

Technics SP-15

Quartz Synthesizer Direct Drive
Turntable



QUARTZ

Professional Series



Setting High Standards for Professional Performance and Flexibility

When you are looking for the best turntable your money can buy, it makes sense to see what professionals choose. In a vast number of cases that means a turntable from Technics, the originator of direct drive and quartz synthesizer pitch control systems. For example, the SP-10MKII and other Technics models are used by broadcasters in over 25 countries around the world, including Britain's BBC.

The new SP-15 likewise offers you high professional standards of performance plus the flexibility and convenience that are important for home use. Features include quartz synthesizer pitch control (as in the original SL-1300MK2 series), full cycle detection FG, extremely high torque for fast starts and load stability, heavy

duty construction, highly effective damping, a pulsed power supply, and a special lock mechanism to prevent accidental misoperation.

Quartz Synthesizer Pitch Control in 0.1% Steps up to $\pm 9.9\%$ at All Three Standard Speeds—with Digital Display

The vast majority of quartz-controlled turntables do not maintain their usual level of rotational speed accuracy when the pitch control is used. This is because the reference frequency in the servo loop is fixed. But in Technics' quartz synthesizer system, the reference frequency itself can be changed, or synthesized, so that rotational speed is always as precise as at standard speeds. This quartz phase-locked pitch control system is a major feature of the SP-15 because it gives precise variation in 0.1%

increments above or below any of the three standard speeds (33, 45, 78 rpm) up to a maximum of $\pm 9.9\%$.

With this precision system you can match the pitch of a record to that of a musical instrument, or expand and compress playing times to fit a given broadcasting time slot. The amount of pitch variation you select is clearly shown by a bright digital display above the pitch control buttons:

Instant Starts (0.4 sec.) and Stops (0.4 sec.) Thanks to High Torque and Advanced Circuitry

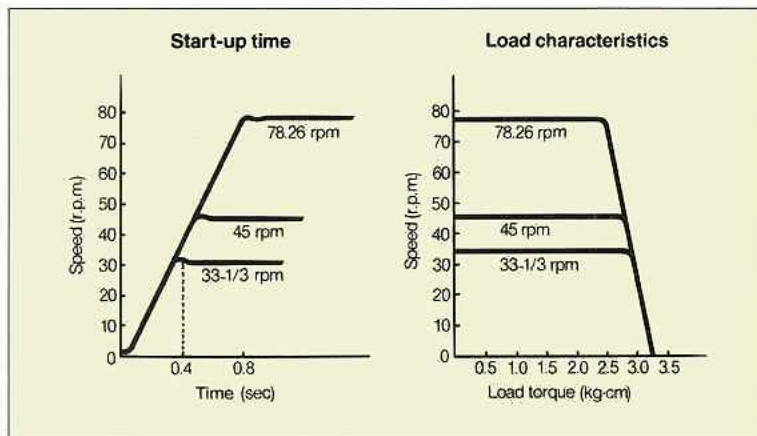
Fast starting times and stopping times are a real advantage in broadcasting and other professional applications. The SP-15 comes up to full rotational speed within a mere 0.4 seconds after pressing the start button. This virtually instantaneous starting time is achieved by the very high torque (3 kg-cm) of Technics' heteropole, direct drive motor, backed up by the advanced circuitry of the servo system.

The 33.9 cm diameter 2.7 kg platter has a very high moment of inertia of 380 kg-cm² to help maintain speed accuracy regardless of load fluctuations. In fact, load torque is so high and the servo control circuit so responsive that speed deviation is 0% for tracking forces up to 500 g. This means that turntable speed would not be affected even with 250 tonearms each tracking at 2 grams.

An ingenious combination of mechanical and electronic braking systems provides an extra measure of convenience and precision control. The turntable is brought to a smooth and complete stop within only 0.4 seconds of pressing the stop button.

Large Turntable Platter with Threefold Damping

To eliminate resonances and damp out external vibrations, the large 33.9 cm aluminum diecast turntable platter of the SP-15 is damped at three



points. Specially fabricated rubber matting is placed in the underside, rim, and top surfaces of the turntable. As a result, acoustic feedback is suppressed even at high sound pressure levels.

Precision Diecast Aluminum Base and TNRC Base

Like the platter itself, the base is made of diecast aluminum. The underside of the base is made of TNRC (Technics Non-Resonant Compound) a unique acoustic material specially developed by Technics and used with great success in a number of other Technics turntables. Thanks to this TNRC base and the other anti-resonance measures incorporated in the SP-15, this turntable exhibits excellent resistance to acoustic feedback.

Advanced IC's Provide the Performance of over 3000 Conventional Circuit Components

Thanks to a number of large scale integrated circuits, the SP-15 can deliver the kind of superb performance already described without requiring excessive space for the electronics. Compact size and precision operation are achieved by using four specially developed IC's which perform the functions of about 3000 discrete components.

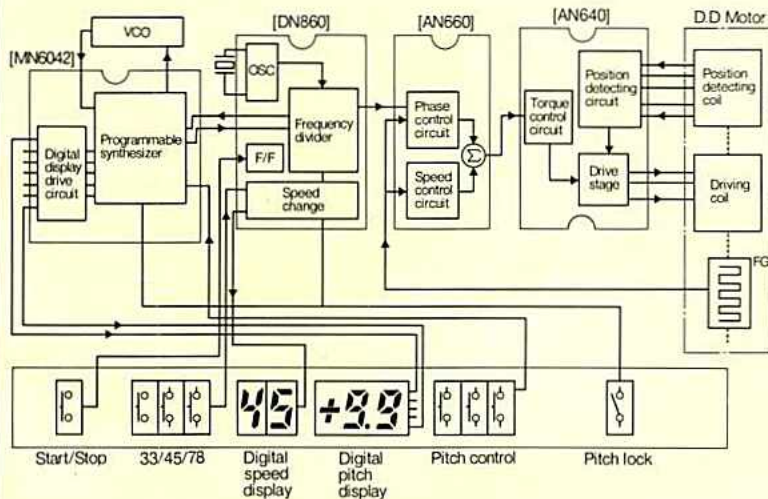
Pulsed Power Supply Prevents Hum Induction

Technics pulsed power supply for the SP-15 direct drive motor is not only more efficient than conventional operating systems, it also serves to prevent AC frequency hum induction. It achieves this by raising the frequency and changing the waveform of the transformer input. Thus the transformer can operate at a higher level of efficiency and the usual 50 or 60 cycle AC frequency cannot affect other circuitry. This is a contributing factor to the turntable's high S/N ratio.

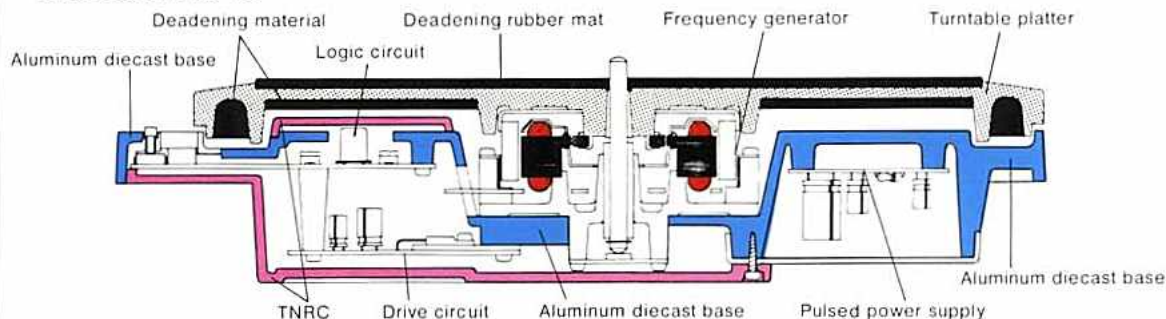
Other Features

- Technics' integral rotor-platter motor construction.
- Full cycle detection frequency generator maintains accurate rotational speed characteristics: Wow & flutter 0.025% WRMS
- Pitch lock mechanism prevents accidental misoperation by locking speed selector and pitch controls during play.
- Heavy duty construction stands up to long term professional and home use.
- Three precision speeds, 33-1/3, 45, and 78.26 rpm make this unit perfect for all phono reproduction applications.

Block diagram of SP-15



Cross section of SP-15





SH-15B2



SH-15B3

SH-15B2/SH-15B3

These two bases have been specially developed for use with either the SP-15 or SP-25 turntables. Each base is constructed of very heavy rubber material that is acoustically dead, and when combined with the excellent anti-resonance characteristics of the SP-15 or SP-25, the result is outstanding insulation against vibration. The four individual spring-loaded feet, as well as the acrylic dust cover are also coupled to the heavy rubber material to further suppress the transmission of vibrations.

The real difference between these two bases is in their appearance. The SH-15B2 is finished in a beautiful simulated rosewood veneer, while the SH-15B3 contains no trim and is completely black.

Technical Specifications

TURNTABLE SECTION

Type	Quartz Synthesizer Direct Drive
Motor	Ultra-low-noise, brushless, heteropole DC motor
Control method	Quartz-phase-locked control
Turntable platter	Aluminum diecast, diameter 13-11/32" (33.9 cm), weight 5.9 lb. (2.7 kg) (including rubber matting) moment of inertia 130 lb-in ² (380 kg cm ²) (including rubber matting)
Speeds	33-1/3, 45, 78.26 rpm
Speed adjustment range	±9.9% in 0.1% steps (digital read-out)

Starting torque	2.61 lb-in (3 kg-cm)
Start-up time	0.4 sec. (to 33-1/3 rpm from standstill)
Braking time	0.4 sec. (at 33-1/3 rpm)
Braking system	Combination of electronic and mechanical brakes
Speed fluctuation due to load torque	0% within 2.2 lb-in (2.5 kg-cm) load torque (up to 500 g tracking force)
Wow and flutter	0.008% WRMS* 0.025% WRMS (JIS C5521), ±0.035% peak (IEC 98A weighted)
Rumble	-56 dB DIN A (IEC 98A unweighted) -78 dB DIN B (IEC 98A weighted)

GENERAL

Power supply	AC 120 V, 50/60 Hz
Power consumption	11W
Dimensions (H×W×D)	3-21/32"×13-3/4"×14-41/64" (9.3×34.9×37.2 cm)
Weight	13.7 lb (6.2 kg)

* 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.

Technics

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