



# Digital Cutting Solutions

White Paper: 5 Questions for Determining the Best Manufacturing Process

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## Digital Cutting Solutions:

### 5 Questions for Determining the Best Manufacturing Process

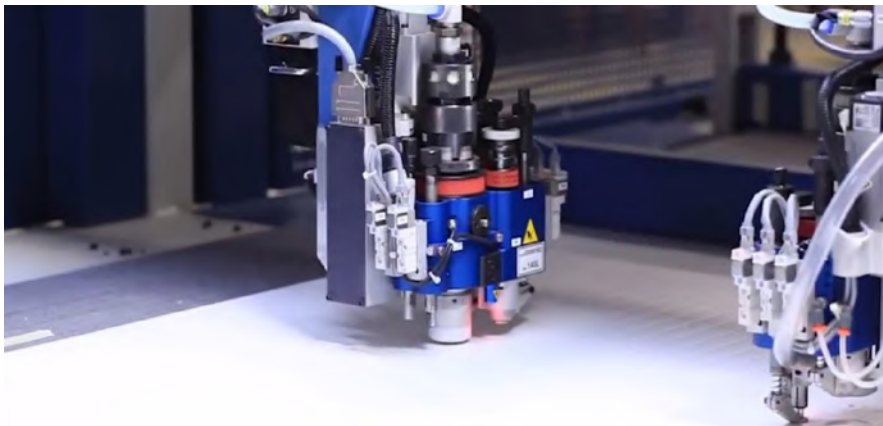
#### Introduction

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Imagine being able to avoid the time and expense of machine tooling as well as production issues, such as water-soaked parts and heat-affected edges. Digital die-less cutting services provide a wealth of benefits to customers looking to gain production and cost efficiencies.

#### How Digital Knife Cutting Works

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The digital knife cutting process involves a vacuum table, an oscillating knife, and router, allowing for precision cuts to be made into the customer specified material. Similar to an "X-acto" blade, the knife creates precise cuts according to the dxf file digitally uploaded to the operating system.

The knife cutter can create various types of components, including rubber seals and plastic parts in various sizes and in low, medium, and high-volume quantities. The machine allows the operators to produce miniature plastic parts with tight tolerances, narrow cross sections, and holes that are spaced closely together in volumes of 10 pieces to 10 million pieces. In addition to plastic parts that measure less than 1" square, the digital knife cutter can be used to create rubber seals, shims, vents, and cushions.

#### 1. When do I need my part?

##### Responding to Urgent Needs

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Interstate Specialty Products uses digital cutting to make fine, fast cuts without the time and expense of tooling. Applications include high performance gaskets, seals, membranes, vents, and filter media with intricate shapes, tight tolerances, and precise details. Digital cutting equipment holds non-metallic materials firmly in place, and follows software-based nesting instructions for maximum material usage and



efficiency. Turn-around times are quick, and Interstate's customer service meets tight timetables.

## **2. Does my part have details that can't be cut with traditional tooling?**

### **Advantages of Digital Die-Less Cutting**

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Unlike other forms of custom fabrication, digital die-less cutting does not require costly tooling that can add expenses to your projects. For sensitive components, you should consider the effects of water contamination or heat-affected zones from processes like waterjet or laser cutting. The digital cutting method provides exceptional edge quality and can meet extremely narrow cross sections that may not be available from traditional processes.

Digital cutting is also flexible for on the fly design changes and cost-effective for low-volume runs. Stacks of material can be cut in a single operation. Different materials can be cut at the same time.

## **3. How will my assemblers handle my die cut parts?**

### **Kiss Cutting with Digital Equipment**

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Both digital die cutting and rotary die cutting equipment can be used to perform kiss cutting, a cutting process that makes precise cuts into a material without penetrating the release liner or backer. Kiss cutting is ideal for components with a pressure-sensitive adhesive (PSA) liner or backing, and produces "peel and stick" parts that are ready-to-install. Applications for kiss cutting can include parts such as membrane filters, vents, and gaskets.



Kiss cutting with digital equipment creates parts that are easy to ship, distribute, and assemble. Unlike die cut gaskets that are cut-through individually, kiss-cut parts are often supplied on sheets or rolls. This supports material handling and production throughput. Instead of carefully removing the release liner from an individually die cut part, an installer can simply "peel and stick" a kiss-cut gasket.

## **4. Should I keep the die cutting process in house?**

### **Outsourcing Advice and Digital Cutting Services**

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Are you thinking about outsourcing some of your company's operations? The decisions you make could affect more than your bottom line. Outsourcing can promote innovation, enabling employees to take on new tasks that lead to breakthroughs in products or processes. Yet

outsourcing can also put your business at a competitive disadvantage. For example, if you pick a partner who fails to protect intellectual property and designs, your trade secrets could become industry knowledge.

Making the wrong decision about outsourcing could also result in receiving components that don't meet your company's quality standards. Rework is an option, but at what cost? Low product quality can damage your brand, and expensive last-minute shipments can break your budget. Unfortunately, many businesses consider only the price per unit in their outsourcing decisions. When you consider whether to outsource a project, it's critical to capture all of your costs and evaluate a potential partner's supply chain strength.

For example, some companies decide to outsource gasket fabrication after analyzing their manufacturing overhead (MOH) costs. These businesses are capable of performing their own die cutting operations, but their factory burden suggests it's not cost-effective to do so. There's also the matter of opportunity costs – the loss of a potential gain when you choose one alternative instead of another. If die cutting is important for operational performance but not strategically important to your enterprise, it can be outsourced.

Outsourcing includes custom manufacturing, but don't forget about logistics. Just-in-time (JIT) deliveries keep assembly lines humming in a variety of industries. If the way that you deliver die cut gaskets to an assembler isn't critical, then outsourcing your logistics makes sense. That's true for general industry, and also for markets such as medical, scientific, and electronics.

## **5. Is my current supplier utilizing the best process and equipment?**

### **Trusted Partners and Die Cutting Capabilities**

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Interstate Specialty Products provides expert die cutting services, maintains a broad array of state of the art equipment, and works with industry-leading suppliers of materials. Depending on your application requirements, Interstate may recommend precision die cutting methods such as steel rule, rotary, high tonnage beam press, high-speed punch, or digital cutting. Let our expertise guide your process! We also provide slitting, laminating, and matched metal die stamping services along with cleanroom die cutting.

To learn more about how Interstate can assist with your next die cutting project, please [contact us](#) online or call (800) 984-1811.