STANTON MAGNETICS, INC.

Plainview, L. I., N. Y.

AN INTRODUCTION TO STANTON PICKUPS

The STANTON LINE of pickups has become the industry standard for the phonograph and broadcast industries.

The STANTON PICKUPS represent the broadest line of highly developed magnetic pickups.

Each design has been developed with a particular application in mind, starting with the "CALIBRATION STANDARD" for the recording room needs.

For the critical listener evaluating phonograph records, the STANTON LINE offers elliptically equipped cartridges.

For the broadcaster, STANTON offers a full line of cartridges and styli to fulfill the needs of the good music station, the pop music broadcaster, or the rugged requirements of the rock and roll station.

We have, in short, developed a pickup to give the user maximum performance while retaining the reliability of a well designed and thoroughly developed pickup.

In addition, the replaceable stylus feature reduces down time to virtually zero; a most important feature in the professional field, where many pickups in the past had to be returned to the factory for a simple stylus replacement.

If you want the best that has been designed in any laboratory, as well as a fully field tested and reliable pickup, then STANTON has a pickup to fulfill your needs.

For further information contact STANTON MAGNETICS INC.

212 HI 5-0554 · TERMINAL DRIVE · PLAINVIEW, NEW YORK 11803

You can tell it's the Münchner Nationaltheater when you listen with a Stanton.

The reconstructed Nationaltheater in Munich, originally built 1811-18, scene of the world premieres of "Tristan" and "Meistersinger."

The ultimate test of a stereo cartridge isn't the sound of the music.

It's the sound of the hall.

Many of today's smoother, better-tracking cartridges can reproduce instrumental and vocal timbres with considerable naturalism. But something is often missing. That nice, undistorted sound seems to be coming from the speakers, or from nowhere in particular, rather than from the concert hall or opera stage.

It's easy to blame the recording, but often it's the cartridge.

The acoustical characteristics that distinguish one hall from another, or any hall from your listening room, represent the subtlest frequency and phase components of the recorded waveform. They end up as extremely fine undulations of the record groove, even finer than the higher harmonics of most instruments.

When a cartridge reproduces these undulations with the utmost precision, you can hear the specific acoustics of the Nationaltheater in Munich, or of any other hall. If it doesn't, you can't.

The Stanton does.

STANTON

"The tracking was excellent and distinctly better in this respect than any other cartridge we have tested . . . The frequency response of the Stanton 681EE was the flattest of the cartridges tested, within ±1 dB over most of the audio range."
Hirsch-Houck Laboratories, HiFi/Stereo Review, July, 1968.

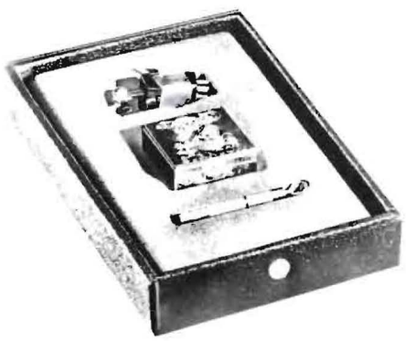
The specifications.* Frequency response, from 10 Hz to 10kHz, ±½ dB. From 10kHz to 20kHz, individually calibrated. Nominal output, 0.7mV/cm/sec. Nominal channel separation, 35dB. Load resistance, 47K ohms. Cable capacitance, 275 pF. DC resistance, 1K ohms. Inductance, 500mH. Stylus tip, .0002" x .0009" elliptical. Tracking force, ¾ to 1½ gm. Cartridge weight, 5.5 gm. Brush weight (self-supporting), 1 gm. *Each Stanton 681 is tested and measured against the laboratory standard for frequency response, channel separation, output, etc. The results are written by hand on the specifications enclosed with every cartridge. The 681EE, with elliptical stylus and the "Longhair" brush that cleans record grooves before they reach the stylus, costs $60. The 681T, identical but with interchangeable elliptical and conical styli both included, costs $75.

For free literature, write to Stanton Magnetics, Inc., Plainview, L.I., N.Y. 11803.

PRINTED U.S.A. 115-105-019

Stanton Model 681EE Stereo Cartridge

Fig. 1–Stanton "Longhair" cartridge with case, styli container and screwdriver shown below.



MANUFACTURER'S SPECIFICATIONS–Frequency Response: 10 Hz to 10 kHz ±1½ dB; above 10 kHz, individually calibrated: (test sample) 10 kHz to 15 kHz ±1½ dB; 15 kHz to 20 kHz ±2 dB. Channel Separation (1 kHz): 35 dB. Load Resistance: 47,000 ohms. Stylus Tip: Diamond, .0002 x .0009 elliptical. Tracking Force: ¾ to 1½ grams. Brush Weight (self-supporting): 1 gram. Cartridge Weight: 5.5 grams. Price: $60.00.

The Stanton Model 681 stereo phono cartridge is the company's top-of-the-line unit. Each cartridge is packaged with individually calibrated performance data, a knurled screwdriver, and an attractive metal "pill box" (for spare styli).

A noteworthy feature of this cartridge is its "longhair" brush, which keeps lint and dust out of the record groove and, naturally, away from the stylus during play.

The stem of the brush is hinged on an off-center pivot, so that it always stays a few record grooves ahead of the stylus point. The bristles also act as an anti-skating device to some degree. In tone arms already employing anti-skating compensation, the arm's compensation must be reduced by about ½ gram to take into account the action of the brush. The bristles, incidentally, never exert a force greater than 1 gram.

The 681's low-mass stylus assembly is probably responsible for the cartridge's superb tracking performance at such low forces as 1 gram. (Perhaps there's an assist from the brush.) In an SME tonearm set for 1¼ grams (plus 1 gram to compensate for the brush), we found that the Stanton 681EE tracked some previously "unplayable" records (for example, a *Project 3* recording, produced by Enoch Light, with Robert Fine as Chief Engineer).

The Stanton 681EE is certainly a smooth one, too. Its frequency response, as plotted in Fig. 2, shows a wide-range response that is free of peaks. Even the usual high-frequency resonant peak is well damped. Response measured within ±2 dB through the 20 Hz to 20 kHz range, which falls within the specifications supplied by the manufacturer as calibration data. Sensitivity was measured as 4.4 mV left and 4.0 mV right, referred to 3.54 cm/sec rms at 1 kHz, which also conforms to the manufacturer's data. Average separation at 1 kHz measured 30 dB, using a CBS STR-100 test record. This is the *best* channel separation figure at this frequency that we've measured over the years. Though our measurement is below the specified 35 dB separation figure (which is 5 decibels more than any other manufacturer claims), one should recognize that only a tiny deviation in pickup alignment (which cannot be avoided without using precise laboratory tools) can reduce the reading by a few decibels. Furthermore, the test record's literature states "to over 30 dB" separation, which may well be only 30.5 dB for all we know.

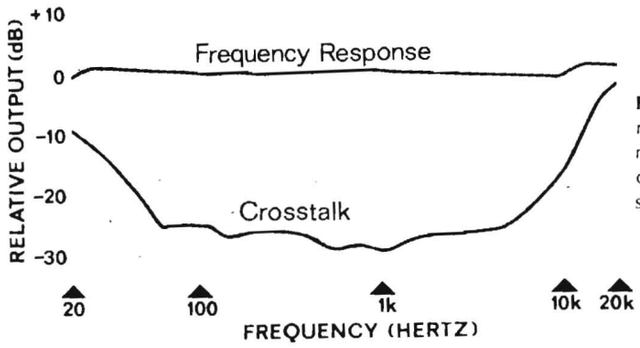


Fig. 2 – Frequency response and channel separation (two channels averaged since they were so close).

The lack of peaks in the 681EE's response is evident in the square-wave photos of Fig. 3. The slight rounding at the top is due to a minor rise in low bass response, while the small wiggle is caused by the very gentle dip at 10 kHz.

With regard to hum-bucking capability, the cartridge's signal-to-noise ratio measured –64 dB through a wide-band RIAA preamplifier. This is an excellent figure, illustrating why the 681EE is not at all susceptible to hum pickup.

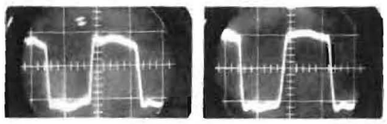


Fig. 3–Square-wave photos; left channel, 5 cm/sec and 3.54 cm/sec velocity.

Performance

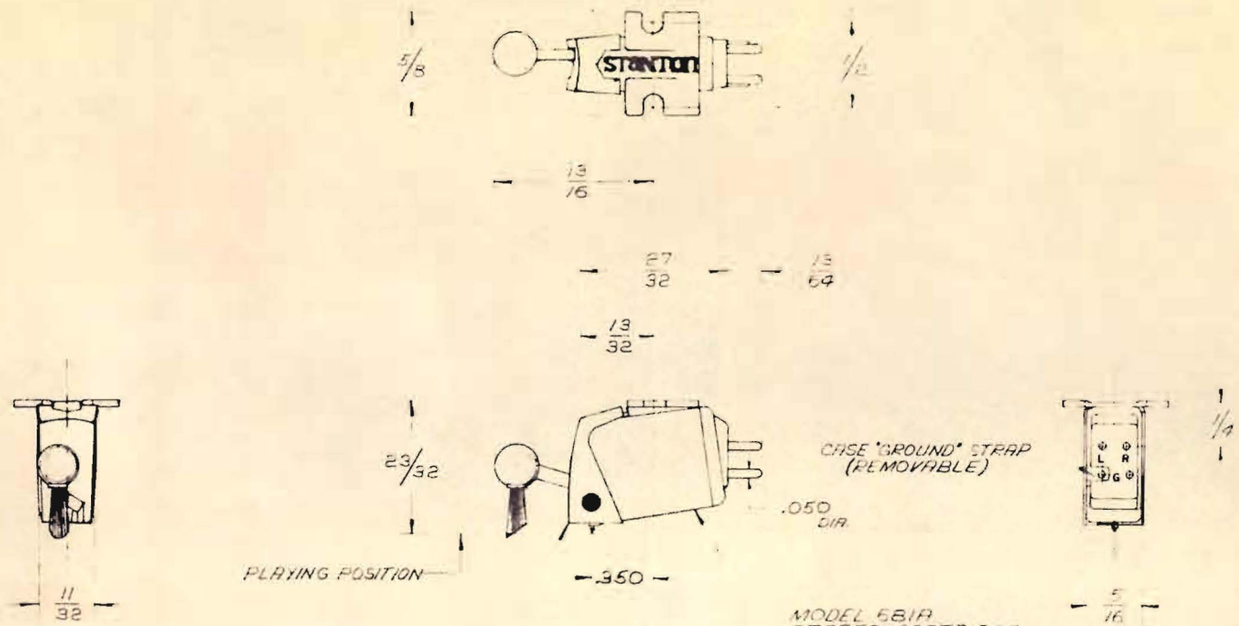
The Stanton 681EE was a pleasure to listen through. It brought new life to some old favorites, performed marvelously well with new, bright stereo releases, eliminated the "fuzz" that accompanied some of the heavily cut records.

High frequencies, as produced by brush work on cymbals, for example, exhibited a realistic airiness with the Stanton 681EE. Lows and middles were equally natural, without any noticeable favoring of particular frequencies. The stereo effect was pronounced; this was especially observable with an old *Quarante Cinq* 45 rpm, 12-in. stereo record on bullfight music.

There are many things that measurements cannot reveal, of course. For example, one has to *listen* to determine the degree of coloration produced by a transducer. The Stanton 681EE is a neutral-sounding stereo cartridge, the type of sound we favor, frankly. Discs sound absolutely great when the source material is good and the stereo playback equipment is excellent. Should either be deficient, however, the cartridge will not mask it.

The 681EE stands among the top few cartridges on the market. It would make a fine mate for any of the better automatic turntables, as well as for manual turntables. For turntables that cannot accommodate the lighter tracking force required of elliptical-stylus-equipped cartridges, one can choose the Stanton 681A conical-stylus stereo cartridge. The latter, priced at $55.00 (compared to the 681EE's $60.00), requires 1 to 3 grams of tracking force. This compares to ¾ to 1½ grams for the 681EE.

MOUNTING DIMENSION



MODEL 681A
STEREO CARTRIDGE
COLOR: SILVER

MODEL D6807r
STEREO STYLUS
(REPLACEABLE)
COLOR: BLACK W/SILVER DOT

681A

ISSUE 1

SPECIFICATIONS

MECHANICAL

CASE COLOR:	SILVER
STYLUS COLOR:	BLACK
WEIGHT:	5 GRAMS
STYLUS TRACKING FORCE:	1 TO 3 GRAMS
TRACKING CAPABILITY:	15 CM/SEC AT 1 1/2 GRAMS
VERTICAL TRACKING ANGLE:	15°
STYLUS RADIUS:	.0007"

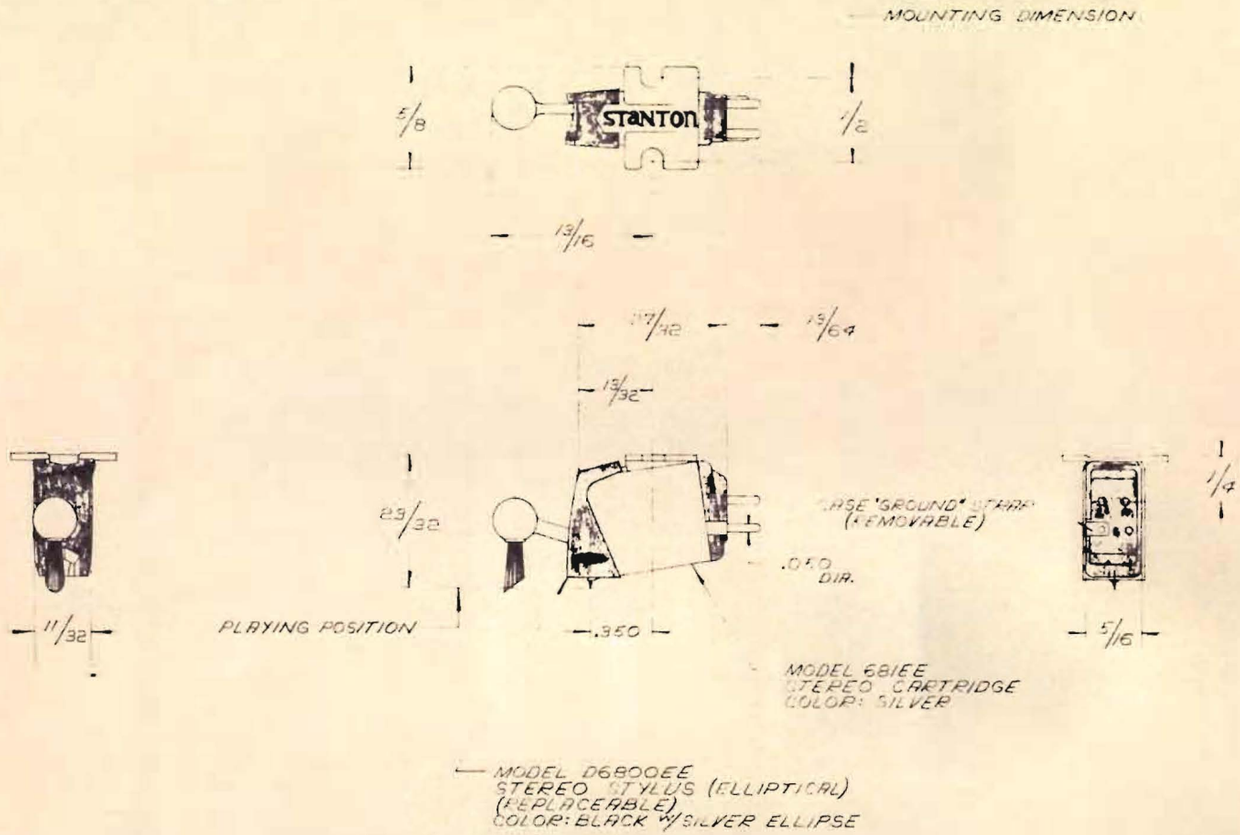
ELECTRICAL

RESISTANCE, D.C.:	1550 OHMS PER CHANNEL
INDUCTANCE:	815 MH PER CHANNEL
LOAD RESISTANCE:	47,000 OHMS
NOMINAL OUTPUT:	1.1 MILLIVOLTS PER CM/SEC OF RECORDED VELOCITY ±2 DB
CHANNEL SEPARATION:	30 DB MINIMUM AT MID-RANGE
FREQUENCY RESPONSE:	10 HZ TO 10 KHZ ±1/2 DB 10 KHZ TO 15 KHZ ± 1 1/4 DB 15 KHZ TO 20 KHZ ±1 1/2 DB
CHANNEL BALANCE:	1 DB MAXIMUM OUTPUT DIFFERENCE @ 1 KHZ
SHIELDING:	ANNEALED MU METAL CASE

STANTON MODEL 681A
STEREO CARTRIDGE
CALIBRATION STANDARD

DO NOT SCALE PRINT

681A



681EE

ISSUE 1

SPECIFICATIONS

MECHANICAL

CASE COLOR:	SILVER
STYLUS COLOR:	BLACK
WEIGHT:	5 GRAMS
STYLUS TRACKING FORCE:	3/4 TO 1 1/2 GRAMS
TRACKING CAPABILITY:	15 CM/SEC AT 1 1/2 GRAMS
VERTICAL TRACKING ANGLE:	15°
STYLUS RADIUS:	ELLIPTICAL (DIAMOND) .0002" X .0009" RADIUS

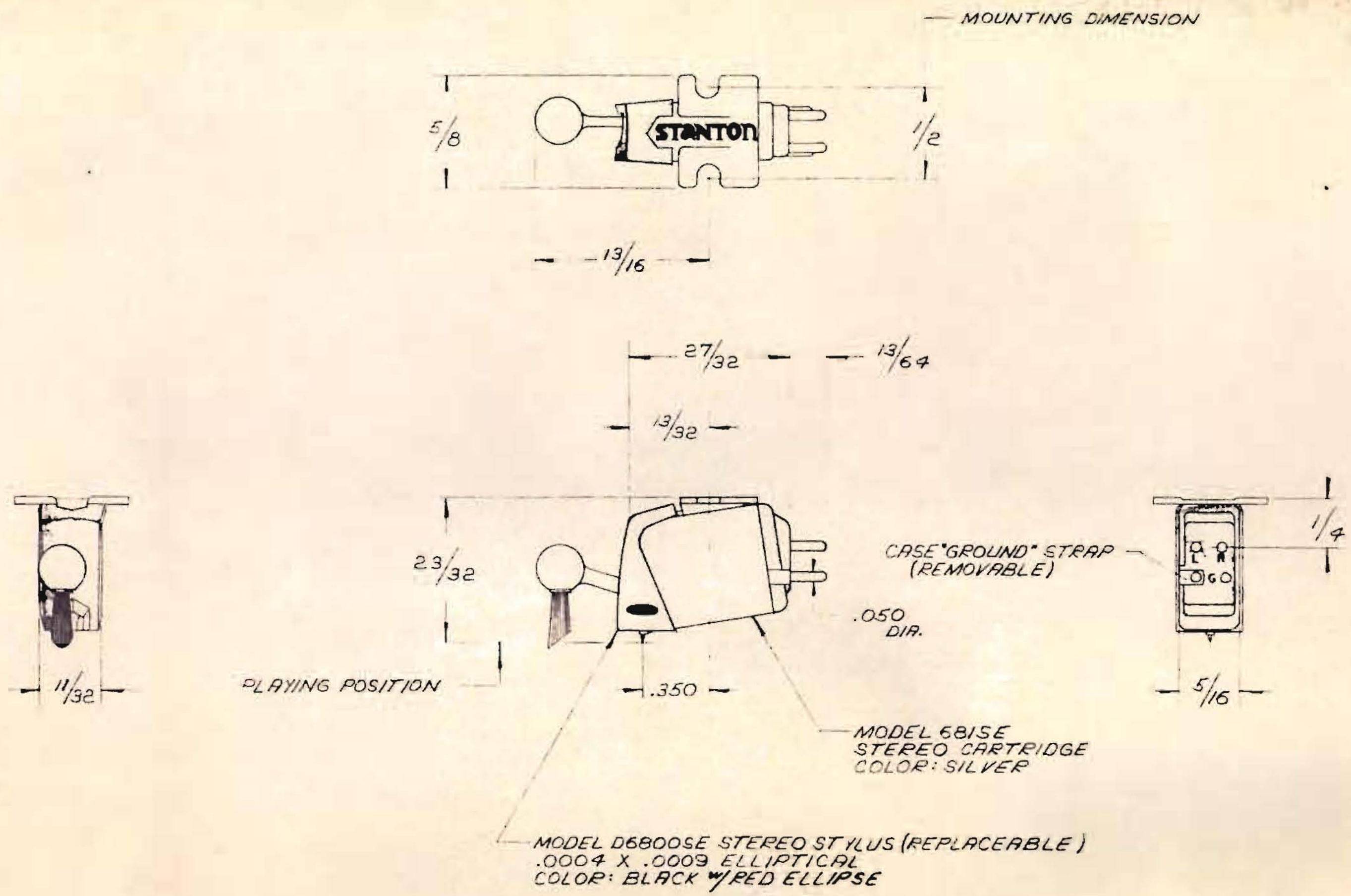
ELECTRICAL

RESISTANCE, D.C.:	1550 OHMS PER CHANNEL
INDUCTANCE:	815 MH PER CHANNEL
LOAD RESISTANCE:	47,000 OHMS
NOMINAL OUTPUT:	0.82 MILLIVOLTS PER CM/SEC OF RECORDED VELOCITY ±2DB
CHANNEL SEPARATION:	30 DB MINIMUM AT MID-RANGE @ 1 1/2 GRAMS
FREQUENCY RESPONSE:	10 HZ TO 10 KHZ ±1/2 DB
	10 KHZ TO 15 KHZ ±1 1/4 DB
	15 KHZ TO 20 KHZ ±1 1/2 DB
CHANNEL BALANCE:	1 DB MAXIMUM OUTPUT DIFFERENCE @ 1 KHZ
SHIELDING:	ANNEALED MU METAL CASE

STANTON MODEL 681EE
STEREO CARTRIDGE
CALIBRATION STANDARD

DO NOT SCALE PRINT

681EE



681SE

7

SPECIFICATIONS

MECHANICAL

CASE COLOR:	SILVER
STYLUS COLOR:	BLACK WITH RED ELLIPSE
WEIGHT:	5 GRAMS
STYLUS TRACKING FORCE:	2 TO 5 GRAMS
TRACKING CAPABILITY:	15 CM/SEC AT 2 GRAMS
VERTICAL TRACKING ANGLE:	15°
STYLUS RADIUS:	ELLIPTICAL (DIAMOND) .0004" X .0009" RADIUS

ELECTRICAL

RESISTANCE, D.C.:	1550 OHMS PER CHANNEL
INDUCTANCE:	815 MH PER CHANNEL
LOAD RESISTANCE:	47,000 OHMS
NOMINAL OUTPUT:	1.1 MILLIVOLTS PER CM/SEC OF RECORDED VELOCITY ±2 DB
CHANNEL SEPARATION:	30 DB MINIMUM AT MID-RANGE @3 GRAMS
FREQUENCY RESPONSE:	10 HZ TO 10 KHZ ±1/2 DB
	10 KHZ TO 15 KHZ ±1 1/2 DB
	15 KHZ TO 20 KHZ ±2 DB
CHANNEL BALANCE:	2 DB MAXIMUM OUTPUT DIFFERENCE @ 1 KHZ
SHIELDING:	ANNEALED MU METAL CASE

CALIBRATION

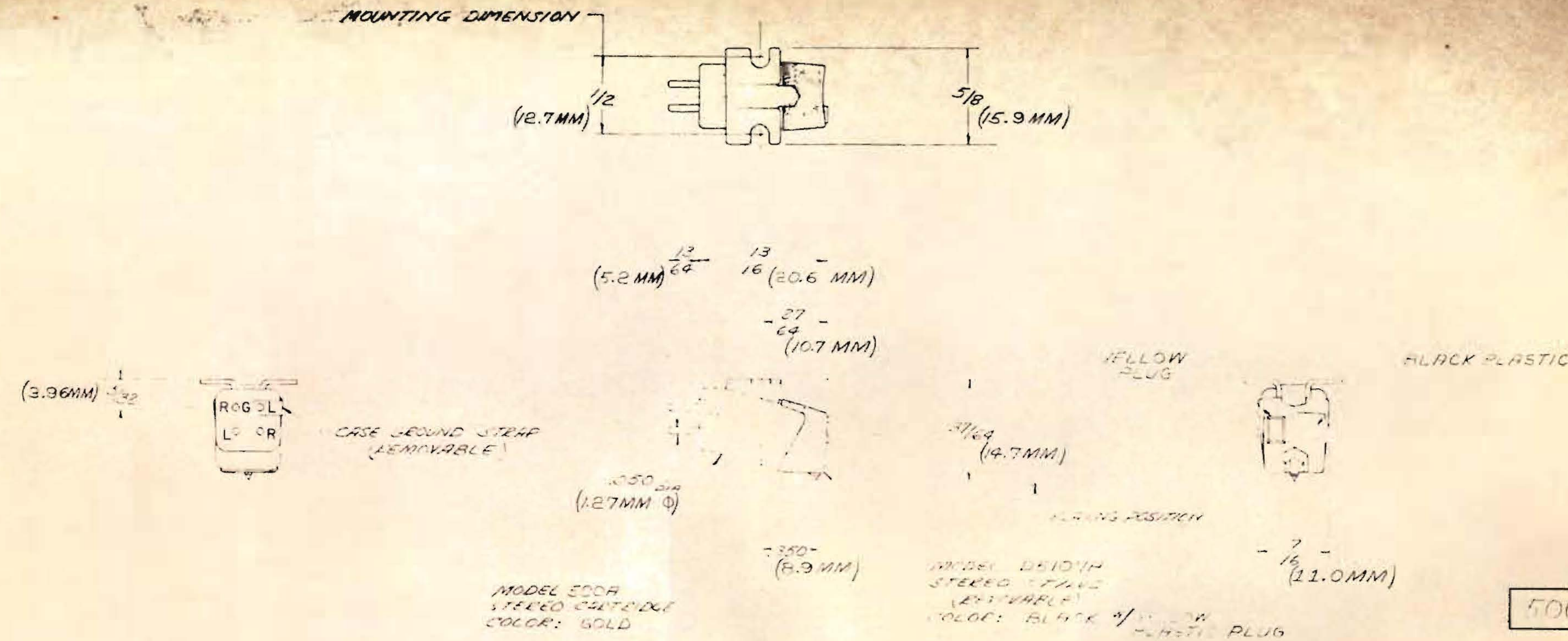
MECHANICAL:	AS SHOWN ABOVE
ELECTRICAL:	AS SHOWN ABOVE
DATA:	AS RECORDED ON ACCOMPANYING CALIBRATION CARD

STANTON MODEL 681SE
STEREO CARTRIDGE
CALIBRATION STANDARD

SCALE
DO NOT SCALE PRINT

DRWN. JR DATE 1-3-69 APPD. DATE 1-4-69 NEXT ASSY
CHK. DATE 1/3/69 APPD. DATE GEN. ASSY

681SE



500A

ISSUE 1

SPECIFICATIONS

MECHANICAL

CASE COLOR: GOLD
STYLUS COLOR: BLACK W/YELLOW PLUG
WEIGHT: 5 GRAMS
STYLUS TRACKING FORCE: 2 TO 5 GRAMS
TRACKING CAPABILITY: 18 CM/SEC - 3 GRAMS
15 CM/SEC MIN. 2 GRAMS
STYLUS TYPE: .0007" CONICAL RADIUS (DIAMOND)
VERTICAL TRACKING ANGLE: 15°

ELECTRICAL

RESISTANCE, D.C.: 630 OHMS
INDUCTANCE: 405 MH
LOAD RESISTANCE: 47,000 OHMS
NOMINAL OUTPUT: 0.9 MILLIVOLTS PER CM/SEC
CHANNEL SEPARATION: 30 DB AT MID-RANGE
FREQUENCY RESPONSE: 20 CPS TO 20,000 CPS
CHANNEL BALANCE: 2 DB MAXIMUM OUTPUT DIFFERENCE
SHIELDING: ANNEALED MU METAL CASE.

STANTON 500A CARTRIDGE
BROADCAST STANDARD

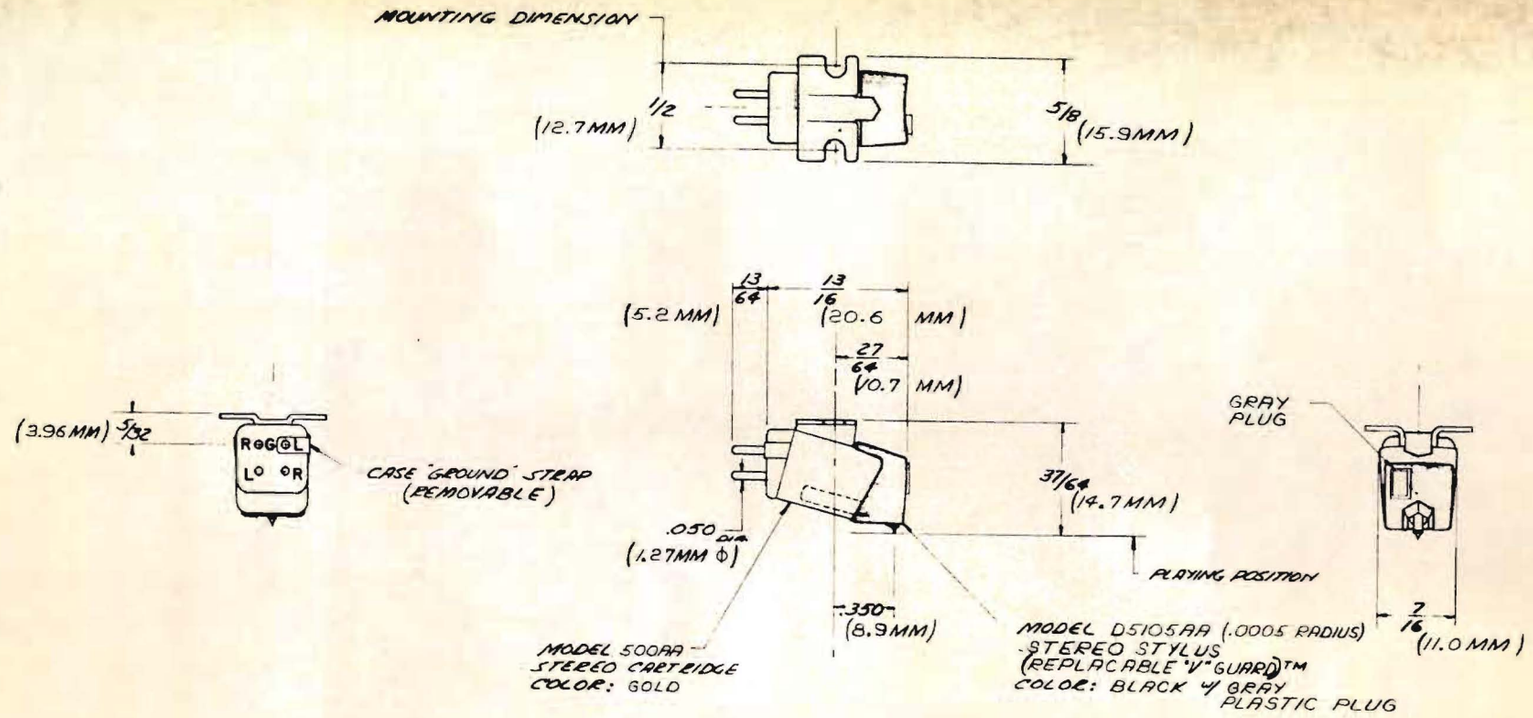
DO NOT SCALE PRINT

JR 3-1-68

2/1/68

NEXT ASSY 500A

500A



500AA

ISSUE 1

SPECIFICATIONS

MECHANICAL

CASE COLOR:	GOLD
STYLUS COLOR:	BLACK W/GRAY PLUG
WEIGHT:	5 GRAMS
STYLUS TRACKING FORCE:	3/4 TO 3 GRAMS
TRACKING CAPABILITY:	18 CM/SEC @ 1 1/2 GRAMS
STYLUS TYPE:	.0005" CONICAL RADIUS (DIAMOND)
VERTICAL TRACKING ANGLE:	15°

ELECTRICAL

RESISTANCE, D.C.:	800 OHMS
INDUCTANCE:	550 MH
LOAD RESISTANCE:	47,000 OHMS
NOMINAL OUTPUT:	0.9 MILLIVOLTS PER CM/SEC
CHANNEL SEPARATION:	30 DB AT MID-RANGE
FREQUENCY RESPONSE:	20 CPS TO 20,000 CPS
CHANNEL BALANCE:	2 DB MAXIMUM OUTPUT DIFFERENCE
SHIELDING:	ANNEALED MU METAL CASE

STANTON 500AA CARTRIDGE
BROADCAST STANDARD

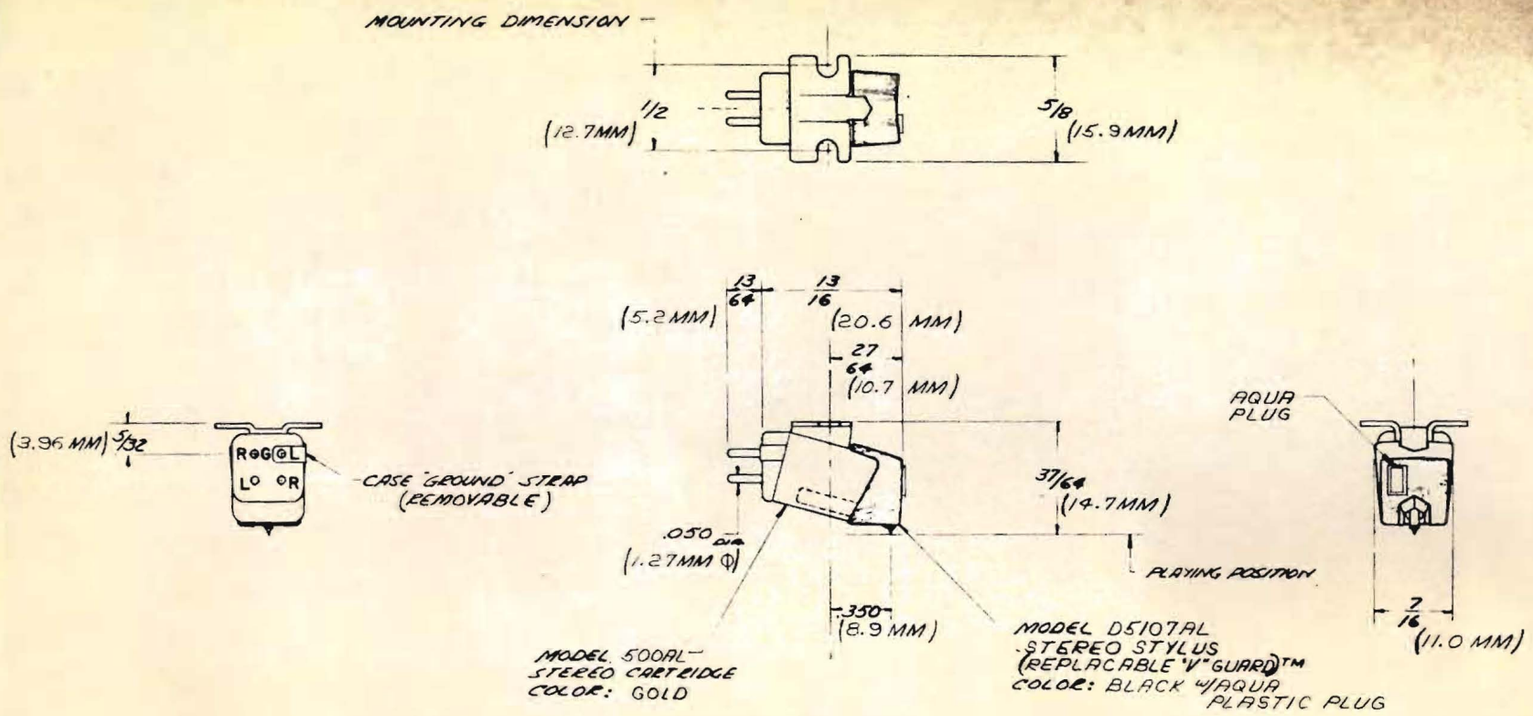
SCALE 2X
DO NOT SCALE PRINT

ALL MACHINED SURFACE FINISHES 125 MICRO-INCHES MAX UNLESS OTHERWISE SPECIFIED

ISSUE	ITEM	REVISION	DATE	BY	APPD

DRN	DATE	APPD	DATE	MFGT ASST	
CHK	DATE	APPD	DATE	ENG ASST	500AA

500AA



500AL

ISSUE 1

SPECIFICATIONS

MECHANICAL

CASE COLOR:	GOLD
STYLUS COLOR:	BLACK W/AQUA PLUG
WEIGHT:	5 GRAMS
STYLUS TRACKING FORCE:	3 TO 7 GRAMS
TRACKING CAPABILITY:	15 CM/SEC @ 3 GRAMS
STYLUS TYPE:	.0007" CONICAL RADIUS (DIAMOND)
VERTICAL TRACKING ANGLE:	15°

ELECTRICAL

RESISTANCE, D.C.:	800 OHMS
INDUCTANCE:	550 MH
LOAD RESISTANCE:	47,000 OHMS
NOMINAL OUTPUT:	0.9 MILLIVOLTS PER CM/SEC
CHANNEL SEPARATION:	30 DB AT MID-RANGE
FREQUENCY RESPONSE:	20 CPS TO 20,000 CPS
CHANNEL BALANCE:	2 DB MAXIMUM OUTPUT DIFFERENCE
SHIELDING:	ANNEALED MU METAL CASE

FOR MUSIC LIBRARIES

STANTON 500AL CARTRIDGE
BROADCAST STANDARD

SCALE 2X
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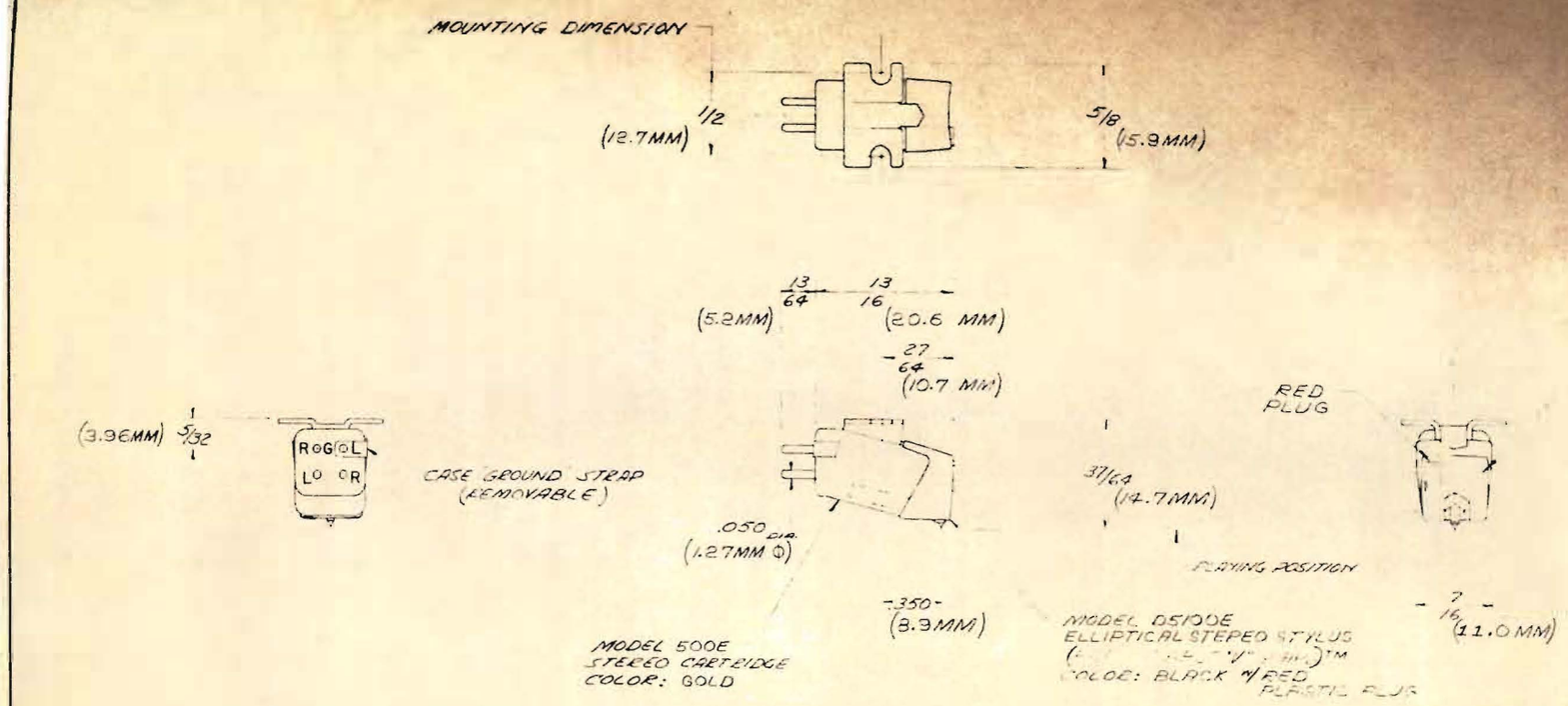


SPECIFICATIONS

MECHANICAL

CASE COLOR:	GOLD
STYLUS COLOR:	BLACK W/RED PLUG
WEIGHT:	5 GRAMS
STYLUS TRACKING FORCE:	2 TO 5 GRAMS
TRACKING CAPABILITY:	15 CM/SEC MIN. @ 2 GRAMS
STYLUS TYPE:	.0004" X .0009" ELLIPTICAL RADIUS (DIAMOND)
VERTICAL TRACKING ANGLE:	15°

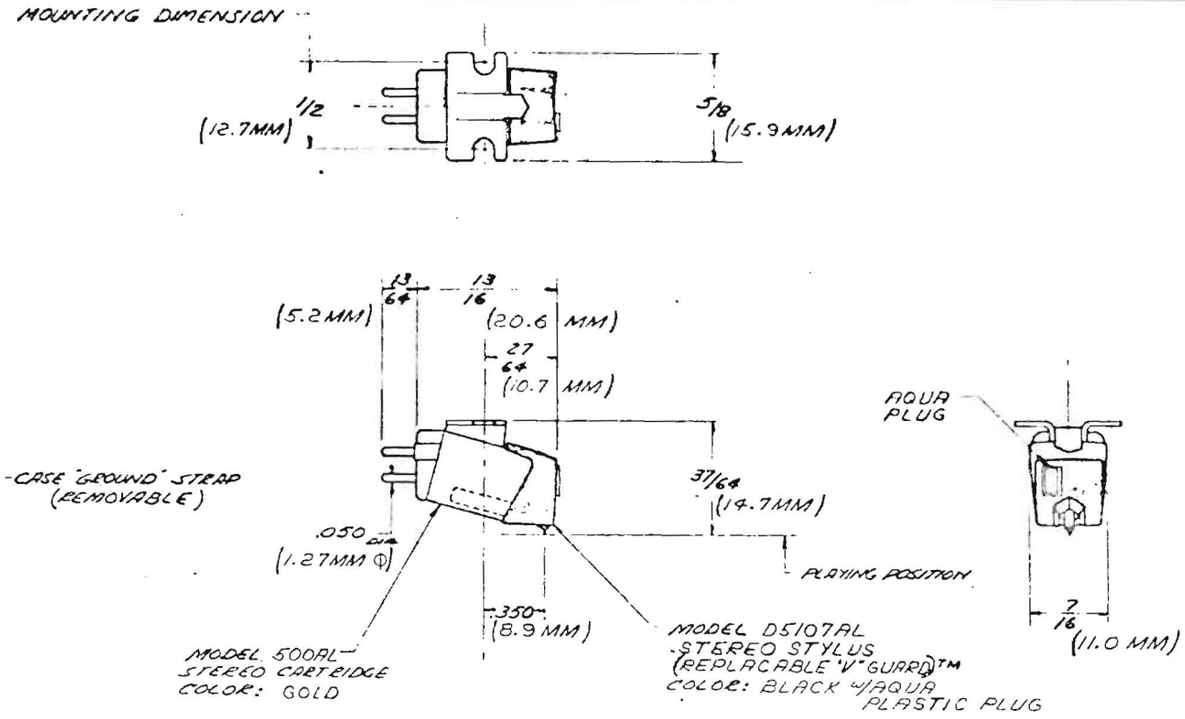
ELECTRICAL

RESISTANCE, D.C.:	640 OHMS
INDUCTANCE:	405 MH
LOAD RESISTANCE:	47,000 OHMS
NOMINAL OUTPUT:	3.5 MILLIVOLTS PER CM/SEC
CHANNEL SEPARATION:	30 DB AT MID-RANGE
FREQUENCY RESPONSE:	20 CPS TO 20,000 CPS
CHANNEL BALANCE:	2 DB MAXIMUM OUTPUT DIFFERENCE
SHIELDING:	ANNEALED MU METAL CASE

STANTON 500E CARTRIDGE
BROADCAST STANDARD

DO NOT SCALE PRINT

500E



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1

SPECIFICATIONS

MECHANICAL

CASE COLOR:	GOLD
STYLUS COLOR:	BLACK W/AQUA PLUG
WEIGHT:	5 GRAMS
STYLUS TRACKING FORCE:	3 TO 7 GRAMS ,
TRACKING CAPABILITY:	15 CM/SEC @ 5 GRAMS
STYLUS TYPE:	.0007" CONICAL RADIUS (DIAMOND)
VERTICAL TRACKING ANGLE:	15°

ELECTRICAL

RESISTANCE, D.C.:	800 OHMS
INDUCTANCE:	550 MH
LOAD RESISTANCE:	47,000 OHMS
NOMINAL OUTPUT:	0.9 MILLIVOLTS PER CM/SEC
CHANNEL SEPARATION:	30 DB AT MID-RANGE
FREQUENCY RESPONSE:	20 CPS TO 20,000 CPS
CHANNEL BALANCE:	2 DB MAXIMUM OUTPUT DIFFERENCE
SHIELDING:	ANNEALED MU METAL CASE

FOR MUSIC LIBRARIES

STANTON 500AL CARTRIDGE
BROADCAST STANDARD

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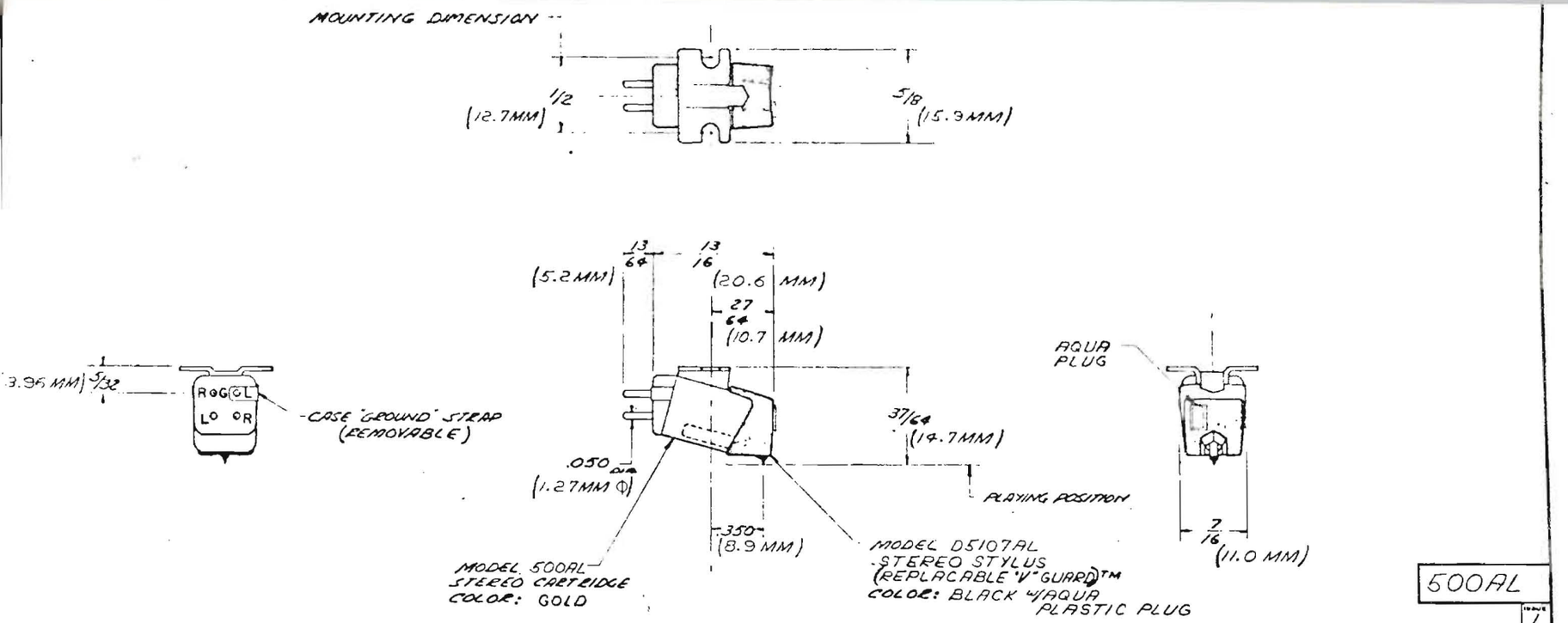

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ISSUE 1

SPECIFICATIONS

MECHANICAL

CASE COLOR:	GOLD
STYLUS COLOR:	BLACK W/AQUA PLUG
WEIGHT:	5 GRAMS
STYLUS TRACKING FORCE:	3 TO 7 GRAMS
TRACKING CAPABILITY:	15 CM/SEC @ 3 GRAMS
STYLUS TYPE:	.0007" CONICAL RADIUS (DIAMOND)
VERTICAL TRACKING ANGLE:	15°

ELECTRICAL

RESISTANCE, D.C.:	800 OHMS
INDUCTANCE:	550 MH
LOAD RESISTANCE:	47,000 OHMS
NOMINAL OUTPUT:	0.9 MILLIVOLTS PER CM/SEC
CHANNEL SEPARATION:	30 DB AT MID-RANGE
FREQUENCY RESPONSE:	20 CPS TO 20,000 CPS
CHANNEL BALANCE:	2 DB MAXIMUM OUTPUT DIFFERENCE
SHIELDING:	ANNEALED MU METAL CASE

FOR MUSIC LIBRARIES

STANTON 500AL CARTRIDGE
BROADCAST STANDARD

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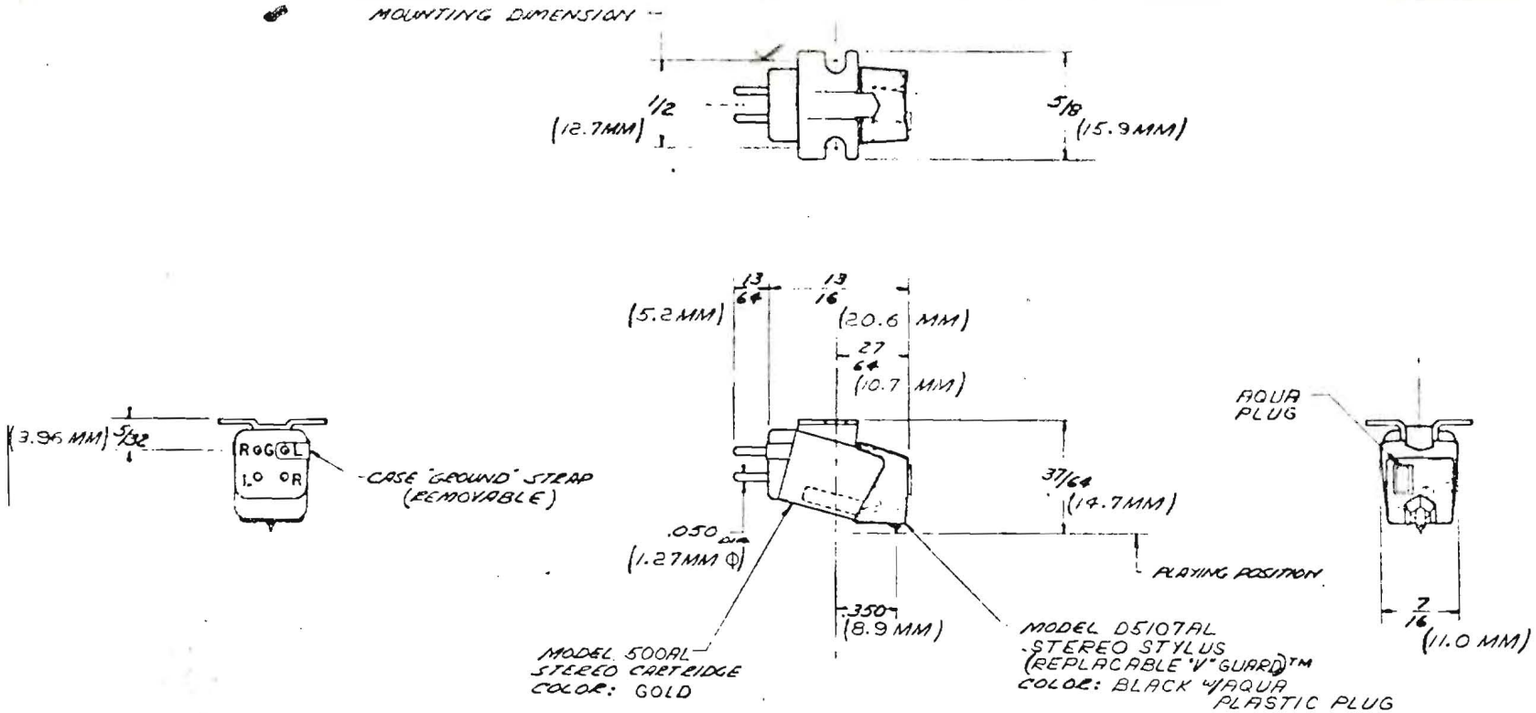

500AL

ISSUE 1

SPECIFICATIONS

MECHANICAL

CASE COLOR:	GOLD
STYLUS COLOR:	BLACK W/AQUA PLUG
WEIGHT:	5 GRAMS
STYLUS TRACKING FORCE:	3 TO 7 GRAMS
TRACKING CAPABILITY:	15 CM/SEC @ 3 GRAMS
STYLUS TYPE:	.0007" CONICAL RADIUS (DIAMOND)
VERTICAL TRACKING ANGLE:	15°

ELECTRICAL

RESISTANCE, D.C.:	800 OHMS
INDUCTANCE:	550 MH
LOAD RESISTANCE:	47,000 OHMS
NOMINAL OUTPUT:	0.9 MILLIVOLTS PER CM/SEC
CHANNEL SEPARATION:	30 DB AT MID-RANGE
FREQUENCY RESPONSE:	20 CPS TO 20,000 CPS
CHANNEL BALANCE:	2 DB MAXIMUM OUTPUT DIFFERENCE
SHIELDING:	ANNEALED MU METAL CASE

FOR MUSIC LIBRARIES

STANTON 500AL CARTRIDGE
BROADCAST STANDARD

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THE ENGINEER'S CORNER

FROM THE ENGINEERING DEPARTMENT OF THE NATIONAL ASSOCIATION OF BROADCASTERS
1771 N STREET, N.W., WASHINGTON D. C. 20036 DECATUR 2-9300

- TECHNICAL TALK -

COMPATIBLE DISC PLAYBACK

By
John J. Bubbers*
Vice President for Field Engineering
Stanton Magnetics, Inc.
Plainview, New York

(Many broadcasting stations are faced with the problem of playing stereophonic discs even though their transmission is mono. Good sound quality along with non-destructive play of these discs is possible.)

Approximately ten years after the introduction of the stereophonic disc the question of compatibility has once again come to occupy the advertising and promotional literature. The technical community has been somewhat less occupied with this problem, especially since the term has come to mean one of several concepts over the decade of stereo. The two most prevalent implied meanings are the ability to play stereo records with monophonic pickups (the vertical component having been modified in the recording process), and the ability to play a stereophonic disc monophonically without a change in the musical balance or intent. It is the purpose, here, to cover only the first implied meaning or use of the compatibility concept.

In the beginning, monophonic recordings presented a single set of problems in that the recorded information was limited to one plane of motion, either lateral or vertical. Certain obscure systems had been proposed from time to time to record at some intermediate

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*Reproduced from the July/August, 1968, edition of db Magazine.

or skew angles were proposed as universal playback methods, but these suffered from the inherent inefficiency of the vectorial loss of output during the recovery of only the vector component, instead of the resultant present in the plane of motion. As a further limitation these devices were acoustical and lacked electronic amplification to overcome their low sensitivity; hence, were only an academic consideration and never a large factor in the development of large-scale home and studio devices.

The introduction of electrical recording cutters and the resultant possibility of stereophonic recording was most definitively outlined in a patent issued to Alan D. Blumlein in 1933 in England (and later in the United States in essentially the same form). While the earlier proponents of stereophonic recording had related the use of two channels to a vertical and lateral channel, Blumlein described in great detail the advantages of the 45/45 recording system since he further recognized the difficulty of maintaining uniform characteristics in a system that had two dissimilar channels, vertical and lateral, as their main vectors. The later Keller patent in the U. S. (1938) rounds out the basic principles of the stereophonic recording systems as we now know them. The effect of removing the low-frequency vertical component has been described in this early literature and in essence has only been rediscovered by the more contemporary recording practitioners. However, nowhere in the original teachings on stereophonic disc recording does the word compatibility appear. One can only assume that this concept has come about as a refinement, as in the case of monophonic playback where a balance change is effected, or as something not intended as in the case of pickups intended for lateral-only use. It is this latter problem which will be treated here.

Basic Mono Pickup Design Considerations

The designer of monophonic pickups formerly was concerned with a moving system which responded optimally in one plane, either lateral or vertical. His specific chore, then as now, was to arrange the mechanical and electrical parameters to achieve uniform frequency response, low distortion, and a degree of ruggedness; all to permit field use of the device. The three parameters which the pickup designer

could vary were mass, compliance, and resistance (this last-named frequently is called damping). Classical mechanics demonstrated that mass and compliance were frequency-sensitive functions, but while the mass was analagous to electrical inductance, compliance could be simulated by a capacitance, as a first consideration. The fact that certain geometric configurations whose weights were identical, but by arrangement of pivot points had different effective masses, was frequently used to the advantage of the designer for the most meaningful exploitation of the parameters within which he worked. The compliance was frequently changed to satisfy the requirements of the arm-mass-pickup compliance relationship to provide a pickup-arm resonance which would not be subject to the periodic disturbances present in any normal playback system, such as disc eccentricity or normal warp. The damping, or resistive component of these pickups was the most elusive parameter, since it introduced mass and (unlike its electrical counterpart) was the most difficult to measure directly. The magnitude of damping required could, however, be determined by several classical means borrowed from the equivalent differential expressions or from electrical analogues.

The result of continued work over the years lead to many excellent monophonic pickups, whose frequency response exceeded 20,000 Hz, with low distortion while being well damped. In this way, no excessive resonant amplitude rises existed and hence the transient response was of equally high order. Important to this review is that the designs concerned themselves with monophonic reproduction, and in only some instances were these devices designed as universal pickups (vertical-lateral for broadcast use). With the freedom of having the motion limited to one plane, the designer frequently did not concern himself with the mechanical impedance in the unwanted plane of motion. In several designs the motion of the unwanted plane was actually limited, since it was felt that this restriction would further remove undesirable commotion of the tone arm. As a general consideration, the mechanical impedance of the pickup varied with the plane of motion, and was most frequently at a minimum in the design plane.

Stereophonic Pickups

With the arrival of stereophonic recordings, the pickup designer was now forced to change his approach. The mechanical impedance

ideally was equal in all planes, that is lateral, vertical, and all planes between. Several pickups had horizontally positioned armatures during the monophonic era, however, the vertical mechanical impedance was far greater than the horizontal impedance. Some other designs employed the vertically-oriented stylus with a vertically-compliant bearing, which plane was electrically sensed, and the output then matrixed to give a resultant 45/45 pickup. The general trend in all of these designs, however, was directed to a horizontally positioned moving member in a universally movable bearing. In magnetic devices the moving member is a part of the magnetic-voltage generating system while the piezo electric devices use an intermediate member to couple the motion to the appropriate voltage-generating elements. (Other designs have been employed such as moving-coil, in which there is not necessarily a horizontally-oriented member but for this discussion we will limit it to the most popular current design.)

Wear of Discs

Many studies have shown that wear incurred during the playback of discs is related to the tip area, tip configuration, tracking force, frequency of recording and amplitude of recording (these last two are inter-related since they represent the acceleration applied to the playback tip and mechanical impedance of the moving system.) In those planes where the mechanical impedance is at a maximum the wear will be greatest; conversely in those planes with low mechanical impedance the rate-of-wear will be at a minimum. The actual rate-of-wear in general terms is a function of the motional impedance presented by the stylus, in an ideal stereo pickup the motional impedance should be, or at least approach, zero. Actual modern designs under ideal conditions have shown that this condition can actually be approached.

Distortion Products

One important consequence of the use of styli with varying motional impedances relative to their design plane, is the unpredictability of the effect of the motion on the moving assembly when constrained. Under the worst case, a pickup having no vertical compliance is called upon to reproduce a vertical signal. The best that one can hope

for is no signal at all. This, however, is frequently not the case. In fact, the stylus or the discs plastic now deforms in an unpredictable fashion and generates unwanted signals; this is more generally termed distortion. During the deformation process, which is frequently in excess of the elastic limit of the record material, the rate of wear is at its greatest. The magnitude of the distortion products will generally be a function of the mechanical impedance and the extent to which the linear characteristics of the stylus-plastic relationship is exceeded.

Equalization

Early systems frequently utilized passive networks for playback equalization. While this may have been state-of-the-art some thirty years ago, it is my opinion and observation that the investment in one of the newer solid-state equalized playback preamplifiers will round out the disc reproducing chain, making possible reproduction well within NAB playback standards. Further, the signal-to-noise ratio will frequently be much improved over the old passive networks, since they were designed for pickups whose output was some 15 dB higher than the current crop.

Conclusion

The use of a monophonic pickup to achieve playback of a stereo disc will generally lead to wear greater than if the record is played back with a pickup whose motional impedance is uniform and small in all planes. Further, the use of a pickup with high motional impedance in one plane will result in large, unpredictable distortion products in that plane. The magnitude of these effects is a function of the motion in the planes of high impedance. While they may be reduced to a lesser magnitude by various recording devices, they are nevertheless present whenever the motional impedance and plastic effects either exceed their linear range or secondary effects take place.

When one considers the likelihood of damage from playing a stereo disc with a monophonic record, in light of the experience

and studies conducted over the last decade, then the continued use of any but the best playback pickups is an expensive and possibly destructive attitude. The cost of even the best pickups does not exceed the cost of a dozen of the best LP's. When one equates these two factors, the cost of the pickup versus the cost of a dozen discs, there can be no question as to the reasonable and logical conclusion for the professional user. The improved results combined with the increased wear far exceed the risky continuation of using a monophonic pickup for stereophonic reproduction.

How to Use the Stereophonic Pickup for Monophonic Reproduction

The stereophonic pickups designed to reproduce stereo records are equally capable of reproducing either monophonic or stereophonic records monaurally. This is accomplished with a minimum of wear to the record surface. To make a monophonic pickup from a stereophonic pickup is one of the easiest operations imaginable. The left and right channels are connected in parallel aiding. This means that the left and right ground connections are connected together and used as the ground while the left hot and right hot connections are tied together and used as the hot lead to the preamplifier. Many of the present day cartridge manufacturers have included this information in their printed installation instructions. Attached are sketches indicating the terminal arrangements of typical present day cartridges. The broad availability of high quality cartridges designed for use with standard EIA pickup arm mounting dimensions provides easy changeover to the use of stereophonic cartridges for monophonic playback. Figure 3 typifies several lateral monophonic connections for some commonly encountered stereophonic terminal arrangements.

XXX

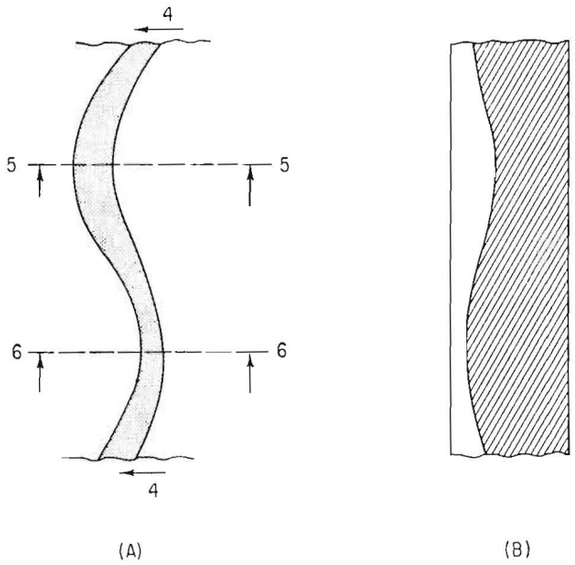


Figure 1. These illustrations are from U. S. Patent Number 1283903 (Reynard, November 5, 1918). They show an oblique-cut groove that allows reproduction to take place with a vertical- or lateral-response pickup. (A) shows the top view of the groove with the lateral component illustrated and (B) the corresponding vertical component.

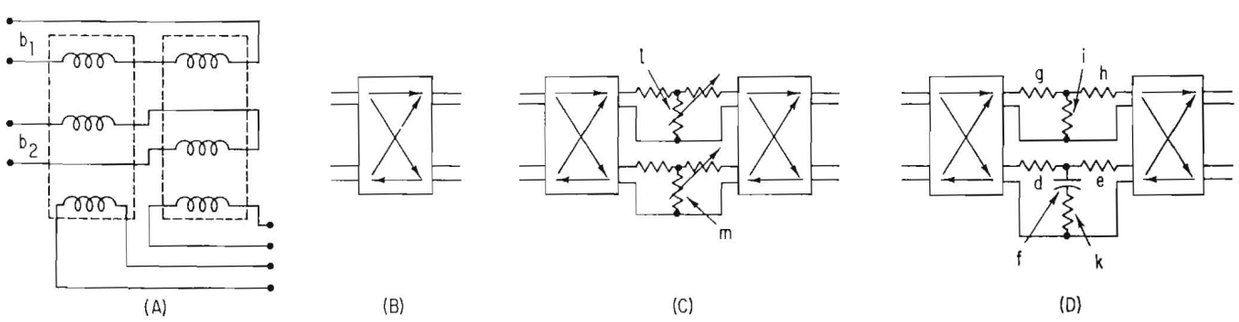
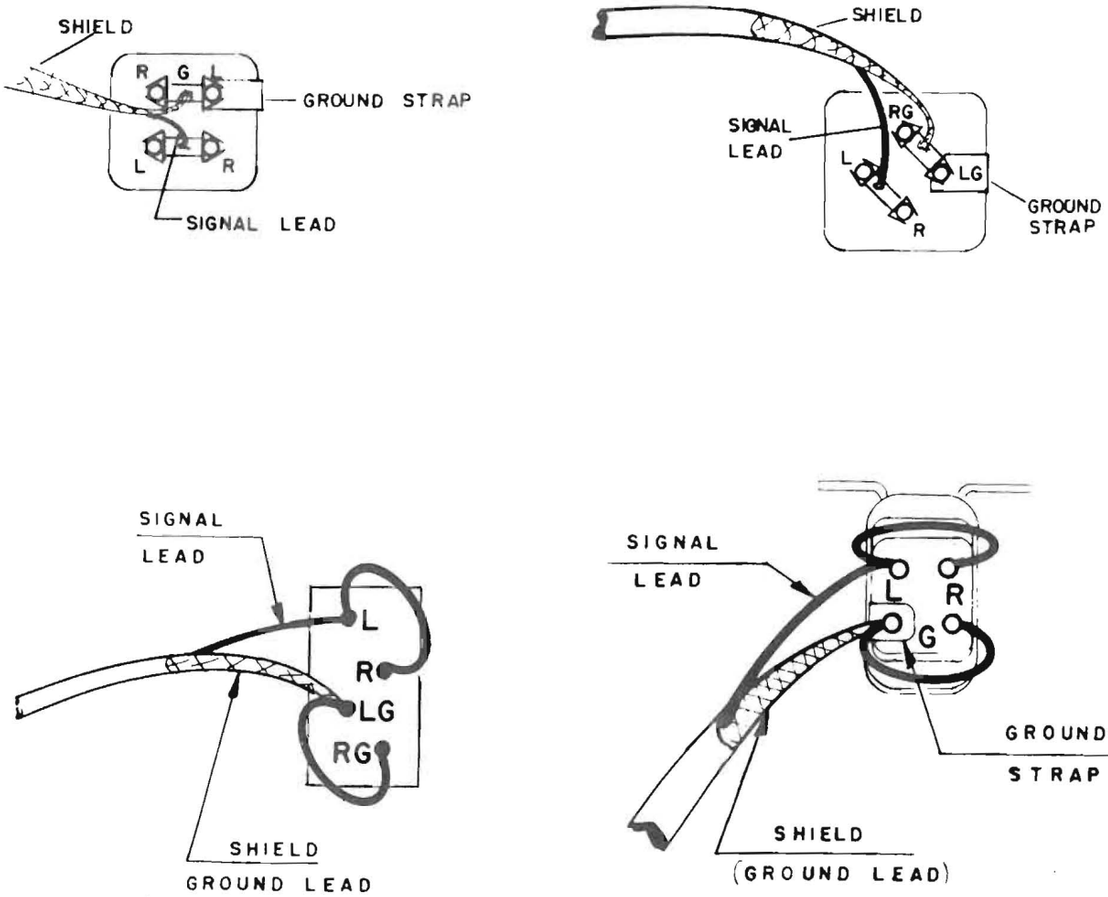


Figure 2. These are portions of British Patent Number 394325 (Alan D. Blumlein, 1933). The patent illustrates the various ways of making sum and difference channels for the purpose of converting a vertical-lateral system to 45/45. In (A) the area within the dashed lines is a common three-coil hybrid transformer; (B) is the diagramatic representation of (A); (C) shows a double matrix in series with a lossy gain control in each channel — its advantage lies in the fact that the sum or difference vectors can be modified by the gain controls and the resultant sum and difference rematrixed in the right-hand matrix; at (D) a frequency-sensitive gain control is indicated in the difference channel — vertical as derived from a 45/45 system — and it indicates the simplest kind of frequency-sensitive reduction of vertical component.

Figure 3.

LATERAL MONOPHONIC CONNECTIONS FOR SOME COMMONLY ENCOUNTERED STEREOPHONIC TERMINAL ARRANGEMENTS



The Stanton Cartridge...

A Critique by the Experts

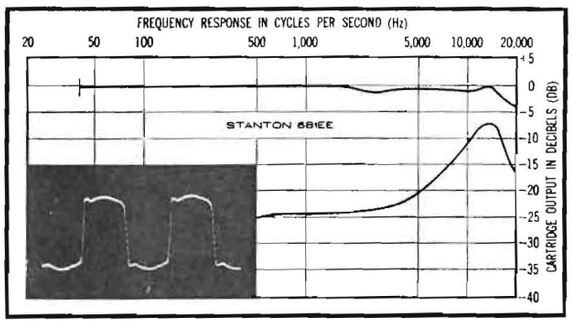
LABORATORY TESTS OF STEREO CARTRIDGES

By Julian D. Hirsch and Gladden B. Houck

The Stanton 681EE had a slightly better trackability score than any other cartridge we have tested.

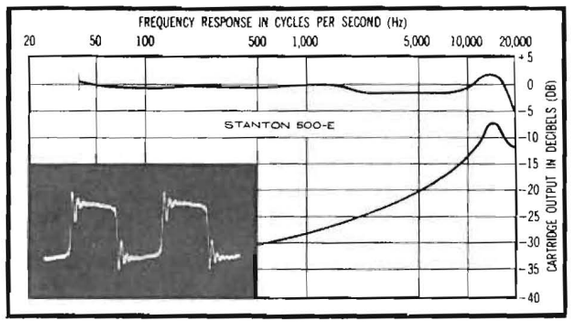
STANTON 681EE

● THE Stanton 681EE is a top-quality cartridge, intended for the most critical listening applications. Each cartridge comes with its own calibration data supplied. The removable stylus assembly carries an elliptical diamond with 0.2- and 0.9-mil radii, and a soft pivoted brush that sweeps dust out of the grooves as the cartridge plays. The manufacturer's rated tracking force is from 0.75 to 1.5 grams; we found the 1.5-gram force to be optimum. The tracking was excellent and distinctly better in this respect than any other cartridge we have tested. IM distortion reached 1 per cent at 17.5 cm/sec and 2 per cent at 22 cm/sec velocity. Signal output was 3.8 millivolts at 3.54 cm/sec. The frequency response of the Stanton 681EE was the flattest of the cartridges tested, within ±1 dB over most of the audio range. Its high-frequency resonant peak was well damped. Channel separation was



good at mid-frequencies, falling to less than 10 dB in the 10,000 to 15,000 Hz region. Price: $60.

STANTON 500-E

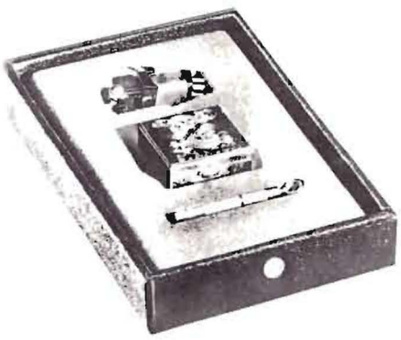


● THE Stanton 500-E is designed for use in broadcast stations and other applications in which it will be in use for extended periods of time. The 500 Series cartridges are available with styli of 0.5-mil, 0.7-mil, 1-mil, and 2.7-mil radii, as well as the 0.4- and 0.9-mil elliptical stylus used on the 500-E we tested. Although the rated tracking force of the Stanton 500E is from 2 to 5 grams, we found that it performed well at the minimum figure of 2 grams. The IM distortion was under 1 per cent up to about 20 cm/sec, and with the force increased to 3 grams it was only 1.5 per cent at 27.1 cm/sec. This is exceptionally good performance. The tracking of the Stanton 500-E was very good when operating at the 2-gram force. The cartridge's output was 4.2 millivolts at 3.54 cm/sec. The stylus assembly is replaceable by the user. Price: $35.

Reprinted by Permission Hi-Fi/Stereo Review July 1968

Stanton Model 681EE Stereo Cartridge

Fig. 1—Stanton "Longhair" cartridge with case, styli container and screwdriver shown below.



MANUFACTURER'S SPECIFICATIONS—Frequency Response: 10 Hz to 10 kHz ±1/2 dB; above 10 kHz, individually calibrated: (test sample) 10 kHz to 15 kHz ±1 1/2 dB; 15 kHz to 20 kHz ±2 dB. Channel Separation (1 kHz): 35 dB. Load Resistance: 47,000 ohms. Stylus Tip: Diamond, .0002 x .0009 elliptical. Tracking Force: 3/4 to 1 1/2 grams. Brush Weight (self-supporting): 1 gram. Cartridge Weight: 5.5 grams. Price: $60.00.

The Stanton Model 681 stereo phono cartridge is the company's top-of-the-line unit. Each cartridge is packaged with individually calibrated performance data, a knurled screwdriver, and an attractive metal "pill box" (for spare styli).

A noteworthy feature of this cartridge is its "longhair" brush, which keeps lint and dust out of the record groove and, naturally, away from the stylus during play.

The stem of the brush is hinged on an off-center pivot, so that it always stays a few record grooves ahead of the stylus point. The bristles also act as an anti-skating device to some degree. In tone arms already employing anti-skating compensation, the arm's compensation must be reduced by about ½ gram to take into account the action of the brush. The bristles, incidentally, never exert a force greater than 1 gram.

The 681's low-mass stylus assembly is probably responsible for the cartridge's superb tracking performance at such low forces as 1 gram. (Perhaps there's an assist from the brush.) In an SME tonearm set for 1¼ grams (plus 1 gram to compensate for the brush), we found that the Stanton 681EE tracked some previously "unplayable" records (for example, a *Project 3* recording, produced by Enoch Light, with Robert Fine as Chief Engineer).

The Stanton 681EE is certainly a smooth one, too. Its frequency response, as plotted in Fig. 2, shows a wide-range response that is free of peaks. Even the usual high-frequency resonant peak is well damped. Response measured within ±2 dB through the 20 Hz to 20 kHz range, which falls within the specifications supplied by the manufacturer as calibration data. Sensitivity was measured as 4.4 mV left and 4.0 mV right, referred to 3.54 cm/sec rms at 1 kHz, which also conforms to the manufacturer's data. Average separation at 1 kHz measured 30 dB, using a CBS STR-100 test record. This is the *best* channel separation figure at this frequency that we've measured over the years. Though our measurement is below the specified 35 dB separation figure (which is 5 decibels more than any other manufacturer claims), one should recognize that only a tiny deviation in pickup alignment (which cannot be avoided without using precise laboratory tools) can reduce the reading by a few decibels. Furthermore, the test record's literature states "to over 30 dB" separation, which may well be only 30.5 dB for all we know.

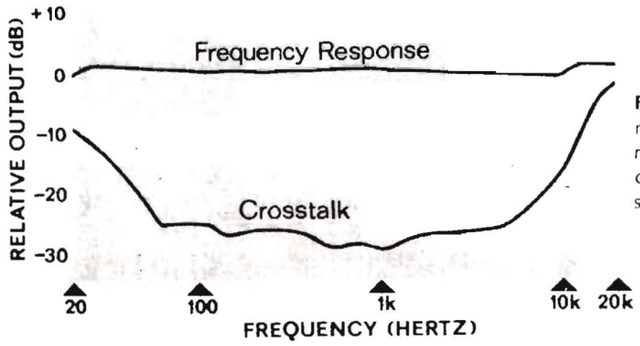


Fig. 2 — Frequency response and channel separation (two channels averaged since they were so close).

The lack of peaks in the 681EE's response is evident in the square-wave photos of Fig. 3. The slight rounding at the top is due to a minor rise in low bass response, while the small wiggle is caused by the very gentle dip at 10 kHz.

With regard to hum-bucking capability, the cartridge's signal-to-noise ratio measured —64 dB through a wide-band RIAA preamplifier. This is an excellent figure, illustrating why the 681EE is not at all susceptible to hum pickup.

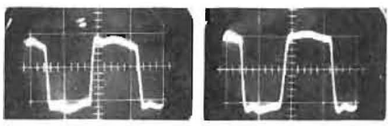


Fig. 3—Square-wave photos; left channel, 5 cm/sec and 3.54 cm/sec velocity.

Performance

The Stanton 681EE was a pleasure to listen through. It brought new life to some old favorites, performed marvelously well with new, bright stereo releases, eliminated the "fuzz" that accompanied some of the heavily cut records.

High frequencies, as produced by brush work on cymbals, for example, exhibited a realistic airiness with the Stanton 681EE. Lows and middles were equally natural, without any noticeable favoring of particular frequencies. The stereo effect was pronounced; this was especially observable with an old *Quarante Cinq* 45 rpm, 12-in. stereo record on bullfight music.

There are many things that measurements cannot reveal, of course. For example, one has to *listen* to determine the degree of coloration produced by a transducer. The Stanton 681EE is a neutral-sounding stereo cartridge, the type of sound we favor, frankly. Discs sound absolutely great when the source material is good and the stereo playback equipment is excellent. Should either be deficient, however, the cartridge will not mask it.

The 681EE stands among the top few cartridges on the market. It would make a fine mate for any of the better automatic turntables, as well as for manual turntables. For turntables that cannot accommodate the lighter tracking force required of elliptical-stylus-equipped cartridges, one can choose the Stanton 681A conical-stylus stereo cartridge. The latter, priced at $55.00 (compared to the 681EE's $60.00), requires 1 to 3 grams of tracking force. This compares to ¾ to 1½ grams for the 681EE.

Reprinted from Audio Magazine December 1968

"LONG HAIR" PICK UP PROVIDES ONE OF THE BEST

EQUIPMENT: Stanton 681EE, a stereo phono pickup fitted with elliptical stylus and "long hair" brush. Price: $60. Manufacturer: Stanton Magnetics, Inc., Plainview, L.I., N.Y. 11803.

COMMENT: Smooth, linear response, very low distortion, high compliance, and excellent tracking characterize this new pickup, the best yet seen from Stanton and easily one of the few top-performing cartridges presently available. Its sound is eminently satisfactory, full, and well balanced across the audible range, and with ample channel separation for fine stereo.

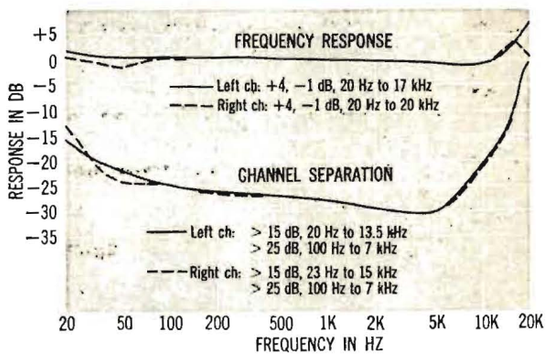
A lightweight model, the 681EE is fitted with Stanton's "long hair" brush which sweeps the record groove ahead of the stylus. Inasmuch as the brush weighs one gram (and thus pushes the cartridge away from the disc by that amount), you must offset this weight when installing the pickup by adjusting for one gram tracking force, and then assume that to be zero and add the required additional force. The recommended stylus force range for the 681EE is ¾ to 1½ grams. For arms with antiskating adjustments, the manufacturer recommends (and we agree) using ½ to ¾ gram less than normally required since the brush's drag is not as much as that of a stylus of equivalent weight in the groove.

Hence, the 1.9 grams needed by the 681EE to track the test bands of CBS Laboratories STR-100 translates effectively to only 0.9 gram. A stylus force of 1 gram (2 grams with the brush) was used for subsequent tests and for playback of commercial discs. Frequency response remained, on either channel, within plus or minus 1 dB across the major part of the audible range. The high-end response rises to a peak just beyond the audible range which does not appear in musical playback. Both channels are very closely balanced across the range. Output voltage measured was 3.6 mV on the left, and 3.7 mV on the right channel. Channel separation is exemplary, going better than 25 dB across most of the range, and well suited for full stereoism.

The 681EE's distortion—both harmonic and IM—was lower than average, and whatever bass resonance it produced in the test arm used (the SME-3009) was well below the audible range and did not become a factor in its response. High compliance was measured: 22 (x 10^{-6} cm/dyne) laterally, and 14 vertically. When installed as per instructions—that is, parallel to the turntable—the cartridge's vertical angle was exactly 15 degrees—the first, incidentally, that CBS Labs has ever measured that was exactly 15 degrees!

As suggested, the 681EE "listens" as superbly as it "measures." Its sound is utterly neutral, full-range,

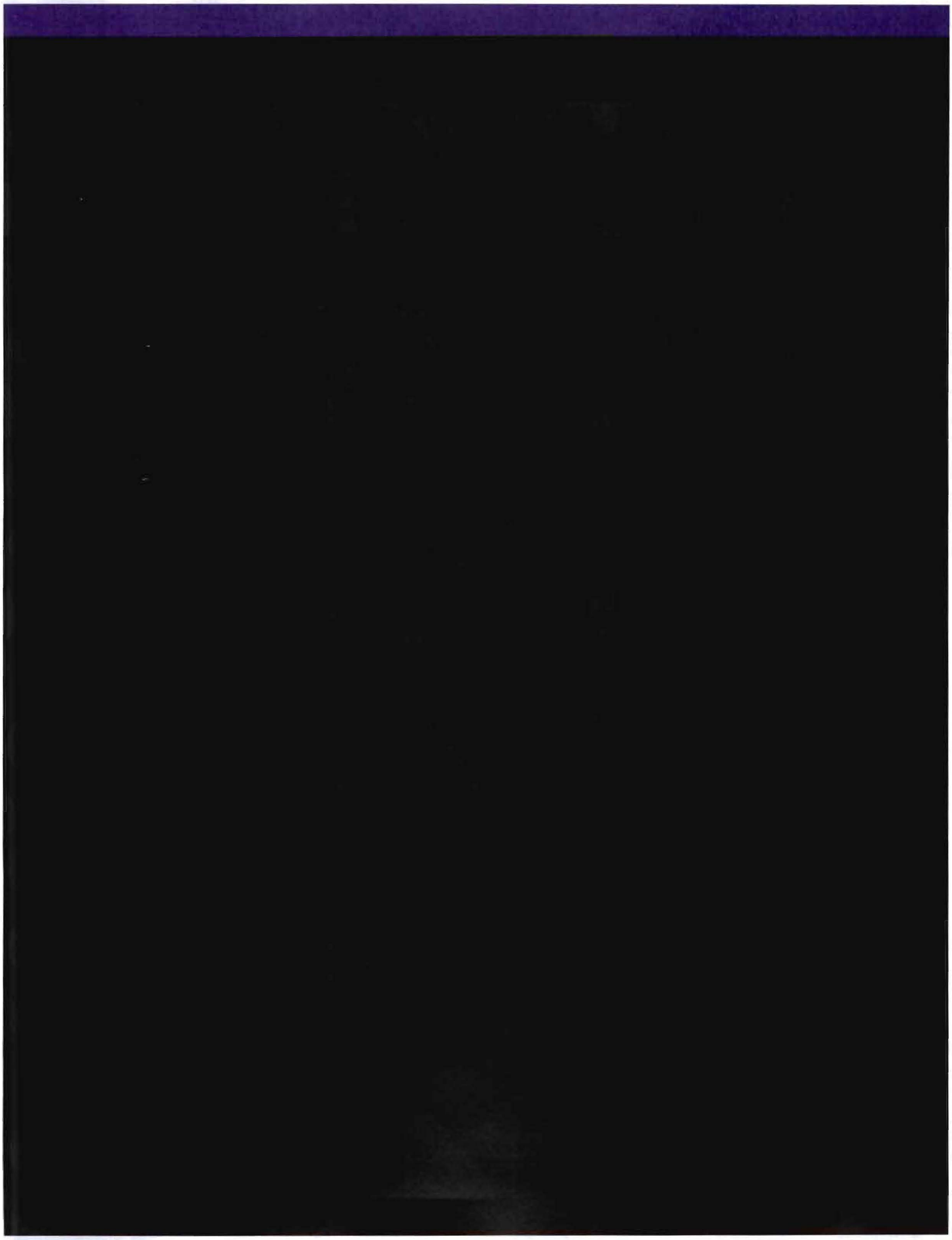
Response to 1-kHz square wave.



and clean. This is a cartridge that can reveal acoustic differences among recordings, that accommodates itself to the musical demands of the recorded material, and that can track the most demanding of groove passages like a champion. We mark it, in fact, as one of the very best yet auditioned.

The 681EE comes in a snap-box which contains a small metal container not unlike a fancy pill box (to hold extra styli), a deluxe little screw driver (for installing the pickup), instructions, mounting hardware, and a card indicating individual test results made at the factory. Alternate styli are available for use in the same cartridge body: a 0.7-mil spherical ($25), a 1-mil spherical ($25), and a 2.7-mil spherical ($25). The 0.7-mil would be suitable for arms that require up to 3 grams stylus force and is the standard "compromise" size for both stereo and mono microgrooves. The 1-mil is strictly for older mono LPs and can take up to 5 grams tracking force. The 2.7-mil, of course, is the recommended size for playing old 78s.

High Fidelity Magazine June 1969



Founded in 1961, Stanton Magnetics' original mission was to create and market state-of-the-art products for professionals in the recording and broadcast industries. And today, we are the #1 choice of all professionals–DJ's, Mobile DJ's and Clubs.

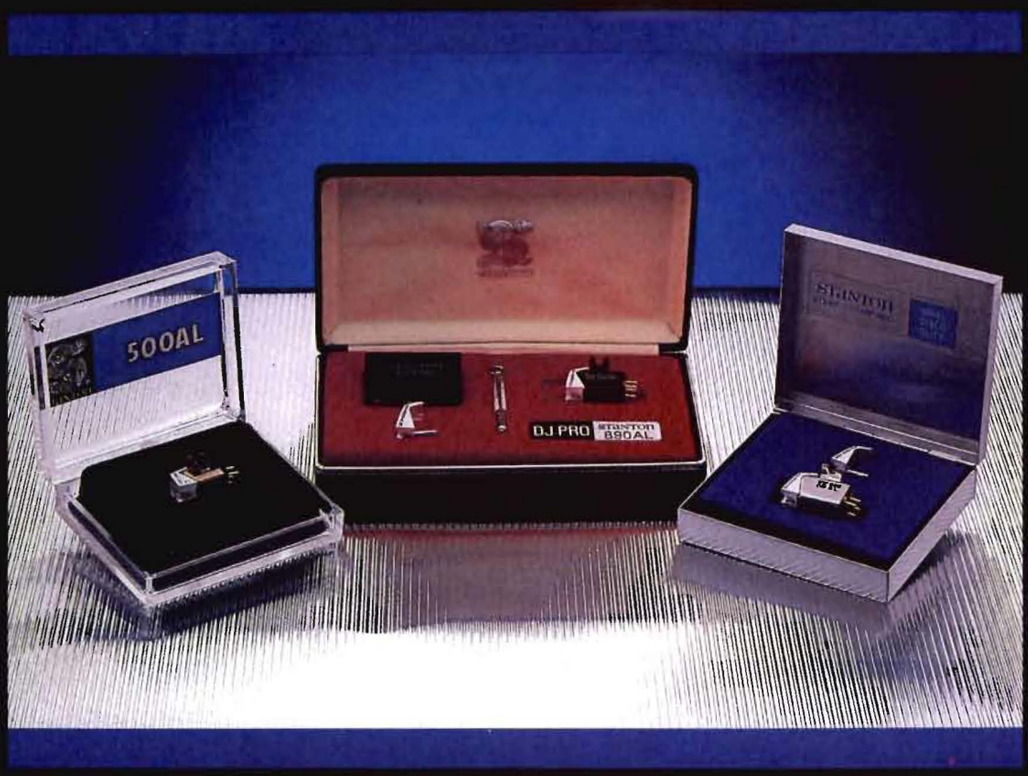
We continue to serve these professionals. And due to Stanton's reputation for uncompromising quality, a majority of our products are also directed to the home systems of audiophiles the world over.

Each of the twenty or more components that goes into every Stanton Cartridge is manufactured within our own plants, to ensure complete uniformity and quality control. Unlike other manufacturers, Stanton products aren't merely spot-checked, but are carefully examined against our rigid "Criteria for Standards." The same is true for our Digitally Compatible Stereo Headphones, Preamplifier/Equalizer and Record Care products. Our continuing success indicates that this extra effort is well worth it.

While much about recordings has changed since 1961, Stanton Magnetics' commitment to the satisfaction of our customers remains unchanged. And always will.

Walter O. Stanton

Walter O. Stanton
Chairman



680EL This is the world's most popular stereo cartridge for the professional. The 680EL provides the best balance between a responsive musical cartridge and rugged construction that can stand up to the demands of the professional. It is the standard by which all other DJ cartridges are measured. The cartridge body is manufactured with a 4-coil design to increase channel separation and reduce intermodulation. It is designed to improve or optimize hum bucking. The cantilever on the 680 EL is designed for optimum strength and minimum mass. It is a thin wall, small diameter aluminum alloy tube, which is highly responsive to groove modulation yet very durable when used for backcueing, scratch mixing, etc. The 680EL diamond is designed to stay in the groove under even the most demanding situations. The 680EL comes with an extra stylus.

500AL The "workhorse" of the professional industry. This cartridge provides the perfect blend of economy, reliability, ruggedness and optimum performance. The 500AL is ideal for the DJ who is very demanding on his equipment. The diamond on the 500AL is designed to fit firmly in the record groove, minimizing miscueing while backcueing, scratch mixing and even mishandling. Its thick wall, large diameter cantilever has a sturdy suspension that permits high tracking forces. Its sturdy grounded cartridge body is designed to minimize hum and deliver good sound quality.

890AL The 890AL is Stanton's newest pro DJ cartridge. This state-of-the-art unit provides the best sound quality ever offered for DJ use, yet is specifically designed for backcueing, scratch mixing and slip cueing. It is designed with a special compliance that allows the stylus to stay firmly in the groove under all conditions.
The 890AL is manufactured with a unique suspension system that is highly responsive to extremes in groove modulation changes. It features a small powerful magnet. Its computer designed 4-coil body virtually eliminates crosstalk and hum. This highly engineered cantilever and suspension system is combined with an ultra high polished diamond which allows the system to have a vertical tracking force of 2-7 grams. The 890AL comes with an extra stylus.

L680EL A specially designed 680EL for plug-in turntables. It increases the tracking force for all P-mount design tonearms from 1 $^1/_4$ to 3 $^1/_2$ grams.

680EL-MP This is a matched pair of 680EL cartridges that are factory tested to have the same output levels, channel separation and frequency response. This is ideal for the DJ who has a two turntable setup.

680EL-C Our famous 680EL cartridge with extra styli on a hang card.

680SL All the design features of our 680EL but uses the patented "stereohedron" 4-cut diamond design. This increases the contact area, which maximizes tracing and frequency response; however, this cartridge is not designed for extreme abuse.

681SE A calibrated version of our 680EL. This cartridge is designed to meet the exacting standards of recording studios and yet is capable of handling the rugged demands of the professional DJ.

681A A calibrated cartridge from our 680 Series. It comes equipped with a spherical diamond. Perfect for broadcast or DJ use.

L500AL This is a cartridge that is specifically designed for plug-in tonearms. It increases the vertical tracking force for all P-mount tonearms from 1 $^1/_4$ to 3 $^1/_2$ grams, making it capable of backcueing, scratch mixing, etc.

500AL-MP This is a matched pair of 500ALs that are factory tested and have the same output level, channel separation and frequency response. This is ideal for the two turntable set-up.

500AL-DP The 500AL comes with an extra stylus.

500AL-PC The 500AL-PC is a blister pack which includes two extra styli.

500EL This cartridge is based on our 500AL design. It is equipped with an elliptical diamond providing an extended frequency response.

310B PROFESSIONAL PHONO PREAMPLIFIER/EQUALIZER The 310B Stereo Phono Preamplifier/ Equalizer is designed to correctly interface all Stanton and selected magnetic phonograph cartridges for optimum playback of LP records. This unit features universal mounting by special brackets, instant selection of flat or NAB postemphasis curves, switch-able effective rumble filter, individual adjustment of gains and high frequency responses, trimming of the capacitive cartridge loading at the input, provision for setting the power transformer for either 115 or 230V operation, immunity to external magnetic and radio frequency fields. The 310B can be used in balanced as well as in unbalanced modes.

DSM-1 Our DSM-1 DJ Slip Mat is manufactured from a resin treated, glazed urethane material with anti-static properties. Its rugged construction makes it an excellent choice for use in clubs or broadcast applications where backcueing and slipcueing are required.

DJ STARTER KIT This kit is designed to give the professional DJ everything he or she needs for immediate set-up. It includes three world-acclaimed 680EL cartridges plus three replacement styli...our single cup, shoulder-rest 30M/ SR headphone...Stanton's ARC-5 carbon fibre brush (the dry cleaning system)...our RC5 Plus™ (the wet record cleaning system and static eliminator)...as well as SC4 stylus cleaning kit and two Stanton Pro-DJ Slip Mats.

30M/SR The Dynaphase 30M/SR DJ Headphone has been designed by Stanton to allow professional DJs to monitor while mixing and playing their LP's, tapes and CD's. It's a shoulder rest, single cup headphone that provides convenience, comfort and superb sound quality. The 30M/SR's patented Samarium Cobalt design produces extremely accurate sound. This lightweight, durable headset is made to rest comfortably on either your left or right shoulder. The shoulder rest can be detached and the headphone can be used as a single cup hand-held monitor. The 30M/SR...a truly professional headphone.

35M/HB The 35M/HB DJ Headphone has been engineered to satisfy a variety of professional uses. The single cup model with headband is perfect for monitoring sound in clubs, radio stations and studios. This headphone provides superb comfort with complete user mobility. Its patented Samarium Cobalt driver produces extremely accurate sound.

45M/MC The Stanton 45M/MC with unidirectional mic is designed with the demanding professional in mind—perfect for DJ, studio, and announcer's use. The headphone is a single sided closed ear design built with a heavy driver element. It is mounted on an adjustable metal headband covered with soft padded vinyl. A high quality 200 ohm unidirectional high sensitivity mic is mounted from the headphone. Comes with 12 ft. dual straight cord with two 1/4" plugs.

RC5 Plus™ Consists of a velvet high pile brush specially designed to reach deep into the grooves and remove contaminants. Plus, a specially formulated cleaning fluid that safely dissolves oil film, loosens micro dust and other debris and at the same time reduces static charges. This special non-toxic fluid is designed to clean 150 records, both sides.

CARBON FIBRE BRUSH The ARC-5 Brush is constructed with aerospace carbon fibers that clean your records and leave them static free. The ARC-5 is a safe, fast and effective method of record care. It's the dry process of cleaning your records and eliminating static build up.

500 Mk II SERIES The Mark II Series is Stanton's latest design of the highly acclaimed 500 Series. The 500EE comes with an elliptical diamond that makes it perfect for the entry level stereo system. The 500E is an economical version of the 500EE, also supplied with an elliptical stylus. The 500A is equipped with a spherical diamond, and is perfect for broadcast use.

680EE This cartridge features a highly polished elliptical diamond and provides outstanding listening characteristics. It is engineered with our 4-coil design cartridge body and lightweight stylus assembly.

COLLECTOR'S SERIES 100 The Collector's Series 100 is a new and exciting rare earth magnetic cartridge that provides an extended frequency response to an amazing 50kHz. The stylus features our finest Stereohedron II diamond for improved groove tracking and minimal record wear. The cantilever has a patented sapphire coating to allow for maximum rigidity yet extremely reduced mass. The suspension system has been engineered to provide optimum compliance tuning. The body construction is made with a Titanium coating for rigidity in mounting. Each cartridge is factory calibrated and comes with an individual frequency response curve to demonstrate its specific performance. It allows you to reproduce *all* the music from your album.

981HZ Mk IIs A Samarium Cobalt micro magnet design with patented moving stylus system that provides an extended frequency response, to 50kHz. The 981HZ Mk IIs features the Stereohedron II diamond mounted on a low mass aluminum alloy cantilever which enables this cartridge to trace th most difficult level of groove modulatio that can be found on many of the high tech records.

881 Mk IIs This cartridge features a Samarium Cobalt super micro magnet with Stereohedron II diamond. It provides an extended frequency response beyond 25 kHz. The 881 Mk IIs has won worldwide acclaim as one the top cartridges ever produced for th audiophile.

681EEE Mk IIs The latest genera-tion of one of the world's most popular cartridges. It features the Stereohedro II diamond tip and a frequency respons beyond 22KHz. It is a cartridge that ha won universal recognition for its outstanding stereo sound reproductior

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STC-710 This cartridge combines durability and reliability. Comes with an elliptical diamond. Perfect for entry level stereo systems.

STC-730 This cartridge is designed with a high polished elliptical diamond that reproduces an extended frequency response.

STC-740 Comes with a high polished elliptical diamond. Reproduces music to beyond 20,000Hz. An outstanding performer at an outstanding price.

L847S A P-mount cartridge assembly with the famous Stereohedron stylus. Its performance compares to the world acclaimed 881 Mk IIs, yet is specifically designed for a plug-in tonearm. With a frequency response ranging from subsonic to 36kHz, the L847S will please even the most demanding listener with its performance.

L747S The most advanced version in our 700 Series. It features the Stereohedron stylus, very light cantilever assembly and stylus system that allows easy tracking of the most complex modulations.

L737S An extremely accurate and responsive cartridge which features the Stereohedron stylus and an advanced high technology cantilever assembly.

L737E Same cartridge as the L737S but with a high polish elliptical stylus tip.

L727E An affordable version of 700 Series P-mount cartridges. Combines a high polished elliptical diamond with an accurate yet rugged cantilever assembly. Perfect for quality home systems.

L725E This cartridge represents the design that started the stereo revolution and introduced stereo to the professional community. The patented moving magnet design features the most reliable, rugged and yet economical answer to reproducing sound from records. This model features an elliptica stylus and a high compliance, low mass cantilever.

L720EE This cartridge provides the perfect blend of reliability, performance and economy. The L720EE comes equipped with an elliptical diamond, and is designed to cope with unusually difficult recordings.

STANTON CARTRIDGE SPECIFICATIONS

Cartridge Model	Tracking Force in grams	Stylus Type	Stylus Tip in mils (μm)	Frequency Response range in Hz ± dB	Output in mV/cm/sec	Separation @ 1kHz in dB	Load Resistance in Ohms	Load Capacitance	D.C. Resistance in Ohms	Inductance in mH	Channel Balance	Dynamic Compliance Stet	Brush	Cartridge weight in Grams	Replacement Stylus	Upgrade Replacement Stylus
COLLECTOR'S SERIES																
Collector's Series 100	.75-1.5	◆	.3x2.8(8x71)*	10-50kHZ 20-20kHz ± 1dB	.76	35	47k	275pF	500	270	Within 1dB	30μm/mN	X	5.5	CS100	—
HZS SERIES (High Impedance)																
981HZ MK IIs	.75-1.5	◆	.3x2.8(8x71)*	10-50k Calib. 10-20k	.7	35	47k	275pF	800	450	Within 1dB	30μm/mN	X	5.5	D98IIs	—
881Mk IIs	.75-1.25	◆	.3x2.8(8x71)*	10-25k Calib. 10-20k	.9	35	47k	275pF	900	510	Within 1dB	30μm/mN	X	5.5	D81IIs	—
681EEE Mk IIs	.75-1.5	◆	.3x2.8(8x71)*	10-22k Calib. 10-20k	.7	35	47k	275pF	1300	930	Within 2dB	25μm/mN	X	6.3	D6800EEE IIs	—
LZS SERIES (Low Impedance)																
981LZ Mk IIs	.75-1.5	◆	.3x2.8(8x71)*	10-50k Calib. 10-20k	.06	35	100	**	3	1	Within 1dB	30μm/mN	X	5.5	D98IIs	—
UNIVERSAL SERIES (For standard ½" and P-Mounts)																
L847S	.75-1.5	◆	.3x2.8(8x71)*	10-36k	.8	35	47k	275pF	900	510	Within 2dB	—		6.0	D84S	—
L747S	.75-1.5	◆	.3x2.8(8x71)*	10-25k	1.2	35	47k	275pF	1300	900	Within 2dB	—		6.0	D74S	—
L737S	.75-1.5	◆	.3x2.8(8x71)*	10-22k	1.2	35	47k	275pF	1300	900	Within 2dB	—		6.0	D73S	D74S
L737E	.75-1.5	⬬	.3x.7(8x18)	10-22k	1.2	35	47k	275pF	1300	900	Within 2dB	—		6.0	D73E	D73S
L727E	.75-1.5	⬬	.4x.7(10x18)	10-20k	1.2	32	47k	275pF	1300	900	Within 2dB	—		6.0	D72E	D73E
L725E	.75-1.5	⬬	.4x.7(10x18)	10-22k	.8	35	47k	275pF	535	400	Within 2dB	—		6.0	D71-2E	—
L720EE	.75-1.5	⬬	.4x.7(10x18)	10-20k	.9	35	47k	275pF	535	400	Within 2dB	—		6.0	D71EE	D71-2E
DISCO SERIES																
890AL	2-7	●	.7(18)	20-20k	.76	30	47k	275pF	900	510	Within 1dB	—		5.5	D89AL	—
681SE	2-4	⬬	.4x.7(10x18)	10-10k ± ½ Calib. 10-20k	1.0	35	47k	275pF	1300	930	Within 2dB	12.5μm/mN	X	6.3	D6800SE	D6800EEE IIs
681A	1.5-3	●	.7(18)	10-10k ± ½ Calib. 10-20k	1.0	35	47k	275pF	1300	930	Within 2dB	11μm/mN	X	6.3	D6807A	D6800EEE IIs
680EL-MP	2-5	⬬	.4x.7(10x18)	20-18k	1.1	30	47k	275pF	1300	930	Within 2dB	13.5μm/mN		5.5	D6800EL-MP	
L680EL	3.5-4	⬬	.4x.7(10x18)	20-18k	1.1	30	47k	275pF	1300	930	Within 2dB	13.5μm/mN		8.4	D6800EL	D6800SL
680EL	2-5	⬬	.4x.7(10x18)	20-18k	1.1	30	47k	275pF	1300	930	Within 2dB	13.5μm/mN		5.5	D6800EL	D6800SL
680AL	2-5	●	0.7(18)	20-18k	1.1	28	47k	275pF	1300	930	Within 2dB	10μm/mN		5.5	D6800AL	D6800SL
680SL	2-5	◆	.3x2.8(8x71)*	20-20k	1.1	30	47k	275pF	1300	930	Within 2dB	12μm/mN	X	5.5	D6800SL	—
L500AL	3.5-4	●	.7(18)	20-17k	1.0	28	47k	275pF	535	400	Within 2dB	10μm/mN		8.4	D57PAL	
500AL	2-5	●	.7(18)	20-17k	1.0	28	47k	275pF	535	400	Within 2dB	10μm/mN		5.0	D5107AL	—
500EL	2-5	⬬	.4x.7(10x18)	20-18k	1.0	30	47k	275pF	535	400	Within 2dB	12μm/mN		5.0	D5100EL	—
500AL-MP	2-5	●	.7(18)	20-17k	1.0	28	47k	275pF	535	400	Within 2dB	10μm/mN		5.0	D5107AL-MP	—
500AL-DP	2-5	●	.7(18)	20-17k	1.0	28	47k	275pF	535	400	Within 2dB	10μm/mN		5.0	D5107AL	—
STEREO STANDARD SERIES																
680EE-S	.75-1.5	◆	.3x2.8(8x71)*	20-20k	.82	35	47k	275pF	1300	930	Within 2dB	18μm/mN	X	5.5	D680S	D6800EEE IIs
680EE	.75-1.5	⬬	.3x.7(8x18)	20-20k	.82	35	47k	275pF	1300	930	Within 2dB	18μm/mN	X	5.5	D680	D6800EE IIs
BROADCAST SERIES																
500EE MK II	.75-1.5	⬬	.3x.7(8x18)	10-22k	.8	35	47k	275pF	535	400	Within 2dB	16μm/mN		5.5	D50EE MK II	—
500E MK II	1-2	⬬	.4x.7(18)	10-22k	.8	35	47k	275pF	535	400	Within 2dB	14μm/mN		5.5	D50E MK II	D50EE
500A MK II	1-2	●	.7(18)	10-20k	.8	35	47k	275pF	535	400	Within 2dB	14μm/mN		5.5	D50A MK II	D50E

**Stereohedron: 2 major bearing radii 2.8 mil each*
***Insensitive to capacitive load*

LP (1mil) and 78RPM (2.7 mil) styli available for all cartridge models.
◆ Stereohedron ⬬ Elliptical ● Spherical

STANTON MAGNETICS INCORPORATED
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912-840-906

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500 SERIES CASE LINE

STANTON is proud to introduce the new 500 SERIES CASE LINE. The 500 Series represents the best value in D.J. cases on the market today. They are strong, rugged yet lightweight. They are designed with top quality hardware, all wood-structure and quality Ozite covering. They are made to last!

STANTON 500 SERIES MOBILE DJ CASES

MOBILE DJ CONSOLE: This compact DJ record case organizes your two turntables and mixer. It is a heavy duty wood carpeted case with metal corners, latches, hinges, padded handles, and removable lid. It offers the secure and safe way to carry your equipment. Dimensions: 58 x 17 x 7½
LIST: $240.00 PROFESSIONAL: $180.00

SINGLE TURNTABLE CASE: Lets you safely carry your turntable. Wooden construction, carpeted finish, and sized for all popular turntables. Dimensions: 19½ x 17¾ x 7¼
LIST: $140.00 PROFESSIONAL: $90.00

DJ SOUND STAGE: This easy to carry wooden and carpeted sound stage turns you into a professional instantly. By simply taking the removable lid from your DJ coffin and placing it on top of your sound stage, you have created a secure and professional sound stage. Dimensions: 36 x 27 x 3¼
LIST: $160.00 PROFESSIONAL: $120.00

16 SPACE ELECTRONICS RACK: Perfect for accommodating all rack mounted equipment. Comes with a front and rear removable cover and heavy duty locking casters. Dimensions: 32½ x 20⅛ x 18
LIST: $240.00 PROFESSIONAL: $180.00

10 SPACE ELECTRONICS RACK: Perfect for accommodating all rack mounted equipment. Comes with a front and rear removable cover and heavy duty casters. Dimensions: 22½ x 20⅛ x 18
LIST: $170.00 PROFESSIONAL: $130.00

6 SPACE ELECTRONICS RACK: Perfect for accommodating all rack mounted equipment. Comes with a front and rear removable cover. Dimensions: 20⅛ x 18 x 13
LIST: $120.00 PROFESSIONAL: $100.00

45 RECORD CASE: Durable wood and carpeted carrying case for 300 of your 45's. Durable, padded handles, metal corners and straps. Dimensions: 25¾ x 14⅜ x 9⅜
LIST: $150.00 PROFESSIONAL: $110.00

LP CARRY CASE: Heavy duty wood carpeted carrying case with removable lid. Holds 90 LP's. Dimensions: 19¼ x 14 x 14
LIST: $150.00 PROFESSIONAL: $110.00

CD CARRY CASE: Heavy duty wood carpeted carrying case with removable lid, padded handle. Holds 100 CD's. Dimensions: 24¾ x 13¾ x 8
LIST: $150.00 PROFESSIONAL: $110.00

Custom Cases Made Upon Request

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The "P-Mount" Series from Stanton

This series combines all of the unique cartridge designs incorporated in the Stanton Professional line with the added convenience of simple plug-in mounting. Stanton offers the user the same performance and sound found in the regular Stanton cartridges. Similarly, each design level offers specific performance benefits based on the sophistication of construction. Now the hi-fi enthusiast is offered a complete selection of Stanton plug-in cartridges to match his specific needs.

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800 Series

L847S The P-Mount cartridge incorporating Samarium Cobalt magnet and extra light cantilever assembly with the famous Stereohedron™ stylus. Its performance compares to the world acclaimed 880 Stanton series. With frequency response spanning from subsonic frequencies to 36kHz, the L847S will please even the most demanding listener with its performance.

L837S Features the same moving magnet design using Samarium Cobalt magnet and Stereohedron stylus, with frequency response spanning from subsonic frequencies to 30kHz.

Both cartridges are based on a stylus design intended to perform at 1 gram of tracking force. This means that these cartridges can track all excursions of the groove at 1 gram and will offer outstanding tracking ability at the 1¼ grams required by the P-Mount tonearms.

Models L847S and L837S are provided with an adaptor for use in standard tone arms with ½" conventional mounting centers.

700 Series

The 700 series represents one of Stanton's most popular designs. It features a four coil construction that creates almost total immunity to the external hum fields as well as lowest distortion. The 700 series offers grounded cantilever and most effective shielding, reducing the noise due to electrical and magnetic induction to the bare minimum.

L747S cartridge is the most advanced version in our 700 series. It features the Stereohedron stylus, very light cantilever assembly and stylus system that allows clean tracing of the most complex wave forms in the groove.

L737S This is an extremely accurate and responsive cartridge which features the Stereohedron stylus and light cantilever assembly.

L737E The same cartridge as the L737S but with high polish elliptical stylus tip.

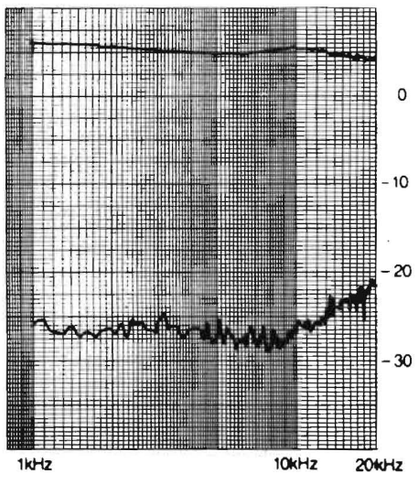
L727E An affordable version of 700 Series P-Mount cartridges. Combines good performance with ruggedness. For systems used by majority of music lovers.

L725E This cartridge represents the design that started the stereo revolution and introduced stereo to the professional community. The moving magnet design of patented construction features the most reliable, rugged and yet economical answer to reproducing sound from records. This model features an elliptical stylus and a high compliance low mass cantilever.

L720EE Combines durability and reliability with improved performance. Designed to cope with unusually difficult recordings.

The 700 Series is supplied premounted with ½" adaptors which can easily be removed.

Stanton offers a cartridge at every level for the audiophile who prefers the simplified "P-Mount" system. For information write: Stanton Magnetics, Inc., 200 Terminal Drive, Plainview, N.Y. 11803



Typical frequency response and channel separation of a Stanton "P-Mount."

TECHNICAL DATA

MODEL	STYLUS TYPE & SIZE	TRACKING FORCE[1]	FREQUENCY RESPONSE[2]	CHANNEL SEPARATION	TRACKING ABILITY	OUTPUT VOLTAGE[3]	CHANNEL BALANCE	DC RESISTANCE	INDUCTANCE	REPLACEMENT STYLUS
L720EE	.0004" x .0007" Elliptical	¾-1½ grams	10-20kHz	28dB	70μ	3.2mV	2dB	535 ohms	400mH	D71EE
L725E	.0004" x .0007" Elliptical	¾-1½ grams	10-22kHz	28dB	70μ	3.0mV	2dB	535 ohms	400mH	D71-2E
L727E	.0004" x .0007" Elliptical	¾-1½ grams	10-20kHz	32dB	60μ	4.4mV	2dB	1300 ohms	900mH	D72E
L737E	.0003" x .0007" Elliptical	¾-1½ grams	10-22kHz	35dB	70μ	4.4mV	2dB	1300 ohms	900mH	D73E
L737S	Stereohedron 2(.3 x 2.8 mil)	¾-1½ grams	10-22kHz	35dB	70μ	4.4mV	2dB	1300 ohms	900mH	D73S
L747S	Stereohedron 2(.3 x 2.8 mil)	¾-1½ grams	10-25kHz	35dB	80μ	4.4mV	2dB	1300 ohms	900mH	D74S
L837S	Stereohedron 2(.3 x 2.8 mil)	¾-1½ grams	10-30kHz	35dB	80μ	3.0mV	2dB	600 ohms	270mH	D83S
L847S	Stereohedron 2(.3 x 2.8 mil)	¾-1½ grams	10-36kHz	35dB	90μ	2.5mV	2dB	900 ohms	510mH	D84S

Dimensions and weights of Stanton standard plug-in cartridges are in accordance with standard P-Mount specifications.

Note 1: *Recommended by manufacturer for optimun performance.*
Note 2: *When the cartridge is terminated in the recommended load of 47k ohms and 275pF.*
Note 3: *Output with reference to 5.5 cm/sec record velocity.*

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912-759-309

The best is even better

(1) The 681EEE Mk II s is hand calibrated to insure the ultimate in performance and quality. Each cartridge is individually certified to exacting specifications.

(2) The 681 also features the new Stereohedron II™ stylus...an advanced stylus geometry that provides ideal stylus to groove interface. Its smaller tracing radii and front to-back angle allows for incredibly faithful tracing of the high frequency modulation.

SPECIFICATIONS MODELS 681EEE Mk II s

Tracking Force	Arm Setting with Brush: $2^{+1/2}_{-1/4}$ Gram	**Channel Balance @ 1 kHz**	within 2 dB
Resulting Tracking Force	$1^{+1/2}_{-1/4}$ Gram	**Tracking Ability**	70 μ@ 1¼ gram
Output	0.7 mV/cm/sec ± 2 dB	**Inductance**	930 mH approx.
Frequency Response	10 Hz-22 kHz *Individually factory calibrated*	**DC Resistance**	1300 Ohms approx.
Stylus	Stereohedron II	**Recommended Resistive Load**	47,000 Ohms
Tip Dimensions	.0002" x .003"	**Recommended Capacitive Load**	275 pF.
Channel Separation @ 1 kHz	35 dB	**Replacement Stylus**	D6800EEE II-s
		Cartridge Weight	6.3 grams

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For further information write to : Stanton Magnetics Inc., 200 Terminal Dr., Plainview, N.Y. 11803.

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681EEE Mk II s

THE NEW CALIBRATION STANDARD

STANTON'S MOST FAMOUS CARTRIDGE IS NOW EVEN BETTER

STANTON CARTRIDGE SPECIFICATIONS

Cartridge Model	Tracking Force in grams	Stylus Type	Stylus Tip	Frequency Response range in Hz +/- dB	Output in mV/cm/sec	Separation @ 1kHz in dB	Load Resistance	Load Capacitance	D.C. Resistance in Ohms	Inductance in mH	Channel Balance	Dynamic Compliance @ 10Hz Horiz./Vert.	Brush	Cartridge weight in Grams
COLLECTOR'S SERIES														
Collector's Series 100	.75-1.5	◆	.3x2.8 (8x71)*	10-50kHZ 20-20kHz ±1dB	.76	35	47k	275pF	500	270	Within 1dB	30µm/mN	X	5.5
HZS SERIES (High Impedance)														
981HZ MK IIs	.75-1.5	◆	.3x2.8 (8x71)*	10-50k Calib. 10-20k	.7	35	47k	275pF	800	450	Within 1dB	30µm/mN	X	5.5
881 Mk IIs	.75-1.25	◆	.3x2.8 (8x71)*	10-25k Calib. 10-20k	.9	35	47k	275pF	900	510	Within 1dB	30µm/mN	X	5.5
681EEE Mk IIs	.75-1.5	◆	.3x2.8 (8x71)*	10-22k Ind. Fac. Calib.	.7	35	47k	275pF	1300	930	Within 2dB	25µm/mN	X	6.3
LZS SERIES (Low Impedance)														
981LZ Mk IIs	.75-1.5	◆	.3x2.8 (8x71)*	10-50k Calib. 10-20k	.06	35	100	**	3	1	Within 1dB	30µm/mN	X	5.5
UNIVERSAL SERIES (For standard ½" and P-Mounts)														
L847S	.75-1.5	◆	.3x2.8 (8x71)*	10-36k	.8	35	47k	275pF	900	510	Within 2dB	—		6.0
L747S	.75-1.5	◆	.3x2.8 (8x71)*	10-25k	1.2	35	47k	275pF	1300	900	Within 2dB	—		6.0
L737S	.75-1.5	◆	.3x2.8 (8x71)*	10-22k	1.2	35	47k	275pF	1300	900	Within 2dB	—		6.0
L737E	.75-1.5	●	.3x.7 (8x18)	10-22k	1.2	35	47k	275pF	1300	900	Within 2dB	—		6.0
L727E	.75-1.5	●	.4x.7 (10x18)	10-20k	1.2	32	47k	275pF	1300	900	Within 2dB	—		6.0
L725E	.75-1.5	●	.4x.7 (10x18)	10-22k	.8	35	47k	275pF	535	400	Within 2dB	—		6.0
L720EE	.75-1.5	●	.4x.7 (10x18)	10-20k	.9	35	47k	275pF	535	400	Within 2dB	—		6.0
DISCO SERIES														
890AL	2-7	●	.7 (18)	20-20k	.76	30	47k	275pF	900	510	Within 1dB	—		5.5
681SE	2-4	●	.4x.7 (10x18)	10-10k ± ½ Calib. 10-20k	1.0	35	47k	275pF	1300	930	Within 2dB	12.5µm/mN	X	6.3
681A	1.5-3	●	.7 (18)	10-10k ± ½ Calib 10-20k	1.0	35	47k	275pF	1300	930	Within 2dB	11µm/mN	X	6.3
680EL-MP	2-5	●	.4x.7 (10x18)	20-18k	1.1	30	47k	275pF	1300	930	Within 2dB	13.5µm/mN		5.5
L680EL	3½-4	●	.4x.7 (10x18)	20-18k	1.1	30	47k	275pF	1300	930	Within 2dB	13.5µm/mN		8.4
680EL	2-5	●	.4x.7 (10x18)	20-18k	1.1	30	47k	275pF	1300	930	Within 2dB	13.5µm/mN		5.5
680AL	2-5	●	0.7 (18)	20-18k	1.1	28	47k	275pF	1300	930	Within 2dB	10µm/mN		5.5
680SL	2-5	◆	.3x2.8 (8x71)*	20-20k	1.1	30	47k	275pF	1300	930	Within 2dB	12µm/mN		5.5
L500AL	3½-4	●	.7 (18)	20-17k	1.0	28	47k	275pF	535	400	Within 2dB	10µm/mN		8.4
500AL	2-5	●	.7 (18)	20-17k	1.0	28	47k	275pF	535	400	Within 2dB	10µm/mN		5.0
500EL	2-5	●	.4x.7 (10x18)	20-18k	1.0	30	47k	275pF	535	400	Within 2dB	12µm/mN		5.0
500AL-MP	2-5	●	.7 (18)	20-17k	1.0	28	47k	275pF	535	400	Within 2dB	10µm/mN		5.0
500AL-DP	2-5	●	.7 (18)	20-17k	1.0	28	47k	275pF	535	400	Within 2dB	10µm/mN		5.0
STEREO STANDARD SERIES														
680EE-S	.75-1.5	◆	3x2.8 (8x71)*	20-20k	.82	35	47k	275pF	1300	930	Within 2dB	18µm/mN	X	5.5
680EE	.75-1.5	●	.3x.7 (8x18)	20-20k	.82	35	47k	275pF	1300	930	Within 2dB	18µm/mN	X	5.5
BROADCAST SERIES														
500EE MK II	.75-1.5	●	.3x.7 (8x18)	10-22k	.8	35	47k	275pF	535	400	Within 2dB	16µm/mN		5.5
500E MK II	1-2	●	.4x.7 (18)	10-22k	.8	35	47k	275pF	535	400	Within 2dB	14µm/mN		5.5
500A MK II	1-2	●	.7 (18)	10-20k	.8	35	47k	275pF	535	400	Within 2dB	14µm/mN		5.5

Stereohedron: 2 major bearing radii 2.8 mil each
***Insensitive to capacitive load*

LP (1mil) and 78RPM (2.7 mil) styli available for all cartridge models.
◆ Stereohedron ● Elliptical ● Spherical

REPLACEMENT STYLI

CARTRIDGE MODEL	STYLUS MODEL	TRACKING FORCE
COLLECTOR'S SERIES 100	CS100	3/4 to 1-1/2 grams
981HZ MK IIs	D98 IIs	3/4 to 1-1/2 grams
981LZ MK IIs	D98 IIs	3/4 to 1-1/2 grams
881 MK IIs	D81 IIs	3/4 to 1-1/2 grams
890AL	D89AL	2 to 7 grams
681EEE MK IIs	D6800EEE IIs	3/4 to 1-1/2 grams
681SE	D6800SE	2 to 4 grams
681A	D6807A	1-1/2 to 3 grams
680SL	D6800SL	2 to 5 grams
680EE/S	D680S	3/4 to 1-1/2 grams
680EE	D680	3/4 to 1-1/2 grams
680EL	D6800EL	2 to 5 grams
680EL-MP (Matched Pair)	D6800EL-MP	2 to 5 grams
680AL	D6800AL	2 to 5 grams
L847S	D84S	3/4 to 1-1/2 grams
L747S	D74S	3/4 to 1-1/2 grams
L737S	D73S	3/4 to 1-1/2 grams
L737E	D73E	3/4 to 1-1/2 grams
L727E	D72E	3/4 to 1-1/2 grams
L725E	D71-2E	3/4 to 1-1/2 grams
L720EE	D71EE	3/4 to 1-1/2 grams
L680EL	D6800EL	3-1/2 to 4 grams
L500AL	D57PAL	3-1/2 to 4 grams
500AL-MP (Matched Pair)	D5107AL-MP	3 to 7 grams
500AL-DP	D5107AL	3 to 7 grams
500AL	D5107AL	3 to 7 grams
500EL	D5100EL	2 to 5 grams
500EE MK II	D50EE MK II	3/4 to 1-1/2 grams
500E MK II	D50E MK II	1 to 2 grams
500AMK II	D50A MK II	1 to 2 grams
681 BPSM	D6800 BPSM	3/4 to 1-1/2 grams
681 BPSR	D6800 BPSR	3 to 7 grams
681 AMC	D6872 AMC	3 to 7 grams

LP (1 mil) and 78RPM (2.7 mil) styli available for all cartridge models

STANTON MAGNETICS INCORPORATED 101 Sunnyside Blvd., Plainview, NY 11803
Phone: (516) 349-0235 • Fax: (516) 349-0230 • TWX: (510) 221-1845

Stanton holds the #1 position in the Disco and Radio Broadcast industry. The reasons – reliability, ruggedness, and superb sound quality.

Our Disco series of professional cartridges offers a complete selection to fill every professional's needs:

The **500AL** known as the workhorse of the broadcast industry, meets the extremely rugged requirements of live application without sacrificing performance quality.

The **L500AL** is our newest version of this cartridge which is designed for P-Mount turntables. It automatically compensates for the higher tracking forces required for Disco use.

The **680AL** is a cartridge perfect for those demanding accurate sound quality, ruggedness and economy in their professional cartridges. An excellent choice for Disco or Broadcast use. Comes with extra stylus.

The **680EL,** the industry standard, is designed to deliver sound excellence and at the same time stand up to back cueing, vibrations and mishandling. Comes with extra stylus.

The **L680EL,** designed to deliver the same sound excellence as the 680EL – but is made to accommodate P-Mount turntables. It also automatically compensates for higher tracking forces. Supplied with extra stylus.

For Home Disco, the **680SL** is the perfect choice. It features the patented Stereohedron stylus tip assuring longer life for record collections.

The **681SE,** our calibrated Disco cartridge is designed to meet the demanding needs of both the professional and the audiophile. It provides the perfect combination of ruggedness and superb sound quality.

The **500EL** is designed to deliver fine sound quality, ruggedness and reliability, all at an affordable price.

Note:
All models (with exception of the 681SE) feature a fluorescent coated stylus assembly to help you cue the record on the exact cut you want – even in the semi-darkness of any disco.

TECHNICAL DATA

	500AL	L500AL (P-Mount)	680AL	680EL
Frequency Response	20 Hz to 17 kHz	20 Hz to 17 kHz	20 Hz to 18 kHz	20 Hz to 18 kHz
Nominal Output	1.0 mV/cm/sec ± 2 dB	1.0 mV/cm/sec ± 2 dB	1.1 mV/cm/sec ± 2 dB	1.1 mV/cm/sec ± 2 dB
Channel Separation	28 dB	28 dB	30 dB	30 dB
Load Resistance	47 k	47 k	47 k	47 k
Load Capacitance	275 pF	275 pF	275 pF	275 pF
D.C. Resistance	535 ohms	535 ohms	1,300 ohms	1,300 ohms
Inductance	400 mH	400 mH	930 mH	930 mH
Channel Balance	within 2 dB	witin 2 dB	within 2 dB	within 2 dB
Stylus Tip	0.7 mil spherical	0.7 mil spherical	0.7 mil spherical	0.4 x 0.7 mil elliptical
Tracking Force	2 to 5 grams	3½ to 4 grams[1]	2 to 5 grams	2 to 5 grams
Cartridge Weight	5 grams	8.4 grams	5.5 grams	5.5 grams
Replacement Stylus	D5107AL	D57PAL	D6800AL	D6800EL

Note: 1. Force at standard tone arm setting of 1.25 grams

	L680EL (P-Mount)	680SL	681SE	500EL
Frequency Response	20 Hz to 18 kHz	20 Hz to 20 kHz	10 Hz to 10 kHz Individually calibrated 10-20k	20 Hz to 18 kHz
Nominal Output	1.1 mV/cm/sec ± 2 dB	1.1 mV/cm/sec ± 2 dB	1.0 mV/cm/sec. ± 2 dB	1.0 mV/cm/sec. ± 2 dB
Channel Separation	30 dB	30 dB	35 dB	30
Load Resistance	47 k	47 k	47,000 ohms	47 k
Load Capacitance	275 pF	275 pF	275 pF	275 pF
D.C. Resistance	1,300 ohms	1,300 ohms	1,300 ohms	535 ohms
Inductance	930 mH	930 mH	930 mH	400 mH
Channel Balance	within 2 dB	within 2 dB	within 2 dB	within 2 dB
Stylus Tip	0.4 x 0.7 mil elliptical	Nude Stereohedron	0.4 x 0.7 elliptical	0.4 x 0.7 elliptical
Tracking Force	3½ to 4 grams[1]	2-5 grams	2-4 grams	2-5 grams
Cartridge Weight	8.4 grams	5.5 grams	6.3	5
Replacement Stylus	D6800EL	D6800SL	D6800SE	D5100EL

Note: 1. Force at standard tone arm setting of 1.25 grams

STANTON
THE CHOICE OF THE PROFESSIONALS™

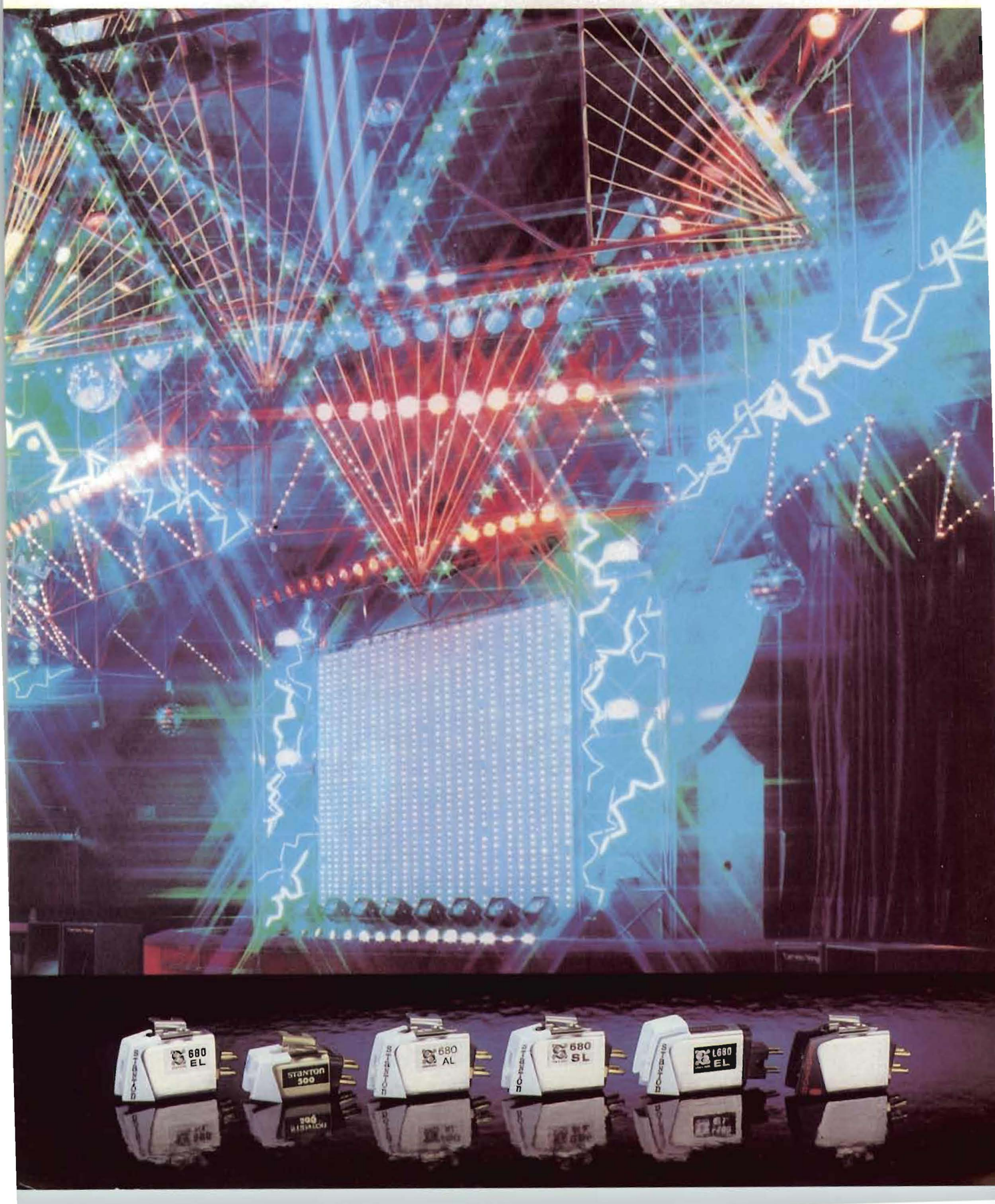
For further information write to : Stanton Magnetics Inc., 200 Terminal Dr., Plainview, N.Y. 11803.

PRINTED IN U.S.A.

912-787-405

Stanton #1 Choice in Professional Sound Application

The Studio, Bristol, England — One of the latest Hi-Tech Discoteques developed by Mecca Leisure Limited, London. Photograph courtesy of Mecca Leisure Limited.



Stanton Professional Phono Preamplifier/Equalizer Model 310 and Model 310B

The Stanton Model 310 Stereo Phono preamplifier is designed to correctly interface all Stanton and selected magnetic phonograph cartridges for optimum playback of disk records and calibration of audio systems. The 310 Preamp features universal mounting by special brackets, instant selection of flat or NAB postemphasis curves, switchable effective rumble filter, individual adjustment of gains and high frequency responses, trimming of the capacitive cartridge loading at the input, provision for setting the power transformer for either 117 or 230V operation at 50 or 60 Hz and immunity to external magnetic AC fields.

Now Stanton has added a second model, the 310B, which in addition to all the above features offers active balanced output resulting in additional gain of 6 dB. The 310B can be used in balanced as well as in unbalanced modes as well as in-phase and out of phase mix of L and R channels for monophonic reproduction of older records.

SPECIFICATIONS

	MODEL 310	MODEL 310B
OUTPUT (Per Channel):	+20 dBm Maximum	+26 dBm Maximum
GAIN (Per Channel):	Adjustable 30-60 dB	Adjustable 36-66 dB
OUTPUT TYPE:	UNBALANCED ONLY	ACTIVE BALANCED or UNBALANCED
OUTPUT SOURCE IMPEDANCE:	5 Ohms, Designed for loads 150 Ohms or higher	0 Ohms, Designed for loads 150 Ohms or higher
FREQUENCY RESPONSE:	±0.5 dB from 20 Hz – 20 kHz in FLAT or NAB positions of Mode Selector	
DISTORTION:	THD < .05% @ 20 dBm	
RUMBLE FILTER:	3 dB knee @ 28 Hz; –35 dB @ 5 Hz	
MAXIMUM INPUT LEVEL @ 1 KHz:	120 mV	
NOISE (input terminated in cartridge):	–70 dB Below 10 mV input @ 1 kHz NAB Curve, 44 dB Voltage gain – 74 dB or lower with Rumble Filter in	
INPUT RESISTANCE:	47k Ohms	
INPUT CAPACITANCE:	15 pF, Switchable in 50 pF steps to 350 pF Maximum	
CHANNEL SEPARATION:	60 dB Minimum (20 Hz – 15 kHz)	
INPUT CONNECTORS:	RCA Phono Jacks	
OUTPUT CONNECTOR:	5 Terminal Barrier Strip	
POWER REQUIREMENTS:	Can be set for 100-125 VAC, or 200-240 VAC, 50-60 Hz, 5 Watts Maximum	
INDICATORS:	LED Pilot Light	
UNIT DIMENSIONS:	2¼" x 5" x 7¼" (57 mm x 127 mm x 184 mm).	

919-797-504
Printed in U.S.A.

For further information contact: Stanton Magnetics Inc., Terminal Drive, Plainview, New York 11803

Stanton Model 310 Professional Phono Preamplifier/Equalizer

CAPITOL RECORDS

MCA RECORDS

TRUTONE RECORDS

Stanton develops the 681 TRIPLE-E (S-type) as the A&R calibration standard...

The A & R (Artists and Repertory) people in the recording industry needed a cartridge of superb precision in order to evaluate the performance quality on test lacquers or on the first test pressings as they become available.

Stanton, in response to requests from recording companies, both in the United States and abroad, set out to satisfy these needs.

The requirements of such a cartridge not only pertain to its total ability to pick up every musical signal in the groove, but also to pick them up with total fidelity. Moreover, if such a cartridge and its stylus tip have the ability to play the record without causing any visible or audible signs of wear, then the cartridge is perfect for this purpose. This is especially important in the case of test lacquers which wear noticeably with ordinary stylus tips.

Stanton has combined the world famous 681 Triple-E cartridge body with a new stylus assembly and the new tip shape in order to create the perfect solution for A & R people. While this new stylus tip shape was developed primarily for the recording industry, Stanton anticipates substantial acceptance by audiophiles as well.

Every 681 Triple-E (S-type) is guaranteed to meet the specifications within exacting limits, and possesses the most meaningful warranty possible ... individual calibration test results come packed with each unit.

SUGGESTED RETAIL $115.00

STANTON

For further information write to:
Stanton Magnetics, Inc.
Terminal Drive, Plainview, N.Y. 11803

SPECIFICATIONS ON THE 681 TRIPLE-E (S-type)

FREQUENCY RESPONSE: ..... 10 Hz to 12 kHz ±½ dB
from 12 kHz to 22 kHz
Individually calibrated at the factory

OUTPUT: ..... 0.7 mV/cm/sec. ±2 dB

CHANNEL SEPARATION:* ..... 35 dB

LOAD RESISTANCE: ..... 47,000 ohms

LOAD CAPACITANCE: ..... 275 pF

DC RESISTANCE: ..... 1,300 ohms approx.

INDUCTANCE: ..... 930 mH approx.

CHANNEL BALANCE: ..... Within 2 dB

STYLUS TIP: ..... .003" x .0028" Stereohedron ™

TRACKING FORCE: ..... Arm Setting with Brush: $2^{+\frac{1}{2}}_{-\frac{1}{4}}$ grams
Resulting tracking force: $1^{+\frac{1}{2}}_{-\frac{1}{4}}$ gram

CARTRIDGE WEIGHT:** ..... 6.3 grams

STYLUS COLOR: ..... Black with $\begin{matrix}E\\E\text{-}S\\E\end{matrix}$

MOUNTING DIMENSIONS: ..... 1/2" mounting centers

APPLICATION: ..... Critical Listening

REPLACEMENT STYLI: 6800EEE-S

ACCESSORY STYLI FOR ABOVE:

LP STYLI: 6810

78 RPM 6827

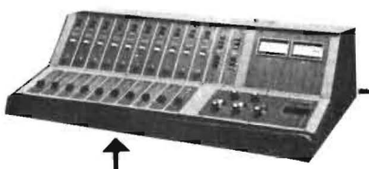
*Reference 1 kHz

**BRUSH WEIGHT (Self Supporting): 1 gram — For Professional Applications requiring precise cueing, the "Longhair" Brush is easily removable without the use of tools.

NOTE: The 681 Triple-E (S-type) stylus can be used in a regular 681 Triple-E body. It is entirely interchangeable.

MIXING CONSOLE

MIXING and EDITING



MATRIX or METAL MASTER

681 BPS M
681 BPS R

MOTHER

STAMPER

681 BPS M
681 BPS R

RADIO and TV

PRESSINGS

DEMO RECORDS AND MASTERS

681EEE 681A
881S 780/4DQ
681EEES 680EE
681EE 500A

METAL MOTHERS

681AMC
881S
681EEES
681EEE
681EE
681A
680EE
500EE
500A
780/4DQ
780/Q

FOR BACKCUEING

881S
681EEES
680EL
500AL
681SE
500E
500A

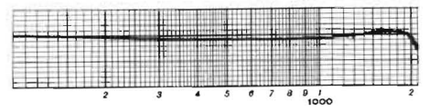
DISC PLAYBACK & TRANSFER TO TAPE

881S
681EEES
681EEE
681EE
681A
680EE
681SE
600EE
600E
600A
500EE
500AA
780/4DQ

DISCOTHEQUE

FOR BACKCUEING

680EL
500AL
681SE
500E
500A



CALIBRATION and QC

881S 681A
681EEES 500EE
681EEE 680EE
681EE 500AA
681SE 780/4DQ

HOME

MANUAL

881S
681EEES
681EEE
681EE
680EE
600EE
500EE
500AA
681A
780/4DQ

MANUAL AUTOMATIC

881S
681EEES
681EEE
681A
600E
600A
500A
600EE
780/4DQ

CHANGER

681SE
600A
500E
500A
500AL

RECORDING STUDIO

A CARTRIDGE DESIGNED FOR EVERY PROFESSIONAL APPLICATION

Deviation from the suggested uses are possible provided application and operating parameters of the specific cartridge are carefully considered by consulting chart on the reverse side.

STANTON MAGNETICS, INC.
Terminal Drive
Plainview, New York 11803

STANTON

Cartridge Model No.	Tracking Range In Grams	Stylus	Stylus Tip Dimensions In Mils (m)	Frequency Response	Output In MV/CM ± 2 dB	Crosstalk At 1 kHz in DB	Number Of Coils	Inductance In MH	DC Resistance In Ohms	Moving Iron	Moving Magnet	Weight In Grams	Brush	Replacement Stylus
881S	.75-1.25	◆	2(.3 x 2.8) [2(8 x 71)]	10-20 kHz ±1½db*	.9	35	4	510	900		X	5.7	X	D81
681EEE/S	.75-1.25	◆	2(.3 x 2.8) [2(8 x 71)]	10-12 kHz ±½ 12-22 kHz*	.7	35	4	930	1300	X		6.3	X	D6800EEE/S
681BPS/M	.75-1.5	●●	2 x .5 (2 x 13)	10-20 kHz ±2db	.7	30	4	930	1300	X		6.3		BPS-M
681BPS/R	3-7	●●	2 x .5 (2 x 13)	10-15 kHz ±2db	1.6	30	4	930	1300	X		6.3		BPS-R
681EEE	.75-1.5	⬬	.2 x .7 (5 x 18)	10-12 kHz ±½ 12K-22K *	.7	35	4	930	1300	X		5.5	X	D6800EEE
681EE	.75-1.5	⬬	.2 x .7 (5 x 18)	10-10 kHz ±½ 10K-20kHz *	.82	35	4	930	1300	X		5.5	X	D6800EE
681A	1.5-3	●	.7 (18)	10-10 kHz ±½ 10K-20kHz *	1.1	35	4	930	1300	X		5.5	X	D6807A
681SE	2-4	⬬	.4 x .7 (10 x 18)	10-10 kHz ±½ 10K-20K *	1.1	35	4	930	1300	X		5.5	X	D6800SE
681AMC	3-7	●	.7 (18)	20-17 kHz	1.6	25	4	930	1300	X		5.5		D6872AMC
680EE	.75-1.5	⬬	.3 x .7 (7 x 18)	20-20 kHz	.82	35	4	930	1300	X		5.5	X	D680
680EL **	2-5	⬬	.4 x .7 (10 x 18)	20-18 kHz	1.1	30	4	930	1300	X		5.5		D6800EL
600EE	1-2	⬬	.3 x .7 (7 x 18)	20-20 kHz	1.0	35	2	550	800	X		5.5		D6003EE
600E	1.5-3	⬬	.4 x .7 (10 x 18)	20-20 kHz	1.0	35	2	550	800	X		5		D6004E
600A	2-4	●	.7 (18)	20-20 kHz	1.0	35	2	550	800	X		5		D6071A
500EE	1-2	⬬	.3 x .7 (7 x 18)	20-10K ± 1 10K-20K ± 3	1.0	35	2	465	750		X	5		D5100EE
500E	2-5	⬬	.4 x .7 (10 x 18)	20-10K ± 1 10K-20K ± 2	1.0	35	2	465	750		X	5		D5100E
500AA	1-2.5	●	.5 (12.6)	20-10K ± 1 10K-20K ± 2	1.0	35	2	465	750		X	5		D5105AA
500A	2-5	●	.7 (18)	20-10K ± 1 10K-20K ± 2	1.0	35	2	465	750		X	5		D5107A
500AL	3-7	●	.7 (18)	20-17 ± 2.5	1.0	28	2	465	750		X	5		D5107AL
780/4DQ[1]	1.5-2.5	◆		10-50K	.6	35	4	290	675	X			X	4/DQ
780Q [1]	1.5-2.5	◆		10-45K	.6	30	4	290	675	X			X	Q

(Metric)
*Factory Calibrated
**Includes Extra Stylus

LP & 78 RPM STYLI Available for 500, 600, 680, 681 Series

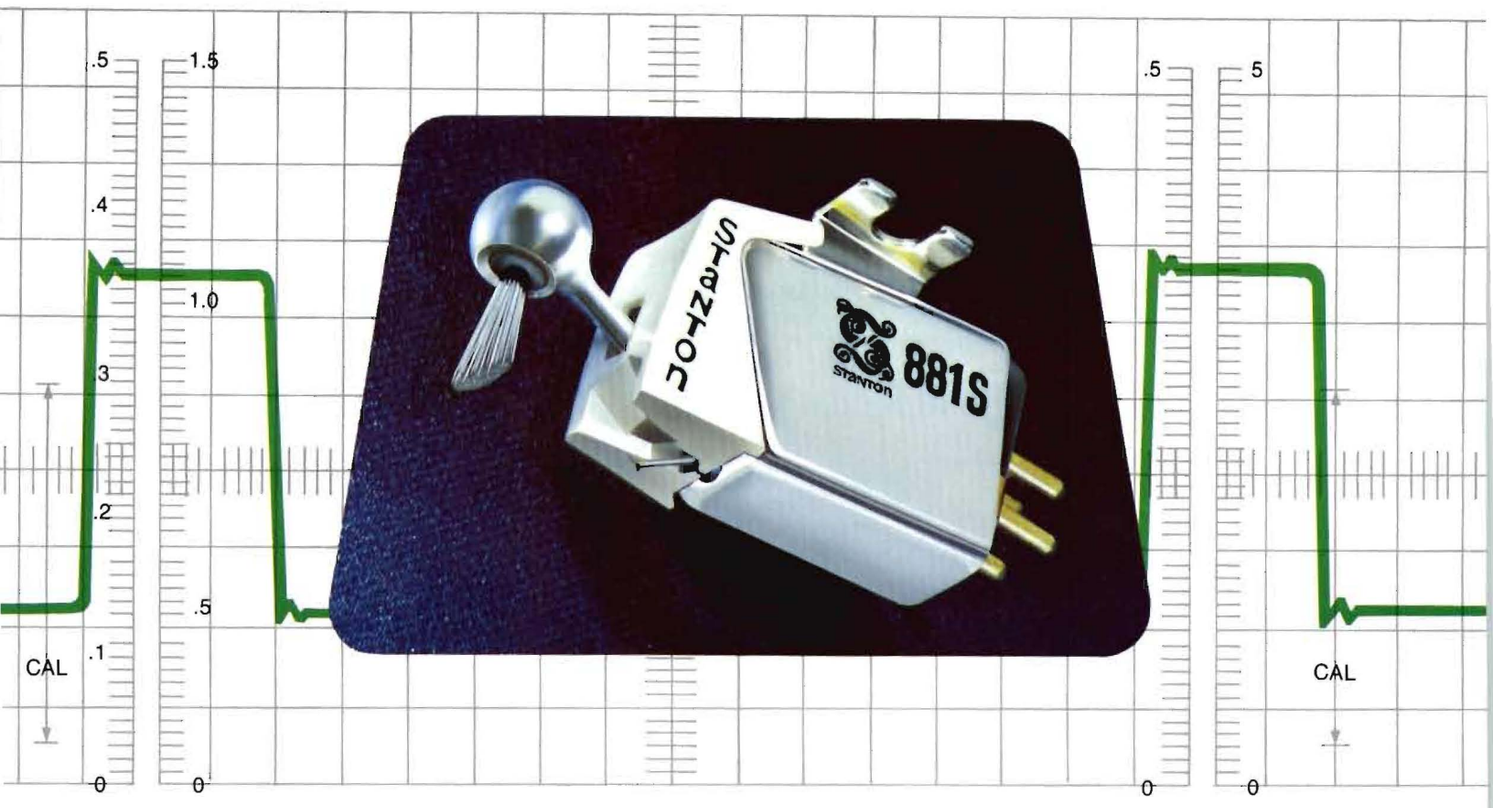
Recommended Load Resistance: 47 K OHMS
Load Capacitance: 275 PF
Recommended Load Resistance: 100 K OHMS
Max. Load Capacitance: 100 PF

➤ Unless otherwise indicated

912-478-711

Introducing Stanton's new 881S Cartridge

the Professional calibration standard



Stanton's 881S Professional Calibration Standard represents the first in a development of a whole *new* generation of cartridges.

Its whole design concept is based on producing a cartridge which would have the highest possible ability to protect records.

This requires a brand new tip shape ... the 881 has it ... it is the Stereohedron®.

This demands a brand new magnet ... the 881 has it ... a magnet of an exotic rare earth compound, which, because of its enormous power, is far smaller than ordinary magnets. It also is positioned closer to the center of rotation for low inertia.

This requires a brand new construction principle ... the 881 has it ... in this instance, it's an improved patented suspension. This new construction principle plus all the features mentioned earlier produce a cartridge whose performance is beyond compare.

The Calibration Concept was an outgrowth of the needs of the recording industry ... for a cartridge of sufficient sophistication to be used as a primary calibration standard in system checkouts for linearity and equalization.

Stanton succeeded in producing such a cartridge as is evidenced by the almost universal acceptance of calibration standard cartridges by engineers, music critics and musicians. Today, Stanton has developed the *Professional* Calibration Standard, which supersedes all previous calibration cartridge products in terms of overall excellence.

Write today for further information to:
Stanton Magnetics, Inc.,
Terminal Drive,
Plainview, N.Y. 11803

STANTON

SPECIFICATIONS FOR THE 881S

Stylus type:	Nude Stereohedron
Stylus Tracking Force:[1]	1 gram ± ¼
Setting with Brush:	2 ± ¼
Resulting Operational Tracking:	1 ± ¼
Frequency Response:[2 & 3]	10 Hz to 25 kHz (Individually calibrated to 20 kHz)
Output:	0.9 mV/cm/sec
Channel Balance:	1 dB maximum difference @ 1 kHz
Channel Separation:*	35 dB
Cartridge D. C. Resistance:	900 ohms
Cartridge Inductance:	510 mH
Cartridge Color:	Silver
Cartridge Weight:**	5.7 grams
Load Resistance:	47K ohms
Load Capacitance:	275 pF including arm leads cables and amplifier
Price:	$150.00
Replacement Stylus:	D81
Accessory Stylus for Monophonic L.P. Records:	D810
Accessory Stylus for 78 RPM records:	D827

*Reference 1 kHz

**BRUSH WEIGHT (Self supporting): 1 gram — For Professional Applications requiring precise cueing, the "Longhair" Brush is easily removable without the use of tools.

Notes:

1. Recommended for optimum performance.
2. When the cartridge is terminated in the recommended load of 47K ohms and 275 pF
3. Low Frequency response controlled by arm resonance

910-451-705

REP NEWS BULLETIN:

STANTON STANTON STANTON STANTON

April 17, 1973

STANTON ANNOUNCES INTRODUCTION OF THE FIRST AMERICAN-MADE DISCRETE, 4-CHANNEL STYLUS

At a special reception for San Francisco Editors held in the Fairmont Hotel April 11, 1973, Walter Stanton made the company's first announcement of an exclusive arrangement with Quadrahedral Development Co., U.S. designers of a new discrete, 4-channel stylus.

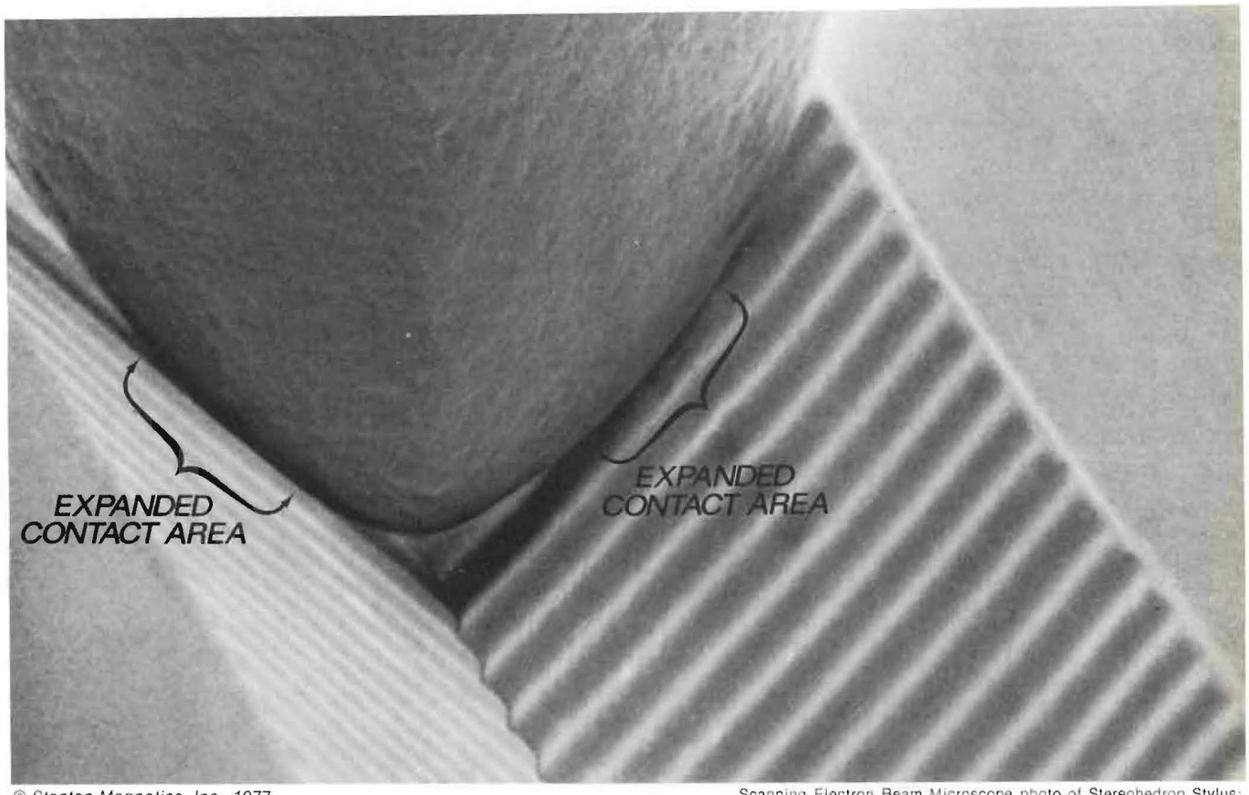
This original, new stylus is the first American designed stylus expressly developed for discrete 4-channel records. It was demonstrated in the Stanton 4-channel cartridge at the reception. The demonstration was moved the next day to the Burlingame Hyatt House for the High Fidelity Music Show, where it was evaluated by both trade and consumers. The reaction was totally favorable.

The performance of the Quadrahedral stylus fulfills all the extensive demands and sophisticated requirements necessary for a playback of the material recorded on discrete disks. Its secret lies in the revolutionary concept of its design.

In making the announcement, Mr. Stanton expressed his satisfaction with the fact that Stanton Magnetics now has multiple sources of supply for discrete 4-channel styli. He also stated that this new exclusive development has been thoroughly tested by Stanton's engineers and has functioned with total reliability in every measurable aspect. The new cartridge (780/4DQ) will be ready for shipment in a few weeks and will retail at $125.00.

STANTON MAGNETICS INC. TERMINAL DR., PLAINVIEW, N.Y. 11803 • 212-445-0554 • 516-681-0200

Better stereo records are the result of better playback pick-ups



Scanning Electron Beam Microscope photo of Stereohedron Stylus; 2000 times magnification. Brackets point out wider contact area.

Enter the New Professional Calibration Standard, Stanton's 881S

Mike Reese of the famous Mastering Lab in Los Angeles says: "While maintaining the Calibration Standard, the 881S sets new levels for tracking and high frequency response. It's an audible improvement. We use the 881S exclusively for calibration and evaluation in our operation".

The recording engineer can only produce a product as good as his ability to analyze it. Such analysis is best accomplished through the use of a playback pick-up. Hence, better records are the result of better playback pick-up. Naturally, a calibrated pick-up is essential.

There is an additional dimension to Stanton's new Professional Calibration Standard cartridges. They are designed for maximum record protection. This requires a brand new tip shape, the Stereohedron®, which was developed for not only better sound characteristics but also the gentlest possible treatment of the record groove. This cartridge possesses a revolutionary new magnet made of an exotic rare earth compound which, because of its enormous power, is far smaller than ordinary magnets.

Stanton guarantees each 881S to meet the specifications within exacting limits. The most meaningful warranty possible, individual calibration test results, come packed with each unit.

Whether your usage involves recording, broadcasting or home entertainment, your choice should be the choice of the professionals... the STANTON 881S.

STANTON

For further information write to Stanton Magnetics, Terminal Drive, Plainview, New York 11803

This new Stanton advertisement will appear in major consumer publications.

STANTON Stereo/Wafers™ MODEL XXI

PROFESSIONAL QUALITY HEADPHONES

The livest sound, the highest fidelity ... plus the livest look.

Here's a totally new concept and technology in headphones ... an Open Audio design that gives the lightest weight comfort in headphones with truly top quality sound. These ultra thin headphones have been designed and engineered to meet important professional needs: extreme comfort over long listening periods, a particular wide frequency response, and a broad dynamic range. A major factor in the success of the design is the use of rare earth elements in the compound of the permanent magnets of each earpiece. Besides having superior magnetic properties, these magnets are also of much smaller size, while still allowing Stanton to achieve an improved response over headphones incorporating conventional permanent magnets. The soft foam cushioned headband is exceptionally comfortable and has a trendy brushed denim fabric covering. The earpiece yokes incorporate specially designed pivots which allow the earpieces to fit perfectly against the ear, whatever the shape of the head.

SPECIFICATIONS

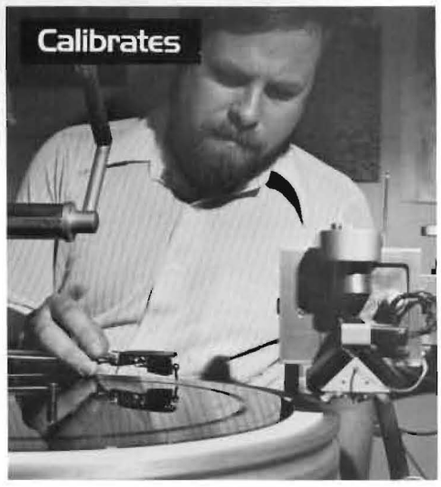
Frequency Response:	20 Hz to 22 kHz ± 5 dB
Sensitivity:	110 dB SPL* at 0.2 Volts input
Maximum Power Input:	0.1 Watts rms
Distortion:	Less than ½% @ 110 dB SPL*
Weight:	5.5 oz. (160 grams) excluding cord and plug.
Cord & Plug:	10 Ft. (3.1 m) flat cord, heavy duty strain-relieved plug.
Impedance:	100 ohms at 1 kHz
Suggested Retail Price:	$69.95

*Sound Pressure Level

STANTON

For further information write Stanton Magnetics, Inc., Terminal Drive, Plainview, N.Y. 11803

Printed in U.S.A. 912-408-608



Capitol Records Calibrates · Evaluates · Approves · Tests · Repairs · Quality Controls · and Reviews with the Stanton 681 Cartridge Series

The physical process of making phonograph records is not for amateurs. It is a job for craftsmen of the highest order, craftsmen who know exactly what they are doing. Naturally, they need the precisely right tools to do the job.

In the case of Capitol Records, the highest quality tools are employed throughout the process. That is why Stanton 681 Calibration Standard Series Cartridges are used, with various styli that are designed specifically for each critical measuring and listening job.

It has proven to be a great advantage to Capitol Records to standardize their entire operation with the 681 Series and three basic styli:

The D6807A — for cutting system check-outs.

The D6800EEE (our famous Triple-E) — for the most critical listening.

The D6872AMC — for tough nickel-plated *"mothers"*.

The Stanton 681 Calibration Standard Series enjoys almost universal acceptance throughout the Recording Industry. After all, it was created in order to satisfy the need for a cartridge of sufficient sophistication to be used as a primary Calibration Standard in system check-outs for linearity and equalization. Stanton Magnetics met this need by producing an "absolute" cartridge standard . . . stereo cartridges of such linearity and overall quality as to gain immediate acceptance within the Recording and Broadcasting Industries.

The fact that Capitol has selected the Stanton 681 Calibration Standard Series for use throughout its operation is a testament to its quality.

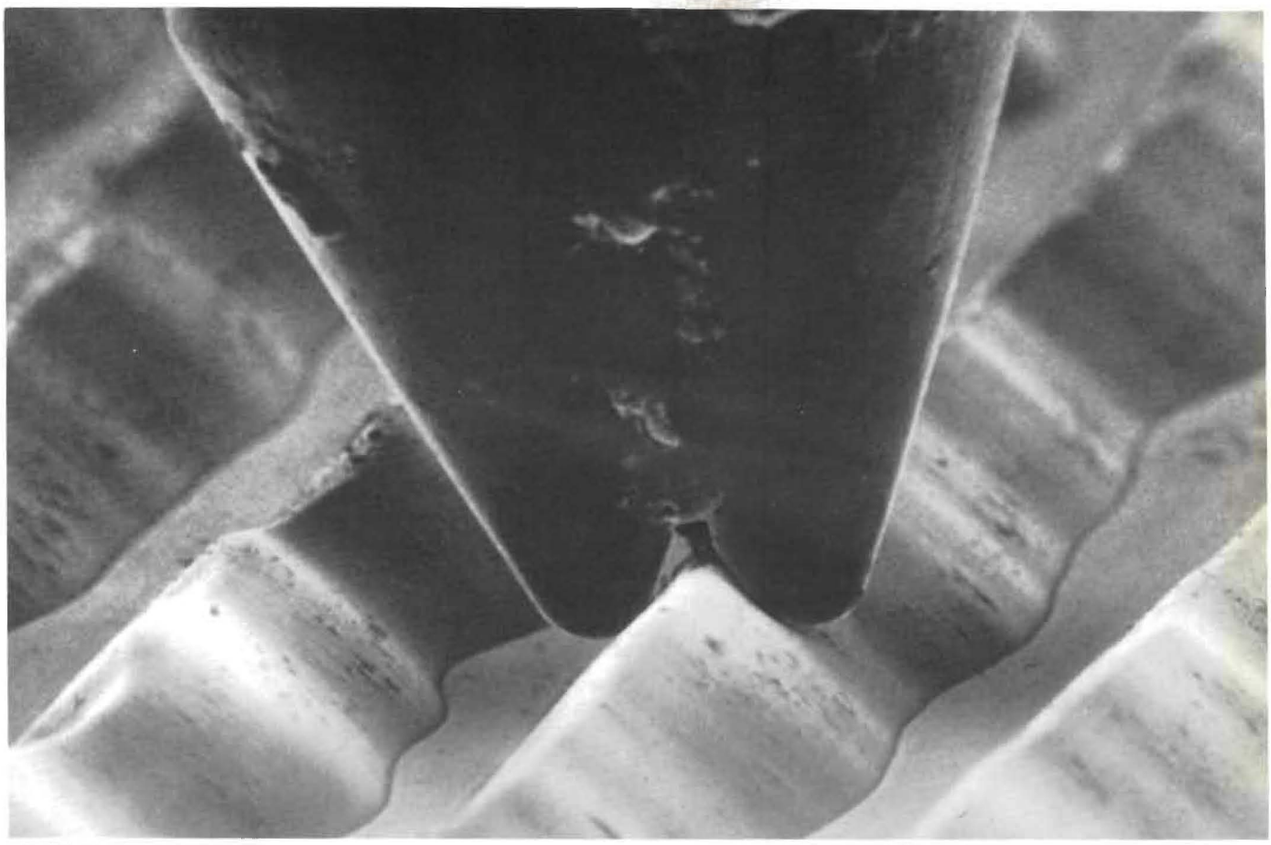
All Stanton Calibration Standard Cartridges are guaranteed to meet specifications within exacting limits. Their warranty comes packed with each unit . . . the calibration test results for that individual cartridge.

Whether your usage involves Recording, Broadcasting or Home Entertainment, you can enjoy professional audio quality with Stanton Products.

STANTON

Write today for further information to Stanton Magnetics, Inc., Terminal Drive, Plainview, N. Y. 11803.

The recording industry needed it... so Stanton developed a new stylus system for playing back stampers



Stanton Magnetics is proud to introduce the world's first and only stylus system Model 681 BPS*; capable of playing and repairing metal stampers and matrices.

Up until now, it was impossible to check the quality of the matrix until the metal mother was made, or the plating quality in the stamper, until actual records were pressed. By introducing this new special stylus system, Stanton is offering to the record industry the tool which will save precious time, improve the quality of the records, and offer a new way to evaluate the quality of the pressing by comparing it to the first generation copy of the master matrix.

Because this new 681 BPS stylus system is designed around the famous Stanton 681 Calibration series, its performance is recognizably superior, and matches that of a 681 Triple-E Calibration Standard cartridge.

Stampers and matrices being negatives of the record require a counter-clockwise rotation of the turntable** and a custom mounted tonearm, or a special arm with head shell offset in the opposite direction.

The new stylus system has two models: the BPSR, which tracks at 3 to 7 grams, for making minor repairs on stampers; and the BPSM, which tracks at 1 to 1½ grams, for stamper and matrix evaluation.

Audiophiles, who think highly of the professional quality of Stanton products and use them for home entertainment purposes, will find it difficult to use this new system . . . unless the distribution of metal stampers heads for the consumer market. At any rate, with this new system Stanton maintains its position as a prime innovator and supplier to the recording industry.

STANTON

*Patent applied for.

**Stanton is even making special turntables for this purpose.

For further information write to: Stanton Magnetics, Terminal Drive, Plainview, N. Y. 11803

STANTON PROFESSIONAL PHONO PREAMP

MODEL	DESCRIPTION	SUGGESTED LIST	PROFESSIONAL NET
310B	Turntable Preamp/Equalizer with active balanced output	$295.00	$240.00

STANTON SPECIAL RECORDING INDUSTRY PRODUCTS

CARTRIDGES — REPLACEMENT STYLI

MODEL	DESCRIPTION	TRACKING FORCE	SUGGESTED LIST	PROFESSIONAL NET
D6800 BPSM	BLACK w/Silver BPSM	¾ to 1½ grams	$126.00	$87.15
D6800 BPSR	BLACK w/Silver BPSR	3 to 7 grams	126.00	87.15

STANTON PBR SERIES ANNOUNCER'S EARPHONE
(INCLUDES BUTTON RECEIVER, EAR LOOP, BAR TIP, EAR ADAPTOR AND CORD)

MODEL	IMPEDANCE	SUGGESTED LIST	PROFESSIONAL NET
PBR-25	25	$30.00	$18.75
PBR-600	600	30.00	18.75
PBR-2000	2000	30.00	18.75

CORDS FIT ALL MODELS — Specify Type When Ordering

HD-1	Matte Grey, Heavy Duty with ⅛" Mini Phone Plug
HD-4	With ¼" Phone Plug
TW-1	Beige, Twisted Tensil with ⅛"Mini Phone Plug
TW-4	With ¼" Phone Plug

ACCESSORIES ITEMS FOR PBR SERIES

MODEL	DESCRIPTION	SUGGESTED LIST	PROFESSIONAL NET
PBR-25	25 Ohm Button Receiver	$15.75	$10.30
PBR-600	600 Ohm Button Receiver	15.75	10.30
PBR-2000	2000 Ohm Button Receiver	15.75	10.30
AD-1	Metal Ear Adaptor Replacement for PBR 25/600/2000	6.30	3.60
ET-1	Rubber Ear Tip Replacement for PBR 25/600/2000	1.40	.90
EL-P	Nylon Ear Loop Replacement for PBR 25/600/2000	5.25	3.05
HD-1	Matte Grey Cord, Heavy-Duty with ⅛" Mini Phone Plug	20.20	12.00
HD-4	With ¼" Phone Plug	20.20	12.00
TW-1	Beige Cord, Twisted Tensil with ⅛" Mini Phone Plug	20.20	12.00
TW-4	With ¼" Phone Plug	20.20	12.00

ALL PRICING SUBJECT TO CHANGE WITHOUT NOTICE
PETE BIDWELL - *Vice President/Professional Products*

STANTON MAGNETICS INCORPORATED
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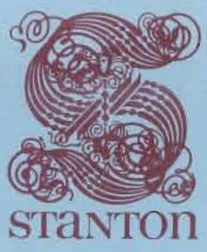

PROFESSIONAL PRICE LIST
September 1, 1992

PROFESSIONAL CARTRIDGES

CALIBRATION STANDARD SERIES (with "Longhair" Brush)

MODEL	STYLUS MODEL	TRACKING FORCE	SUGGESTED LIST	PROFESSIONAL NET	
881 MK IIs	D81 IIs	¾ to 1½ grams	$237.00	$120.75	
* 890AL**[1]	D89AL	2 to 7 grams	178.00	89.25	FOR BACKCUEING
681EEE MK III	D6800EEE-III	¾ to 1½ grams	171.00	78.15	

680 STEREO STANDARD SERIES (with "Longhair" Brush)

680EE	D680	¾ to 1½ grams	$112.00	$ 44.10	
[1]680EL*	D6800EL	2 to 5 grams	152.00	68.25	FOR BACKCUEING
*680EL-MP (Matched Pair)	D6800EL-MP	2 to 5 grams	211.00	105.00	FOR BACKCUEING
[1]680AL*	D6800AL	2 to 5 grams	132.00	60.90	FOR BACKCUEING

STEREO STANDARD PLUG-IN SERIES (Pre-mounted with ½" adapters)

L747S	D74S	¾ to 1½ grams	$191.00	$ 82.00	
L727E	D72E	¾ to 1½ grams	125.00	44.00	
L725E	D71-2E	¾ to 1½ grams	90.00	42.00	
L720EE	D71EE	¾ to 1½ grams	79.00	30.00	
[1]L680EL*	D6800EL	3½ to 4 grams	152.00	68.25	FOR BACKCUEING
L500AL	D57PAL	3½ to 4 grams	81.00	22.00	FOR BACKCUEING

BROADCAST STANDARD SERIES/ BROADCAST SERIES MARK II

500AL-MP (Matched Pair)	D5107AL-MP	2 to 5 grams	$171.00	$ 39.40	FOR BACKCUEING
[1]500AL-DP	D5107AL	2 to 5 grams	105.00	28.65	FOR BACKCUEING
500AL	D5107AL	2 to 5 grams	81.00	22.05	FOR BACKCUEING
500EL	D5100EL	2 to 5 grams	90.00	27.55	FOR BACKCUEING
500E MK II	D50E MK II	1 to 2 grams	79.00	23.55	

REPLACEMENT STYLI

HIGH PERFORMANCE PROFESSIONAL SERIES

MODEL	STYLUS COLOR	RADIUS	TRACKING FORCE	SUGGESTED LIST	PROFESSIONAL NET
[2] D81 IIs	WHITE w/ Black D81 IIs	Stereohedron	¾ to 1½ grams	$99.00	$52.00
D89AL	WHITE w/ Black D89AL	.7 Mil Spherical	2 to 7 grams	48.50	25.30
[3] DP89AL	WHITE w/ Black D89AL	.7 Mil Spherical	2 to 7 grams	132.00	69.30

[1] Extra Stylus included. [2]Substitute D81 IIs for D81E, D80S, D88S, D78E. [3](Disco Pack — includes 3 styli in each pack.)
* Does not include brush. **Non-calibrated.

STYLI

V-GUARD FOR 681 (with "Longhair" Brush*)

Model	Stylus Color	Radius	Tracking Force	List Price	Professional Net
D6807A	BLACK w/Silver Dot	0.7 Mil	1 to 3 grams	30.00	16.50
D6800EE	BLACK w/Silver Ellipse	0.2 x 0.9 Mil Elliptical	¾ to 1½ grams	36.00	19.80
D6800SE	BLACK w/Red Ellipse	0.4 x 0.9 Mil Elliptical	2 to 5 grams	30.00	16.50
D6810	BLACK w/Green Dot	1.0 Mil	2 to 5 grams	30.00	16.50
D6827	BLACK w/Blue Dot	2.7 Mil	3 to 7 grams	30.00	16.50

V-GUARD FOR 581 (with "Longhair" Brush)

D5207A	YELLOW	0.7 Mil	2 to 5 grams	29.40	16.17
D5205AA	CLEAR	0.5 Mil	¾ to 1½ grams	29.40	16.17
D5207AL	YELLOW w/Blue Dot	0.7 Mil	3 to 7 grams	29.40	16.17
D5200EL	BLACK	0.2 x 0.9 Mil Elliptical	¾ to 1½ grams	29.40	16.17
D5210	WHITE	1.0 Mil	2 to 5 grams	23.40	12.87
D5227	BLUE	2.7 Mil	2 to 7 grams	23.40	12.87

V-GUARD FOR 500

D5107A	BLACK w/Yellow Dot	0.7 Mil	2 to 5 grams	12.00	6.60
D5105AA	BLACK w/Gray Dot	0.5 Mil	¾ to 3 grams	18.00	9.90
D5107AL	BLACK w/Aqua Dot	0.7 Mil	3 to 7 grams	12.00	6.60
D5100E	BLACK w/Red Dot	0.4 x 0.9 Mil Elliptical	2 to 5 grams	20.00	11.00
D5100EE	BLACK w/Gold Dot	0.3 x 0.9 Mil Elliptical	1 to 3 grams	25.00	13.75
D5110	BLACK w/White Dot	1.0 Mil	2 to 5 grams	12.00	6.60
D5127	BLACK w/Blue Dot	2.7 Mil	3 to 7 grams	12.00	6.60

V-GUARD FOR 481

D4007A	YELLOW	0.7 Mil	2 to 5 grams	18.00	9.90
D4007AA	CLEAR	0.7 Mil	¾ to 3 grams	23.40	12.87
D4000EL	BROWN	0.2 x 0.9 Mil Elliptical	¾ to 1½ grams	23.40	12.87
D4010A	GRAY	1.0 Mil	2 to 5 grams	18.00	9.90
D4027	BLUE	2.7 Mil	3 to 7 grams	14.40	7.92

*See Note on Reverse Side

STANTON MAGNETICS INCORPORATED
Terminal Drive, Plainview, New York 11803

212-445-0554—0063
516-681-0200

PROFESSIONAL PRICE LIST
EFFECTIVE MARCH 1, 1970

CARTRIDGES

CALIBRATION STANDARD (with "Longhair" Brush*)

Model	Cartridge Color	Stylus Model	Stylus Radius	Tracking Force in Grams	Suggested List Price	Professional Net
681A	Silver	D6807A	0.7 Mil	1 to 3	66.00	36.30
681EE	Silver	D6800EE	0.2 x 0.9 Mil Elliptical	¾ to 1½	72.00	39.60
681 Ensemble	Silver	D6800EE	0.2 x 0.9 Mil Elliptical	¾ to 1½	110.00	60.50
		D6807A	0.7 Mil	1 to 3		
		D6810	1.0 Mil	2 to 5		
681 Twin	Silver	D6800EE	0.2 x 0.9 Mil Elliptical	¾ to 1½	90.00	49.50
		D6807A	0.7 Mil	1 to 3		
681SE	Silver	D6800SE	0.4 x 0.9 Mil Elliptical	2 to 5	66.00	36.30
**681L	Silver	All 6800 Styli	Priced according to styli used			

BROADCAST STANDARD

Model	Cartridge Color	Stylus Model	Stylus Radius	Tracking Force in Grams	Suggested List Price	Professional Net
500A	Gold	D5107A	0.7 Mil	2 to 5	30.00	16.50
500AA	Gold	D5105AA	0.5 Mil	¾ to 3	35.00	19.25
500AL	Gold	D5107AL	0.7 Mil	3 to 7	30.00	16.50
500E	Gold	D5100E	0.4 x 0.9 Mil Elliptical	2 to 5	35.00	19.25
500EE	Gold	D5100EE	0.3 x 0.9 Mil Elliptical	1 to 3	40.00	22.00

*For Broadcast and any Professional applications requiring precise cueing the "Longhair" Brush is easily removable without the use of tools.

**681L Low impedance cartridge available with all listed D6800 type styli at quantity prices listed above.

•Any questions pertaining to application or product specifications should be directed to Stanton Magnetics Field Engineering Dept.

•Suggested list prices are indicated for identification purposes only, and should not be used to represent the usual retail selling price of the product unless such is the fact in the marketing area where the product is to be sold.

Prices subject to change without notice
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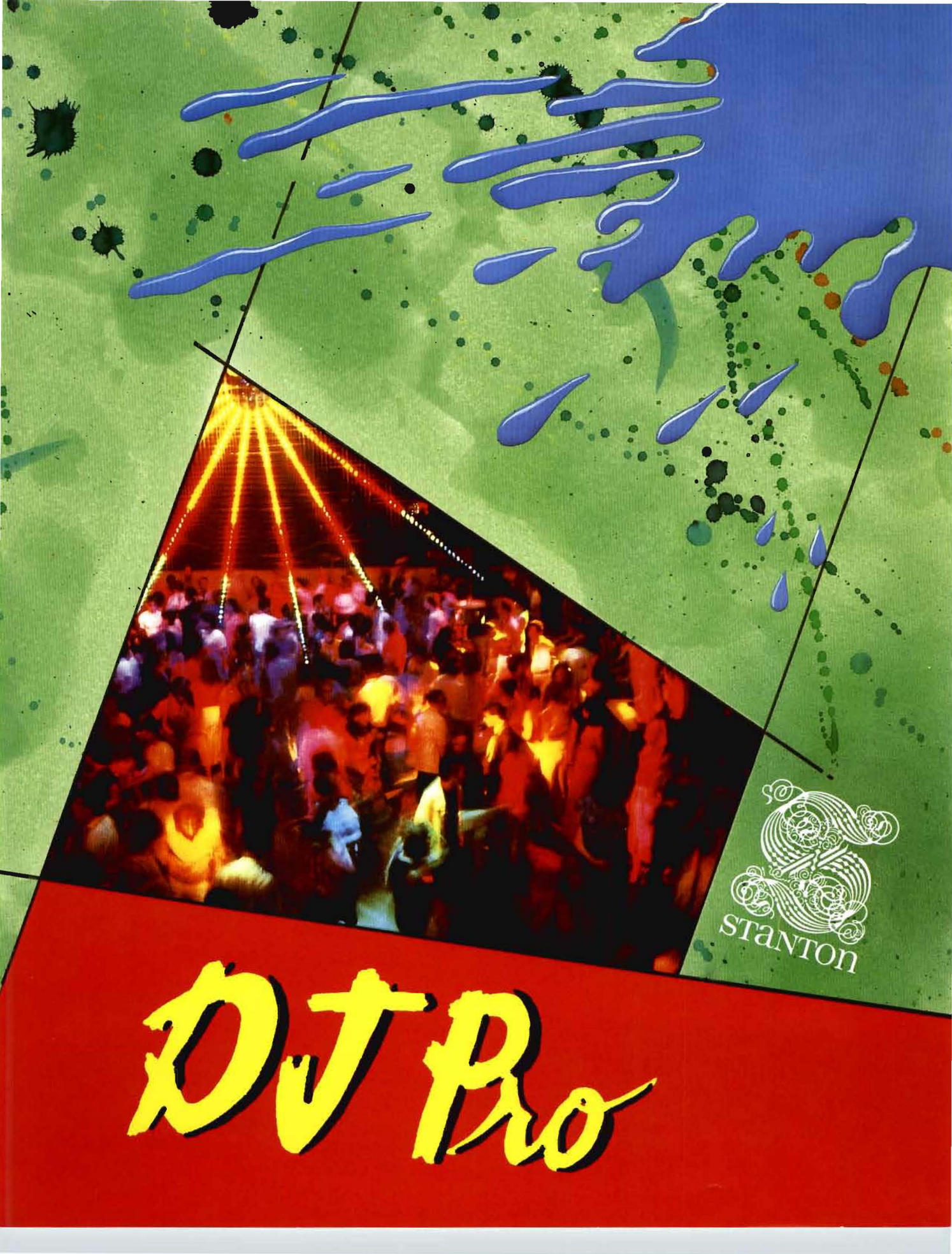


STANTON

DJ Pro

890AL

The ***890AL*** is Stanton's newest DJ Pro cartridge. It's state-of-the-art design provides the best sound quality ever offered for the professional D. J. It's the perfect balance of responsiveness and ruggedness, making it completely adaptable for backcueing, scratch mixing and slip cueing—while providing the musical quality needed in the most demanding club environments.

The 890AL is manufactured with a unique suspension system that is highly responsive to extremes in groove modulation changes. It features a small powerful magnet plus a computer balanced 4 coil body which virtually eliminates crosstalk and hum. This highly engineered cantilever and suspension system is combined with an ultra high polished diamond, which allows the system to perform optimally at a tracking force of 2-7 grams. The 890AL comes with an extra stylus.

Frequency response	20-20 kHz
Output @ 1 kHz	.76 mV/cm/sec ±1½ dB
Channel Separation @ 1kHz	30 dB
Channel Balance @ 1 kHz	Within 1 dB
Tracking Force	2-7 grams
Stylus Tip	.7 mil (18 µm) Spherical Diamond (Ultra High Polish)
DC Resistance	900 Ohms approx.
Inductance	510 mH approx.
Cartridge Weight	5.5 grams
Recommended Load	275 pF—47K Ohms
Tracking Ability	100 µ @ 3 grams
Replacement Stylus	D89AL D89AL-DP (3 per pack)

Stanton's cartridges all have ***precision polished styli*** *and feature a* ***fluorescent stylus tip*** *for easy cueing.*

STANTON MAGNETICS.
"The Choice of the Professionals." ™

680EL

The ***680EL*** is the world's most popular stereo cartridge for the professional. The 680EL provides the best balance between a responsive musical cartridge and rugged construction. It is the standard by which all other DJ cartridges are measured. The cartridge body is manufactured with 4-coil design to increase channel separation and reduce intermodulation. The cantilever on the 680EL is designed for optimum strength and minimum mass. It is a thin wall, small diameter aluminum alloy tube, which is highly responsive to groove modulation, yet very durable when used for backcueing, scratch mixing, etc. The 680EL diamond is designed to stay in the groove under even the most demanding situations.

The ***680EL-MP*** is a matched pair of 680EL cartridges that are factory tested to have the same output levels, channel separation and frequency response. This is ideal for the DJ who has a two turntable setup.

The ***680EL-C*** is our famous 680EL cartridge with extra styli on a hang-card. The ***680AL*** is a 680 cartridge with a spherical stylus. The ***L680EL*** is a cartridge that is especially designed for plug-in tonearms. It increases the vertical tracking force for all P-mount tonearms from $1\frac{1}{2}$ to $3\frac{1}{2}$ grams, making it capable of backcueing, scratch mixing, etc.

Frequency response	20-18 kHz
Output @ 1 kHz	1.1 mV/cm/sec ±1½ dB
Channel Separation @ 1kHz	30 dB
Channel Balance @ 1 kHz	Within 2 dB
Tracking Force	2-5 grams
Stylus Tip	Elliptical .4x.7 mil (10x18 µm) High Polish Diamond
DC Resistance	1300 Ohms approx.
Inductance	930 mH approx.
Cartridge Weight	5.5 grams
Recommended Load	275 pF—47K Ohms
Replacement Stylus	D6800EL, DP6800EL, D6800EL-MP

680EL-H4—A premounted **680EL** in a high quality headshell.

500AL

Stanton's ***500AL*** is the workhorse of the professional industry. This cartridge provides the perfect blend of economy, reliability, ruggedness and optimum performance. The 500AL is ideal for the DJ who is very demanding on his equipment. The diamond on the 500AL is designed to fit firmly in the record groove, minimizing miscueing while backcueing, scratch-mixing and even mishandling. Its thick wall, large diameter cantilever has a sturdy suspension that permits high tracking forces. Its sturdy grounded cartridge body is designed to minimize hum and deliver good sound quality.

The ***500AL-MP*** is a matched pair of 500AL's that are factory tested to have the same output level, channel separation and frequency response. This is ideal for the two turntable setup. The ***500AL-DP*** is a 500AL with an extra stylus. ***500AL-PC*** is a blister pack which includes two extra styli. The ***L500AL*** is a cartridge that is specially designed for plug-in tonearms. It increases the vertical tracking force for all P-mount tonearms from $1\frac{1}{2}$ to $3\frac{1}{2}$ grams, making it capable of backcueing, scratch mixing, etc. The ***500EL*** is a cartridge equipped with an elliptical diamond, providing an extended frequency response.

Frequency response	20-17 kHz
Output @ 1 kHz	1.0
Channel Separation @ 1kHz	28 dB
Channel Balance @ 1 kHz	Within 2 dB
Tracking Force	2-5 grams
Stylus Tip	Spherical .7 mil (18µm) Special High Polish Diamond
DC Resistance	535 Ohms approx.
Inductance	400 mH approx.
Cartridge Weight	5.5 grams
Recommended Load	275 pF—47K Ohms
Replacement Stylus	D5107AL, D5100EL, D5107AL-MP

500AL-H4—A premounted **500AL** in a high quality headshell.

30M/SR

The Dynaphase **30M/SR** DJ Headphone has been designed to allow professional DJs to monitor while mixing and playing their LP's, tapes and CD's. It's a shoulder rest, single cup headphone that provides convenience, comfort and superb sound quality. The 30M/SR's patented Samarium Cobalt design produces extremely accurate sound. This lightweight, durable headset is made to rest comfortably on either your right or left shoulder. The shoulder rest can be detached and the headphone can be used as a single cup hand-held monitor. The 30M/SR...a truly professional headphone.

35M/HB

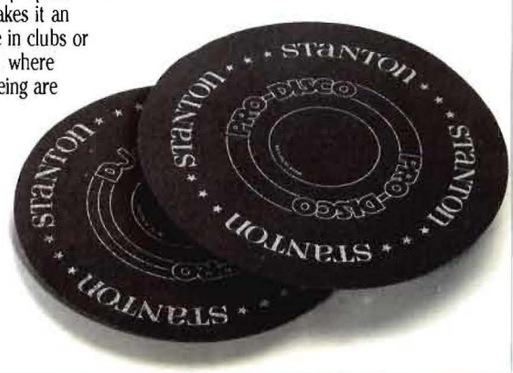
The **35M/HB** DJ Headphone has been engineered to satisfy a variety of professional uses. The single cup model with headband is perfect for monitoring sound in clubs, radio stations and studios. This headphone provides superb comfort with complete user mobility. Its patented Samarium Cobalt driver produces extremely accurate sound..

45M/MC

The Stanton **45M/MC** with unidirectional mic is designed with the demanding professional in mind—perfect for DJ, studio and announcer's use. The headphone is a single sided closed ear design built with a heavy driver element. It is mounted on an adjustable metal headband covered with soft padded vinyl. A high quality 200 ohm unidirectional high sensitivity mic is mounted from the headphone. Comes with 12 ft. dual straight cord with two $\frac{1}{4}$" plugs.

DJ SLIP MAT

Our **DSM-1 DJ Slip Mat** is manufactured from a resin treated, glazed urethane material with anti-static properties. Its rugged construction makes it an excellent choice for use in clubs or broadcast applications, where backcueing and slip cueing are required.



STANTON'S 500 CASE LINE

MOBILE DJ CONSOLE–This compact DJ case organizes your two turntables and mixer. It is a heavy duty wood carpeted case with metal corners, latches, hinges, padded handles, and removable lid. It offers the secure and safe way to carry your equipment. Dimensions: 58"x17"x7 1/4"

DJ SOUND STAGE–This easy to carry wooden and carpeted sound stage turns you into a professional instantly. By simply taking the removable lid from your DJ console and placing it on top of your sound stage, you have created a secure and professional sound stage. Dimensions: 36"x27"x3 1/4"

SINGLE TURNTABLE CASE–Lets you safely carry your turntable. Wooden construction, carpeted finish, and sized for all popular turntables. Dimensions: 19 1/2"x17 3/4"x7 1/4"

16 SPACE ELECTRONICS RACK–Perfect for accomodating all rack mounted equipment. Comes with a front and rear removable cover and heavy duty locking casters. Dimensions: 32 1/2"x20 1/8"x18"

16 SPACE- L ELECTRONICS RACK–Same case as above, only deeper. Dimensions: 32 1/2"x20 1/8"x22"

10 SPACE ELECTRONICS RACK–Perfect for accomodating all rack mounted equipment. Comes with a front and rear removable cover and heavy duty casters.
Dimensions: 22 1/2"x20 1/8"x18"

10 SPACE- L ELECTRONICS RACK–Same case as above, only deeper. Dimensions: 20 1/8"x18"x22"

6 SPACE ELECTRONICS RACK–Perfect for accomodating all rack mounted equipment. Comes with a front and rear removable cover. Dimensions: 20 1/8"x13"x18"

6 SPACE- L ELECTRONICS RACK–Same as above, only deeper. Dimensions: 20 1/8"x13"x22"

45 RECORD CASE–Durable wood and carpeted carrying case for 300 of your 45's. Durable, padded handles, metal corners and straps. Dimensions: 25 1/4"x14 3/8"x9 3/8"

LP CARRY CASE–Heavy duty wood carpeted carrying case with removable lid, padded handle. Holds 100 LP's.
Dimensions: 24 3/4"x13 3/4"x8"

CD CARRY CASE–Heavy duty wood carpeted carrying case with removable lid, padded handle. Holds 100 CD's.
Dimensions: 24 3/4"x13 3/4"x8"

CASSETTE CARRY CASE–Heavy duty wood carpeted carrying case with removable lid, padded handle. Holds 90 tapes.

SINGLE MIXER CASE–Heavy duty wood carpeted carrying case with removable lid, padded handles. Holds a single DJ mixer.
Dimensions: 20 1/4"x16"x10"

STANTON MAGNETICS Incorporated
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912-851-191

Printed in USA

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Detailed below is a listing of Stanton Cartridges and Styli that are interchangeable with each other within the same cartridge family:

CARTRIDGES		STYLI	
880E	890AL	D80E	D83S
880S	L837S	D80S	D84S
881S	L847S	D81E	D89AL
881-MK-II-S		D81S	D810
		D81-II-S	D827

680AL	681-EEE-MK-II-S	D680	D6800SE
680EE	681-EEE-S	D680S	D6807A
680EE-S	681SE	D6800AL	D6810
680EL	L680EL	D6800EE	D6827
680SL	L727E	D6800EEE	D72E
681A	L737E	D6800EEE-S	D73E
681EE	L737S	D6800EEE-II-S	D73S
681EEE	L747S	D6800EL	D74S
		D6800SL	

600A		D6003EE	D6027
600E		D6004E	D6071A
600EE		D6010	

500A	500EE-MK-II	D50A	D5100EL	D5127
500A-MK-II	500EL	D50A-MK-II	D5100E	D5107DJ
500E	500AL/500AL-DP	D50E	D5100EE	(Radio
500E-MK-II	500DJ (Radio Shack)	D50E-MK-II	D5105AA	Shack)
500EE		D50EE	D5107A	D5110
		D50EE-MK-II	D5107AL	

L720EE	D71-2E
L725E	D71EE
