

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

AREA CODE 312/328-9000 • CABLE SHUREMICRO

**MODEL M32-3**

(see note)

**DATA SHEET****MONO (78) AND  
STEREO DYNETIC®  
PHONOGRAPH CARTRIDGES****SPECIFICATIONS****M31 AND M32 CARTRIDGE SERIES  
N31 AND N32 STYLI SERIES**

Model Number	Diamond Stylus Replacement	Output Voltage (1,000 Hz. at 5 cm/sec)	Stylus Color Grip	Compliance (Vertical, Horizontal, cm per dyne)	Tracking (Grams)
M31E	N31E Elliptical Side Contact Radius: .0002" (.005 mm) Frontal Radius: .0007" (.018 mm)	10.5 millivolts	Yellow	15.0 x 10 <sup>-6</sup>	1 to 2
M32E	N32E Elliptical Side Contact Radius: .0004" (.010 mm) Frontal Radius: .0007" (.018 mm)	9.3 millivolts	Brown	10.0 x 10 <sup>-6</sup>	2½ to 5
M32-3	N32-3, Radius .0025" (.064 mm)	5.5 millivolts	Green	10.0 x 10 <sup>-6</sup>	2½ to 5

**NOTE:** Model M32-3 for 78 records is supplied with the two output channels connected in parallel and is thus suitable for use with mono and stereo systems. Double loop pin jacks are used to connect the "R" to the "L" terminal and the "RG" to the "LG". Stereo and mono L.P. records may be played by fitting an N31E or N32E Stylus. When used with a stereo system, the double loop pin jacks should be removed.

**FREQUENCY RESPONSE:** From 20 to 18,500 Hz (M31E)  
From 20 to 17,500 Hz (M32E)  
From 20 to 17,500 Hz (M32-3)

**CHANNEL SEPARATION:** More than 20 db at 1,000 Hz

**RECOMMENDED LOAD IMPEDANCE:** 47,000 ohms per channel

**INDUCTANCE:** 720 millihenries per channel

**D.C. RESISTANCE:** 630 ohms per channel

**MOUNTING:** Standard ½" (12.7 mm) mounting center

**WEIGHT:** 6 grams

**TERMINALS:** 4 terminals

**GENERAL:** The M31 and M32 Series of Dynetic phonograph cartridges have been developed for use with all high fidelity amplifiers having magnetic and constant velocity inputs.

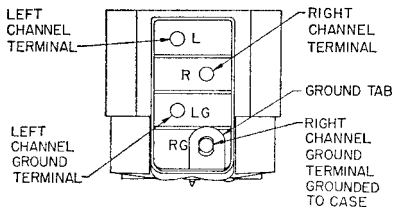
**OPERATION:** Recommended needle forces for optimum results are listed under "Specifications." Forces greater than the indicated "maximum" should not be used.

**CONNECTIONS**

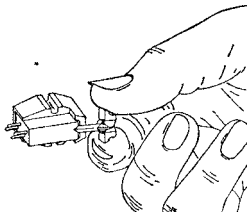
**4-LEAD STEREO CONNECTION:** Connect "hot" lead of right channel to terminal "R" and shield or ground lead of right channel to terminal "RG." Connect "hot" lead of left channel to terminal "L" and shield or ground lead of left channel to "LG." To prevent "ground loops" and hum, no common connection should be used at cartridge terminals.

**MONAURAL CONNECTION:** For single channel reproduction of Monaural or Stereo recordings, connect "hot" lead to both "R" and "L" terminals and connect ground or shield lead to both ground terminals marked "RG" and "LG."

**CAUTION:** Do not make solder connections to cartridge terminals. Make all solder connections to terminal jacks provided before slipping them over the terminals.



TERMINAL DIAGRAM  
FIGURE 1



STYLUS REPLACEMENT  
FIGURE 2

### 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.

**SPECIAL NOTE:** The Dynetic stylus assembly used in these cartridges is the most critical component. To maintain the original performance standards of your cartridge, be certain that any replacement stylus you buy bears the following certification on the package: "This Dynetic stylus is precision manufactured by Shure Brothers, Inc."

Avoid inferior imitations. They will seriously degrade the performance of your cartridge. All genuine "Dynetic" styli are manufactured by Shure Brothers, Inc.

**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 performances—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 M31 and M32 Stereo Dynetic Cartridges and N31 and N32 Stereo Dynetic Styli are guaranteed to be free from electrical and mechanical defects for one year from date of shipment from 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.

### Service Protection—Accidental Damage

Shure Dynetic Styli will withstand long, continued usage. However, if stylus assembly should be damaged due to accidental mishandling, and diamond tip is still intact, return the stylus assembly to the factory for servicing and testing to original performance standards at a nominal service charge of \$5.50. This price is only applicable when the customer returns the stylus direct to the factory in Evanston. In Canada and England, send to addresses shown below. (Prices proportionately higher outside the U.S.A.) Please enclose a check for service charge with the returned assembly.

Return Stylus to:	In Canada, return stylus to:	In England, return stylus to:
Service Department	A. C. Simmonds and Sons, Ltd.	Shure Electronics Ltd.
Shure Brothers, Inc.	285 Yorkland Boulevard	84 Blackfriars Road
222 Hartrey Avenue	Willowdale, Ontario	London S E 1
Evanston, Illinois 60204	Canada	England
U.S.A.		

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

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