

# cycles times

PROACTIVE SOLUTIONS FOR COST EFFECTIVE CUSTOM MOLDING

OCTOBER 2002

## We're Investing In Your Business

BY LARRY MARTIN, PRESIDENT

Welcome to **Cycles Times** – our newsletter about investments we are making in technology, personnel, and business processes to keep our customers and Cycles competitive in today's rigorous global economy.

Cycles' original idea was to use technology and talent to improve quality and productivity for our medical, automotive, telecom, and consumer/industrial customers. We were largely focused on cycle time efficiencies.



In the 90's we partnered with customers to create better product designs, more cost-effective tooling, and to get them to market faster. The focus was on streamlining the entire process from design to finished product.

Today, we are taking the initiative to develop new technologies, investigate global sourcing partnerships, and expand our manufacturing capacity to give you a competitive advantage when we are called upon.

In this issue you will read about our new 2-shot molding capability, contract manufacturing, the addition of talented staff, and progress on our Asian mold sourcing initiative. In the next issue you will learn about how doubling the size of our facilities next year will give us the flexibility to respond quickly to your changing needs and high volume capacity requirements.

If you are searching for a way to get parts faster, better and less expensive, we're relentlessly working on it. Please talk to our regional sales managers.

Advanced 2-shot molding cell recently installed at Cycles (see story inside)



Jim (l) and Chuck (r) on the molding floor

### New Cycles Teammates

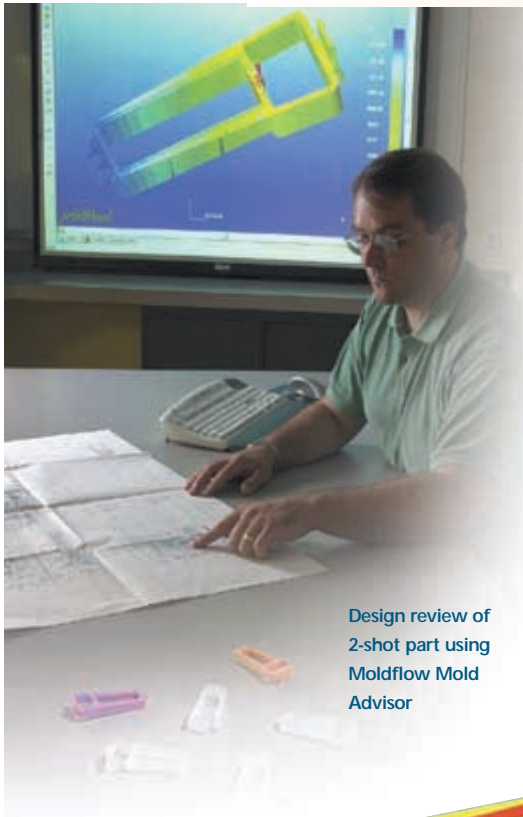
**Jim Liebke.** After a 30-year career with the Gillette Company, Jim Liebke has joined Cycles as Plastics Process Engineer. Jim comes to us from one of the world's largest captive molding shops, which operates 100 presses manufacturing 25 million parts a day. One of the first processes Jim will become immersed in at Cycles will be 2-shot molding. His involvement with this goes back to the early 90's with the introduction of the Sensor Excel razor. That was the kick-off for a long run of 2-shot introductions and, ultimately, the expansion of capacity to include sixty 2- and 3-shot presses.

**Chuck DUBY.** Our newest Project Engineer, prior to joining Cycles, had been Production Manager, Plant Manager and Engineering Manager for two of the largest custom molding companies in the country. Now he will be using his exceptional engineering, automation application and program management skills to champion special projects to give our customers a unique competitive advantage in the marketplace.

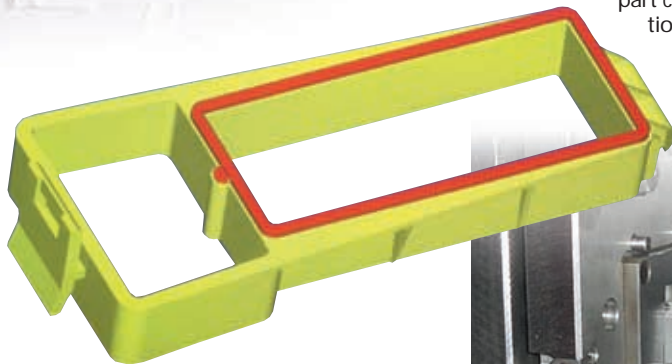


## 2-Shot Molding – Ready When You Are

**definition:** *Two-color molding, multi-material molding, multi-color molding, 2-shot molding, and 3-shot molding, all refer to a process for manufacturing parts that integrates two or more types of dissimilar materials to produce a unique appearance, feel or performance advantage.*



Design review of 2-shot part using Moldflow Mold Advisor



2-shot part designed in SolidWorks®

Cycles has installed an advanced 2-shot injection molding cell consisting of a 120 ton Ferromatik machine along with a Foboha rotary turntable and a 1x1 cavity mold. Both companies are considered leaders in their fields.

The new system will be used to manufacture a critical component for reagent delivery in automated, slide-based laboratory equipment. The two materials are polypropylene and Kraton®. The first is a rigid substrate; the second is a thermoplastic elastomer used to create a seal for retaining a reagent solution around microscope slides during a diagnostic test.

The 2-shot molding system will be used to replace a labor-intensive manufacturing process in which the two-material part is manufactured using two molds and two molding machines and a full-time operator. This process is called over-molding.

The 2-shot process provides a more cost effective process, more precise control of quality, and dramatically reduced part costs when production is scaled up from a 1x1 to a 4x4 cavity mold.



Within a few months, this project will utilize 40% of the 2-shot machine's molding capacity. Our goal is to add new projects to fill the machine to capacity and buy more machines to suit additional demand.

### Numerous Applications

Cycles has chosen the best equipment for developing highly stable and productive manufacturing processes.

Some applications for the 2-shot process include:

- Overmolding of different colors or specialized product features for either cosmetic or functional advantages.
- In-mold assembly to reduce manual operations and manufacturing complexity.
- Using a softer second material on handles and switches to impart a tactile quality for greater perceived value and consumer appeal.
- Using a sound damping material for noise attenuation or to minimize the rattle of plastic parts.
- Material cost reduction by sandwiching less expensive materials underneath or within more expensive resins.
- Sandwiching heavy materials in a part to create higher perceived value or improve the weight distribution for better balance.

(1x1) 2-shot mold with part ready to eject

# ip In Process

## Contract Manufacturing: Improving Your Logistics

Doing as much as you can in one place and at one time simplifies manufacturing logistics to reduce costs, improve quality, and shorten the time it takes to go from raw material to the finished product. That is why we have invested and will continue to invest heavily in our contract manufacturing capabilities.

The turning point for us came in 1998. We were chosen by a medical device company to be their single source injection molding supplier. The project required that Cycles ultrasonically weld two molded components and

insert a purchased part inside a class 100,000 clean room. The easiest and least costly approach would have been to simply purchase an ultrasonic welder and put it under an existing clean room tent. Instead, we took a long-term approach and built a clean room assembly area that could be expanded as volume increased.

Our clean room has already doubled in size and our plan is to double it again. Cycles' clean room contract manufacturing capabilities include: ultrasonic welding, adhesive and solvent bonding, hot-stamp decorating, pad printing with oven drying, manual and semi-automated assembly and packaging.

Of course, a clean room assembly area is not always the final answer in manufacturing logistics. Why send parts "all the way" to our clean room if many or all of the aforementioned steps can be performed beside the press. Imminent doubling of our plant capacity will give us the space to customize these integrated manufacturing efficiencies to suit your product.

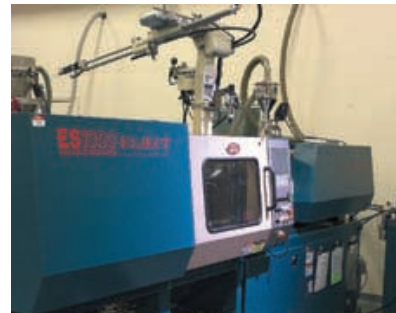
Yes, we want to mold your parts. We also want to help you get your sub-assemblies and finished products made and delivered with greater efficiency. Talk to us about contract manufacturing.



Class 100,000 clean room assembly area

## New Molding Equipment

Cycles installed a new 80-ton Nissei electric machine in May. Based on the success we are having, it is our intention to incorporate electric machine technology for all future machine purchases.



## Asian Mold Sourcing

Manufacturers are well aware of the potential savings that can be realized by having injection molds manufactured in Asia, particularly China. They are also deeply concerned about potential problems. These include greater potential for miscommunication with the tool builder due to distance and language barriers, longer lead times for shipping and qualifying of tools, and the absence of local engineering support.

Cycles is currently working with a number of customers to fulfill the upside and minimize the downside of Asian mold sourcing. We are currently building ten new Class 101 production molds at five different suppliers in China and Taiwan. Savings to our customers can range from 30% to 50% depending on where the mold is built, complexity and cavitation.

We are working closely with our Asian mold-building partners to troubleshoot communications processes to assure precise execution of design intent and streamline deliveries. Our customers will get the best of both worlds – lower tooling costs and responsive local engineering support.

On many new jobs, we will be quoting tooling from both domestic and Asian sources to demonstrate the potential savings to our customers.

## Coming Soon!

Plans are moving forward to acquire a nearby facility that will instantly double our manufacturing space and allow for twenty additional machines. The new plant will be used initially for 2-shot molding, insert molding, larger presses (150-tons and up), and mold-making operations. Moving our 150- and 260-ton machines to the new plant will reduce the number of presses at the Sterling facility from 28 to 23, giving us more room and better efficiencies. Our new facility will have space for larger machines, automated rotary insert or molding cells, decorating cells, and assembly. Look for more details in the next issue.

# The Front Lines

## You Want It Delivered When?



PAUL NICKERSON  
VICE PRESIDENT, SALES AND MARKETING

On a recent Wednesday afternoon, one of our automotive customers received PC boards from one of their suppliers that were too thick to fit the Housings that we mold for them. Their customer was expecting delivery of the assembly in just a few days. To redesign the circuitry and produce new PC boards would have taken three weeks.

The bottom line was that our customer needed 20,000 modified Housings with larger slots to accommodate the thicker PC boards by the following Monday. The problem had to be resolved over the weekend to allow the components to be assembled and delivered to prevent a line shut-down.

We met with the customer the next day, Thursday, and brought the steel with us for better clarity of the work to be done. We worked out a plan together, which involved having the cores plated to increase the width of the slot.

David Butler, our Project Engineer, hand delivered the tooling to the plater on Thursday after the meeting. David picked up the plated cores early the following Monday morning and delivered them to our in-house tool room by noon.

At 4:00 PM Monday we installed the mold. By 4:30 PM we were making acceptable parts. By 7:00 PM the customer was on his way back to his plant with 800 new components so that assembly could begin immediately.

We are not about excuses. We are about results!

## The Inevitability of Change

RICK MAHAN, REGIONAL SALES MANAGER

As we all know, the one thing we can be sure of when we get involved in a project is that it will change. That change can range from simple tooling requirements to complete part redesign.

One of our medical customers had been forced to redesign five parts in order to conform to a regulatory group decision. They would have only one month to fill the pipeline with redesigned parts or risk losing market share.

As of Monday, we had design changes to implement in all five molds. This very aggressive schedule called for 1,000 sample parts to be assembled at the customer's offshore facility one week later before production could begin.

We were able to do the conversions to all five molds by Friday.

The last tool to be tested went into the machine on Friday afternoon.

The parts were sticking in the front half of the mold. We tried many ways to solve the problem but were having difficulty getting the mold to run consistently.

By midnight Friday, Tim Blake, our Project Engineer, together with the customer, made the decision to add front half ejection. This intensive mold revision was completed over the next eighteen hours.

We were back in a machine making parts to specification late Saturday night. Sunday we hand delivered sample parts to the customer, who personally flew them to their off-shore facility for a Monday morning arrival.

All parts were immediately approved and production commenced on five machines simultaneously. Over the next three weeks we were thus able to meet the requirements for each part on time.

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