

SHURE®

V15xMR



User's Guide

The V15VxMR

(See illustrations on inside back cover.)

The Micro-Ridge diamond tip and the beryllium stylus cantilever of the V15VxMR combine to achieve the highest trackability and most detailed and accurate playback possible, allowing the listener to hear musical sounds that were previously hidden in the record grooves. The use of these and other design features of the V15VxMR result in the most accurate tracing of a phonograph record groove yet obtained.

The V15VxMR offers all these outstanding features and benefits:

- The highest known **trackability** at 1 gram for extended record and tip life
- Beryllium **MICROWALL/Be™** stylus cantilever affords superior trackability for accurate sound reproduction
- **MĀSAR™**-polished Micro-Ridge stylus tip minimizes distortion and record wear
- **Ultra-flat frequency response**, higher output, and superior signal-to-noise level from high-efficiency magnetic structure
- **Dynamic Stabilizer/Destaticizer** overcomes record warp, dust, and surface static electricity
- Exclusive **SIDE-GUARD** stylus protection system guards against accidental stylus damage

Trackability.. is the stylus' ability to stay in contact with the record groove walls at a given tracking force. The most demanding signals on a record are usually high-level, high-frequency sounds and sharp transients. Mistracking of any signal can cause record groove damage that permanently reduces future reproduction accuracy.

Trackability can be improved by increasing stylus tracking force at the expense of record and stylus tip wear. The V15 achieves high trackability without making these sacrifices.

The V15VxMR's **Micro-Ridge** stylus tip and low effective-mass **MICROWALL/Be** stylus structure almost double previously achieved high frequency trackability at 10 kHz - at an optimum stylus force of only one gram!

Beryllium MICROWALL/Be Stylus Cantilever for Lowest Effective Mass Ever!

Beryllium has extremely low mass and high stiffness. These properties result in superior performance, however, only when the material is geometrically optimized. The ultra-thin (0.0005-inch) beryllium **MICROWALL/Be** tube, shown in Figure 1c, has the lowest effective mass and highest ratio of stiffness to mass of any stylus cantilever ever, resulting in unprecedented high-frequency trackability.

Below is the Stiffness to Mass ratio for the three different types of beryllium cantilevers shown in Figure 1 (inside back cover).

a	b	c
<u>SOLID ROD</u>	<u>2 mil WALL</u>	<u>0.5 mil MICROWALL</u>
10 mil dia.	12 mil dia.	18 mil dia.
Stiffness/Mass	Stiffness/Mass	Stiffness/Mass
Ratio: 1	Ratio: 2	Ratio: 6.25

The physical characteristics of beryllium allow a longer length low-mass stylus structure. The resultant longer cantilever achieves the proper vertical tracking angle for a better match to the recorded signal and lower distortion.

MĀSAR™-Polished Micro-Ridge (MR) stylus tip
The MR **Micro-Ridge** stylus tip has a very small tracing radius, as shown in Figure 2, that reduces distortion and minimizes record surface indentation for long record life.

The very low mass of the nude, gem-stone quality diamond tip of the V15VxMR helps minimize the total effective stylus mass.

The areas of the diamond actually in contact with the record are MASAR-polished, an ultra-smooth polishing technique for reducing surface noise and record wear.

Ultra-flat frequency response

The MICROWALL/Be cantilever raises the stylus mechanical resonance frequency to 33 kHz, well beyond the audible range, ensuring the flat response shown in Figure 3, as well as superior high-frequency channel separation.

The V15VxMR features high output levels with fewer turns of wire on its coils, which results in a lower impedance at the output terminals, making the frequency response of the cartridge less sensitive to capacitive and resistive loading.

The Dynamic Stabilizer/Destaticizer

Shure's exclusive Dynamic Stabilizer acts like a miniature shock absorber, maintaining a constant cartridge-to-record distance, as shown in Figure 4, to ensure uniform tracking force. This minimizes such warp-related problems as groove skipping, cartridge bottoming, signal wow, and even amplifier and/or speaker overload.

The viscous-damped Dynamic Stabilizer attenuates the arm-cartridge system resonance effect that causes large increases in sub-audio frequency output and possible mistracking.

When in the "operating" or "guard" positions (see Figure V in the Installation Manual), the Dynamic Stabilizer protects the stylus and record from damage if the tone arm is accidentally dropped onto the record.

As shown in Figure 5, there are over 10,000 tiny, electrically conductive fibers in the

Dynamic Stabilizer brush. These tiny fibers discharge surface static electricity and, though not meant to be the primary record cleaning mechanism, do sweep away microscopic dust particles.

SIDE-GUARD Stylus Protection System

The *SIDE-GUARD* stylus protection system, shown in Figure 6, helps prevent stylus damage if the cartridge accidentally slides across a record.

The *SIDE-GUARD* stylus protection system responds to side thrusts on the stylus by withdrawing the entire stylus cantilever and tip safely into the stylus housing before the cantilever can be damaged.

Specifications

Frequency Response:	10 to 25,000 Hz
Channel Balance:	Within 1.5 dB
Channel Separation:	1 kHz – 25 dB or greater 10 kHz –18 dB or greater

Trackability at 1 gram (10 mN) Tracking Force (typical values shown in cm/sec peak velocity);

400 Hz: 30 cm/sec	5 kHz: 80 cm/sec
1 kHz: 46 cm/sec	10 kHz: 60 cm/sec

Tracking Force:

	Force at the stylus tip	Total Tone Arm Force setting with Dynamic Stabilizer operating
Optimum	1.0 g (10 mN)	1.5 g (15 mN)
Maximum	1.25 g (12.5 mN)	1.75 g (17.5 mN)

Output Voltage (typical): 3 mV RMS at 1 kHz at 5 cm/sec peak velocity

Recommended Load: 47 k Ω ohms in parallel with 250 pF

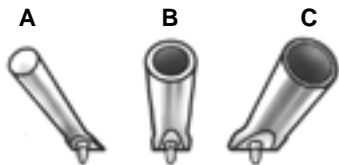
Resistance (typical): 1000 Ω dc

Inductance (typical): 425 mH at 1 kHz

Cartridge Weight: 6.6 grams

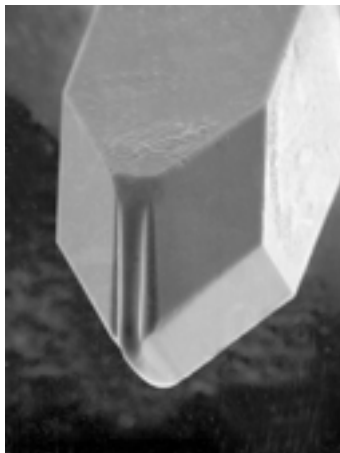
Replacement Stylus: VN5xMR, nude Micro-Ridge tip 3.8 x 75 μ (.00015 x .003 in.), burgundy-colored grip

Certification: Conforms to European Union directives, eligible to bear CE marking; meets European Union EMC Immunity Requirements: EN 50 082-1, 1992 [ESD (IEC 801-2)]



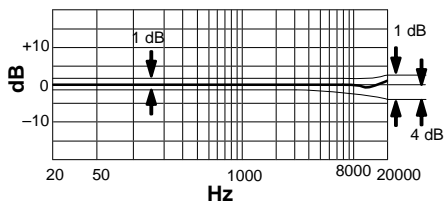
Beryllium Stylus-cantilevers

FIGURE 1



V15VxMR MicroRidge Stylus Tip

FIGURE 2



V15VxMR Frequency Response

FIGURE 3



Dynamic Stabilizer

FIGURE 4



Dstaticizer Brush

FIGURE 5



SIDEWARD Stylus Protection System

FIGURE 6

FULL ONE-YEAR WARRANTY

Shure Incorporated ("Shure"), 222 Hartrey Avenue, Evanston, Illinois 60202-3696, warrants to the owner of this product that it will be free in normal use of any defects in workmanship and materials for a period of one year from date of purchase. You should retain proof of date of purchase. Shure is not liable for any consequential damages. If this Shure product has any defects as described above, carefully repack it and send it prepaid to: Shure Incorporated, Attention: Service Department, 222 Hartrey Avenue, Evanston, Illinois 60202-3696. Outside the United States, return the product to your dealer or Authorized Service Center for repair. The product will be repaired or replaced and returned to you promptly. If it cannot be repaired or replaced, you may elect to receive a refund. This warranty does not include stylus wear.

The SHURE logo is rendered in a bold, blue, sans-serif font. The letters are thick and closely spaced, with a slight shadow effect that gives it a three-dimensional appearance. The logo is positioned at the top of the contact information section.

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