

# CORAL

NATURALLY BEAUTIFUL

## 30cm Woofer Unit

# 12L-60

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Archiv Michael-Otto*



# A 30cm woofer developed by new materials that reproduces true-to-reality sounds.

All the ideal properties for a woofer – from the cone paper to the magnetic circuit – are fully incorporated in the 12L-60 woofer. Its outstanding performance is endorsed by its high input resistivity, low distortion ratio, and stability. Its excellent mid- and low-range performance and the extensive reproduction of the lowest frequencies vividly recreate the original sounds of musical instruments.

## Corrugated Cone Paper

A thorough study of all aspects involved and a very careful selection of available materials were made to determine which pulp to employ as the main material for the cone paper – which is the most vital part of a speaker. As a result, three different pulps, each having excellent properties, were selected and blended by our unique method. This has made possible the manufacture of a light yet sturdy high-quality cone paper which possesses the proper internal loss. Furthermore, the corrugations are made to effectively suppress the partial vibration that normally poses a problem for a large-diameter woofer, and to greatly improve the audio characteristics.

## High-Compliance Edge

An edge must quickly respond without distortion to the movement of the cone paper that repeats complex fluctuations instantaneously in response to input signals. It is not an easy task to ideally fulfill these conditions. The high-compliance edge of the 12L-60 woofer, however, uses superior materials and is thoroughly coated with a damping material – thus expertly solving this difficult problem.

## Voice Coil

A voice coil must have excellent linearity to drive the cone paper as well as ample stability and heat resistivity to withstand severe continuous use. The long travel voice coil of the 12L-60 employs a heat-resisting wire, has an ample program source input of 80W, and is provided with perfect following ability and thermal resistivity.

## Magnetic Circuit

A high-performance Alnico casting magnet brings about outstanding sharp transient characteristics and ensures high efficiency.

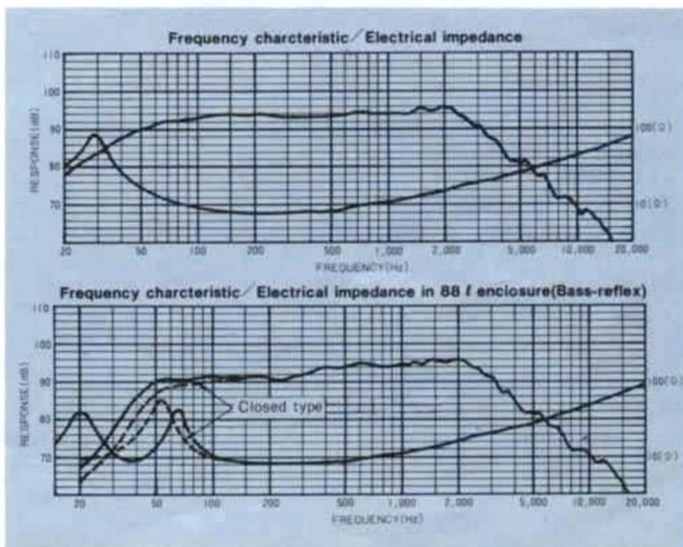
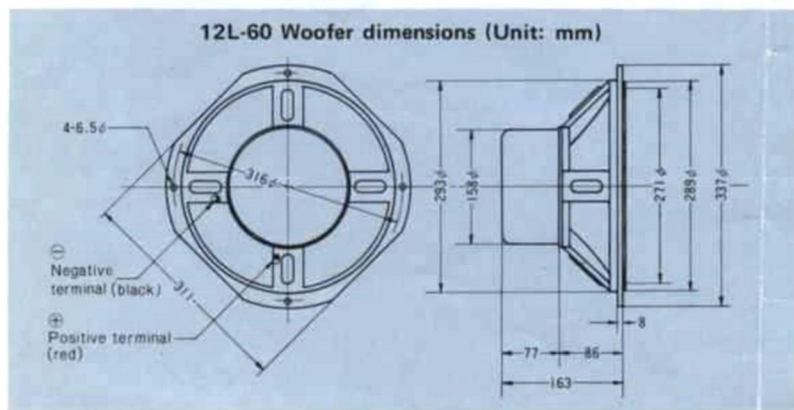


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## 30cm WOOFER UNIT 12L-60

### SPECIFICATIONS

- Impedance ..... 8 Ohms
  - Program source input ..... 80W
  - Lowest resonance frequency ..... 27 Hz
  - Frequency response .....  $f_0 \sim 2,500$  Hz
  - Output sound pressure level ..... 95 dB/1m
  - Crossover frequency ..... 2,000 Hz
  - Total magnetic flux ..... 268,000 maxwell
  - Baffle board opening dia. .... 295  $\phi$  mm (front mounting)
  - Weight ..... 6.5kg
- a = 127.5 mm (Effective diaphragm radius)  
 $M_0 = 51g$  (Vibration system effective mass)  
 $Q_0 = 0.25$



# techniques and

## 2-WAY DIVIDING NETWORK

### NW-1200

- Crossover: 1,200 Hz
- Damping: 12 dB/oct
- Impedance: 8Ω
- Max. input: 200W
- Dimensions: 310(W) x 90(H) x 220(D) mm

## DRIVER UNIT

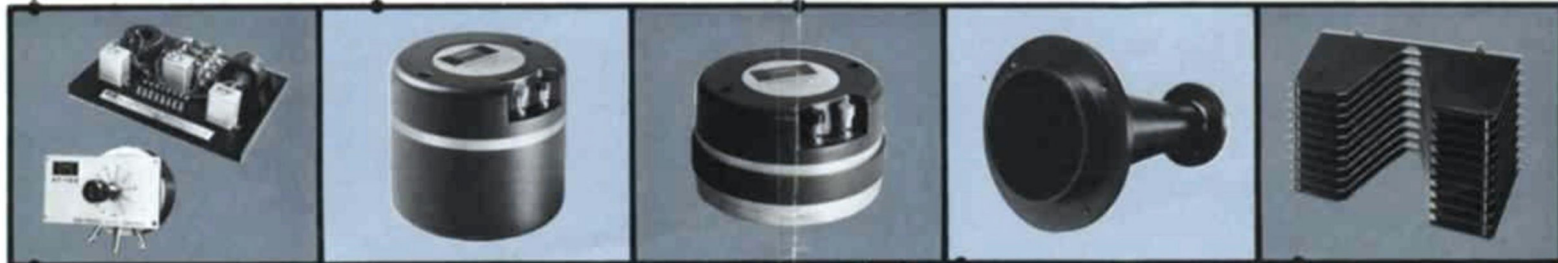
### M-100

- Impedance: 8Ω or 16Ω
- Program source input: 150W
- Frequency response: 500 ~ 1,800 Hz
- Output sound pressure level: 105 dB (When mounted on AH-503 & AL-603)
- Dimensions: 116φ x 104(D) mm

## DRIVER UNIT

### M-103

- Impedance: 8Ω or 16Ω
- Program source input: 100W
- Frequency response: 500 ~ 18,000 Hz
- Output sound pressure level: 104 dB (When mounted on AH-503 & AL-603)
- Dimensions: 120φ x 74(D) mm



## LEVEL CONTROLLER

### AT-100

- Impedance: 8Ω
- Max. input: 100W
- Swing angle: 300°
- Mounting hole dia: 9 mm

## STRAIGHT HORN

### AH-503

- Optimum crossover: 800 Hz
- Dimensions: 158φ x 220(D) mm

## ACOUSTIC LENS KITS FOR THE AH-503 (One pair)

### AL-603

- Dispersion angles: 80° Horizontal, 45° Vertical
- Effective frequency: Over 2,500 Hz
- Dimensions: 245(W) x 168(H) x 72(D) mm

## For High-Grade 2-Way and 3-Way Systems

In a 2-way system that uses a woofer with a diameter of larger than 30cm, the range covered by the woofer is fairly wide. The characteristics and reproduction of the medium and low ranges, which are most important in music reproduction, adversely affect the total quality of the system to a great extent. Furthermore, for the use of mid- and high-range units, which have extremely good transient characteristics, the woofer must be provided with a linearity that matches them. The mid-range characteristics of the 12L-60 have been substantially improved — an improvement based on abundant data and listening tests. The 12L-60 also has improved adaptability to mid- and high-range speaker units.

### Recommended Mid- and High-Range Units for a 2-Way System

A combination of the CORAL wide-range driver M-100 or M-103 with the straight horn AH-503 and the acoustic lens kit AL-603 — all from CORAL Professional Series Speakers — is recommended. This simple system composition excellently reproduces the localization of sharp sound image. And outstanding directivity and resolving power cover the major ranges with high efficiency.

### For a 3-Way System

The 12L-60 in a 3-way system demonstrates its performance in improving the transient and directivity characteristics in the highest range, while using the CORAL horn tweeter H-100 or H-60 for the reproduction of over 7,000Hz to expand the range.

## 2-WAY DIVIDING NETWORK

### NW-7000

- Crossover: 7,000Hz
- Damping: 12dB/oct
- Impedance: 8Ω
- Max. input: 200W
- Dimensions: 220(W) x 83(H) x 150(D)mm

## LEVEL CONTROLLER

### AT-100



## HORN TWEETER

### H-100

- Impedance: 8Ω
- Program source input: 30W
- Frequency response: 7,000 Hz ~ 30,000 Hz
- Crossover frequency: Over 7,000 Hz
- Output sound pressure level: 110 dB/W-m
- Dimensions: 98φ x 115(D) mm
- In case of mounting on baffle board, use the mounting flange (Model AD-3)

## HORN TWEETER

### H-60

- Impedance: 8Ω
- Program source input: 15W
- Frequency response: 5,000 ~ 22,000 Hz
- Crossover frequency: Over 5,000 Hz
- Output sound pressure level: 107 dB/W-m

## ACOUSTIC LENS KITS FOR THE H-60 (One pair)

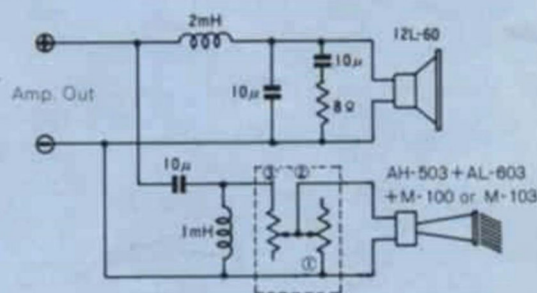
### AL-601

- Dispersion angles: 80° Horizontal, 45° Vertical
- Dimensions: 130(W) x 92(H) x 35(D) mm

## Dividing network

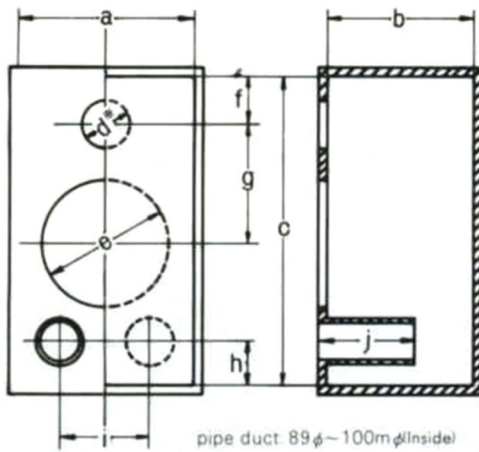
Proper attention must be paid to the selection of a dividing network where the characteristics of each speaker unit get better. CORAL professional Series dividing networks NW-1200, NW-7000, etc., use a large air-core coil and an MP condenser to effect low rates of losses and distortion, permitting high reliability and performance.

## 2-Way Dividing network NW-1200 (12dB/oct)



Numbers shown in the above circuit diagram are terminal positions of AT-100.

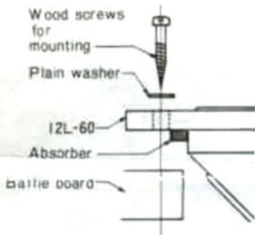
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88 ℓ / 100 ℓ / 120 ℓ  
BASS-REFLEX ENCLOSURE  
DIMENSIONS (mm)

Size	a	b	c	d*	e	f	g	h	i	j
88 ℓ	400	310	710	110	295	110	270	90	200	260
100 ℓ	400	345	730	110	295	110	275	100	200	260
120 ℓ	460	350	750	110	295	110	275	135	240	210

\*For mounting AH-503, straight horn



### Speaker & Absorber Mounting

The 12L-60 should be properly mounted on the baffle board without leaving any gap. Be sure to set the accessory absorber in the position shown in the illustration, and then clamp the speaker with the accessory wood screws.

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### CAUTIONS WHEN USING THE 12L-60

- Do not use the 12L-60 without mounting.
- Do not apply an excessive program source input of more than 80W.
- Handle the speaker carefully so that the cone paper will not be damaged.
- Do not place magnetic tapes or clocks and other instruments near the speaker since a powerful magnetic circuit is used.