

Custom Diecuts Simplify Masking



MASKING HAS LONG BEEN a craft as much as a technology. The shop that understands how to mask efficiently and accurately has a natural edge over competitors.

Today, this picture is changing and developing, as simpler and more versatile design software enters the field. Additionally, the range of masking materials has been extended.

John D. Gill, an engineer with Caplugs, points out that historically, materials were defined by the surface finishing process they were used in; green tape and silicone for powder coating, cork plugs for wet paint. As finishing processes have become more sophisticated, however, masking materials have needed to evolve.

“EPDM caps are now starting to become popular for lower temperature finishing processes,” he says. “Thinner powder coating tapes have been developed which are easier to use on curved surfaces. Higher temperature tapes are available to use on parts that are retaining heat during the coating process.”

And as in other areas of coating and painting, computerization has had a strong impact on how masking is designed

and produced. The hand-sketch might still be a factor in an initial discussion, but digital design takes over from that point.

“All our custom masking is designed using computer assisted design,” Gill says. “It is used when designing the custom mask, for printing a 3-D prototype and for designing the molding tool. It’s safe to say that it would be difficult to efficiently deliver a custom masking solution without using computer assisted design.”

There is a cost factor, obviously, in having masking custom-designed. However, this is often assumed to be higher than it is in reality.

“Yes, there is an investment for the masks and their initial design and development,” Gill says. “It’s essential, however, to consider the costs and impact of bad masking.”

“Problems with quality, customer complaints, inconsistent finished parts, rework and capacity problems can all be eliminated with a good custom masking solution. It’s important not to overlook the costs of those problems when you are considering the investment in custom masking.”

Custom masking, he emphasizes, can bring the masking



Making masks by unreliable manual methods (left) is increasingly replaced today with computer-design of custom masks and diecuts.

Photos: Caplugs

time of a product down from multiple minutes to seconds.

“Consider the typical masking environment,” he suggests. “The part is placed on the bench, tape is applied to the part and the tape is then trimmed with a knife. Compare that to the rapid peel and stick of a custom die cut mask or the rapid push on of a custom molded cap or plug. Custom masking will reduce errors, ensure consistency, speed up the process and deliver a quality product.”

Beyond the obvious savings at the masking stage, there are the savings that can be seen by bringing consistency to the process. Inspection times can be reduced, as there is confidence in the process. Reworks, which often include costly stripping processes and risk damaging the component, can be eliminated.

Production planning can be easier and more precise. And customer service is improved, as customer service agents are no longer dealing with

issues regarding badly masked products. “Accounting people are no longer spending their time researching and issuing credit notes,” he points out. “Quality control personnel are no longer completing non-conformance reports for customers. Good masking can positively impact all the areas of a business.”

Diecuts in particular have made market inroads in recent years. Diecuts are pre-cut pieces of masking tape made to the exact size and shape of the surface areas to be masked.

Echo Engineering and Production Supplies recommends diecut kits because they can be custom made to mask components that have multiple surfaces of different sizes and shapes, like an engine block. These kits reduce the amount of time spent looking for the right die cut piece. “They also ensure,” the company says, “that no surface in need of masking is forgotten as each kit can be made to the exact

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amount of die cut pieces per component you are coating.”

Another trick, employing plugs, is to order them in multiple color variations, for sizing identification purposes. Using multiple colors helps speed up the masking process, the company states as the user can quickly associate which cap or plug goes to its designated spot rather than wasting time sorting through a variety of different caps or plugs. Some of its customers reportedly use tie-dye plugs to avoid mixing with solid color plugs.

Custom-molded masks can also help decrease the amount of time spent on masking by speeding up the installation and removal processes. In some cases, Echo says, they can even reduce the amount of total parts needed to completely mask components.

Powder coating has its own specific requirements, since the application process is different to that for traditional paint. In particular, there is a temperature factor to consider, since the coatings need to be baked on, meaning the masking has to be suited to the application. However, there is no problem with liquid to deal with, so seepage is less of a concern.

Custom Fabricating and Supplies is another supplier of diecut masking. The company states that its rotary die cutting machines produce numerous standard diecuts for a range of procedures. “The diecutting method is determined by volume and lead time,” the company states. “Our staff has over 30 years of diecutting experience, including custom diecutting services.”

Caps ‘n Plugs expanded inventory levels at its Brampton, ON, warehouse, not long ago, also adding a high-speed tape slitter. This, said general manager Paul Hamilton, can slit any width, whether metric or in standard imperial sizes, of all popular masking tapes. Turnaround for cut tape for shipment is the same day, or next day at the latest.

As far as industry trends go, he says the main thing several suppliers report is more requests for different types of rubber compounds. High temperature silicone is also popular for higher temperature applications

And while it’s best known for hooks and racks, Mighty Hook provides an extensive range of masking caps and plugs, as well as special molded masking products. The company says it specializes in challenging designs.

It also produces silicone masking tubing, for masking threads, pins and tubing where a longer masking length is required. The tubing is flexible but sturdy enough for use in masking threaded, non-threaded or slotted holes, and is easily cut for desired length. Additionally, its silicone foam cord can form a tight seal in threaded and non-threaded slots, grooves, irregular shaped cavities and through holes.

Matching masking to specific needs will probably always require experienced skill. But as that experience builds, and suppliers adopt more creative and flexible solutions for plugs and masks, the precision and efficiency of what is available is only going to increase. ■