



TOP SECRET

Three Things Your Foundry Won't Tell You About Saving Money and Time When Commissioning Custom Metal Castings

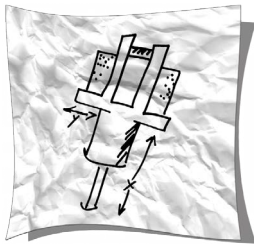
by Jon McGraw, Alloy Casting, Inc.

As a designer or architect, your goal is to create unique spaces that perfectly suit their purpose and leave a lasting impression on their inhabitants. One of the best ways to create a distinctive space is through the use of custom metal castings and designs. Unfortunately, the word “custom” and a general lack of knowledge about the design and casting process can strike fear in to the hearts of designers, architects, fabricators, and manufacturers, conjuring fears of price gouging and project delays while waiting for that just-right piece to be cast and delivered. In this paper, we'll expose some industry secrets and insider tips your foundry doesn't want you to know, but that will save you time and money while getting you the exceptional designs you dream of.

**TOP
SECRET**

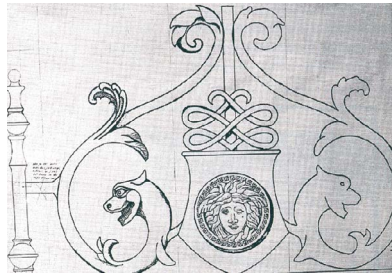
1.0 The Savings are in the Details

Have a great idea for a distinct ornamental piece? Quick, grab a napkin and sketch it out. A good foundry can take the most basic idea sketch, provide you with a quote, and turn that sketch into quality custom castings. But, many foundries don't have the time, resources, or desire to hand-hold clients through the entire custom design and casting process. This scenario can produce vague and inadequate communication which leads to costly delays.



A good foundry can turn even a simple sketch like the one on the left into a quality custom casting...

But a GREAT foundry will help you develop detailed design drawings like the one on the right that can be used to generate a comprehensive price quote.



A great foundry will work with you to develop a detailed design drawing with the specifications and measurements necessary to develop a comprehensive price quote. They'll ask questions that gives the foundry a detailed understanding of the scope of the project and the application of the custom piece, and offer recommendations on the types of alloys that are ideal for the planned end use. Don't be offended if your foundry tells you that they're not right for the job, a project should be viable for both the producer and the end user. A great foundry will direct you to the right resources for what you need – whether it's another foundry, a machine shop, or a metal fabricator. Look for a foundry that is willing to consult with you from the earliest stages to help you get started and bring your project to life.

TIP:

What to Ask When Interviewing Foundries

What's the largest casting size I can get from your foundry?

What types of metals do you cast and which is right for my project?

Do you have a restriction on casting weight?

Do you have a minimum quantity or dollar amount per custom order?

Will the casting be paintable? (if applicable)

Will the casting hold a finish? (if applicable)

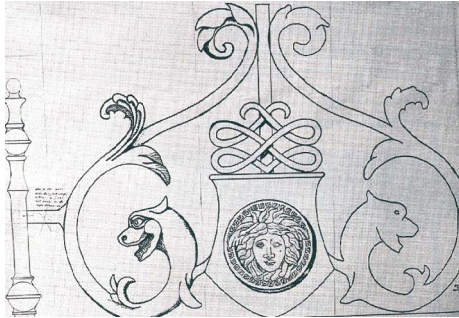
Do I need to prepare the casting in any way for final finishing?

Can your castings be welded?

Do you provide heat treatment? Is that included in the price quote? (if applicable)

Are there any charges in your quote other than drawings, pattern making/tooling, and price per piece?

2.0 One Size – or Price – Does NOT Fit All



Taking the time to specify details, cross sections, and dimensions with detailed drawings (top, above) can save you significantly in terms of time and money once you enter the pattern making portion of the project (bottom, above).

Receiving a lump sum quote may seem like a good thing – until you need to increase or decrease your order and have no idea how much you're paying for each individual piece. Likewise, lumping together pattern making and tooling makes it difficult to comparison shop. Look for a foundry that will offer transparent, itemized pricing for drawings, pattern making, tooling, and per piece casting.

Sketches for decorative castings often lack dimensional detail. If details are vague or missing, it forces the woodcarver/patternmaker to provide his own artistic interpretation. The detailed design drawings mentioned earlier? Taking the time to specify details, cross sections, and dimensions can save you significantly once you enter the pattern making portion of the project. Pattern making consumes the majority of a typical custom project timeline and mistakes made here can be costly to correct. Once a pattern is passed through to the tooling stages, corrections not only increase costs significantly, but can also increase overall project time.

A great foundry will set up tooling in the most economical way for the customer. Tooling isn't a one-size fits all solution, if a client needs one piece, setting up tooling to make 10 pieces doesn't make sense. Likewise, tooling is (barring changes on a customer's part) a one-time fee.

Just like tooling is flexible based on project needs, a foundry should be flexible on using tooling from outside sources, and should be able to provide a price quote that reflects that. Your foundry may want input on outside tooling to determine how it will be used, how it's set up, sizing, and number of pieces. They're not being difficult; they're just ensuring that it will be the most practical and cost-effective method for delivering your finished product.

Finally, look for a foundry that can provide a per piece quote so that you, the customer, knows how pricing will change if quantity changes. This offers an enormous value over a single lump sum fee, which can make it extremely difficult for the end use to anticipate changes in cost in relation to changing project needs.

Did You Know?

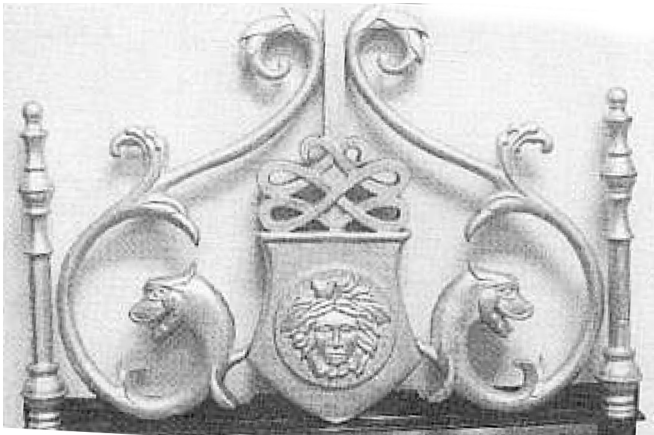
A typical timeline for custom work is 5-8 weeks, with the majority of that time being devoted to pattern work. In some cases, projects can be turned around in as little as 2-3 weeks.

**TOP
SECRET**

3.0 Finished Should Mean *Finished*

Your foundry should provide a sample of the finished casting before initiating a production run. If the prototype sample does not meet the specifications of the original drawing, a great foundry will correct the error at no charge to you. But, if changes are made because of a redesign, those changes could result in increased tooling costs and time delays. Again, time spent in the initial planning and drawings stages will save you significant time and money later in the project.

Once you've approved your sample piece, it's time for the final production run. Look for a foundry that will provide finished, cleaned castings that don't require clean up on your end. When you receive your castings, they should be ready for their final application – whether it's painting or welding.



The time and effort spent early in a custom project pays off when the final product is exactly what you had envisioned.

Imagine an original space filled with original details – all designed by you. You now have the basic knowledge you need to work with a great foundry in commissioning the distinctive pieces that will inspire the end users of your spaces and let you leave your mark in a truly unique way.



About the Author:

Jon McGraw is the owner/operator of Alloy Casting, located in Mesquite, TX. Jon has worked with architects, designers, and fabricators for the past 32 years providing custom metal castings for every type of application. With a degree in metallurgical engineering from Case Western Reserve, an MBA from Stanford University and a professional resume that includes Reynolds Aluminum, Trane Corporation and New Jersey Steel, Jon is an expert in the foundry industry. His depth of knowledge ranges from the structural properties of metals through to best foundry industry practice.

TIP: What do you need to know if you provide your own pattern?

- There can be no undercuts.
- Ensure that you have proper drafts and angles.
- Your pattern should be 2% bigger than final casting.
- Wood, plastic, steel, aluminum, resin are all ideal materials.
- Clay CANNOT be used for patterns.

TIP:
When doing restoration work, look for a foundry that can create tooling directly from a sample part off the job and reduce the pattern making expense.