



[Products' list and Features](#)

Super-tweeter

TAKET-BATPRO II

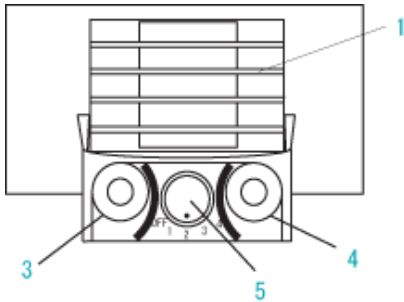
- Efficiency is switched with the rotary switch by five stages.
- Adoption of gold-plated speaker terminals.
- Adoption of high-level material for vibration-control.
- Beautiful surface finish with black-silver metallic painting.



JPY 60,000/pair

User Manual

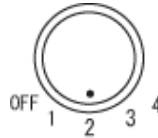
1. Sound wave radiation board
3. Black speaker terminal(minus).
4. Red speaker terminal(plus).
5. rotary switch1



The explanation of the rotary switch

Five settings for theSPL efficiency of the speaker

- OFF ; 50dB
- 1 ; @@ 70dB
- 2 ; @@ 80dB
- 3 ; @@ 90dB
- 4 ; @100dB



Note 1;

The protection circuit operates over 100V (However, a test signal by 20kHz or more should be under 10V). It returns to the origin when you turns off power)

Note2;

We have determined the reproduction ability of 150kHz or more. That measurement limit of the microphone used for the measurement at the university research laboratories.

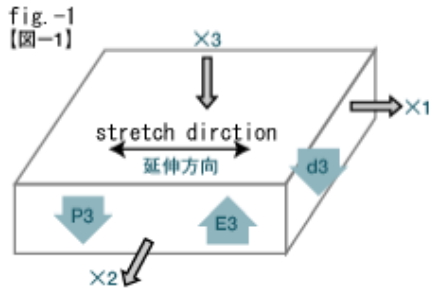
Note3; Connection method

1. Please connect the speaker terminals of BATPRO2 in parallel with the speaker @@terminals of the main speaker. @Or you connect it directly with the speaker output @@terminals at the amplifier. @@Unusually, there seems to be a speaker that is a reverse-aspect, too. @@In that case, please connect the +terminal and -terminal in reverse.
2. Please connect it with high pitch(tweeter) side at the ,i-wiring connection.

The main specification

- Maximum input voltage; @35V
- Impedance; @8ohms
- Reproduction frequency band region; 18kHz-150kHz or more
- The maximum output sound efficiency; 100dB/W/m Five stage switch
- Mass; About 300 grams
- Size; 125mm(width)90mm(height) 100mm(depth terminals are contained)
- Drive system; polymer piezo-electric Heil type

Character of piezo-film

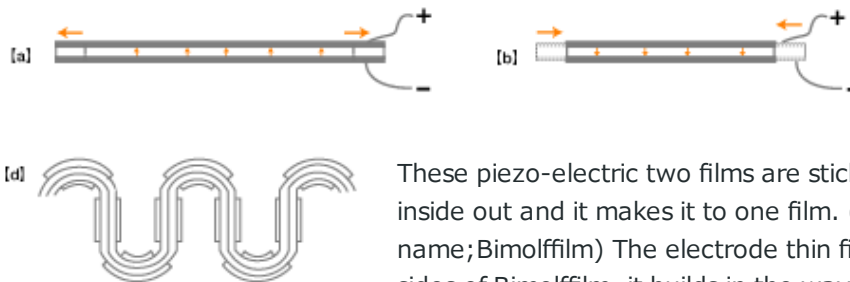


As for the piezo film, one axis stretched film of polyvinylidene fluoride (PVDF) is called polymer ferroelectric by the one that the polarization processing was done by a high voltage. This film has big piezo-electric in the direction of expansion and the direction of thickness of the film as shown in Figure 1. Polarization P3 of the vertical direction is shown on the film side caused by stress σ_1 in the direction of the film of expansion by piezo-electric distortion constant d31. This means the thing that the electric field is generated in the direction of the polarization and the counter direction in the film in the polarizing film. Therefore, the polarization is generated according to the electric field if electric field E3 joins the film contrary to the distortion, and the transformation that corresponds to distortion γ_i because of the polarization happens.

that is, $\nabla P3 / \nabla \sigma_i = d31 = \nabla \gamma_i / \nabla E3 (i=1,2,3)$ expands and contracts in the direction of expansion (direction of the length hand) when the voltage is added to both sides of the film to be brief when expressing it by the expression.

Principle of operation of vibration piezo-film shaped like wave

It expands when the voltage is added to both sides of a polymer piezo-electric film, and there is a character to shrink when an opposite voltage is added. (a)(b)



These piezo-electric two films are stucked together to turning inside out and it makes it to one film. (General name; Bimorph) The electrode thin film is formed in both sides of Bimorph, it builds in the wave-like, and it makes it to the vibration-board. (d)

The mountain shrink if the voltage joins the electrode on both sides of the vibration board, the valley spreads out, and an opposite voltage joins and the mountain spreads, the valley shrink. (c)(e)



Therefore, when the music signal enters the electrode, the vibration board generates the breathed vibration sound wave.

Fig.2



Heil-Driver and difference with Heil type piezo-electric vibration board (TAT-Driver)

There is a fundamental following differences though the vibration that the Heil-driver and the TAT-driver show in Fig.2 is done. Heil-driver drives the electrode with mass by pushing by the



power of the magnet and pulling it. Then, the speed of standing up is a drive of a dynamic type of slowness until acceleration attaches. The feature of TAT-driver happens by the transition of a molecular level, makes momentarily, and becomes a big movement compared with it.

TAT-driver a upper photograph is a toy that finishes expanding instantaneously the rolling paper when air is blown in. That is, paper finishes postponing momentarily in the flow of air (current). It will be able to be said that the response of TAT-driver is better overwhelmingly. Moreover, it is a big advantage that there is no shield like the magnet that deteriorates the transmission of the sound wave to surroundings.