National Technics

SL-1100

Direct-Drive Turntable

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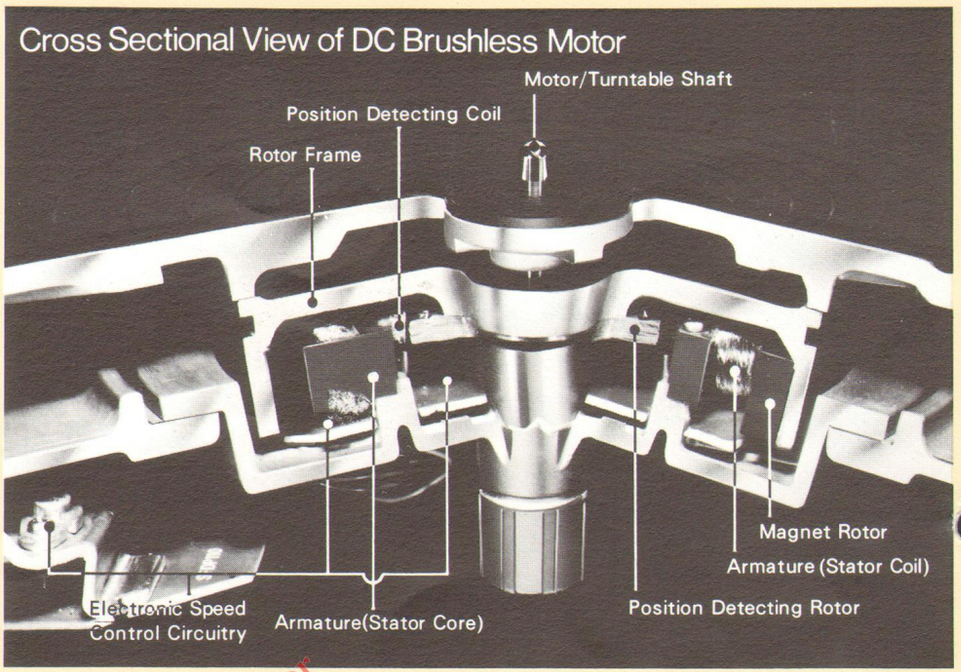
Direct-Drive Turntable
for Those Who Want Professional Performance at Moderate Cost

Technics again offers a revolutionary new development in turntable technology. The sophisticated highly touted direct-drive turntable—SL-1100. Technics has achieved the ultimate in mechanical simplicity with only one moving part—the combined motor/turntable structure. The SL-1100's 2 kg. cast aluminium platter, 350 mm in diameter, is mounted directly on the shaft of the motor. No stepped shafts, idlers, or belts are used in the system.

Conventional belt-drive or idler-drive systems, in order to obtain the proper record-playing speed from an AC motor rotating at several hundred to a few thousand revolutions per minute, develop wow and flutter, no matter how precise the construction of the system. By going directly to a slow-speed motor which rotates at exactly the same speed as the records you're playing, Technics has avoided these problems, developing a record-playing system which offers superb performance. Wow and flutter less than 0.03% WRMS and rumble better than −65 dB (DIN A), −70 dB (DIN B).

SL-1100 comes with a matching high performance tonearm. On an impressive cast aluminium base, weighing 13 kg. in total. And has a deluxe plexiglass dust cover. Stroboscope is molded around the platter to check the correct speed of rotation. A strobo lamp is included. Install your favorite cartridge in the tonearm, and you have added the definitive component to your high-fidelity system.



Turntable Section

Direct-Drive System

The heart of this unique record playback system is an ultra-low speed DC brushless motor that rotates at exactly the same speed as the records you're playing—33⅓ or 45 rpm. Thus, Technics has done away with turntable parts that create trouble in performance and in servicing. Parts like belts and idler wheels, which deteriorate over the years, making it difficult to maintain the initial performance characteristics of even the best conventional turntable. And parts like conventional AC motors, with their built-in hum problem. Rumble, another bugaboo of the conventional turntable, is practically non-existent. It's usually caused by vibration of the motor, transmitted to the turntable through the drive system and motor housing. When a motor rotates at high speed, it transfers vibrations, no matter how effective the motor mounting may be in trying to absorb it. This vibration is transmitted through the turntable platter to the record and the pickup stylus, which passes it along with the music as a low-pitched roar. Because the SL-1100 motor rotates exactly at the speed of the record you're playing, there is barely a trace of the vibration produced by high-speed motors—hence virtually no rumble. In fact, the rumble of the SL-1100 is in excess of −65 dB (DIN A), −70 dB (DIN B). Hum, always a problem with AC motors and power lines, has been eliminated by use of the DC brushless motor. AC motors have magnetic flux leakage, while ordinary DC motors using a brush and commutator create their own brand of electrical noise caused by sparking.

Multi-Pole DC Brushless Motor

The multi-pole DC brushless motor is fed by an internal adaptor which converts ordinary AC current to 20 V DC. A built-in electronic analog feedback speed control system maintains exactly the proper speed you've selected. A 50 kHz signal is fed into the first coil of each of the three pairs of control signal pickup coils wound in the stator. The control rotor, a toothed wheel rotating with the motor rotor, varies the coupling of the pair of coils to produce changes in the output voltage of the second coil of each pickup coil. The outputs from three pairs of control signal pickup coils are then fed back into the electronic circuit to keep the rotation of the motor constant. Neither the frequency nor fluctuation in the voltage of AC mains influence the rotation of the motor—an important feature when one considers the ever increasing brownouts and voltage fluctuations caused by commercial power suppliers.

The SL-1100 starts immediately because the DC motor and the exclusive Technics ferrite permanent magnet employed in the rotor have high magnetic flux density, wihch means high starting torque, or reaching playing speed much faster than conventionally-designed turntables—within one-half revolution at 33⅓ rpm, in fact. And because of its high torque, rotation won't stop even if you press your dust cleaner onto a record hard to wipe off dust.

At the same time, though, power consumption is extremely small—only 4.0 W. (DC motor itself consumes only 0.1 W.) As the machine does not employ belts nor idler wheels, it suffers no damage even if you stop the turntable with your hand while it's on. The SL-1100 is, therefore, tamper-proof.

Stroboscope Speed Indication

Stroboscope markings are molded around the platter to check the correct speed of rotation. They are used in coordination with the variable pitch controls. A strobo lamp is included.

Variable Pitch Controls

Variable pitch controls let you vary playing speed separately on $33\frac{1}{3}$ and 45 rpm up to 5% in either direction, enabling you to play all of your records at perfect pitch. And once you set the pitch control, there is no need for re-adjustment. If you prefer a high pitch, you can enhance the sound brilliance up to almost semi-tone by this device.

Easy Balancing and Stylus Pressure Control

By the smooth movement of rack-and-pinion, the balance-weight can be easily adjusted. After you get the balance, pull the balancing knob outward, and the scale will return to zero instantly. Now you can add any amount of stylus pressure you desire by directly reading the scale on the knob, a special device developed for convenient operation. For those who prefer to use more than one cartridge, this is it.

Dynamically-Balanced Turntable Platter

Some turntables maintain their balance when they are in a static position, but they lose their balance as rotation starts. With Technics SL-1100 this never happens. Each turntable platter is dynamically balanced by a dynamic-balancing machine, so that accurate balance is insured at any time. This contributes immensely to the high performance of SL-1100. The turntable platter weighs 2.0 kg. And boasts large inertial moment of 320 kg.-cm^2

Tonearm Section

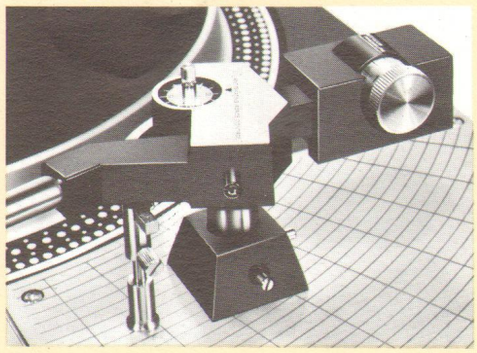
Precision-Engineered Tonearm

Accurate cast aluminium and miniature bearings are employed in the essential part of the tonearm where precision scaling is hard to maintain structurally. Various adjustments center around the upper portion of the tonearm for your convenient handling.

Feather-Touch Cueing Control

Feather-touch cueing is oil-damped in both directions for smooth and even descent and ascent. Guarantees your tonearm to ground exactly at the spot you desire.

Anti-Skating Device



Skating force is created by the contact between the stylus tip and the disc groove. In accordance with the geometrical position of the tonearm, the stylus will be attracted inwardly. Thus the imbalance of contact force between the stylus tip and two groove walls will cause increased distortion, deteriorated tracking ability, lowered separation, and the abnormal wear-out of the stylus tip and the discs. Skating force will increase as the stylus pressure becomes greater. So that you must add the anti-skating force in accordance with the stylus pressure. With Technics SL-1100, all you have to do is to turn the anti-skating force control knob to the same scale as the stylus pressure. Precision control is ensured by this simple operation.

Other Features

Detachable Arm Panel

The metal arm panel can be easily detached just in case you decide to change the arm.

Pin-Jack Terminals

Allow you to freely choose the length of the cord to your amplifier. This is essential for discrete 4-channel record playback, where low capacitance cord is recommended.

AC Outlet

On the turntable underneath the adaptor for 45 rpm there is an AC outlet for such special conveniences as a strobo lamp or stylus illumination light.

Deluxe Plexiglass Dust Cover

Provided for extra care of the record playback system.

Audio Insulated Legs

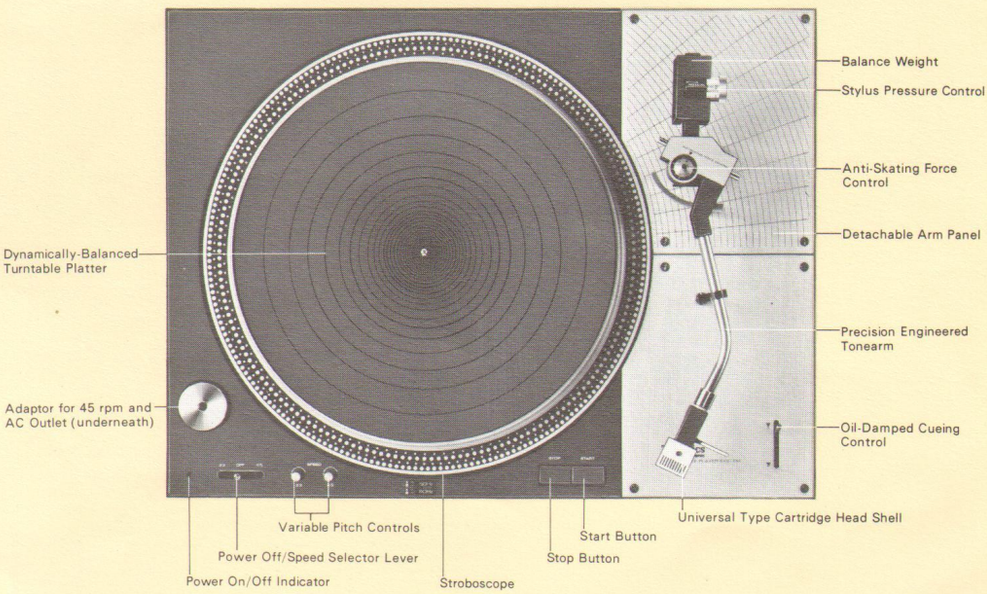
Together with the player system, they help keep acoustic feedback to a very minimum. By rotating the legs, you can adjust the horizontal level of the turntable.

Easy-to-Operate Switches

On the left side of the turntable deck, is the power off/speed selector lever. To its right lie two variable pitch controls for $33\frac{1}{3}$ and 45 rpm. At the center towards right are Start and Stop buttons. Once you set the speed, the turntable is ready to go at a finger touch.

Impressive Cast Aluminium Base

The turntable base that supports the system is made up of cast aluminium, weighing 13 kg. in total. Turntable and base are coordinated into one unit, for the best results of D.D. performance.



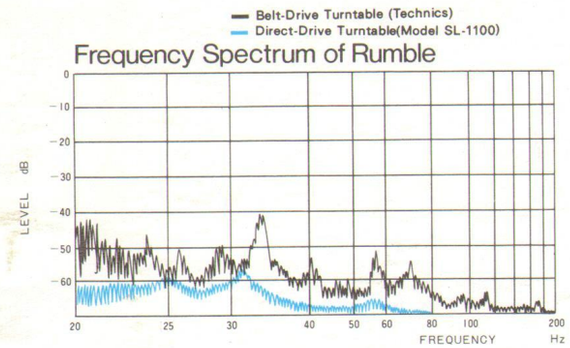
Specifications

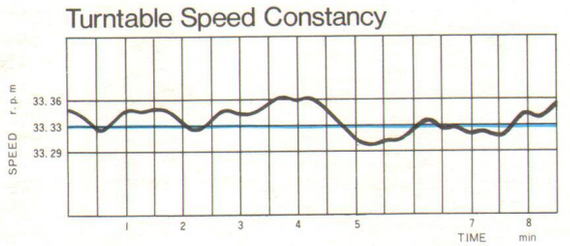
Turntable Section

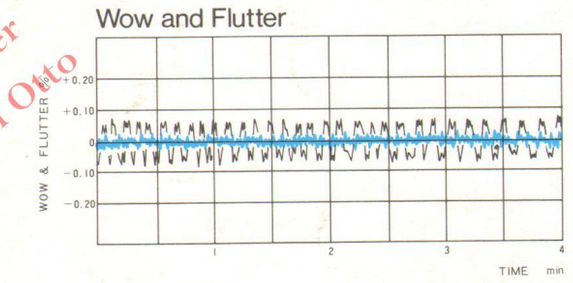
Type:	Direct drive turntable
Turntable:	Aluminium die-cast; 35 cm ($13\frac{25}{32}$'') diameter, 320 kg-cm^2 (109.5 lb-in^2) inertial moment, 2 kg. (4.4 lb.) weight
Turntable Speed:	$33\frac{1}{3}$ and 45 r.p.m.
Motor:	20 poles (rotor)-15 poles (stator) ultra low speed electronically commutated motor
Power Supply:	AC 110.120.220.240V 50 or 60 Hz,
Speed Change Method:	Electronic change
Variable Pitch Control:	Individual adjustment by variable resistor, ±5% adjustment range
Wow and Flutter:	Less than 0.03% WRMS
Rumble:	Better than −65 dB (DIN A), −70 dB (DIN B)
Build-up Time:	Within $\frac{1}{2}$ rotation at $33\frac{1}{3}$ r.p.m.
Dimensions: (W × H × D)	510 × 195 × 390 mm ($20\frac{1}{16} \times 7\frac{11}{16} \times 15\frac{11}{32}$ inch)
Weight:	13 kg (28.7 lb.) with dust cover
Turntable Base:	Aluminium die-cast with audio insulated legs

Tonearm Section

Type:	Static-blanced tubular
Stylus Pressure Control:	0~5g, Direct reading type
Anti-Skating Device:	Yes
Cueing Control:	Oil-damped
Cartridge Head Shell:	Universal type
Effective Length:	235 mm ($9\frac{1}{4}$'')
Overhang:	14 mm ($\frac{9}{16}$'')
Tracking Error Angle:	Within ±1.75°
Stylus Pressure:	0-5 g







SL-110

Direct Drive Phono Motor System

Identical in every respect with model SL-1100, but without tonearm.
Wooden tonearm base board permits easy installation of any tonearm.
Transparent dust cover supplied.

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Specifications are subject to change without notice for further improvement.

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