SHEPHERD

ShepherdReport

VOLUME #1 ISSUE #2

Message From the President

One Saturday morning last fall I was playing golf with a friend who happens to be a VP with an automotive parts manufacturer. While walking down the fairway he mentioned that one of his pet peeves is the packaging of the parts that his company produces. He went on to give an example of an automotive interior part that seemed over-packaged. He questioned why it had to be this way when it was just going 15 minutes down the road to the customer's assembly line. The answer he received was "because that is the way it has always been done". The reality is that the process needs to be reviewed and updated.

I have been in or around the packaging industry for 40 years and while huge technical advances have been made in packaging in general, industrial packaging is only now starting to get the attention it deserves.

For example the car companies don't manufacture cars these days. They just assemble all the parts. This is also true in the electronics and appliance industries. It's a new phase of doing business today - especially for the large manufacturers. Parts manufacturers specifically are becoming so specialized and automated, that they too have smaller sub assemblies built elsewhere. Parts will travel from plant-to-plant with operations performed by robots without flesh and blood involvement. It is a phenomenon that has evolved out of the necessity to compete globally. But it also gives packaging an even more vital role in the key areas of material handling and logistics.

It creates a need for more trays and pallets that can be handled by automated equipment, loaded by robots and stacked securely.

Wood pallets and corrugated boxes with loose partitions are no longer acceptable. Trays and pallets must have the capability of nesting when empty for efficient return to the subassembly plant. They must also stack neatly when full for maximum density and protection to the product while in transit. Our Engineering staff is constantly involved in the design of "Transit Trays" and pallets that can provide these qualities. Customer parts and sub-assemblies range from very small power accessory buttons to complete seat assemblies that ride on custom pallets made from 3/8'' thick ABS. Where the gauge of the tray is light we will run it on one of our roll-fed lines.

If your company has a need to move parts more efficiently at less cost, please contact us. Our engineering department will be happy to explore some solutions with you.

Sincerely,

Barry Shepherd
President

Inside This Issue

Precision Tooling is the Answer

Definition: "Thermoforming" - The process of heating a plastic sheet and forming it into the shape of a mold using primarily, vacuum.

Sounds simple enough. So simple in fact that it is possible to form a shape this way using a kitchen oven and a vacuum cleaner. So why are there not thermoforming companies springing up on every corner? Precision Tooling is the answer!

Thermoforming evolved from its primitive beginnings, to a process that more and more duplicates injection molding. It has progressed to the point where it is sometimes very difficult to tell a thermoformed part from an injection molded part. That's because thermoform tools are now designed and built using the same technology as injection molds. There is one very noticeable difference however. Thermoform tools require the precise shape to be machined into (continues on page #2)

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The Vacuum Formed vs. Fiberglass Challenge

If your manufacturing process utilizes fiberglass reinforced components or gelcoat fiberglass parts, we have an interesting challenge that could result in big cost savings for you.

At Shepherd we can produce vacuum formed parts that are the same components as the high cost, low production level fiberglass parts. The big plus is that moving to vacuum formed parts increases production, reduces space and achieves substantial cost savings.

How does vacuum forming compare to fiberglass in actual production runs? Typically you can produce 3 to 4 components using a mold, gelcoat and fiberglass reinforcing per shift. Shepherd produces the same component using similar tooling, but at a rate of 6 to 10 parts per hour - or even more depending on the thickness of the material. That's a lot of extra production at the end of the day! We also offer a variety of co-extruded materials such as an acrylic surface capped over ABS for products requiring good surface properties.

The in-depth testing we have done on the adhesion of various extruded materials has resulted in a superior product that has excellent bonding characteristics with polyester resins.

Please give us a call, use the enclosed fax-back response or e-mail to have us show you how easy it is to convert gelcoat or fiberglass to vacuum formed products that have similar or greater structural properties. Contact information is on the bottom of the back page of this newsletter.

Typical Components Using Vacuum Forming

- **Bathware components such as skirts**
- **Pool steps using co-extruded materials**
- **Transportation components such as wind deflectors and roof bins**
- **Building components such as shutters**
- **RV and marine components**

Precision Tooling is the Answer (continued)

only one mold whereas injection tools require 2 halves that come together to form the cavity into which the plastic flows. In thermoforming the side of the plastic sheet away from the mold is "assisted" into and over the mold by machined assist plugs, perimeter plates and air pressure.

High-speed roll-fed thermoforming has made the use of non-metal mold materials less popular because non-metals cannot be easily cooled. Today, it makes no sense to use wood or epoxy or composite molds on thermoforming equipment that can heat the sheet 4 times faster than the cooling [or forming] time, unless of course you are only producing small quantities where cycle time is insignificant in the total cost. Likewise, the larger, sheet-fed machines, which still run the non-metal molds are being built with 2 heater banks in a rotary format, cutting the heating time in half and making the cooling or forming part of the cycle significant. It is that part of the cycle that dictates the speed at which parts can be produced.

Some industries (like bath-ware) have clung to the use of epoxy and fibreglass molds for the simple reason that run quantities are small and variations in mold shapes are numerous. Many operations in this type of product line still have single- station shuttle machines which only have one heater and a very long cycle time. Tooling for these molds usually starts out as a wood pattern, which is used to cast the final tool.

When Shepherd Thermoforming is asked to design a new part, whether thin gauge roll-fed or heavy gauge sheet-fed, we start with a CAD drawing which we will convert to a CNC program and finally to the tooling. This CAD file contains every detail including the trim lines. CAD files are used to economically produce molds, assist tools, steel rule dies, forged dies, matched metal dies, and CNC router programs. The CAD file is the key to precision. In many cases customer CAD files of their product can be used by us to produce the thermoformed part more precisely and more economically. Although Shepherd has run non-metal molds for customers when requested, we prefer not to use this process. Molds become soft or deformed over time. The lack of temperature control in the mold results in inconsistent part thickness. Repairs to the mold are costly. Shepherd will repair aluminum tooling at no charge but must charge for repairs to non-metal tools.

So although there are cheaper ways to build a tool to form plastic, our commitment to quality and customer satisfaction recommends against them. Precision tooling is always the answer for professional results.

Shepherd Wins Dupont Silver Packaging Award

Product innovation and teamwork are key factors in Shepherd's success in developing new packaging products for customers.

In 2004 Shepherd Thermoforming and Packaging won a prestigious silver award from Dupont and the Society of Plastic Engineers. The award was for the "Bee-O-Pak" honey collection system developed in conjunction with Bee-O-Sphere Technologies in St. Williams, Ontario. The product is a plastic container that bees fill directly (believing it to be a honey comb) and it is marketed simply by snapping on a cover and affixing a label. For the complete story go to the Shepherd website **www.shepherdthermoforming.com** and click on the Shepherd Newsletter.

From the Funny Bone

Mrs. Peters was in deep mourning, for her husband, a tugboat operator, had fallen off his boat and drowned.

"I'm terribly sorry", a neighbour told her soon after the tragedy.
"Did he leave you well provided for?"

"Thank goodness, yes", Mrs. Peters replied. ***"He left me over $500,000."***

"My, that's marvelous for a man who could neither read nor write".

"Nor swim" sighed the widow.

Meet Greg Henderson

Greg Henderson is a self proclaimed "hands-on" type of manager, which is a key quality for the man who heads up Shepherd's Plant Maintenance.

Greg is a 1985 graduate of Georgian College in Owen Sound Ontario, specializing in Marine Engineering. He spent the first few years of his working life onboard cargo carrying ships (Greg labels "floating cities"), plying his trade as a specialist in the electrical/ mechanical field. He regained his land-legs later with maintenance roles in the automotive and electrical switchgear manufacturing industries.

Greg has been with Shepherd Thermoforming 2-1/2 years and is part of the management team. He believes very strongly in promoting preventative maintenance and safety on the job where equipment is involved. Greg says it is more cost effective to anticipate manufacturing equipment problems before they happen than it is to be surprised by them after.

He lives in Mississauga, Ontario with his wife and two young sons, ages 4 and 1 year. Greg's dream is to someday re-build a classic car working hand-in-hand with his two boys.

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Another Success Story From Shepherd

In the vacuum formed vs. fiberglass article in this issue, we outlined how in general, vacuum formed parts are more cost effective than their fiberglass reinforced or gelcoat fiberglass counter parts. That proposition became solid fact for a Toronto area major spa manufacturer who was using 600 square feet of prime production space to house 20 gelcoat molds used daily to produce 30 parts needed in their fiberglass operation.

The customer required a vacuum formed part that would duplicate the current component and would bond well to polyester resin and successfully pass a water pressure holding test for the spa. The vacuum formed part would be bonded to the fiberglass shell with special polyester putty and sprayed with a fiberglass chop to complete the spa.

Our Engineering group came up with the exact adhesive to bond the vacuum formed part to the fiberglass shell so that it does not delaminate or cause leaks. We next made a mold from high heat material (suitable for vacuum forming), using the customer's original gelcoat master mold. Volume justified a two-up mold in which 2 parts could be formed every five minutes.

The vacuum formed mold was completed in 3 weeks and samples produced. CNC programming by Shepherd engineers created an automatic trimming process, overcoming the inconsistencies of hand trimming under the previous system. Prototype parts were delivered to the customer and tested very satisfactorily. The success rate compounded and within a few months all production was converted to vacuum formed parts.

How productive was the move to vacuum formed parts to the spa manufacturer? Their current volume of spa production would have meant that floor space and man power would have to be almost doubled to make enough fiberglass sub-components to keep up current production. With vacuum formed components they saved time, space and money. With innovations like these we keep our clients "out of hot water" and into increased production.

Response Corner

Can we be of help? Do you have a question about our technology or policies or require a quotation? If you do, please send your request to Todd Shepherd, Vice President of Sales, e-mail **todd@shepherd.ca** and you will get a prompt response.

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