

# HD 1110 Horn Speaker

## 1. Summary

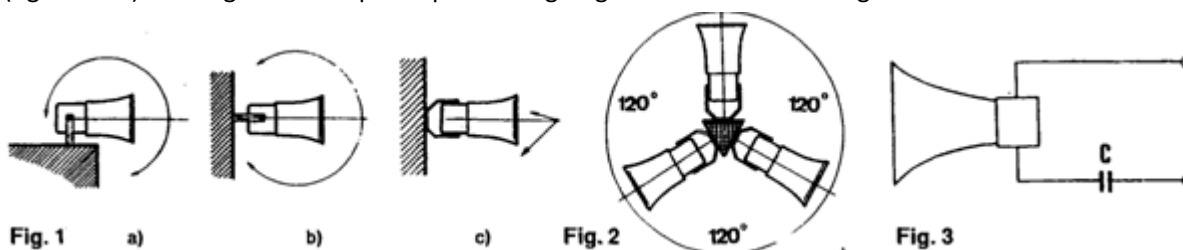
The HD 1110 Horn Speaker is a small horn diffuser which offers high acoustics and is solid and compact. Particularly suitable for signal or alarm electro acoustical systems in rooms with a high level of background noise. As it is weather-proof, can also be installed outdoors or on mobile vehicles or boats.

## 2. Specification

Model	<b>HD1110 Horn Speaker</b>
Rated power	20 Watt
Peak power	30 Watt
Impedance	16 Ohm
Frequency response	900-13000 Hz
Cut-off frequency	900
Rated power	114DB
Dispersion angle	175°
Dimensions	110x93 mm
Weight	820 g

## 3. Installation

This horn Speaker is supplied with a bracket which can easily be mounted on any surface at any inclination (fig. 1 a-b-c). Fig. 2 shows special positioning to give a 360° area coverage.



## 4. ELECTRICAL CONNECTION

The HD 1110 has a two-wire outgoing power cable with different coloured wires for quick phasing when several diffusers are installed in the same room. When connecting only diffuser to the amplifier, to obtain the maximum declared power, the amplifier output Impedance must be the same as that of the horn.

If several diffusers are powered by the same amplifier, connect as follows:

A) In series (fig. 4)

Here the amplifier output ( $Z_a$ ) should be equal to the number of diffusers used ( $n$ ) multiplied by diffusers' impedance ( $Z_d$ ):  $Z_a = n \cdot Z_d$

E.G. If eight HD 1110 are to be connected in series, the amplifier output impedance  $Z_a$  should be:

$$Z_a = 16 \cdot 8 = 128 \text{ Ohm}$$

B) In parallel

In this case the Impedance should be:  $Z_a = Z_d/n$

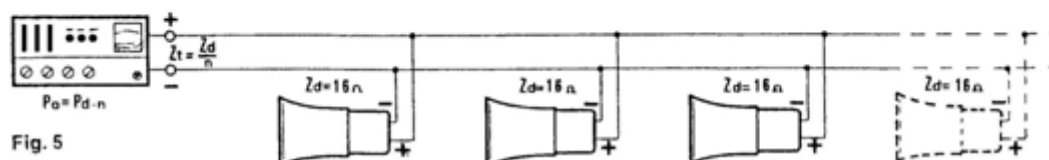
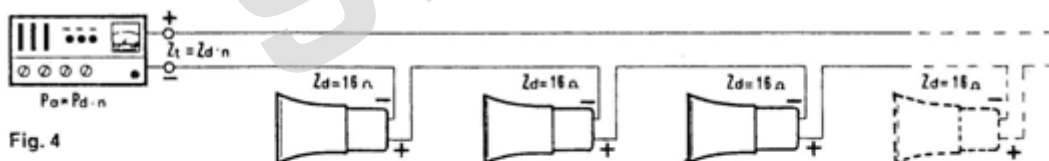
E.G. If eight HD 1110 are to be connected in parallel, the amplifier output impedance should be

$$Z_a = 16/8 = 2 \text{ Ohm}$$

In both the above cases, so that the diffusers function at the maximum declared power, the amplifier power  $P_a$  should at least equal the sum of the diffusers powers  $P_d$ :  $P_a = n P_d$

## 5. CUT-OFF FREQUENCY

To use the horns correctly we advise the application of a  $33\mu\text{F}$  non-polarized condenser in series as shown in Fig. 3.

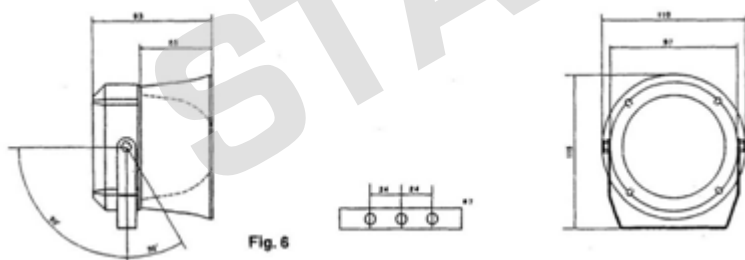


## 6. DIAPHRAGM REPLACEMENT

(fig. 7)

Ask ACF for model M24 (cod. 154.10.026) indicating the impedance value and proceed as follows:

- A) Remove the four screws I that fix horn H.
- B) Remove the horn H and the first part of the horn G letting the connection cable run.
- C) Unsolder wires F connected to diaphragm terminals D using a narrow tipped low powered welder (Ng. 6).
- D) Remove cap A with the help of a screwdriver as shown in fig. 9.
- E) Unscrew screws E with the help of a hexagonal tube spanner.
- F) Remove magnetic assembly B and clean any dust from the air gap.
- G) Remove diaphragm C by pressing on terminals D.
- H) Insert new diaphragm checking that (he terminals D slip through the holes.
- I) Replace the magnetic assembly B and rescrew on screws E.
- J) Solder wires F to the diaphragm terminals which poke out of the holes.
- L) Place the first part of the horn Q inside the horn H checking that the positioning blocks Q Inside horn H slip into holes M (fig. 10).
- N) Replace the horn letting the connection cable run freely and checking that the cable holder runner N fits into the cable\* pass P.
- O) Rescrew the four screws L and press the protection cap A back into place.



## 7. CAUTIONS

Should you place or connect several loudspeakers in the same room, care that they are in phase, in order to insure correct phasing, the output and input terminals in the wiring diagram mark the relative polarities.

In order to ease the phasing when connecting them, use wires different in colours and adequate in section to the transmuted power.

Transmission lines at acoustic frequency, must never be put together with (he wires of the electric network, in fact they must be spaced in order to avoid the characteristic hum, due to induction.

Should you have several electroacoustic lines, which are put together and which are broadcasting different programs, use braided wires, coupling them two by two. This will limit diaphony among channels.

