

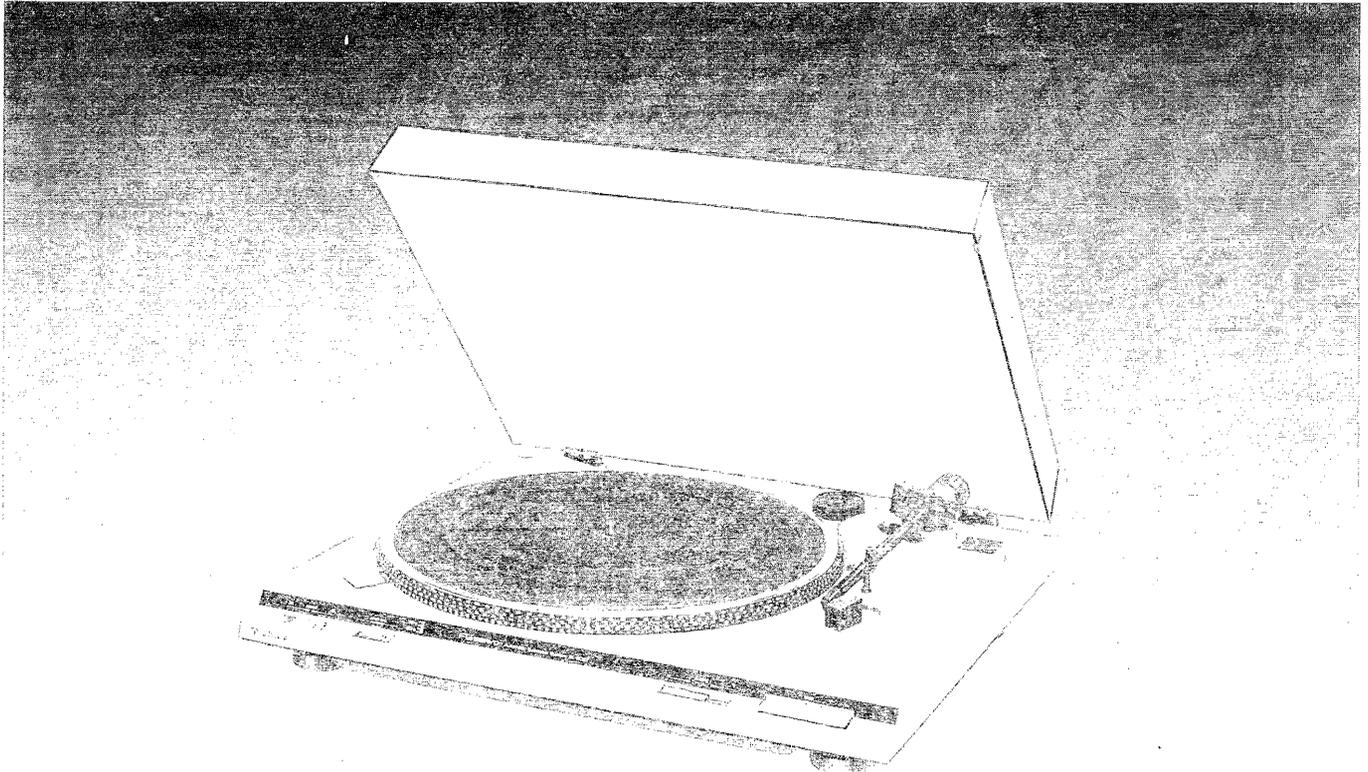
Technics

FG SERVO

Automatic Turntable System

SL-BD22

OPERATING INSTRUCTIONS



The model number and serial number of this product can be found either on the back or bottom of the unit.

Please note them in the space provided below and retain this booklet as a permanent record of your purchase to aid identification in the event of theft.

MODEL NUMBER SL-BD22

SERIAL NUMBER _____

Before operating this unit, please read these instructions completely.

Dear Stereo Fan

Technics, The Science of Sound, welcomes the challenge of new audio technologies and brings you a multitude of world-renowned, high quality audio components.

Like our stereo high speed editing cassette decks with dbx*, Computer Drive New Class A receivers, quartz drive linear tracking turntables, and revolutionary honeycomb disc speakers. All are backed by our time-honored commitment to imagination, value, and quality.

Technics captures the power of new ideas and turns them into realities -- with digital Compact Disc players that bring the search for perfect sound to

fruition. And A/V receivers that can integrate both audio and video technologies to forever alter the home entertainment system.

The Technics list of advanced audio components continues. From digital PCM processors, quartz tuners, and preamps to the world's first touch-sensitive and graphic equalizer, Technics is a shining example of audio technology at its best -- ready to take you to new dimensions in sound.

*dbx is a registered trademark of dbx, Inc.

Suggestions for Safety

Before using this unit, be sure to read the applicable items of operating instructions and these safety suggestions carefully. Afterwards keep them handy for future reference. Take special care to follow the warnings indicated on the unit itself as well as in the operating instructions.

1. Avoid places where there is water or humidity.

Do not use this unit near a bathtub, washbasin, swimming pool, or the like. Damp basements should also be avoided.

2. Don't allow water or any foreign object to get inside this unit.

Don't place small metal objects or anything containing liquid on or near the unit.

3. Avoid placement of the unit where it will be exposed to the direct rays of the sun, or where ventilation is inadequate.

Don't place this unit in a bookcase or between cabinets, or where curtains or furniture may obstruct the ventilation holes.

4. Place this unit away from heat-emitting appliances.

Never place this unit near a radiator, heat register, stove, or any other heat-emitting equipment (including amplifiers).

5. Placement

Place the unit on a stable, vibration-free, level shelf or stand.

6. Use of a cart or stand

When deciding on a cart or stand, be sure to follow the recommendations for this unit in the operating instructions.

7. Wall or ceiling installation

If the unit is to be mounted on a wall or ceiling, be sure to do so only as recommended in the operating instructions.

8. Check the voltage rating of this unit before connecting the unit to a power supply.

Be sure to connect the unit only to the type of power supply indicated in the operating instructions, or as indicated on the unit itself.

9. Care of the power cord and plug

Take care that the cord is not bent sharply (especially near its connection to the unit or near the plug), that nothing is placed on it, and that it is not pinched or crushed. Never take hold of the plug or cord if your hand is wet, and always be sure to grasp the plug body when connecting or disconnecting it.

10. If the unit will not be used for a long period of time:

Be sure to disconnect the power cord.

11. Never attempt repairs yourself

- (a) If the power cord or plug is damaged.
- (b) If a foreign object or liquid falls into the unit.
- (c) If the unit is exposed to rain.
- (d) If the unit does not function normally, or if operation shows an unusual change.
- (e) If the unit has been dropped and the cabinet or chassis are damaged . . . etc.

Unplug the power cord and consult with a qualified technician (or the dealer from whom the unit was purchased or the nearest service center).

12. Repairs

Except for adjustments explained in the operating instructions, do not attempt any repairs yourself. Be sure to request service from a qualified technician (or your dealer or nearest service center).

WARNING:

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE SCREWS. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

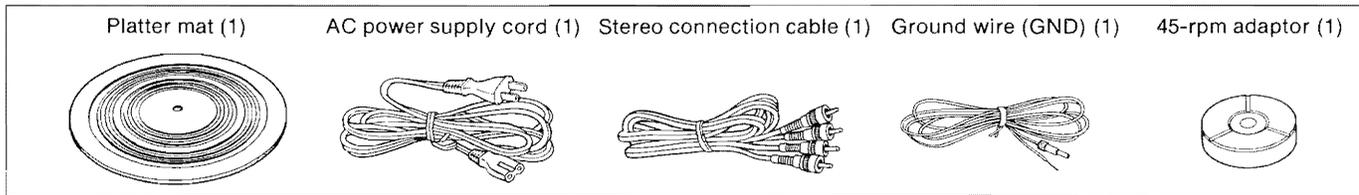


The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



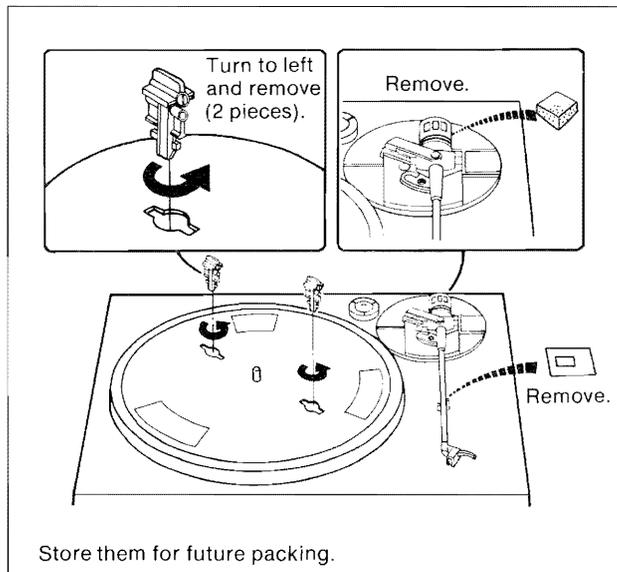
The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature-accompanying the appliance.

Accessories

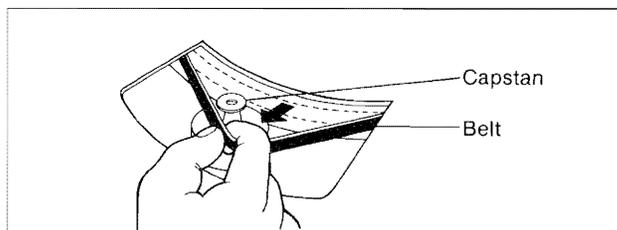


Turntable Assembly

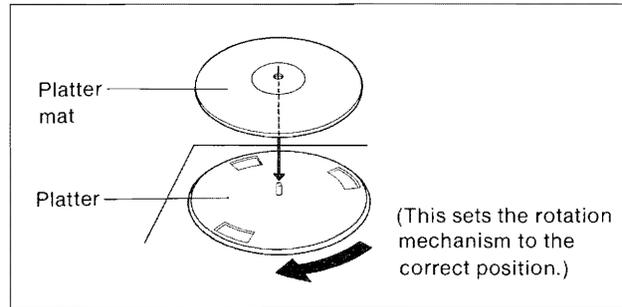
1. Remove the packing spacers.



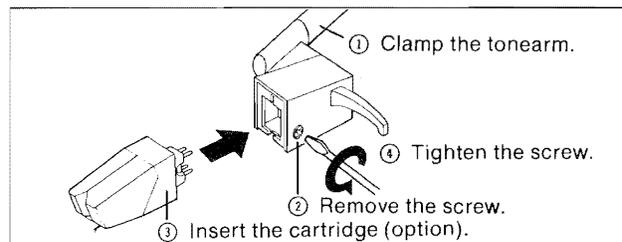
2. Attach the drive belt properly.



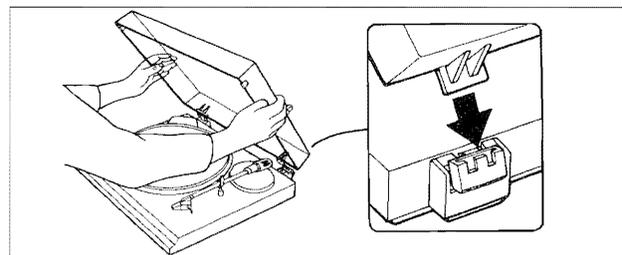
3. Place the platter mat on the platter, and turn the platter about ten times clockwise.



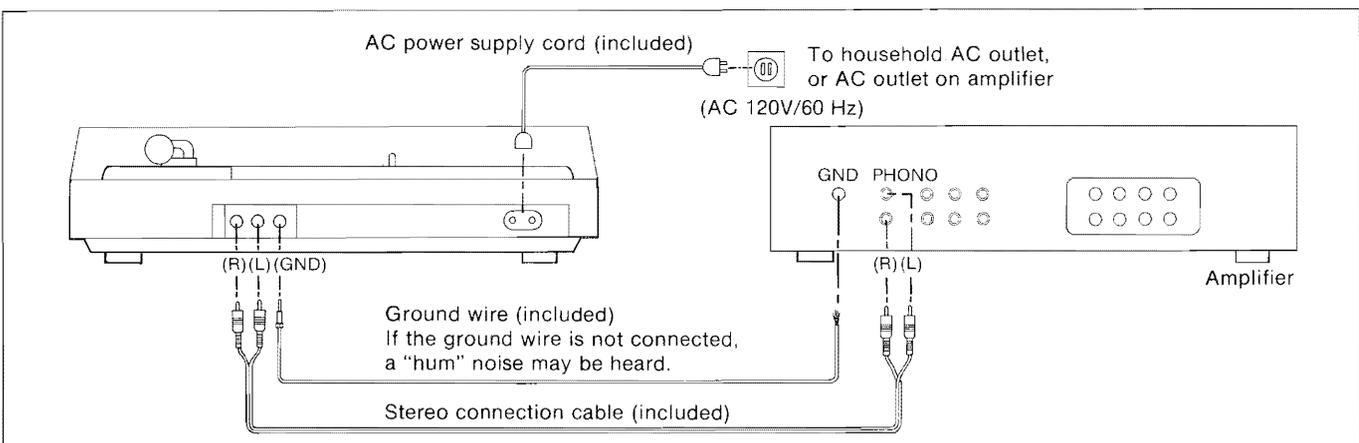
4. Attach a T4P cartridge (option).



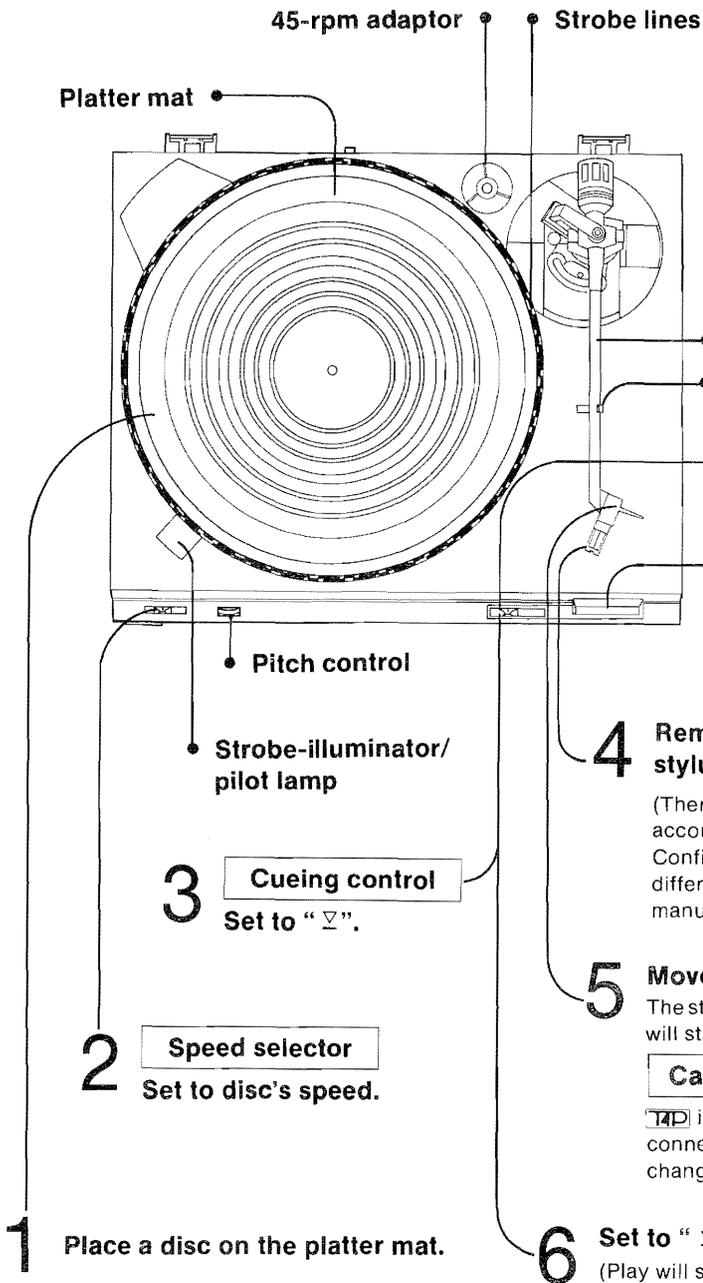
5. Install the dust cover.



Connections



Operation



This unit's strobe illuminator operates at the AC line frequency which generally has a 0.2% fluctuation. This fluctuation, when present, may make the strobe pattern appear to change. However, actual platter speed does not change, because the DC motor is not affected by AC power line frequency.

Note
Do not try to clean the dust cover while a disc is playing, because static electricity might cause the tonearm to rise.

Tonearm
Arm rest

Set to "∇" to stop the play temporarily.

Stop switch
Press to stop the play.

Pitch control
Strobe-illuminator/pilot lamp

3 Cueing control
Set to "∇".

2 Speed selector
Set to disc's speed.

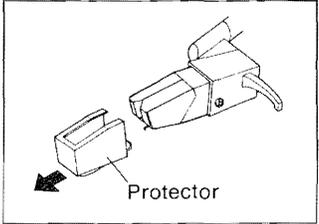
4 Remove the stylus protector.
(There is no protector according to the manufacturer. Configuration of the protector differs according to the manufacturer.)

5 Move to the desired position.
The strobe-illuminator/pilot lamp will light and the platter will start turning.

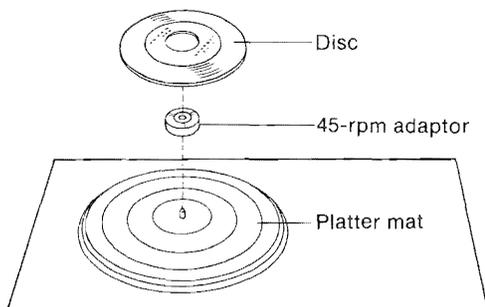
Cartridge (option)

Ⓜ is the standard mark for the "P-mount" plug-in connector system. Products carrying this mark are interchangeable and compatible with each other.

6 Set to "∇".
(Play will start.)



■ For a 17-cm (7") (large center hole) disc

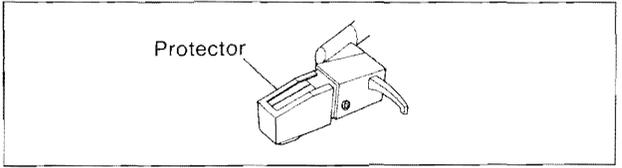


■ When play ends

1. The tonearm will automatically return to the arm rest (the automatic return feature).
2. Rotation will stop.

After use

Attach the stylus protector if fitted.

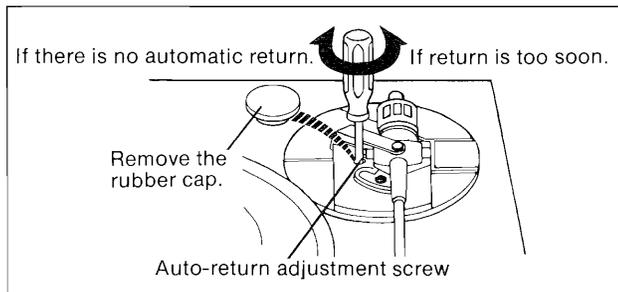


Adjustment

Adjustment of the automatic-return position

Make this adjustment if the tonearm doesn't return automatically to the arm rest, or if it returns before the tune ends.

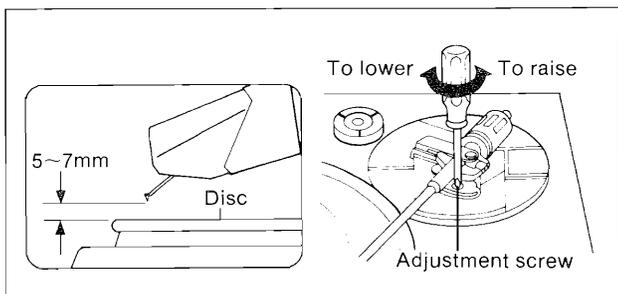
1. Adjust to the desired automatic-return position.
2. Check to be sure the automatic-return position is correct.



Adjustment of the stylus-to-disc clearance

This adjustment is preset at the factory. This adjustment should not be necessary unless the cartridge or stylus is changed.

1. Set the cueing control to "∇".
2. Move the tonearm to a position above the disc.
3. Adjust the stylus tip position.



Replacement

Replacement of the stylus

If noise is heard from new discs, the stylus is probably worn. Replace it with a new one.
(Refer to the operating instructions of the cartridge.)

Replacement of the cartridge

The plug-in type of cartridge is already designed to match this unit in every respect: weight, correct stylus pressure, stylus tip position, center of gravity, etc. This means that there's no longer any need for troublesome connection of lead wires or adjustment of the stylus pressure.

(Refer to page 3.)

Adjustment of the platter speed

When the platter rotates, the strobe marks form a stripe pattern according to the rotation speed and the frequency of the power supply.

The platter speed is correct when the stripe pattern of the stroboscope appears to be stationary while the platter is moving; adjust the speed if the stripes appear to be moving.

	Speed	Power supply frequency
	45 rpm	for 50 Hz use
	33-1/3 rpm	(For European countries)
	45 rpm	for 60 Hz use
	33-1/3 rpm	(For U.S.A. and CANADA)

Adjustment	Visual Cue
If stripe pattern seems to move to the left (platter speed is too fast)	
Platter speed will decrease.	
If stripe pattern seems to move to the right (platter speed is too slow)	
Platter speed will increase.	

Maintenance

To clean dust from the stylus

Use a soft brush or similar material to gently remove the dust. Thoroughly clean your discs occasionally with a high-quality disc cleaner.

Maintenance of external surfaces

To clean this unit, use a soft, dry cloth.

If the surfaces are extremely dirty, use a soft cloth, dipped into a soap-and-water solution or a weak detergent solution. Wring the cloth well before wiping the unit.

Wipe once again with a soft, dry cloth.

Never use alcohol, paint thinner, benzene, nor a chemically treated cloth to clean this unit.

Such chemicals may damage the finish of your unit.

Troubleshooting Guide

Before requesting service for this unit, check the chart below for a possible cause of the problem you are experiencing. Some simple checks or a minor adjustment on your part may eliminate the problem and restore proper operation.

If you are in doubt about some of the check points, or if the remedies indicated in the chart do not solve the problem, refer to the directory of Authorized service centers (enclosed with this unit) to locate a convenient service center, or consult your Technics dealer for instructions. (In U.S.A., consult MSC Authorized service center for detailed instructions.)

Problem	Probable cause(s)	Suggested remedy
During disc play		
The platter doesn't turn when the tonearm is moved.	The platter's belt has slipped off.	• Re-attach the belt.
A loud and unusual sound ("howling") is heard when the volume level is increased.	The location of the turntable and speaker systems is unstable.	• If the equipment is unstable because it is located upon a soft surface, such as a carpet, place a solid material (such as concrete blocks, bricks, a hard board, etc.) beneath the speaker systems. • Try moving the turntable farther away from the speaker systems. • Try placing a cushioning material (such as felt or commercially available audio insulators) beneath the turntable.
Unusual scratching noises are heard.	Disc is old or scratched.	• Turn the treble tone control of the amplifier to reduce the treble sound.
	Dust in disc grooves.	• Use a disc cleaner to remove the dust from the disc grooves.
	Stylus needle is worn.	• If the noise is heard even when a new disc is played, probably the stylus is worn. Replace it with a new stylus.
	Dust is attached to stylus tip.	• Remove the dust by using a soft brush.

Technical Specifications

■ TURNTABLE SECTION

Type	Automatic turntable
Features	Auto-return Auto-stop
Drive method	Belt drive
Motor	DC motor
Drive control method	FG servo control
Turntable platter	Aluminum die-cast Diameter 31.2 cm (12-9/32")
Turntable speeds	33-1/3 rpm and 45 rpm
Wow and flutter	0.045% WRMS (JIS C5521) ±0.06% Weight zero to peak (IEC 98A weighted)
Rumble	-70 dB DIN-B (IEC 98A weighted)

■ TONEARM SECTION

Type	Static-balanced straight tonearm Plug-in-connector cartridge system
Overhang	15 mm (19/32")
Effective length	230 mm (9-1/16")
Tracking error angle	Within 2°32' at outer groove of 30 cm (12") record Within 0°32' at inner groove of 30 cm (12") record
Stylus pressure	1.25 g (Fixed)
Applicable cartridge weight	6 g
Phono cable capacitance	90 pF

■ GENERAL

Power supply	AC 120V, 60 Hz
Power consumption	3 W
Dimensions (W×H×D)	430×93×375 mm (16-15/16"×3-21/32"×14-3/4") When dust cover is open: 430×360×410 mm (16-15/16"×14-5/32"×16-1/8")
Weight	3.6 kg (7.9 lb.)

Product Service

The unit should be serviced by qualified technicians only. No service information is provided for customers. Your product is designed and manufactured to ensure a minimum of maintenance. However, should your unit ever require service, a

nationwide system of factory servicers and AUTHORIZED INDEPENDENT SERVICENTERS is maintained to support your product's warranty.

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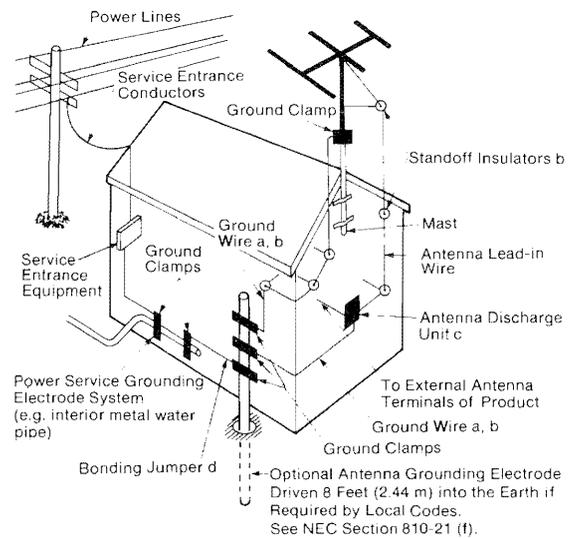


Suggestions for Safety

Before using this unit, be sure to read applicable items of the operating instructions and these safety suggestions carefully. Afterwards keep them handy for future reference. Take special care to follow the warnings indicated on the unit itself as well as in the operating instructions.

- 1. Water and Moisture** -- The unit should not be used near water -- for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, and the like.
- 2. Object and Liquid Entry** -- Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
- 3. Ventilation** -- The unit should be situated so that its location or position does not interfere with its proper ventilation. For example, the unit should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
- 4. Heat** -- The unit should be situated away from heat sources such as radiators, heat registers, stoves, or other units that produce heat.
- 5. Power Sources** -- The unit should be connected to a power supply only of the type described in the operating instructions or as marked on the unit.
- 6. Power Cord Protection** -- AC power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the unit. Never take hold of the plug or cord if your hand is wet, and always grasp the plug body when connecting or disconnecting it.
- 7. Polarization** -- If the unit is equipped with a polarized AC power plug (a plug having one blade wider than the other), that plug will fit into the AC outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
- 8. Carts and Stands** -- The unit should be used only with a cart or stand that is recommended by the manufacturer. The unit and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the unit and cart combination to overturn. 
- 9. Wall or Ceiling Mounting** -- The unit should be mounted to a wall or ceiling only as recommended by the manufacturer.
- 10. Cleaning** -- The unit should be cleaned only as recommended by the manufacturer.

- 11. Outdoor Antenna Grounding** -- If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code, ANSI/NFPA No. 70 - 1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See figure below.



- Use No. 10 AWG (5.3 mm²) copper, No. 8 AWG (8.4 mm²) aluminum, No. 17 AWG (1.0 mm²) copper-clad steel or bronze wire, or larger, as a ground wire.
- Secure antenna lead-in and ground wires to house with stand-off insulators spaced from 4 feet (1.22 m) to 6 feet (1.83 m) apart.
- Mount antenna discharge unit as close as possible to where lead-in enters house.
- Use jumper wire not smaller than No. 6 AWG (13.3 mm²) copper, or the equivalent, when a separate antenna-grounding electrode is used. See NEC Section 810-21 (j).

- 12. Power Lines** -- An outdoor antenna should be located away from power lines.
- 13. Nonuse Periods** -- The AC power supply cord of the unit should be unplugged from the household AC outlet when left unused for a long period of time.
- 14. Damage Requiring Service** -- The unit should be serviced by qualified service personnel when:
 - The AC power supply cord or the plug has been damaged; or
 - Objects have fallen or liquid has been spilled into the unit; or
 - The unit has been exposed to rain; or
 - The unit does not appear to operate normally or exhibits a marked change in performance; or
 - The unit has been dropped, or the enclosure damaged.
- 15. Servicing** -- The user should not attempt to service the unit beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.