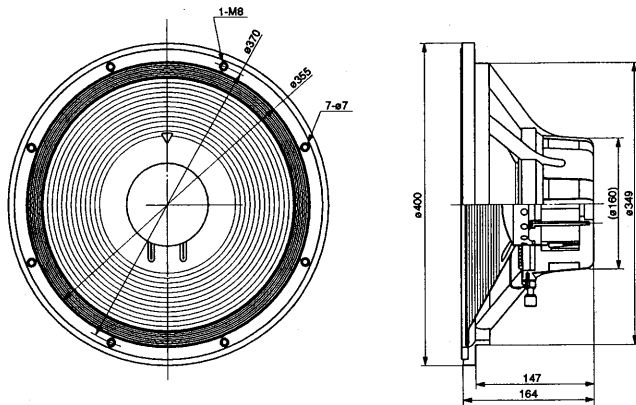


LOW FREQUENCY LOUDSPEAKER

INSTRUCTION MANUAL

SPECIFICATIONS



FEATURES

1. Magnetic Circuit with Integrated High-rigidity Frame

The yoke, the top plate, and the supporting frame of the magnetic circuit are integrated in a single ductile cast iron construction according to a special casting method to increase the rigidity. In addition, the pole piece has been given a special shape to obtain a symmetrical magnetic flux, and the fixing method has been changed from vague adhesive fixing to positive bolt fixing. An Alnico magnet is used to aim for reduced distortion, and a sufficient magnetic shield characteristic is ensured.

2. Sensitive Vibration System

The TL-1601C employs the special aging pulp cone made of the choicest materials, a corrugation type cloth surround with high stability which has been coated with a specially developed damping material to suppress cone break up, and an linear spider. With careful assembly of these moving parts TL-1601C has extremely sensitive and linear vibration for all input levels.

3. 500 W max. Permissible Input and High Efficiency

The TL-1601C uses a 23 mm long voice coil that moves completely inside the magnetic gap even with a peak-to-peak amplitude of 15 mm. Powerful low-frequency sound with little distortion is obtained even at the time of high input. The voice coil bobbin and the adhesive also have a very high heat resistance, and the max. permissible input is 500 W (IEC).

4. Large Input Terminals

Speaker cables with a cross section of 14 mm² can be connected directly.

5. Unrelated to Parasitic Resonance

The generation of parasitic resonance on the rear of the moving parts are prevented by opening a hole in the voice coil bobbin and by dividing the Alnico magnet into nine pieces. This provides a smooth linear sound, and at the same time, the air cooling effect is improved together with the maximum input and the linearity.

Nominal diameter	400 mm (16 in.)
Impedance	8 ohms (Rated) 7.8 ohms (Min) $\pm 7\%$ at 20°C
Sound pressure level ¹⁾	97.5 dB SPL, 1 W (2.83 V), 1 m (3.3 ft)
Power capacity	500 W RMS (Max Power) ²⁾ 200 W RMS (Rated Power) ³⁾
Frequency range ⁴⁾	28 Hz to 2000 Hz
Highest recommended crossover ⁵⁾	1200 Hz
Recommended enclosure ⁶⁾	113 to 304 liter (4 to 10.7 ft ³)
Effective piston diameter	335 mm (13.2 in.)

THIELE/SMALL PARAMETERS:

Fs	28 Hz
Qts	0.31
Qes	0.32
Qms	8.76
B1	20.5 N/A
Re	6.6 ohms
η_0	2.00 %
Vas	304 liter
Sd	0.0881 m ² (137 in ²)
Mms	0.117 kg
Mmd	0.086 kg
Cms	2.761 x 10 ⁻⁴ m/N
Le	1.9 mH

LARGE-SIGNAL PARAMETERS:

Pe (max)	500 W
Xmax	7.5 mm (0.3 in.) [0-P]
Vd	661 cm ³ (40.3 in ³)
Maximum excursion before damage	36 mm (1.42 in.) [P-P]

MAGNETIC CIRCUIT AND VOICE COIL:

Total magnetic flux	290000 Maxwell
Magnetic flux density	11500 Gauss
Magnetic gap depth	8 mm (0.31 in.)
Voice coil diameter	100 mm (4 in.)
Voice coil material	Edgewound OFC Ribbon
Voice coil winding depth	23 mm (0.91 in.)

MOUNTING INFORMATION:

Baffle opening diameter	352 mm (13-7/8 in.)
Bolt circle diameter	370 mm (14-9/16 in.)
Volume displaced by driver	4.5 liter (0.24 ft ³)

EXTERNAL DIMENSIONS:

Diameter	400 mm (15-3/4 in.)
Depth	164 mm (6-9/16 in.)
Weight	13.0 kg (24.3 lb)

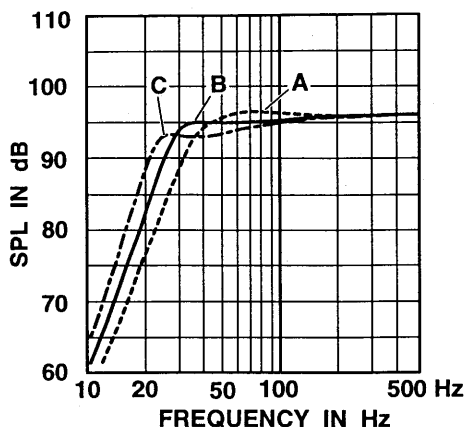
ACCESSORIES

Mounting screws (M5 x 40 Philips head)	8
Nuts, Fung nuts, Washers	8 each
Airtight packings	4
Instruction manual	1

* Specifications and features are subject to change without notice due to improvements.

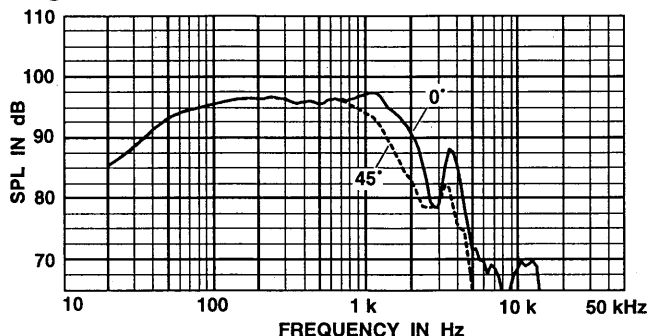
- 1) Indicates the average of 200 to 500 Hz.
- 2) IEC 268-5: Long term maximum power
- 3) IEC 268-5: Rated noise power
- 4) For frequency band, a frequency 10 dB lower than the rated output level at half space condition placed in an enclosure of 22 ft³ is shown.
- 5) When a high-range impedance compensation network is necessary, insert 20 μ F + 8 Ω in parallel with the speaker.
- 6) Computer simulation sample of bass characteristics is shown on the other side.

Enclosure volume and port tuning

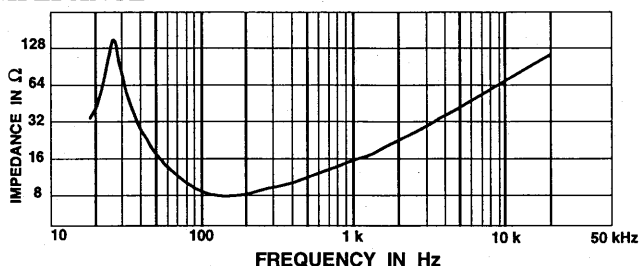


A: Enclosure volume	120 liter (4.2 ft ³)
Port tuning frequency	35 Hz
B: Enclosure volume	200 liter (7 ft ³)
Port tuning frequency	30 Hz
C: Enclosure volume	310 liter (11 ft ³)
Port tuning frequency	24 Hz

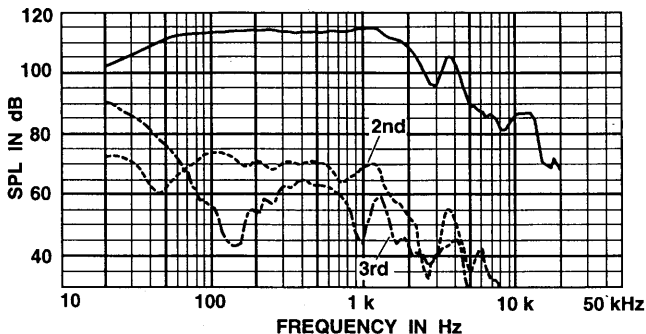
FREQUENCY RESPONSE



IMPEDANCE



HARMONIC DISTORTION



Impedance was measured at free space.
 Frequency response and harmonic distortion were taken in a 2-space (hemispherical free-field) condition placed in an enclosure of 620 liter (22 ft³).

INSTALLATION METHOD

Method of fitting the gasket

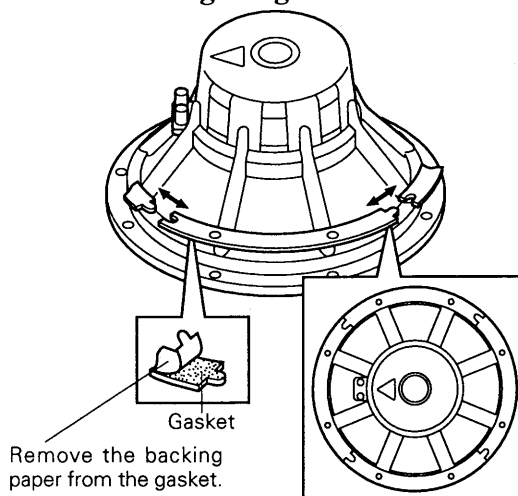


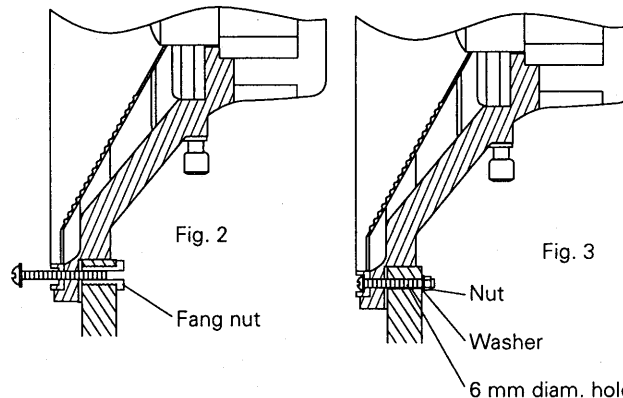
Fig. 1

WHEN USING FANG NUTS

First, drill 7 mm diam. holes in the baffle. Next, using the method shown in Fig 2, drive fang nuts into these holes from the back of the baffle. Finally, insert the screws provided (8) and tighten them up.

WHEN USING NUTS

First, drill 6 mm diam. holes. Next, using the method shown in Fig. 3, fit the mounting screws, washers and nuts, and then tighten up firmly.



After pulling out the mounting screws, fit the TL-1601C into position, then finally reinsert the screws and tighten securely. Progressively tighten up diagonally opposite screws, applying final tightening torque after adjusting the position of the speaker. As washers are not required, make sure they are removed from the mounting screws.

CONNECTIONS:

Connect the ⊕ side of the speaker cable from the power amplifier to the red terminal and connect the ⊖ side of the speaker cable to the black terminal.

Note:
 Be careful not to short-circuit the speaker cable end.

Recone

Use the diaphragm assembly SXV1002 for the TL-1601C as a cone replacement repair kit.

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TAD Technical Audio Devices

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