

# YAMAHA NS645/625

SOFT DOME 2-WAY BOOKSHELF SPEAKER SYSTEMS



# Yamaha NS-645 & NS-625 Soft Dome Speaker Systems.

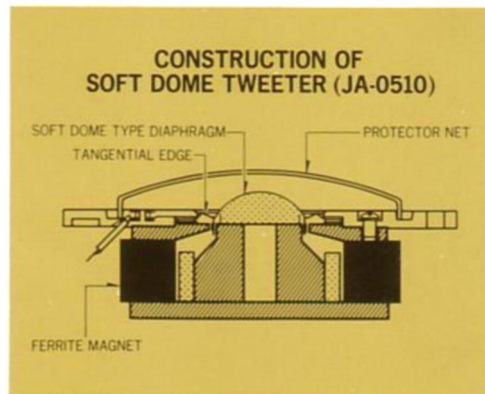
- Die-cast transducer frames to prevent undesirable resonance
- Superior transient response from powerful magnet structures
- Increased power output with high space-factor voice coil windings
- Soft-dome transducers for smooth treble
- High temperature voice coil bobbins for superior overload capacity
- Low-resistance networks for minimum power loss and better speaker damping
- Extra-thick laminates for maximum cabinet stability

These are only a few of the outstanding features which give distinctive and exciting sound quality to these new Yamaha speaker systems. The NS-625 and NS-645, proud members of the award-winning Yamaha NS speaker system series, are designed for input power capabilities of 40 watts and 50 watts, respectively. They provide full, rich-sounding bass and midrange responses and crystal clear trebles under realistic, in-the-home conditions. Foremost in the design concept is the total avoidance of the annoying "peak phenomenon" normally found in the high-end ranges of the responses of dome speakers. Distortion is further reduced by controlling the fundamental resonance frequency. Very broad sound dispersion—as opposed to sharp, unidirectional limitations—produces accurate and natural tones. The NS-625 and NS-645—fine craftsmanship in sound from the people long associated with the finest in musical instruments. Yamaha.

## Soft Dome Tweeter



The outstanding high-frequency response characteristics of the NS-625 and NS-645 are especially worth noting. So much depends upon these often ignored characteristics that a slight difference in design, construction or mounting can entirely change the "personality" of an entire speaker system from excellent to poor. Here Yamaha has spent a great deal of time in creating just the right tweeter for the NS-600 series. The 4.5cm-diameter, soft dome tweeter used in both the NS-625 and NS-645 are identical to those in the higher-priced NS-690 and NS-670 models, except that those in the latter models are smaller by about 1.5cm. The tweeter diaphragm is formed of a special hot-pressed fabric, double coated with a thermosetting resin and a viscous rubber resin. Hot pressing forms a tangential edge with superior sound quality.



In this way, the diaphragm allows reproduction of smooth, natural treble notes while reducing high-end peaks in frequency response.

The high space-factor voice coil has a FRP bobbin with edge-wound aluminum wire. It is able to withstand temperatures up to 200°C as well as substantial signal overloads, all of which means that the marginal response characteristics are more than excellent under all conditions.

The magnetic circuit of each tweeter makes use of a large, powerful magnet to lower the Q-factor of the speaker and improve its transient response.

## High-Performance Woofer

As should be found in all first-class speaker systems, the woofers used in the NS-625 and NS-645 are specially equipped with a super-high compliance suspension, extended voice coil and the best of heavy-duty cones to ensure accurate reproduction of bass-heavy woofer frequencies with plenty of "elbow-room." The woofer in the NS-625 measures a full 20cm in diameter; that in the NS-645 is an even larger 25cm in diameter. The NS-625 woofer has a fundamental resonance frequency ( $f_0$ ) of 30Hz in free air and of 50Hz when mounted inside the enclosure; the NS-645 woofer, 25Hz and 45Hz, respectively.

## Level Control



The level (volume) of the tweeter in each speaker system can be controlled

independently by means of a special device mounted on the front baffle. This continuous-type rotary control can be used to compensate for changes in room acoustics due to open windows, additional furniture, etc.

#### Crossover Network

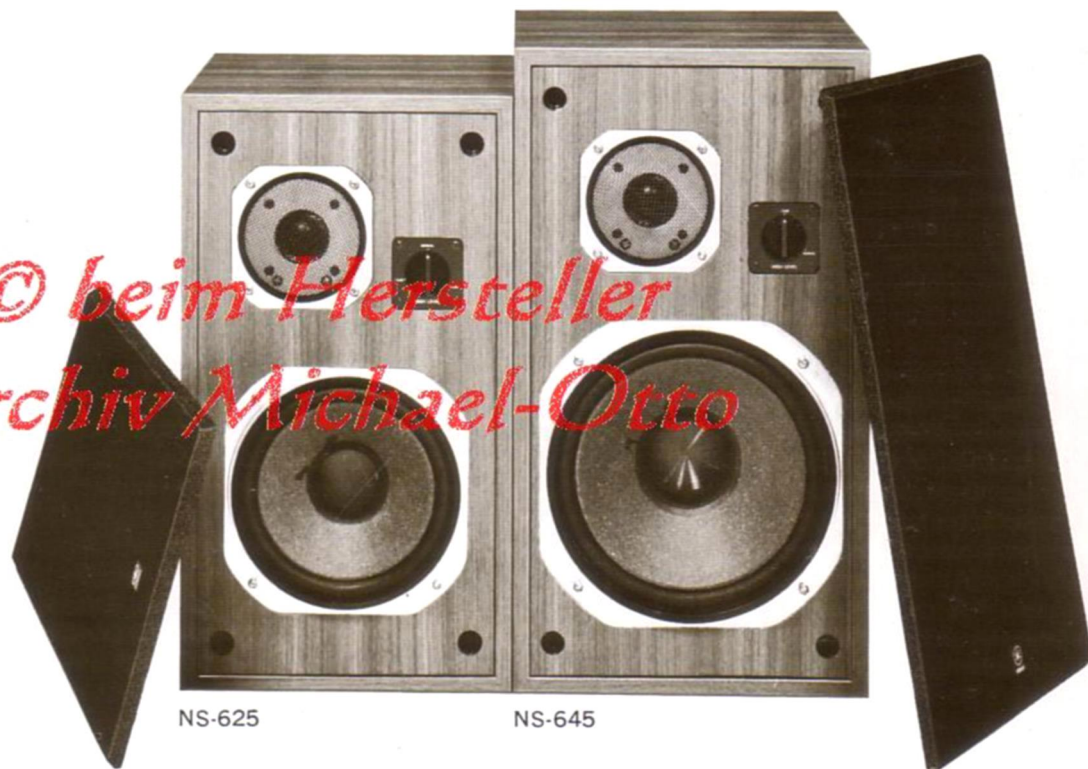
A totally new crossover network has been created by Yamaha for the NS-600 series speaker systems. It features special coils with extra thick 1mm diameter copper wire wound around ferrite cores; the wire minimizes power loss and improves speaker damping owing to its low electrical resistance. The ferrite cores reduce the number of coil windings, and since the coils are then arranged at right angles to each other to avoid mutual inductance, tonal quality is improved near crossover frequencies. Additionally, unique metallized paper capacitors are used in the network. They also help to improve tonal quality because of a low power loss factor. Crossover frequencies and other constants have been chosen with care and only after repeated listening tests.

#### Solid Enclosures

Aside from the speaker elements themselves, nothing is more important to the overall response of a speaker system than its enclosure.

The NS-625 and NS-645, like all models in the famed NS-600 series from Yamaha, are housed in enclosures specifically designed to meet rigid stress requirements to enhance and compliment the characteristics of the fine speakers they contain. So-called "cabinet resonance" is entirely eliminated.

Fine walnut-grained panel, bonded and expertly finished, gives each unit a professional, quality furniture appearance. But more importantly, their wood construction adds the kind of sound quality you would expect from such an attractive exterior. The rugged construction features a 18mm-thick front baffle board of a special wood laminate, side



NS-625

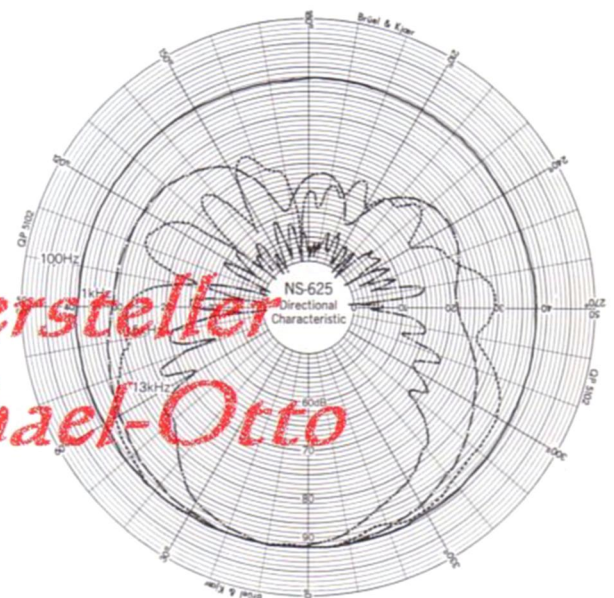
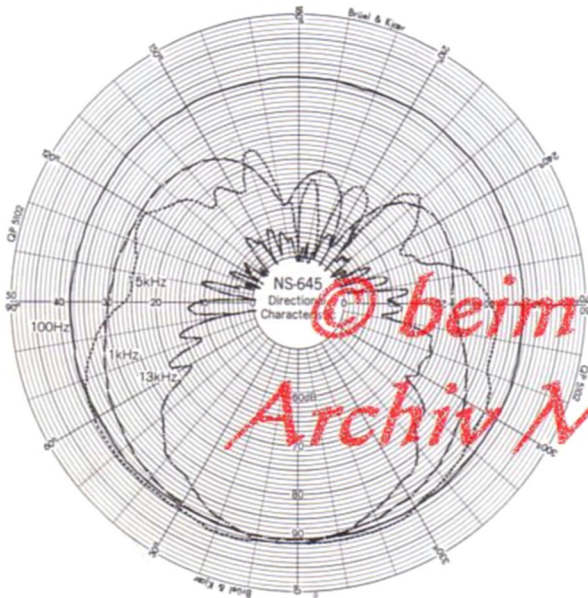
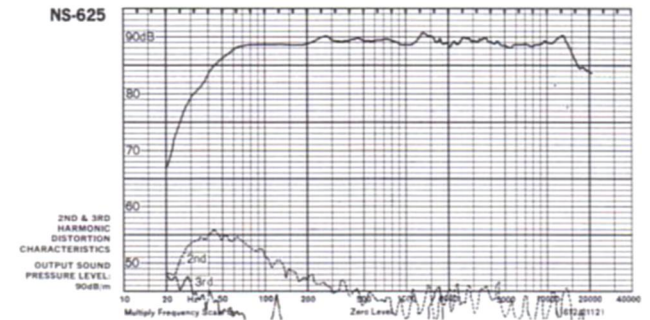
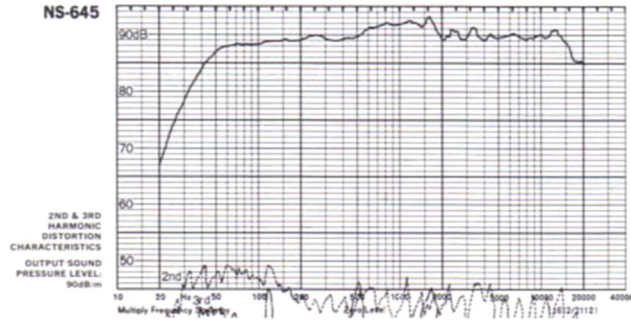
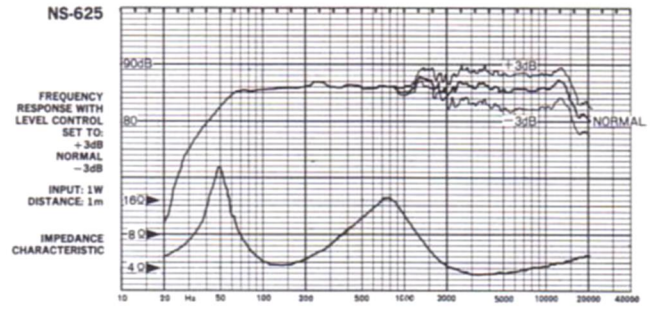
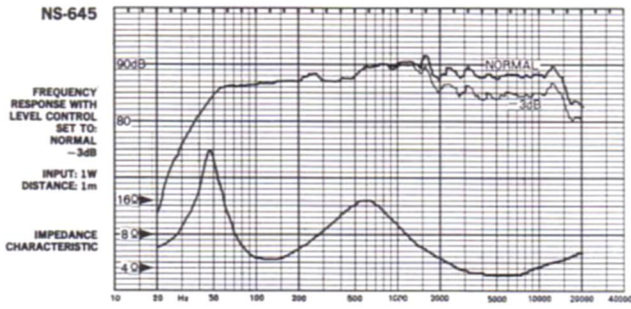
NS-645

and top boards of the same laminate in 15mm thickness, a 15mm-thick rear board of treated chipboard and thick, solid crosspieces for maximum stability.

Each individual speaker within the system is solidly mounted in a die-cast, aluminum alloy speaker frame. This special alloy forestalls any deterioration of sound quality by preventing frame resonance and allowing each speaker to perform to its full potential.

The extra-strong speaker magnets, top quality wood and solid alloy speaker mounts add up to a hefty 11.6kg for the NS-625 and 14.6kg for the NS-645.

For a final, extra touch of elegance, the front grilles of each system are quickly detachable to permit easy access to the level controls for the tweeters, or to show off the inside of what looks and sounds so very good on the outside. The NS-625 and NS-645, two in the fine NS-600 series from that "sound-thinking" company. Yamaha, of course.



*© beim Hersteller  
Archiv Michael-Otto*

## SPECIFICATIONS (DIN Standard)

	<b>NS-645</b>	<b>NS-625</b>
Frequency response	40 – 20,000Hz	45 – 20,000Hz
Power handling capacity	50W	40W
Nominal Impedance	4Ω	4Ω
Woofer	250mmφ cone (JA-2502)	200mmφ cone (JA-2056)
Tweeter	45mmφ soft dome (JA-0510)	45mmφ soft dome (JA-0510)
Crossover frequency	2,000Hz	2,000Hz
Fundamental resonance frequency ( $f_0$ )	45Hz	50Hz
Operating power*	6.3W	10W
Dimensions (H × W × D)	540mm × 300mm × 259mm (21 1/2" × 11 3/4" × 10 1/4")	500mm × 280mm × 249mm (19 3/4" × 11" × 9 3/4")
Weight	14.6kg (32.1 lbs.)	11.6kg (25.5 lbs.)

\*Input electrical power required to obtain 96dB sound pressure level at 1 meter according to DIN 45500.

Specifications subject to change without notice.

For details please contact:

raum - ton - kunst  
6 frankfurt/main  
neue kräme 29  
sandhofpassage  
telefon 287928

SINCE 1887  **YAMAHA**  
NIPPON GAKKI CO., LTD. HAMAMATSU, JAPAN