



CORAL

# PROFESSIONAL SERIES

STRAIGHT HORN & ACOUSTIC LENS KIT.

# AH-503 AL-603

**Ideal frequency response is achieved by a combination of the aluminum-alloy exponential horn and resonancefree acoustic lens.**

CORAL Professional-Series products have completely different specifications from regular products and are manufactured with extra care under rigorous quality control.

- The AH-503 straight horn, being an exponential horn, is provided with an ideal horn curve. And in order to suppress the resonance caused by increased sound pressure inside the horn, a thick aluminum alloy plate with amply high rigidity is employed. This results in a straight horn with very high precision.

- The AL-603 acoustic lens has been developed for use in combination with the AH-503 and is available as a kit. Sound waves that are almost in the form of plane waves which are radiated from the opening of the straight horn are converted into ideal spherical waves, thus greatly improving the directional frequency characteristic.

Furthermore, the resonance of the acoustic lens itself, which is caused by power sound energy generated by the driver, is almost completely eliminated by effectively using damping packing. The shape of the damping packing also serves as an extension of the horn and effectively prevents unwanted sound wave turbulence from occurring at the opening of the horn (patents pending).

- The combination of the AH-503 and the AL-603 thus provides an ample low-range load for the driver and vastly improves characteristics in the range around the cut-off frequency. The combination also permits smooth crossing with a 38cm-diameter-class large woofer.

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Archiv Michael-Otto*



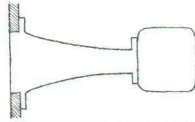
## STRAIGHT HORN

## AH-503

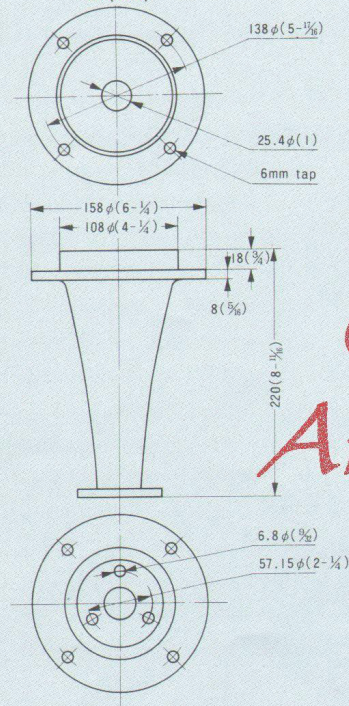
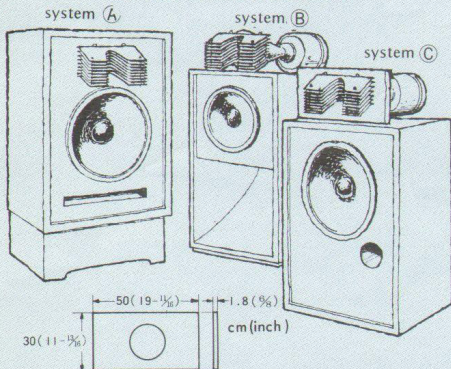
The AH-503 should be used with the CORAL Professional Series driver unit M-100 or M-103, and at a crossover of over 800Hz (12dB/oct). Mounting to the enclosure should be made from the back side of the baffle board. The thickness of the baffle board should be adjusted so that the edge of the horn opening is flush with the surface of the baffle board.

• APPLICABLE DIVIDING NETWORKS

NW-800 (Crossover: 800Hz)  
NW-1200 (Crossover: 1,200Hz)



## AH-503 DIMENSIONS

FIG. 1  
VARIATIONS OF THE AH-503 &  
AL-603 COMBINATION

The CORAL Professional Series Bass-Reflex Enclosure B-170(A)\* is ideal for assembling the AH-503, AL-603, 38cm woofer 15L-100 and driver unit M-100 or M-103. \*170ℓ, with Saran net and stand

## ACOUSTIC LENS KIT

## AL-603

A set of two units  
Patents pending

## Greatly Improved Directivity

The characteristics shown on the right are measured by mounting the AH-503 on the baffle board (also shown at right). Characteristics at 45° indicate the same characteristics as on the axis, thus realizing an ideal frequency response. Characteristics without the baffle board indicate slight sound pressure fluctuations downward.

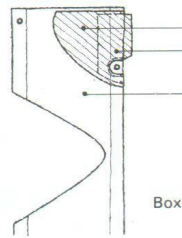
Figure 1 shows various combinations of the AH-503 and the AL-603. System (A), in which everything is inside an enclosure, is most ideal and can be used at a crossover of 800Hz. In System (B), the AH-503 and AL-603 are mounted on a sub-baffle board (50cm wide, 30cm high, 1.8cm thick). When placed on an enclosure, use with a crossover of over 800Hz is required. In System (C), the AH-503 and AL-603 are simply placed on an enclosure, requiring use at a crossover of over 1,000Hz.

## How to Assemble the AL-603

The AL-603 may be mounted on a baffle board or directly to the straight horn, depending on the application. Check the number of parts before starting assembly.

PART LIST	
Acoustic lens kit	22
Lens wing	4
Mounting plate	8
Catch	40
Packing	40
Double surface adhesive tape (L)	40
Label	2
Screw set	
Long stem screw (large)	4
Spacer (large)	40
Box nut (large)	4
Plane washer (large)	8
Screw set	
Long stem screw (small)	4
Spacer (small)	40
Box nut (small)	4
Plane washer (small)	8
Screw set	
Screw	8
Spring washer	8
Tapping screw	16
Wood screw	16

FIG. 2

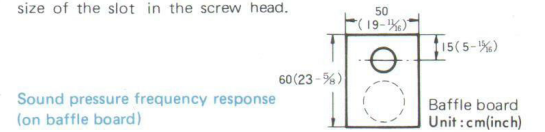


(1) Apply the proper double-surface adhesive tape (there is tape for the right only and tape for the left only), which is used to fasten the packing, on the top of the right and left surfaces of 20 of the 22 lens wings, as shown in Fig. 2. Then fasten the 40 pieces of packing properly to the second adhesive surface of the tapes.

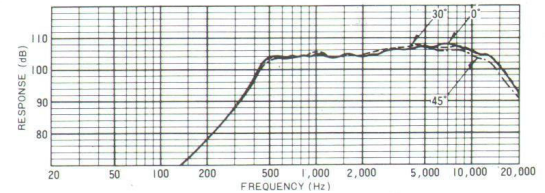
(2) Fig. 3 shows the exploded view for assembling. The mounting plates serve as attachments when mounting the AL-603 directly to the straight horn. When mounting the AL-603 on a baffle board, the positions for locating the catches should be determined by using the accessory pattern sheet, and then the catches should be fastened with wood

screws. The catches and the assembled acoustic lens are then joined by the spacers. Attach the labels provided in positions as desired to complete assembly.

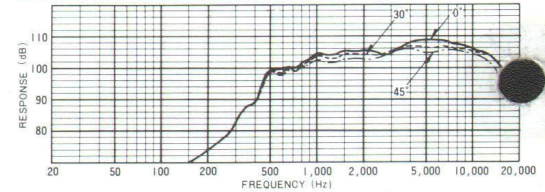
**NOTE:** The tapping screws which are used to mount the catches on the mounting plates are rather closefitting and should be carefully tightened with a proper screwdriver that matches the size of the slot in the screw head.



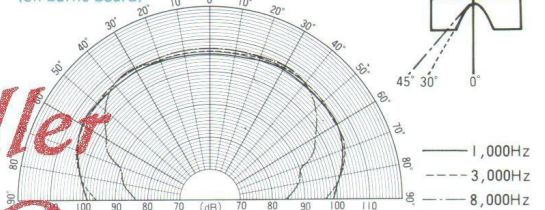
Sound pressure frequency response (on baffle board)



Sound pressure frequency response (without baffle board)



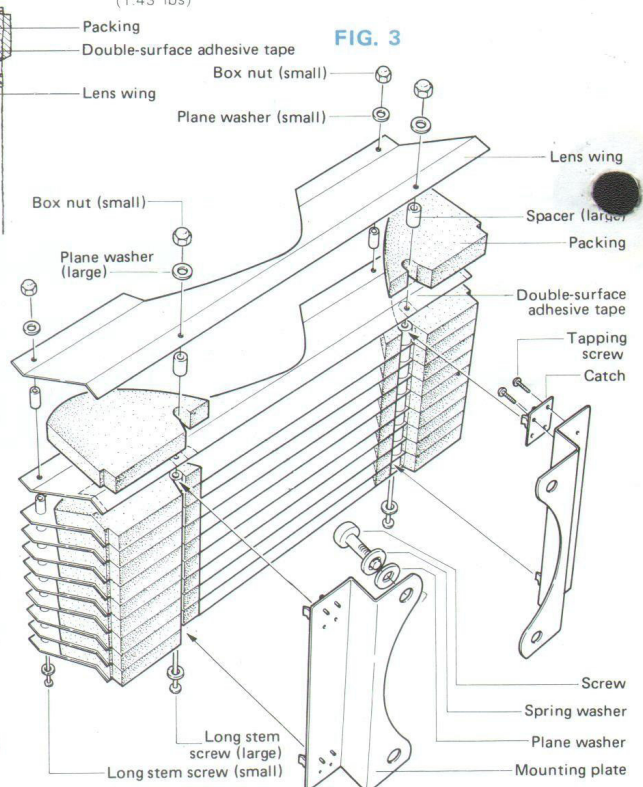
Directivity characteristics (on baffle board)



## MAIN SPECIFICATIONS

- Dispersion angle: 20° horizontal, 45° vertical
- Effective frequency: Over 2,500Hz
- Applicable horn diameter: 100mmφ
- Dimensions: 245mm(9 5/8")W x 168mm(6 5/8")H x 72mm(2 7/8")D
- Weight: 650g (1.43 lbs)

FIG. 3



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