

Dual

Dual 1009

**A high fidelity record player
for 1½ gram tracking**

A new standard of performance for high fidelity record players

Only very few audio components approach the goal of the term "high fidelity" . . . conveying the true sound of music. Among this very select group, the Dual 1009 now sets a new standard of quality.

Many years in development, the Dual 1009 incorporates in its design the most advanced knowledge of record reproduction techniques and satisfies even the most stringent technical requirements at the present state of the art.

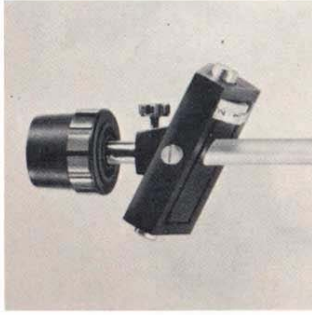
The Dual 1009 is the first record playing instrument to combine professional standards of reproduction with automatic changer operation . . . the first to offer automatic operation

at a tracking force of only $\frac{1}{2}$ gram. In contrast, ordinary record changers require up to ten times this tracking force in order to function with any degree of reliability.

Thanks to the unique tracking ability of its tonearm, the Dual 1009 is the first automatic record player able to accommodate cartridges of even the highest compliance. No compromise whatever need be made for the convenience of automatic operation . . . no compromise either in fidelity of performance or in record wear.

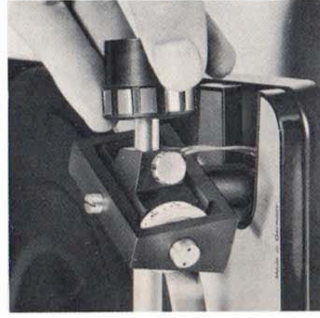


10 significant features



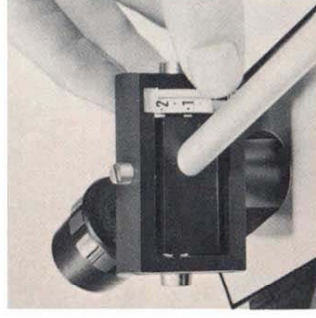
1

Dynamically balanced, low-mass tonearm, stable in all planes.



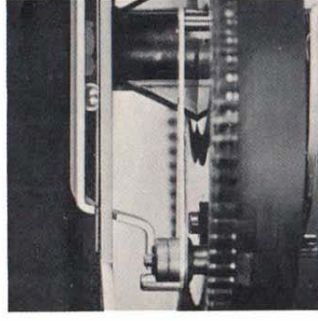
2

Extremely simple and positive tonearm balancing.



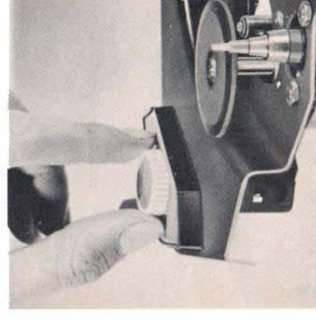
3

Continuously variable tracking force from 0 to 7 grams.



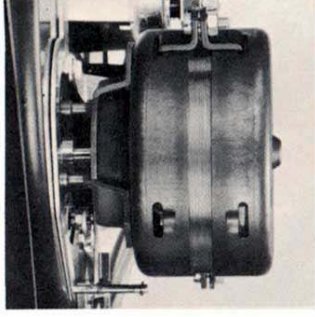
4

Flawless tracking as low as $\frac{1}{2}$ gram, with automatic stop and shut-off.



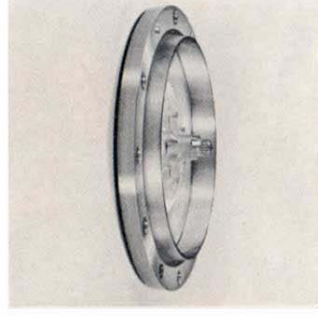
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Continuously variable speed adjustment for each of the four standard speeds.



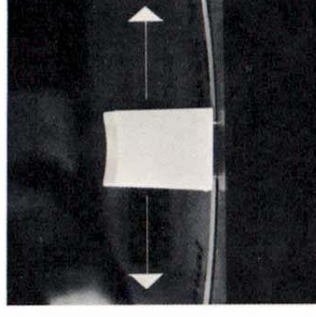
6

Four-pole induction motor with special hum shielding and elastic torque suspension.



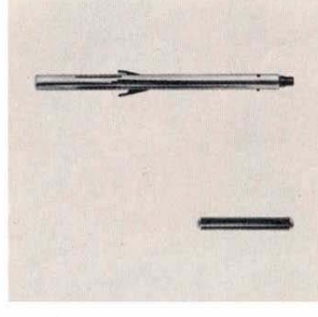
7

Smooth and constant rotation assured by dynamically balanced 7- $\frac{1}{2}$ pound non-ferrous platter.



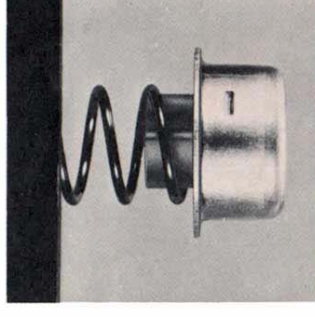
8

Vibration-free, self-returning slide switch controls.



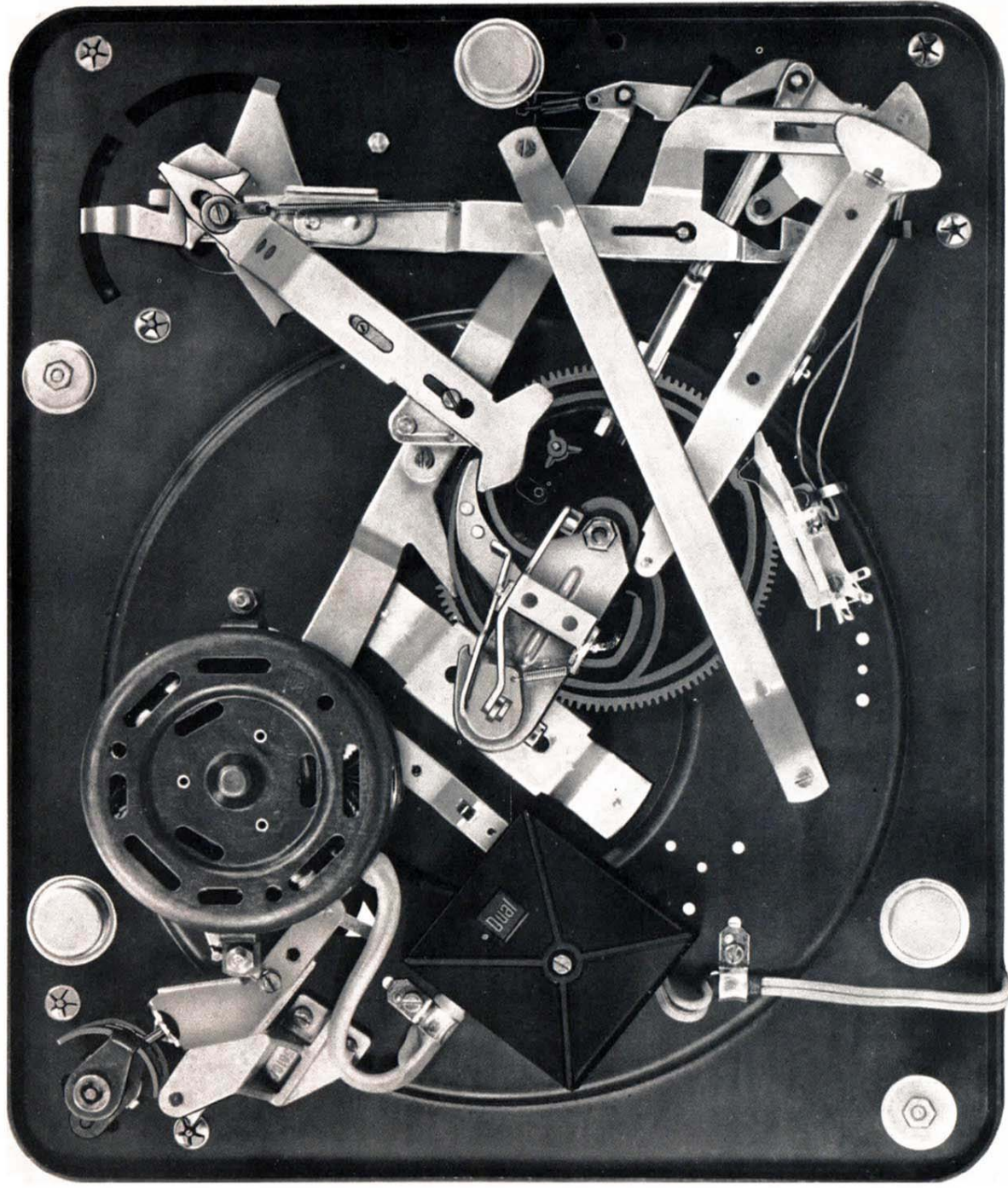
9

Manual and automatic single play, plus automatic changer operation.



10

Acoustic feedback eliminated by low mechanical resonance. Entire unit suspended in friction-damped rubber-cushioned springs. Tonearm counter balance also cushioned in rubber.



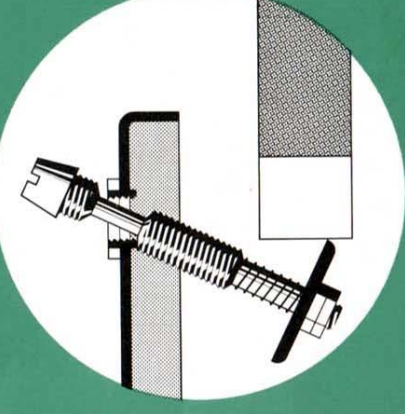
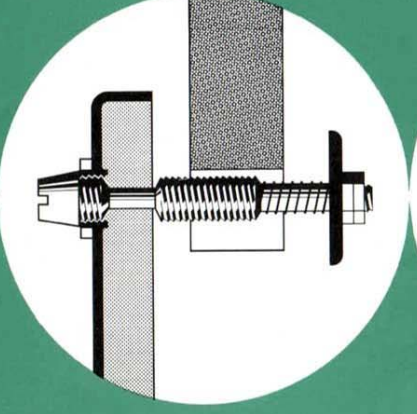
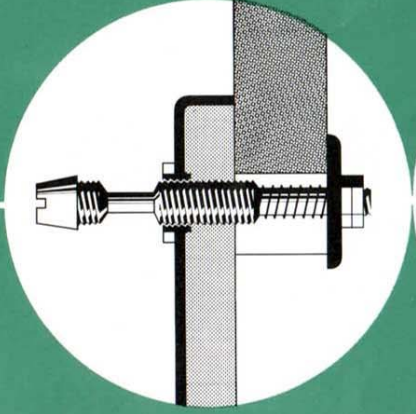
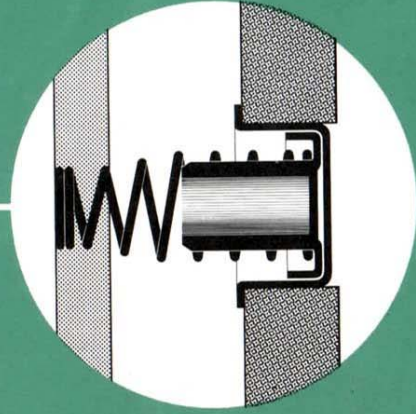
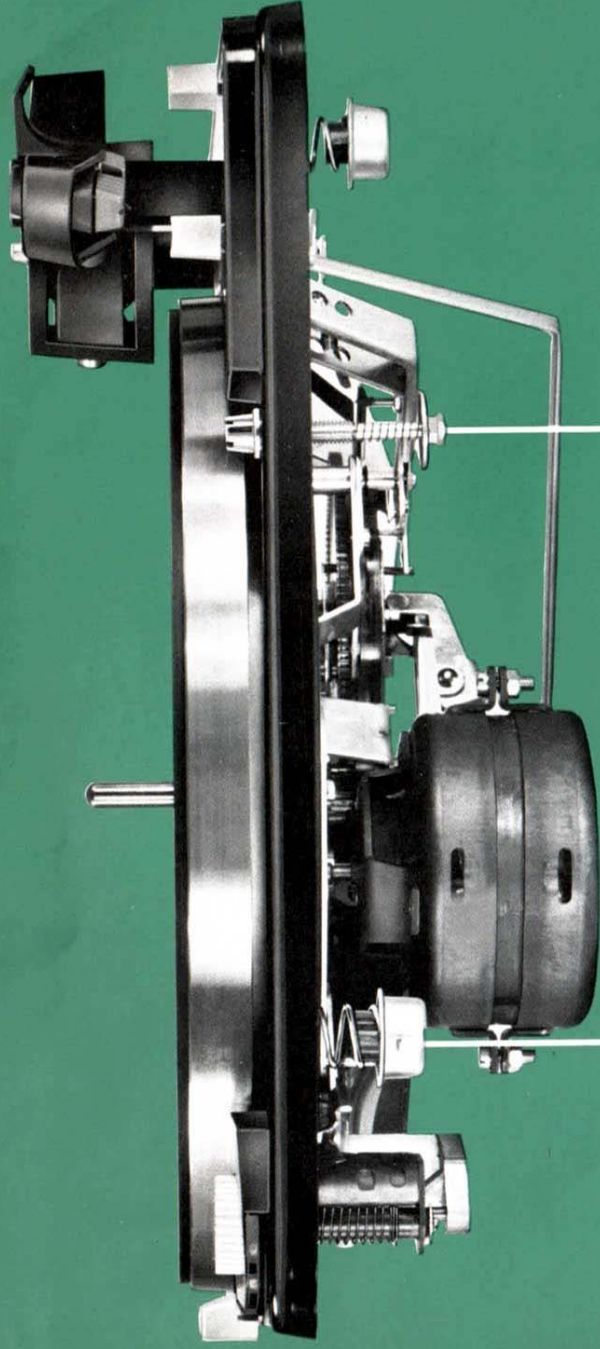
Further Technical Data

The Dual 1009 is driven by a four-pole single-phase induction motor with balanced armature and precision bearings that virtually eliminate vibration. Special shielding reduces magnetic hum radiation to the point where even the most sensitive magnetic cartridges remain unaffected.

Shock-mounting of the motor in an elastic suspension isolates the turntable from any vibration emanating from the motor. The motor drive pulley is adjustable from the top of the chassis and disengages automatically at the end of play.

The entire chassis is suspended on three spring-mounted footings, each isolated in rubber cushions. This isolates the unit against external shock and vibration.

Further, the spring suspension is tuned to the unusually low resonance of 4 cps, both vertically and horizontally. This makes the Dual 1009 virtually insensitive to all environmental influences and acoustic feedback.



Top / Mounting Spring Screws

The Dual 1009 is secured for shipment by two special 3-position mounting screws. These protect the unit during transit and make installation and removal from cabinet or base remarkably simple. Both these functions can thus be performed from the top, without any need to work underneath. In their center position, the screws tilt sideways for either installation or removal. Turning them to the left and lifting them at the same time, secures the Dual 1009 rigidly to its mounting board. Turned to their clockwise position, the screws release the mounting board and free the chassis on its spring suspension. At the same time, washers at the bottom of the screws protect the unit against being dislodged accidentally.



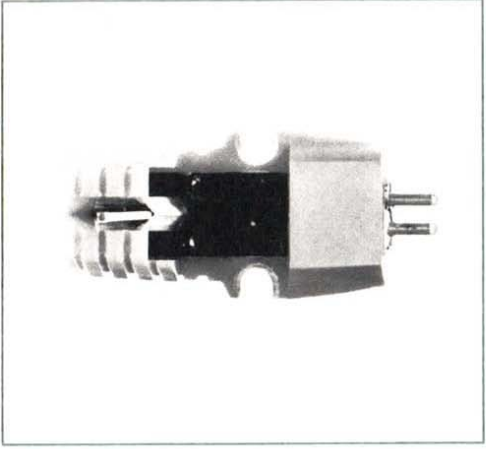
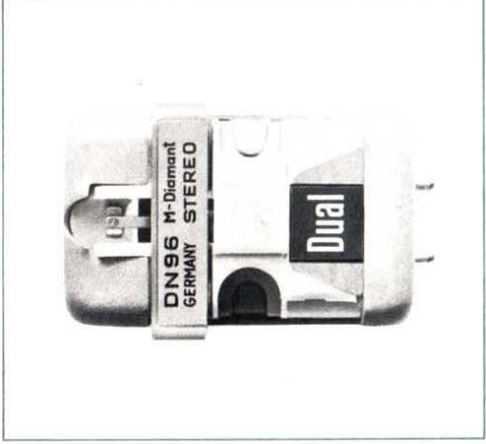
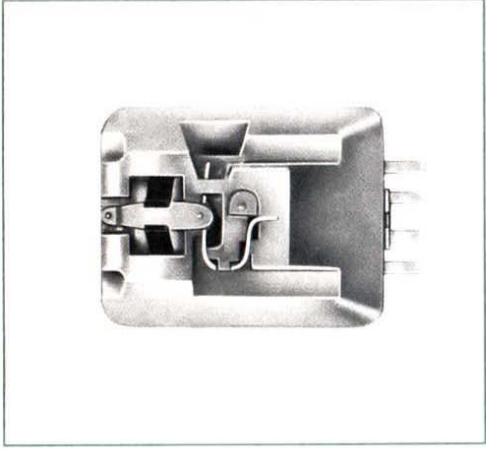
A High Fidelity Tonearm Must Be "Weightless"

The Dual 1009 has an authentic studio-tonearm made of metal and designed for utter simplicity in balancing. The balance weight is slipped on the shaft at the rear of the tonearm, and when in a position that provides approximate balance is fixed there by its set screw. For fine balance, the counterweight itself is adjusted on its fine-threads. This makes it possible to use any cartridge weighing from 2 to 16 grams. The counterweight is also rubber-cushioned to absorb shock and to provide resistance to slippage.

With the tonearm thus perfectly balanced, tracking force can then be applied in a continuous range from 0 to 7 grams. The desired tracking force is simply dialed directly at the pivot by means of the calibrated scale. Even with a tracking force of only $\frac{1}{2}$ gram, the tonearm will track perfectly and then shut off automatically with complete reliability.

The tonearm head (cartridge holder) is made of light-weight plastic in order to provide the smallest possible mass. This lowers tonearm resonance to approximately 8 cps when used with a cartridge having a compliance of about 20×10^{-5} cm/dyne (at approximately 20 g).

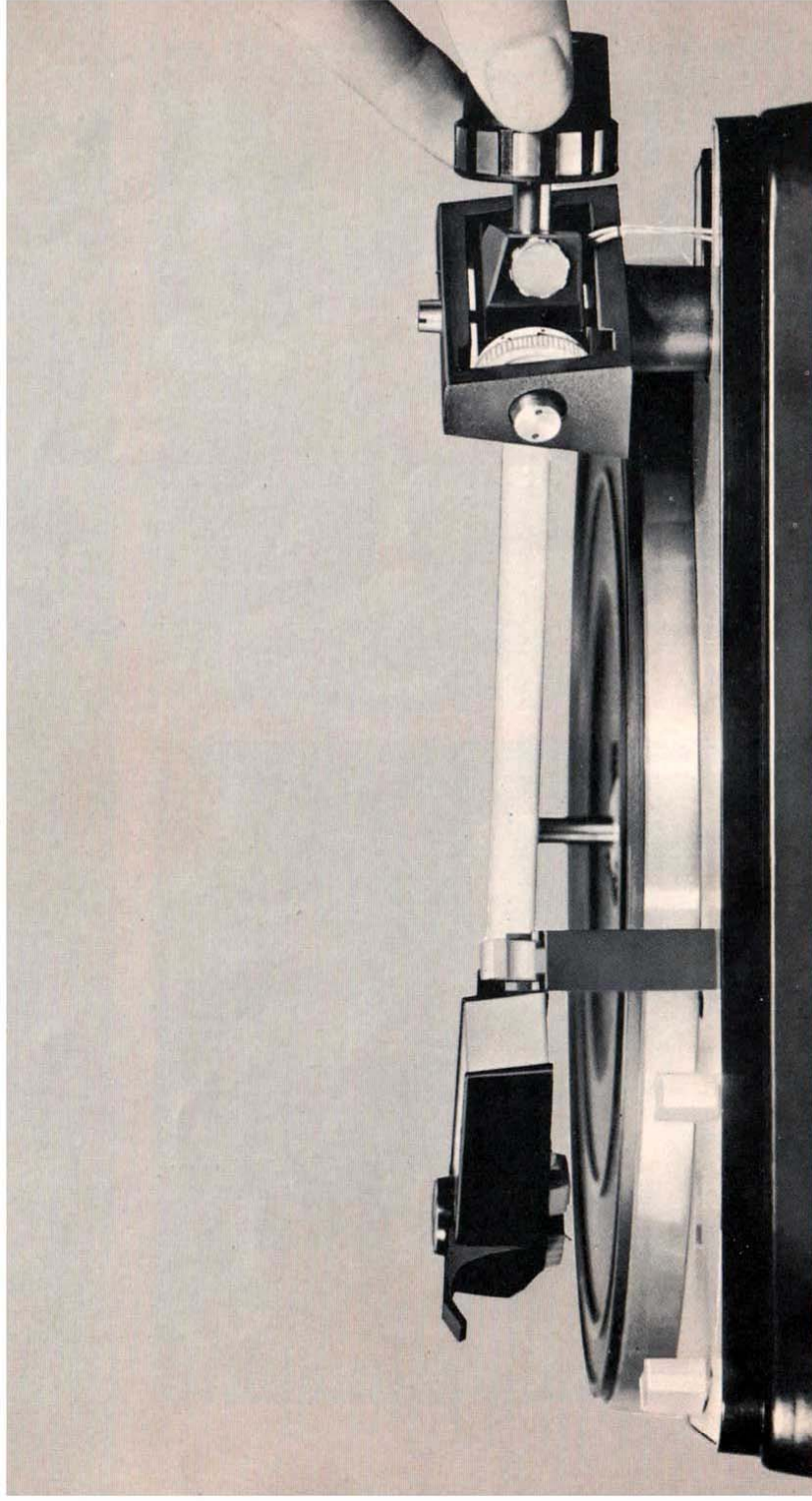
The tonearm pivots horizontally on double ball bearings, vertically on two hardened steel points, each supported by ball bearings. Total bearing friction in both planes is thus kept at about one order of magnitude (= 10 times) smaller than the minimum tracking force.



Light Tracking Force Protects Your Records

As you undoubtedly know, high fidelity reproduction requires records to remain in absolutely perfect condition. Stereo records, in particular, must be protected in their "like new" condition despite repeated use. With a tracking force of $\frac{1}{2}$ gram, possible with the Dual 1009, record wear is practically eliminated.

The Dual 1009 is available either with or without the Dual DMS 900 stereo magnetic cartridge. All standard cartridges (with $\frac{1}{2}$ " between mounting holes) can be used. For less stringent fidelity requirements, the Dual CDS 420 crystal cartridge may be used.



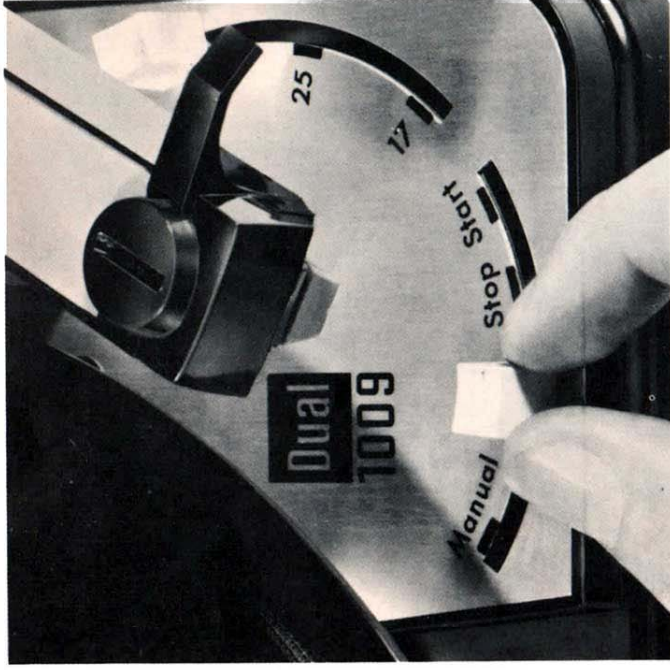


Dynamically Balanced Turntable

The turntable of the Dual 1009 is made of a solid, one-piece non-ferrous casting. Its weight is $7\frac{1}{2}$ pounds and it is dynamically balanced. High flywheel effect contributes importantly to speed constancy within 0.1% , far below audible limits and well within the tolerances specified for broadcast-quality equipment.

The rubber mat is bonded to the platter to assure preservation of the perfect linearity of the record-supporting surface. The c-clip that secures the turntable to the shaft is concealed by a decorative center disc.



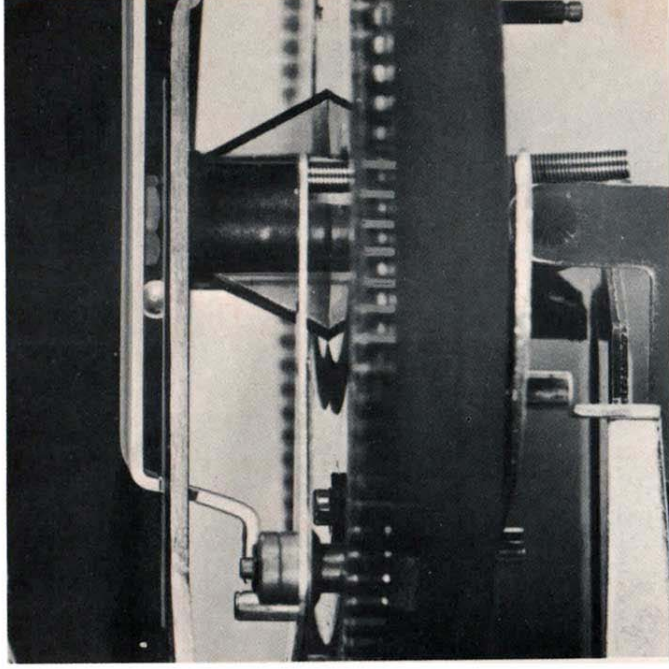
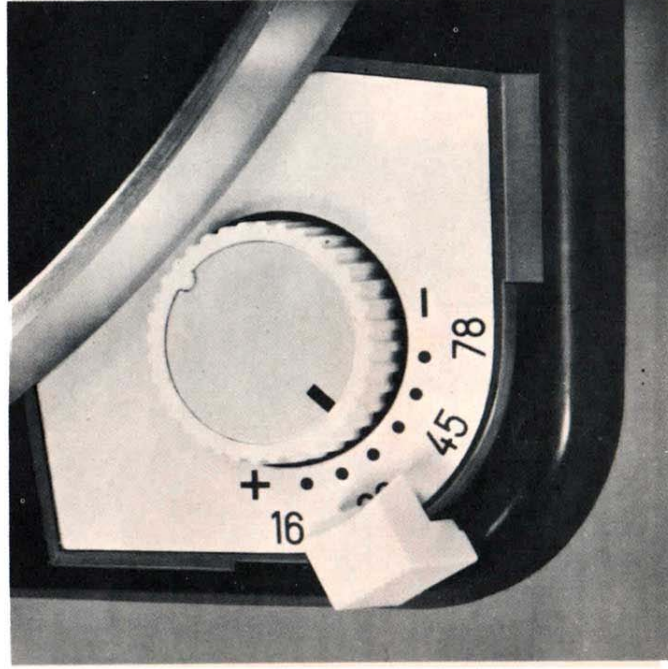


Vibration-Free Operation

All operations are activated by a single slide switch that needs only light fingertip pressure for automatic start, manual start, stop, or reject. The switch is instantly self-returning from each position. Result: completely vibration-free functioning.

Variable Speed Control

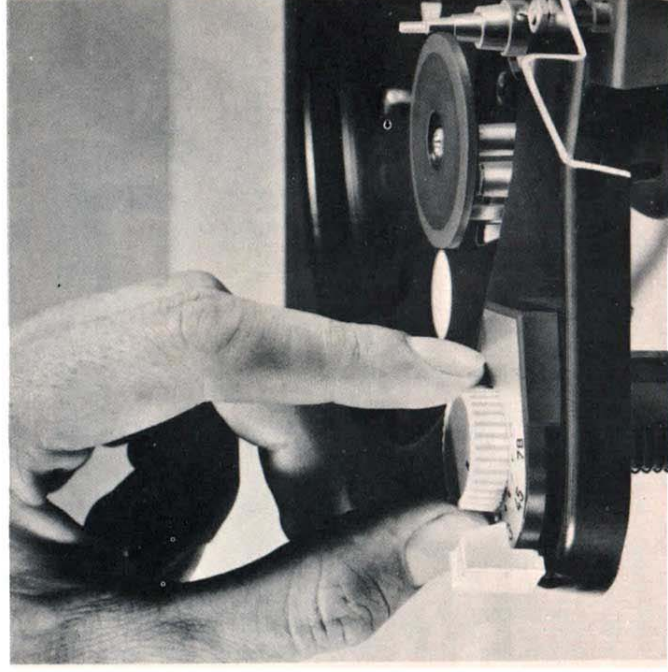
The Dual 1009 operates at all four standard speeds: $16\frac{2}{3}$, $33\frac{1}{3}$, 45 and 78 rpm. A vernier speed control provides a 6% variable range for all four speeds.

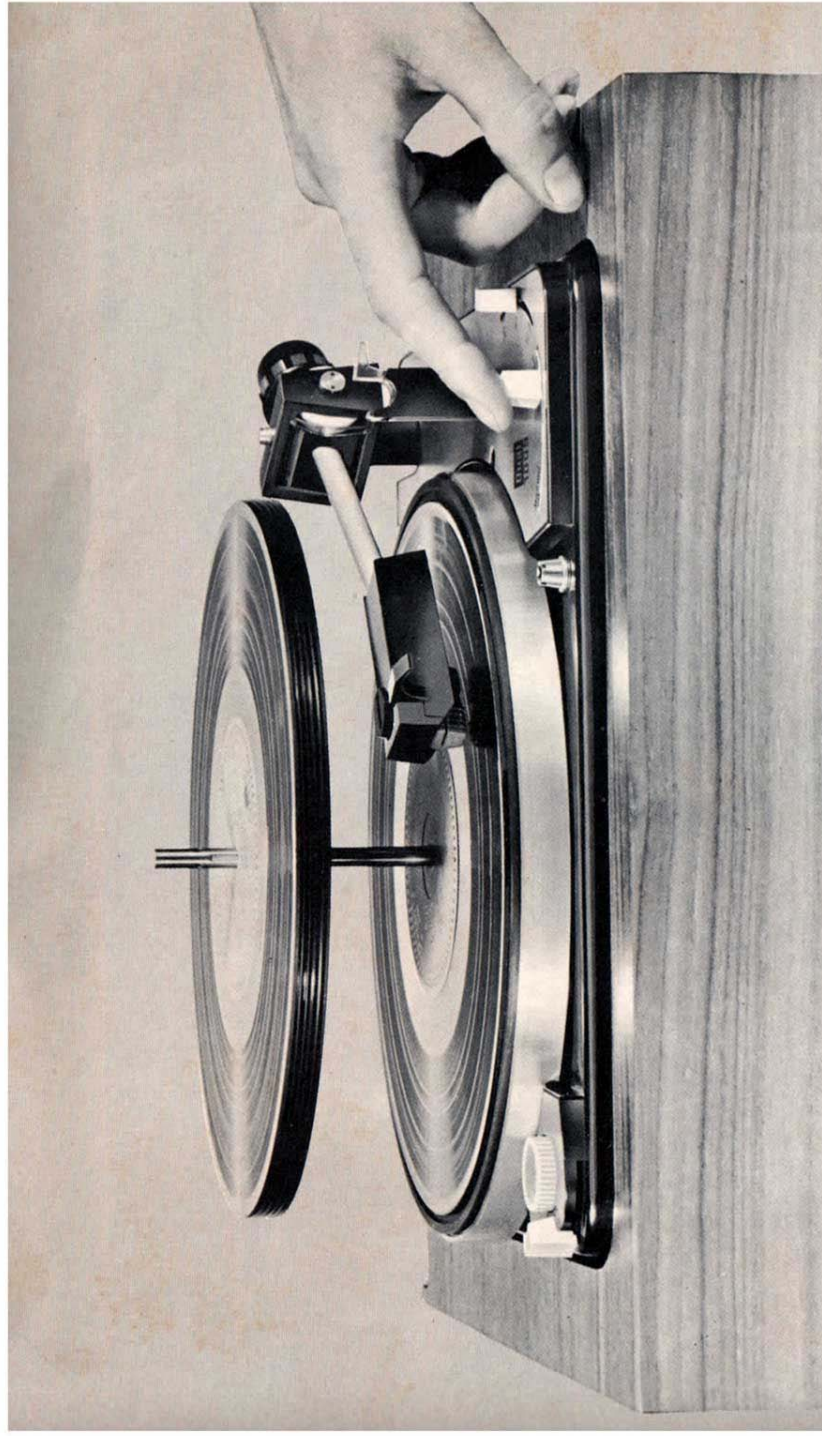


Sensitive Shut-off

The automatic shut-off is extremely sensitive and instantly responsive, activated by a lightweight lever gliding freely on a ball bearing toward the freefloating trip lever. Tripping force is so slight that it has no effect whatever on the tone-arm and cartridge.

This speed variation is accomplished by raising and lowering the idler along the conical motor drive pulley. Hence, the turntable speed is varied without changing the motor speed.





A High Fidelity Record Player Not Limited to Manual Operation

With the Dual 1009 it is possible:

1. To place the tonearm manually on the motionless record
2. To place the tonearm manually on the rotating record, and
3. To place the tonearm automatically on the rotating record. This automatic start is especially important when using light tracking forces as it prevents accidental damage to the cart-ridge from careless handling. This is especially important when using high compliance cartridges . . . and for people with unsteady hands. Up to ten records of the same size and speed can be changed by the same automatic mechanism.

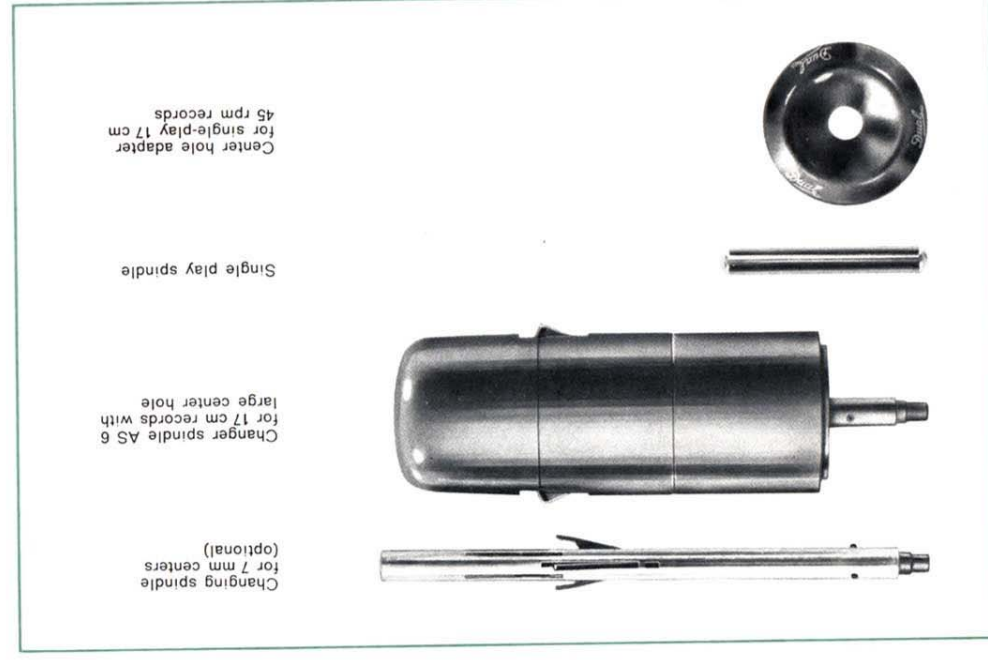
Other Operating Features

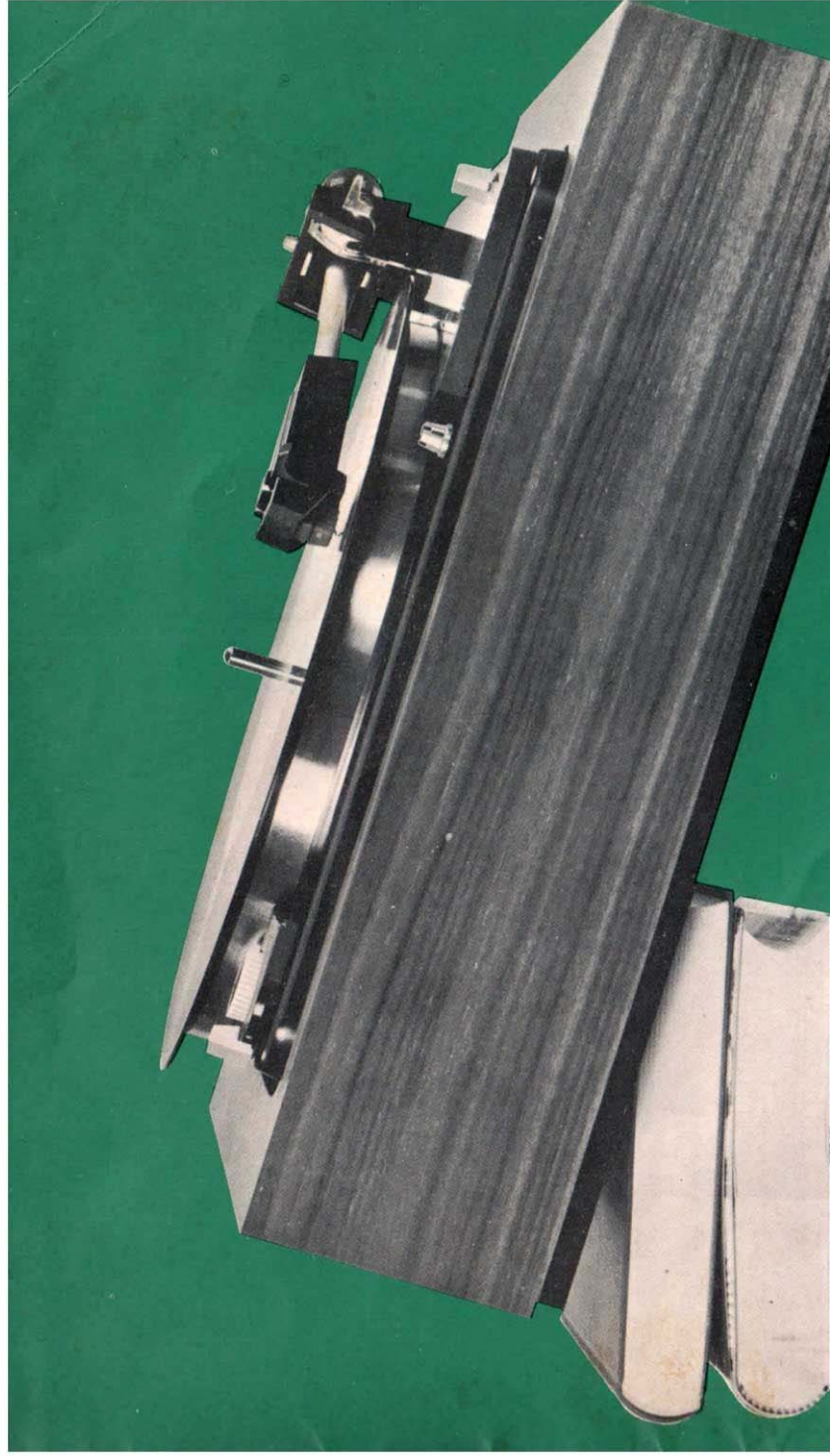
Reject: If, while playing a single record, you would like to hear the record from the beginning again, simply move the operating switch to "start". The tonearm will immediately return to the starting groove.

When playing records during changer operation, the same action will reject the record in play and begin the next record on the stack.

Stop: Moving the operating switch to "stop" returns the tonearm to its resting post, disengages the idler wheel and switches the unit off . . . all automatically.

Accessories





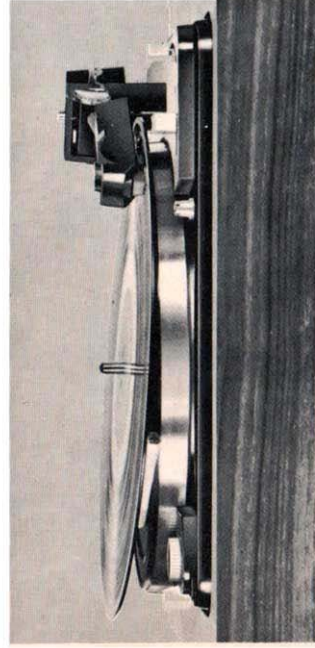
Tonearm For 1/2 Gram Tracking

Tracking ability and isolation from environmental influences are the two principal requirements for quality tonearms. Contact between stylus and record groove must be maintained without disturbance despite external vibrations or imperfect leveling of the record player. The following "torture" tests have been devised to prove the exceptional tracking ability of the Dual 1009 tonearm. The tests must be carried out with a cartridge capable of tracking reliably at 1 gram stylus force and which weighs no more than 10 grams. Also, the tonearm must be perfectly balanced.

Tests That Can Be Passed Only By A Tonearm Capable of Tracking at 1/2 Gram

Tilted Tracking

With speed set at $33\frac{1}{3}$ rpm, a 30 cm record, and tracking force at 1 gram, tilt the Dual from the side opposite the tonearm to an angle of 45° or more . . . then start it automatically. The tonearm will index and track perfectly, even at 1 gram. This demonstrates how "indifferent" the Dual 1009 is to levelling. Try this with any ordinary record player and you will see the tonearm fly off the record.



Cigarette Test

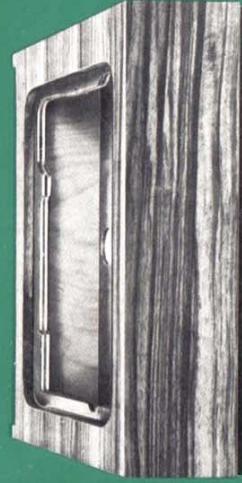
Speed, $33\frac{1}{3}$ rpm, 30 cm record, tracking force $\frac{1}{2}$ gram! Place a cigarette under the record (about halfway toward the center) to simulate the undulating surface of a warped record. When started automatically, the tonearm will again index and track perfectly, despite the continuous rise and fall. This demonstrates the extremely low friction of the tonearm in its vertical movement as well as its exceptionally low inertial mass.



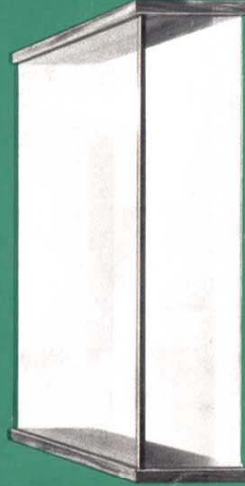
Eccentric Tracking

Speed, $33\frac{1}{3}$ rpm, 17 cm record with large center hole, tracking force set at 2 grams. Without using the center hole adapter, place the record off-center so that its inner rim touches the spindle. Place the tonearm on one of the outer grooves of the record and push the slide switch to "manual." You will see the tonearm follow the eccentric movement of the grooves perfectly. This demonstrates the extremely low friction of the tonearm in its horizontal movement and its insensitivity to horizontal vibration.

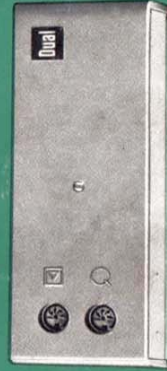
Base CK 2 is supplied for mounting the Dual 1009. It has an oiled walnut finish. The matching dust cover, CH 1, made with lightly tinted transparent plexiglass, can be left closed during play, raised to an open position, or removed entirely. When the Dual 1009 is operated with a magnetic stereo cartridge, the Dual TVV 42 preamplifier must also be used. It may be connected to 110 V or 220 V AC.



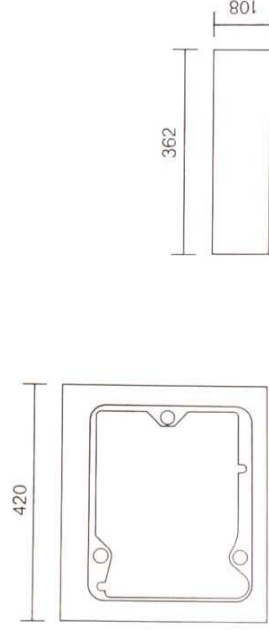
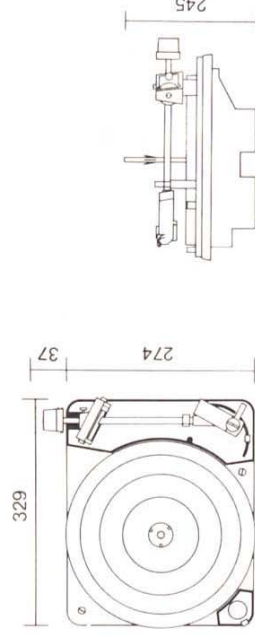
CK 2



CH 1



TVV 42 / TVV 43



Standard models of the Dual 1009 available

T 508 without cartridge

For 50 cycle, 220 volt AC, with phono cable and power cord.
Cartridge leads terminate in standard miniature phono plug type DIN 41524.

Power cord is connected to chassis through AMP 10 k connector.

T 505 with Dual DMS 900 stereo magnetic cartridge.
Otherwise same as Model T 508.

All types also available for 60 cycle, 110 volt AC.

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