

**SHURE**

MICROPHONES AND ELECTRONIC COMPONENTS

EVANSTON PHONE DA 8-9000 • CHICAGO PHONE SH 3-1600

**DATA SHEET****MODEL M98/A  
"GARD-A-MATIC"**

The Model M98/A was designed to replace and upgrade the M99/A Gard-a-matic Assembly. It consists of the well-known, high quality 15° angle, distortion-free M44 Stereo Phonograph Cartridge mounted in Garrard Laboratory Series Automatic Turntable—Type "A" Pickup Head.

The cartridge is spring mounted in a Garrard type pickup head in such a manner that permits a maximum needle force of 3 grams to be exerted on the face of the record. Forces in excess of 3 grams will cause the projection on the pickup head 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 M98/A makes it possible to operate the Type A Changer 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 M98/A pickup head into the respective Garrard phono arm.
2. Loosen screw on the arm to release the spring tension of the adjustment for stylus pressure.
3. Adjust position of the counterweight on the rear of the arm so that when the cartridge is setting on a record there is a clearance of approximately 1/16" (1.6 mm) between record surface and the projection on the pickup head. A U. S. nickel or U. S. half-dollar is approximately 1/16" thick. The tracking force in this case will be approximately 2.5 grams. It is not necessary to reset the springs.

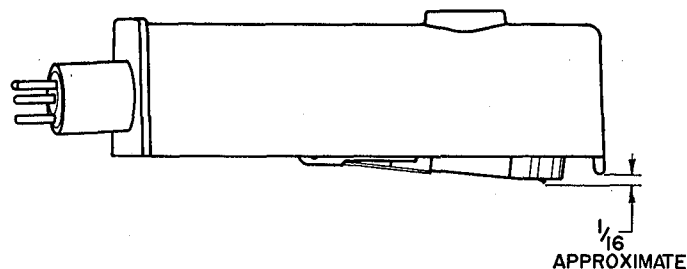
**NOTE:** If it is desired to play a stack of six records, the clearance of the safety bumper should be measured with three records on the turntable.

**SPECIFICATIONS**

<b>Frequency Response:</b>	From 20 to 20,000 cps
<b>Output Voltage:</b>	11 millivolts per channel
<b>Channel Separation:</b>	Nominally over 25 db at 1000 cps
<b>Recommended Load Impedance:</b>	47,000 ohms
<b>Stylus Replacement:</b>	N44-7
<b>Compliance:</b>	20.0 x 10 <sup>-6</sup> cm per dyne
<b>Tracking:</b>	1.5 to 3.0 grams
<b>Inductance:</b>	720 millihenries
<b>D. C. Resistance:</b>	630 ohms
<b>Stylus:</b>	.0007" diamond

**Guarantee:** The Shure M98/A Cartridge is guaranteed to be free from electrical and mechanical defects for one year from 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.



RECOMMENDED PLAYING POSITION

*OBZ*