



WORLD'S FINEST AUTOMATIC TURNTABLES

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In Automatic Turntables today Garrard is the innovator and has been for over 50 years!

It is remarkable how a stereo record captures the sound of the live performance.

It is equally remarkable how a Garrard automatic turntable reproduces that record without a hint of distortion or unwanted noise.

Modern records contain a miraculous spectrum of simple and complex waveforms, covering a wide dynamic range, from very soft to very loud.

The recognized ability of Garrard units to reproduce this material with more consistent perfection than any other home record playing equipment, has brought this line to its pre-eminent position.

Musically – the results have been so impressive that more owners of component stereo systems enjoy their records on Garrard automatics than on all other record playing equipment combined.

Technically – these results stem from this thoughtfully formulated policy, followed by Garrard for more than 50 years:

To incorporate meaningful new features as soon as available.

But, to retain tested mechanisms which have not been surpassed.

Advancements inspired by the state of the art are eagerly pursued.

But, changes for the sake of change are sternly rejected.

This demanding creed guides the everyday activities of the phenomenal organization known as the Garrard Laboratories... whose key personnel have devoted their entire careers to this one company and this one product. The engineering background, teamwork, sheer know-how of this established corps of experts are simply not matched by others producing record playing equipment anywhere in the world.

This is the Garrard tradition. What has it accomplished in actual practice? The impressive answer is the long list of advancements introduced by the Garrard Laboratories. These Garrard developments established most of the significant trends which have literally upgraded this entire class of equipment over the years. Proof of this is self-evident in the degree to which Garrard automatics have been, and continue to be imitated by others.

Consider with us the various parts of an automatic record playing unit. Note how Garrard equipment has evolved since the beginning of high fidelity.

Tone arm

This is probably the most prominent part of any record playing unit - and a tremendous amount of attention has been paid to it by all manufacturers. The key to the metamorphosis of the tone arm is the cartridge. The basic purpose of the tone arm is to hold the cartridge in a shell and to track it with the correct force, obtaining the best reproduction possible, and imposing no impediments on the free action of the stylus. This sets up a complex geometrical problem in arm design. It has also required continued improvement in pivoting, permitting the arm to move more freely, since inertia and friction are detrimental to the performance of the cartridge. Poor tracking, of course, may also result in damage to the stylus and the record. In each of these basic aspects of tone arm design, Garrard has led the way, as the following will indicate.

The shell

First, the accommodation for the cartridge. The physical size of the cartridge, its mass and weight, its shape and related mounting problems...have all changed. Furthermore, each brand of cartridge has its own loyal group of followers – all of them interested in using the cartridge of their choice. Simple as this may

2 If You Didn't Get This From My Site, Then It Was Stolen From... www.SteamPoweredRadio.Com sound, it was nevertheless true that few record players, automatic or manual, were ever able to accommodate more than a fraction of even the popular cartridges on the market at the time.

It was Garrard who introduced the plugin universal shell...taking all cartridges ... in models built as far back as the 1940's. This feature has remained in virtually all Garrard equipment to the present time.



But today's plug-in shell is vastly improved over its earlier counterparts. It is now a lightweight, low mass structure compatible with the smallest, lightest cartridge on the market. You will notice this most prominently on the Garrard Lab 80 Mk II (pages 4-5) and the 70 Mk II (pages 6-7), but all Garrard

models have cut-away plug-in shells which accommodate any cartridge, and are furnished with mounting hardware for the simplest installation and finest performance.

Arm material

Even at the time when Garrard's classic RC80 was introduced, there was a noticeable trend toward lighter tone arms. Most manufacturers met this problem by building the arm of plastic. But this material was not sufficiently rigid and it tended to create resonance. The RC80 and subsequent Garrards, therefore, featured an aluminum tone arm. This material still serves excellently on most of the models. The most popular separate professional arms have been built of tubular aluminum. Garard introduced this construction feature in its automatic AT6 five years ago. Today, you will find it on the 60 Mk II, the 50 Mk II and, in a flat silhouette version which imparts extreme rigidity, on the 70 Mk II.



The epitome of low mass tone arm construction is the exceptional arm of the Lab 80. It is made of Afrormosia – the least resonant of woods...therefore, ideal for this special application. The wooden shaft is rigidly held by a "T" of aluminum... an ingenious combination of materials promoting flawless tracking performance.

Tone arm weight and balance

In order to bring out the best in modern cartridges, it is essential that the arm be balanced perfectly and capable of tracking the stylus at the correct force against the record groove. At one time, this was a relatively simple matter. Tracking force was established by a simple spring, which pulled the arm from the rear to partially offset the dead weight of the shell, the cartridge, and the shaft of the arm. Essentially, this reduced the weight fortward of the pivot, leaving the remainder of the weight for tracking. Today, with the very light cartridges and the feather light pressures prescribed for them, this method is not adequate. Professional tone arms are balanced in much the same manner as a doctor's scale – by the positioning, inward or outward, of a counterbalance weight.

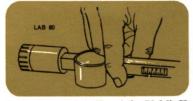


Garrard introduced this type of dynamically balanced tone arm, for the first time in an automatic unit, with the revolutionary Type A – the first automatic turntable – six years ago. The Type A series (now the 70 Mk II) and then the AT6 series (now the 60 Mk II) still use this type of sliding weight very success-

fully. The Lab 80 has a more precise variation of it, the counterweight being mounted on a vernier adjustment for really fine, precision balancing.

Even on the lower priced Garrard units, you will now find a counterweight at the rear of the tone arm – placed there to reduce the amount of spring action needed to balance the arm, resulting in a dramatic improvement in performance. Every modern cartridge is designed to track properly within a specific range of pressure. The tone arm must be capable of being set to this pressure, and maintaining it. Garrard has pioneered in this direction by simplifying the stylus pressure adjustment, conveniently locating a knurled knob at the back of the tone arm on early models such as the RC88 and more recently, under the arm of the 40 Mk II.

However, as stylus pressures became more critical, with cartridges tracking down to fractions of a gram, it was necessary to depend upon accessory stylus pressure gauges, not always available or convenient to use. Therefore, Garrard introduced the concept of the built-in stylus pressure gauge, first on the Type A... then on the AT6. Now, this development has been carried through to its logical fulfillment with the precision pressure gauges built into the arms of the Lab 80 Mk II, 70 Mk II and 60 Mk II.



In the Lab 80 Mk II and the 70 Mk II, accurate settings to fractions of a gram are easily made by click settings calibrated at quarter gram intervals. The adjustments are both audible and visible. In the 60 Mk II (pages 8-9) the pressure is dialed in by turning an optical type knob. If the knob is turned beyond 5 grams, it simply clicks back to starting position, making the mechanism foolproof. There is also an interesting variation of the stylus pressure adjustment in a new type of gauge just introduced by Garrard — on the tone arm of the 50 Mk II (pages 10-11). This useful adjustment is a model of simplicity to read. The markings vary in size. Larger means heavier, and smaller means lighter pressure.

Pivots

One of the most obvious problems in tone arm design is to eliminate resistance to motion, vertically and laterally. Only with an effective pivoting system can the arm track freely enough at the very light pressures now required. Garrard engineers have been working on this problem for many years, utilizing Garrard's special capabilities for maintaining precision tolerances in minature fabricated parts. The results can be visualized by examining the tiny needle pivots used in the Lab 80 Mk II, 70 Mk II, and 60 Mk II, where a jewel-like point just touches into a miniaturized ball bearing race, resulting in vertical pivoting which would do credit to the finest chronometer.



Anti-skating control

One development has logically led to another. Ultra-sensitive cartridges have resulted in low mass tone arms with virtually frictionless motion. Stylus assemblies have become more delicate. The dynamic range of records has become wider. Now ... tracking must be very light, but it must not impair in the slightest the freedom of motion of the stylus. Side pressure acting on the stylus would result in distortion of one side of the stereo groove or the other. It might also cause undue record wear - particularly affecting the all-important clarity of the highs. Some years ago, Garrard laboratory tests confirmed that the natural side pressure created in all tone arms by the angle of the cartridge head was creating an increasingly noticeable problem, with the growing sophistication of stereo equipment. It was clear that compensation for this side pressure was essential to permit the stylus to function unimpeded. This very genuine need re-sulted in the design of the patented antiskating device introduced by Garrard in the Lab 80 and Type A70 for the first time in automatics, and now refined in the Lab 80 Mk II and 70 Mk II.



This small, simple arm, calibrated in grams, is adjusted by sliding a weight to match the stylus pressure setting on the tone arm. There are no springs or delicate mechanisms to get out of order. In a few minutes, using a grooveless record, any Garrard dealer can make a most convincing demonstration proving how this little weighted arm neutralizes the side pressure on the stylus, and results in perfect tracking. Garrard has incorporated another version of anti-skating control in the 60 Mk II, where it performs a similar service with a weight that is preset. Until Garrard's presentation of the anti-skating compensator on the Lab 80, this principle was found only in a few professional tone arms. Now, of course, the feature has been imitated on other units, but the patented method of utilizing a simple sliding weight to accomplish the purpose cannot be duplicated.

Cueing

When one considers the modern tone arms which Garrard has evolved for its automatics - it becomes clear that such an arm is not an arm - it is a system by itself - a group of components of advanced design whose purposes are to transport a modern cartridge, track it perfectly, and protect it as well. The matter of protection for the stylus and the increasingly delicate record grooves, has become more important as tracking forces have become lighter. For today, it is no simple matter for the user to set a tone arm down on a record by hand, or to pick it up off the record manually. Sooner or later, there is damage to the record or stylus. Furthermore, a large number of records have multiple selections on one side of the disc. Finding these bands ("cueing" the stylus into them) is also a frequent cause of damage to nearby grooves. Cueing devices have existed for some years on professional equipment used in broadcasting studios but it remained for Garrard to be the first to apply the principle to automatics.



When they did - with the integral cueing control on the Lab 80, it was again with a highly advanced, yet simple mechan-ism. The Lab 80 cueing control is a squeeze device, cleverly located in the tone arm rest, where it is easily reached regardless of where the record player is installed. It is hydraulically operated. A touch of the finger on the manual tab starts the record player, activates the cueing device ... smoothly raising the tone arm a safe half inch over the record. Then, move the tone arm over any groove desired and press the cueing control. The arm gently lowers to the groove. It is that simple, and that useful ... now the most wanted feature in any record playing equipment. But follow the rest of the story for a typical example of Garrard's developmental leadership in the field. Naturally, the cueing feature, per se, was soon imitated on other automatic turntables \dots all of them higher in price than the Lab 80. Then, recognizing this interest, Garrard developed a lever type cueing control similar in use to those which appear in the highest priced competitive automatics. You will find it in the 60 Mk II (pages 8-9) and in the new 50 Mk II (pages 10-11) which is priced not at \$130.00 or \$150.00, but at \$54.50!



One of the reasons why the cueing device is very appealing is the pause feature. Should the record player be operating when the phone rings – for example – the music may be interrupted, simply by touching the cueing control – and it may then be resumed at the very same groove when the interruption is over. Thus, a feature which was originally developed for professional applications in radio stations – has found its widest use in the home – safeguarding records and styli, and making the record player a greater pleasure to use than ever before.

The turntable

Garrard believes in a carefully balanced turntable, capable of imparting flywheel action - to smooth out any variations in the turning speed of the motor. No one familiar with record players will ever forget the beautifully manufactured turntable of the old RC80, revolving on a ball bearing main spindle race, and covered by a felt top. For subsequent models, Garrard carried on a continuous design project, culminating with the precision cast "sandwich" turntable introduced on the Type A-the first time such a turntable was seen on an auto-matic record player. Now, there is an entire group of oversized Garrard turn-. on the Lab 80 Mk II, 70 Mk tables . II, and 60 Mk II ... each of them somewhat different in construction . . . but all cast of non-magnetic metal, and dynamically balanced on special Garrard equip-ment. The record is well supported, and rumble, uneven speed, or hum caused by

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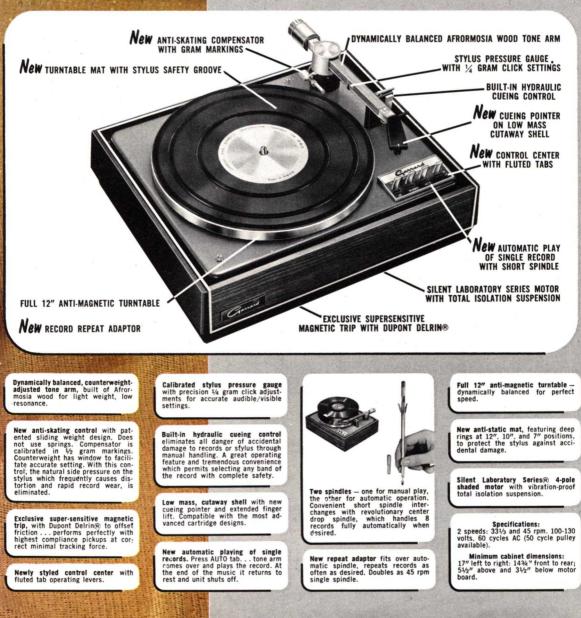


4 If You Didn't Get This From My Site, Then It Was Stolen From... www.SteamPoweredRadio.Com Just two years ago, with the introduction of the Lab 80, Garrard set a spectacular precedent in record playing equipment – by combining precision, performance, and convenience to a degree not previously available in either single play or automatic units. Due to this extraordinary product, the entire industry has witnessed a revolutionary upgrading in fine record playing equipment.

Now, consistent with the Garrard leadership tradition, the Lab 80 Mk II is introduced. It is the Lab 80 brought to perfection . . . subtly but magnificently refined in appearance and engineering. All the Lab 80 developments remain, but in addition, there are useful new operating features. One of them is provision for automatic play of a single record. The Lab 80, which was the first automatic player to have an integrated cueing device, retains this outstanding feature, which differs from all other types since it is hydraulically operated. The anti-skating control introduced to the automatic field by the Lab 80, has been refined, with the compensator now calibrated at half gram increment markings, and employing a counterweight with a window to facilitate accurate settings. Refinements in the Lab 80 Mk II have been carried even to the turntable mat. It is now designed with safety rings which protect the stylus should the arm be lowered accidentally, without a record on the turntable.

The Lab 80 Mk II is also an outstanding example of ingenuity and good taste in contemporary product design, with its distinctive tone arm assembly, turntable and mat, and a newly styled, raised control center, with fluted tab operating levers.

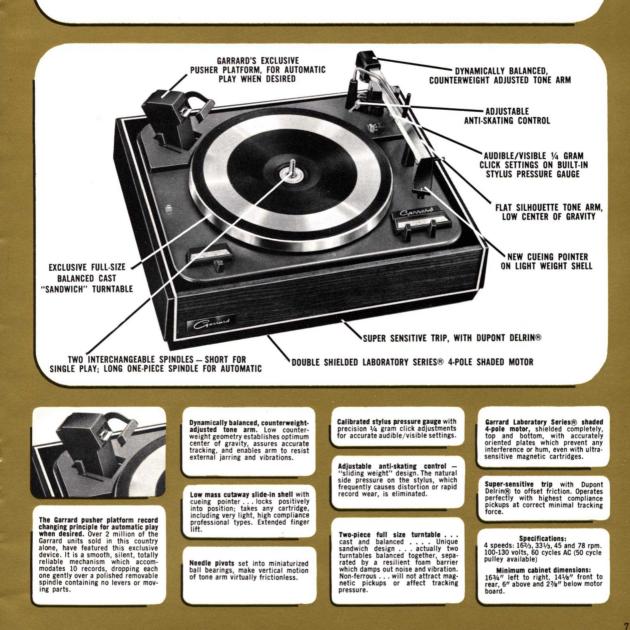
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This is the aristocrat of record playing units ... the ultimate expression of the automatic turntable concept which Garrard launched with the original Type A. It has been, and remains the most successful and satisfactory series of record playing instruments the high fidelity field has ever known ... a perfect expression of the Garrard philosophy. Dealers throughout the industry, who for many years have been featuring the outstanding record changers which established the Garrard reputation for unassailable integrity, will recognize in the 70 Mk II certain familiar and proven features which have become indivisible from the Garrard name. As in previous models of this notable series, the 70 Mk II retains the

exclusive Garrard pusher platform record changing principle ... a classic mechanism which has never been equalled, much less surpassed, for gentleness or reliability. This feature is retained, and combined with other, new advancements, including an adjustable antiskating control and a precision counterbalanced tone arm, designed to an exceptionally high standard. Because of its low mass and flat geometry, this tone arm provides the 70 Mk II with impressive advantages in tracking capability, and achieves outstandingly clean reproduction with modern cartridges. Thus, for reasons of quality, Garrard dealers everywhere not only carry the 70 Mk II they are proud to feature it and recommend it.

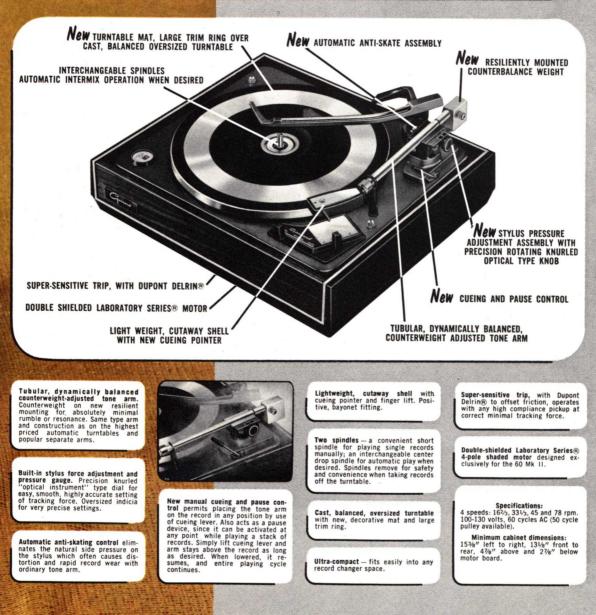


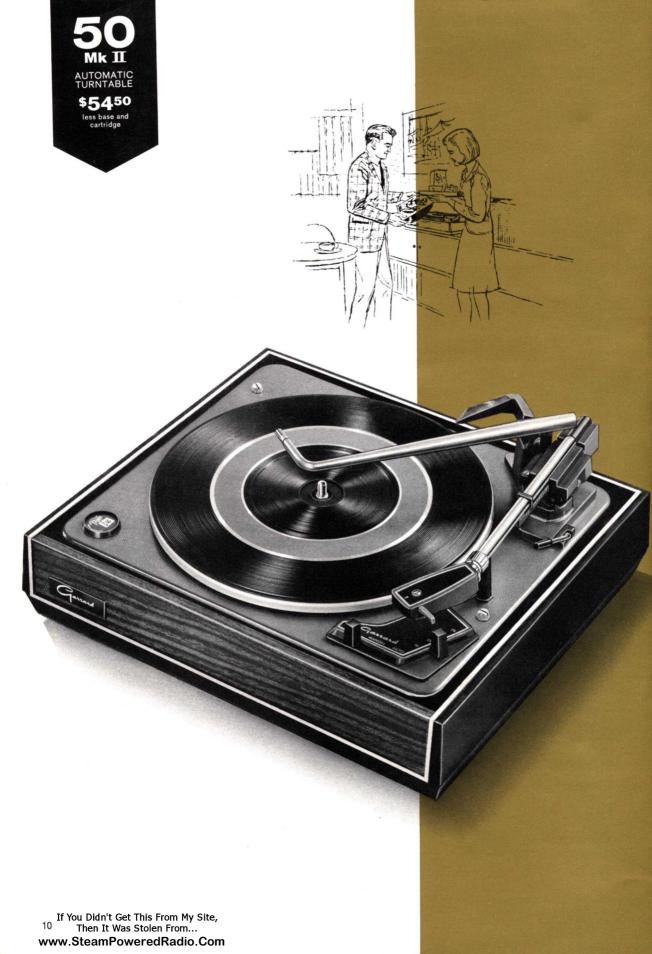


The basic design of this unit was developed from the AT60, recognized as a "best buy" among all automatic turntables. Now, the enhanced styling of the 60 Mk II includes a new turntable mat and the large trim ring, similar to that of the 70 Mk II. But appearance handsome as it is - is only a minor virtue of the 60 Mk II. The selling appeal of this dramatic unit lies basically in superior performance, and it is richly endowed with engineering features, refined to assure excellent reproduction with the latest ultra-sensitive cartridges. The true dynamically balanced tone arm is of the most advanced construction. Rumble and resonance, already minimal in the AT60, have now been even further eliminated by a new resilient counterweight mounting. The arm system of the 60 Mk II will track flawlessly at 1/2 gram. Stylus pres-

sure adjustments have been made more precise, and more convenient, by a new stylus pressure control assembly which incorporates the type of dial arrangement found in fine cameras and other precision optical instruments. Another key feature of the 60 Mk II is a new manual cueing and pause device. The tone arm may be placed safely on the record at any groove, or raised safely from the record at any time, by this simple, positive lever device.

Add to the impressive appearance of this model, and its impressive list of features, automatic intermix operation versatility, compact size, and modest price... and it becomes clear why the 60 Mk II will continue to be the ideal automatic turntable to satisfy the growing major market for high fidelity components.



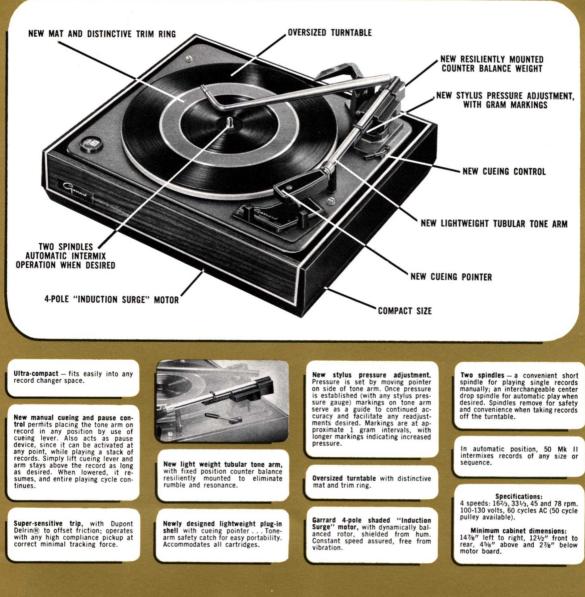


Far from being keyed to the level of budget or even medium-priced music systems, the 50 Mk II deserves comparison with the most expensive automatic turntables. It will then become clear how much the Garrard organization has accomplished in this excellent new compact model. The dramatic impact of the 50 Mk II begins with the styling. It is chaste, functional and handsome ... beautifully coordinated . . . with a quality appearance which is a tribute to the designers and engineers alike. The features are equally impressive. The tone arm is the excellent performing light weight tubular type, with a resiliently-mounted, fixed position counter-weight. The low mass shell will accommodate all cartridges, and the stylus pressure is set by moving a pointer along a gauge conveniently located on the side of the arm, which indicates heavier or

lighter pressure by markings of varying lengths at 1 gram intervals.

Perhaps the most dramatic feature of the 50 Mk II is a manual cueing and pause device, operated by a control lever carefully located for utmost convenience. Simply lift the cueing lever and the arm stays above the record as long as desired. Lower it, and the arm gently lowers to the record groove. This control provides complete safety to records and stylus, and can be used at any time... to begin a single record, or to pause whether the unit is playing manually or automatically. Built-in cueing of the same type is now considered the single most desirable operating feature of the most expensive automatic turntables.

As with all Garrard automatic turntables, the 50 Mk II is a manual player, but it may also be used automatically – with intermix operation.



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Built to Garrard's highest standards, this handsomely designed 4-speed unit is actually an exceptionally compact automatic turntable at the price of an ordinary record changer!

It was designed to introduce a new concept of performance and versatility to systems where space must be considered. Despite its modest price, dealers large and small, in all parts of the country, have included its predecessor in the overwhelming majority of advertised music systems which they preselect. These dealers are aware that they can combine the 40 Mk II with the finest amplifiers, receivers and speakers, and offer them to their most discriminating customers assured that it will be compatible and an enduring credit to their judgement.

The widespread dealer confidence which this Garrard model type has earned, is as significant as the impressive list of features which the 40 Mk II offers. This is the lowest priced Garrard automatic turntable, but all Garrards must meet the same high standards of quality. The 40 Mk II may be purchased with complete assurance that it will serve its purpose admirably, operating with utmost reliability from the beginning, and for years to come.



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Automatic return of arm to rest and shut-off after play

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electrical interaction with the cartridge ... are all things of the past. If you wish to see an example of fine metal craftsmanship, lift a Garrard Lab 80 turntable and inspect the bottom. Note the ribbed, rigid structure and the copper weights which balance it, as on an automobile wheel.



However, the turntable itself is not the entire story – for the mat receives a full share of attention. A Garrard mat is an object of beauty. It is also a challenge to engineering ingenuity. Perfect example of this is the exclusive material Garrard formulated for the Lab 80 mat. It protects the record, but is also anti-static – tending to discharge the electrical force which attracts dust to the record. This feature is more than a flourish, since it helps to protect records from their greatest enemy...dust. Also note the deep safety grooves at the 7", 10", and 12" positions, incorporated by Garrard to protect the stylus, should the automatic tab be pressed accidentally. The stylus would then ride in these special grooves without damage.

Motor

Under the turntable are the motor and drive assembly. Garrard has traditionally used the shaded induction motor, recognizing that the key consideration in power plants is not type but quality. The differences in viewpoint over induction vs. hysteresis principles were resolved many years ago when Garrard introduced the smooth, completely reliable 4-pole type, to replace the 2-pole motors which were then in general use.

The present precision made Laboratory Series motors used in the Lab 80 Mk II, 70 Mk II, and 60 Mk II, were developed entirely by Garrard, which designs and builds its own motors completely.



Armatures are dynamically balanced on exclusive machines . . . built for Garrard specifically for this purpose. Regardless of which Garrard model you own, you are assured that the motor will be exactly the right size and power to turn silently and smoothly, at perfect speed, without any service whatsoever for years. The Laboratory Series motor will main-tain its speed within NAB standards, even through the unlikely line voltage variation of 95 to 135 volts. The construction is exemplary, with refinements such as oilite bearings used to make the unit flawless and ageless. Garrard also takes pains to insure that even the slightest vibration of the motor cannot be imparted to the record via the unit plate or turntable. Rubber mountings are incorporated in all Garrard units. In the Lab 80, there is something additional. a coordinated suspension system of rubber anti-vibration mountings and damp-

ing pad devices which isolate the motor completely from the unit plate. You can move the entire motor structure freely by hand. Try it at your Garrard dealer. You will be impressed. Incidentally, speaking of motors and drive assemblies, we should also mention that one reason why Garrard equipment lasts so long is that every lever is adjustable – with bronze bushings wherever needed. This construction, used 18 years ago in the RC80, made it the phenomenal success it was, and is - since the majority of these machines are probably still in use, almost two decades after they were purchased. Garrard automatics are built of a greater number of adjustable small scale components - rather than fewer, unadjustable large scale stampings and castings, which although simplified, may be subject to warping and misalignment. Therefore – Garrards take more hours to assemble than mass produced record players, but in the long run, it pays... because any Garrard is virtually indestructible.

While on this subject, consider some of the refinements which Garrard has brought into automatic record players (all record playing units for that matter) over the years. For example, the muting switch, which keeps the unit perfectly quiet except while a record is playing (first incorporated by Garrard in the RC88 more than 10 years ago); the resistor/condensor networks incorporated by Garrard 12 years ago, eliminating the annoying electrical discharge "plop" which used to startle record listeners in the early days of high fidelity. Then there is the question of wiring and in-stallation. Ever since the RC80, all Garrard automatics have come fully equipped with UL approved wiring. Garrard introduced it. Before this, you would have had to solder the various cables to the record player before you could incorporate it into the music system. Now, due to Garrard, the changer is simply plugged in. Not only are the AC wires installed, but the twin stereo cables and plugs are already attached, with a 4-pin 5-wire system – separate ground connections - ideal wiring because it eliminates the problem of hum. And, this is done with Amplok connec-tors for AC and twin female phono sockets on the unit plate – so that a Garrard can be connected or disconnected instantly from the music system. Today, these conveniences may seem elementary, but they simply were not pro-vided until Garrard research paid them the attention they deserved.

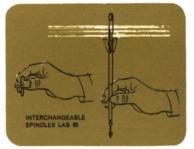
Automatic and Manual operation

As far back as the 1930's, Garrard had already developed and incorporated an automatic record handling device known as the pusher platform. Those were the days of gates, scissors, and other changer mechanisms equally murderous to records. The Garrard pusher platform revolutionized all automatic record changers, and established Garrard, even at that early date, as the outstanding...indeed (many will say)... the only really reliable record changer in the market. When the LP era and high fidelity began, this same pusher platform, refined in action and appearance, was built into the RC80 ... and Garrard has kept it to this day.



On pages 6-7, you will see the latest version of this fine completely reliable mechanism, on the 70 Mk II. Today—we have the benefit of a tremendous number of these mechanisms built, most of which are still in operation. It is a classic example of how Garrard will retain an unsurpassed principle while incorporating legitimate improvements.

But recent developments, emphasizing the need for clearing the top of the automatic to add convenience – called for a new type of automatic arrangement, and resulted in the revolutionary single spindle introduced in the Lab 80. Here, no adjustments are made in converting from single play to automatic. It is done by simply replacing a short single play spindle with the automatic spindle.



Place a stack of eight records on top of the spindle, and this transcription turntable instantly becomes a fully automatic changer. Compare the Garrard spindle with others that, at first sight, may resemble it. Note the wide record support which only the Garrard spindle affords. Cup your hands at the sides of the turntable. Let a record drop and feel the cushion of air which explains why the record falls so gently... and suddenly the words "Garrard engineering ingenuity" will hold new meaning for you.

The other three Garrard automatics have the more usual spindle and overarm arrangement, which makes them more compact and provides the intermix feature. Here again, the automatic spindle is removable and a short single play spindle can be substituted. There is never any reason to take a record off a Garrard unit by pulling it awkwardly over a locked-in spindle.

Now, play the record. Note that however light the tracking force, the Garrard will shut itself off at the end of the will shut itself off at the end of the record (or stack). Also note how reliably and silently it will trip - go into automatic cycle - at that same minimal pressure. This is due to the material which Garrard has applied for the first time to this use . . . Dupont's remarkable Delrin®... often called the "slippery plastic." The quietness of Garrard automatic tripping is due to the ingenious use of silent materials and the elimination of friction, but the Lab 80 goes even further. There, Garrard engineers have replaced the mechanical contact which begins the tripping process in every other automatic, with the prin-ciple of magnetic repulsion. Because of this, it can be said that the Lab 80 will trip at virtually zero stylus pressure. Ingenious it is... but more important, it permits the Lab 80 tone arm, to operate at the lightest tracking forces in the industry, with the most sensitive and ad-vanced cartridges. As with all other Garrard innovations, this one was developed and is used for only two purposes better musical performance - longer satisfaction.

This is why Garrard is Garrard.



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