**Speaker unit material analysis**

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The speaker unit is the soul of the whole speaker, and her temperament directly determines the tone characteristics of the speaker.

The tweeters are generally classified into three major categories according to the material of the diaphragm: the hard dome, the soft dome and the composite dome.

1) The hard dome is made of light metal such as aluminum alloy or titanium alloy. It is formed by ultra-thin alloy platinum. The surface is chemically treated. Its tone is bright and transparent, and it has high resolution.

2) The soft ball top adopts a silky soft film, and the sound is fine and soft, and the expression is strong.

3), the composite film dome is made of a composite of several materials, for example, some diaphragms use a "Si Juan + aluminum film" composite film.

This kind of tweeter has the bright sound quality and resolution of the hard dome, and the natural smoothness of the silky soft dome, and the layered sense of hearing.

At present, the materials of the common tweeters mainly include titanium film, silk film, pv film, etc. In the multimedia speaker, the top of the dome of the pv film and the silk film is mostly used, and it is generally believed that the high sound of the latter is superior to the former.

The materials commonly used in the woofer for making woofer are paper cone, bulletproof cloth, ceramic basin, polypropylene, wool basin and so on.

Paper cone: It has the advantages of rigidity and flexibility, high internal damping, easy mixing with other materials, natural tone and natural bass. The disadvantage is that the moisture resistance is poor and the consistency in manufacturing is difficult to control. Because of the low cost of the paper cone, it is widely used in multimedia speakers below 300 yuan.

Bulletproof cloth basin (woven pot): It has wide frequency response and low distortion, can withstand more power, can produce warm, natural intermediate frequency and deep, fierce low frequency, good transient, play big dynamic music effect Excellent, it is the first choice for those who love strong bass. If you are a super game fan, choose a bulletproof cloth speaker to play games with explosive scenes, fierce fighting, etc. It is a very good choice, the kind of imposing feeling is that the speaker of the paper cone or other general materials can not be compared. The disadvantage is that the manufacturing process is complicated, the cost is high, and the performance is poor when playing light music.

Ceramic basin: The performance of vocals and classical music is very delicate. The mid-bass is very transient, full and powerful, with good dynamic performance, excellent bass and accurate positioning. Suitable for expressing the appeal and shock of a surging movie source.

Pp (polypropylene) basin: widely popular in high-end speakers, good consistency and low distortion, excellent performance in all aspects, wide range of applications, but the price is higher.

Wool fiber basin: The horn cone is infiltrated into the wool fiber in the pulp. The texture is slightly soft, and the performance of soft music is also very good, and the human voice is natural. The downside is that the bass is not good, and the performance of rock and roll is not satisfactory. If you are a person who likes to listen to melodious music and not pay attention to the bass effect, the wool basin is the best for you. Using it to listen to the symphony will make you feel like you are there.