

Downing's Guide To The Perfect Portable Case

With Special Guest Contributor: Jon (Hailrazer) Janderan



This guide is designed to help any of those who are interested in putting out quality work that will both please and last. It's something that I've had a passion for and in doing so have learned many techniques that have worked for me and I'd like to pass on to you.

Granted I am no skilled veteran of this specific trade, but I have been in the fields of woodworking, carpentry, drafting, supply acquisition and sales for the past 15 years. Skills from each of these trades have been easily applied to the case making side of portable making and I feel is my strong point when it comes to it.

With that said, this guide is more than just a simple how-to with examples and pictures, but a complete, comprehensive guide to the theory and practices behind each step. You will find it's quite "wordy" with pictures really just being there for support. But this allows you a more in-depth analysis of what is going on and why.

I would also like to thank Jon (Hailrazer) Janderan for supporting this project and being a contributor to the "FrankenCasing" section as his work has stands for itself in the Modding communities all over the world.

So please, use this guide as a way to try and further your skills if you are just starting out, or if you've been at the game for awhile, maybe take a look into a different technique. Either way, I've put a lot of work into this guide and I hope it benefits all that read it!

Thanks again everyone for getting me into this hobby and encouraging me to take it to the next level! If you have any questions or comments, feel free to post them on my site: Downing's Basement (address below) or on The Modded by Bacteria Forums!

"...Quality over quantity is a practice that defines not only value but the devotion of those who choose to follow it..."

-Downing



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INTRODUCTION

THE ART OF PORTABLE CASE MAKING

The hobby of portable making is a relatively new venture into the hobby world. Recent advancements in batteries and flat screen technology have made the art much more affordable and plausible with older systems.

From the first home based video game systems like the Atari 2600 right up to the Nintendo Game Cube and PlayStation 2, making these dated systems into a portable hand held unit has become an electronic hobbyist most thrilling adventure!

Along with these electronic breakthroughs, a new art that accompanies the hobby is really the finishing touch that makes a portable system either stand out or get left behind. While it is no easy task in making a portable system of any kind, the demand for quality is growing faster than the concept of a portable system on its own.

Plainly speaking, a system that functions as a portable is not going to be considered as impressive to the extent it used to.

This is where the secondary art comes into play, and that is the ability to build a casing that is both worthy enough to house the very idea of a portable and showcases the professionalism and creativity of the maker.

There are only so many ways to wire the insides of a portable unit, but the creative means in which to house those projects are limitless. The creative designs are what will keep the hobby alive and make it not just a passing fad.

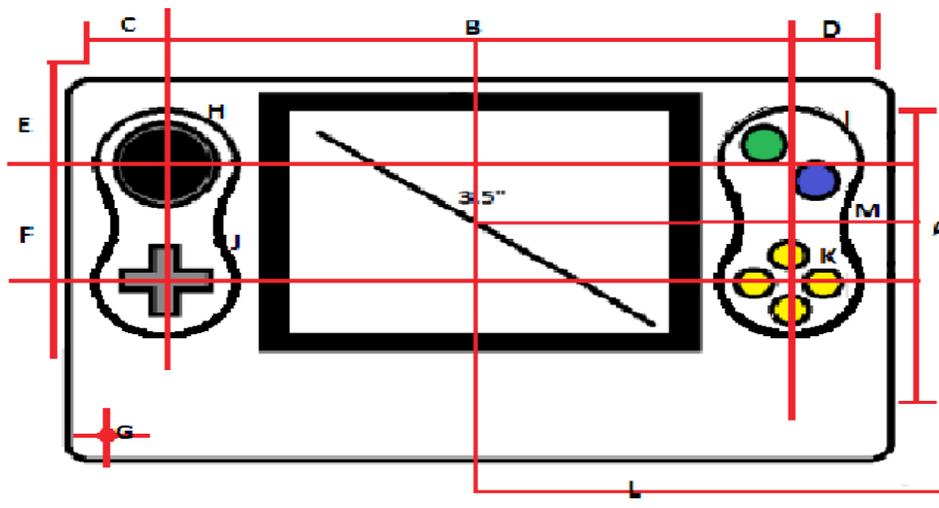
This guide is designed to help everyone from new Modders to hardcore electronics experts to the side of portable making that I love and that of course is Case Making! In this guide I'll be taking you step by step from concept to production, using Do-It-Yourself techniques and touch upon professional CNC design and cut.

These are techniques that I've put together from personal experience, research and contributors. Are these techniques the only way to do this, not at all, but they are tried and true methods that work given whatever situation you're working under. Creativity is key here, thinking outside the box or more appropriately, thinking how to work inside the box!

INTRODUCTION

MENTALITY AND START-UP

The best way to get a project started is both in design and mental awareness towards that design. You have to ask yourself, what are the primary goals this case needs to accomplish and how am I going to achieve them? Planning is key and should be one of the longest parts of the case making process.



Ok forget all the letters and such.

Its 6" wide, 4" high and 1 and 1/4" thick.

The screen is 3" wide, so it has to be in the middle, meaning 1 1/2" on either side.

Taking this information about the screen, we can say that all the raised parts are halfway between the case edge and the screen, meaning there's .75" on the thin sides and .5" on the thicker parts.

As far as high up this goes, I don't really think it needs to be planned in detail, you can see from the diagram that I want everything almost as the top.

Sample of Alon Tal Design Specs

Not settling for "it works" or "good enough" is what makes your work stand out above the floods of other hackers who are all about cutting corners and saving time. But it's not just about portable cases that this relates too.

This discipline of working until it's right transcends into any skill and can really help to promote both your creative and work ethic to make you far more marketable in the job market of real life!

Stay focused, pay attention to detail and put in the extra time. This goes a long way in a lot of places!

Vacuum Forming:

This is perhaps my favorite method, only because it gives you the utmost control over your design and how your layouts will work, while also being an affordable alternative to CNC. It's also great because the imagination and unique style of the builder really has a chance to shine through into the work. Vacuum forming is the practice of taking a hot sheet of plastic, setting it over a solid mold of some sort sucking the plastic down around that mold, taking its shape and staying that way after it cools. This method is exceptionally useful for custom case designs and adds to the "WOW" factor a great deal! However, setup, equipment, tools and the learning curve can make the initial startup a bit expensive but not unreasonable.

FrankenCasing:

No matter what (with the exception of CNC), there is no way around FrankenCasing. This is the term used to describe the taking of multiple parts from different cases, systems, controllers etc... and placing them all into a single casing by means of hacking, gluing, melting, taping or any other sinister means of bonding. The term is also used congruently with using casings for other electronics or casings not originally designed for the purpose (i.e. router cases or Tupperware). Even if you were to buy a premade case (Like a ZN-45 for example from Polycase) or a project box from radio shack, you would still need to FrankenCase. This is one of the more fun parts of the process though, so enjoy it!

CNC (Computer Numerically Controlled):

This is where you can get into the big money, but also have the most professional results around. Normally this is a bit beyond the reach of average DIY modder and reserved for the big wigs and CAD technicians. But the results can speak for themselves. You might still need to do some Frankencasing with this depending on your design, but the ability to make the precision cuts is well beyond the skill of any freehand human. In my opinion, this is more for the pros in a commercial application and can kind of take away from the building experience and sense of pride when it's complete. But we'll touch upon this later.