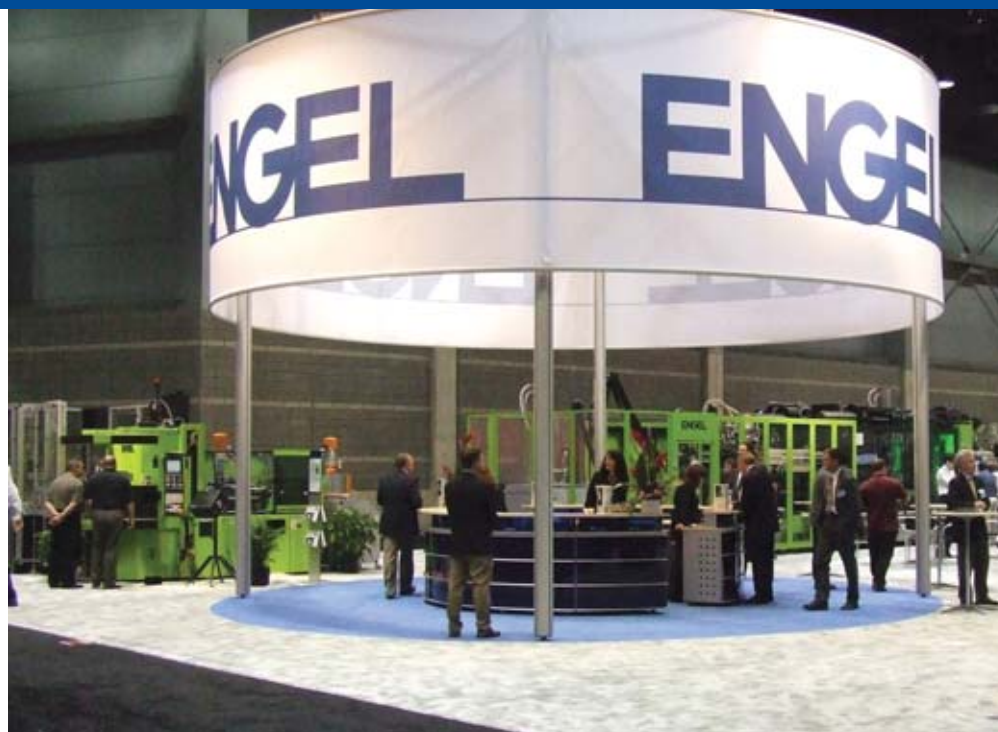


>> The National Plastics Exposition – NPE 2006 – recently held in Chicago, Illinois was a busy week for staff in the Engel booth. Overall visitor registration was up 9% over the 2003 figures, and traffic at the Engel exhibit reflected this increase.

Staffing of the booth included personnel from Engel's North American facilities, as well as representatives from Austria, England, Korea, Japan and South America. This was a good fit to the attendee demographics, as NPE 2006 attendance of international visitors was up 33% over NPE 2003, accounting for 25% of all visitor registrations.

"While the unprecedented participation by international exhibitors and visitors certainly contributed to the high level of excitement at NPE 2006, it was only one of the factors causing this show to mark a turning point in NPE history," said Walt Bishop, SPI vice president of trade shows. "In preparing for NPE 2006, SPI developed innovative programs that would broaden the technological content of the show, attract new kinds of participants, and increase the value of attending."



NPE 2006



Quality by Design

For molders in the medical and teletronics industry, where precision is not a requirement but an expectation, Engel featured two all-electric E-Motion machines.

The ENGEL E-MOTION 110 Combi US – all-electric, LSR/PBT two component machine – was introduced, offering molders unlimited cost savings and design possibilities not available previously in all-electric machinery.

The reality of **defect free molding** was shown with the all-electric ENGEL E-MOTION 60 US and integrated RJG Decoupled Molding technology, with Engel being the first machine manufacturer to incorporate and support this industry accepted molding philosophy via screen layouts imbedded in the control logic of our new CC200 controller.

A crowd-drawing-display was the ENGEL DUO 1650 US Combi-M, which was molding a two color sunroof panel using Engel's unique GLAZEMELT technology. The Combi M multi-injection unit configuration, designed specifically for the DUO machine, allows for the use of a stack-type multi-component tool.

As well as equipment displayed in our own booth, Engel equipment was also showcased through-out the exhibit halls in the booths of six partners, running applications from technical molding to high speed to in-mold decorating and assembly.

Excellence by Design

With the co-operation of many industry partners, Engel provided show visitors with a broad display of industry-leading technology, demonstrating our leadership in the North American market, and giving many reasons to consider their visit to the NPE as time well spent. <<

The Power of Green

Engel's 14,000 square-foot booth showcased seven fully automated cells, and unveiled some of our newest, most innovative machine technologies to the North American market – reflecting **The Power of Green**.

The new ENGEL SPEED machine line, designed specifically for the packaging industry, was introduced with a display of two fully automated cells utilizing the ENGEL SPEED 300 US. One cell showed the true speed of the machine, molding and removing parts in only 2.7 seconds. The second cell incorporated an in-mold labeling system, loading a 3D lens, removing and packaging the finished parts - in less than 8 seconds! A third cell, incorporating the ENGEL SPEED 200 US, was displayed in a partner's booth, also showing IML technology.

Expanded Customer Service and Support for North America New Training and Technical Center Added at Engel, USA

>> Engel has opened its newest technical center and training facility at its manufacturing facility in York, Pennsylvania. Located in the factory where Engel produces machinery ranging from 600 to 1,900 US tons, this 7,500 square foot technical center houses a wide variety of machinery, automation and process technologies.

The new technical center was developed to give an added dimension to the customer service and support provided in North America. All equipment is available and dedicated for customer mold trials, product development, customer training and machine demonstra-

tions including automation. Prior to the opening of the York technical center earlier this year, Engel Canada had been the primary technical and training center for Engel in North America. The addition of the York facility expands capabilities – allowing demonstration/trial machines of a larger tonnage than could previously be accommodated, as well as providing customers an optional travel destination.

The Technical Center houses five machines. Equipment currently being showcased includes: a 200 ton vertical clamp rotary table machine designed for insert molding, a 165 ton Victory tiebarless press, a T-series all-electric 310 ton E-Motion machine, and two large tonnage – 720 and 1000 ton – two-platen Duo machines. All machines are equipped with integrated Engel robots as well as numerous options, ensuring they are well prepared for the requirements of any possible customer evaluation. In addition, the Duo machines can demonstrate advanced technology such as injection compression and platen parallelism, frequently required options for larger tonnage machines. Machines with both CC100 and the latest CC200 controllers are available for training and evaluation.



The latest Technical and Training Center in North America now provides large tonnage machines for customer testing, training and trials.

The new Center also includes advanced training facilities for customers, utilizing dedicated computer systems, plasma screen displays for simulation, as well as hands-on training on the equipment located adjacent to the classroom.

There are currently 14 training courses scheduled for the York facility in 2007 – including Basic and Advanced Operator, Large Hydraulics and various Control courses.

This newest Training and Technical Center compliments the current facilities operating at Engel in Canada (Guelph, Ontario) and Mexi-

co (Mexico City). With the addition of the Engel USA Training and Technical Center, Engel North America is better positioned than ever to service our customers. <<

>> For more information on the newest Technical Center, contact Brent Strawbridge (phone: 717 764 6818) or e-mail: brent.strawbridge@engel-ec.com

>> For more information on our Customer Training courses, visit our website or e-mail: training@engel-ec.com



Engel Customer Training courses include hands-on training to demonstrate and reinforce what is taught in the classroom.



TAH founder and CEO, Terry Horner, was one of the early developers of static mixing technology for the disposable, two-component adhesive and sealant industry.

Engel meets the challenge

After years of having their motionless mixers molded by a custom molder, Terry and his staff decided to purchase their own machines. The right machine for them would have to have the precision to close their smallest elements on a sticking part. Choosing four machine vendors including Engel, Terry gave each a challenge: he sent each manufacturer their smallest element (about 1/8" diameter) with the instruction to "close on it under molding conditions" to test the sensitivity of each machine's low pressure close safeties. The elements were to be taped to the mold face and then closed on.

>> Founded in 1976, TAH Industries is the brainchild of Terry Horner, an entrepreneur with both a strong background in chemical engineering and keen business insight. TAH supplies disposable cartridges and static mixers used for packaging and dispensing of two component adhesives and sealants. Their products provide excellent barrier properties for a variety of packaged materials, and the

Two competitors' machines snapped the test element in half, the third creased it severely. The Engel system, by contrast, did so little damage that Terry's people had to ask if Engel had indeed closed on the part. This demonstration, in addition to the excellent repeatability, ease of process setup and outstanding mold protection of Engel's machines, convinced Terry and his people that Engel was



TAH Industries

TAH + Engel: A Good Mix

company designs specialty mixers for specific applications such as the air-assisted adhesive spraying of truck bedliners. TAH's products service the construction, automotive, consumer, industrial, medical and dental markets.

TAH Industries was born literally in Terry's basement when he was working for Koch Engineering in New York. Determined to create a disposable static mixer that would work better with certain types of adhesives and sealants (such as epoxies and urethanes), Terry spent months making models and running experiments. The product of his efforts was his Stata-Tube™ model, the catalyst for TAH. Moving his operation from his basement to a rented Butler building, Terry realized his Stata-Tube™ design was not the ideal geometry for his niche market of two component adhesives and sealants, and turned his attention to disposable spiral mixers. He purchased his first plastic spiral elements ironically from a company that is now one of his chief competitors, and soon his tiny company began to grow.

Today TAH Industries occupies a 90,000 sq. ft. production facility in Robbinsville, New Jersey as well as a warehouse and distribution facility in Great Britain. The company employees approximately 200 people worldwide.

the only supplier who could meet their exacting standards. They immediately purchased three machines and a long, close relationship was born.

Today, TAH is still running those original three machines purchased in 1991. Indicative of the company's phenomenal growth, their facility now houses *thirty-three* Engel presses, ranging from 85 to 450 tons.

Looking to the future with Engel

Terry is convinced Engel's wide variety of molding equipment has played an integral role in his company's evolution. He praises Engel's performance consistency from machine to machine, their excellent technical support and their continuous improvement in controls and machine options. Engel has worked with TAH to reduce energy use with its smart pump design as well as electric and hybrid technology. Engel has also helped TAH better serve their customers by assisting in projects involving the automated assembly of molded parts directly from the molding press.

After more than a decade of growth, Terry's company shows no sign of slowing down. With the creation of TAH Europe Inc. in Great Britain, the company now maintains a strong European presence. Terry's next goal is to expand into the Asian market with a facility in Asia. No matter where their growth takes them, TAH plans to continue to manufacture new products that keep them on the leading technical edge of the industry. Having begun his company's long journey with Engel, Terry is confident they will be with TAH every step of the way. <<



Polycon Automotive Exteriors with Extra Drive

>> Polycon Industries is a Tier 1 supplier of exterior vehicle appearance systems to major automotive assembly plants in both Canada and the U.S. As an integral part of Magna International's Decoma division, Polycon specializes in the molding, assembling, packaging and shipping of RIM & TPO fascias (bumpers) and EPP foam shock absorbers. Established in 1991, Polycon employs approximately 1000 workers at their state-of-the-art production plant in Guelph, Ontario, Canada.

published specification and is providing a dry cycle time 10% faster than any other machine currently on their production floor.

The machine also features Tiebar Position Monitoring, technology that allows the individual pressure transducers of each tie bar to monitor stretch and tonnage load per tie bar. This technology provides the ability to identify tooling issues like mold parallelism, blocked valve gates or cores out of position.

With an expansive range of standard features and options, Engel was able to provide all the technical features required by Polycon.

The Engel Decision

Polycon purchased Engel's DUO 4400 Combi US, a machine which provides 4400 tons of clamping force with two injection units in piggy-back configuration. This machine allows Polycon to run single, dual or co-injection runs, providing extraordinary flexibility for production. Most importantly, the DUO 4400 has launched Polycon into a new level of technology and innovation, opening the door for new product types and business opportunities that were previously unattainable.

The plant managers at Polycon were careful in making their decision regarding the new technology. What turned them to Engel was an extremely competitive price, a delivery time that meshed with production requirements and rave reviews from sister divisions that had already benefited from the advantages of Engel technology.

Engel also offered many technical features that matched – or in many cases, exceeded – the offerings of competitive machines. One feature that drew Polycon's attention was the fast cycle time of the Engel DUO press. Once in production, the machine surpassed even the

The Perfect Fit

The smooth, fast installation of the DUO 4400 created minimal interference with current production, and the new machine quickly integrated with existing technology. Engel's CSD – Customer Support Division – continues the good work, providing unparalleled service technician and spare parts support, with timely response to all requirements, and Polycon management received excellent feedback from employees who were involved in Engel's training program.

From start to finish, Engel proved to Polycon that they made the right choice. Superior machine technology, providing the flexibility required in manufacturing today, with continuous support to keep Polycon a leader in their industry. All in all, the plant managers at Polycon agree Engel was the perfect fit to their production plant. <<

>> Note: Polycon were so pleased by their first press, that a second DUO 4400 US ton machine has been purchased and installed.



Polycon – first shot ceremony, personnel in photo (from left to right): 1. Wolfgang Kamleitner, Engel Service Technician – 2. Luc Senecal, Mould Maintenance Manager – 3. Mike Hamilton, Mould Engineering Team Leader – 4. Shane Kavanagh, Paint Area Manager (at time of picture, Mould Area Manager) – 5. Walter Jungwirth, President & CEO of Engel North America – 6. David Gray, Polycon General Manager – 7. Jim Marshall, Polycon Assistant General Manager – 8. Ary Van Eyk, Materials Manager – 9. Sylvain Dorion, Engel Service Technician – 10. Ken Schad, Engel Sr. Account Manager – 11. Franz Strohmaier, Engel Vice President CSD and Automation.



Machine assembly bay.



Office building with main entrance.



Low bay for parts manufacturing.



Basement für heavy machining center.



The office area.

Engel Machinery (Shanghai) Co., Ltd.

Building just completed

>> The project of the Engel large machine production plant in Shanghai is fully conforming with the master plan. By end of September 2006 – only 10 month after the ground-breaking ceremony took place – the construction works for the building had been completed, including the infrastructure like the utilities and electro supply, or the overhead cranes for the machine assembly bays. The machine tools are on the way. The office equipment is coming in and the computer systems are presently being installed and started up step by step.

In parallel with the final set up works the start up phases of the component manufacturing and assembling is taking place. In the first year of operation the production plan covers 30 DUO 2-platen machines between 650 and 1500 tons clamp force. The machine design and the technical specification will be identical as from the sister factory in St. Valentin.

>> The official opening and inauguration ceremony is scheduled for May 18th 2007, just before the Chinaplas fair, May 21-24th 2007 in Guangzhou. <<



>> With a joint effort of Engel Service in China, Austria and peripheral equipment suppliers TPS and Motan, Engel's first macPET system in China has recently commissioned. It is now running production at our customer site located in the upper Northeast corner of China – Harbin Hui Yuan Juice Co. Ltd, one of China's leading juice beverage producers.

The entire PET system including Engel machine, TPS mold and robot, Motan material handling system, was installed and put into operation in less than 2 weeks. As Engel's first PET system ever to be sold to China, Engel Shanghai and Austria operations made every endeavor to ensure it is running flawlessly. In order to achieve the goal of optimized system performance, Engel established a start up team with members from various related units that included: technician from CSD China; technician from CSD and PET BU Austria; technician from Motan China; technician from TPS Holland.

Engel Machinery is a global manufacturer of Injection molding machines and robots with a resource network that stretches around the globe for Technical Support, Customer Training, Spare Parts and Service. This PET system is fully supported through the Engel Machinery Shanghai operations and is serviced through our North China operations, to ensure our customer gets the fastest technical support when required. <<

China: HUIJUAN JUICE

First ENGEL macPET Installed and Running Programm in China



15th September 2006 – The new ENGEL macPET system at Huiyuan is running well (from left to right): Roland Lugmayr (CSD, Engel Austria), Steve Sun (Product Manager Packaging, Engel Shanghai), Owen Liu (Equipment Manager, Harbin Huiyuan Food and Beverage Co. Ltd.), Andy Fenske (CSD Manager, Engel Shanghai), Jürgen Rumpelsberger (macPET Team, Engel Austria).





China: PERLOS Positioned for success in APAC

>> Perlos story started 53 years ago in Helsinki, the capital of Finland. Through the clear strategic visions, high-quality service, and technical competencies built into company in past years, Perlos is nowadays a global, world-class supplier for top Mobile phone OEM's in the world.

In China, Perlos firstly started its operations in Guangzhou in 2000. One year later, representative office was set up in Beijing. Manu-

facturing plant in Beijing was established in 2003 and first parts were delivered to customer in Oct.

Perlos has responded to the rapid growth of Asia's markets by quickly strengthening its foothold in the region. Today Perlos is managing the high growth in Beijing by concentrating its production in two high-volume production plants, both in the XingWang industrial park. The second plant in Beijing started its

operations in early June 2006, which expanded company's production space with more than 20,000 square meters. Meanwhile a second plant in Guangzhou and a new plant in India are under construction. Perlos has also acquired competence for mould making by becoming a major shareholder for CIM Precision Moulds in China.

With the Beijing new plant, Perlos continues its company culture to serve customer with the best professional manner. Focusing on operational efficiency, production quality and cost, cycle time reductions, and training to personnel, Perlos has an ambitious target to attract more new customers into its global service network. The new facilities are built in a way that more assembly functions can be added into value-added service category. All the production facilities are based on ESD re-

quirements, which allows electronics assembly straight on plastics mechanics. With R&D functions located in the same building with manufacturing operations, technology professionals can support customers on R&D, testing and other areas.

Perlos' rapid growth in China has been supported by its suppliers. Today the company has more than 50 Engel machines in Beijing plants, including VC200 and VC330 Tech Pro. The first Vertical Injection Moulding machine and some new Engel 2K machines will be installed in the near future. Rapid ramp-up, efficient production and equipment, and high-quality service are the solid foundations of company's reputation and success. We are more than happy to see that Engel has a same approach, providing services that we need to be best in our area. <<

South Korea: OPTO-VISION New challenges promise a global competitiveness



>> Opto-vision was founded in 1999 and established mold frame factory in Tangjung, Korea in 2006. At the moment, factory for LGP (Light Guide Plate) is on construction in Suchow, China.

Since started to test production of LGP, Opto-vision has completed to prepare for producing core spare parts of BLU (Back light unit) for LCD with increase in mold frame production line (250 k/month) in 2003, which got the authorization as a venture company.

After developing on Prism LGP since 2004, Opto-vision was acknowledged as its technology with holding a patent of Prism LGP for BLU (Back Light Unit) using LCD.

With rapidly increased in demand of LCD like World cup and Olympic, the factory in Tangjung is preparing for this trend, which expanded 10 sets of Engel Mold Frame including small-sized by the end of this year owing to improvement in business showings of Tae San, Samsung Electronics' 1st vendor.

Opto-vision is changing production line from 14 inch, 15 inch and 19 inch M/F for mon-

itor to 42 inch, 48 inch and 52 inch mold frame for LCD.

The factory in Tangjung for mold frame is capable of operating 20 units of Engel Injection Molding Machine at the same time, installed with the up-to-date system. Recently Opto-vision received an order of large-size mold for 48 inch and 52 inch M/F using for LCD and proved its modernized equipment and productivity from big local companies as Samsung Electronics, Tae San and so on.

Opto-vision is one of the leading group in local BLU market. With the change of management representative, Opto-vision is standing at a new turning point. One of this movement, it is putting in operation zero defects program with aggressive management. Because of all efforts, Opto-vision is increasing in both productivity and the sales rapidly.

>> Now Opto-vision has the prospective that turnover of 13.2 billion won (13,793,103 USD) achieving the goal setting for in 2006 when completing LGP factory in China. <<

