10 Things to Ask

Your Plastic Injection Molder

K&B
Molded Products

Introduction

Injection molding is the manufacturing process where melted resins are injected into a mold to form the shape of the desired part. Unfilled and filled resins can be used to create complex parts from motors and water filters to instrument panels and brake pedals. This entire process is highly efficient, and requires very little involvement from human operators. When considering injection molding, there are a number of things for manufacturers to consider before selecting the proper partner to assist you in producing that part. Use the questions and answers below to ensure you choose the best injection molder to supply your part.

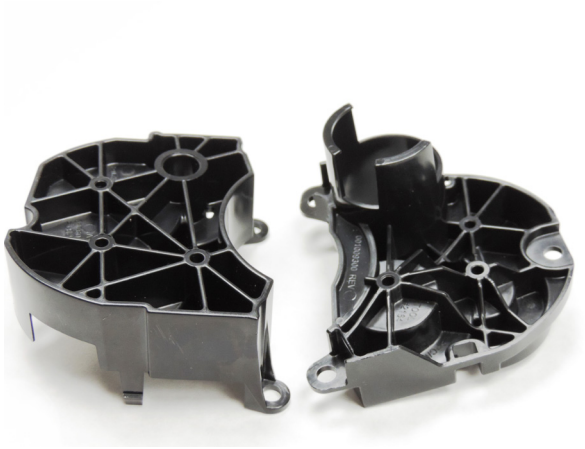
1. DO I NEED TO HAVE A DETAILED DESIGN READY?

No, many plastic injection molders — including K&B — can help you with the design of the part you need in order to meet all of your project's requirements. The earlier a qualified molder gets involved in the design process, the better results you'll see in terms of the project's turnaround time and overall quality.

Some of the things that injection molders can help you understand are:

- What is the final function for the part?
- How does it interact with adjacent items in the assembly?
- What are the stresses applied during normal use?
- How is the material interacting with the mold during the forming process?

It is also important for the molder to have a close tie with a skilled tool builder who can make engineering changes and repairs in a timely manner. Molders like K&B are able to utilize advanced in-house engineering software to create 3D renderings and in-process simulations, allowing us to validate the final design prior to manufacture. This process also ensures all issues are addressed early in the product lifecycle.



Many quality molders also have access to offshore suppliers and domestic shops to provide cost-effective and efficient mold making solutions for projects with longer lead times or tight budgetary constraints.

2. WHAT DETERMINES THE COST OF A PLASTIC PART?

The cost of plastic parts will vary depending on the size, weight and type of material, along with the production quantity. Despite the higher cost of some plastic materials, injection-molded plastic parts typically still cost less than custom-machined parts made from metal or other materials, while still providing the same tolerances needed for various applications. There are many things that can be done to help control the costs of molds, but it is vital that the mold adheres to exacting tolerances and durability. Proper design, quality materials and skilled craftmanship are all a necessary part of the process.

3. WHAT'S WRONG WITH SENDING MY PART OVERSEAS TO SAVE COSTS?

A quality injection mold is the first step in producing better parts. If a part is made from substandard material and workmanship, it is more prone to wear and break under the stresses of the application and may be dimensionally incorrect for its intended use. Substandard mold design also means that injection may cause flow lines, sinks and voids and other characteristics that are present in poorly molded products.

There are also confidentiality issues with sending your parts offshore. Having a molder you can trust ensures the unique design of your parts remains unique — and is more reliable.

4. WHAT CERTIFICATIONS SHOULD AN INJECTION MOLDER MAINTAIN?

Certified injection molders like K&B are registered with ISO 9001:2008 for the design, manufacture and supply of molds for plastic, metal molding and die casting industries. This certification proves that the molder has shown great commitment in providing customers with high-quality parts.

UL listings affirm that parts produced by your molder pass strict inspections and meet high safety and quality standards. When a company such as K&B is UL-Certified, it guarantees parts will be molded with the correct specified materials. If your industry must meet strict standards, it is crucial to find a partner that is both ISO-certified and UL-Certified.

5. WHAT TYPES OF MATERIALS CAN BE INJECTION MOLDED?

Material selection is vital to your product's success. The materials used for manufacturing a part depends on the application. Some of the base materials that K&B can mold include:

- ABS
- Acrylic
- Nylon
- PEEK
- Polyester
- Polycarbonate
- Polyethylene
- Polypropylene
- PPO
- Styrene
- And more

In addition to these base materials, injection molders can also add fillers such as glass fiber, carbon fiber, minerals and other additives to enhance the properties of your part. Literally thousands of materials are available, depending on the client's specific need.

6. WHAT INDUSTRIES DO PLASTIC INJECTION MOLDERS WORK WITH?

The number of industries that can benefit from plastic injection molding is virtually limitless. Today's leading plastics manufacturers leverage technology to create superior injection molded alternatives to conventionally machined metal parts. Plastic parts can be formed to the same tight tolerances and strengths as metal, and their material and light weight reduces total manufacturing costs.

Different industries require different specifications, so it is important to know what regulations apply to your product. Some of the industries that are benefiting the most from plastic injection molding technology include:

MARINE INDUSTRIES

Industries which involve corrosive environments will affect almost any type of metal, but modern thermoplastics are immune to the same problems experienced by these metals in a marine environment.

Plastic injection molding can deliver parts to the marine industry at a lower cost and higher resistance to corrosion than other types of metals. This allows greater flexibility and lower cost for the industry when it comes to parts such as protective electronics covers, remote control FOBs, propellers and parts for trolling motors.

For much lower cost than corrosion resistant metal alloys, thermoplastics can be formulated to resist a myriad of corrosion sources, as well as deterioration due to extended exposure to UVs. For the Marine industry, this means greater design flexibility at lower costs, and for this highly competitive market every advantage counts. Our services to this industry include a wide range of products including items such as protective covers for electronics, remote control FOBs, propellers, and various trolling motor parts and components.

HVAC INDUSTRY

In an industry such as HVAC, the sheer vastness and variation in OEM and aftermarket parts and components is staggering. Taking cost out of these products is a critical factor in the competitiveness of many HVAC customers. By utilizing cutting edge materials, we have been able to produce parts for water heaters, furnaces, air conditioner compressors, electrical covers, blower, draft inducers, and a number of other components that regenerate gases and remove heat.

In plastic injection molding, a mold only needs to be manufactured once before long cycle times for machining or casting of parts are eliminated. Use of plastic means that the cost and weight of materials is greatly reduced along with the cost, while the parts can still meet the tolerances needed for the application.

ENVIRONMENTAL TESTING & WASTEWATER INDUSTRIES

The development of cutting edge materials such as Polyether Ether Ketone, (PEEK) has greatly affected the expansion of injection molded products in the environmental testing and wastewater industries. For the Wastewater Management and Environmental Testing industries, this means robust parts and components that deliver design flexibility and lightweight with the same strength characteristics of metal. The use of thermoplastics also means that parts are easier to install and far less expensive to custom manufacture.

The obvious expense and difficulty working with parts composed of these materials is not lost on system engineers. However, when using materials like PEEK for septic tank effluent drainage (STED) or solids-free sewer (SFS) systems, cost is driven down, and the simplicity of installation and maintenance is driven up.

7. AT WHAT STAGE OF THE DESIGN PROCESS SHOULD THE MOLDER BECOME INVOLVED?

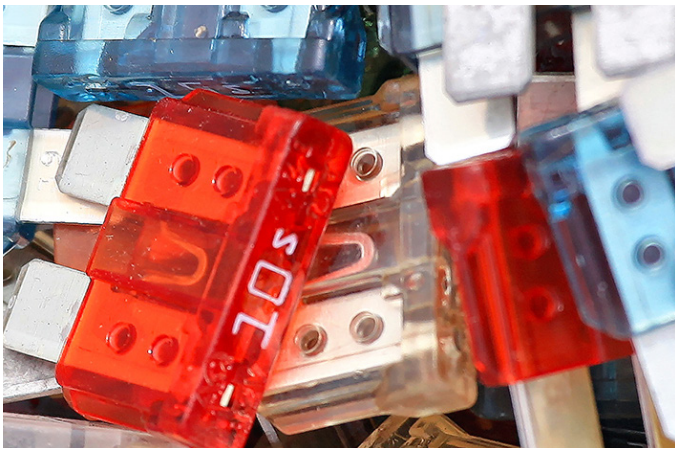
The earlier a supplier's involvement in the product's design and development stage, the easier it is to optimize the product's specifications and selection of a material. Addressing issues early also helps to control expenses and improve time-to-market. When a product is in development, designs can go through a number of iterations before being finalized and the size and requirements for parts may change drastically.

Using injection molding to create these parts takes much of the labor-intensive work of machining parts. Parts can be produced faster, or tolerances increased or decreased through the use of different material without the high costs of retooling a part from scratch.

Additionally, companies who are seeking higher quality parts should consider an injection molder for their needs. Injection molding design engineers can work with your company to manufacture custom parts that are needed for any application and use the best material for the job. Using the right material will reduce the cost of your parts and provide the same tolerances as a part manufactured through other means.

8. WHAT PRODUCTION VOLUMES DO MOST INJECTION MOLDERS WORK WITH?

Injection molders like K&B will work with production volumes ranging from a few hundred pieces to over 100,000. Whatever your need for production, we will help you achieve it. Regardless of whether you are a small business or a large distributer, K&B has the facilities to help you achieve your manufacturing goals and provide the quality parts that your customers deserve.



9. WHAT TOLERANCES CAN BE HELD?

The tolerances delivered depends on the type of material being used and the requirements of the application. Part configuration is also a factor. A detailed discussion with your proposed vendor can assist greatly in avoiding disappointments as the mold is sampled.

10. DO PLASTIC INJECTION MOLDERS OFFER ANY ADDITIONAL SERVICES?

An on-site tooling facility can benefit the relationship between manufacturers and plastic injection molders greatly. In addition, specialized molding processes like over molding and insert molding can assist greatly with your project. Ultrasonic welding, heat transfer and hot stamping can also prove vital.

K&B offers a number of services beyond our injection molding capabilities, including:

- **Overmolding** – One material is molder on top of another that has been inserted into the mold. This is also referred to as "two-shot" molding.
- **Hot Stamping** – This process can be used to transfer ink to a part to provide logos, accents or instructions on the parts themselves. There are no volatile chemicals or dry time for the ink which can slow down production.
- **Production Machining** - K&B offers production machining of plastic parts when part configurations are particularly demanding.
- **Tool and Die Design** – Our expert tool makers will create and check custom dies and injection molds which meet the requirements of our customers and provide the best possible parts for your application.
- **On-site Tooling Facility** – Tooling facilities on-site allows for efficient manufacturing of tools and engineering changes and repairs.
- **Point-of-Sale Shipping** – We provide nationwide shipment of client products directly to their distribution chain.

CONCLUSION

With all the options available to produce plastic parts, it can be challenging to choose a plastic injection molder. Knowing the answers to the 10 questions above can help you to select the molder to fit your part's specifications, turnaround time and budget.

Our team at K&B Molded Products is happy to answer any additional questions about injection molding that you may have. To find out the various ways we can help you and your business, please **contact us today**.