Sansui

Turntable XP-99

XP-99—The Vibration Vanquisher

A turntable's dreaded enemy is vibration. Sansui's exquisite new XP-99 vanquishes this villain completely, and in unusual ways, as you'll see.

Vibration robs music of its immediacy by making sound dull and lifeless. This happens because vibration, when allowed to reach the tonearm, alters the actual geometry between the stylus tip and the record groove during play.

The XP-99 actively and passively suppresses vibration. Actively suppressing vibration is our revolutionary Silent Synchrotor System. It is assisted by our "friction-free" linear coreless motor, D-O-B straight tonearm and solid, anti-vibration cabinet.

Just one listen will convince you that the XP-99 sounds far superior to all other direct-drive turntables. It offers better definition, greater musical sonority and sharper transients.

XP-99—the most highly evolved turntable you can buy.

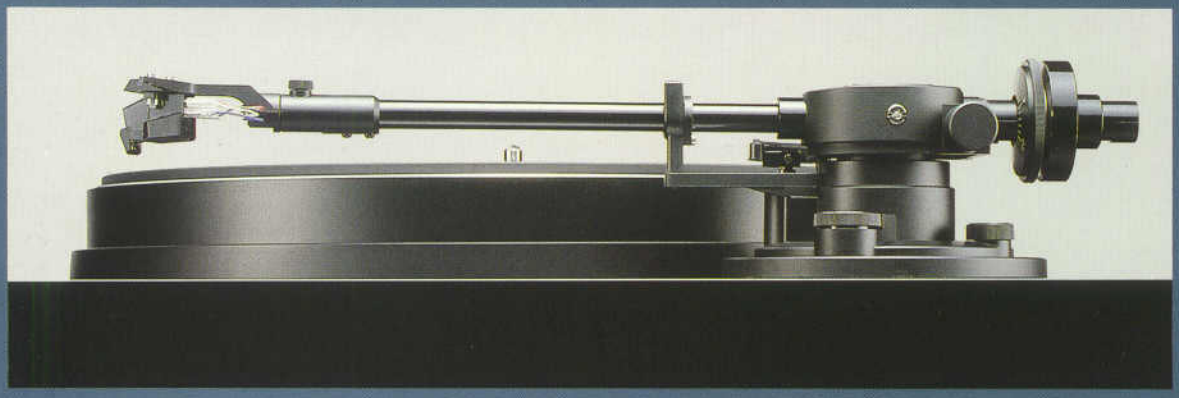

Fig. 2 The Silent Synchroto
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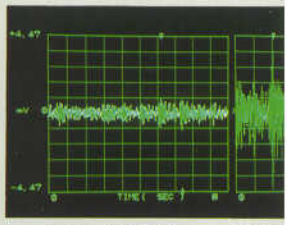

Motor switch off; power switch on.

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Silent Synchrotor System

Despite the tremendous improvements that the direct-drive turntable has brought to hi-fi, many "golden eared" audiophiles have noted that they sound distant, fuzzy and unfocused. We have proven that there is a grain of truth to this complaint.

In most direct-drive turntables, the motor is located near the center of the cabinet. When the motor rotates the platter clockwise, it applies a torque to the cabinet in the same direction. To compensate and restore balance, the cabinet attempts to create counterclockwise torque. This leads to a serious problem.

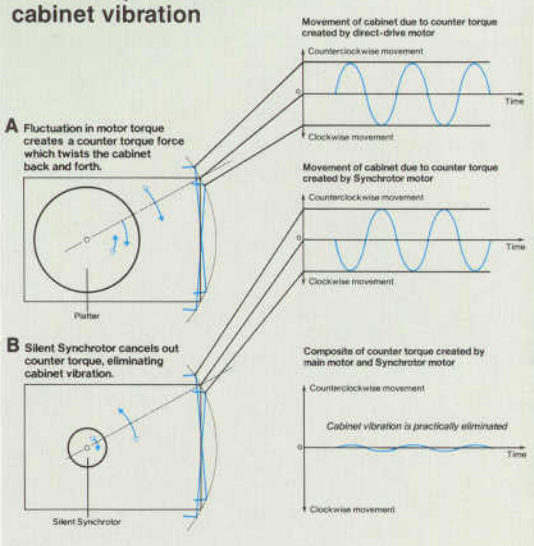
All direct-drive motors "cog," that is, they imperceptibly speed up and slow down in a jerky manner as the servo system tries to compensate for wow and flutter and other speed irregularities. These minute speed variations cause matching variations in motor torque, which in turn set up variations in countertorque generated in the cabinet (Fig. 1A). These variations are turned into actual physical vibrations that eventually find their way to the stylus. It is these vibrations that cause sound to be fuzzy and unfocused, because they change the delicate geometric relationship between the record groove and stylus.

The Sansui Silent Synchrotor System has felled this shortcoming of direct-drive turntables in a single blow. As you see in Fig. 3A, a second motor is mounted directly below the main drive motor and shares the same axis. Controlled by the same servo system as the main motor, it rotates in the opposite direction, creating torque which exactly offsets the countertorque created in the cabinet (Fig. 1B).

Listen to the XP-99: you'll hear well-defined, sharply focused sound, and excellent transients.

Fig. 1

Motor torque and cabinet vibration



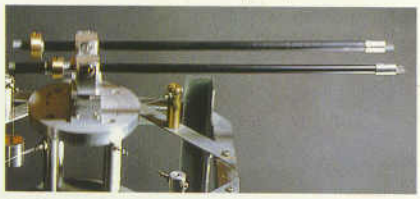
Friction-free linear coreless motor

The motor we use in our Silent Synchrotor System is of an entirely new, high-precision design called the "friction-free linear coreless motor." It was expressly developed to overcome problems encountered by conventional coreless designs: 1) mechanical friction at the bearing due to strong magnetic attraction between rotor and stator; 2) drag on the rotor by the stator; and 3) braking effect on the rotor caused by eddy currents in the stator. All these problems lead to uneven rotation and undue mechanical wear (Fig. 3B).

Our new linear coreless motor has extremely low friction, for the attraction between the rotor and stator is very low. Both drag and the breaking effect applied to the rotor are reduced because the yoke rotor and rotor are mounted on the same spindle. Indeed, the motor of the XP-99 presents such low friction that, when spun by hand, it keeps rotating on and on, almost like magic (Fig. 3A).

Straight D-O-B tonearm

The fulcrum of our D-O-B (Dynaoptimum Balanced) tonearm is at the exact point of dynamic balance. As a result, there is no longer a mutual dynamic influence between the parts of the tonearm on either side of the fulcrum: vibrations picked up by the stylus never jeopardize the fulcrum's delicate balance, while outside vibrations never travel from the arm base to the stylus tip to alter the geometry between the stylus and the record. This is one more reason why the XP-99 delivers eminently superior sound.

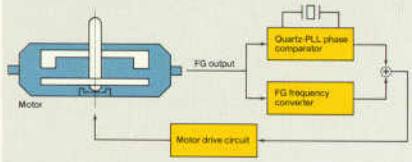


Apply vibrations to the base of a conventional-design tonearm; the arm will vibrate together with the base. But the D-O-B tonearm, subjected to the same test, does not vibrate.

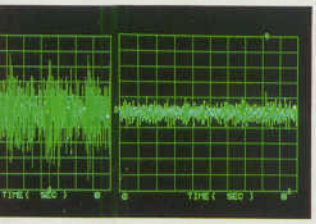
Precision Double-Servo Quartz PLL System

A double-servo speed control system affords our linear coreless motor its highly accurate performance. As the platter starts up, the FG (Frequency Generator) servo applies a powerful accelerating torque to the motor, bringing the platter up to operating speed in 2 seconds. Then the Quartz PLL servo takes over, dynamically smoothing out the minutest fluctuations in speed. Our elaborate servo system and linear coreless motor provide amazingly low wow and flutter specs of a mere 0.012% (WRMS).

Double Servo Quartz PLL System



System reduces vibration to one-onal direct-drive turntables.

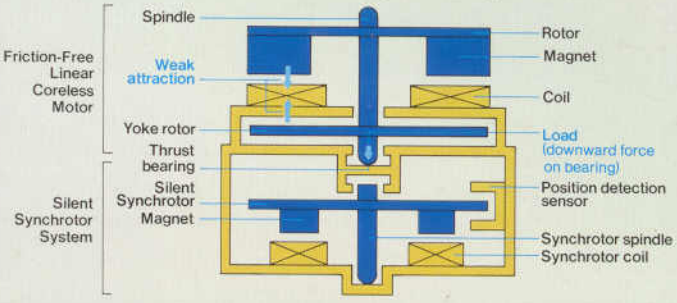


itch on; nchrotor ff.

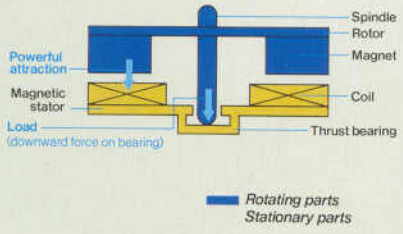
Motor switch on; Silent Synchrotor System on.

Fig. 3

A Cross-section of Sansui Direct-Drive Motor with Silent Synchrotor System



B Conventional Direct-Drive Motor



Computer-controlled fully automatic operation

A custom-made 4-bit microcomputer is at the heart of the XP-99, overseeing every facet of turntable operation. It makes a number of automatic operations possible, including one-touch play, stop and repeat. It also fully protects the XP-99 from damage to turntable parts or the record on the platter. Manual operation, using the arm UP/DOWN button, is possible any time, of course.

Attractive solid cabinet

To prevent acoustic feedback and provide a solid base for the motor and tonearm, the cabinet is constructed of solid, high-density wood. Its exterior surface is finished to a deep piano-like luster. Controls, including tonearm UP/DOWN, are positioned outside the closed dust cover on a slanted front panel. The cabinet is exactly 430mm (16-15/16 inches) wide, the same as other Sansui components.

A DC type head shell

The tonearm comes with an ADC type head shell so you can easily change cartridges.

Moving-coil cartridge*

The XP-99 comes complete with a moving-coil cartridge (AT-3100S) for crisp, transient sound. Unusual for an MC, it features a user-replaceable stylus.

**Not included in some areas.*