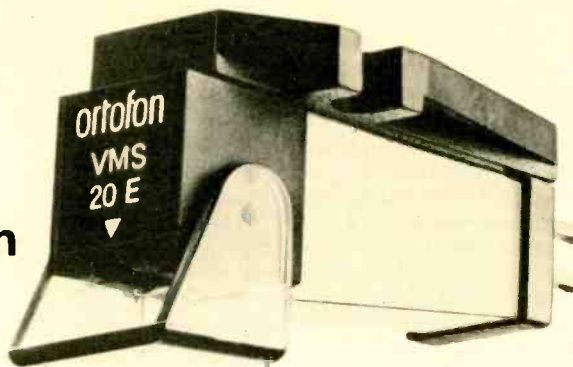


A Moderate-Priced Ortofon



The Equipment: Ortofon Model VMS-20E, a stereo/phono pickup with elliptical diamond stylus. Price: \$65. Warranty: one year parts and labor; servicing at Ortofon New York headquarters, shipping paid one way. Manufacturer: Ortofon Manufacturing, Denmark; U.S. distributor: Ortofon, 9 E. 38th St., New York, N.Y. 10016.

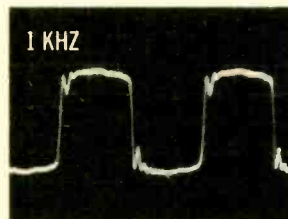
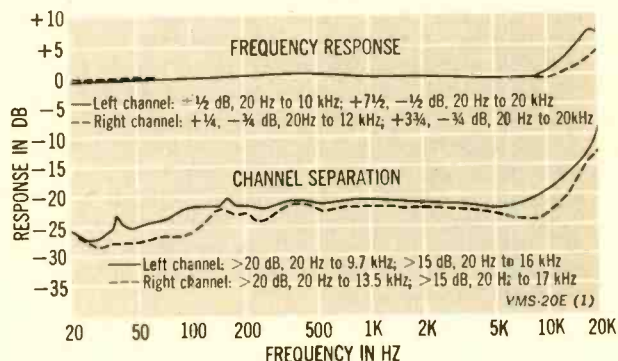
Comment: Ortofon, sometimes thought of as the Rolls-Royce of pickup manufacturers, never has offered what the U.S. companies would consider a "full line"—from state-of-the-art to budget. It has not, that is to say, catered to users with so-so tone arms such as those in budget-priced changers. And even the VMS-20E, though it is less expensive than the M-15E Super (\$90; HF test reports, April 1973), "should be used in tone arms capable of light tracking pressures," according to Ortofon.

The comparison to the M-15E Super is unavoidable. Like that model, the VMS-20E uses the Ortofon Variable Magnetic Shunt principle, in which the moving element is neither a magnet nor a coil, but (in a sense) a magnetic-field modulator that, by altering the field, induces the output current in the coil. The VMS-20E was, in fact, developed from the M-15E as a pickup that Dual could offer (in Europe) as a "package" with the Model 701 turntable; now Ortofon has decided to market the cartridge here on its own.

And it turns out to offer stiff competition even to the M-15E Super. It passed CBS Labs' "torture test" at 0.4 gram VTF (slightly less than was needed for the M-15E), proved a little more linear over most of the reproduction range, has (at 4.3 millivolts in the left channel and 3.9 in the right with 5 cm/sec velocities of 1 kHz) a slightly higher output and almost as good channel balance, and costs \$25 less. Distortion figures are very good indeed, and tracking ability is exceptional. In both the 300-Hz test and that for the 10- to 20-kHz band no mistracking could be detected; at 1 kHz, the +18-dB figure is the best the lab has yet measured with the present technique (which was not in use when we tested the M-15E).

Under the microscope the diamond tip proved to have excellent geometry, with tip radii of 0.8 and 0.4 mils (21 by 10 microns). The vertical tracking angle measures 18 degrees. Low-frequency resonance in the SME arm measures 12 Hz—a little higher than average, but probably to the good in terms of tracking at typical warp frequencies, which generally are lower.

As you can see from the accompanying graph, the response is exceptionally linear and separation very good below 10 kHz. The lab's sample showed a fairly pronounced rise to tip resonance (at about 20 kHz)—like that for the M-15E, somewhat greater than we would have expected from the specifications. The curves were made with the specified capacitive loading (400 picofarads); somewhat



Square-wave response

Ortofon VMS-20E Additional Data

Maximum tracking level (1 gram VTF; re RIAA 0 VU)	
300 Hz	$> +12$ dB
1 kHz	$+18$ dB
10-20 kHz	> -5 dB

greater capacitance in your preamp or phono leads would, of course, reduce high-frequency response to some extent and therefore might result in flatter response. These measurements—like all but those in the torture test—were, incidentally, made with the VTF set for 1 gram.

In listening—again at 1 gram, but using a second sample of the pickup—we could detect no evidence of a pronounced high-frequency resonance, which generally makes itself felt in a "hardness" of the highs, more than in their mere superabundance, because the frequencies involved are well beyond the fundamental range of normal musical instruments. On all sorts of music we judged the performance of VMS-20E to be excellent, in fact. Even in one arm that we would consider a borderline choice for a 1-gram cartridge, the sound is a model of cleanliness, firm imaging, and detail. The VMS-20E, then, represents not only a very good value, but a serious challenge to pickups in the \$100 range.

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