

Technics

QUARTZ

Direct Drive Turntable

SP-10MK2A

Operating instructions



“WARNING: To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.”

Before operating this product, please read these instructions completely.

Thank you for choosing the SP-10MK2A.
 For optimum performance and safety, please read
 these instructions carefully.

Dear Stereo Fan

Technics. The science of sound. Our name represents
 over 100 high quality audio products, in every price range.
 From our revolutionary direct drive turntables to our highly
 acclaimed linear phase speakers, Technics quality and
 value have become almost legendary among audio
 enthusiasts.



Our truly complete selection of turntables (including
 belt-drive, direct-drive, and quartz-locked models with
 varying degrees of automation) now includes an exciting
 line of linear tracking turntables with zero tracking error.
 Another innovation, direct drive cassette decks, is avail-
 able in both slim and micro formats. In fact, with Technics
 micro series, you can assemble an entire system of
 the highest quality with truly compact dimensions.

Features like our new computer-drive now class-A ampli-
 fication and quartz-synthesizer tuning have created
 tremendous excitement among reviewers and customers
 alike. Amplifiers, tuners, headphones, microphones, car-
 tridges, openreel decks, sound processors—we are
 proud of all our high quality equipment and we are
 constantly seeking to improve our products, in terms of
 performance and handling ease. In addition, our confi-
 dence in the reliability of our merchandise (demonstrated
 by our warranties) and the reasons for our enormous and
 rapid growth become obvious.

The model number of this product may be found on the back of
 the control unit, and the serial number on the bottom of the
 turntable unit.

Please note the model and serial numbers of this unit in the
 space provided and retain this booklet as a permanent record of
 your purchase to aid identification in the even of theft.

MODEL NUMBER SP-10MK2A
 SERIAL NUMBER _____

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

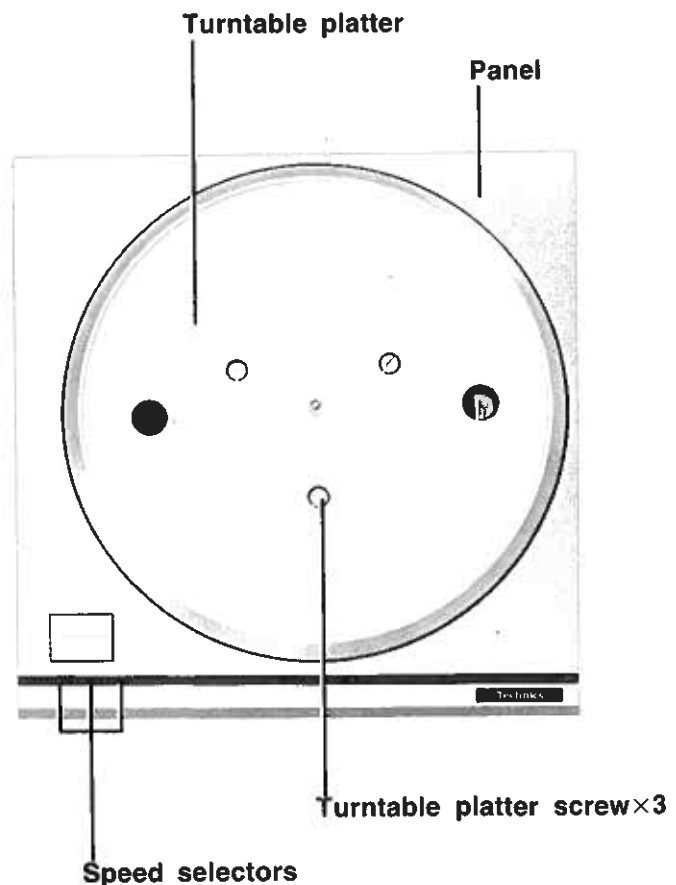
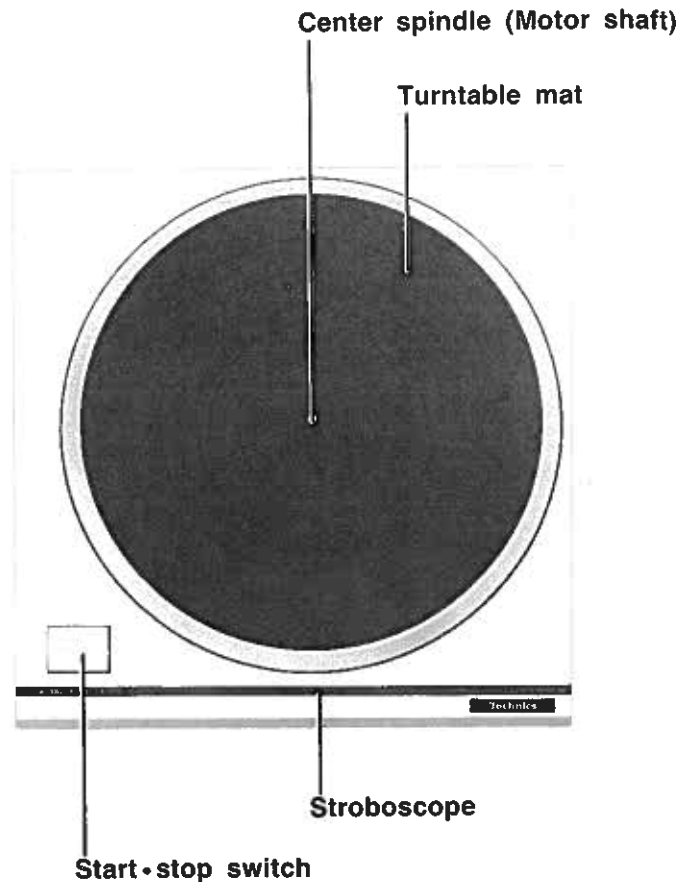


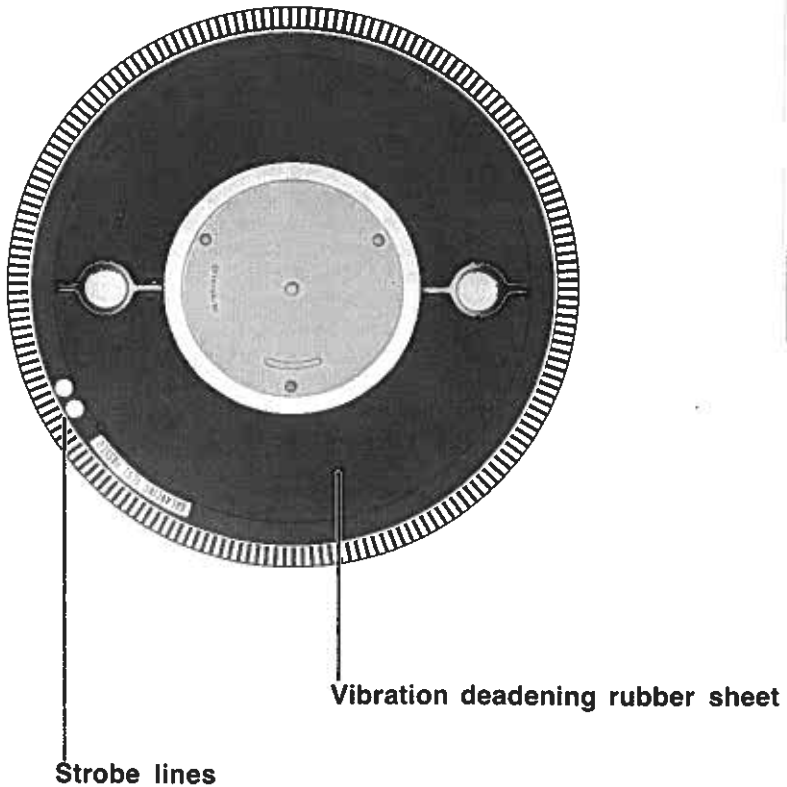
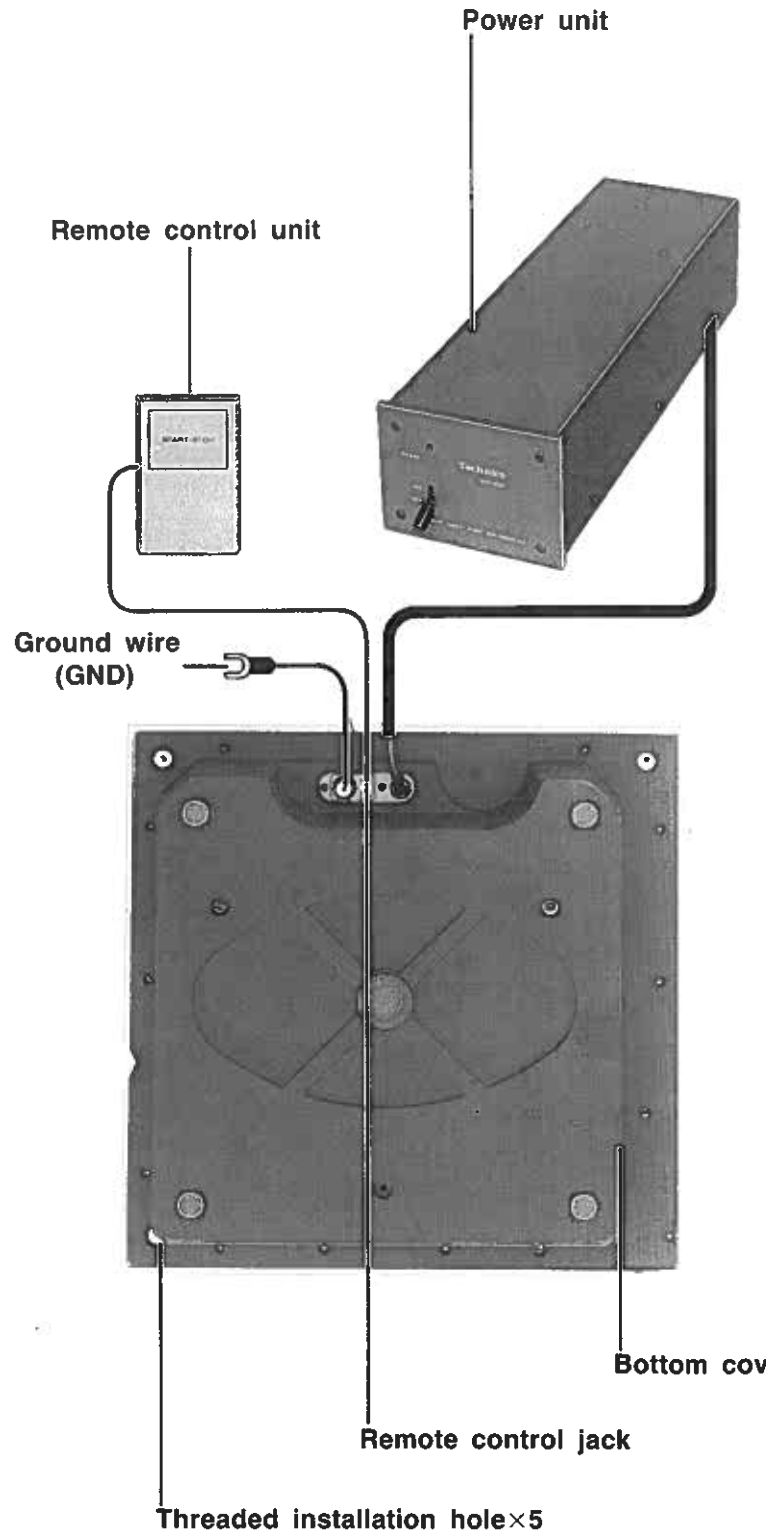
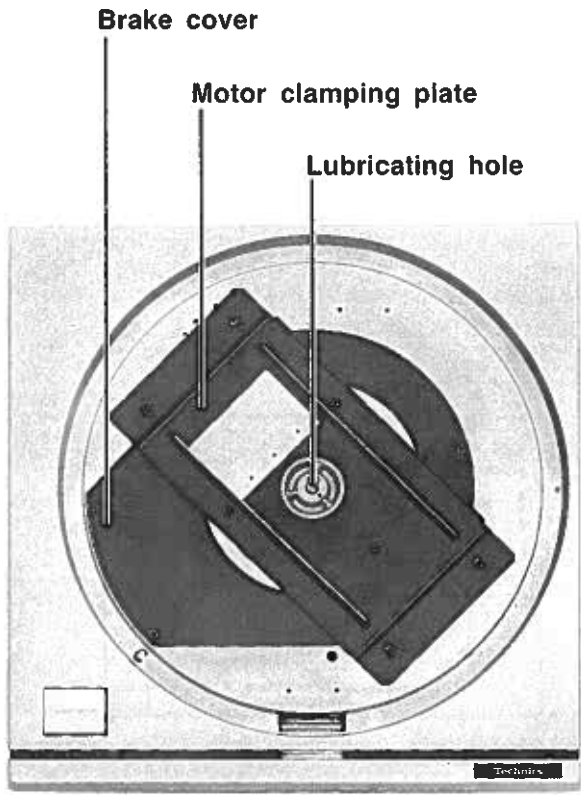
The lightning flash with arrowhead symbol,
 within an equilateral triangle, is intended to alert
 the user to the presence of uninsulated
 "dangerous voltage" within the product's enclo-
 sure that may be of sufficient magnitude to
 constitute a risk of electric shock to persons.



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

Parts identification





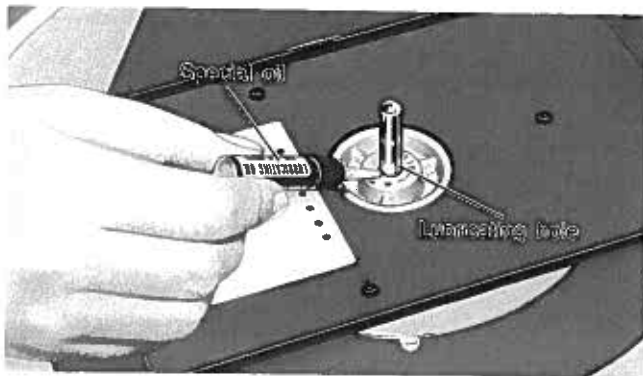
Before unpacking

- Open the carton and confirm that none of the following parts are missing.

Turntable unit	1
Turntable platter	1
Turntable mat	1
Turntable platter screws	3
Installation screws	
(M5×43)	5
(M5×35)	5
Washers	5
Power unit (SH-10EA)	1
Remote control unit (SH-10R)	1
45-rpm adapter	1
Special oil	1
Installation diagram	1

- Apply two or three drops of oil to the motor shaft

Open the tip of the oil vial with a needle and apply two or three drops of oil to the motor shaft.



Note:

If oil has leaked out around the rotor of the motor during transportation, wipe it with a lint free cloth.

- Do not plug the power cord into an AC socket until assembly has been completed.

- Do not turn on the power unit when the turntable platter is not in place.

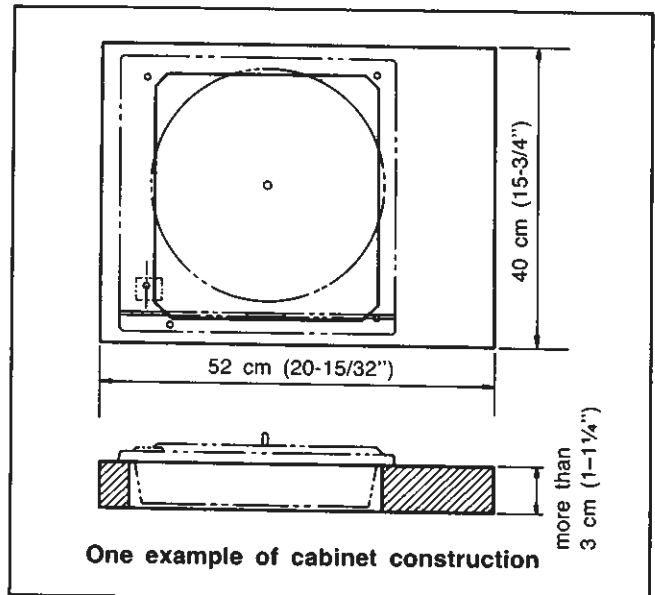
Assembly and set-up

- Cabinet requirements

The SP-10MK2A has a very high starting torque of 6 kg·cm (5.2 lbs·in) and a powerful braking system to instantaneously start and stop the extremely heavy platter (2.9 kg.—6.4 lbs., 32 cm—12¹/₂ in. diameter). Consequently, the cabinet should be made of a hard, heavy material with a thickness of at least 3 cm (1¹/₄ inches) to obtain all the benefits of this sophisticated turntable.

Note:

Use stable insulators (legs). Shown below is one example of cabinet construction.



- Drill and cut out the base according to the installation diagram.

The installation diagram shows the actual size of all parts. Since the printing may be slightly out of line and since the paper may stretch or shrink a little, measure all cabinet dimensions with a measuring tape or ruler to be sure they are exactly as specified on the diagram.

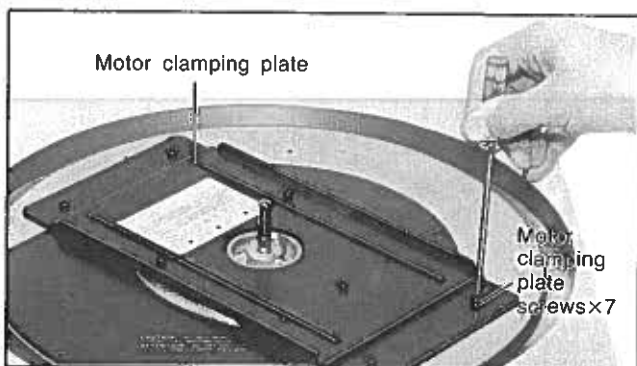
Check the tonearm mounting position for proper alignment (follow the tonearm manufacturer's specifications). Also be sure to allow sufficient clearance for the power connector and output terminals of the tonearm.

- Install the unit in the cabinet.

Two kinds of screws are included with this unit. Select the length that is right for the thickness of the cabinet you are using. When you place the unit in the cabinet, put a protective material on top of the unit to protect the center spindle from damage and a soft cloth on the panel to protect it from scratches.

■ Remove the motor clamping plate and screws

After placing the unit in the cabinet, remove the seven blue screws and motor clamping plate.

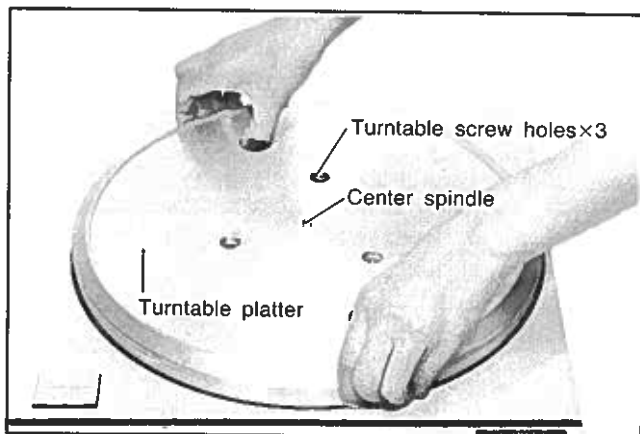


Notes:

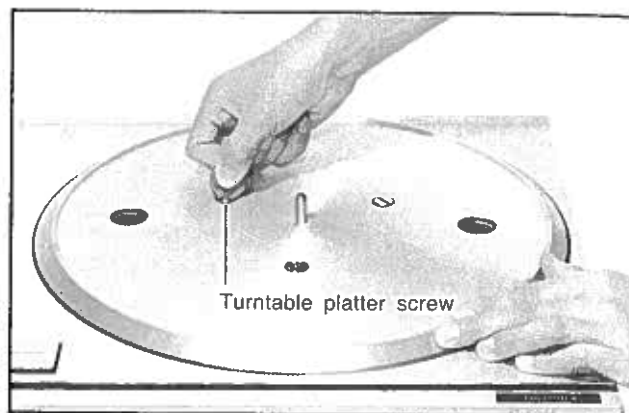
- Since this is a direct-drive turntable, the center spindle is the shaft of the motor and it is very important to protect the shaft from bumps and shocks. Always fasten the motor with the motor clamping plate when transporting the unit or installing it in a cabinet to be sure these important parts are not damaged.
- Insert the motor clamping plate screws in the holes in the plate so the plate and screws can be used again when the turntable is moved to a different location.

■ Securing the turntable platter

Place the turntable platter on the spindle aligning the holes in the platter with the rotor screw holes. Slightly lifting the turntable platter will make it easier to align the holes.



Using the three screws supplied, firmly tighten the turntable platter and put the turntable mat on it.



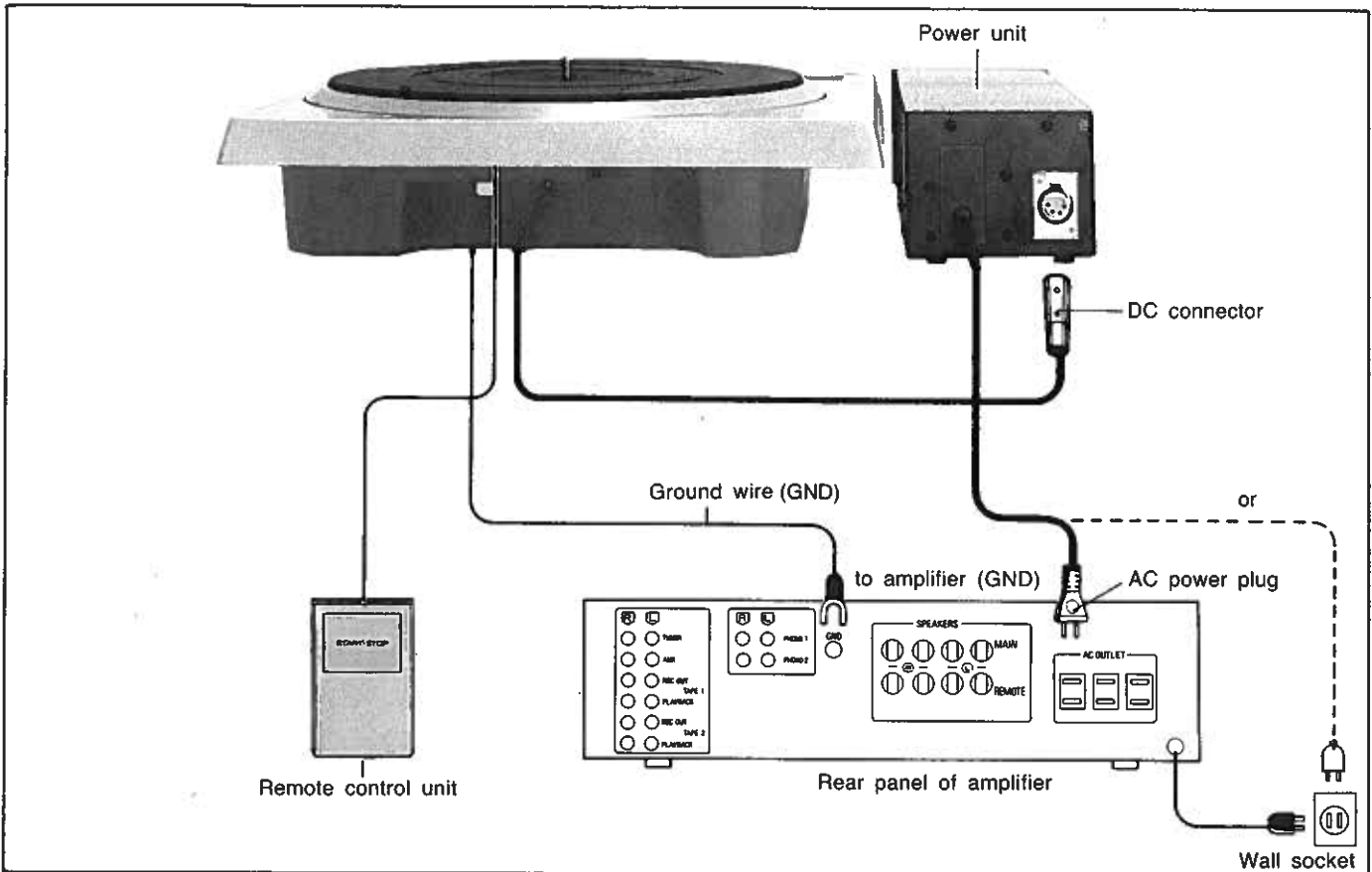
Note:

The turntable platter must be tightened at all three points to assure proper operation.

Placement

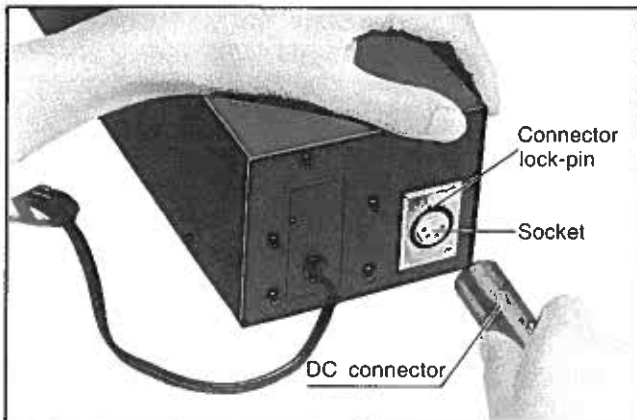
- Place the unit in a horizontal position and in a stable location not subject to vibrations.
- Place the unit as far away from the speakers as possible and isolate the unit from vibrations created by sounds from the speakers. If the speakers are placed too near the unit, sound vibrations may be transmitted to the platter or tonearm and result in feedback.
- Keep this unit away from radios and tuners as static may be heard in radio broadcasts if the two units are placed too close together.
- Do not place the unit where it is exposed to direct sunlight, dust, moisture or heat. Also keep it away from heating equipment.
- Place the unit in a well ventilated location.

Connections



■ Connecting each part

- Plug the DC connector of the turntable unit into the socket of the power unit. It will lock with a clicking sound.



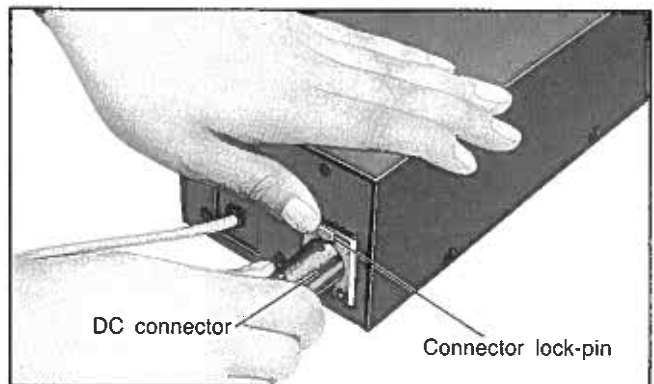
- Plug the power unit into a wall socket or AC outlet of an amplifier. Using a switched outlet will assure that the power unit will be turned off when the amplifier is turned off.
- Connect the ground wire to the amplifier GND terminal or the chassis of an amplifier.

Note:

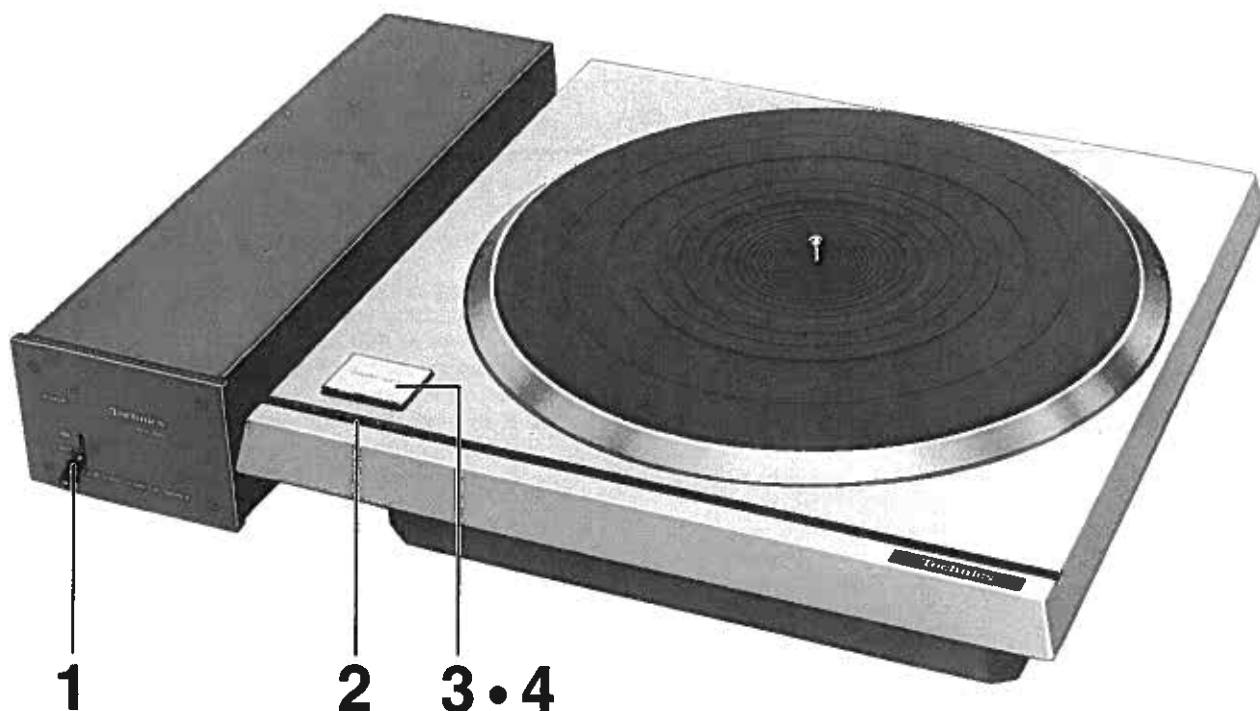
The SP-10MK2A is designed to be used with 120 V, AC power.

This unit includes a voltage stabilizing circuit to maintain the correct platter speed within a voltage range of about $\pm 10\%$ of the rated voltage. However, a power supply with the rated voltage of this unit should always be used to assure optimum performance at all times.

- Do not forget to connect the ground line since failure to do so can result in a power hum being generated.
- Connect and disconnect the DC connector while pushing in on the lock pin as shown below.



Operating procedure



1 Turn on the power unit.

The pilot lamp of the power unit, the speed selector for 33-1/3 r.p.m. and the stroboscope will all light up.

2 Push the speed selector of the speed of the record you wish to play.

An LED lamp will light to show which speed has been selected.

3 Push the start/stop switch.

The platter will begin to rotate and reach its rated speed within about 0.25 sec. (a platter rotation of 25° at 33-1/3 r.p.m.).

4 In order to stop the platter, push the start/stop switch again.

Electrical and mechanical braking systems bring the platter to a complete stop in about 0.3 sec. (a platter rotation of 30° at 33-1/3 r.p.m.)

Notes:

- When not in use for long periods of time, turn the power unit off.
- If the power of the turntable is turned off before actuating the start/stop switch, the braking system will not work. In this case the turntable platter will continue rotating for some time by its own inertia. When the power is turned on again the speed selector will automatically be reset to 33-1/3 r.p.m.

The remote control unit can start and stop the turntable but it cannot turn the power on and off.

Remote control unit
(SH-10R)



Specifications

■ General

Power supply	120 V, AC 60 Hz
Power consumption	20 W
Dimensions: (W×H×D)	Turntable Only 36.85×10.25×36.85 cm (14-31/64×4-1/64×14-31/64 inches) Power Unit 110×8.35×37.0 cm Turntable Only 9.5 kg (20.9 lbs.) Power Unit 3.8 kg
Weight:	

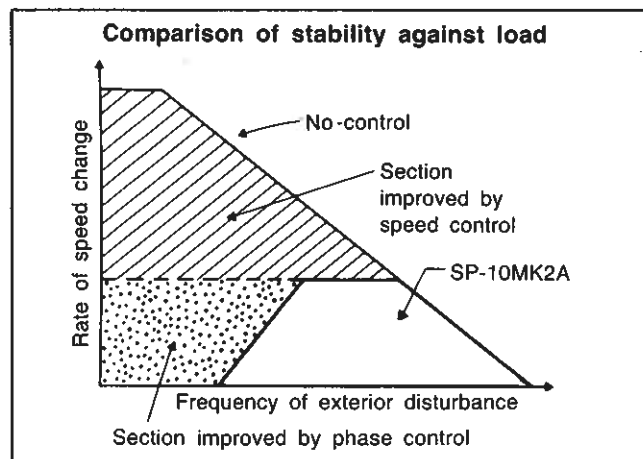
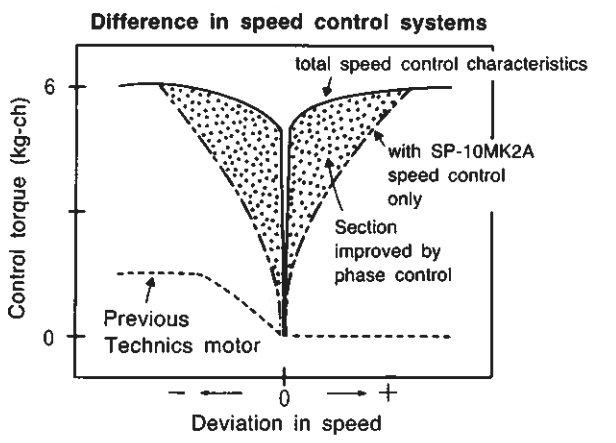
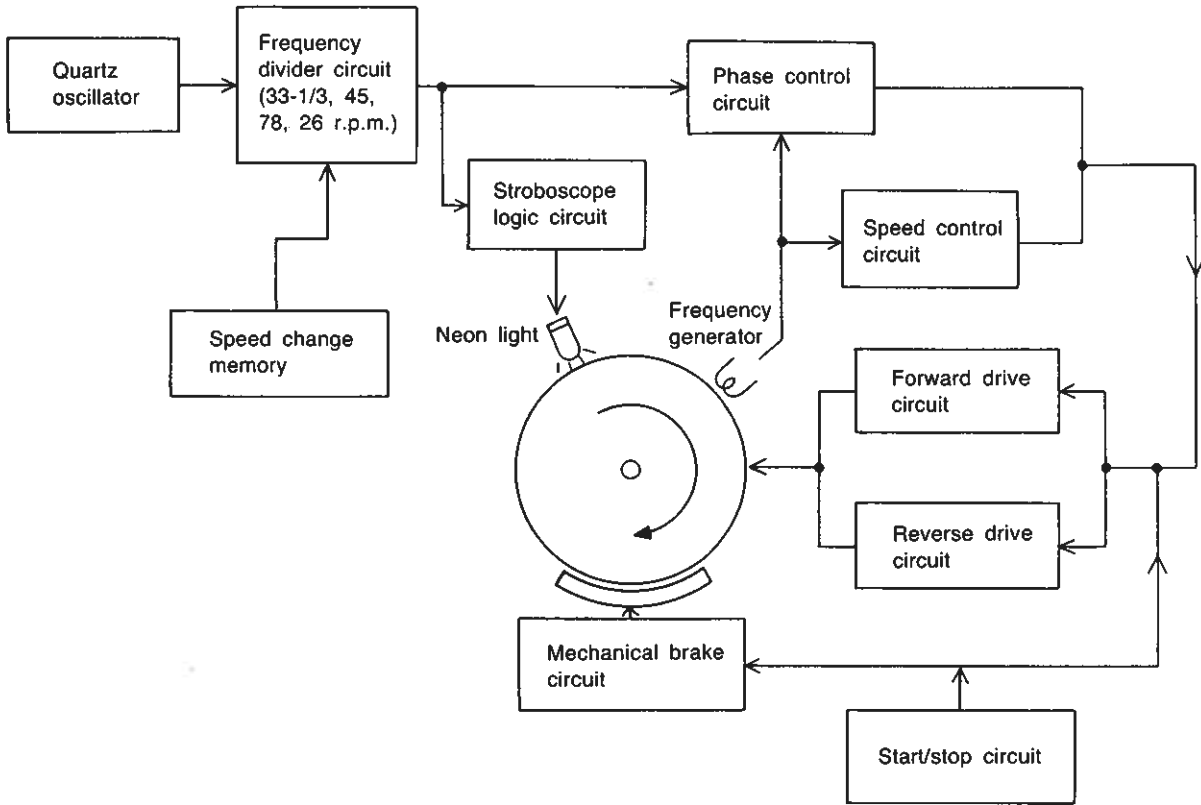
■ Turntable section

Type	Direct-drive turntable
Turntable platter	Aluminum diecast, diameter 32 cm (12-19/32 inches), weight 2.9 kg (6.4 lbs.)
Moment of inertia	380 kg·cm ² (130 lbs·in ²)
Motor	Brushless DC motor, electronic rectification, quartz-controlled phase-locked servo circuit
Platter speeds	33-1/3, 45 and 78.26 r.p.m.
Starting torque	6 kg·cm (5.2 lbs·in)
Build-up time	0.25 sec. (25° rotation) to 33-1/3 r.p.m.
Braking time	0.3 sec. (30° rotation) from 33-1/3 r.p.m. to standstill
Speed fluctuation with load changes	0% within 5 kg·cm (4.3 lbs·in)
Speed drift	Within ±0.001% 0.01% WRMS*
Wow & Flutter	0.02% W.R.M.S. (JIS C5521) ±0.028% Peak (IEC 98A Weighted) *This rating refers to turntable assembly alone, excluding effects of record, cartridge or tonearm, but including platter. Measured by obtaining signal from built-in frequency generator of motor assembly.
Rumble	-58 dB (IEC 98A Unweighted) -86 dB (IEC 98A Weighted)

Notes and maintenance

- Remove the turntable platter only when absolutely necessary.
If you must lift the platter off the spindle, be sure to unplug the power cord beforehand. Do not touch the motor screws or bolts.
- The warranty for this turntable is no longer valid if the motor screws and bolts are loosened.
- From time to time, wipe off the control unit and turntable section with a soft, dry cloth.
- Do not try to clean the turntable unit or front panel of the control unit with alcohol, benzene, thinner or other solvents as this could remove the finish and even the lettering.
- If an insecticide spray comes in contact with the front panel, the panel may be stained.
- If an oily substance is spilled on the control unit or turntable section, clean it off with a cloth dampened in a weak soap solution.
Wring out the cloth well before wiping the control unit or turntable. Dry immediately afterward with a soft, dry cloth. Be sure to unplug the power cord before wiping the unit with a damp cloth.

Operating fundamentals of the SP-10MK2A

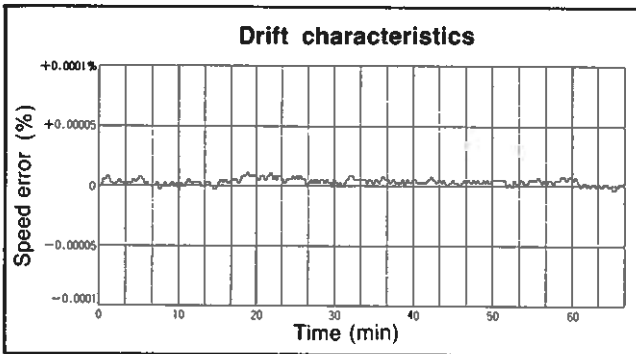


Features

1 Quartz controlled rotation accuracy

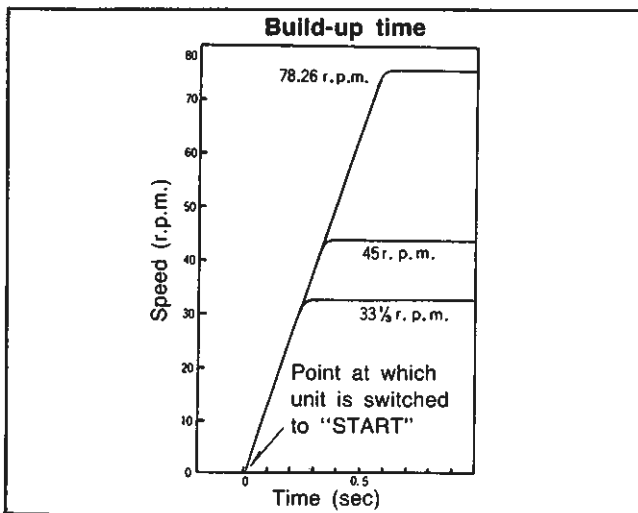
The SP-10MK2A utilizes the oscillation of a quartz crystal as a reference signal. This oscillation is not affected by temperature changes or power supply frequency fluctuations. By synchronizing the rotation of the turntable platter with the reference signal, speed drift of the SP-10MK2A is held within $\pm 0.001\%$. This means that for a record with a playing time of 30 min., total playing time variation can amount to no more than 0.018 sec. This stable and accurate rotation sets a new standard of precision.

The accuracy under normal operating conditions is about $\pm 0.00001\%$ as shown below.



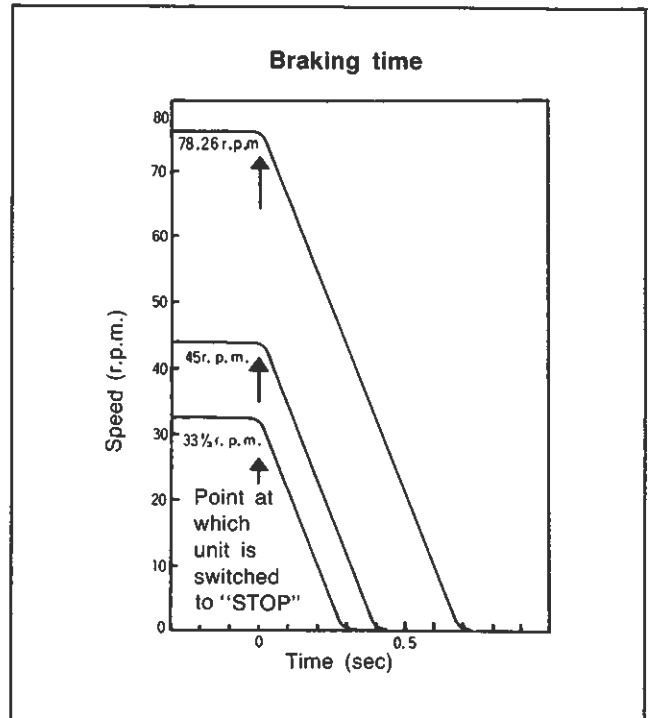
2 Instant starting for accurate cueing (a start-up time of only 0.25 sec. for 33-1/3 r.p.m.)

In the professional broadcasting world, instantaneous starting is a must for any turntable. The SP-10MK2A platter is 32 cm (12-19/32") in diameter and has a moment of inertia of 380 kg·cm² (130 lbs. in²). It can be brought to a rated 33-1/3 r.p.m. within 0.25 sec. A half-braking force is applied to the turntable platter after it is stopped to permit easy cueing of a record. This fast start minimizes unpleasant out-of-pitch music when record play is begun.



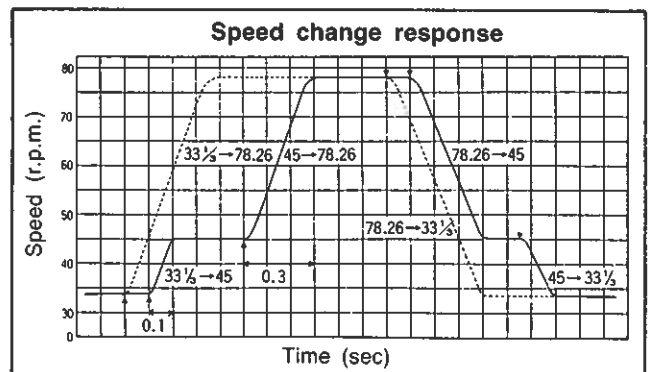
3 Integrated electrical and mechanical braking (a complete stop within 0.3 sec.)

For professional use with frequent record changes, instant stopping is also a must. The electrical braking system uses reverse rotation of the DC servo motor to slow down the rotation and, in combination with the mechanical braking system, brings the turntable platter smoothly to a complete stop within 0.3 sec.



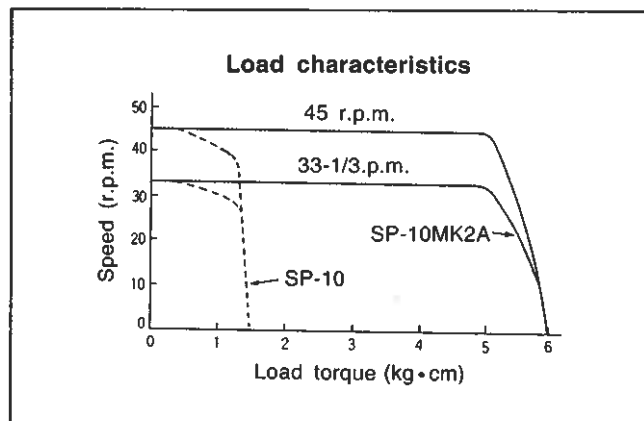
4 Instant speed change (a switchover time of only 0.4 sec.)

The SP-10MK2A operates at the standard speeds of 33-1/3, 45 and 78.26 r.p.m. The speed is changed electrically and the selectors incorporate LED indicators. A large torque and an electrical braking system make it possible to switch between any of the 3 speeds in a fraction of a second.



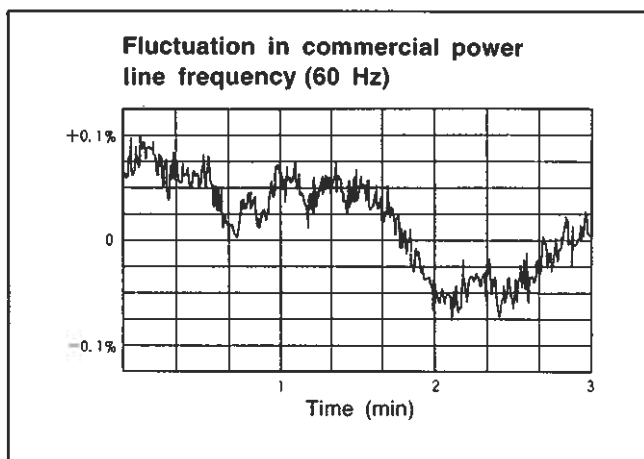
5 Stable load characteristics (normal rotation with up to 1 kg tracking force.)

The quartz phase-locked control system and the DC servo motor with large torque can maintain each rated speed of the turntable even with a load torque of up to 5 kg-cm (4.3 lbs. in). If 500 tonearms of 2 g, tracking force were placed on a record at the same time the turntable would still maintain each rated speed.



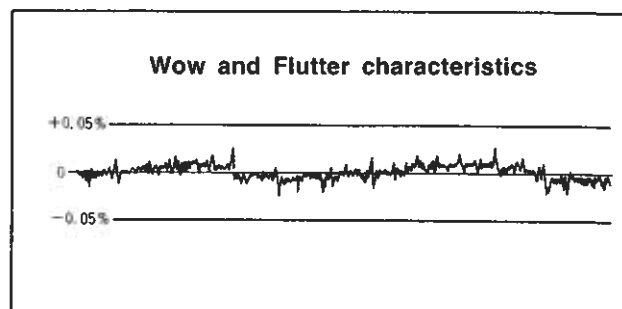
6 Bright, clear and accurate quartz controlled stroboscope

If AC power were used for the stroboscope, its accuracy would be influenced by the power supply frequency fluctuations of about 0.2%. In the SP-10MK2A the stroboscope neon lamp is lighted using the reference signal from the quartz oscillator. Thus a different set of strobo lines is not necessary for different power supply frequencies or different platter speeds. Along with wave shaping by the strobe logic circuit, this system makes the stroboscope bright and clear.



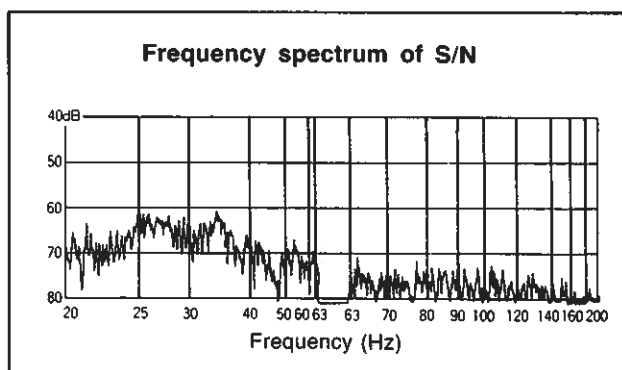
7 S/N ratio and wow and flutter specs better than those of phonograph records

Beginning with the SP-10, the world's first direct drive turntable Technics has had a reputation for excellence in DD turntables. The high S/N and low wow & flutter of the Technics DC servo motor in this unit are the result of knowledge gained over the years by Technics designing and building the best DD turntables in the world.



8 Excellent performance and versatility let you create any sort of turntable system.

The professional grade performance of this turntable makes it possible for the user to build a personalized high end turntable system to satisfy almost any need. For extra convenience, a remote control unit is included to make instant starting and stopping possible from almost anywhere in the listening room.



*The S/N ratio values in the above chart were obtained using an original lacquer disc cut in the same manner (45/45° cutting angle) as a normal phonograph record. S/N readings obtained using glass and other smooth surfaces are based on different vibration patterns, so the data are not the same as when an actual record is played.