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PRECISION MOLDS + MOLDING

How to Get the Best Results From Your Molding and Tooling Partners

By Matt Walters, Technical Sales, DGI

Bringing a new MedTech product or industrial tool to market is no small feat. Efficient timelines and cost considerations are critical.

For years, relying on molding and tooling vendors has been absolutely essential for everything from small startups to major industry players to produce quality results, on time. To achieve these results, your molding vendor relies on Design for Manufacturability (DFM)—an engineering process that makes your parts faster, easier, and more cost-effective to produce.

But DFM principles on their own can't always protect you from the risks of unexpected rework, creeping project scope, and missed release-to-market deadlines.

How well you work with your vendor makes all the difference.

Through real-world examples and advice from an expert in the industry, this eBook will help you build stronger, more trusting relationships with your molding partners and create exceptional products together.

Find out:

- What happens when you wait too long to talk to a molder
- How sharing information prevents scope creep and requoting
- The hidden costs of cutting corners in the engineering process
- Why it's important to commit to a molding partner early
- And more!

About the Author

Boasting extensive industrial injection molding and tooling engineering experience, Matt Walters is a Technical Sales specialist for Dynamic Group, Inc. Every day, Matt gets hands-on with clients to help them make the most of DGI's molding and mold tooling experts and reap the rewards of DFM engineering principles.

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CHAPTER 1:

Collaboration Starts Early

One of the most critical factors in your project's success is at which point in the project's timeline you choose to involve precision molding experts like us here at DGI. Ideally, the earlier you start having conversations with our engineers, the better. Let's take a look at why.

What happens when you wait too long to talk to a molder?

All too often, manufacturers in need of outside molding and tooling support seek out vendors late enough in their product development timeline that they already have a hard release-to-market date. Design for Manufacturability is an iterative process, and depending on the complexity of the project, it's not always easy to put a strict timeline on that process.

As a result, clients often feel pressured to have their vendors skip important steps in the engineering process to get things done faster.

But sometimes, you just can't rush quality, and the temptation to take shortcuts can lead to serious consequences down the road. Let's look at a hypothetical example:

- A client comes to us with a hard deadline for bringing their product to market.
- Conscious of their deadline, we do our best to provide a thorough engineering timeline that ensures reliable results with no ugly surprises.
- The client, seeing our timeline estimate, asks us to skip mold flow analysis to shave a few weeks off.
  Mold flow analysis *is a crucial step in the engineering process where we simulate the injection molding process to identify potential problems like warpage, sink marks, void bubbles, or weld lines that can compromise the product's functionality or durability.*
- To save time, mold flow analysis is skipped. When production begins, a problem this procedure would have uncovered early rears its ugly head at the worst possible time. At this point, it takes two months to fix an issue that would have taken less than half the time to prevent.

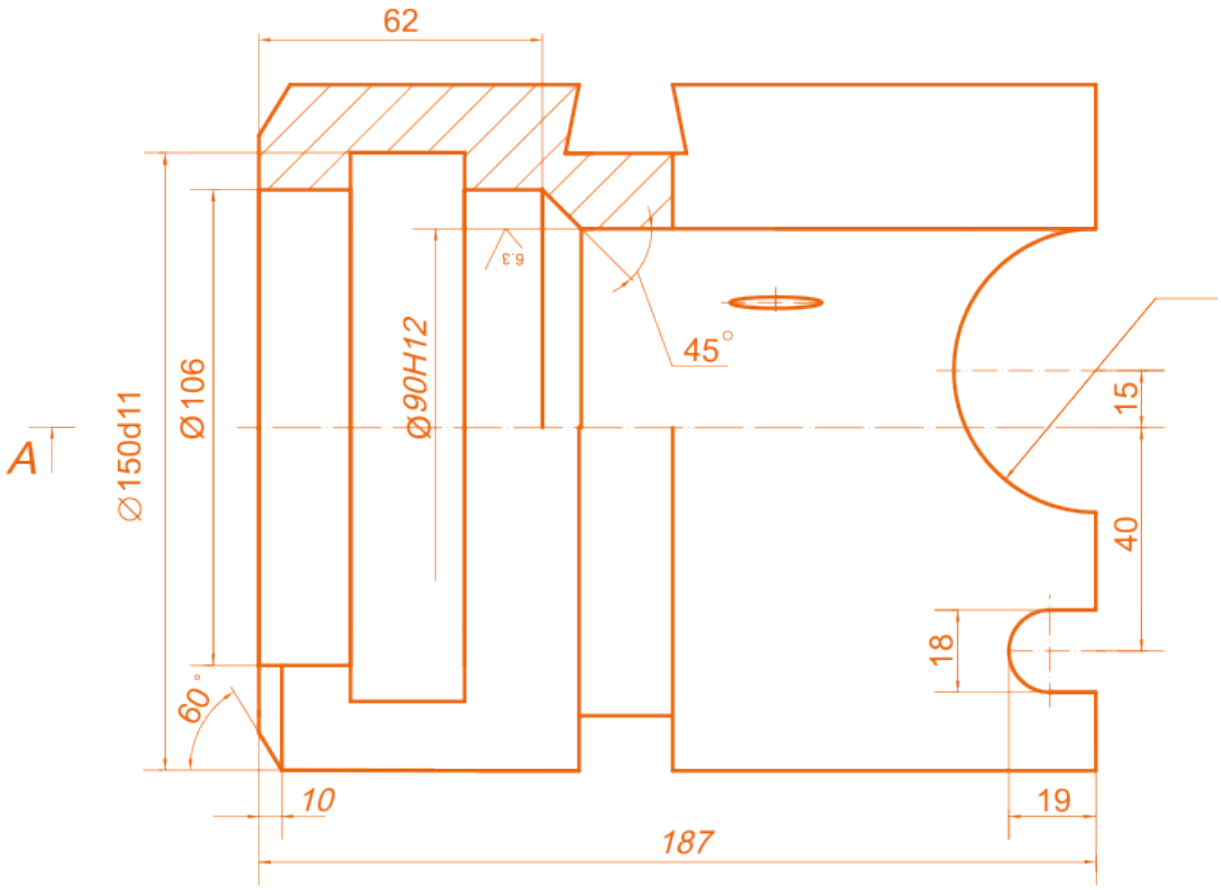
CHAPTER 1:

Collaboration Starts Early

When you start talking with molders later in the product development process, you might also miss crucial opportunities for other important conversations, such as Form-Fit-Function, that ensure your molded components are properly integrated into your product.

In engineering, taking shortcuts at any point just leads to more time wasted later on. The benefit of reaching out to and talking to molders early, ideally before you have a hard release-to-market date, is that you don't feel pressured to skip important steps in the engineering process.

If your molder tells you a step in their engineering process is important, trust them. We don't want to do rework any more than you want us to have to do it!



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CHAPTER 2:

Collaboration Is a Conversation, Not a Download

When you contract molding and tooling work to an outside team of engineers, you're choosing a partner in your production process. And in any relationship, partnership depends on trust, transparency, and willingness to share.

But especially in highly competitive industries, companies in need of molding support can be so protective about their intellectual property that they're afraid to share important details about their parts—details like what the part does or what its critical features are. The extent of their willingness to share information with their molder is to give us a download link to a CAD file.

When a client isn't willing to talk to their molding vendor about the part they need produced, though, there can be serious consequences.

Trust: The Key to a Smooth DFM Process

Design for Manufacturability involves tweaking and optimizing a product's design to make it easier and more cost-effective to manufacture while maintaining or improving your core features and functionality. If you hold important details close to your chest, your molding and tooling partner can't play with a full deck. We don't know which elements of the design can be altered and which are non-negotiable. Our ideas about your project goals become murkier. As a result, the DFM process gets slower and less efficient because we have to ask questions as we go instead of getting answers upfront.

CHAPTER 2:

Collaboration Is a Conversation, Not a Download

Any contract molder worth their salt will happily agree to sign an NDA to protect your intellectual property as early as possible, so you can feel comfortable answering essential questions about your product as early as the quoting stage. We want our clients to succeed, and that means being willing to keep secrets for them!

There are two other reasons to be willing to have detailed conversations about your parts, the earlier, the better—ideally, before your project even becomes a project:

1. Getting More Accurate Quotes

When you're seeking quotes from prospective molding partners, you're typically searching for the most cost-effective option that can deliver the quality you need. But your willingness to share information affects how accurate those quotes are.

With fewer details about your part's fit, form, or function or any design constraints, your molding partner's initial price quote might not take into account unique considerations about your project. If it seems simple, the initial price quote can be lower.

But without that information, your molder's engineers run into issues that require rework down the line. These issues cause scope creep and require re-quoting. Suddenly, that low initial price quote has been revised, sometimes several times over, and is no longer so low. When this happens, the temptation to cut corners becomes especially hard to resist.

2. Avoiding Scope Creep

No one wants to deal with scope creep. Nobody wants to be the one to ask for more money—not us, and especially not you. But corner-cutting to get your project's budget and timeline back on track comes with serious risks, which I'll detail in the next chapter.

Having detailed conversations with your molder early in the quoting process and being upfront may result in higher price quotes, but those price quotes will be what you actually pay when all is said and done. These conversations allow both you and your molder to make better decisions later because you planned ahead for them now.

CHAPTER 3:

The Real Costs of Corner-Cutting

The biggest issue with scope creep is that when it starts rearing its ugly head, people on both sides of the equation become worried and afraid of asking for what's right for the project—and so they don't. Corners get cut. Steps get skipped. Without upfront communication and trust, engineers are afraid to go back to the client and ask for more money, and clients are afraid of having to give it.

In these past two chapters, I've gone through how early collaboration and upfront, transparent communication saves time and money. Now let's look at a real-life example of what can happen when things go wrong.

CASE STUDY:
How Saving $3,500 Turns Into Losing $14,000—And More

In Chapter One, I talked about mold flow analysis as a crucial step in the engineering process. Every step we take from the point our client approves a price quote to the point they receive their molded parts takes time and costs money, and that time and money, ideally, is included in the price quote and timeline provided.

The reason why I chose mold flow analysis specifically was because of this story from early in my career, in which a small MedTech startup opted out of having their vendor perform this analysis for the part they were producing. It wasn't the extra time mold flow analysis would have taken that was the problem, it was the cost of the procedure and of fixing any design issues it might have detected.

As it happened, the molder's engineers encountered a serious filling issue that a $3,500 mold flow analysis would have caught. A gas trap in the molded part took three months' worth of costly extra work by the engineers to fix, totaling roughly four times the cost of performing mold flow analysis.

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CASE STUDY CONTINUED:
How Saving $3,500 Turns Into Losing $14,000—And More

If mold flow analysis had been performed, the engineers could have easily made a simple modification to the part or the tool to design around the potential issue. But when that potential issue stopped being potential, the work it took to fix it ballooned in scope.

The molding engineers tried multiple fixes, but ended up having to redesign the part altogether. The end product ended up requiring more plastic than the initial design, making it more expensive to produce long-term.

Over the product's lifetime, the cost of the extra resin used in the redesigned part has most likely made the project's total cost overruns even higher than the $14,000 price tag of fixing the gas trap. On top of that, the extra rework meant the product missed its original release-to-market date, which caused the client further logistics and financial headaches.

Because of this story, I always go the extra mile to make sure every manufacturer I talk to knows the risks of cutting corners.

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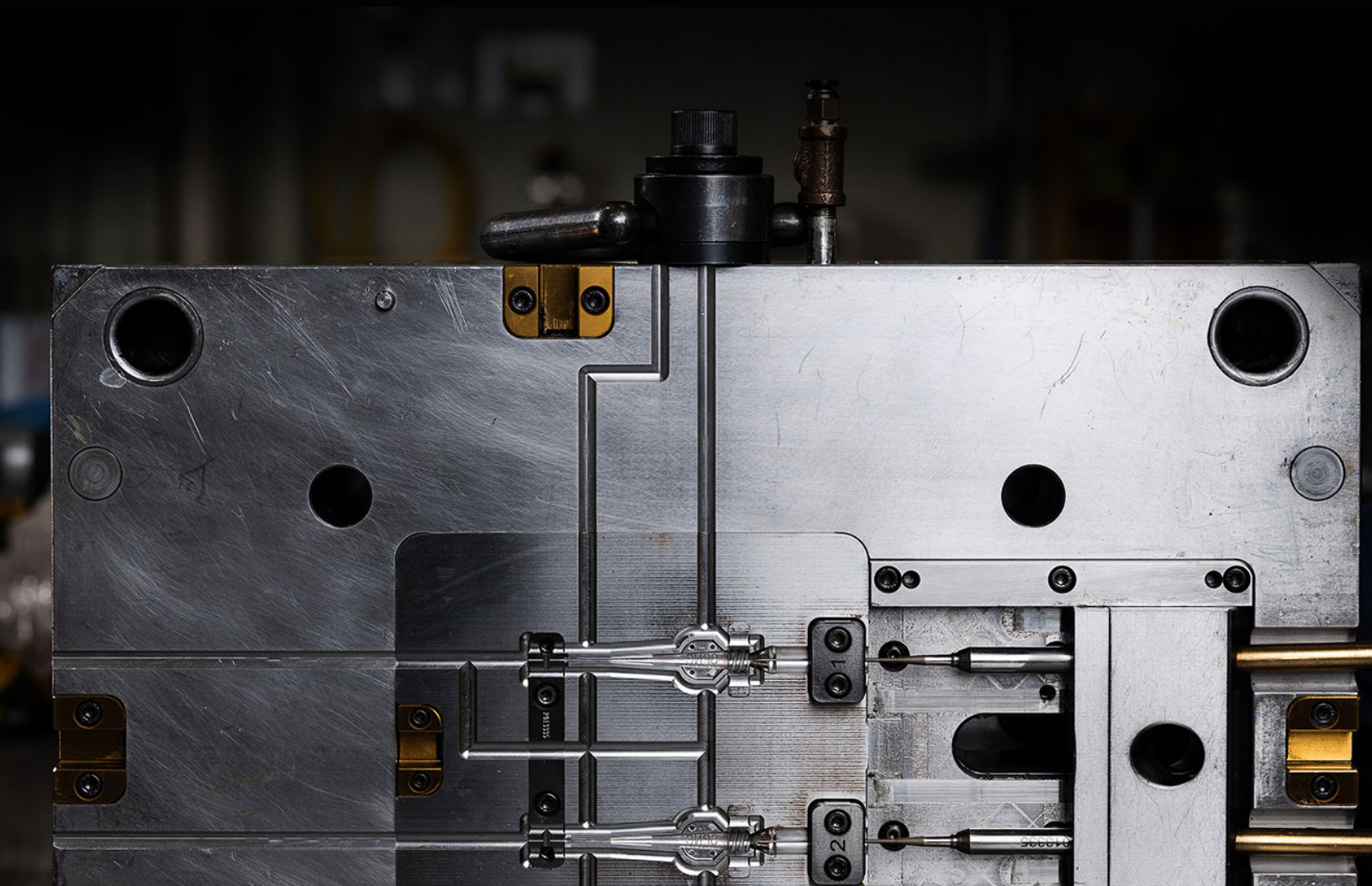
CHAPTER 4:

The Power of Integrated Molding and Tooling Capabilities

It's not uncommon for MedTech and industrial manufacturers to need to outsource both molding and tooling in order to meet their project goals. In many cases, this involves two separate vendors - one to design new custom molds, and another to take these molds and use them to produce parts.

As you can imagine, having two vendors means that not only do you need to communicate with both vendors, but the two vendors also need to communicate with each other. Having detailed, transparent conversations is good—but the more distance there is between each party, the more barriers there are to these conversations, and the longer they take to have.

When molding and tooling capabilities are split between two vendors, there's always the risk that one vendor could end up with information the other vendor doesn't have, or a game of telephone between vendors can lead to critical details being misinterpreted. If one vendor encounters an issue, identifying that issue, assigning responsibility, and resolving the issue can take weeks.



CHAPTER 4:

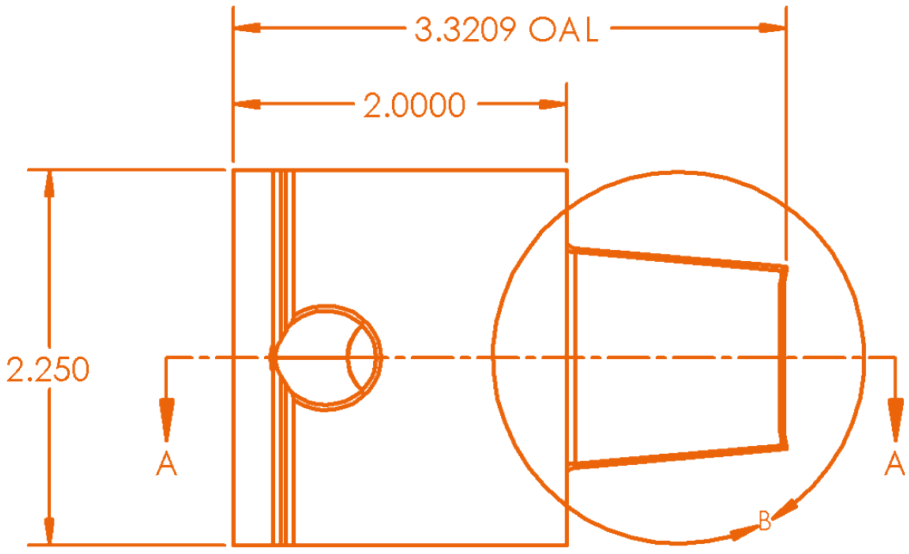
The Power of Integrated Molding and Tooling Capabilities

The closer your molding and tooling teams are to each other, the faster they can identify and resolve issues that crop up during the engineering process. That's why, to keep the engineering process efficient, DGI maintains molding and tooling capabilities under one figurative roof—two closely connected facilities that can easily and quickly collaborate and solve problems for clients together.

DGI has a centralized project engineering team that coordinates both teams and avoids the weeks-long delays that can happen when molding and tooling teams are separate, and conversations between molding and tooling engineers are easy to have—all it takes is a quick Teams meeting or a short jaunt from one facility to the other.

Because we maintain integrated molding and tooling capabilities, we can also offer efficient product design consulting services. By leveraging convenient access to molding and tooling specialists, our manufacturing engineer and product design consultant can take our clients' designs and assess DFM concerns, moldability issues, and toolability issues early and provide advice for more efficient and cost-effective project execution.

At the end of the day, the most important factor in the success of your relationship with a molding vendor is how well you can communicate. At DGI, we've worked hard to encourage open communication and effective collaboration from start to finish so our clients can put their best foot forward on every project and enjoy the best possible results.



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CHAPTER 5:

My Advice for Molding and Tooling Customers

Throughout this eBook, you've seen what can go wrong when the collaborative process between client and vendor breaks down, starts too late, or doesn't start at all. For the most part, these issues are caused by a lack of trust. The best antidote for a lack of trust is education, and the best education comes from conversation.

The more clearly you understand how the engineering process works and what molding and tooling experts need to know to do their best possible work, the better results you'll see—faster project timelines, fewer cases of expensive rework, and less scope creep.

Why It's Important to Choose a Vendor Early

I've focused on the importance of having honest, open conversations with your molding and tooling vendor, the sooner the better. When your in-house engineers and your molding and tooling vendor's engineers can have conversations early in your project timeline, you have more time to have those conversations and identify the best path forward as soon as possible.

The longer it takes to decide on the best course of action for your project, the more time you've spent before that decision was made on a less-than-ideal course of action.

That's why the advice I give to anyone looking for molding and tooling support is to commit to a vendor early. While it's important to explore your options, the sooner you can choose a partner for your next project, the sooner you can have technical conversations with them about fit, form, function, and manufacturability.

And by committing early, you only need to have that conversation once—and you'll get straight answers about how long a project will take and how much it will cost.

Key Takeaways for Successful Molding Partnerships

So, how do you ensure you get the most out of your molding and tooling vendor for each project?

Let's recap:

- Initiate conversations with your molding partner early in the project timeline to avoid rushed decisions.
- Share essential details about your product's fit, form, and function early so your partner can provide the best solutions.
- Choose partners with in-house molding and tooling capabilities to benefit from faster feedback loops, reduced rework, and minimal delays.
- Resist the temptation to skip critical engineering steps.
- Take advantage of consulting services to address DFM concerns, moldability, and toolability issues early.
- Select your molding partner early to facilitate technical discussions and streamline the DFM process.

DFM alone isn't a magic bullet to solve the problems of unexpected rework, creeping project scope, or missed deadlines. The real game-changer is how closely you can collaborate with your vendor. That's where the real magic happens. As one of DGI's technical sales experts, I know firsthand that the better my conversations are with our clients, the better results our engineers deliver.

If you have an upcoming molding or tooling project to discuss, go ahead and reach out to DGI today. We'd love to talk to you.fers solutions to their problems.

Talk to an Expert

Request a Quote

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