Materion has been supplying Lockheed Martin its AlBeCast® aluminium-beryllium investment cast components for the F-35 Lightning II fighter jet’s electro-optical targeting system.

Materion has been supplying Lockheed Martin its AlBeCast® aluminium-beryllium composite alloy for the targeting system.

“Leveraging off its lightweight alloy investment casting experience, Aristo Cast provides Materion with a breakthrough shell technology that in qualification proved not only to improve casting quality, but dramatically reduce production costs of aluminium-beryllium investment castings,” Materion said in a press release. “Shell technology refers to the process of producing the hollow ceramic shells into which molten metal is poured to make the castings.”

Through its subsidiaries, Mayfield Heights, Ohio-based Materion supplies highly engineered advanced materials worldwide, such as specialty metals, inorganic chemicals and powders, coatings, specialty engineered beryllium alloys and more.

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PYROTEK’S MEXICO FACILITY GROWS TO MEET INCREASED DEMAND IN REGION

Pyrotek’s operation in Apodaca, Mexico, has been expanding to serve the increased demand in Mexico’s rapidly growing aluminium and metal casting industries. Nissan, Honda, Mazda, Hyundai and General Motors are just a few automotive companies that have expanded their manufacturing and assembly plants in the region to support the booming auto industry in North America.

Located near Monterrey, Mexico, Pyrotek’s operation in Apodaca is the primary distribution point for foundry, aluminum and glass products in Mexico. The facility is Pyrotek’s North American manufacturing plant for reinforced fiberglass material (RFM®), dense fused-silica shapes, small cast shapes, and glass manufactured products.

During the past two years, Pyrotek’s Mexico operation has aggressively grown in organization and infrastructure. It has increased its availability to the customer by expanding sales, stocking and service locations to the cities of Chihuahua in northern Mexico. The company also plans to expand in Queretaro, which is strategically located in the region where a significant number of international companies are establishing operations within the automotive and aerospace manufacturing clusters.

Pyrotek has also invested in technological and organizational capabilities to expedite manufacturing and service. This has been achieved by increasing engineering resources and production capabilities. Pyrotek also has developed new refractory and castable materials, tooling and components to reduce costs yet increase critical attributes in products. The company’s Mexico operations also has added the capability to build control panels and capital equipment, including flux injection systems, degassing equipment and furnaces with a holding capacity of up to five furnaces.

A team of experienced application engineers are strategically based throughout Mexico to provide customers locally with products, technical support, services and equipment that improve their metal quality and metal casting processes.

Pyrotek will showcase the Apodaca plant’s fabrication and Mexico service capabilities at FundiExpo 2014 in Monterrey, 24–26 September, booth 400.

In addition to Apodaca, Pyrotek operates manufacturing plants throughout the world, and its global network of field experts work with customers to determine the performance-improving products or equipment that best suit their needs.

Pyrotek's facility in Apodaca, Mexico, continues to expand manufacturing capabilities to support its customers' growth in the region.

TOYOTA SEES MONTHLY SALES INCREASES

Toyota Motor Sales (TMS), U.S.A. Inc. has reported that sales of Toyota, Scion and Lexus brand vehicles rose 11.9 percent in June 2014 over June 2013, based on the daily selling rate (DSR). The automaker sold 243,236 units in May, a 12.6 percent DSR increase over May 2013 and the company’s best sales month in six years.

The company attributes the increases to strong sales of its Camry, Corolla and Lexus brands, as well as hybrids. “Sales in the first half of 2014 indicate a steadily recovering industry, and we expect this pace to increase as we move into the second part of the year,” Bill Fay, a Toyota Group Vice President and General Manager, said in a press release. “In June, Camry and Corolla posted double-digit gains as passenger cars showed renewed strength industry-wide.

Sales of luxury vehicles has been outpacing the auto industry. “While the industry has been posting healthy gains, Lexus has been able to more than double the average growth rate with a combination of fresh new products, improving availability and industry-leading customer satisfaction practices,” Jeff Bracken, Lexus group Vice President and General Manager, said in a press release.

FULL STORY, PAGE F3

NEW CAR REGISTRATIONS IN UK INCREASE FOR THE FIRST HALF OF 2014, BEST SINCE 2005

New car registrations in the UK from January to June 2014 rose 10.6 percent over the same period the previous year.

Full story, page F2

UNDERHEATED SYSTEMS IMPROVE HOLDING FURNACE EFFICIENCY COMPARED TO TOP-HEATED COUNTERPARTS

Underheated technology for holding furnaces can improve furnace efficiency and metal quality, yielding higher quality aluminium castings.

Full story, page F2

IMPROVE ACCURACY OF MOLTEN METAL FLOW 'SMART PUMP' TECHNOLOGY HELPS DIECASTERS

The advent of “smart pump” technology has enabled diecasters to more precisely control metal flow and improve pump performance.

Full story, page F4

NEW CAR REGISTRATIONS IN UK INCREASE FOR THE FIRST HALF OF 2014, BEST SINCE 2005

Full story, page F2

PRECISION CASTPARTS REPORTS SALES BOOST

Precision Castparts Corp. has reported an increase in sales during the first quarter of FY2015 to USD$2.53 billion.

Full story, page F4

SPECIALTY сыrьeн промышленности на Западе

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Asian Automakers to Build Engine Manufacturing Plant in Malaysia

Malaysian automaker Perodua and Japan-based Daihatsu Motor Co. plan to build an engine manufacturing plant in Sondrayan, Negeri Sembilan, Malaysia. Construction of the MYR RM600 million (USD$189 million) plant is expected to begin in September.

“In anticipation of intensifying global competition in the future, Daihatsu is working on structural transformation of its local operations in Malaysia, which it has determined as a key base for its overseas business,” Daihatsu said in a statement.

The 19,000-square-metre (204,500-square-foot) engine plant will employ 150 people initially and have a production capacity of 140,000 units a year, Perodua says.

Underheated Systems Improve Holding Furnace Efficiency Compared to Top-Heated Counterparts

Underheated technology for holding furnaces can improve furnace efficiency and bath quality, yielding higher quality aluminium castings to meet the demands of today’s competitive metal casting industry.

In underheated furnaces, heaters are located in ceramic tubes inserted through the refractory wall and immersed in the aluminium near the bottom of the furnace. These transfer heat through conduction from the ceramic sheaths, generating convection currents in the liquid metal which improves heat transfer and produces a more homogeneous temperature through all levels of the metal.

Underheated furnaces may have a temperature gradient as low as 5°C (9°F) from the bottom to the surface of the melt. Top-heated furnaces, meanwhile, radiate heat from the top downward. The top-heated furnace typically must heat the air and refractory above the metal to about 1000°C (1832°F) to radiate heat down into the metal. As a result, the surface is superheated and becomes oxidized. This layer of oxides impedes the heat transfer and must be removed, as it forms. It is skimmed by hand, but some oxides become mixed into the metal by this operation and can cause defects in the end product.

If a diecaster fails to clean the furnace, the oxides will build up, creating an insulating layer, forcing the heaters to operate at even higher temperatures. The frequent cleaning of a top-heated furnace interferes with production, wastes aluminium and can present a hazard to the operators.

Underheated technology has existed for about 30 years but has gained popularity in the USA within the last decade. Pyrotek is licensed by Japan-based Tounetsu to market and rebuild its underheated furnaces throughout North America. Underheated furnaces are best suited for high-pressure diecasters who make critical castings, and maintain the liquid aluminium at lower temperatures. They typically have a service life of eight years.

In addition to designing and building new holding furnaces, Pyrotek can rebuild a customer’s existing furnace to extend the life of the equipment. Pyrotek has designed complete furnace systems that incorporate launderers, inline degassing and filtration. Whether a customer’s application would benefit from an underheated furnace design, or a top-heated furnace for higher temperature applications, Pyrotek’s field engineers work with customers to determine the best solution for their needs.

Shiloh Agrees to Buy Finnveden Metal Structures

Shiloh Industries Inc., of Valley City, Ohio, USA, has agreed to buy the Finnveden Metal Structures division from FinnvedenBulten AB, of Stockholm, Sweden. The acquisition will expand Shiloh’s capabilities with the addition of stamping and magnesium diecasting and increases its presence in Europe, Shiloh says.

Rolls-Royce and Hispano-Suiza Sign Memorandum of Understanding to Form Venture to Develop Aircraft Drivetrain Transmission Systems

UK-based Rolls-Royce plc and Hispano-Suiza (Safran), of France, have signed a memorandum of understanding to establish a joint venture to develop accessory drivetrain transmission systems for aircraft engines. Each company will own 50 percent of the joint venture.

The venture, which is expected to be based in France, will conduct business in France, the UK and Germany and operate a production facility.

Rolls-Royce’s customers include airlines, militaries and energy customers throughout the world. Its annual revenue was GBP£13.5 billion (USD$26.5 billion) in 2013. Rolls-Royce employs over 55,000 people in 45 countries.

Hispano-Suiza specializes in aircraft power transmission and management systems. The company is developing power transmission systems for tomorrow’s engines, including the Rolls-Royce Trent XWB and the CFM International LEAP, Rolls-Royce says.

Earlier this year, TITAL, a Germany-based engine manufacturer, has signed a memorandum of understanding with Rolls-Royce to develop and produce complex aluminium and titanium investment castings for aircraft engines. Initial projects under the multifaceted agreement are underway, TITAL says. To accommodate increased production, TITAL plans to expand its plant in Bestwig, Germany.

Foundry Society Launches Survey to Collect Metalcaster Data

The American Foundry Society (AFS) has launched an Internet-based survey for metalcasters to compare their facilities’ demographics and performance to other similar, anonymous facilities in North America.

Called the Metalcaster Benchmark, the website is a more comprehensive update to the organization’s Operational Cost Survey. Participation in the survey is free to AFS members and nonmembers. Corporate members will be able to access results for free, but others must pay a fee for access.

The Metalcaster Benchmark includes the 2014 North American Industry Census. Based on data collected annually for the AFS directory of metalcasters, information is available on the most widely used moulding and melting processes, production data and employee counts.

Ask the Expert...
PYROTEK TO EXHIBIT AT FUNDIEXPO 2014 IN MEXICO IN SEPTEMBER

Pyrotek plans to exhibit at FUNDIEXPO 2014, the largest trade show and exhibition for metal casting in Mexico, 24–26 September, booth 400.

The Mexican Foundry Society’s North Region will present this 19th congress and international exhibition of the foundry industry that will be held at CINTERMEX in Monterrey, Mexico. The show will feature talks on ferrous and non-ferrous alloys, moulding processes, mathematical simulations, innovations in casting metal processing and environmental sustainability.

During the 3-day event, Pyrotek will highlight its full range of products and equipment, designed, engineered, built, installed and serviced by its Mexico operations. Products will focus on improving metal quality, underheated furnace technology, metal treatment and metal transfer.

NEW CAR REGISTRATIONS IN THE UK INCREASE FOR THE FIRST HALF OF 2014, BEST SINCE 2005, ORGANIZATION SAYS

New car registrations in the UK from January to June 2014 rose 10.6 percent over the first six months of 2013. More than 1.29 million new cars were registered during the period, the best half-year total since 2005, says the Society of Motor Manufacturers & Traders Ltd. (SMMT).

In June, new car registrations rose 6.2 percent over the same month in 2013. The organization estimates the UK could experience a 6 percent increase in new car registrations for 2014 overall.

Alternatively fuelled vehicle registrations jumped 51.3 percent to 23,337 from January to June, driven by consumer demand for efficiency, while registrations of pure-electric cars have more than doubled, SMMT says.

NEW NADCA SURVEY SHOWS INCREASE IN ALUMINIUM AND ZINC DIECASTING SHIPMENTS

The North American Die Casting Association (NADCA) has released data from its newly launched Biztrak survey showing that diecasting shipments in March increased over February for most sectors, the latest period for which data is available.

Diecasting shipments in the aluminium sector, which includes automotive aluminium, increased 16.5 percent over February. Non-automotive zinc diecasting shipments increased 12.7 percent, while automotive zinc shipments rose just 2.9 percent. Magnesium diecasting shipments, however, decreased 2.7 percent over the month.

The Biztrak monthly survey replaces NADCA's Quarterly Barometer and will be used to generate data that can be used as a real-time benchmark, NADCA says.

AAVID THERMALLOY BUYS ALLCAST LLC

Aavid Thermalloy has acquired Allcast LLC, of Allenton, Wisconsin, USA. Allcast designs, manufactures and distributes aluminium diecasting products for LED lighting, recreational vehicle, consumer and other applications.

Aavid designs, makes and distributes thermal management solutions, including heat sinks, heat pipe assemblies, and cold plates for telecommunications, server, consumer electronics, transportation and industrial applications. It markets its products worldwide through its global sales force, distributors and the Internet, the company says.

Based in Laconia, New Hampshire, USA, Aavid was established in 1964.

CHRYSLER OPENS TRANSMISSION PLANT IN INDIANA, USA

Chrysler Group LLC, of Auburn Hills, Michigan, USA, has opened a transmission plant in Tipton County Indiana, USA, and has begun manufacturing fuel-efficient 9-speed transmissions.

The company bought the idle 72,650-square-metre (782,000-square-foot) facility in 2013 and invested USD$162 million to renovate and launch the plant, Chrysler says. It currently employs about 200 people and could employ up to 850 people by the end of 2015.

The Tipton plant is expected to be one of Chrysler's global hubs for the manufacture of 9-speed transmissions, which will be shipped to auto plants worldwide for use in the Jeep Cherokee, Chrysler 200 and FIAT models.

PYROTEK TO FOCUS ON METAL QUALITY AT DIE CASTING CONGRESS

Pyrotek will showcase systems and consumables that improve metal quality and diecasting performance at the North American Die Casting Association's 2014 Die Casting Congress and Tabletop show in September.

Pyrotek's technologies for metal circulation, transfer, filtration and treatment include underheated furnaces, STAR degassing systems and RFM® AutoPour ladles. Pyrotek’s Metaullitics® division’s overflow transfer system (OTS) and integrated melting system (IMS) also will be promoted.

The Die Casting Congress will be held 22–24 September in Milwaukee, Wisconsin, USA. Visit Pyrotek at booth 130.

JAGUAR LAND ROVER SEES STRONGEST HALF-YEAR SALES PERFORMANCE EVER

Jaguar Land Rover, a UK-based manufacturer of luxury vehicles, says its vehicle sales increased 14 percent from January to June 2014 over the same period last year, its strongest half-year sales performance ever.

The automaker delivered more vehicles in the past six months than in all of 2010, it says.

“Range Rover Sport sales are up remarkably since last year and, 21 months since it was rolled out, the Range Rover remains strong, with sales performance continuing to grow year-on-year. Our top-selling model, the Range Rover Evoque, also continues to show solid growth,” Andy Goss, Operations Director of Jaguar Land Rover Group Sales, said in a press release.

The company says it plans to invest about GBP£3.5 billion (USD$6 billion) in its products and facilities during this fiscal year, which ends March 2015.

FEDERAL-MOGUL INTRODUCES CONTROL ARMS FOR LATE-MODEL VEHICLES

Federal-Mogul Motorparts, a newly renamed division of Federal-Mogul Holdings Corp., of Southfield, Michigan, USA, has introduced 497 new MOOG® brand replacement control arms and assemblies for millions of late-model Asian, European and USA passenger vehicles.

MOOG parts are designed to provide increased durability, enhanced performance and easier installation, Federal-Mogul says. The new parts include 263 MOOG Asia-Spec control arms and assemblies for auto brands such as Acura, Honda, Hyundai, and Toyota. Also available are 74 new MOOG Euro-Spec control arms for late-model applications from Audi, BMW, Mercedes-Benz and other European vehicle manufacturers, and 160 additional control arms for a wide range of USA passenger vehicles.

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FUNDI 2014

24–26 September
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‘SMART PUMP’ TECHNOLOGY HELPS DIECASTERS IMPROVE ACCURACY OF MOLTEN METAL FLOW

Over the past several years, the advent of “smart pump” technology has enabled diecasters to more precisely control metal flow and improve pump performance, increasing worker safety and reducing costs. Smart pump technology primarily provides level control in launder and ladling systems for high-pressure diecasting applications. It involves the use of engineered control panels to enhance and optimize the performance of a transfer, circulation or gas injection pump. It also can optimize and quantify value and performance for pump and melting products for the customer.

In addition, the technology can be used to sense vibration that arises when debris in a recycling furnace gets caught in a pump’s impeller. If too much vibration is registered, the system will automatically shut off the pump and alert the maintenance crew. Such a system can help prevent damage or breakage to a pump’s posts and an expensive pump rebuild.

If a circulation pump is installed in a furnace well, a level-control system can sense when the metal level is too low, improving the efficiency of furnace operation. When more precise level control is used, less iron is created and scrap rates for metal is reduced. A high-pressure diecasting machine can be reduced, providing the customer with cost savings.

CASE STUDY

When Briggs & Stratton Corp. wanted to improve performance of its metal transfer system at its plant in Missouri, USA, Pyrotek worked with the major producer of gasoline engines for American Securities LLC, which operated a plant in California, USA, from the Marvin Group.

Pace Airo Division, which operates a facility in Loyalhanna, Pennsylvania, USA, has received a Jobs First Governor’s ImPAct Award from Pennsylvania Gov. Tom Corbett. The award recognizes businesses in Pennsylvania that have made a positive impact on local and state economies through job growth and retention.

Pace Airo Division manufactures and supplies high-quality aluminium diecasting services. It is an affiliate of Pace Industries, a Fayetteville, Arkansas, USA-based aluminium, zinc and magnesium diecasting company. The company is an affiliate of Pace Industries, a Fayetteville, Arkansas, USA-based aluminium, zinc and magnesium diecasting company.