
Subject: how do Heil drivers work
Posted by [steve f](#) on Thu, 10 Oct 2013 07:07:07 GMT
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Here is the question.. Are they dipoles or bipoles. I believe they are dipoles, but I haven't been able to find a polar response chart of an open back Heil driver. Please help solve a friendly argument. Thanks.

Steve

Subject: Re: how do Heil drivers work
Posted by [Wayne Parham](#) on Wed, 16 Oct 2013 18:03:04 GMT
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I haven't looked at one closely. But if it has one diaphragm and the front and back are exposed, then it is a dipole.

If it has two diaphragms, or any other mechanism that can pressurize the front and rear surfaces in phase, then it is a bipole.

Subject: Re: how do Heil drivers work
Posted by [steve f](#) on Thu, 17 Oct 2013 18:30:52 GMT
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The controversy is basically about how the diaphragm works due to its shape. Some feel that it operates like an accordion and then both sides of the diaphragm would have the same action. The patents show a series of 'S' shaped pleats that expand and contract with the curved areas acting as surrounds. It looks like an AMT operates like a group of tweeters side by side. Therefore a dipole. I don't see how the diaphragm can work any other way.
As always, thank you for your help.

Steve

Subject: Re: how do Heil drivers work
Posted by [Wayne Parham](#) on Thu, 17 Oct 2013 21:48:53 GMT
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I think I see what you mean. If it moves up and down as an accordion, one might theorize that it is creating positive pressure on both sides equally when compressed, and negative pressure when expanded.

There is still a very easy answer, and that is to measure the device. You can easily see its behavior in measurements. If the acoustic pressure on both sides are phased the same, it's a bipole. If it's opposite on each side, it's a dipole. Then I suppose there's also the possibility it's something else. Look at the polars, and see its radiation pattern. Dipoles, bipole and monopoles all create different polar patterns.

Where both sides are driven, the only real difference between bipole and dipole is phase. They're 180° apart. But you can have any other kind of phase relationship too, and then it is something else. So do some measurements. They'll tell you what it is.

Subject: Re: how do Heil drivers work
Posted by [Bill Wassilak](#) on Sat, 16 Nov 2013 05:16:00 GMT
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From my experience Heil is know for AMT's. I'm not sure how they work, that's all I'm saying (I know nothing). But the one's I've known of, compare to the ribbon tweeter principle now day's. But the Heil AMT's I've heard we're omni-directional's(360deg), and you could never blow them as long as they we're x-over at the recommend freq... This made room acoustics come into play as far the placement speaker's that are using the Heil AMT's. But it's been years since I've heard about them.