

- P1** Key to Successful Mold Design
- P1** Thermotech Opens Plant in Monterrey, Mexico
- P2** Introducing Thermotech's New Monterrey and Queretaro Plant Manager
- P3** Introducing Thermotech's New Global Customer Service/Resource Planning Manager
- P3** New Juarez Quality Manager is Welcomed Back
- P3** Company Cookbook is a Success
- P3** Three Times a Winner
- P3** Nexteer Presents Its Perfect Launch Award
- P3** Saturn Electronics Celebrates Their 25th Anniversary
- P4** Participants in Children's Hospitals Golf Benefit
- P4** 2010 Chairman Award Winners
- P4** Family Event Planned
- P4** Planning Ahead

Key to Successful Mold Design

By Matt Mahmood, COO

Tooling Feasibility Studies are most effective early in the design of a plastic part before designs have been submitted for approval, testing, or production. The first aspect of a study may be to review the part design for features that may require complicated mold actions and to offer suggestions on how to improve the design and reduce the mold cost. Another aspect of a Feasibility Study may be to look at ways of combining multiple plastic parts into one part in order to reduce the number of molds required to produce a plastic part assembly. Finally, a study may go



so far as to provide mold assembly drawings that illustrate key components and material selection and then submit those designs along with the OEM's mold RFQ's so that they receive back accurate "apples to apples" quotes from their mold vendors.

Up-front mold design allows the engineering team to explore all feasible alternatives early in the process and reduce costly changes later. It prevents the tool builder from wasting a lot of effort having to rework tooling and avoid producing an unacceptable or expensive part. The way to design molds today is not just taking the final product design data sent from the customer, construct parting line surfaces and enclose them with a mold base. You should discuss any improvements or potential issues with the customer. Communicating slight changes in the part design will lead to considerable time and cost savings.

Continued on Page 2...

Thermotech Opens Plant in Monterrey, Mexico

As part of our ongoing initiative to meet growing global customer demand in the manufacturing marketplace, Thermotech is proud to announce the opening of its first operating plant in Monterrey, Mexico. Monterrey hosts the largest industrial zone in Mexico and boasts the third largest population in the second largest metropolitan city in Mexico. The addition of the Monterrey facility offers Thermotech a strategic step towards expanding its operations to deliver more cross-border and maquila services.



The 85,000 square foot facility will be located at the former Wisconsin-based UFE's molding plant in the City of Guadalupe, a suburb of Monterrey. The plant will have 27 injection molding machines ranging from 75 tons to 385 tons, which include 11 electric molding presses. With more than 90 full-time and temporary employees, the facility operates three shifts on a five-day work week schedule, which includes full in-house mold repair, component assembly and metrology. Monterrey is known as home to hundreds of North American, European, Asian and Latin American companies who are demanding for more technical molders to meet their molding needs.

Thermotech expects current and prospective OEMs/customers operating maquiladoras to leverage the Nuevo Leon region's business climate of low labor costs, high technology mix and logistic benefits. The diverse market in the Monterrey area offers us opportunities in the automotive, heavy industrial equipment, household appliance, consumer products and electronics industries. To meet market growth, we plan to invest and improve capabilities and resources at the facility while ensuring continuous improvement.

Key to Successful Mold Design continued...

Reduce Lead-times with Concurrent Product/Mold Engineering

It's been proven that lead times can be reduced by an average of 25 to 35 percent with concurrent product/mold engineering. From initial marketing suggestions to final product delivered, there were considerable time and cost reductions. A 10-month project delivery can be cut down to six months just by supervising the progression of actions throughout the entire development process.

Recently, an undisclosed OEM that manufactures small engines had contracted our help with the development of its upcoming series of various components. The project consisted of several different parts to be made for different assembly versions and of diverse. The customer's product design team was very knowledgeable as well as open and eager for new suggestions.

After brainstorming the initial concepts, conferencing and cooperating, the original number of parts needed was condensed; the number of molds to be built was reduced by combining them with interchangeable inserts in the tool; and, many features of the parts were simplified that would have caused unnecessary lifters, floating plates and side actions. The team figured out how to over-mold the gasket element inside the housings by using one of the tools to be built and gear it for co-injection.

This interaction not only saved a tremendous amount of time by dropping the number of parts, it also reduced the tooling cost radically because the molds were fewer and much less sophisticated.

Parts were designed; molds were concurrently designed and built; plastic parts were approved after minimal adjustments to the tool due to steel safe provisions made on critical areas; and, molding production was achieved in a six-month period. The tooling budget was reduced 25 percent from initial forecast, and the target piece part cost was condensed by 15 percent due to enhanced cooling and easier "processability" of the mold. The OEM declared that the turnout was historically successful. The most gratifying aspect of this project was that in addition to the fast turnaround, the project was under budget, met time constraints, and its production stayed in the U.S.

If you want to shrink lead-times, reduce manufacturing costs and create a competitive edge, get a competent mold designer like, Thermotech, by your side before the product design gets developed. You can have a high rate of return for a relatively small time investment. With an open mind, forward-preventive thinking and a unified vision you too can save time, money and design for manufacture.

By involving Thermotech's tool design team early in product development, you can reduce turnaround time by weeks or even months, shave weeks off the mold construction cycle and reduce costs by eliminating potential product design troubles.

Introducing Thermotech's New Monterrey and Querétaro Plant Manager

Rodolfo Madero is the new Plant Manager for Thermotech's Queretaro and Monterrey facilities. Mr. Rodolfo's primary role will be to direct day-to-day operations at both facilities. He will be reporting directly to the General Manager of Mexico Operations.



As the former Plant Manager at UFE's Monterrey, Mexico facility, he brings over ten years of experience in operations and sales management. He has a solid technical and commercial background on manufacturing; namely, in thermoplastic injection and assembly in automotive and non-automotive environments. Rodolfo's strong abilities to manage complex projects, build and manage customer relationships, and hands-on experience with lean manufacturing and continuous improvement will prove invaluable to the company.

Suggestion Box is Working



The new suggestion box that was put in place in late January is proving to be a success.

To date, we've received 12 suggestions: Eight were accepted, two are under review, and two were rejected.

Please keep them coming!

Introducing Thermotech's New Global Customer Service/Resource Planning Manager



Thermotech is happy to welcome Sergio Cercado as its new Global Customer Service/Resource Planning Manager. Sergio has 38 years experience in manufacturing. His most recent experience was with UFE, where he was employed since 1998. During that time he held the positions of Purchasing Manager and Corporate Master Scheduler for their United States and Mexico facilities. His responsibilities included customer service planning and scheduling functions supervisor. Sergio's expertise and familiarity with the plastics business in general will benefit all Thermotech locations.

New Juarez Quality Manager is Welcomed Back



Maggie Perez has joined the Thermotech – Juarez team as Quality Manager for that plant. She brings many years of quality and plastics experience with her. Since Maggie had worked for Thermotech before, she is already familiar with many of Thermotech's systems, as well as the parts and customer requirements

Company Cookbook is a Success



The Pioneer Plastics' companies put together a company cookbook for the purpose of not only making a connection with all its plants, but also to raise money for the Cancer Kids Fund. The Fund provides support, care and comfort to children and families coping with cancer or blood disorders.

On February 23rd we were able to present a check for over \$1,400 to Heather Riddle, Foundation Officer for the Children's Foundation. The Company covered all expenses associated with producing the cookbook, which meant every dollar in sales went directly to the Cancer Kids Fund. Future profits from sales will also be directed to the Fund.

If you're interested in buying the "Cooking to Fight Kids Cancer" cookbook--for only \$10--just call 952.933.9481 to place your order.

Three Times a Winner

Pioneer Plastics, Inc. has been selected as one of the "Top Businesses" by DiversityBusiness.com for the third year in a row. As stated by Kenton Clarke, President and CEO of Diversity Business.com, "You have distinguished yourself as one of the top entrepreneurs in the country and are most deserving of this award and recognition." Pioneer Plastics will be honored at the 11th Annual National Business Awards Ceremony and Conference being held in Washington, DC on April 19-21, 2011.

Launched in 1999, DiversityBusiness, with over 50,000 members, is the largest organization of diversity-owned businesses throughout the United States that provide goods and services to Fortune 1000 companies, government agencies, and colleges and universities.

Nexteer Presents Its Perfect Launch Award

Thermotech recently achieved a Perfect Launch for a Nexteer Automotive Corporation's critical new program. The customer's expectations for APQP, PPAP and launch were extremely high. "Thermotech rose to the challenge and met Nexteer's requirements for a Perfect Launch," according to Lois Alverson, Nexteer's Global Director of Supplier Quality".

On March 2nd, Thermotech was honored to have David Gottschling, Nexteer's Senior Advanced Quality Engineer, present the Perfect Launch Award to our staff.



Saturn Electronics Celebrates Their 25th Anniversary

Saturn Electronics was kind enough to include Thermotech in their 25th anniversary celebration in November. As a "thank you" to all Thermotech employees for their hard work, Steve Challis, Saturn's Senior Supply Quality Engineer, hosted a pizza party for all three of Thermotech's production shifts and office personnel.

Our congratulations to Saturn!



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Awardees





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Participants in Children's Hospitals Golf Benefit

Representing the Pioneer Plastics companies at the 20th Annual Children's Hospitals Golf Benefit on June 13th will be Harland Tonnell from Thermotech and Jody Anderson from Group Tool. This year's proceeds will benefit the Family Needs Fund and the Pain and Palliative Care program at Children's Hospitals and Clinics of Minnesota. The Family Needs Fund provides emergency grants to families in crisis that do not have the means to meet their child's medical needs. The Pain and Palliative Care Program focuses on relieving the pain and suffering of a child. We know we'll be well represented.



2010 Chairman Award Winners

The 2010 Chairman Award winners were announced at the Company's December 17, 2010 Summit Meeting held in Hopkins, Minnesota. Award winners were Nathan King, Senior Product Engineer at Pioneer Plastics; Lambros Miras, Process Engineer at Thermotech – Juarez; and Volker Kientzle, Tool Design Manager at Thermotech – Hopkins. Congratulations to these outstanding employees.



Family Event Planned

Pioneer Plastics and Thermotech employees and their families are invited to a Family Fun Day on Saturday, May 21st.



The event will include a barbecue, tour of Thermotech's production

area, games and prizes, face and tattoo painting, balloon creations, clown and magic show, plus a lot more to entertain all ages.

Planning Ahead

Thermotech will be exhibiting at Gear Expo at the Duke Energy Convention Center, in Cincinnati, OH November 1-3. Gear Expo is the only trade show dedicated to the complete gear manufacturing process. They'd welcome your visit in booth 210.



Pioneer Plastics will be exhibiting at the MD&M Minneapolis at the Minneapolis Convention Center November 2-3. For nearly 20 years, MD&M Minneapolis has been the trusted resource for what's next in medical design and manufacturing. Regardless of your particular design and development objectives, MD&M offers everything you need to drive your project to the finish line. If you have the chance, please stop by to see them in booth 1050.

