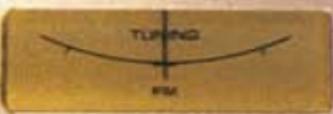


98 100 102 104 106 108 MHz  
800 1000 1200 1400 1600 kHz

PROGRAM  
AM FM AUTO PHONO 1 PHONO 2 AUX FM STEREO



TUNING

FM MPX FLT FM HI-BLEND  
▲ OUT ▲ IN ▲ OFF ▲ ON  
(REC)



BALANCE

FM MODE FM MUTING  
STEREO ON

REC MODE MONITOR  
TAPE 1-2 TAPE 1

PHONO IMPEDANCE RESISTANCE  
25kΩ 50kΩ 100kΩ  
CAPACITANCE LOW HIGH



SELECTOR



VOLUME  
-dB

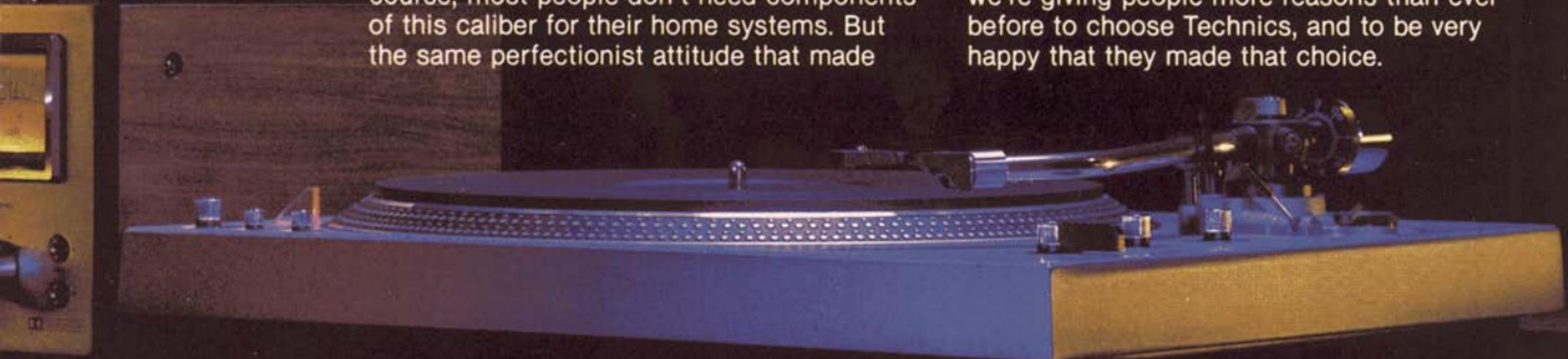
Technics

# Technics



Over the years, the Technics name has come to be associated with extraordinarily high levels of performance. It started with the first direct-drive turntable, the SP-10, which is still a professional standard. It has continued with other components that have set new standards of excellence. For example, our latest triumph—the Class A+ amplifier. Of course, most people don't need components of this caliber for their home systems. But the same perfectionist attitude that made

them possible is also reflected in every component we make. If it has the "Technics" name on it, it's the best we know how to make for its asking price. People are rapidly discovering how special Technics components are. Over the past few years, our rate of growth has been far ahead of the audio industry as a whole. This year, we're giving people more reasons than ever before to choose Technics, and to be very happy that they made that choice.



# Receivers

## Total Performance Series

### Clean Power

Technics' eight receivers range in power from 25 to 330 watts per channel, minimum continuous "RMS" into 8 ohms, from 20—20,000Hz, with no more than 0.04% total harmonic distortion (0.03% in the top-of-the-line SA-1000). These extremely low THD figures are rare in receivers, particularly in modestly powered units. So no matter which Technics receiver you choose, you can be sure it will deliver its rated power cleanly.

### Advanced Amplifier Designs

At Technics, we pay close attention to areas of amplifier design that affect musical sound. We use large power supplies with high filter capacitance to maintain smoothness and low distortion during transient musical peaks. All our receivers are direct-coupled OCL, for solid deep bass response. And all use differential amplifiers with current-mirror loading. Current-mirror loading achieves high gain without increasing noise and distortion. It plays a key role in obtaining low harmonic distortion.

### Quiet, Accurate Phono Sections

Close adherence to RIAA equalization standards, extremely quiet operation, and high tolerance to strong input signals are the hallmarks of Technics receivers' phono sections. High S/N ratios, ranging from 90 to 97 dB (IHF A) referenced to 10 mV (78 to 85 dB re 2.5 mV), assure that noise generated by the phono sections will be almost totally inaudible, even at high volume levels.

# Technics

## Flexible Tonal Adjustment with "Acoustic Control"

Models SA-500 through 1000 include Technics' new "Acoustic Control." As the accompanying chart shows, you can use it to achieve a 6 dB boost centering at 100 Hz, and a gradual "shelving" boost in the upper midrange and treble. The bass boost will give "punch" to bass instruments, but without possibly undesirable boost at extremely low frequencies. The treble boost will brighten the sound of guitars, brass and cymbals. Of course, you can use the regular tone controls to further tailor the sound to your liking. Note that models SA-700 through 1000 also have a midrange control. With the 1000, the midrange center frequency is adjustable between 250 and 5,000 Hz.

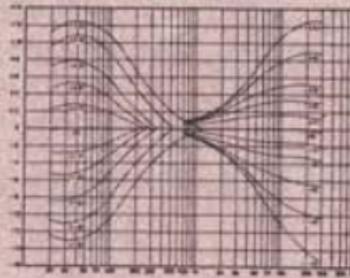
## LED Power-Level Indicators

Models SA-500 through 1000 have a series of LED's which display the power levels being generated by the receiver. Besides creating a beautiful visual effect, these quick-acting LED's help you avoid amplifier clipping and let you see channel balance. Models SA-500 and 600 have 11 LED's with 5 per stereo channel. Models SA-700 through 1000 have 24 LED's, with 12 per channel.

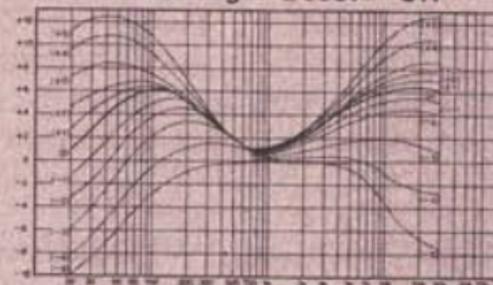
## High FM Sensitivity and Selectivity

Linearly variable tuning capacitors and MOS FET's are featured in the FM front end of every receiver, achieving high sensitivity, excellent quieting and ample rejection ratios of image, IF and spurious response interference. In the IF sections, Flat Group Delay ceramic filters are used to combine high selectivity with low time-delay distortion.

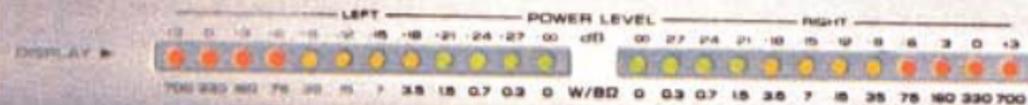
Normal Tone Control Response



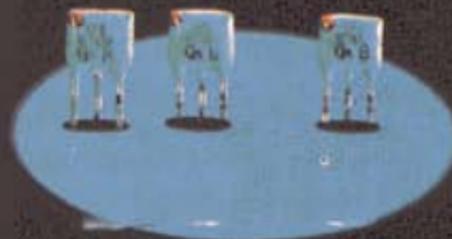
Tone Control Response with Low and High "Boosts" ON



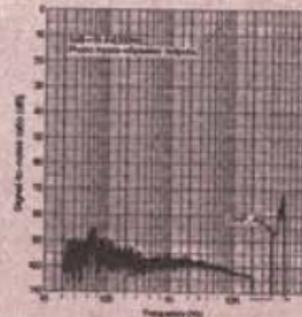
LED Power-Level Indicators



Flat Group Delay Ceramic Filters



Phono Equalizer Noise Spectrum



## Wide, Flat Frequency Response

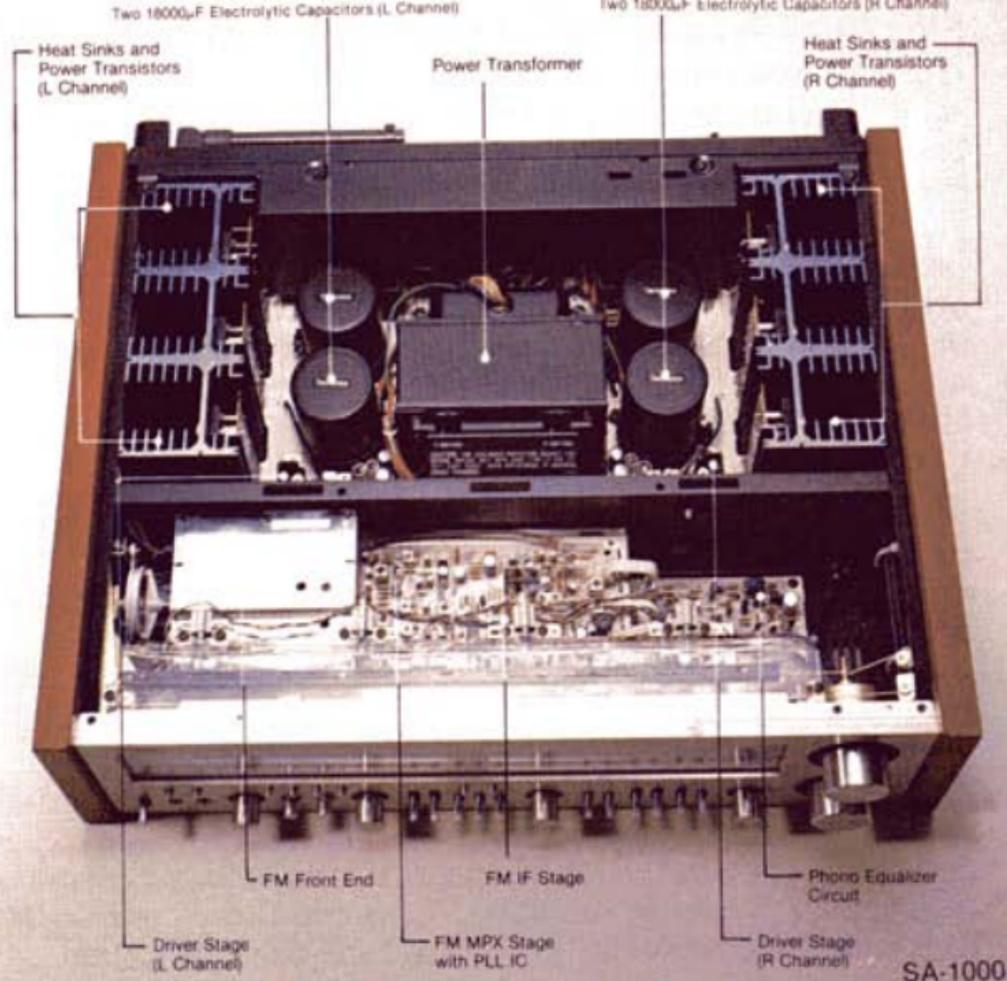
All Technics receivers span the normal 20—15,000 Hz FM broadcast range with very minimal deviation from flat response. Models SA-800 and 1000 use a pilot-signal canceller, which results in virtually *no* roll-off in high frequencies, as well as excellent phase linearity in this region.

## Other Premium FM Features

All models employ a high-linearity quadrature detector (ratio detector in the SA-1000). As a result, even grossly overmodulated FM signals will not create significant distortion or loss of high frequencies. In the MPX section, a phase-locked-loop IC is used to maintain wideband, stable FM stereo separation with low distortion.

## Power for the Purist

Until now, no receiver and very few power amps could boast the enormous power output capabilities of our new SA-1000 receiver. Many purists favor high power because it can reproduce highly dynamic program material effortlessly—a quality that is most noticeable with low-efficiency speakers played at high volume levels. But the SA-1000's enormous power represents only a part of its highly sophisticated design. It should definitely be auditioned by those seeking the best possible audio performance.





## Stereo Receiver

# SA-200

**25 watts per channel, minimum RMS, both channels driven, at 8 ohms from 20—20,000 Hz, with no more than 0.04% total harmonic distortion.**

Direct-coupled OCL power amp with current-mirror loaded differential amplifier employing single-packaged matched transistors. Twin 6,800- $\mu$ F electrolytic filter capacitors in power supply. 3-stage direct coupled phono equalizer with S/N of 90 dB (IHF A, re 10 mV). 5-stage FM IF stage with two "flat group delay" ceramic filters. MOS FET FM front end. 3-gang FM tuning capacitor. High-linearity FM quadrature detector. Phase locked loop IC in FM MPX circuit. Bass/treble tone controls. Loudness control. Main/remote speaker switches. FM muting/mode switch. Tape monitor switch. Dual-function FM/AM tuning meter. Fuse protected. Simulated wood cabinet.

## Stereo Receiver

# SA-300

**35 watts per channel, minimum RMS, both channels driven, at 8 ohms from 20—20,000 Hz, with no more than 0.04% total harmonic distortion.**

Direct-coupled OCL power amplifier with current-mirror loaded differential amplifier employing single-packaged matched transistors. Twin 6,800- $\mu$ F filter capacitors in power supply. 3-stage direct coupled phono equalizer with S/N ratio of 90 dB (IHF A, re 10 mV). 3-gang FM tuning capacitor. MOS FET FM front end. 5-stage IF section with two "flat group delay" ceramic filters. High-linearity FM quadrature detector. Phase locked loop in FM MPX section. Bass/treble tone controls. Loudness control. High filter. Two tape monitors with 1 $\rightarrow$ 2 dubbing. Dual-function FM/AM tuning meter. Main/remote speaker selectors. Fuse protected. Simulated wood cabinet.





## SA-400

**45 watts per channel, minimum RMS, both channels driven, at 8 ohms from 20—20,000 Hz, with no more than 0.04% total harmonic distortion.**

Pure-complementary OCL power amplifier with current-mirror loaded differential amplifier employing single-packaged matched transistors. Twin 10,000- $\mu$ F filter capacitors in power supply. 3-stage direct-coupled phono equalizer with S/N ratio of 90 dB (IHF A, re 10mV). 3-gang FM variable tuning capacitor. MOS FET FM front end. 5-stage IF section with two "flat group delay" ceramic filters. High-linearity FM quadrature detector. Phase locked loop IC in FM MPX. Low-distortion bass and treble controls. High and low filters. Two tape monitors with two-way dubbing. Zero-center and linear signal-strength tuning meters. Circuit-protection relay switch and pop-noise muting. Main and remote speaker switches. Simulated wood cabinet.

# Stereo Receiver

## SA-500

55 watts per channel, minimum RMS, both channels driven, at 8 ohms from 20—20,000 Hz, with no more than 0.04% total harmonic distortion.

Pure-complementary OCL power amplifier with current-mirror loaded differential amplifier employing single-packaged matched transistors. Twin 10,000- $\mu$ F filter capacitors in power supply. Phono S/N ratio 90 dB (IHF A, re 10 mV). "Acoustic Control" plus bass and treble controls provide flexibility in tonal adjustment. 11 power-level LED's (5 per channel plus "display on" LED) with 2-step range selector. Dual-gate MOS FET FM front end. Two "flat group delay" filters in IF section. High-linearity quadrature detector. Phase locked loop IC in FM MPX. Two tape monitors with two-way dubbing. Two tuning meters. Circuit-protection relay switch and pop-noise muting. Main and remote speaker switches. Simulated wood cabinet.





## SA-600

**70 watts per channel, minimum RMS, both channels driven, at 8 ohms from 20—20,000 Hz, with no more than 0.04% total harmonic distortion.**

Pure-complementary OCL power amplifier with current-mirror loaded differential amplifier employing single-packaged matched transistors. Twin 15,000- $\mu$ F filter capacitors in power supply. Phono S/N ratio 90 dB (IHF A, re 10 mV). Bass and treble controls plus "Acoustic Control." 11 power-level LED's (5 per channel plus "display on" LED) with 2-step range selector. Dual-gate MOS FET FM front end. Two "flat group delay" filters in FM IF section. Quadrature detector. Phase locked loop IC in FM MPX. Two-way tape dubbing. Two tuning meters. Circuit-protection relay switch and pop-noise muting. Main and remote speaker facilities. Program indicator. Simulated wood cabinet.

# Stereo Receiver

## SA-700

100 watts per channel, minimum RMS, both channels driven, at 8 ohms from 20—20,000 Hz, with no more than 0.04% total harmonic distortion. Parallel push-pull, pure-complementary OCL power amplifier with current-mirror loaded differential amplifier employing single-packaged matched transistors. Massive power supply with twin 15,000- $\mu$ F filter capacitors. Technics-developed M47LP low-noise transistor in phono section contributes to 95 dB S/N ratio (IHF A, re 10 mV). Baxandall-type bass/midrange/treble controls plus "Acoustic Control." 12 power-level LED's per stereo channel (24 total) with 2-step range selector. 4-gang FM tuning capacitor with 4-pole MOS FET and FET buffer amp. Three "flat group delay" filters in IF section. PLL in FM MPX. Two-way tape dubbing. Circuit-protection relay switch and pop-noise muting. Program indicator. Jacks for adding future 4-channel FM and stereo AM adaptors. Pre-out/Main-in jacks. Simulated wood cabinet.





## SA-800

125 watts per channel, minimum RMS, both channels driven, at 8 ohms from 20—20,000 Hz, with no more than 0.04% total harmonic distortion. Parallel push-pull, pure complementary OCL power amplifier with current-mirror loaded differential amplifier employing single-packaged matched transistors. Massive power supply with twin 15,000- $\mu$ F filter capacitors. Automatic load impedance detector optimizes power transfer depending on speaker impedance. Technics-developed M47LP low-noise transistor in phono section contributes to 95 dB S/N ratio (IHF A, re 10 mV). Baxandall-type bass/midrange/treble controls plus "Acoustic Control". 12 power-level LED's per channel (24 total) with 2-step range selector. 4-gang FM tuning capacitor with 4-pole MOS FET and FET buffer amp. Three "flat group delay" filters in IF. PLL in FM MPX. 19 kHz pilot-cancel circuit permits extremely wide FM frequency response. FM MPX hi-blend switch. Two-way tape dubbing. Two-fold circuit and speaker protection circuits. Jacks for adding future 4-channel FM and AM stereo adaptors. Pre-out/Main-in jacks. Simulated wood cabinet.



# Stereo Receiver

## SA-1000

**330 watts per channel, minimum RMS, both channels driven, at 4 or 8 ohms, from 20—20,000 Hz, with no more than 0.03% total harmonic distortion.**

Triple push-pull, Darlington-connected, pure-complementary OCL power amplifier. First-stage differential amplifier employs single-packaged matched transistors and current-mirror loading. Constant-voltage power supply and four 18,000  $\mu$ F filter capacitors maintain low distortion under high-amplitude transient conditions. 12 power-level LED's per channel (24 total) with 3-step range selector. Phono equalizer employs two M47LP transistors in current-mirror loaded differential stage, contributing to 97 dB phono S/N ratio (IHF A, re 10 mV). SEPP phono output stage. Phono overload of 300 mV (1 kHz, RMS) assures very wide dynamic range. Switchable phono resistance and capacitance for matching cartridge characteristics.

Steep-slope (-12dB/oct) high and low filters.

Baxandall-type bass/midrange/treble controls plus "Acoustic Control." Midrange control center frequency variable between 250 Hz and 5 kHz. Two-way tape dubbing. 26-position true

attenuator volume control. Three-fold circuit and speaker protection. Automatic load impedance detector optimizes power transfer depending on speaker impedance. 8-gang variable tuning capacitor (5 for FM, 3 for AM). 4-pole MOS FET utilized in both RF and mixer stage. Local oscillator with FET buffer amp contributes to excellent spurious response rejection, wide dynamic range and high tolerance to strong input signals. 85 dB selectivity achieved with four-2-element "flat group delay" filters and double-tuned circuits in RF amplification stage. 19 and 38 kHz signal cancellers permit wide, flat frequency response in FM. Phase locked loop IC in FM MPX section for wideband, stable stereo separation. MPX hi-blend reduces noise on weak FM stereo signals. Ratio detector minimizes FM distortion, with high tolerance to overmodulated broadcast signals. In AM section, tuned RF amplification and triple-tuned coils in IF contribute to excellent selectivity. Main and remote speaker facilities. Jacks for adding future 4-channel FM and stereo AM adaptors. Pre-out/Main-in jacks. Simulated wood cabinet.

# Amplifiers Tuners

## Technics

### **Low Total Harmonic Distortion**

Tested in accordance with FTC regulations, each Technics integrated amplifier puts out its rated power, both channels driven, across the full audible frequency bandwidth with very low total harmonic distortion. And each has a power supply to meet the demands of high-power transient peaks in the music. So you'll be able to get clean, transparent sound, with plenty of power when it's needed.

### **Accurate, Quiet Phono Circuitry**

Rigid adherence to the RIAA standard for disc equalization and tolerance to high-voltage input signals for dynamic range, assure exceptional fidelity from your records. Each of the four integrated amplifiers offers superb signal-to-noise ratios for clean, clear music reproduction.

### **Direct-Reading Power Meters**

Models SU-7300 and 7700 have direct-reading power meters calibrated in both dB and watts. So you can see how much power the unit is putting out. And a sensitivity switch allows monitoring of power levels under low-output conditions.

### **Two Tape Monitors with Two-Way Dubbing**

Each integrated amplifier provides complete facilities for two tape decks, or for the addition of accessories like an equalizer. Tape dubbing may be accomplished from either deck to the other. And you can even listen to another sound source, such as a record or FM, while dubbing is in progress.

## Tone Controls/Filters/Loudness

All integrated amplifiers feature NF-type bass and treble tone controls, a high-filter and a loudness switch. In addition, models SU-7700 and 8600 have steep cut-off subsonic filters for reducing effects of low-frequency noise caused by turntable rumble and record warp. Both have provisions for bypassing the tone control circuitry. And the SU-8600 has switchable turnover frequencies for bass and treble.

## Waveform Fidelity in FM

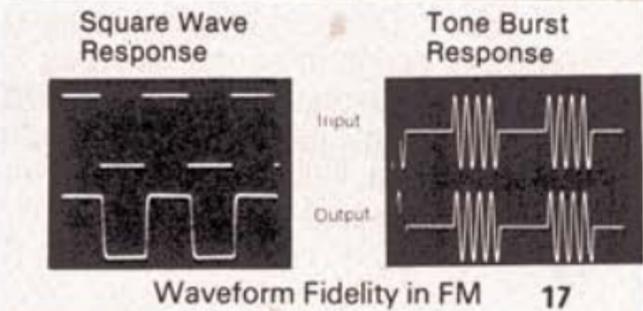
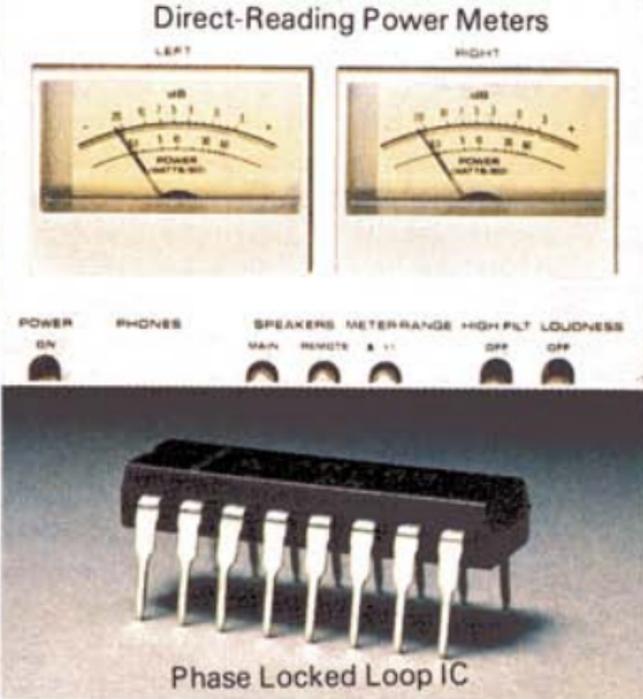
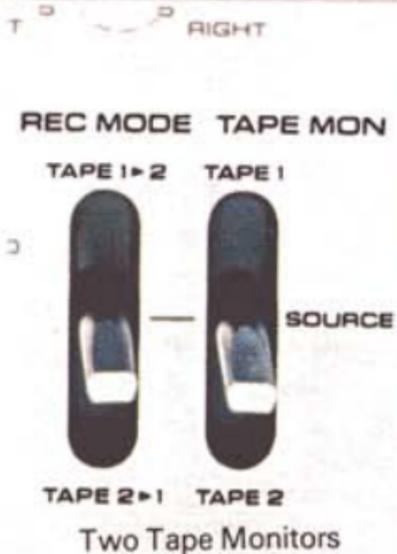
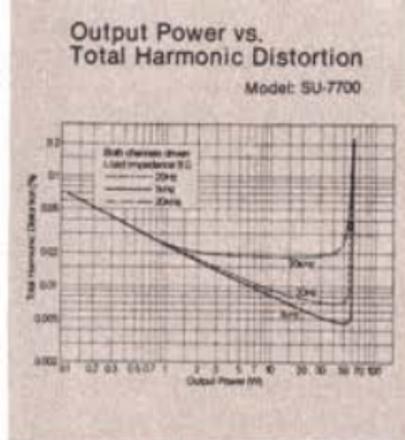
Both the ST-7300 and ST-8600 boast very impressive conventional specs. But more important, each is designed for "waveform fidelity"—the ability to receive, process and transmit FM broadcast signals with minimal alteration of the musical waveforms. This is achieved through wide, flat frequency response and the use of "Flat Group Delay" filters for low phase (time delay) distortion. The end result is breathtaking clarity and transparency in FM sound.

## "Phase Locked Loop" IC for Stable FM Stereo Separation

A "Phase Locked Loop" IC in both tuners insures wideband, stable stereo separation in FM, with low distortion. The IC is unaffected by normal heat and humidity fluctuations, and retains its performance over a long period of time.

## Test Generator Signal for Setting Recording Levels

Both tuners can put out a test signal for accurate level settings when you want to make off-the-air tape recordings.



# Stereo Integrated Amplifier

## SU-7100

35 watts per channel, minimum RMS into 8 ohms, both channels driven from 20—20,000 Hz, with no more than 0.1% total harmonic distortion.

Employs a Technics-developed Darlington power IC which combines driver and output stages. Single-packaged pairs of low-noise transistors included in first-stage differential amplifiers of the power amp circuit. Balanced dual power supply, incorporating twin 6,800- $\mu$ F filter capacitors. 90 dB phono S/N ratio (IHF A, re 10mV). RIAA equalization for phono within  $\pm 0.5$  dB (30—15,000 Hz). 2 tape monitors with dubbing in either direction. Dubbing may be done while listening to another program source such as FM or records. NF-type, low-distortion tone controls, with tone-defeat switch. High filter. Loudness control. 41-step master level control. Will drive main or remote speakers. Simulated wood cabinet.





## SU-7300

**41 watts per channel, minimum RMS, both channels driven, at 8 ohms from 20—20,000 Hz, with no more than 0.08% total harmonic distortion.**

Pure-complementary, direct-coupled OCL power stage. Current-mirror loading in differential amplifier and phono equalizer results in low noise and distortion. Large power transformer and electrolytic capacitors for stable voltage regulation and high power reserve. 90 dB phono S/N ratio (IHF A, re 10mV) and wide dynamic range. 2 tape monitors with 2-way dubbing. Direct-reading power meters. Advanced tone-control circuitry. Main-or-remote speaker selector. High-filter and loudness switches. 41-step master level control. Fuses protect both circuit and speakers. Simulated wood cabinet.

# Stereo Integrated Amplifier

## SU-7700

50 watts per channel, minimum RMS, both channels driven, at 8 ohms from 20—20,000 Hz, with no more than 0.08% total harmonic distortion.

Pure-complementary, direct-coupled OCL power amplifier with differential OCL power stage. Current-mirror loading in differential amplifier and phono equalizer. Balanced positive-negative power supply with large transformer and electrolytic capacitors for high stability and large power reserve. 90 dB phono S/N ratio (IHF A, re 10mV) and wide dynamic range. 2 tape monitors, 2-way dubbing. NF tone-control circuitry with defeat at center position. Direct-reading power meters. Separate main/remote speaker switches. Switchable subsonic filter in phono equalizer. High-filter. 41-step master level control. Circuit protection and shock-noise muting circuit with relay switch and fuses. Simulated wood cabinet.





## SU-8600

**73 watts per channel, minimum RMS, both channels driven, at 8 ohms from 20—20,000 Hz, with no more than 0.08% total harmonic distortion.**

Pure-complementary, direct-coupled OCL power amplifier with differential initial stage and emitter-follower for impedance matching and tight, clean bass. Stable regulated current-loaded pre-driver. Balanced 6-fold (3 split pairs) power supply for stable power output over the entire frequency range. 2-stage, wide dynamic range, shunt-regulated push-pull phono equalizer. Current-mirror loaded differential amp employed in 3-stage direct-coupled tone-control circuit, with turnover frequency selector and tone-defeat switch. 26-step attenuator-type level control with loudness switch.  $-12$  dB/oct. low/high filters,  $-20$  dB audio muting switch. 2-way tape-to-tape dubbing. Simulated wood cabinet.

# FM/AM Stereo Tuner

## ST-7300

Linearly variable tuning capacitor, FET front-end and 5-stage differential IF amplifier for high sensitivity and selectivity, and low capture ratio. Three "Flat Group Delay" ceramic filters for minimal phase distortion. Chebyshev-type low-pass filter permits wide, flat frequency response with sharp attenuation of 19 kHz pilot signal. "Phase Locked Loop" IC in FM MPX circuit for wideband, stable stereo FM separation. Test signal generator for accurate setting of levels on tape deck. Antenna terminals directly connected to front-end circuit board, contributing to excellent spurious response and image rejection. Zero-center and linear signal-strength meters. FM muting to suppress interstation noise. FM linear dial scale. Simulated wood cabinet.





## ST-8600

Low-noise direct FM-to-tape deck system sends pre-emphasized signal to deck for recording, with de-emphasis in playback. Built-in pink noise generator for accurate level settings of tape deck. Unique pilot signal canceller permits virtually flat response to 18 kHz, without interference. Four "Flat Group Delay" ceramic filters and 6-stage IF contribute to "waveform fidelity". Separate control and IF circuitry, with dual-level FM muting ("normal" and "deep"). Switchable auto or manual MPX hi-blend circuit reduces noise on weak stereo broadcasts. 5-gang FM variable tuning capacitor. 4-pole MOS FET front-end. Buffered MOS FET RF mixer. PLL for stable stereo separation. FM/AM linear dial scale. Output level control. 2 tuning meters. FM multi-path output, 4-channel MPX output for future discrete FM broadcasts. Simulated wood cabinet.

# Turntables

## **Ultra-Low Speed, Direct-Drive Motor**

Precise, quiet and rugged. Those words best describe Technics direct-drive. Instead of using a high-speed motor, with complicated speed reduction mechanisms like idler wheels, belts and pulleys, the direct-drive system uses a precise motor that rotates at exactly the same speed as the platter. And with our integral rotor/platter structure, there is only one moving part in the entire system. All this results in extremely low rumble, wow and flutter, along with high reliability. It's little wonder that broadcast stations and discos have used Technics direct-drive turntables for years.

## **Quartz Phase-Locked Servo Control**

Our new SL-1301 and 1401 direct-drives use a quartz crystal for speed control. The quartz results in almost non-existent speed drift ( $\pm 0.002\%$  maximum). What's more, three high-density IC's maintain this incredible speed stability with up to 180 grams of load resistance. This provides high starting torque and excellent handling of transient and constant load conditions.

## **B•FG Servo Speed Control**

All the non-quartz direct-drives employ B•FG servo systems (back-electromotive-force frequency generator). This servo system constantly monitors the platter's movement, providing near-instantaneous correcting current when any speed deviation is detected. As a result, platter rotation is very stable, with superb load and transient characteristics. The system is incorporated into a 321-element IC chip.

# Technics

## Full Line of F.G. Servo Belt-Drives

For the first time, Technics offers a full line of belt-drive turntables. You can choose from manual, semi-automatic, automatic and multi-disc models, each with a Frequency Generator DC servo motor. They also feature up-front controls for easy operation, electronic speed change, plus individual pitch controls and an illuminated stroboscope. They offer superb performance for very reasonable prices.

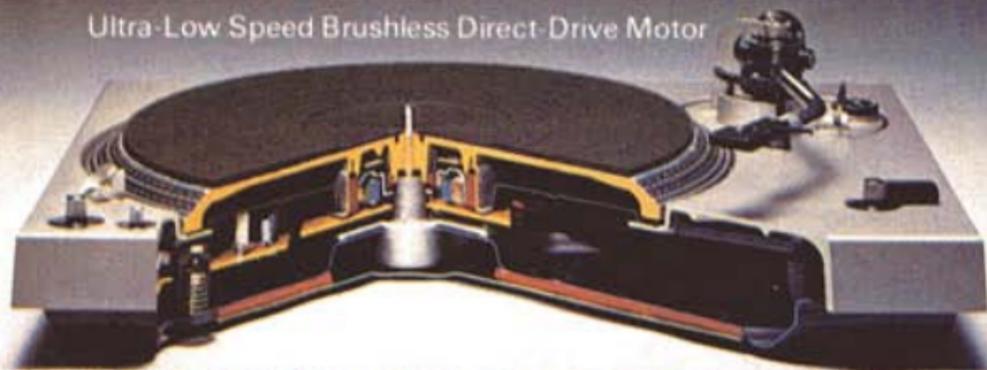
## Anti-Feedback Design

All Technics turntables are carefully designed to minimize the sound-degrading effects of feedback. The more expensive direct-drives use a double isolated suspension. The first isolation stage consists of spring mountings in the turntable's feet. A second isolation system suspends the motor, platter and tonearm assembly within the base. This double isolated suspension makes it very unlikely that you'll encounter problems with feedback. The other direct-drives and the belt-drives use audio insulators in the turntable's feet, plus anti-resonant base material for effective resistance to vibrations.

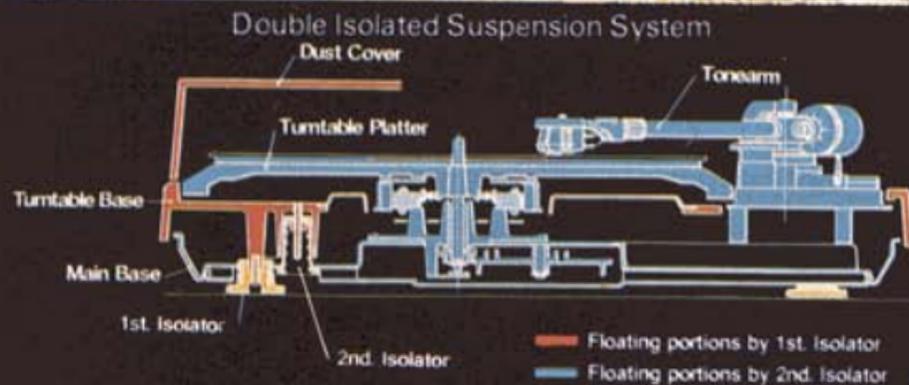
## Multi-Disc Turntables

Now you can enjoy the convenience of a record changer with a level of performance that is usually associated with manual turntables. Technics offers both in the direct-drive SL-1650 and 3350, and in our belt-driven SL-235. Each has a Memo-Gram control, which you can use to program sequential play of up to six records, or to repeat a single record.

Ultra-Low Speed Brushless Direct-Drive Motor



Three High-Density IC's for Speed Stability



## Automatic/Semi-Automatic Single Play

If automatic or semi-automatic operation is your choice, Technics offers both in a variety of ways: belt-drive, direct-drive, direct-drive with quartz control. The semi-automatics provide tonearm lift-off and return, and turntable shut-off. The automatics add the convenience of tonearm set-down at the beginning of a record, plus a Memo-Repeat control, which automatically repeats a record up to six times, or indefinitely.

## Computer-Assisted Tonearm Design

Technics tonearms are the product of intensive research into all important areas of tonearm design. Computer assistance was used to achieve precise lateral balance and offset angles. In addition, the arms are designed so that their mass will be compatible with a wide range of cartridge compliances, and also for rigidity to resist airborne and mechanically-induced resonances.

## Low Tonearm Bearing Friction

Technics arms exhibit low bearing friction in their pivots. This is particularly important with high-compliance cartridges, and warped or highly modulated discs. All models use gimbal-suspension arms with extremely low bearing friction of only 7 mg for both lateral and vertical movement.

F.G. Servo DC Motor



Automatic Single Play



Automatic Direct-Drive Changer



Universal Tonearm



## Manual F.G. Belt-Drive

### SL-210

Frequency Generator DC servo belt-drive turntable. F.G. servo system maintains platter speed despite AC line fluctuations. Superb specifications include: rumble -70 dB DIN B, wow and flutter 0.045% WRMS. 30.4 cm aluminum diecast platter. 33-1/3 and 45 rpm speeds with electronic speed change. Individual pitch controls for each speed, and illuminated stroboscope, permit accurate speed adjustment. S-shaped tubular tonearm with low-friction gimbal suspension. Oil-damped cueing in both directions. Anti-skating control. Up-front controls for power on/off, cueing and speed adjustment. Detachable tonearm headshell. Hinged, removable dust cover. Resonance-damping base material and audio isolators fight feedback.

# Semi-Automatic F.G. Belt-Drive

## SL-220

Frequency Generator DC servo belt-drive turntable. Semi-automatic operation provides tonearm return and turntable shut-off. F.G. servo system maintains constant platter speed despite AC line fluctuations. Superb specification include: rumble -70 dB DIN B, wow and flutter 0.045% WRMS. 30.4 cm aluminum diecast platter. 33-1/3 and 45 rpm speeds with electronic speed change. Individual pitch controls and illuminated stroboscope for accurate speed setting. S-shaped tonearm with low-friction gimbal suspension. Oil-damped cueing in both directions. Anti-skating control. Up-front controls for stop, speed adjustment and cueing. Detachable tonearm headshell. Hinged, detachable dust cover. Resonance-damping base material and audio isolators fight feedback.





## Automatic F.G. Belt-Drive SL-230

Frequency Generator DC servo belt-drive turntable. Automatic operation includes automatic tonearm set-down and lift-off, auto-cut and turntable shut-off. Memo-Repeat control permits up to 6 repeated plays, or continuous play. F.G. servo system maintains platter speed despite AC line fluctuations. Superb specifications include: rumble  $-70$  dB DIN B, wow and flutter 0.045% WRMS. 30.4 cm aluminum diecast platter. Electronic speed change. Individual pitch controls and illuminated stroboscope permit accurate speed adjustment. S-shaped tonearm with low-friction gimbal suspension. Oil-damped cueing in both directions. Anti-skating control. Up-front controls for start, stop, cueing, Memo-Repeat and speed adjustment. Detachable tonearm headshell. Hinged, removable dust cover. Resonance-damping base material and audio isolators fight feedback.

## Semi-Automatic Direct-Drive

# SL-3200

Direct-drive turntable with ultra-low speed, DC brushless motor. B•FG servo control for superb rotational accuracy. Integral rotor/platter structure. Wow and flutter 0.03% WRMS. Rumble -75 dB DIN B. Semi-automatic operation provides tonearm return and turntable shut-off. Resonance damping base material and audio isolators fight feedback. S-shaped tonearm with low-friction gimbal suspension. Viscous-damped cueing in both directions. Anti-skating control. Individual pitch controls for 33-1/3 and 45 rpm speeds. Stroboscope assists in accurate speed setting. Front-panel controls for stop, cueing and speed adjustment. Detachable tonearm headshell. Hinged, removable dust cover.





## Automatic Direct-Drive SL-3300

Direct-drive turntable with ultra-low speed, DC brushless motor and integral rotor/platter structure. B•FG servo control for superb rotational accuracy. Wow and flutter 0.03% WRMS. Rumble -75 dB DIN B. Automatic tonearm set-down, return and stop. Memo-Repeat control permits up to six repeat plays of a record or continuous play. Resonance damping base material and audio isolators fight feedback. S-shaped tonearm with low-friction gimbal suspension. Viscous-damped cueing in both directions. Anti-skating control. Individual pitch controls for 33-1/3 and 45 rpm speeds. Stroboscope assists in accurate speed setting. Front-panel controls for start, stop, cueing, Memo-Repeat and speed adjustment. Detachable tonearm headshell. Hinged, removable dust cover.

## Manual Direct-Drive

# SL-1800

Direct-drive system with ultra-low speed, DC brushless motor and integral rotor/platter structure. One-chip IC, incorporating 321 elements, uses B•FG servo control for superb rotational accuracy. Wow and flutter 0.025% WRMS. Rumble -78 dB DIN B, -56 dB DIN A. Double-isolated suspension system provides highly effective protection against feedback. 9-1/16" effective-length S-shaped tonearm with low-friction gimbal suspension provides superb tracking. Viscous-damped cueing. Anti-skating control. Individual variable pitch controls for 33-1/3 and 45 rpm speeds. Illuminated stroboscope assists in accurate speed setting. Detachable tonearm headshell. Hinged, removable dust cover.



## Semi-Automatic Direct-Drive SL-1700



Direct-drive system with ultra-low speed, DC brushless motor and integral rotor/platter structure. One-chip IC, incorporating 321 elements, uses B•FG servo system for high starting torque and superb speed stability despite transient load fluctuations. Wow and flutter 0.025% WRMS. Rumble -78 dB DIN B, -56 dB DIN A. Double-isolated suspension provides highly effective protection against feedback. Semi-automatic operation provides tonearm return and turntable shut-off. 9-1/16" effective-length S-shaped tonearm with low-friction gimbal suspension provides superb tracking. Viscous-damped cueing. Anti-skating control. Independent variable pitch controls for 33-1/3 and 45 rpm speeds. Illuminated stroboscope assists in accurate speed setting. Detachable tonearm headshell. Hinged, removable dust cover.

# Automatic Direct-Drive

## SL-1600

Direct-drive system with ultra-low speed, DC brushless motor and integral rotor/platter structure. One-chip IC, incorporating 321 elements, uses B•FG control for high torque and superb rotational accuracy. Wow and flutter 0.025% WRMS. Rumble -78 dB DIN B, -56 dB DIN A. Double-isolated suspension system provides highly effective protection against feedback. Automatic operation provides automatic set-down, lift-off and return, plus turntable shut-off. Memo-Repeat control permits up to six repeated plays of a record or continuous play. 9-1/16" effective-length tonearm with low-friction gimbal suspension. Viscous-damped cueing. Anti-skating control. Independent variable pitch controls for 33-1/3 and 45 rpm speeds. Illuminated stroboscope assists in accurate speed setting. Detachable tonearm headshell. Hinged, removable dust cover.





## Quartz Phase-Locked Direct-Drive Semi-Automatic Turntable

### SL-1401

Ultra-low speed, direct-drive motor. Quartz phase-locked servo control results in almost non-existent speed drift ( $\pm 0.002\%$  maximum). Very high torque for quick start-up, stable rotation despite load fluctuation. Rumble  $-78$  dB DIN B,  $-56$  dB DIN A. Wow and flutter  $0.025\%$  WRMS. Double-isolated suspension system provides excellent resistance to feedback.  $13"$ ,  $4.4$  lb. dynamically balanced aluminum diecast platter. S-shaped gimbal suspension tonearm with  $9\frac{1}{16}"$  effective length and  $7$  mg bearing friction. Anti-skating control. Oil-damped cueing. Automatic tonearm return. Illuminated stroboscope. Removable tonearm headshell. Hinged, removable dust cover.

# Quartz Phase-Locked Direct-Drive Automatic Turntable

## SL-1301

Ultra-low speed, direct-drive motor. Quartz phase-locked servo control results in almost non-existent speed drift ( $\pm 0.002\%$  maximum). Very high torque for quick start-up, stable rotation despite load fluctuations. Rumble  $-78$  dB DIN B,  $-56$  dB DIN A. Wow and flutter  $0.025\%$  WRMS. Double-isolated suspension system provides excellent resistance to feedback.  $13"$ ,  $4.4$  lb. aluminum diecast platter. S-shaped gimbal suspension tonearm with  $9\text{-}1/16"$  effective length and  $7$  mg bearing friction. Anti-skating control, oil-damped cueing. Automatic tonearm set-down, lift-off, return. Memo-Repeat control permits up to  $6$  repeated plays of record, or continuous play. Illuminated stroboscope. Detachable tonearm headshell. Hinged, removable dust cover.





## Multi-Disc F.G. Belt-Drive SL-235

Frequency Generator DC servo belt-drive motor. Multi-disc operation permits sequential play of up to six records. Memo-Gram control programs record change and/or repeats last record. In the single-play mode, the Memo-Gram control allows six repeated plays of a record, or continuous play. F.G. servo system maintains platter speed despite AC line fluctuations. Superb specifications include: rumble -70 dB DIN B, wow and flutter 0.045% WRMS. 30.4 cm aluminum diecast platter. Electronic speed change. Individual pitch (speed) controls and illuminated stroboscope permit accurate speed setting. S-shaped tonearm with low-friction gimbal suspension. Oil-damped cueing in both directions. Anti-skating control. Up-front controls for start, stop, cueing, Memo-Gram and speed adjustment. Detachable tonearm headshell. Hinged, removable dust cover. Resonance-damping base material and audio isolators fight feedback.

# Multi-Disc Direct-Drive

## SL-3350

Direct-drive system with ultra-low speed, DC brushless motor and integral rotor/platter structure. B•FG servo control for stable platter rotation. Multi-disc operation includes tonearm set-down, lift-off, return and record change. Accommodates up to 6 records, with Memo-Gram control to program sequential play and/or repeat last record. In the single-play mode, the Memo-Gram control allows six repeated plays of a record, or continuous play. Resonance damping base material and audio isolators fight feedback. S-shaped tonearm with low-friction gimbal suspension. Viscous-damped cueing in both directions. Anti-skating control. Individual pitch controls for 33-1/3 and 45 rpm speeds. Stroboscope assists in accurate speed setting. Front-panel controls for start, stop, cueing, Memo-Gram and speed adjustment. Detachable tonearm headshell. Hinged, removable dust cover.





## SL-1650

Direct-drive system with ultra-low speed, DC brushless motor and integral rotor/platter structure. One-chip IC, incorporating 321 elements, uses B•FG servo control for stable platter rotation. Multi-disc operation includes tonearm set-down, lift-off, return and record change. Accommodates up to 6 records, with Memo-Gram control to program sequential play and/or repeat last record. In the single-play mode, the Memo-Gram control allows six repeated plays of a record, or continuous play. Double-isolated suspension system. 9-1/16" effective-length S-shaped tonearm with low-friction gimbal suspension. Viscous-damped cueing. Anti-skating control. Individual pitch controls for 33-1/3 and 45 rpm speeds. Illuminated stroboscope assists in accurate speed setting. Detachable tonearm headshell. Hinged, removable dust cover.

## Turntables

Model	Type	Turntable Platter	Speed	Motor	Pitch Control Range	Wow & Flutter	Rumble	Build-up Time
SL-210	Manual Belt-Drive	Aluminum Diecast 12" Diameter	33 $\frac{1}{3}$ , 45 rpm	Frequency Generator Servo DC	6%	0.045% WRMS	-70dB (DIN B)	-
SL-220	Semi-Automatic Belt-Drive	Aluminum Diecast 12" Diameter	33 $\frac{1}{3}$ , 45 rpm	Frequency Generator Servo DC	6%	0.045% WRMS	-70dB (DIN B)	-
SL-230	Automatic Belt-Drive	Aluminum Diecast 12" Diameter	33 $\frac{1}{3}$ , 45 rpm	Frequency Generator Servo DC	6%	0.045% WRMS	-70dB (DIN B)	-
SL-3200	Semi-Automatic Direct-Drive	Aluminum Diecast 12" Diameter	33 $\frac{1}{3}$ , 45 rpm	Ultra-Low Speed DC Brushless	10%	0.03% WRMS	-75dB (DIN B)	-
SL-3300	Automatic Direct-Drive	Aluminum Diecast 12" Diameter	33 $\frac{1}{3}$ , 45 rpm	Ultra-Low Speed DC Brushless	10%	0.03% WRMS	-75dB (DIN B)	-
SL-1800	Manual Direct-Drive	Aluminum Diecast 13" Diameter	33 $\frac{1}{3}$ , 45 rpm	Ultra-Low Speed DC Brushless	10%	0.025% WRMS	-56dB (DIN A) -78dB (DIN B)	$\frac{1}{3}$ Rotation (33 $\frac{1}{3}$ rpm)
SL-1700	Semi-Automatic Direct-Drive	Aluminum Diecast 13" Diameter	33 $\frac{1}{3}$ , 45 rpm	Ultra-Low Speed DC Brushless	10%	0.025% WRMS	-56dB (DIN A) -78dB (DIN B)	$\frac{1}{3}$ Rotation (33 $\frac{1}{3}$ rpm)
SL-1600	Automatic Direct-Drive	Aluminum Diecast 13" Diameter	33 $\frac{1}{3}$ , 45 rpm	Ultra-Low Speed DC Brushless	10%	0.025% WRMS	-56dB (DIN A) -78dB (DIN B)	$\frac{1}{3}$ Rotation (33 $\frac{1}{3}$ rpm)
SL-1401	Semi-Automatic Quartz-Phase-Locked Control Direct-Drive	Aluminum Diecast 13" Diameter	33 $\frac{1}{3}$ , 45 rpm	Ultra-Low Speed DC Brushless	-	0.025% WRMS	-56dB (DIN A) -78dB (DIN B)	$\frac{1}{3}$ Rotation (33 $\frac{1}{3}$ rpm)
SL-1301	Automatic Quartz-Phase-Locked Control Direct-Drive	Aluminum Diecast 13" Diameter	33 $\frac{1}{3}$ , 45 rpm	Ultra-Low Speed DC Brushless	-	0.025% WRMS	-56dB (DIN A) -78dB (DIN B)	$\frac{1}{3}$ Rotation (33 $\frac{1}{3}$ rpm)
SL-235	Automatic Changer Belt-Drive	Aluminum Diecast 12" Diameter	33 $\frac{1}{3}$ , 45 rpm	Frequency Generator Servo DC	6%	0.045% WRMS	-70dB (DIN B)	-
SL-3350	Automatic Changer Direct-Drive	Aluminum Diecast 12" Diameter	33 $\frac{1}{3}$ , 45 rpm	Ultra-Low Speed DC Brushless	10%	0.03% WRMS	-75 dB (DIN B)	-
SL-1650	Automatic Changer Direct-Drive	Aluminum Diecast 13" Diameter	33 $\frac{1}{3}$ , 45 rpm	Ultra-Low Speed DC Brushless	10%	0.03% WRMS	-53dB (DIN A) -75dB (DIN B)	$\frac{1}{3}$ Rotation (33 $\frac{1}{3}$ rpm)

Tonearm	Stylus Pressure Control	Cartridge Head Shell	Effective Length	Overhang	Friction	Offset Angle	Dimensions (H x W x D)	Model
Gimbal Suspension Universal S-Shaped Tubular	0~3g Direct Reading	Universal 4-Pin Connector	$9\frac{1}{16}$ "	$\frac{19}{32}$ "	7mg	22°	$4\frac{31}{32}$ " x $16\frac{59}{64}$ " x $14\frac{49}{64}$ "	SL-210
Gimbal Suspension Universal S-Shaped Tubular	0~3g Direct Reading	Universal 4-Pin Connector	$9\frac{1}{16}$ "	$\frac{19}{32}$ "	7mg	22°	$4\frac{31}{32}$ " x $16\frac{59}{64}$ " x $14\frac{49}{64}$ "	SL-220
Gimbal Suspension Universal S-Shaped Tubular	0~3g Direct Reading	Universal 4-Pin Connector	$9\frac{1}{16}$ "	$\frac{19}{32}$ "	7mg	22°	$4\frac{31}{32}$ " x $16\frac{59}{64}$ " x $14\frac{49}{64}$ "	SL-230
Gimbal Suspension Universal S-Shaped Tubular	0~2.5g Direct Reading	Universal 4-Pin Connector	$9\frac{1}{16}$ "	$\frac{19}{32}$ "	7mg	22°	$5\frac{7}{64}$ " x $16\frac{59}{64}$ " x $14\frac{49}{64}$ "	SL-3200
Gimbal Suspension Universal S-Shaped Tubular	0~2.5g Direct Reading	Universal 4-Pin Connector	$9\frac{1}{16}$ "	$\frac{19}{32}$ "	7mg	22°	$5\frac{7}{64}$ " x $16\frac{59}{64}$ " x $14\frac{49}{64}$ "	SL-3300
Gimbal Suspension Universal S-Shaped Tubular	0~3g Direct Reading	Universal 4-Pin Connector	$9\frac{1}{16}$ "	$\frac{19}{32}$ "	7mg	21.5°	$4\frac{15}{16}$ " x $17\frac{12}{16}$ " x $14\frac{9}{16}$ "	SL-1800
Gimbal Suspension Universal S-Shaped Tubular	0~3g Direct Reading	Universal 4-Pin Connector	$9\frac{1}{16}$ "	$\frac{19}{32}$ "	7mg	21.5°	$4\frac{15}{16}$ " x $17\frac{12}{16}$ " x $14\frac{9}{16}$ "	SL-1700
Gimbal Suspension Universal S-Shaped Tubular	0~3g Direct Reading	Universal 4-Pin Connector	$9\frac{1}{16}$ "	$\frac{19}{32}$ "	7mg	21.5°	$4\frac{15}{16}$ " x $17\frac{12}{16}$ " x $14\frac{9}{16}$ "	SL-1600
Gimbal Suspension Universal S-Shaped Tubular	0~3g Direct Reading	Universal 4-Pin Connector	$9\frac{1}{16}$ "	$\frac{19}{32}$ "	7mg	21.5°	$4\frac{15}{16}$ " x $17\frac{12}{16}$ " x $14\frac{9}{16}$ "	SL-1401
Gimbal Suspension Universal S-Shaped Tubular	0~3g Direct Reading	Universal 4-Pin Connector	$9\frac{1}{16}$ "	$\frac{19}{32}$ "	7mg	21.5°	$4\frac{15}{16}$ " x $17\frac{12}{16}$ " x $14\frac{9}{16}$ "	SL-1301
Gimbal Suspension Universal S-Shaped Tubular	0~3g Direct Reading	Universal 4-Pin Connector	$9\frac{1}{16}$ "	$\frac{19}{32}$ "	7mg	22°	$6\frac{23}{64}$ " x $16\frac{59}{64}$ " x $14\frac{49}{64}$ "	SL-235
Gimbal Suspension Universal S-Shaped Tubular	0~2.5g Direct Reading	Universal 4-Pin Connector	$9\frac{1}{16}$ "	$\frac{19}{32}$ "	7mg	22°	$7\frac{3}{32}$ " x $16\frac{59}{64}$ " x $14\frac{49}{64}$ "	SL-3350
Gimbal Suspension Universal S-Shaped Tubular	0~3g Direct Reading	Universal 4-Pin Connector	$9\frac{1}{16}$ "	$\frac{19}{32}$ "	7mg	21.5°	$6\frac{7}{8}$ " x $17\frac{12}{16}$ " x $14\frac{3}{8}$ "	SL-1650

# Technics

Panasonic Company  
Division of Matsushita Electric Corporation of America

EXECUTIVE OFFICES: One Panasonic Way, Secaucus, New Jersey 07094

(201) 348-7000

PANASONIC NEW YORK: 50 Meadowlands parkway, Secaucus, New Jersey 07094

(201) 348-7000

PANASONIC NEW JERSEY: 50 Meadowlands Parkway Secaucus, New Jersey 07094

(201) 348-7000

PANASONIC BOSTON: C.C. & F. Industrial Park, 31 Suffolk Road,

Mansfield, Mass. 02048 (617) 339-9115

PANASONIC BALTIMORE: 11 Azar Court, Baltimore, Md. 21227

(301) 247-4300

PANASONIC CHICAGO: 363 N. Third Avenue, Des Plaines, Ill. 60016

(312) 299-7171

PANASONIC ATLANTA: 1 Meca Way, Duluth, Georgia 30136

(404) 448-1100

PANASONIC DALLAS: 1825 Walnut Hill Lane, Irving, Texas 75062

(214) 258-2828

NEWCRAFT, INC.: 8383 Wilshire Blvd., Beverly Hills, Calif. 90211

(213) 655-5160

PANASONIC SALES COMPANY: Ave. 65 de Infanteria, Km. 9.7, Victoria

Industrial Park, Carolina, Puerto Rico 00630 (809) 769-4320

PANASONIC HAWAII, INC.: 320 Waiakamilo Road, Honolulu, Hawaii 96817

(808) 847-5361

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Technics  
by Panasonic

FM/AM STEREO RECEIVER SA-1000



F M 88 90 92 94 96  
A M 530 600 700

LEFT POWER LEVEL RIGHT  
-13 0 -13 -8 -5 -2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 27 00 dB -06 -27 -24 -21 -18 -15 -12 -9 -6 -3 0 +3  
700 330 90 75 35 15 7 3.5 1.5 0.7 0.3 0 W/BQ 0 0.3 0.7 1.5 3.5 7 15 35 75 90 330 700

POWER ON OFF  
SPEAKERS MAINS REMOTE  
PHONES A B  
BASS 1 0 1 2 3 4 5  
MID RANGE f0 1 2 3 4 5  
LEVEL dB 1 2 3 4 5  
TREBLE 1 0 1 2 3 4 5  
BOOST LOW 30Hz -12dB/OCT