



J. H. REPRODUCERS CO

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A Discussion of the **SYNCHRONOUS TURNTABLE**

The "TRANSCRIPTOR" fluid damped arm is depicted with the J. H. Turntable

... so quiet — no known amplifier can provide nearly enough bass boost, to bring the rumble content to the audible level of the recorded music

SPECIFICATIONS

Power Requirements: 200 to 250 volts AC, 50 cps, 5 Watts.
Speeds: 33-1/3 and 45 RPM.
Method of propulsion: Belt drive.
Rumble: Unmeasurably small.
Wow and Flutter: Better than 0.04%.
Hum Radiation: Negligible.
Diameter of platter: 12 ins.
 (Manual and Automatic models available)

Years ahead of its time, this is truly the ultimate in turntables and the closest approach to rotating a record on air.

The JH light-weight turntable utilizes all of the long sought-for advantages of lightness and eliminates the disadvantages of weight and mass. It is a dramatically new product, offering a performance, which transcends all previous designs irrespective of price; it is all new ... new ideas, new features, a completely new and fresh approach to turntable design!

Constructed of aluminium and suspended on the quietest and most friction-free teflon bearing yet devised, the platter requires so little torque, that an extremely small 12-pole hysteresis synchronous motor, which is locked to the mains frequency, drives it at constant speed, regardless of line and load variation. YET, the mass of this platter plus its rubber mat and the mass of the record are perfectly proportioned to the mass of the armature of the motor, to wipe out all speed variation and still permit acceleration to synchronous speed in less than three-quarter of a revolution!

WHY is this turntable so superior to conventional turntables?

THE MOTOR. The 12-pole hysteresis synchronous motor vibrates infinitely less than any other motor in any other turntable, because it has such low armature mass and precision balance; it is virtually vibrationless. Also, a 12-pole motor vibrates far less than a conventional 4-pole motor, just as a six-cylinder petrol engine vibrates less than a four-cylinder and a four-cylinder less than a two-cylinder. Its precision is such, that its timing can only be compared with an electric clock and its rotational speed is so slow (500 RPM as compared to 1500 RPM of conventional motors), that the rumble frequency occurs at eight cps, which is well below audibility. The unit is designed for continuous duty

under the most adverse conditions and can be stalled for any period of time, as it has been built, to take this kind of treatment. Furthermore, it will rotate backwards, which makes it extremely easy to "cue." One need only rotate by hand until a particular location is reached, back off three-quarter of a turn, and release on "cue." *A new type of motor for a new type of turntable.*

THE DRIVE. This is, without question, the quietest, most accurate and dependable system designed. Power linkage is very simple and completely uncluttered and free of unnecessary gadgets and parts, that only impair performance and reduce reliability. An exceedingly flexible pure latex belt, that drives the turntable, is an ideal damping element and practically eliminates the fantastically small amount of rumble that exists. Rumble content, therefore, is so incredibly low, that it is unmeasurable with present test records and test instruments.

A STUDY IN RATIOS OF RELATIVELY MOVING MASSES. Although the platter is actually very light, it is RELATIVELY very massive, when compared with the armature of the motor. A great advantage of the lightweight platter is the short delay required to attain operating speed and an unbelievable quietness of operation with freedom from speed variation unmatched by any other turntable.

PRACTICABILITY. Extremely light in weight and far less space-hungry than other tables, permitting very easy custom installation.

BUDGET-WISE. Very moderate in cost, because the gadgets you don't want are eliminated.

VARIABLE SPEED ADJUSTMENT. Originally, it was intended, to incorporate such an adjustment in the JH Synchronous Turntable, to fall in line with some of the conventional commercial tables. However, the manufacturers made a very close and thorough study of speed control and have come to the following conclusions:

Any turntable can, of course, be fitted with a variable speed device, however, only at the cost of quality. The complication in the coupling aggravates rumble, wow and flutter, the inevitable by-products of mechanical motion

(For, mechanical motion implies moving parts, and moving parts must contend with friction and tolerance, the key causes of turntable noise.) Thus any APPARENT gain to be made by the use of a variable system, however well engineered it might be, must be offset by deficiencies associated with this added mechanical linkage. In all fairness, it has to be admitted, that some tables incorporating variable speed control have acceptable rumble and wow figures WHEN NEW, however, owing to slippage and wear, performance deteriorates substantially in use. This is, indeed, why many Recording, Television and Broadcasting Studios overseas and here in Australia specify, that their professional tables must be without a variable speed adjustment; they just operate at the correct speed.

The main reason, why conventional "battleship" type of tables usually incorporate a variable system lies in the fact, that their coupling is subject to frictional wear introducing speed changes even after a few weeks of operation. Some manufacturers have gone to the less desirable 4-pole induction motor with variable magnetic slip control, to correct this inevitable change of speed. The drive of the JH Synchronous Turntable is simplicity itself — there are only two moving parts, the motor and the platter — and wear in the power linkage is virtually non-existent, as, due to the extreme lightness of the system, stress imparted to bearing surfaces has been practically eliminated.

The JH Synchronous Turntable will, therefore, MAINTAIN its perfection of operation over years and years of hard usage and, for reasons given above, no variable speed device has been incorporated.

ABSOLUTE PITCH AND PITCH CORRECTION. All reputable record manufacturers today go to very great lengths, to assure, that their recordings are precisely on pitch for reproduction at the standard speeds, and these precautions extend to the re-issued collectors' items. Thus, the need for pitch correction with modern records on a turntable operating at correct standard speed is practically nil. According to established authorities, even musicians and listeners, who have the very rare faculty of absolute pitch, can barely detect, if pitch is half a semitone too high or too low, which is equivalent to a turntable speed, that is 1% too fast or too slow. Pulley sizes of the JH Synchronous Turntable are very accurately maintained for a speed, that is exactly 1% fast, which is entirely unnoticeable on a listening test (even for critical listeners with absolute pitch), but does, of course, show up with a stroboscope. When the "Dustbug" is used, speed becomes accurate within plus or minus 0.1%.