

**SHURE****MICROPHONES AND ELECTRONIC COMPONENTS**

AREA CODE 312/328-9000 • CABLE SHUREMICRO

**MODEL M80E-D19****DATA SHEET  
GARD-A-MATIC®  
STEREO DYNETIC  
PHONOGRAPH CARTRIDGE  
HEAD ASSEMBLY****SPECIFICATIONS****MODELS M80E, M80E-D AND M80E-D19***9.50/68  
11/2/68*

<b>FREQUENCY RESPONSE:</b>	From 20 to 20,000 hertz
<b>OUTPUT VOLTAGE:</b>	6.6 millivolts per channel at 1,000 hertz at 5 cm/sec.
<b>CHANNEL SEPARATION:</b>	Nominally over 25 db at 1,000 hertz
<b>CHANNEL BALANCE:</b>	Within 2 db of each other
<b>RECOMMENDED LOAD IMPEDANCE:</b>	47,000 ohms (per channel)
<b>INDUCTANCE:</b>	720 millihenries
<b>D.C. RESISTANCE:</b>	630 ohms
<b>STYLUS MODEL N55E:</b>	Replacement: Grip Color—yellow ELLIPTICAL SHAPED DIAMOND TIP .0007 inch (17.8 microns) frontal radius .0010 inch (25.4 microns) between points of contact with groove. .0002 inch (5 microns) side contact radii
<b>COMPLIANCE:</b>	Vertical } 25.0 x 10 <sup>-9</sup> cm/dyne at 26.7°C. Horizontal }
<b>TRACKING FORCE:</b>	1½ grams maximum
<b>REPLACEMENT STYLUS:</b>	N55E

Models M80E, M80E-D and M80E-D19 are high quality elliptical-stylus stereo phono cartridges mounted in a retractile safety suspension system to provide a scratch-proof, bounce-proof, feature to the operation of an automatic turntable. The Model M80E is designed specifically for the Garrard Lab 80 and type A70 series automatic turntables. The Model M80E-D is designed specifically for the Dual 1009 Automatic Turntable. The Model M80E-D19 is designed specifically for The Dual 1019 and 1009SK Automatic Turntables.

The new elliptical stylus cartridges are spring mounted in pickup heads in such a manner that permit a maximum needle force of 1½ grams to be exerted on the face of the record. Forces in excess of approximately 2 grams will cause either the plastic safety bumper at the rear of the cartridge or the plastic bumper in the stylus grip to come in contact with the record surface and thereby protect the record from needle scratches and protect the needle itself from damage.

Perhaps the most desirable advantage of all is the fact that the M80 Series makes it possible to operate the turntable in situations where a changer normally will not work well. These include such adverse conditions as aboard a ship during a storm; in rooms where modern dancing is done; and, in general, in any area in which shaky floors or unstable phonograph supports have caused the changer cartridge to mistrack.

**INSTALLATION**

For Automatic and Manual Play:

1. Remove present pickup head and insert Shure Model into phono arm. Care must be taken in removal and inserting of the pickup heads not to cause damage to the stylus, or to disturb the position of the leads.
2. Set stylus force indicator to "0."
3. Balance arm as per Garrard or Dual instructions and set stylus force indicator in the range of 1¼ to 1½ grams. In this case, the clearance from the record surface to the plastic safety bumper at the rear of the cartridge will be between 1/16" to 1/8". This range in recommended playing position should be maintained even if it is necessary to adjust the 1½ gram setting on the arm indicator slightly. This may be necessary due to the tolerance buildup in certain arms plus slight inaccuracies in the arm-balancing process.

**NOTE:** If it is desired to play a stack of five records, the clearance of the safety bumper should be measured with THREE records on the turntable.

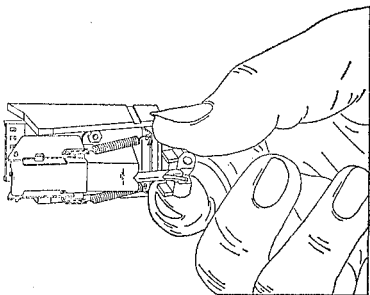
*OBS.*

## Suggestions for Cleaning Your Stylus

To clean the stylus, use a camel's-hair brush (No. 2 size or smaller) dipped lightly in alcohol. The alcohol will remove any sludge deposits which may have coated the stylus tip. The brush bristles should be trimmed to a length no longer than  $\frac{1}{4}$  inch. Always brush the stylus with a forward movement from the rear (terminal end of the cartridge) to the front. Never brush or wipe the stylus from front to back or side to side.

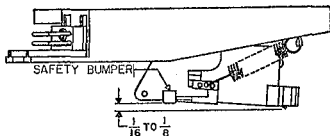
## EASY STYLUS REPLACEMENT

Grasp molded housing of stylus between thumb and forefinger. Gently withdraw stylus by pulling forward out of cartridge. Grasp replacement stylus between thumb and forefinger and insert into stylus socket. Press stylus into socket until the molded housing of the stylus mates with the cartridge case. Care must be taken not to allow the finger to slip off the molded housing of the stylus, resulting in damage to the stylus tip or shank.

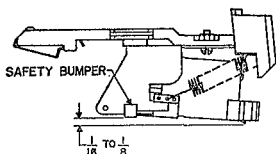


## STYLUS REPLACEMENT

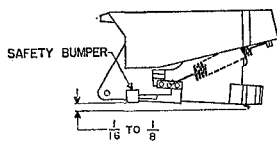
**CAUTION:** The position of the leads inside the pickup head shell is extremely important in maintaining proper tracking force and proper operation of the cartridge-head assembly. The leads have been positioned at the factory for optimum performance and the leads should not be disturbed.



MODEL M80E



MODEL M80E-D



MODEL M80E-D19

## RECOMMENDED PLAYING POSITIONS

**LABORATORY TEST FINDINGS:** (Note: The following stylus test findings of the Shure N3D stylus are an example of the close scrutiny Shure pays to all imitation Shure Dynetic Styli.) Shure laboratory tests show that the imitation stylus assemblies labeled as replacements for the Shure Model N3D Stylus Assembly vary drastically in important performance characteristics. For example, the compliance varied from a low of 0.9 to a high of 11.5, requiring 9.0 grams to track a record with a low compliance stylus, and 2 grams with a high compliance stylus. The high compliance stylus retracted at 4 grams needle force, allowing the cartridge case to drag on the record surface, thereby becoming inoperative. Response at high frequency (relative to the 1kc level) ranged from a 5.5db peak to a drop of 7.5db. Separation varied from "good" (27db) to "poor" (16.5db) at 1kc. These figures reveal that there is very little consistency in performance characteristics of the imitation Dynetic Styli.

In each of the categories shown above, the results ranged from good to poor. As a matter of fact, only 10% of the samples met the Shure performance standards for the Shure N3D Stereo Dynetic Stylus. In addition to our test findings, our Service Department records show that an increasing number of Dynetic Phono Cartridges are being returned because of poor performance—and our examination has disclosed that most of these returned cartridges are using imitation Dynetic Styli.

**CONCLUSION:** Obviously, if any imitation Dynetic Stylus is used, we cannot guarantee that the performance of Shure Dynetic cartridges will meet the published Shure specifications. Accept no substitute.

## Guarantee

The Stereo Dynetic Head Assemblies and Stereo Dynetic Styli are guaranteed to be free from electrical and mechanical defects for one year from the date of shipment from the factory, provided all instructions are complied with fully. The Guarantee does not cover stylus wear, nor does it cover damage to the stylus assembly from abuse or mishandling.

**PATENT NOTICE:** Manufactured under U. S. Patents 3,055,988, 3,077,521, and 3,077,522. Other patents pending.

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