Vac-Clamp review

Surprise results photo at end on article.

Introduction :

Recently I was asked to do a review on the Vac-Clamp hold down system.

This consists of a small plate that is 160 X 200mm rectangle x 22mm deep. The plate is bolted down to a work surface. Compressed air is fed into the plate via an input hose, and vacuum is produced using an inbuilt venturi valve.

This system can be used for either a standard work bench hold down system, or as a machining hold down device.

It amazes me that compressed air will actually cause a vacuum if channeled in the right way. You will also see later on in this review how strong the vacuum produced actually is.

Delivery :

While it is true that I did not actually purchase this device, I requested that it be sent to me in the same manner that a regular purchaser would receive it. The order was dispatched and delivered with in a 24 hour period by courier. I believe this can vary depending on the country and destination.

Contents :

The contents of the package consisted of ;

- The hold down pad.
- Rubber seal.
- Connecting hose.
- Air switch (an additional cost)
- Rubber template seal.
- An instruction booklet.

Setup and usage :

The setup and usage was pretty self explanatory. (If all else fails read the instructions) The air switch connects to the plate hose, and the other end connects to the compressor hose. The connections that were supplied with the hose, were an easy to use "quick fit" push connection type. My one and only frustration was that the other side if the air switch was not a standard connection to common compressor fittings. It took a bit of shopping around to find the right converter. I am told that Vac-clamp is looking into changing this to a standard size in the near future.

Before I bolted the plate to a work surface I wanted to give it a few non traditional tests. The sorts of tests that we all wonder about. Just how strong is that suction? What sort of slippage will happen under load ? Etc. Here is where things get exciting, and for those that know me, I firmly believe a picture is worth a thousand words.

I bolted the plate to an aluminum sheet, and hung the sheet from the rafters

Another sheet of aluminum was placed on the face of the vacuum plate and then air was supplied to the pad. This caused the plate to stick to the pad.

So you are wondering how much weight will this take before the plate slips.

You will be surprised……. see the next page.

Da Daaaaa

The irony is, this compressor is supplying the air that is causing the plate to hold itself off the ground. The plate did not slip at all during this exercise. If the compressor had a brain it would know not to stop pumping so as to save its own life. **J** Before I did this test I also stood on a knotted rope and it held me off the ground also. Ok, I am a fatty, I weight 100 KG.
I must admit that before I had seen this product I was thinking that probably 20kg would be its maximum. It still amazes me that you push compressed air into this thing and yet it creates such a strong vacuum. If you are in any doubt about this product having suitable strength then I hope I have dismissed this fear.

Other materials :

For a good vacuum hold down you need a non porous material. Vac-Clamp is suitable for many non porous materials and will even work with many semi porous materials like MDF and chip board. Because these materials vary in porosity the results of hold down will vary depending on your material. I have sufficiently help down MDF with the Vac-clamp. There are sprays that you can apply to the surface on porous materials that can help with keeping up the suction.

Use for CNC Router table :

This device can be used for CNC work as a hold down system. I would however recommend a few plates for larger sheet type work. Care must also be taken with the placement of the plates so that the router bit will not cut through the seal. I am told that a new Vac-Clamp is soon to be released where its holds down from both sides. This will allow for easy movement and placement of these plates for differing types of cutting work.

Economics

The Vac-Clamp is by far the cheapest hold down system that I have seen. I am told they are around the $100 mark.
They use a surprisingly small amount of air to run. (@0.6MPa) 23NI/min(ANR) Less than most air drills.

Conclusion

I would not hesitate to recommend to any hobbyist to use such a system on their CNC machine. It is a very strong and cheap answer to work hold down problems. It may not be the answer to all hold down situations, but it will assist with most jobs.

Value for money- 

Company backup (Service)- 

Overall Performance- 

Design- 

It is hard to assign stars when there are other systems that are better but cost many hundreds of dollars more. The stars are just assigned on the product alone and not as a comparison to any other similar product.

Vac-Clamp web site; http://www.vac-clamp.com