

# YAMAHA NS-1000 NS-1000M

Ultra-low distortion speaker system with vapor deposition beryllium dome drivers. Left-right stereo configuration. Choice of luxury ebony enclosure or professional monitor design.



# YAMAHA

## NS-1000 MONITOR

Today radical improvements in amplifiers, tuners, turntables and tape equipment are placing demands upon the loudspeaker system for lower distortion and higher power handling abilities. Yet further refinements of conventional loudspeaker designs have not resulted in significantly better sound for quite quite some time.

When Yamaha developed the NS-1000 system to complement the new generation of ultra-low distortion/super power stereo amplifiers, we started with the basics.

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Archiv Michael-Otto*

We not only redesigned every component of the speaker system, but even perfected an entirely new driver material and formation process: the vapor deposition beryllium dome. We built special driver elements, crossover network and a unique acoustic equalizer.

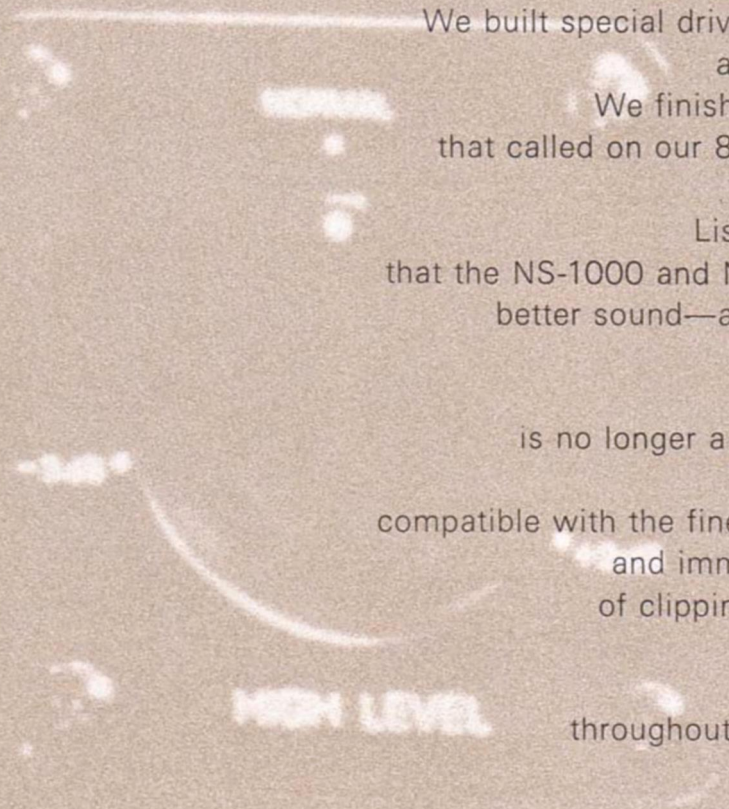
We finished with a choice of enclosure that called on our 80 years of piano craftsmanship for their acoustic excellence.

Listening tests prove conclusively that the NS-1000 and NS-1000M provide *significantly* better sound—a difference you can really hear.

For the serious audiophile the compact loudspeaker is no longer a weak link in his stereo system.

Distortion is reduced to levels compatible with the finest reproduction characteristics, and immense input capacity ends fears of clipping during peak music passages.

Musical transparency and tonal definition are superb throughout the entire frequency spectrum.



# BERYLLIUM DOME DRIVERS

For optimum performance the diaphragm of a mid-range or high-frequency metal driver must be:

- \* Hard—for best sound propagation.
- \* Lightweight—so that it can react to all signals without delay, more efficiently.
- \* Heat-resistant—to handle higher power inputs.
- \* Formed to the ideal shape and size for the driver.

Beryllium is one of the lightest, hardest metals known to man.

**Beryllium: lighter, stronger and propagates sound better than other metals**

	Atomic Weight	Rigidity (elastic modulus) Kg/mm <sup>2</sup>	Sound Propagation (velocity) m/sec.
Beryllium (Be)	9.013	28000	12600
Magnesium (Mg)	24.32	4500	5770
Aluminum (Al)	26.98	7400	6420
Titanium (Ti)	47.90	11000	5990
Iron (Fe)	55.85	19700	5950

Its sound propagation is twice that of aluminum diaphragm materials.

## Dome Tweeter Comparison

	Dome Size (cm)	Thickness (mm)	Weight (g)
Yamaha NS-1000 (Beryllium)	3	0.03	0.03
Typical Soft Dome	3	0.3	0.1
Conventional Driver	2.5	0.45	1.03



Beryllium Dome Diaphragms

It also boasts excellent thermal conductivity and the highest specific heat. Since it was first refined in the 1950s it has been used in many special applications, including space technology. But beryllium's very hardness makes it practically impossible to form with precision using conventional methods. At Yamaha we use a process developed for our field effect transistor production: the metal is vaporized in a vacuum and then deposited on a preshaped mold.

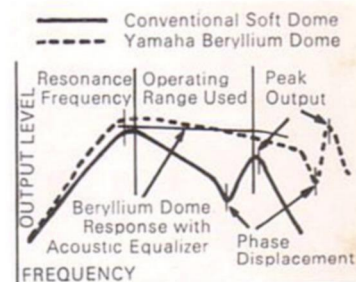
This results in a precision dome only 30μ thick, formed to a shape and size impossible by any other

Flat Response for Lower Distortion

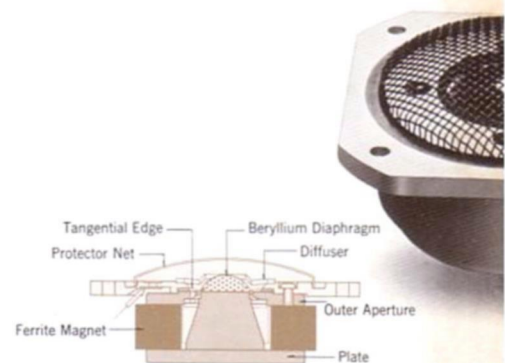
The Yamaha vacuum production process assures larger dome sizes and precise thickness control.

That means that each dome features a wider flat section on its frequency response curve, accounting for the lower distortion in the frequency zone used for each speaker.

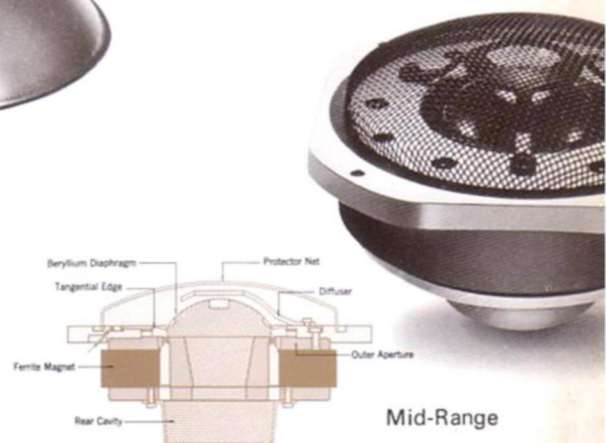
**A Beryllium Dome Uses More of the Flat Section of its Frequency Curve than Other Types**



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Tweeter



Mid-Range

POWER EXTRAS

### Tangential Edge Design

The cloth base of the driver edge is coated with two types of specially developed resins, allowing the tangential edge to dissipate unwanted peaks most efficiently in a tangential plane.

### Ribbon Type Voice Coils

Wound edgewise, these coils are more efficient than conventional types, and work with the beryllium domes for superb power handling capacity and overload resistance.

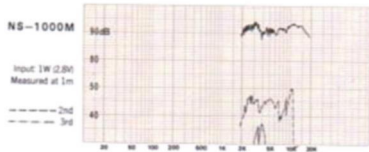
### The Tweeter

Operating above 6,000Hz, the NS-1000 tweeter employs a 1.18" (3cm) dome weighing a minuscule 0.03 grams.

### The Mid-Range

This driver reproduces the critical frequencies between 500Hz and 6000Hz, where most of the music is heard. Its extra-large (3.46"—8.8cm) dome is complemented by a massive 1.6Kg magnet for superb transient response resulting in unsurpassed "definition"—each voice and instrument is heard with distinct clarity.

### Tweeter



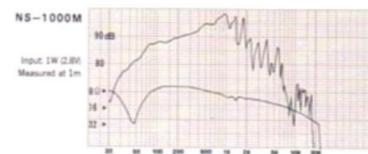
### Mid-Range



# ALL-NEW WOOFER

It's all Yamaha, even down to the cone paper from our chemical laboratories and the alloy frame from our foundry. Excellent damping is achieved with no loss in efficiency, and distortion in case of overdrive is avoided thanks to an electronic circuit which reduces input during excessive peaks.

### Woofers

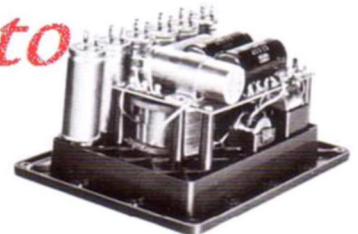


### The Crossover Network

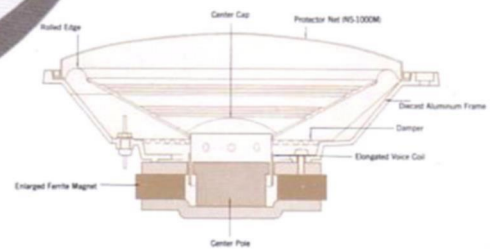
Completely redesigned for the NS-1000, this three-way system incorporates large-diameter (1.1mm) copper wire

wound on a ferrite core, for shortest possible winding and reduced DC resistance (another reason for the superior power handling capacity). The network circuitry also features special metallized paper capacitors. Their low power loss improves high frequency performance and reduces phase shift. For optimum durability, these capacitors are self-healing in case of dielectric material breakdown.

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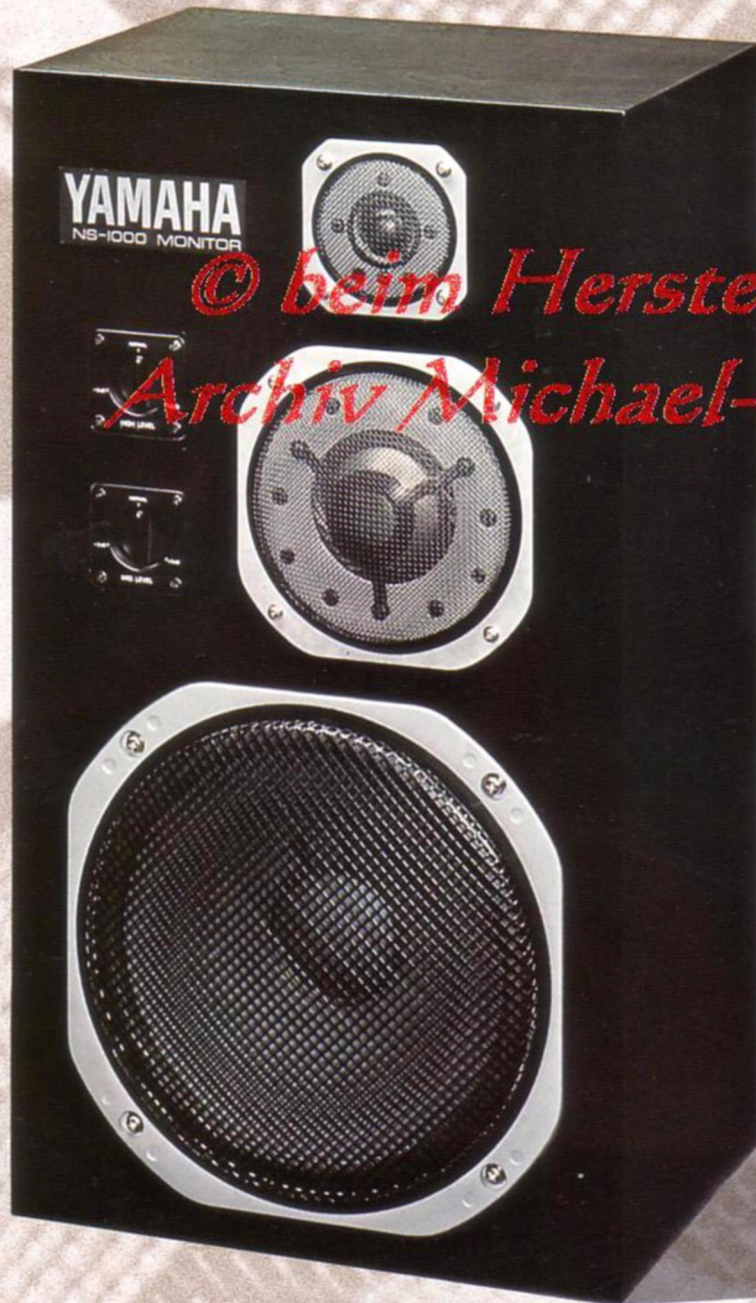


Crossover Network



Woofers

# Announcing the End of the Weak Link



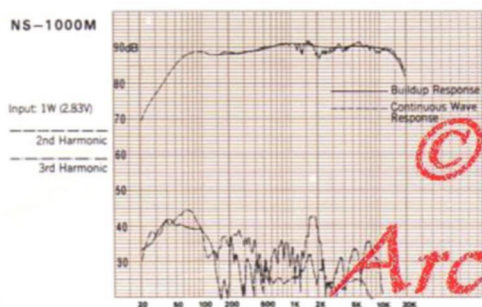
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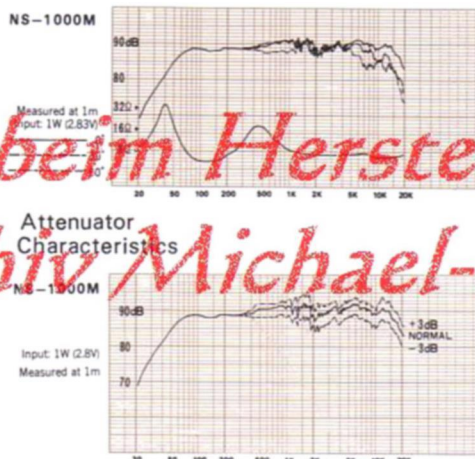
With more than eight decades of experience producing some of the world's finest pianos and other musical instruments, Yamaha acoustic engineers know what wood can do for sound. Each section of the NS-1000 or NS-1000M enclosure

is over 30mm thick, and the unit is reinforced throughout for ideal resonance damping. The NS-1000 or NS-1000M is available in matched pairs only. Each speaker is a special left or right stereo configuration.

#### Harmonic Distortion and Transient Response



#### Impedance/Frequency Characteristics



#### Directional Characteristics



## SPECIFICATIONS

			NS-1000M	NS-1000
Maximum Input Capacity	100W	Mid-range	8.8cm JA-0801	
Rated Input (JIS Standards)	50W	Woofer	JA-3058A 30cm JA-3058	
Sound Pressure Level	90dB/W/m	Dimensions (W×H×D)	375×675×326mm	395×710×369mm
Frequency Response	40-20,000Hz		(14¾"×26½"×12¾") (15½"×28"×14½")	
Resonance Frequency (fo)	40Hz	Weight	31kg (68.2 lbs.)	39kg (85.8 lbs.)
Impedance	8Ω	Finish	Semi-Gloss Black	Ebony, Polyurethane finish
Crossover Frequencies	500Hz, 6,000Hz			
Network	3-way, 12dB/oct.			
Level Controls	Mid-Range, Treble (continuous)			
Tweeter	3cm JA-0513			

Specifications subject to change without notice.

For details please contact:

SINCE 1887



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