



# Technics

Quartz-Phase-Locked Control  
Direct Drive Turntables with  
Quartz Synthesizer Pitch Control

# QUARTZ

## SL-1310MK2

The Fully-Automatic

## SL-1410MK2

The Semi-Automatic

## SL-1510MK2

The Manual



Technics QUARTZ  
Direct Drive Automatic SL-1310MK2

power



# SL-1310MK2

Another World's First: Quartz Synthesizer Pitch Control with  $\pm 9.9\%$  Range Digital Display  
Our Latest Fully-Automatic Direct Drive Turntable

The SL-1310MK2 has wow & flutter of only 0.025% WRMS. That's low. But turntables have not always had this kind of rotational accuracy. In fact, most record albums are cut to a lower degree of precision. Back some eight years ago, Technics introduced the turntable that opened up the possibility of performance on this level. That turntable was the first direct drive turntable in the world. And since that breakthrough we at Technics have been working to improve on the basic direct drive concept. Last year, Technics SP-10MKII opened up a new era of quartz control in professional turntables, finding quick and enthusiastic acclaim for its unrivaled speed accuracy, enormous torque and super-fast start/stop action. Now, we are proud to introduce the SL-1310MK2, another "world's first" on account of its totally quartz controlled drive with digital LED readout of the  $\pm 9.9\%$  pitch chosen. In the SL-1310MK2 a quartz synthesizer is used not only for the standard speeds of 33-1/3 and 45 rpm, but also for changes in speed in 0.1% increments up to plus or minus 9.9%. Previous quartz controlled turntables lost rotational accuracy when run at speeds other than precisely 33-1/3 or 45 rpm because the quartz control had to be disengaged.

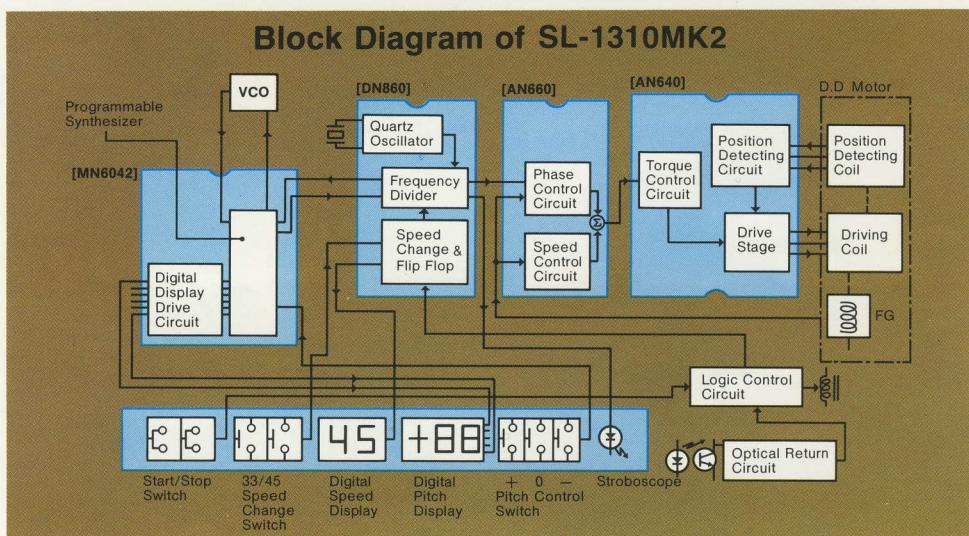
So that you know exactly how fast the turntable is turning, programmable synthesizer gives you a constant digital readout of the percentage difference from standard speed.

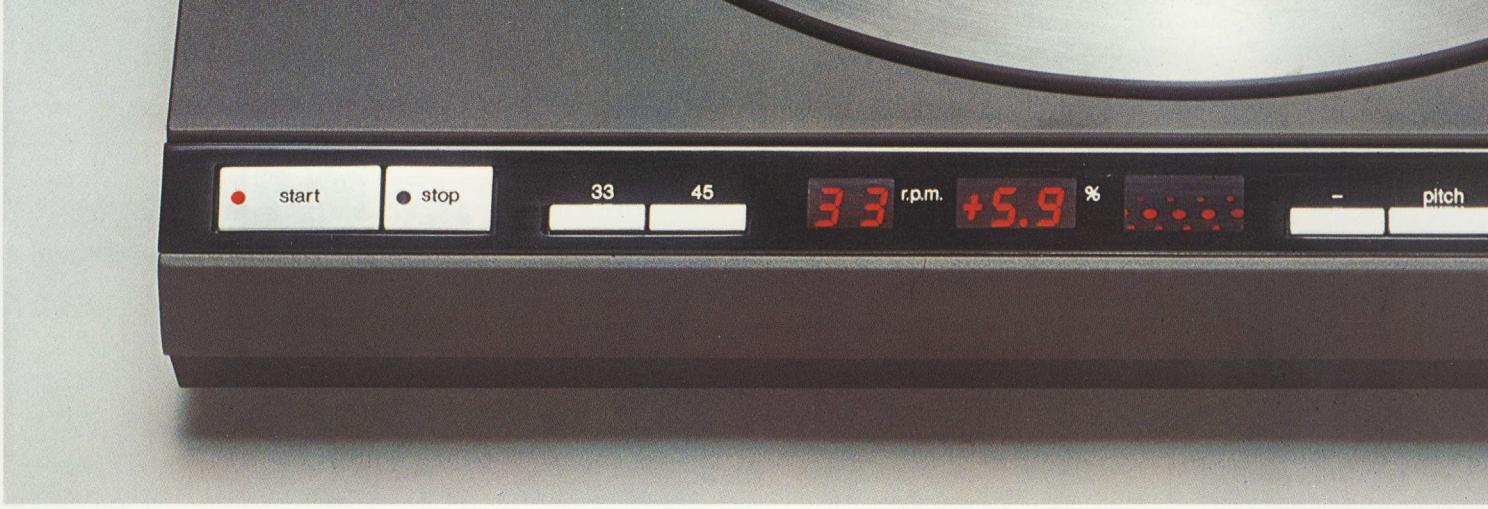
## Total Quartz-Phase-Locked Control at 199 Speed Increments and Digital LED Pitch Readout Controlled by Quartz Synthesizer

By now most people have heard of quartz watches. The same quartz controlled split-second accuracy is used in Technics' Quartz synthesizer direct drive turntable to attain a mere 0.002% deviation from perfect rotational speed. With the SL-1310MK2 speed is adjustable. So you can raise or lower the pitch on your records. In this way you can match playback pitch to that of a musical instrument. Or by the same token you can adjust the tempo during playback to comply with what you judge to be correct. No matter what speed you choose, the same incredible rotational accuracy is

maintained. Because the quartz synthesizer is used to control all speeds, not just the standard 33-1/3 and 45 rpm. Operation is simple. Just press the plus or minus feather-touch button and speed will increase or decrease by 0.1%. Keep the button depressed and the pitch change will continue up to 9.9%. That means a total of 199 different speed settings are possible.

The LED display to the left of the pitch control buttons gives a readout of the pitch variation that you have chosen. Starting from 33-1/3, for instance, the display will show "+0.1%" after you've pressed the plus button once. An indication of plus 5.9% or minus 5.6% means that the musical pitch has been raised or lowered by one half note. All electronic controls and the LED digital display are out front for easy use even when the dust cover is down.



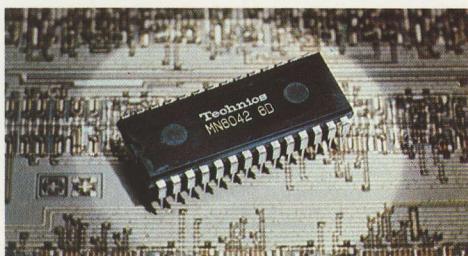


## All Control Functions Effected by High-Density ICs

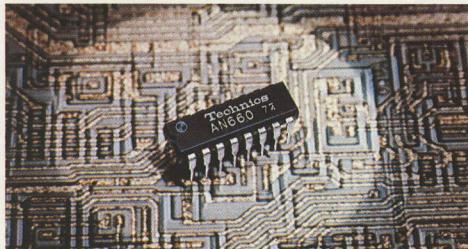
The SL-1310MK2 has such a sleek functional design and such ease of operation that one may forget the technological and engineering complexity upon which it is based. High-density integrated circuits are used to squeeze the operations of more than 3000 discrete elements into a mere few inches of space. The IC's used cover these basic functions: quartz synthesizer pitch control and digital driver, quartz-oscillator frequency divider and speed change control, phase and speed control, and full-cycle, integration-type frequency generator. Furthermore, automatic operation is based on our most advanced detection and logic circuits.

## All Front Controls

Technics designs equipment for excellent musical reproduction. But we never forget that equipment is operated by people. So we put the control buttons and LED display in-line on the front panel for optimum handling convenience. The control buttons have a 0.4 mm stroke and take 90 grams of pressure to operate the circuits. This allows precision control capability without the annoyance of accidental operation.



MN6042 Equivalent to 1856 elements



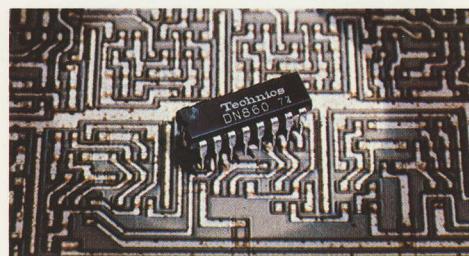
AN660 Equivalent to 427 elements

## Double Insulated Suspension System and Special Base Material Prevents Acoustic Feedback Problems

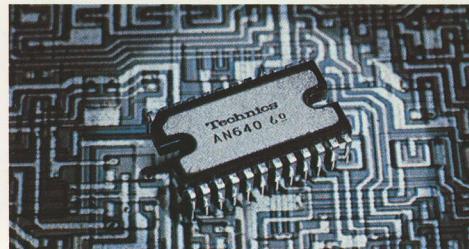
Acoustic feedback is a serious threat to turntable performance. Technics developed the double insulated system to cut feedback down to virtually zero. The aluminum diecast turntable base is supported by one set of insulators. The inner main base is made of a newly developed anti-resonant heavy material molded from fiberglass and other inorganic materials, and is suspended from the turntable base by a second set of insulators. All important turntable, motor and tonearm assembly are mounted on this main base. This unique construction makes the turntable practically feedback proof.

## Sensitive Gimbal Suspension Tonearm

20 miniature balls in bearings finished to a tolerance of  $\pm 0.5$  microns reduce friction and improve response. The arm is so sensitive that it will respond to forces as tiny as 7 mg. So you can expect to get all the performance your high compliance cartridge is designed to give.



DN860 Equivalent to 380 elements



AN640 Equivalent to 340 elements

## Fully Automatic Tonearm Function and Output Muting

You'll find that in automatic operation the tonearm is so quiet that you have to see it to know it's moving. Technics uses mechanically silent, precision molded, hard synthetic parts in the tonearm control mechanism. An optical sensor detects the record's end and activates the auto-return system. The result is clean, noise-free operation. And it's all controlled by advanced integrated circuit logic. An automatic muting circuit cuts off the irritating noise when the needle is set down on or lifted up from the record. This output muting is also effective when the cueing lever is used for manual operation.

## Memo-Repeat

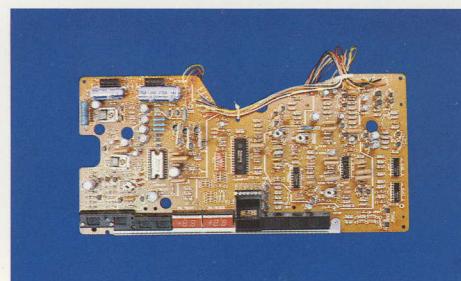
This convenient feature lets you decide how many times you want the record played automatically. The control may be set for repeat playing up to six times or it may be set to continue playing the record an indefinite number of times.

## S/N ratio 73 dB (DIN 45539B) Wow & Flutter 0.025% (WRMS)

There is no point going into detail about these figures except to point out that they are better than the standards to which your record albums are made.

## Integral Rotor Platter Motor

A refinement of the basic direct drive idea, the integral rotor platter merely combines the turntable platter with the rotor of the motor. The number of parts is reduced and performance is improved as evidenced by the low wow and flutter achieved.





**Technics**  
Direct Drive Automatic

QUARTZ

SL-1310MK2

power



stereo  
standard type)  
, ±2 dB  
Hz,  
to peak

at 1 kHz  
at 10 kHz

diamond

stereo  
impedance

, ±2 dB  
to peak

at 1 kHz  
at 10 kHz

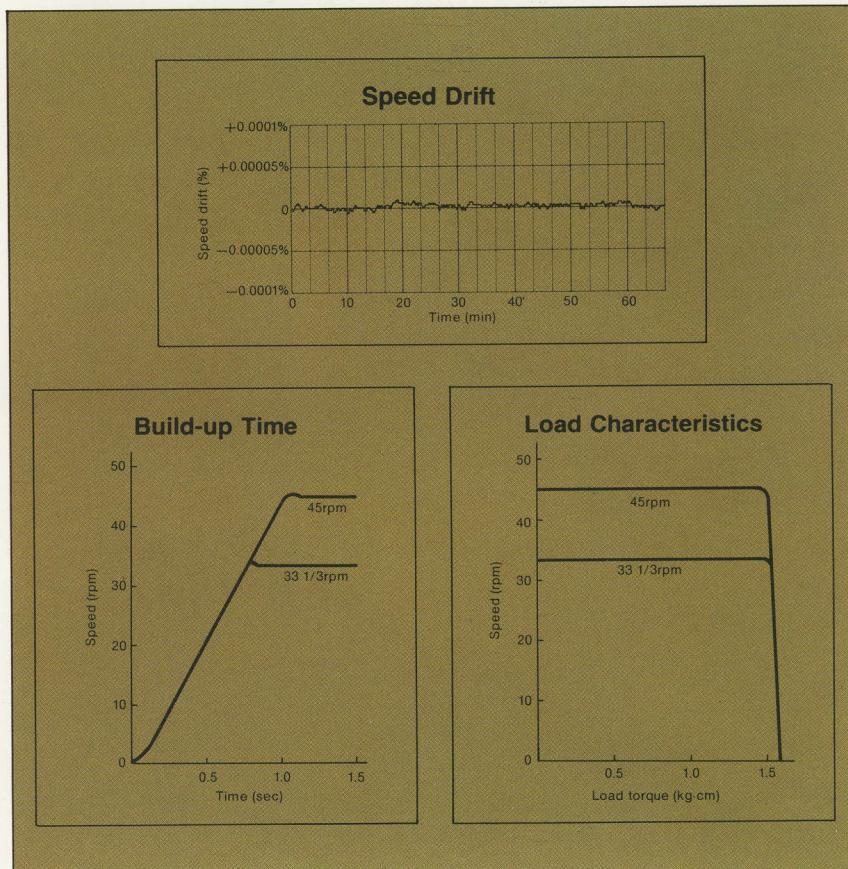
diamond

### Enormous Torque for Fast Starts, Steady Speed

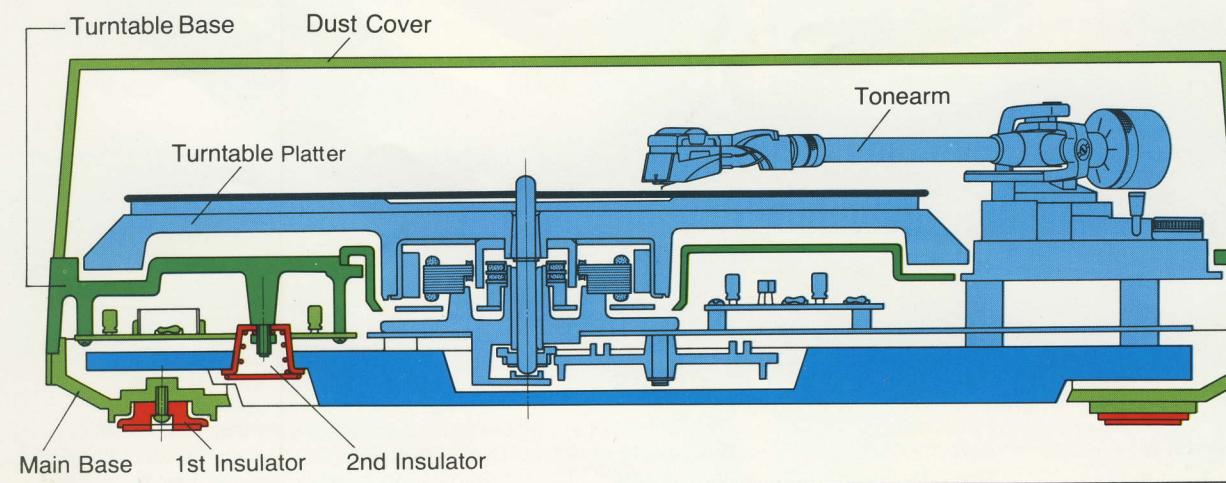
The integral rotor platter motor delivers 1.5 kg·cm (1.3 lb·in) torque to virtually eliminate the speed fluctuations caused by tonearm or record cleaner drag. In fact, if you could fit 150 tonearms tracking 2 grams each onto this turntable, it would still rotate at precisely the chosen speed. But in more realistic terms, the enormous torque gives very quick starts. From standstill, the platter reaches 33-1/3 rpm within 0.7 sec. (a quarter of a turn). This is a big advantage in many professional applications where nearly instant cueing is necessity. Quick braking is achieved with a fully electronic system.

### Other Feature

- Arm height is adjustable within a range of 6 mm to accommodate varying cartridge dimensions.
- Zinc diecast heavy tonearm base for improved acoustic characteristics.
- Resonance damped head shell with unique overhang adjuster.
- Low capacitance phonocables.



Cross Section of SL-1310MK2



20V/240V

cm  
'64" x

/1410MK2  
MK2

**CS**  
ctic

Made in Japan.

If you're looking for smooth, out front control of all tonearm operations, take a look at the SL-1510MK2. Better yet, try it out. It's perfect for professional applications where automatic operation is not needed. An electronic muting circuit is engaged by cueing lever to cut off the irritating noise when the needle is set down on or lifted up from the record.

## SL-1510MK2 The Manual

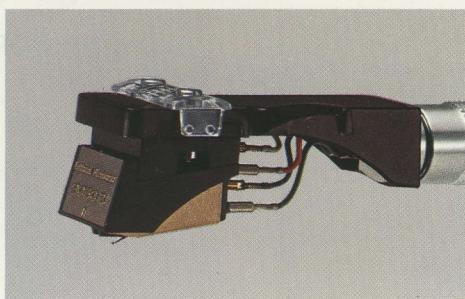


## SL-1410MK2 The Semi-Automatic

Technics uses mechanically silent, precision molded hard synthetic parts in the tonearm control mechanism. An optical sensor detects the record's end and activates the auto-return system. The result is clean, noise-free operation. And it's all

controlled by advanced integrated circuit logic. An automatic muting circuit cuts off the irritating noise when the needle is lifted up from the record. This output muting is also effective when the cueing lever is used for manual set-down or lift-up of the tonearm.

# High Performance MM Stereo Phono Cartridges



## EPC-205C-II S The Standard Type

The 205C-II S features disc-shaped armature of high energy samarium-cobalt magnet and ultra-thin, rigid titanium cantilever for low moving mass (0.35 mg) and high output voltage (3.5 mV). The diamond stylus is an elliptical naked square diamond of 0.15 mm width. The low effective mass armature is suspended at a single, clearly defined point. These exceptionally high compliance give the system low mechanical impedance over all frequency range, thus superior tracking ability.

Type	Moving magnet stereo cartridge (standard type)
Frequency response	10 Hz-25 kHz, ±2 dB
Output voltage	3.5 mV at 1 kHz, 5 cm/sec, zero to peak lateral velocity
Channel separation	25 dB or more at 1 kHz 20 dB or more at 10 kHz
Recommended tracking force	1.25±0.25 g
Load impedance	47 kΩ-100 kΩ
Stylus tip	Elliptical naked diamond
Cartridge weight	6.5 g
Replacement stylus	EPS-205 ED



## EPC-205C-III L The Low Impedance Type

The 205C-III L also features samarium-cobalt disc-shaped magnet, and clearly defined one-point armature suspension for greater linearity. An extremely thin, tapered titanium (TiN) cantilever is employed to get greater tracing fidelity. In contrast to conventional moving magnet cartridge whose high internal inductance can lead to changes in frequency response under varying load impedances and capacitances, the 250C-III L has very low inductance/impedance. Consequently, it can be freely used with almost any turntable or amplifier without any possibility of deterioration in tonal quality.

Type	Moving magnet stereo cartridge (low impedance type)
Frequency response	10 Hz-25 kHz, ±2 dB 2 mV at 1 kHz, 5 cm/sec, zero to peak lateral velocity
Channel separation	25 dB or more at 1 kHz 20 dB or more at 10 kHz
Recommended tracking force	1.25±0.25 g
Load impedance	10 kΩ-1 MΩ
Stylus tip	Elliptical naked diamond
Cartridge weight	6.5 g
Replacement stylus	EPS-205 EX

### Note:

While one of these high performance moving magnet stereo cartridges is supplied with your turntable in some countries, the unit comes without any cartridge in other countries. Check with your Technics dealer.

## Technical Specifications

### TURNTABLE SECTION

Type	Quartz-phase-locked control direct drive fully-automatic (SL-1310MK2)
Motor	semi-automatic (SL-1410MK2)
	manual (SL-1510MK2)
Turntable platter	Ultra-low-speed brushless DC motor
	Aluminum diecast, diameter 33 cm (13"), weight 2.5 kg (5.5 lb.) moment of inertia 340 kg·cm <sup>2</sup> (116 lb·in <sup>2</sup> )
Turntable speeds	33 1/3 and 45 rpm
Pitch controls	Quartz synthesizer pitch control ±9.9% range digital pitch readout
Starting torque	1.5 kg·cm (1.3 lb·in)
Speed fluctuation due to load torque	0% within 1.5 kg·cm (1.3 lb·in)

### TONARM SECTION

Type	Universal "S" shaped tubular arm, static-balanced type, with anti-skating force control device, oil-damped cueing device in both directions
Effective length	230 mm (9-1/16")
Overhang	15 mm (19/32")
Tracking error angle	+1° at the inner groove of record +3° at the outer groove of record
Friction	7 mg (lateral, vertical)

Effective mass 22 g (with a cartridge weighing 6.5 g at 1.25 g tracking force)

Offset angle 21.5°

Tonearm height adjustment 6 mm

Adjustable tracking force 0-3 g

Headshell weight 9.5 g

Cartridge range 5-11 g

### GENERAL

Power consumption	13 W
Power supply	AC 110V/120V/220V/240V 50/60 Hz
Dimensions (W×H×D)	45.3×14.5×38.4 cm (17-45/64"×5-45/64"×15-7/64")
Weight	11.8 kg—SL-1310/1410MK2 11.5 kg—SL-1510MK2