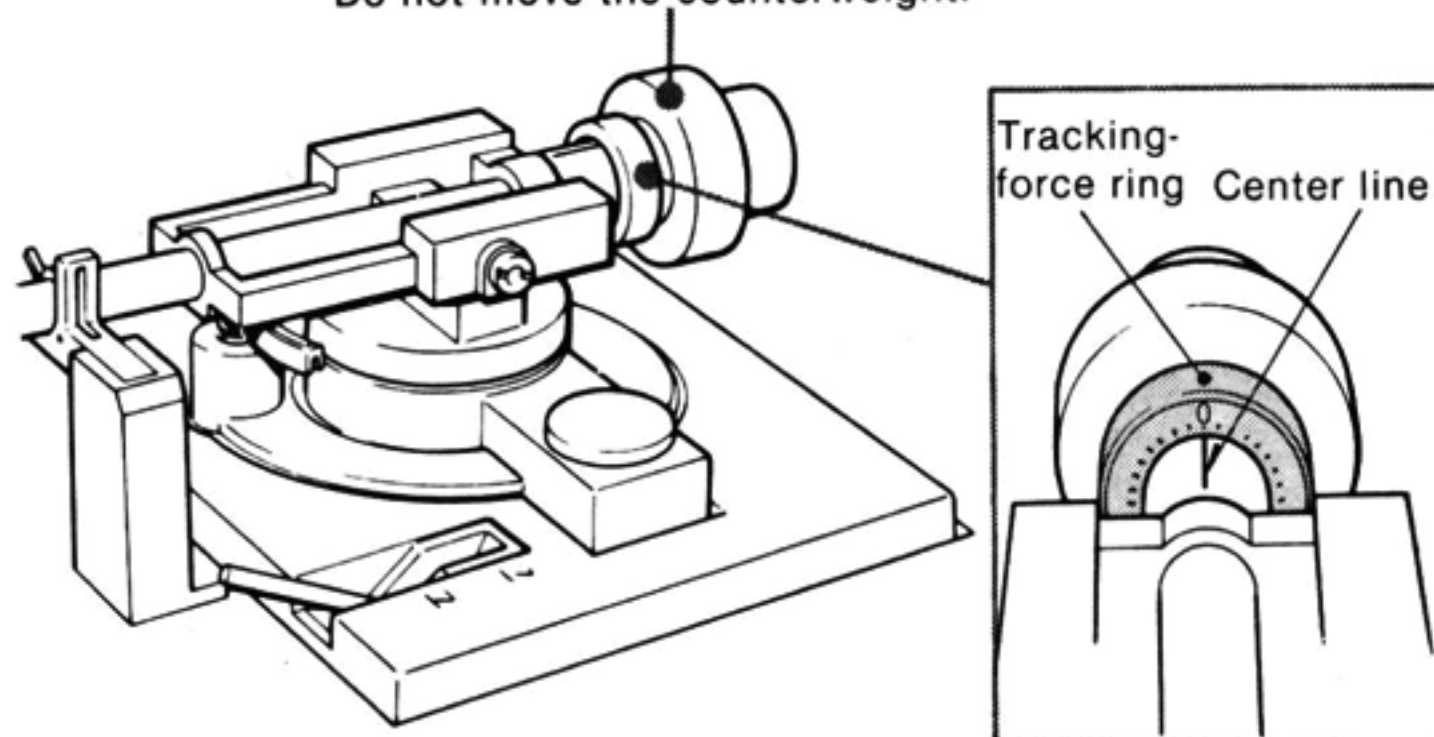
Move the weight forward.



Move the weight backward.

- 8 Secure the tonearm to its rest.
- 9 Turn the tracking-force ring until the "0" indication is aligned with the center line on the tonearm.

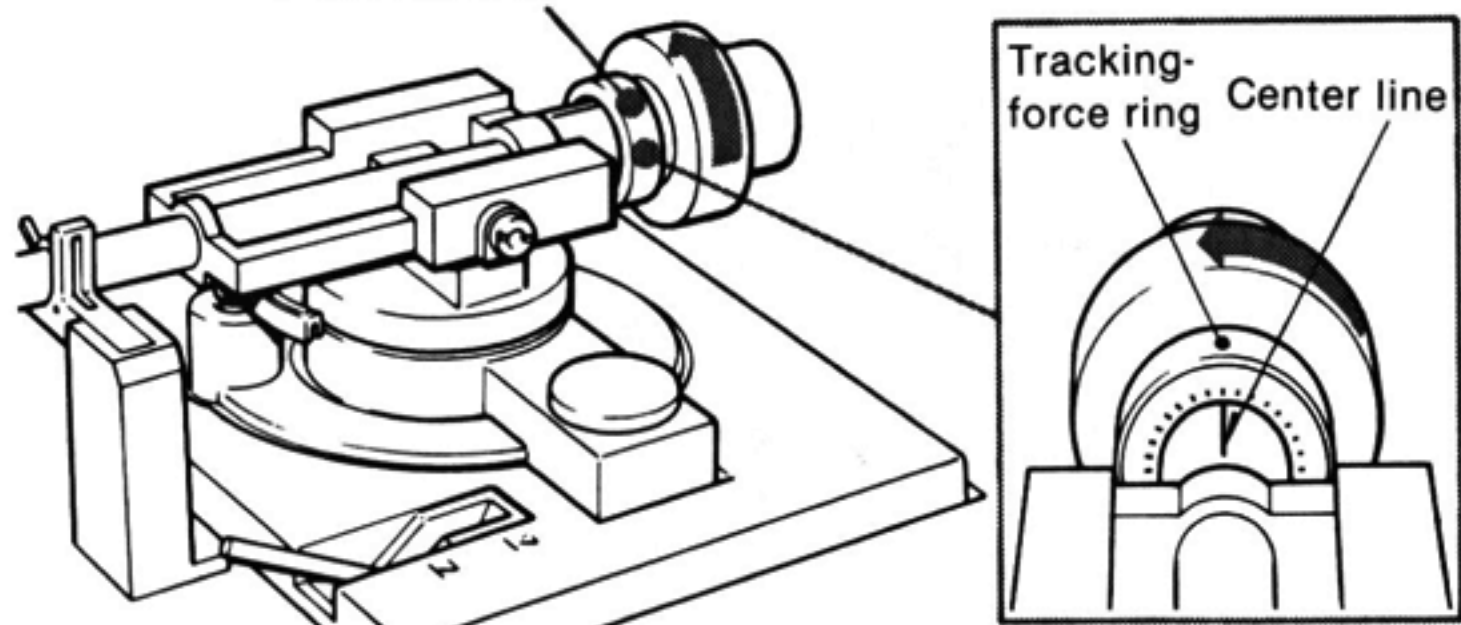
Do not move the counterweight.



TRACKING-FORCE ADJUSTMENT

Turn the counterweight as illustrated so that the recommended tracking-force figure for the supplied cartridge (1.7 g) is aligned with the center line on the tonearm. The maximum tracking force available is 2.5 grams.

Tracking-force ring will turn at the same time.



AFTER THE TONEARM ADJUSTMENT

When the tonearm adjustments are completed, turn on the power and press the START/STOP button to raise the cueing platform. The turntable is now ready for record playing. Press the POWER switch again to turn off the unit.

ANTI-SKATING COMPENSATION

Turn the anti-skating compensator so that the guide mark is aligned with the selected tracking-force value.



Tracking force

Tracking force is the vertical force applied to the stylus tip so that it accurately traces the record groove.

The tracking force is applied after the tonearm is first balanced. Since the proper tracking force differs from cartridge to cartridge, be sure to apply the tracking force recommended for your cartridge. If the tracking force is too light, the stylus will skip grooves and when it is too heavy, the stylus tip and the record will wear excessively. However, if you play a record at a temperature below 10°C (50°F), or if the record to be played is badly warped, increase the tracking force by 20 to 30%.

Anti-skating compensator

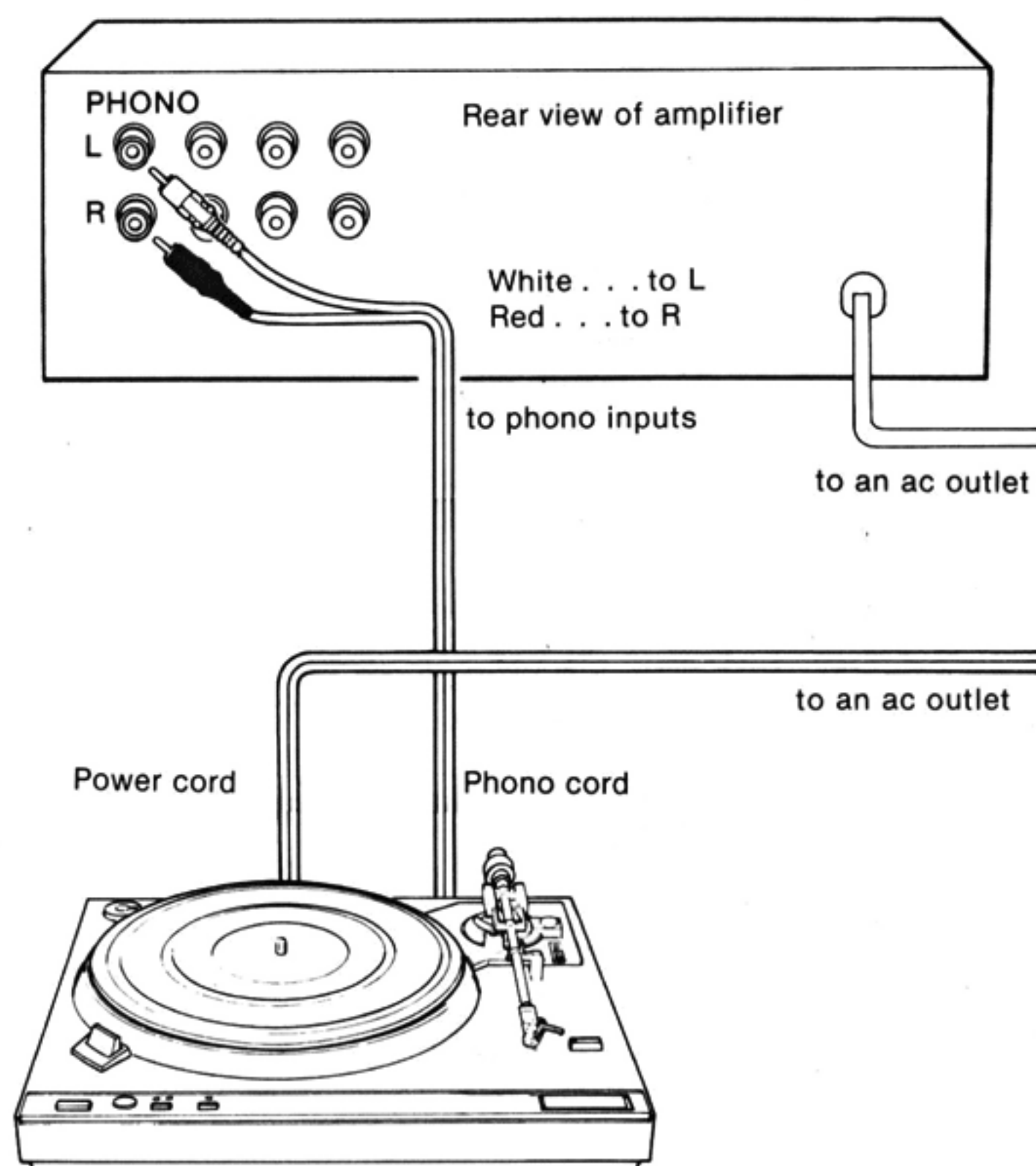
While the record is being played, friction between the record groove and the stylus produces a force that tends to drive the tonearm toward the center of the record.

The anti-skating compensator cancels this force. The anti-skating force should be adjusted to the same value as that of the tracking force.

Incorrect anti-skating compensator adjustment results in sound distortion and uneven wear on both the stylus and the record.

CONNECTIONS

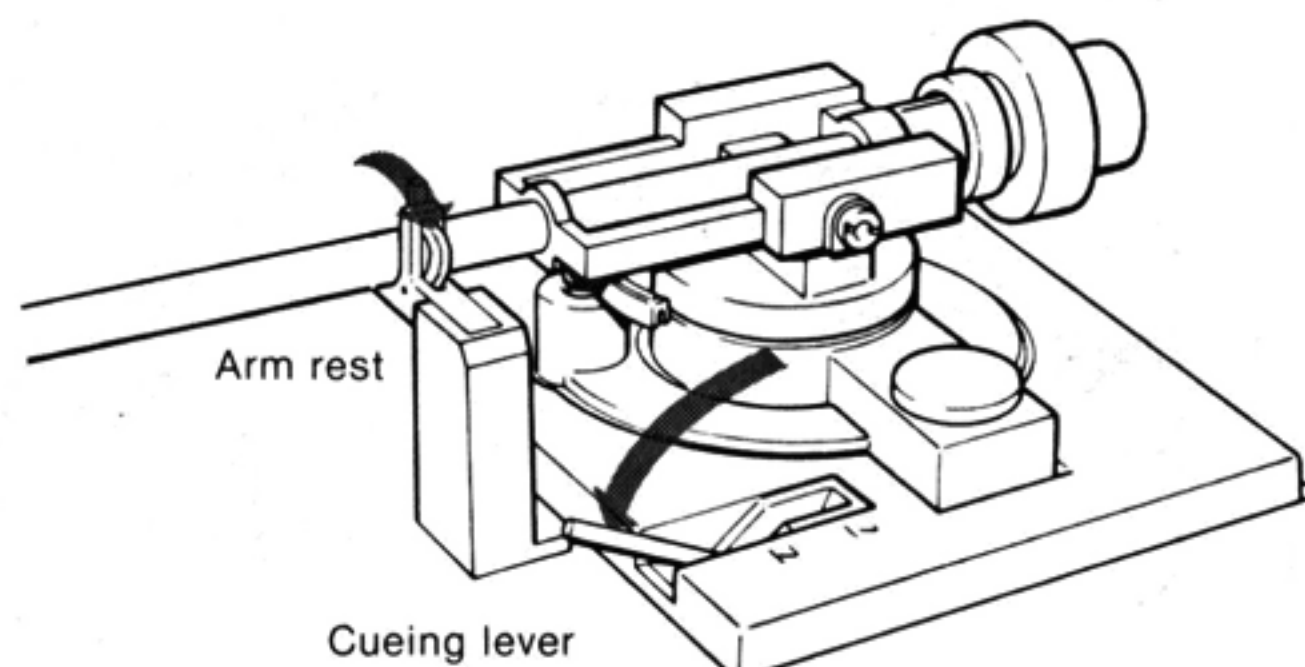
- Turn off the amplifier before making connections.
- Be sure to insert the cable connectors firmly into the jacks. Loose connections may cause hum and noise.
- Leave a little slack in the connecting cord to allow for inadvertent shock or vibration.



RECORD PLAYING

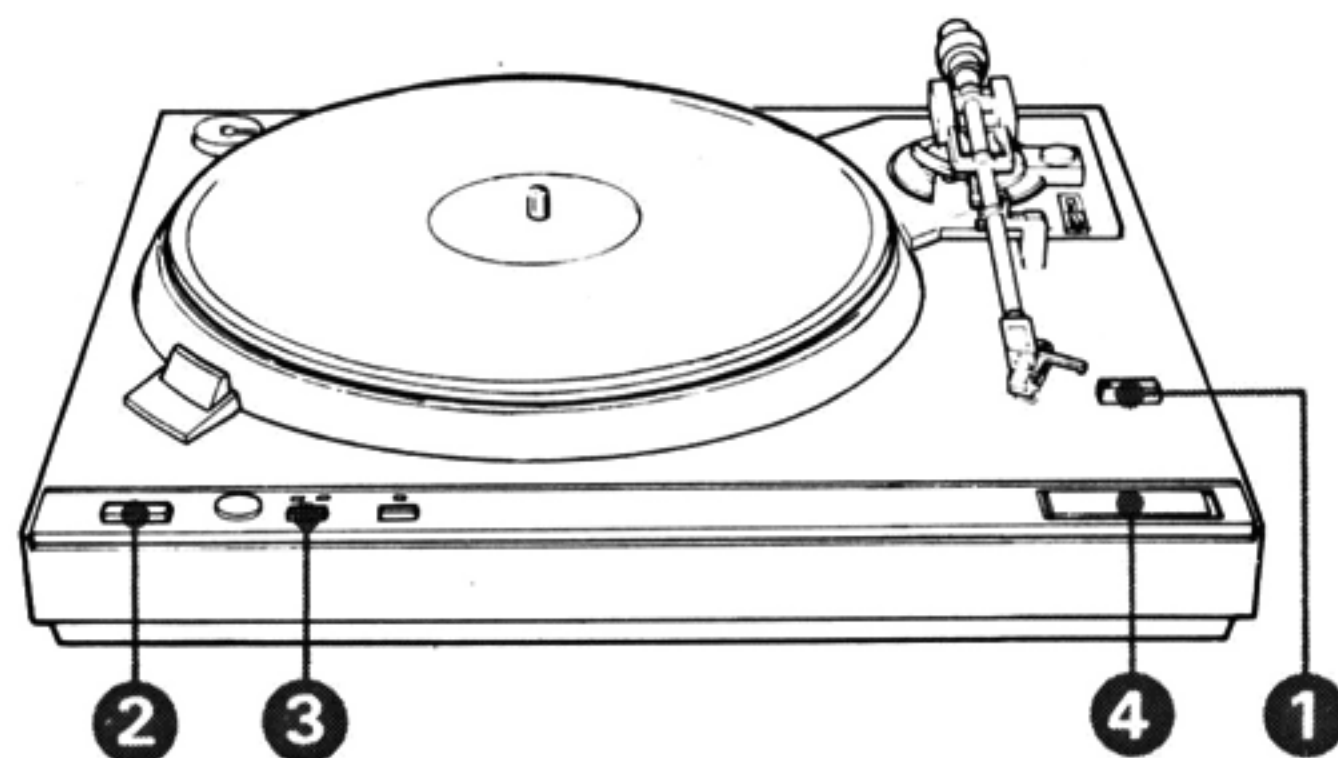
PREPARATION

- Place a record on the platter. For 17 cm (7 inch) records, put the supplied 45-rpm adaptor over the center spindle.
- Lift up the stylus guard and unlock the arm rest latch during operation. After playing, secure the tonearm to the arm rest.
- Keep the cueing lever to the ∇ position during record play.



- Lower the amplifier volume and set the function selector to PHONO. Set the volume control after the cartridge is lowered on a record.
- When the tonearm reaches the end of the record, it will automatically return to the arm rest and the turntable will stop.

AUTO PLAY

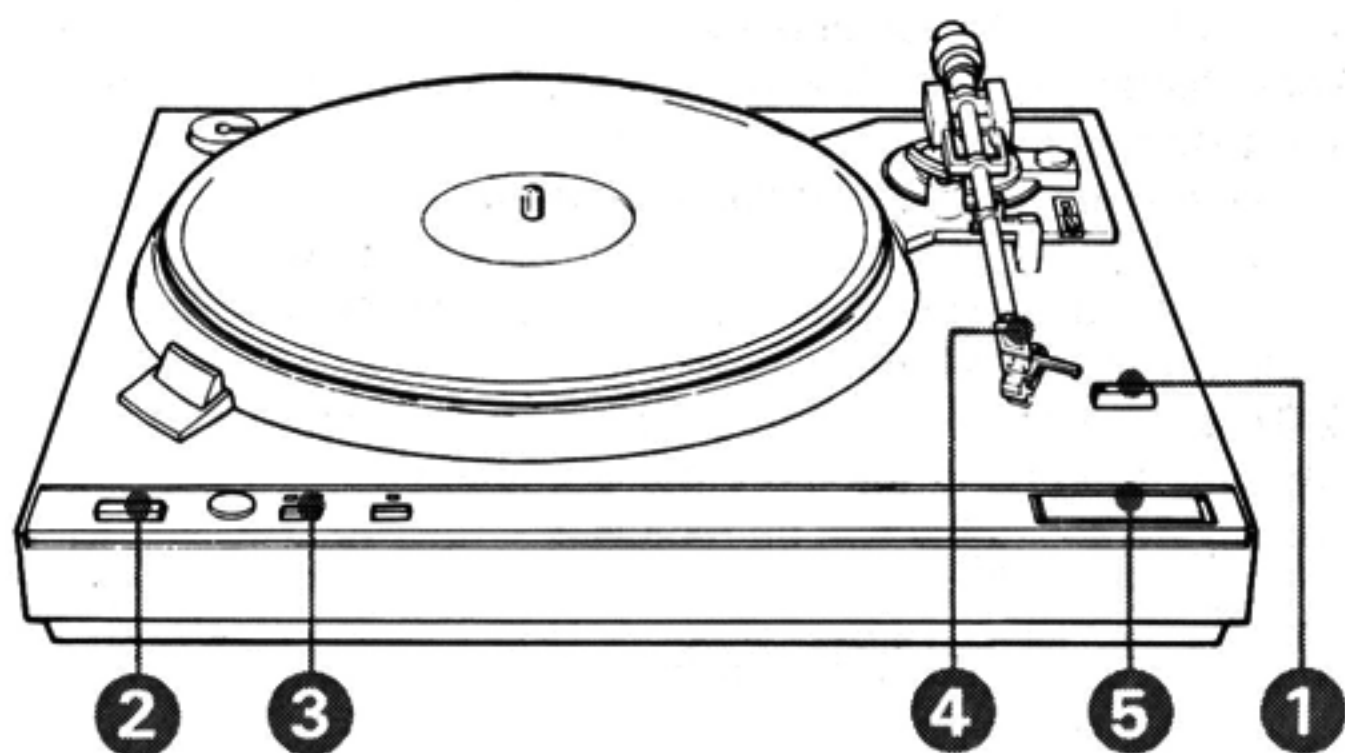


- 1 Set the record size/manual selector to the proper position, according to the record size.
- 2 Press the POWER switch (ON).
- 3 Select the correct record speed.
- 4 Press the START/STOP button. Play will begin.

Note

Turn off the POWER switch after the tonearm returns to the arm rest. If the POWER switch is turned off while the tonearm is still moving in the return operation, the tonearm will start in the return mode and record playing will not begin when you press the START/STOP button the next time. If this happens, press the START/STOP button again.

MANUAL PLAY—for playing records at any point





- ① Set the record size/manual selector to MANUAL.
- ② Press the POWER switch (ON).
- ③ Select the correct record speed.
- ④ Bring the tonearm to the desired point on the record.
- ⑤ Press the START/STOP button. Play will begin.

Note

If you bring the tonearm too near the label of the record, the automatic return mechanism may return the tonearm to the arm rest.

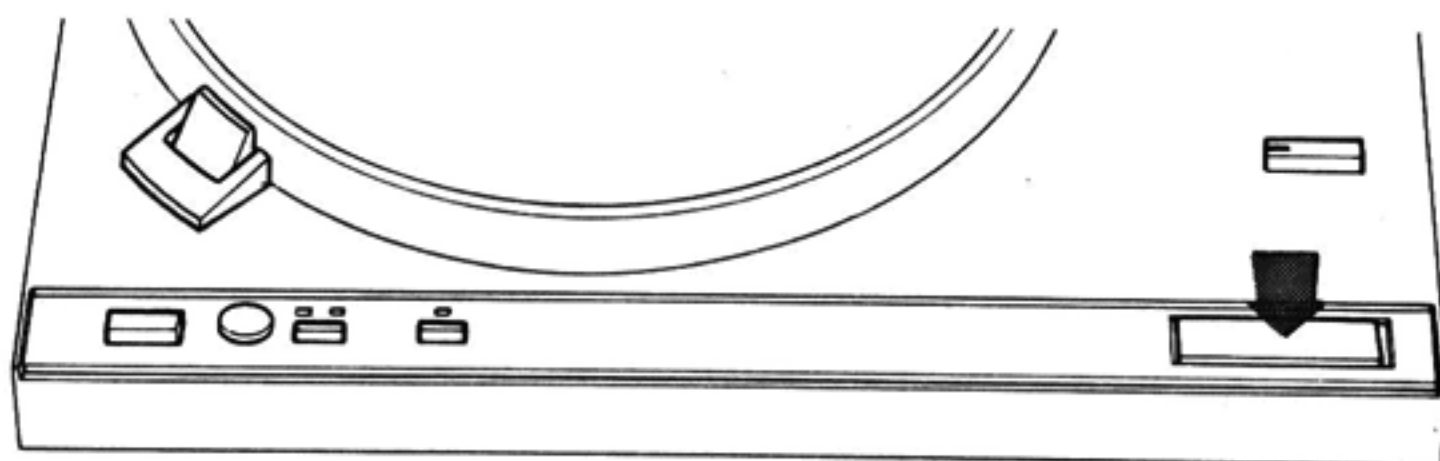
TO LIFT UP THE STYLUS DURING PLAY

To listen to another part of the record being played, or to lift up the stylus on a record for a brief moment and start playing from the same point, set the cueing lever to the  position.

The tonearm will be lifted up. To lower it again, set the lever to .

TO STOP DURING PLAY

Press the START/STOP button. The tonearm will return to the arm rest and the turntable will stop rotating.

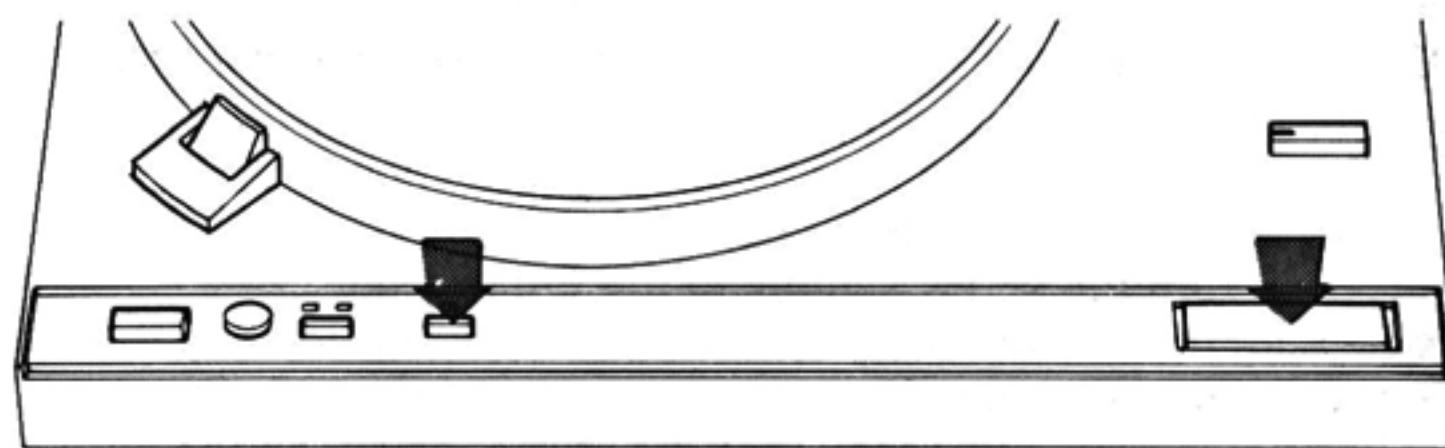


TO REPEAT PLAY

This is possible only in automatic playing.

Press the REPEAT button either before or after starting play.

The tonearm continues repeat play unless the button is pressed again to turn off the repeat function. During repeat playing, the red lamp lights up.



● To stop the repeat play at the end of the record, press the REPEAT button again.

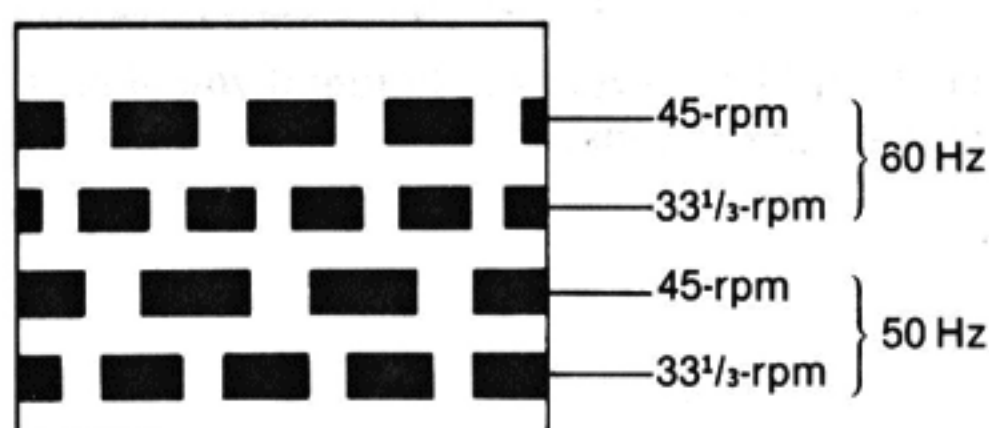
● To stop part-way on the record, press the REPEAT and START/STOP buttons.

Note

When the record size/manual selector is set to MANUAL, the repeat mechanism will not operate. If the REPEAT button is mistakenly pressed when the selector is set to MANUAL, the turntable will not stop rotating even after the tonearm returns to the arm rest. In this case, press the REPEAT and START/STOP buttons to stop the turntable.

PITCH CONTROL AND STROBOSCOPE

Looking at the Stroboscope, adjust the speed with the PITCH Control unit respective strobe 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 Control, consult your Sony Service Station or Sony dealer.

TONEARM DROP-POINT ADJUSTMENT

At the factory, the tonearm has been adjusted to have the correct drop-point in auto play. If this needs to be readjusted, proceed as follows.

❶ Be sure that the turntable is turned off and the tonearm is secured to the arm rest.

❷ Remove the rubber cap of the tonearm drop-point adjustment hole located at the left side of the arm base.

❸ Insert the supplied drop-point adjustment key into the hole.

To change the drop-point inward

.... Turn the screw slightly to the A direction.

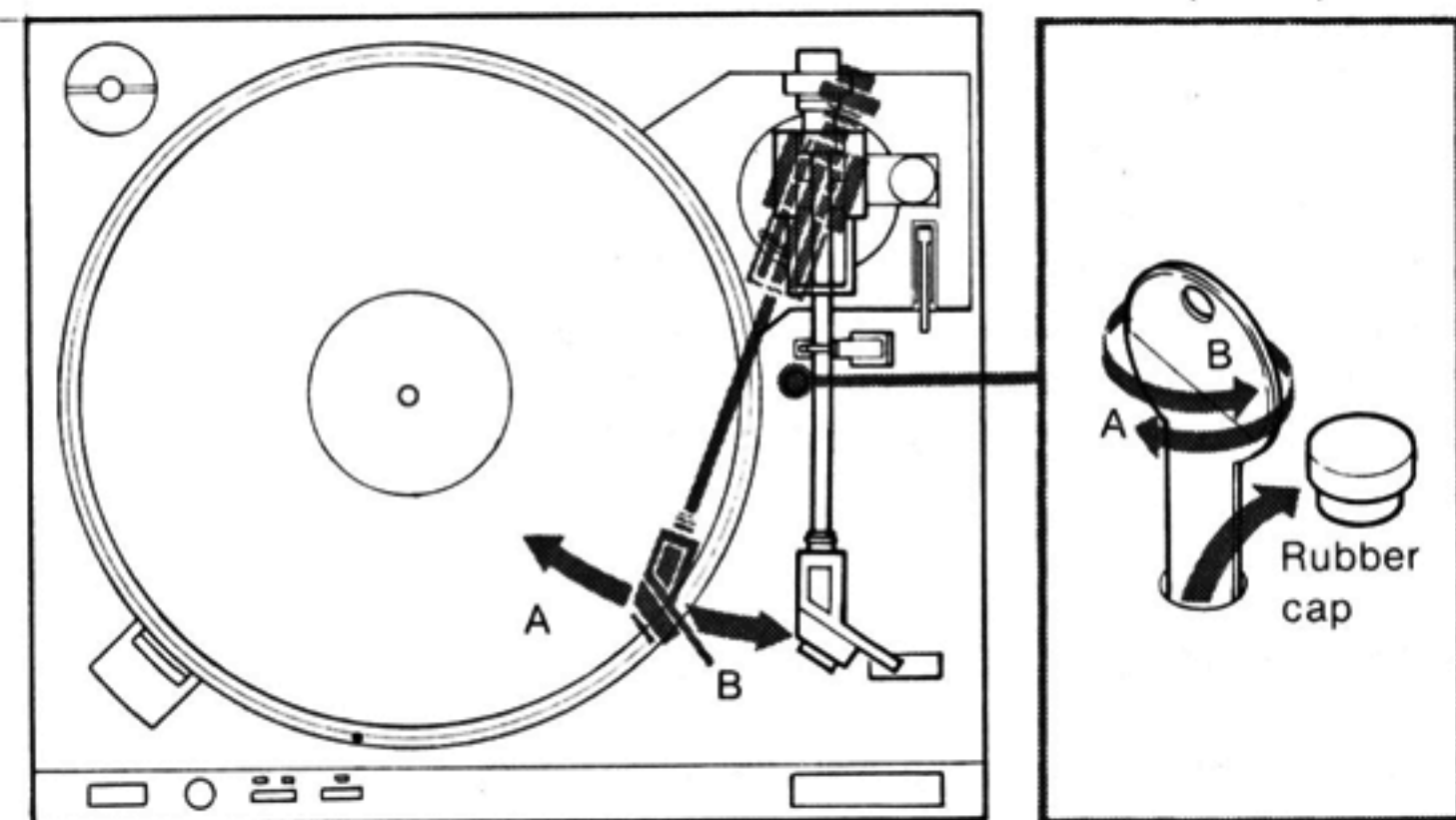
To change the drop-point outward

.... Turn the screw slightly to the B direction.

● Be sure not to turn the screw to the B direction too much so as not to bump the stylus tip on the turntable edge.

❹ Start auto play and check that the stylus lowers on the correct drop-point.

● Once it is properly adjusted with a 30 cm (12 in.) record, the drop-point will be correct for a 17 cm (7 in.) record as well.



● You can keep the adjustment key in your key holder if you like. It may come in handy for a variety of jobs.

REPLACING THE STYLUS

The cartridge stylus of the turntable will wear out after about 400 hours of use. Replacement Stylus ND-15GA is available at your Sony dealer. Handle the stylus carefully as it is a highly precise and delicate device.

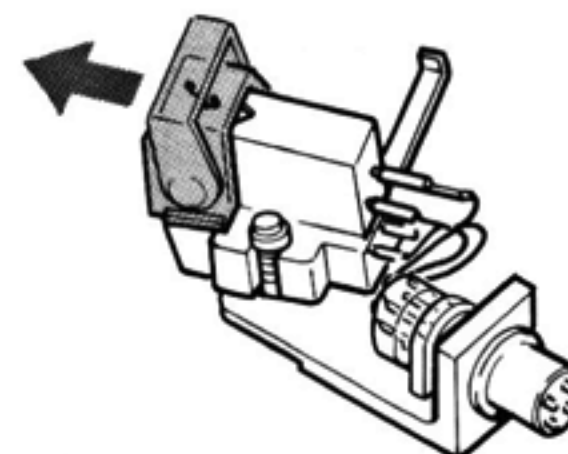
Install the replacement stylus as follows :

❶ Lower the amplifier volume or turn off the power.

❷ Secure the tonearm to the arm rest and remove the cartridge shell from the tonearm.

❸ Grasp the stylus assembly between the thumb and forefinger and pull it gently in the direction of the arrow.

The stylus assembly will be removed.



❹ Insert the new stylus onto the cartridge.

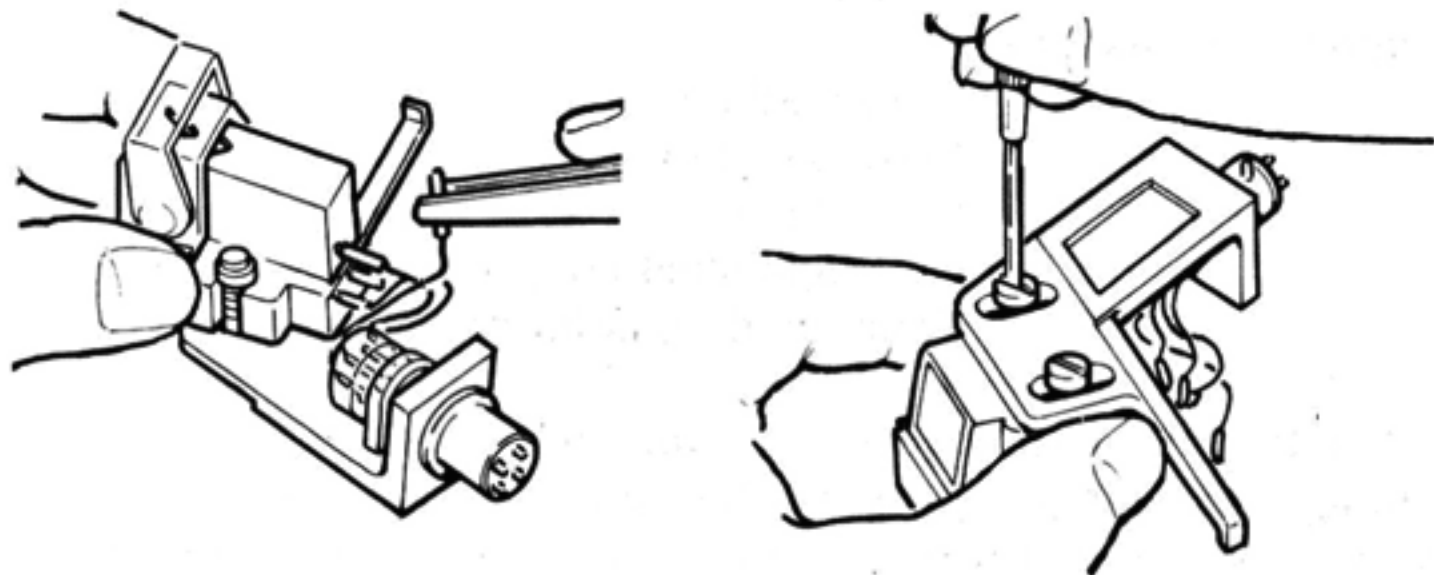
❺ Plug the shell into the tonearm and turn the locking collar counterclockwise until the shell is firmly locked.

USING A DIFFERENT CARTRIDGE

A cartridge weighing from 2.5 to 6.5 g can be mounted with the supplied cartridge shell (5 g). Heavier cartridges from 6 to 10 g can be mounted using the supplied extra weight.

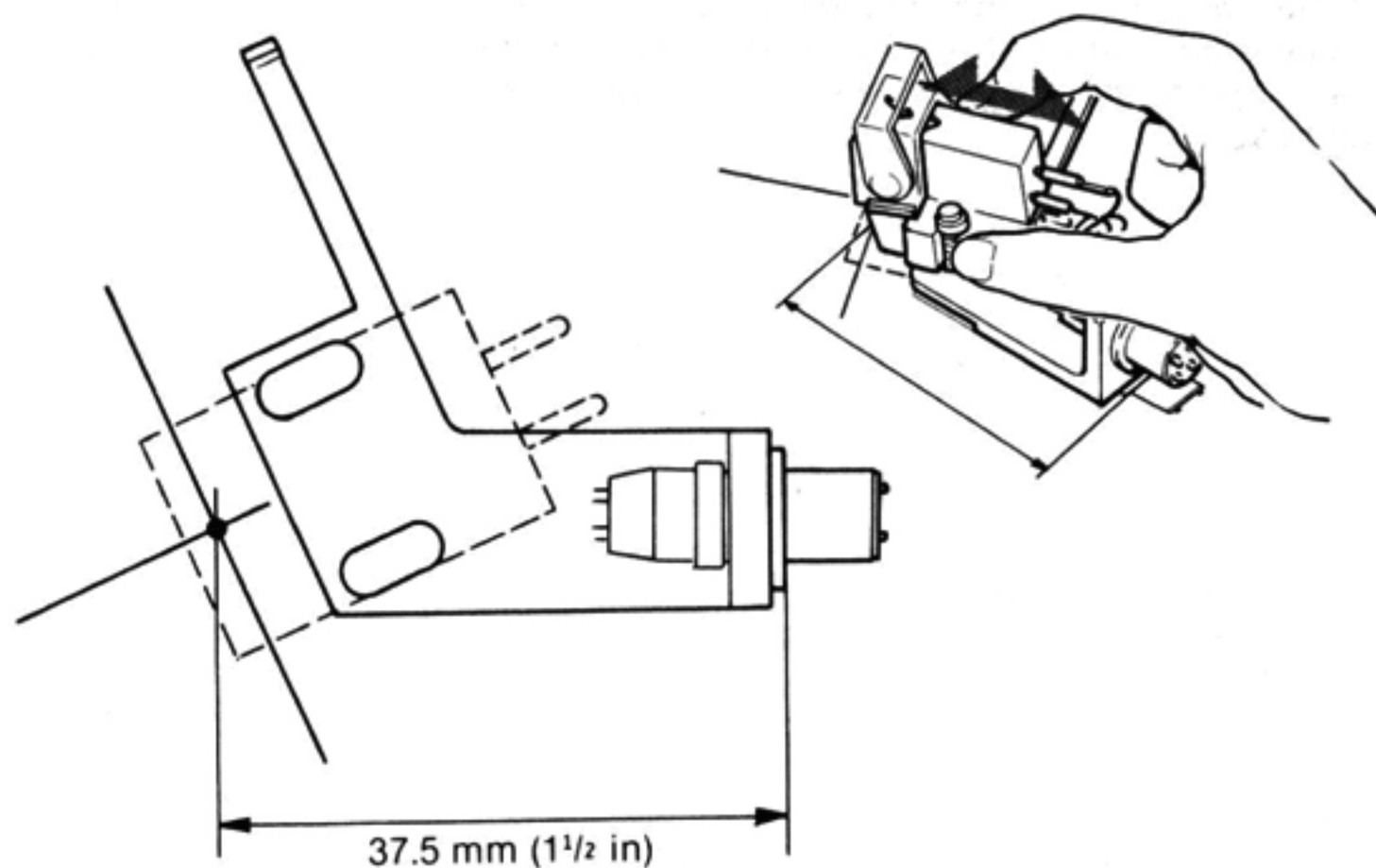
Removal of the old cartridge

- 1 Lower the amplifier volume or turn off the power.
- 2 Secure the tonearm to the arm rest, then remove the shell from the tonearm by turning the locking collar.
- 3 Disconnect the lead wires of the shell from the four output terminals of the cartridge.
- 4 Remove the old cartridge by loosening the two mounting screws.



Installation of a new cartridge

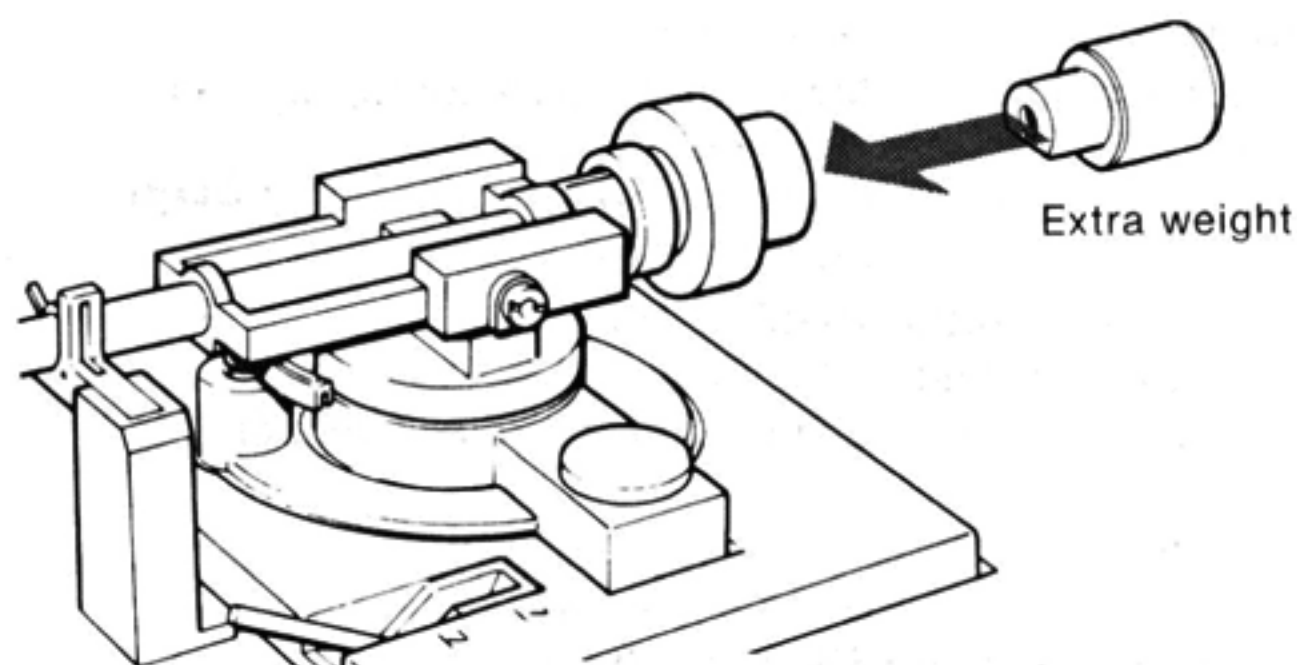
- 1 Install the cartridge into the cartridge shell with the supplied mounting screws temporarily.
- 2 Place the cartridge shell exactly over the diagram below and adjust the position of the cartridge so that the stylus tip is just over the cross point of the lines. Then fasten the screws tightly.



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

Wires	Cartridge pins
White	White, L (left channel signal)
Blue	Blue, LE or G (left channel ground)
Red	Red, R (right channel signal)
Green	Green, RE or G (right channel ground)

- 4 Plug the shell into the tonearm.
- 5 If it is necessary, insert the supplied extra weight fully to the end.

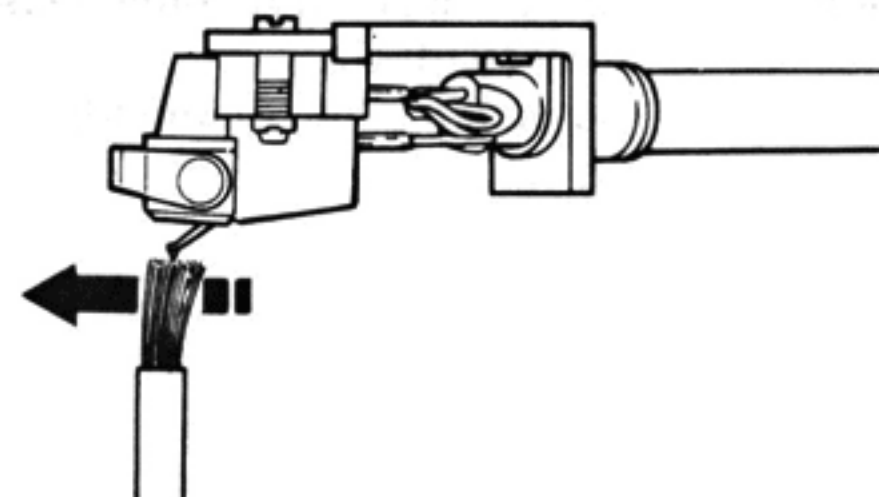


- 6 Adjust the tonearm again according to the "Tonearm adjustment" on page 6.

MAINTENANCE

Stylus

Before playing, clean the stylus using a soft brush. Brush the stylus from back to front. Never attempt to clean the stylus with finger tip. If fluid-type stylus cleaner is used, make sure not to moisten the stylus too much.



Cabinet

Clean the cabinet and dust cover periodically with a soft dry cloth. If the stains are difficult to remove, use a cloth moistened with a mild detergent solution. Do not use solvents such as alcohol, benzine or thinner, since they will damage the finish.

Rubber mat

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

Lubrication

No lubrication is required for this turntable. The motor shaft is factory lubricated for the life of the turntable.

SPECIFICATIONS

Turntable

Platter	31 cm (12 ¹ / ₄ in.), aluminum-alloy diecast
Motor	Linear BSL (brushless and slotless) motor
Drive system	Direct drive
Control system	Magnedisc servo control system
Speed	33 ¹ / ₃ rpm, 45 rpm
Wow and flutter	0.02% (WRMS)*, 0.025% (WRMS) ±0.04% (DIN)
Signal-to-noise ratio	75 dB (DIN-B)
Pitch control range	±4%
Automatic system	Lead-in, return, reject, repeat,

Tonearm

Type	Statically balanced
Pivot-to-stylus length	216.5 mm (8 ¹ / ₂ in.)
Overall arm length	300 mm (11 ⁷ / ₈ in.)
Overhang	16.5 mm (2 ¹ / ₃₂ in.)
Tracking error	(+) 3° - (-) 1°
Stylus force adjustment range	0 - 2.5 g
Cartridge shell weight	5 g
Cartridge weight range (including supplied shell)	7.5 - 11.5 g 11 - 15 g (with extra weight)

Cartridge XL-15A

Type	Moving-magnet
Frequency response	10 - 30,000 Hz
Channel separation	25 dB at 1 kHz
Output voltage	4 mV at 1 kHz, 5 cm/sec, 45°
Load impedance	50 k ohms - 100 k ohms
Tracking force	1.2 - 2.5 g (1.7 g recommended)
Stylus	Sony ND-15GA (Conical 0.6 mil, diamond)
Weight	5 g

General

Power requirements	Type 1:220 V ac Type 2:240 V ac Type 3:110-120 or 220-240 V ac adjustable 50/60 Hz
Power consumption	8 W
Dimensions	Approx. 430 × 140 × 375 mm (w/h/d) (17 × 5 ⁵ / ₈ × 14 ³ / ₄ in.) including projecting parts and controls
Weight	Approx. 6.5 kg (14 lbs 5 oz), net Approx. 8.3 kg (18 lbs 5 oz), in shipping carton
Supplied accessories	45-rpm adaptor (1) Extra weight (1) Cartridge (1) Cartridge shell (1) Tonearm drop-point adjustment key (1)

While the information given is correct at the time of printing, small production changes in the course of our company's policy of improvement through research and design might not necessarily be indicated in the specifications. We ask you to check with your appointed Sony dealer if clarification on any point is required.



Note

Appliance conforms with EEC Directive 76/889 regarding interference suppression.

* This new measuring method concerns only the turntable assembly, including the platter. It excludes wow and flutter caused by the tonearm, the cartridge, or the record. Measured by obtaining signal from magnetic pick-up head.

TROUBLE CHECKS

The following chart will help correct most problems which may occur with the unit. If the problem persists after you have made these checks, consult your Sony service facility.

TROUBLES	CAUSES	WHAT TO DO
Impaired tone quality	Improper tonearm balance or tracking-force	Make correctly tonearm adjustment referring to the page 6.
	Dusty stylus	Clean the stylus with a soft brush from back to front.
	Worn stylus	The stylus life is approx. 400 hours of use. Replace with a new stylus.
Auto play cannot be made by pressing the START/STOP button.	The record size/manual selector is set to MANUAL.	Set the record size/manual selector according to the record size
The cartridge does not lower on the record during auto play.	The cueing lever is set to the  position.	Set the cueing lever to the  position.
No audio from one channel	Loose connection of phono cord	Insert the connectors firmly.
Steady low-pitched sound (hum)	Loose attachment of the cartridge shell to the tonearm.	Fix the shell to the tonearm firmly.
	Ground wire is not connected to the amplifier.	Connect the ground wire to the amplifier.
Groove skipping, tonearm tends to skate out, tonearm does not advance.	Improper tracking-force	Apply proper tracking-force. (See page 7.)
	Turntable not level	Place the turntable on a level surface.
	Defective record	
Loud rumble or low-frequency "howl" (acoustic feedback*)	The turntable is placed on a base prone to external vibration.	Place it on a sturdy surface free from external vibration.
	The turntable is placed near the speaker.	Keep it as far away from the speaker as possible.

* Acoustic feedback : The vibration of speakers is transmitted through the air or via solid objects (shelves, cabinets, floor, etc.) to the turntable, picked up by the cartridge stylus, amplified, and again reproduced through the speakers.

