Magnetic Pulser

Washer Demonstration

Hello, I am going to be demonstrating what I call the Magnetic Pulser washer trick. Back in the late 90s when I introduced the Magnetic Pulser, I did a little demonstration where I took a washer which is a steel washer, very similar to this one, and I placed it inside the coil of our Magnetic Pulser, pulsed it and it flew up fairly high. However, once we encased the coil in plastic, we no longer could access the internals of the coil where the major part of the magnetic field, the flux, is concentrated. Of course the washer didn't fly up as much and people were concerned that we weren't getting the magnetic field that we had on our initial product.

Now what I have here is our MP5 and I have a small little washer and I just wanted to let you know that the washer trick was initially designed to show the presence of a magnetic field. It was not meant to determine the quality or the strength of the magnetic field. You can only determine the quality and strength using a Tesla meter or a Gauss meter. And we certainly do that for testing our Magnetic Pulsers. We use an FW Bell Model 5080 Tesla Meter, but for our demonstrations here, I just want to show you the difference between pulsing on top of the coil where you cannot access the internals and inside the coil—I'll do that later.

Notice that I am wearing my glasses, please do not try this at home, you could get injured by flying particles and objects. So let's get started here.

So here is the coil, and it is exactly the Magnetic Pulser that we offer today. This is a standard steel washer that I got out of the hardware store and I have tied a little tassel to it. I am going to turn the Magnetic Pulser on and see what happens. So let's do that now. Beep. Clink. Whoop. We see that it jumped right off the table and I will reset and try again.

Okay, we have reset and I am going to do another demonstration. Magnetic Pulser is charging up and click, there's a little jump. This one I caught that time.

So I am going turn the Magnetic Pulser off. Now I want to take apart the coil and show you what is inside of our hand paddle. This one of course is able to be taken apart because I have not sealed it. Inside the coil, or inside the hand paddle is a coil, 270 turns of 18 gauge wire, and I am going to remove that from the plastic casing. Now I have access to the center of the coil. I am going to be putting the washer in the center of coil and then doing the same demonstration again. So let's see what happens. I take my washer, place it in the center of the coil, and there we are. Turn the Pulser on, beep, and let's see what happens, snap, clank. As you can see that one flew off with great velocity compared to the one before. I'll do that one more time.

Okay we have the washer back in the center of the coil. I'll turn the Magnetic Pulser on and we will see what happens this time. Snap, clank, (Chuckles) Okay well that was actually a really good demonstration.

So what is happening here? When we release the magnetic field into the coil and the washer being in the center of the coil, a small eddy current is created. An eddy current is like a minute electrical current – it is created in the washer itself and it opposes the main magnetic field and that opposition sets up a condition where the Magnetic Pulser will expel the washer from the center of the coil. So the center of the coil is actually the highest flux of density. It is the greatest concentration of the magnetic field. That is why when I demonstrate that in the center of the coil, we have a great deal of velocity of the washer. In fact, it actually hit the roof and flew off here. And compared to just a few minutes ago, where we had it on the surface, it just sort of spun off to the side, maybe went up a few inches.

So as you can see this does not tell me the strength of the magnetic field, relatively speaking, because we can put it in a different place on the coil and get different results. So it is not an indication.

When we use a proper meter, like an FW Bell Model 5080 Tesla Meter, we get the exact and true repeatable Gauss measurement. For our coil it is 6000 Gauss at the face of the coil and it is actually quite a bit more deep within the coil. But, because the coil is on the flat surface of the hand paddle, this is what we are interested in, so it is 6000 Gauss at the face of the coil. So if you want to use the washer as a demonstration, just to let you know the magnetic field is present, great, but don't use that as an indication for the magnetic field strength.

I hope this helps clear that up. Thank you very much.