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MANUFACTURING PROCESS DECORATING

Decorating refers to those features that add aesthetic appeal and/or provide information for the user to read. More specifically, decorating for PEI manufactured enclosures includes silk screening, painting, engraving, and pocketing for labels, overlays, and membrane switches. Other processes employed by higher volume enclosure manufacturers are not offered by PEI simply because they either require tooling to be made and/or they extend lead-times beyond our business model. As such, at this time we do not offer pad printing or hot stamping. Should those processes evolve to where the tooling and lead-times fall within our operating parameters, we will certainly look into adding them to our repertoire.

Please note that there is more detailed information available for each of these processes on our Silk Screen and Painting pages. The information presented here is only meant to provide a guideline for how decorating fits into our manufacturing process.

Silk Screening

This is the most popular of the decorating processes we offer due to the low cost and short lead-times involved. In particular, for as little as \$150 a silk screen can be made and within a day or two, parts can be printed. Additionally, while there is setup time and associated costs involved with this method, typically they are less than most other processes.

Typically, we apply the silk screening image on flat panels and not on bent sub-assemblies or finished product. This means that the silk screening process takes place between the CNC routing and assembly operations. As such, silk screening may extend the lead-time of the final product's ship date by a day or more. However, depending on the complexity of the project, we may be able to concurrently perform silk screening and other processes such that the final delivery is not affected by this operation. Usually, this is achievable for the more complex projects where we can begin production of the silk screened panels first and then have them printed while other panels and/or operations are being performed. Unfortunately, for very simple enclosure styles, lead-times and process steps are so short that silk screening may delay the shipment by a day or so.

Painting

When we paint an enclosure it is done using industrial production equipment, which means you can expect a very professional job with excellent visual appearance. No streaks, no swirls, no drips, no spotting, no flaking. Just a clean, smooth, uniform application of paint that is virtually bonded to the plastic surface.

However, to accomplish this high quality paint application involves a somewhat longer lead-time for supplying the finished product. Depending on the specific enclosure design, we may have to assemble and mask each panel before applying the paint. Then once the paint has dried, we would have to unmask and clean (masking tape glue, over-spray, etc.) the units before final inspection and packaging. As such, the painting process is not typically done concurrently with other process steps, but rather after final assembly, which ultimately extends the delivery lead-time. Also, if silk screening is required on a painted part, those two processes will have to be performed sequentially, which will further add to the leadtime projection.

Engraving

Of the decorating methods used by PEI, those requiring CNC machining may impact cost and lead-times the least, depending on the production quantity. Because engraving is done during the CNC

operation, it does require engineering time to develop the decorative/text file, however, that amount of time is usually no more costly than creating a silk screen or developing the masking for painting.

As for the actual machining process, again our experience is that compared to the other processes this can sometimes be a better alternative to silk screening, depending on the quantity and final application. However, we also find that the majority of the decorating that is done with silk screening would not be a good candidate for engraving due to the amount, size, and legibility of text as required by the customer. For logos and simple labeling, engraving is an ideal candidate, especially if no other silk screening is involved.

If you have any questions on any of our decorating processes, please do not hesitate to run it by us for input or direction. With our years of experience in designing enclosures, we can provide guidance on which would be the best method for your specific application.

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