

FEATURES

1. High input durability maintaining high performance up to large output

The 23 mm side oxygen-free copper edgewise-wound voice coil works with a large amplitude of 15 mm (p-p) without reducing driving force. Further, no mechanical damage will occur at amplitudes up to 40 mm (p-p). Consequently, powerful playback with low distortion is comfortably achieved during large input.

Moreover, as a result of the continuing effort and dedication of our designers, TL-1801 now has an advanced heat radiation design, achieving a maximum input of 800 W (IEC).

2. Low-distortion high-efficiency magnetic circuit

The powerful magnetic circuit of the TL-1801 is equipped with ferrite magnet to ensure highly stable operation at high power. Great care has been taken in the selection of the material and shape of the poles to produce an extremely high flux density of 11200 G. This, in combination with lighter moving parts and the long-travel voice coil have resulted in a sensitivity of 96.5 dB/w (1 m), an excellent figure in consideration of the size of this speaker.

3. Utilizing new materials and forms technology for vibration system parts

A newly developed cone employing a mixture of high-rigid pulp and Kevlar fibers is used for the vibration system, achieving an enhanced balance between high rigidity and inner loss. Laminated macromolecular film and a special surface treatment provide innovative water repellence, as well as reducing deterioration of sound quality caused by breakup of the cone.

The suspension system designed is aimed at linearity taking advantage of better form and materials.

4. High-strength die-cast frame

The sturdy die-cast aluminum alloy frame firmly supports the magnetic circuit for heavy models, as well as the vibration system producing powerful bass. Seven frame arms provide suppression of frame resonance. A large input terminal allows direct connection to a 14 mm² speaker cable.

5. Wide band range and high sound quality

The THIELE/SMALL parameter controlling low-frequency characteristics of the speaker unit is designed to optimize matching between the unit and the cabinet as attained through computer simulation and hearing survey. Combination with a proper cabinet enables to handle a wide range of use from super-bass driver to low-frequency driver.

SPECIFICATION

Nominal diameter	460 mm (18 in)
Impedance	8 Ω (rated)
	8 Ω (min) ±7% at 20°C
Sound pressure level ¹⁾	96.5 dB SPL, 1 W (2.83 V), 1 m (3.3 ft)
Power capacity	800 W RMS (max power) ²⁾
	200 W RMS (rated power) ³⁾
Frequency range ⁴⁾	26 Hz to 2,000 Hz
Highest recommended crossover ⁵⁾	800 Hz
Recommended enclosure ⁶⁾	170 to 510 ℓ (6 to 18 ft ³)
Effective piston diameter	394 mm (15.5 in)

THIELE/SMALL PARAMETERS:

Fs	26 Hz
Qts	0.37
Qes	0.39
Qms	7.94
Bl	21 N/A
Re	6.6 Ω
η _o	2.2%
V _{as}	500 ℓ (17.7 ft ³)
S _d	0.122 m ² (189 in ²)
M _{ms}	0.158 kg
M _{md}	0.114 kg
C _{ms}	2.372 x 10 ⁻⁴ m/N
Le	1.1 mH

LARGE-SIGNAL PARAMETERS:

Pe (max)	800 W ²⁾
X _{max}	7.5 mm (0.3 in) [O-P]
V _d	914 cm ³ (56.7 in ³)
Maximum excursion before damage	40 mm (1.57 in) [P-P]

MAGNETIC CIRCUIT AND VOICE COIL:

Total magnetic flux	282,000 Mx
Magnetic flux density	11,200 G
Magnetic gap depth	8 mm (0.31 in)
Magnetic assembly weight	9.6 kg (4.35 lb)
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	426 mm (16 3/4 in)
Bolt circle diameter	441 mm (17 3/8 in)
Volume displaced by driver	6.9 ℓ (0.24 ft ³)

EXTERNAL DIMENSIONS:

Diameter	464 mm (18 1/4 in)
Depth	176 mm (6 15/16 in)
Weight	12.6 kg (27.8 lb)

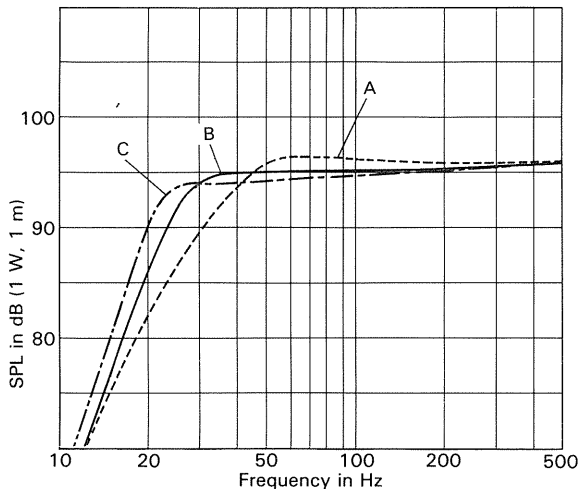
ACCESSORIES:

Mounting screw (M5 x 40 Phillips head)	8
Nuts, fang nuts, washers	8 each
Airtight packing	4
Instruction manual	1

Specifications and dimensions are subject to change without notification.

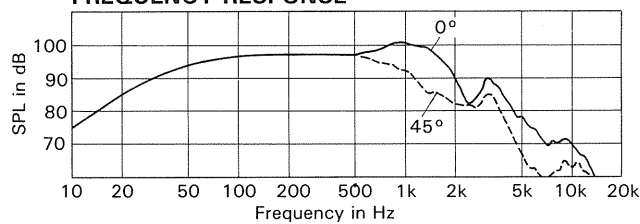
- 1) Indicates the average of 200 to 500 Hz.
- 2) IEC 268-5: Long term maximum power
- 3) IEC 268-5: Rated noise power
- 4) For frequency band, a frequency 10 dB lower than the rated output level at half space condition placed in an enclosure of 22 ft³ is shown.
- 5) When a high-range impedance compensation network is necessary, insert 27 μF + 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

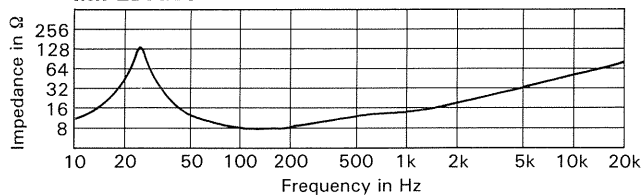


A:	Enclosure volume	170 l (6 ft ³)
	Port tuning frequency	26 Hz
B:	Enclosure volume	340 l (12 ft ³)
	Port tuning frequency	26 Hz
C:	Enclosure volume	510 l (18 ft ³)
	Port tuning frequency	23 Hz

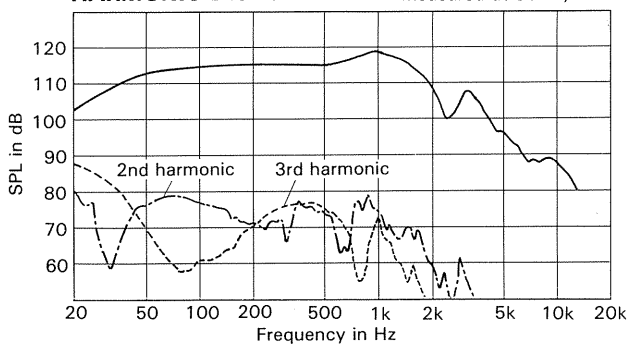
FREQUENCY RESPONSE



IMPEDANCE



HARMONIC DISTORTION measured at 80 W, 1 m



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

INSTALLATION METHOD

Method of fitting gasket

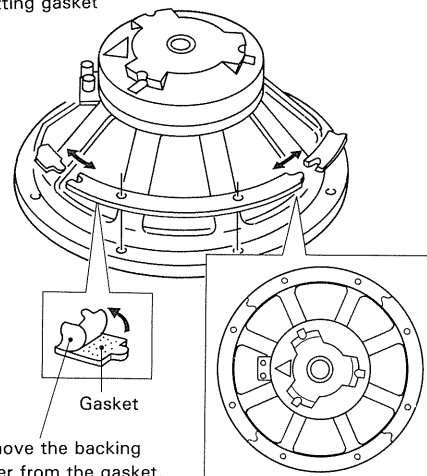


Fig. 1

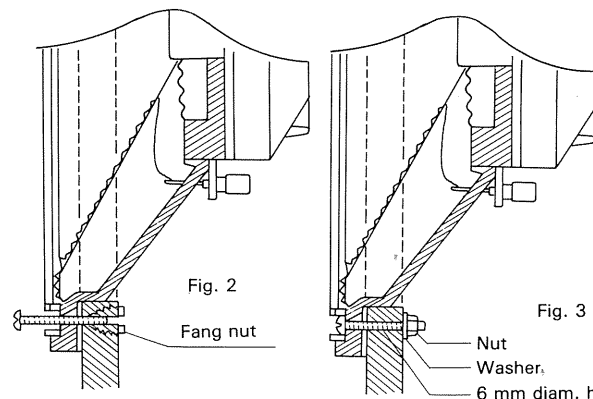
Remove the backing paper from the gasket.

WHEN USING FANG NUTS

First, drill 7 mm diam. holes in the baffle. Next, using the method shown in Fig. 2, drive fang nut 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 mounting screws, washers and nuts, and then tighten up firmly.



After undoing mounting screws, fit TL-1801 into position, then finally reinsert screws and tighten securely. Progressively tighten up diagonally opposite screws, applying final tightening torque after adjusting position of speaker. As washers are not required, make sure they are removed from the mounting screws.

Note:
Be careful not to short-circuit the cable end when hooking up.

Recone

Use the diaphragm assy DP-1801 for TL-1801 as cone replacement repair kit.

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