

SONY®

STEREO TURNTABLE SYSTEM

# PS-X45



## OPERATING INSTRUCTIONS

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

## FEATURES

- The Crystal Lock System maintains the turntable at an accurate and drift-free speed.
- Magnedisc Servo System for high precision speed monitoring.
- The linear BSL (brushless and slotless) direct drive servo motor has a high signal-to-noise ratio.
- The low-mass tonearm and cartridge allow the stylus to track with greater accuracy.
- Control switches and buttons located on front of base allow turntable operation with the dust cover closed.
- Crystal Lock indicator illuminates lighter when the turntable starts to rotate at nominal speed.
- Electromagnetic brake system changes the turntable speed or stops the turntable quickly and smoothly.

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## OWNER'S RECORD

The model and serial numbers are located at the rear. Record these numbers in the spaces provided below. Refer to them whenever you call upon your Sony dealer regarding this product.

Model No. PS-X45

Serial No. \_\_\_\_\_

## 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.

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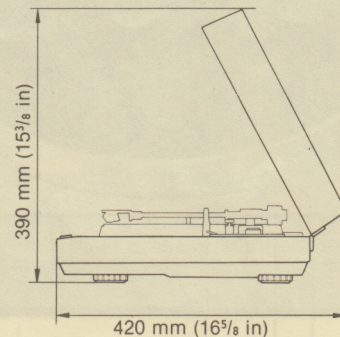
## PRECAUTIONS

### On safety

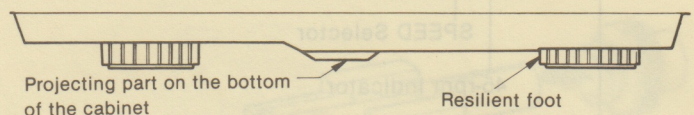
- Before operating the unit, be sure that the operating voltage of your unit is identical with that of your local power supply.
- Should any liquid or solid object fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Unplug the unit from 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.

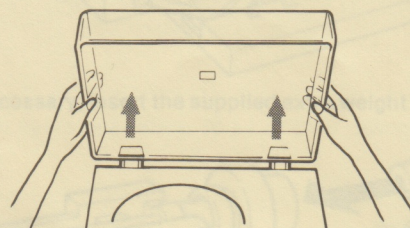


- The turntable has resilient feet that isolate the mechanism from external shock and vibration. If the unit is placed on an uneven surface or if the projection below the bottom of the cabinet touches the surface the unit is resting on, turn each foot until the unit is level and the projection does not touch.



### On dust cover removal

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

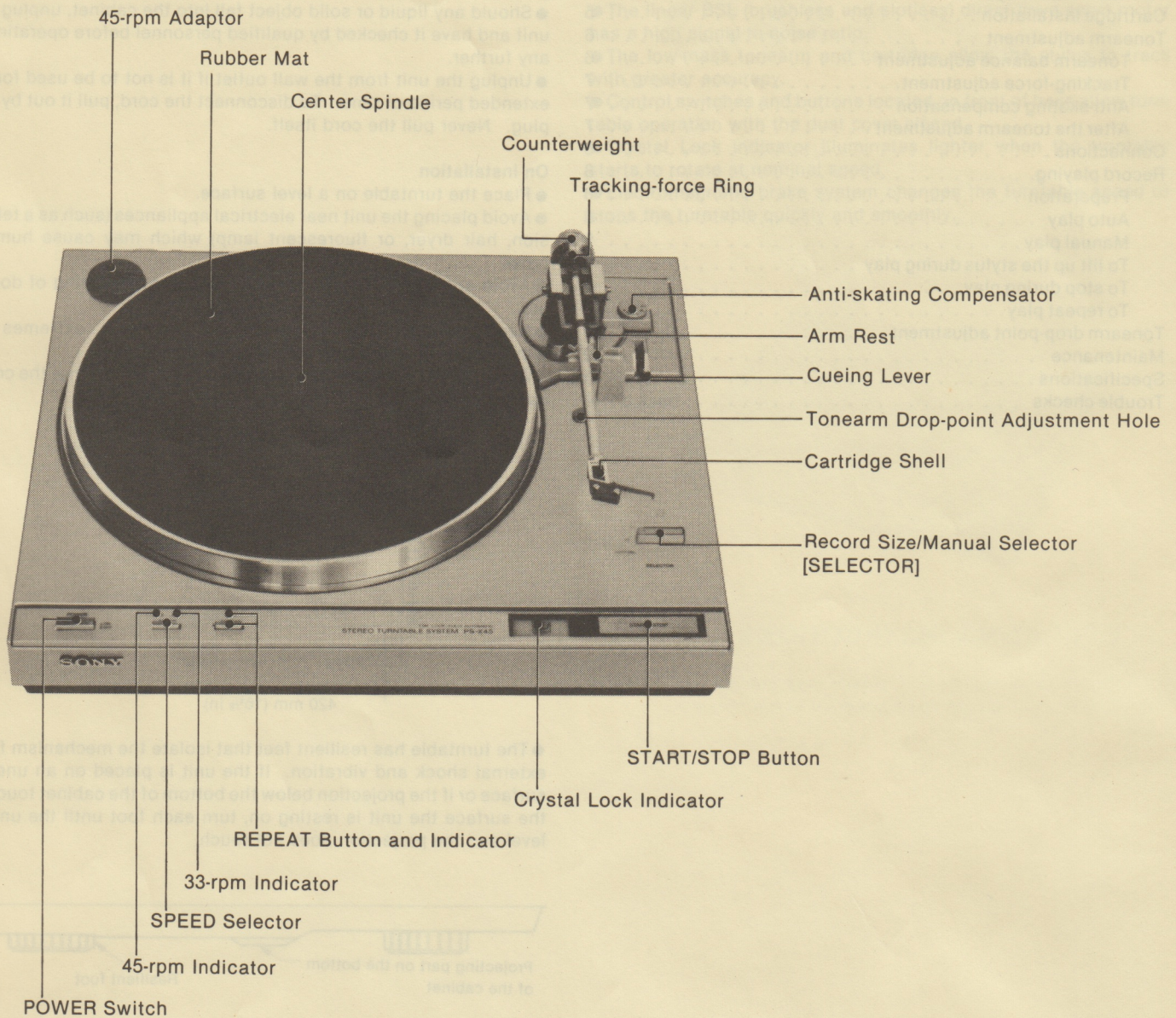


### On repacking

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, fix the transit screws in the original positions, 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.



## OWNER'S RECORD

The turntable has resilient feet that reduce the mechanical shock and vibration. The unit is housed on a universal mounting base which allows the unit to be mounted on a variety of surfaces or it can be used on a flat surface. The unit is designed to be used on a variety of surfaces.

On repacking, do not touch the turntable. It makes an ideal container in which to transport the unit. When shipping the unit for repair work or to another location, fit the handle covers in the original position, secure the foam in the unit and return the unit as illustrated on the carton box.

## WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture. To avoid electric shock, do not touch the cabinet. Refer servicing to qualified personnel only.

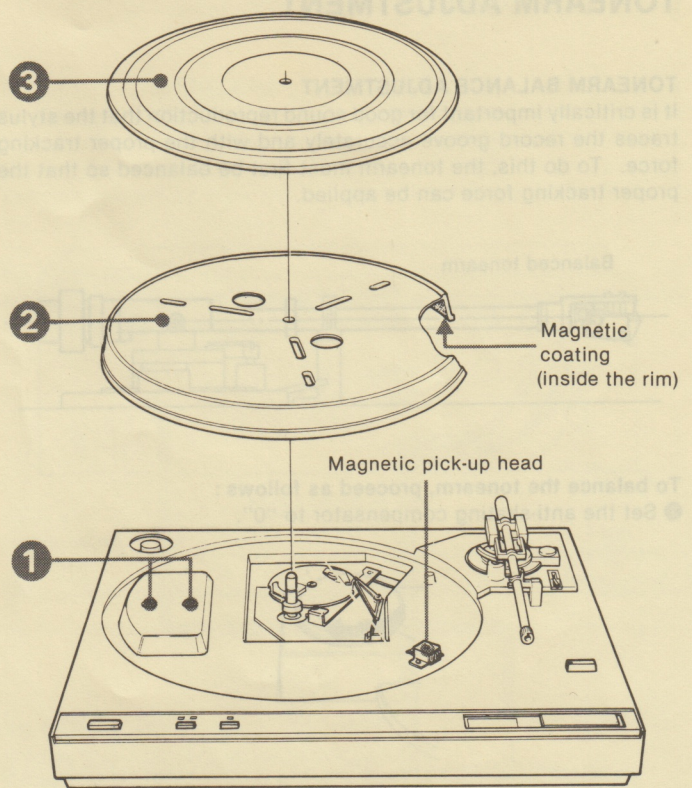
## TURNTABLE ASSEMBLY

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.

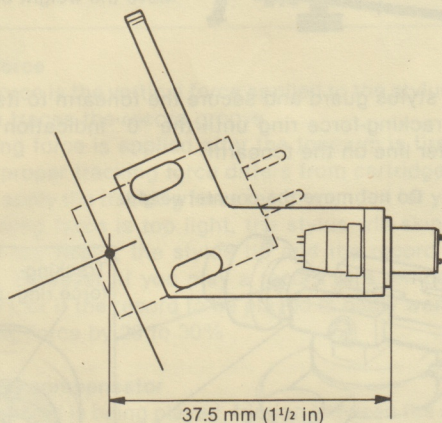
- 1 Remove the red-painted transit screws using a screw driver, coin or something similar. Save these screws, since they will be required when repacking.
- 2 Carefully place the platter on the motor board by matching the center hole and the center spindle. Be careful that no foreign objects lodge under the platter.
  - Do not touch the magnetic coating or the magnetic pick-up head.
- 3 Place the rubber mat on the platter.



## CARTRIDGE INSTALLATION

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.

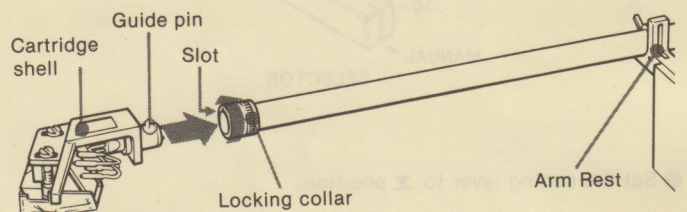
- 1 Install the cartridge into the cartridge shell with the supplied mounting screws temporarily.
- 2 Place the cartridge shell exactly over the diagram below and adjust the position of the cartridge so that the stylus tip is just over the cross point of the lines. Then fasten the screws tightly.



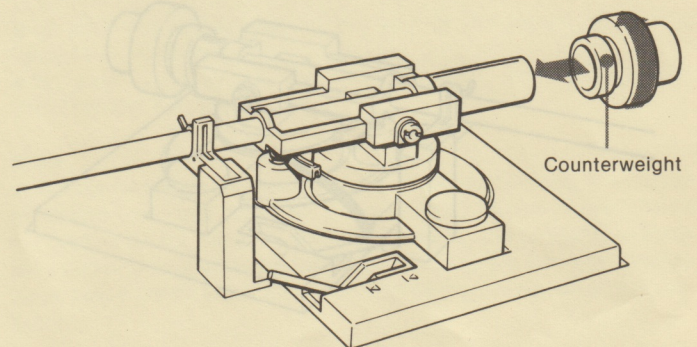
- 3 Connect the lead wires of the shell to the corresponding pins on the cartridge.

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)

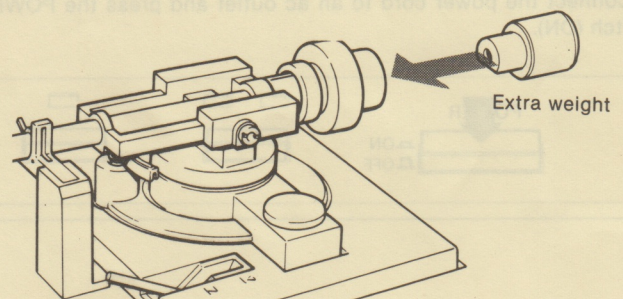
- 4 Plug the shell into the tonearm, matching the guide pin on the shell with the upper slot of the tonearm. Turn the locking collar in the direction of the arrow until the shell is firmly locked.



- 5 Insert the counterweight by tuning it.



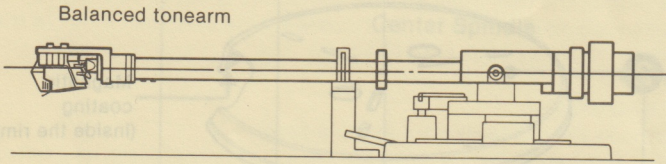
- 6 If it is necessary, insert the supplied extra weight fully to the end.



# TONARM ADJUSTMENT

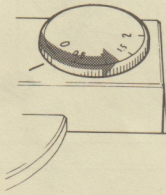
## TONARM BALANCE ADJUSTMENT

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.

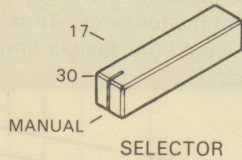


To balance the tonearm, proceed as follows:

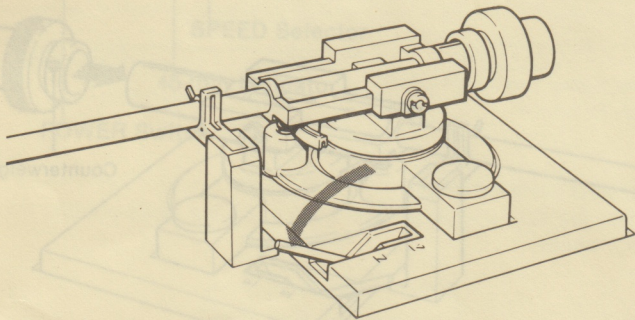
- 1 Set the anti-skating compensator to "0".



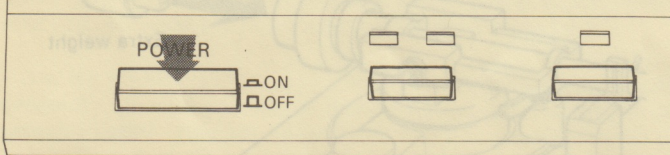
- 2 Set the record size/manual selector to MANUAL.



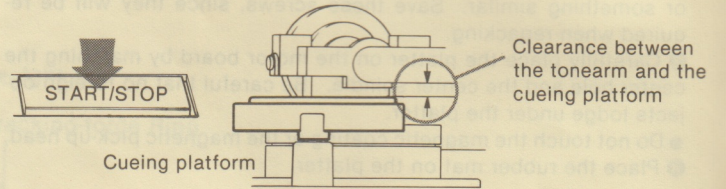
- 3 Set the cueing lever to ▽ position.



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



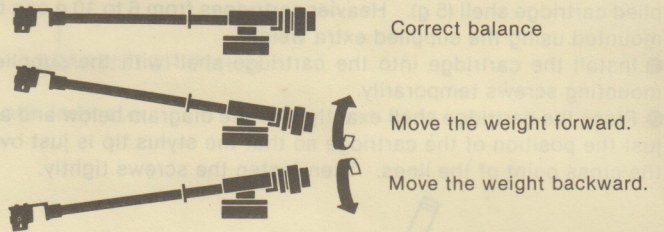
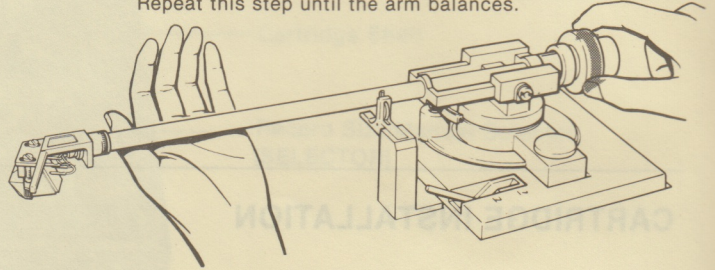
- 5 Press the START/STOP button. This will cause the turntable to rotate and the cueing platform to lower. After the cueing platform is lowered, press the POWER switch again to turn the unit off and stop the turntable by hand.



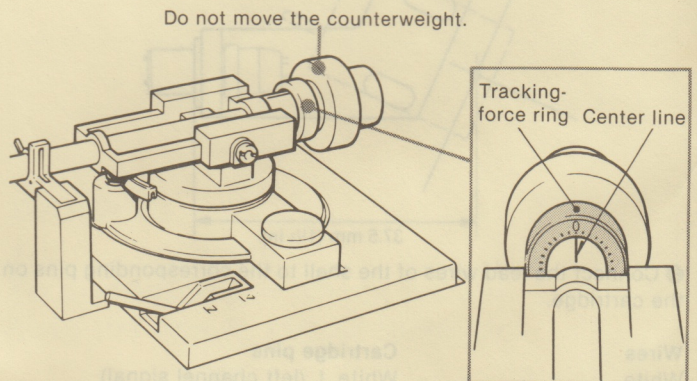
- 6 Remove the stylus guard and release the tonearm from the arm rest.

- 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.



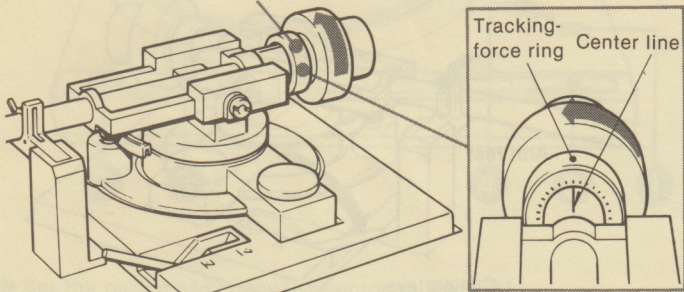
- 8 Install the stylus guard and secure the tonearm to its rest.
- 9 Turn the tracking-force ring until the "0" indication is aligned with the center line on the tonearm.



### TRACKING-FORCE ADJUSTMENT

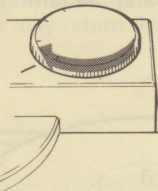
Turn the counterweight as illustrated so that the recommended tracking-force figure for the cartridge used is aligned with the center line on the tonearm. The maximum tracking force available is 2.5 grams.

Tracking-force ring will turn at the same time.



### ANTI-SKATING COMPENSATION

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



### 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.

### 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

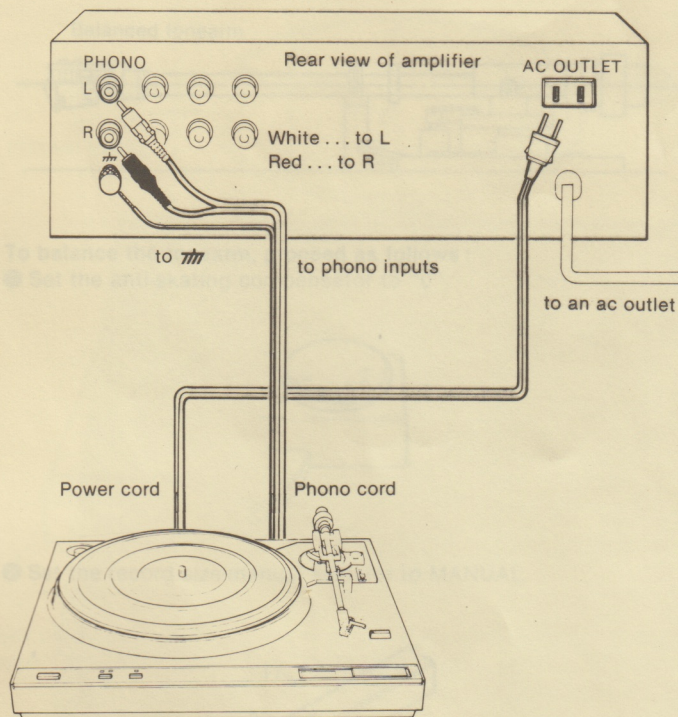
While the record is being played, friction between the record groove and the stylus produces a force that tends to drive the tonearm toward the center of the record.

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

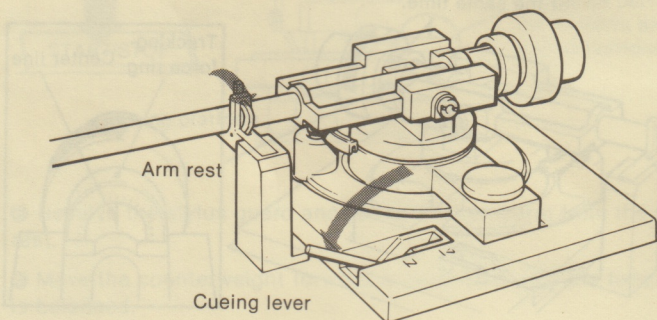
- Turn off the amplifier before making connections.
- Be sure to insert the cable connectors firmly into the jacks. Loose connections may cause hum and noise.
- Leave a little slack in the connecting cord to allow for inadvertent shock or vibration.



## RECORD PLAYING

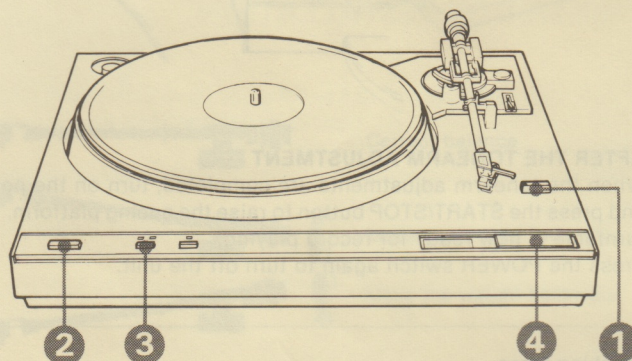
### PREPARATION

- Place a record on the platter. For 17 cm (7 inch) records, put the supplied 45-rpm adaptor over the center spindle.
- Remove 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  $\nabla$  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

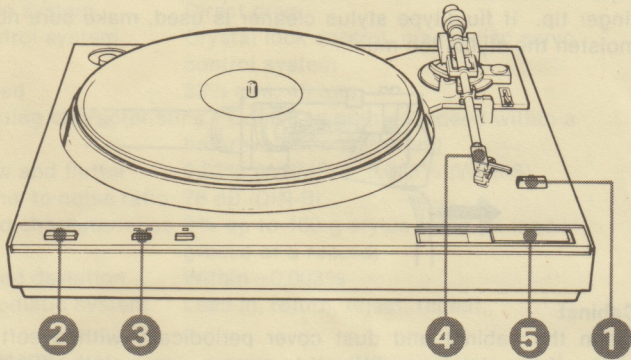


- 1 Set the record size/manual selector to the proper position, according to the record size.
- 2 Press the POWER switch (ON).
- 3 Select the correct record speed.
- 4 Press the START/STOP button. Play will begin.

### 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

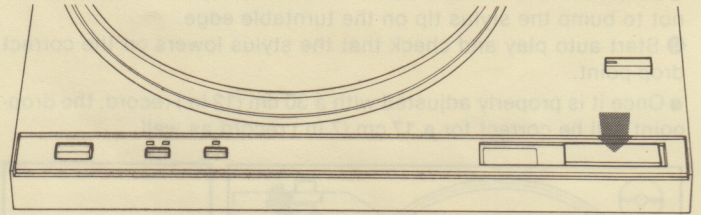
If you bring the tonearm too near the label of the record, the automatic return mechanism may return the tonearm to the arm rest.

## 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  $\nabla$  position. The tonearm will be lifted up. To lower it again, set the lever to  $\nabla$ .

## TO STOP DURING PLAY

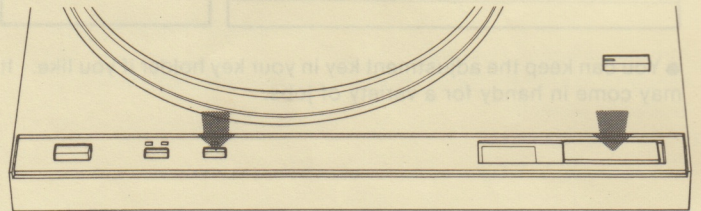
Press the START/STOP button. The tonearm will return to the arm rest and the turntable will stop rotating.



## 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.

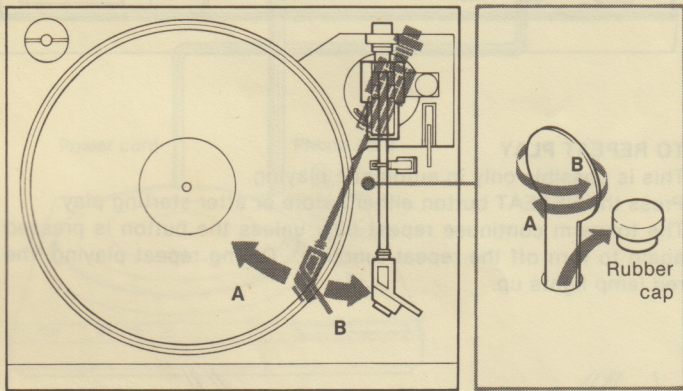
### Note

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.

## ONEARM 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.

- 1 Be sure that the turntable is turned off and the tonearm is secured to the arm rest.
  - 2 Remove the rubber cap of the tonearm drop-point adjustment hole located at the left side of the arm base.
  - 3 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.
  - 4 Start auto play and check that the stylus lowers on the correct drop-point.
- 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.
  - 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.

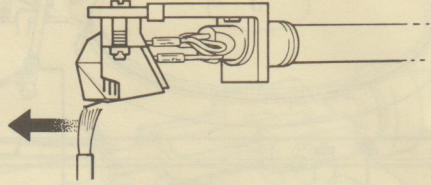


- You can keep the adjustment key in your key holder if you like. It may come in handy for a variety of jobs.

## 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, benzene 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 <sup>3</sup> / <sub>4</sub> in.), aluminum-alloy diecast
Motor	Linear BSL (brushless and slotless) motor
Drive system	Direct drive
Control system	Crystal lock control, magnedisc servo control system
Speed	33 <sup>1</sup> / <sub>3</sub> rpm, 45 rpm
Starting characteristics	Comes to nominal speed within a half revolution (33 <sup>1</sup> / <sub>3</sub> rpm)
Wow and flutter	0.02% (WRMS)*, 0.025% (WRMS)
Signal-to-noise ratio	78 dB (DIN-B)
Load characteristics	0% up to 100 g stylus force (at lead-in groove of a record)
Speed deviation	Within ±0.003%
Automatic system	Lead-in, return, reject, repeat,

## Tonearm

Type	Statically balanced
Pivot-to-stylus length	216.5 mm (8 <sup>1</sup> / <sub>2</sub> in.)
Overall arm length	300 mm (11 <sup>7</sup> / <sub>8</sub> in.)
Overhang	16.5 mm (2 <sup>1</sup> / <sub>32</sub> 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)

## General

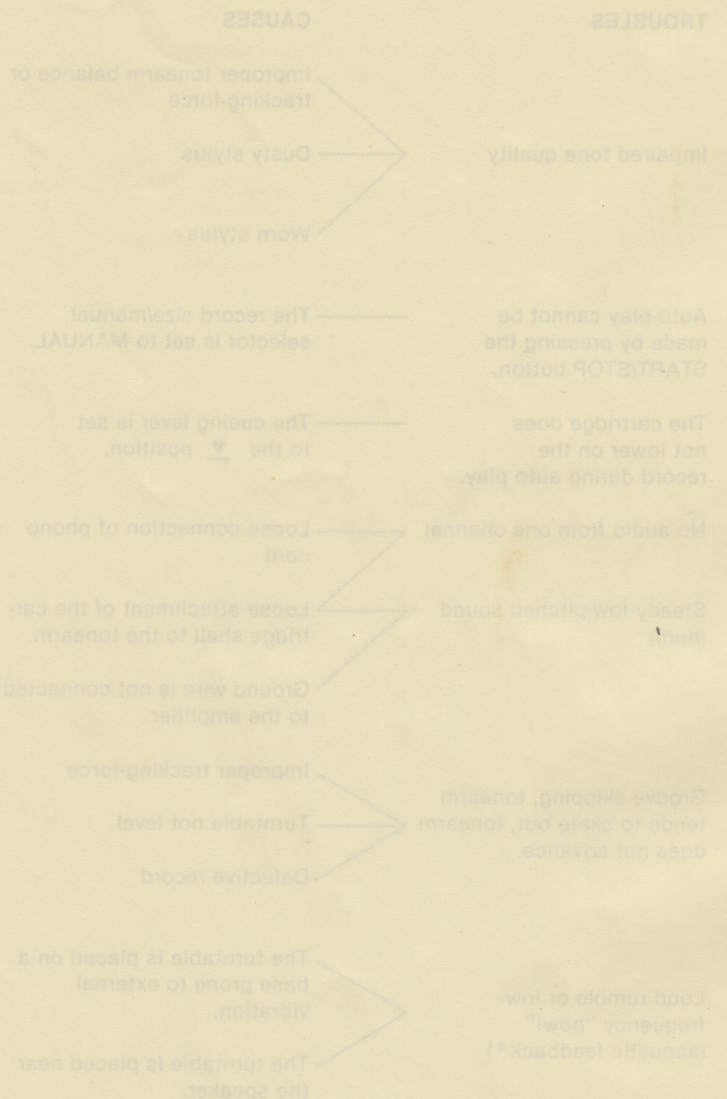
Power requirements	120 V ac, 60 Hz
Power consumption	12 W
Dimensions	Approx. 430 × 135 × 375 mm (w/h/d) (17 × 5 <sup>3</sup> / <sub>8</sub> × 14 <sup>3</sup> / <sub>4</sub> in.)
Weight	including projecting parts and controls Approx. 7 kg (15 lbs 7 oz), net Approx. 8.6 kg (19 lbs), in shipping carton
Supplied accessories	45-rpm adaptor (1) Extra weight (1) Cartridge shell (1) Cartridge mounting screws (1 set) Tonearm drop-point adjustment key (1)

Design and specifications subject to change without notice.

\* 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.



# 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 record size
The cartridge does not lower on the record during auto play.	The cueing lever is set to the $\nabla$ position.	Set the cueing lever to the $\nabla$ 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.