

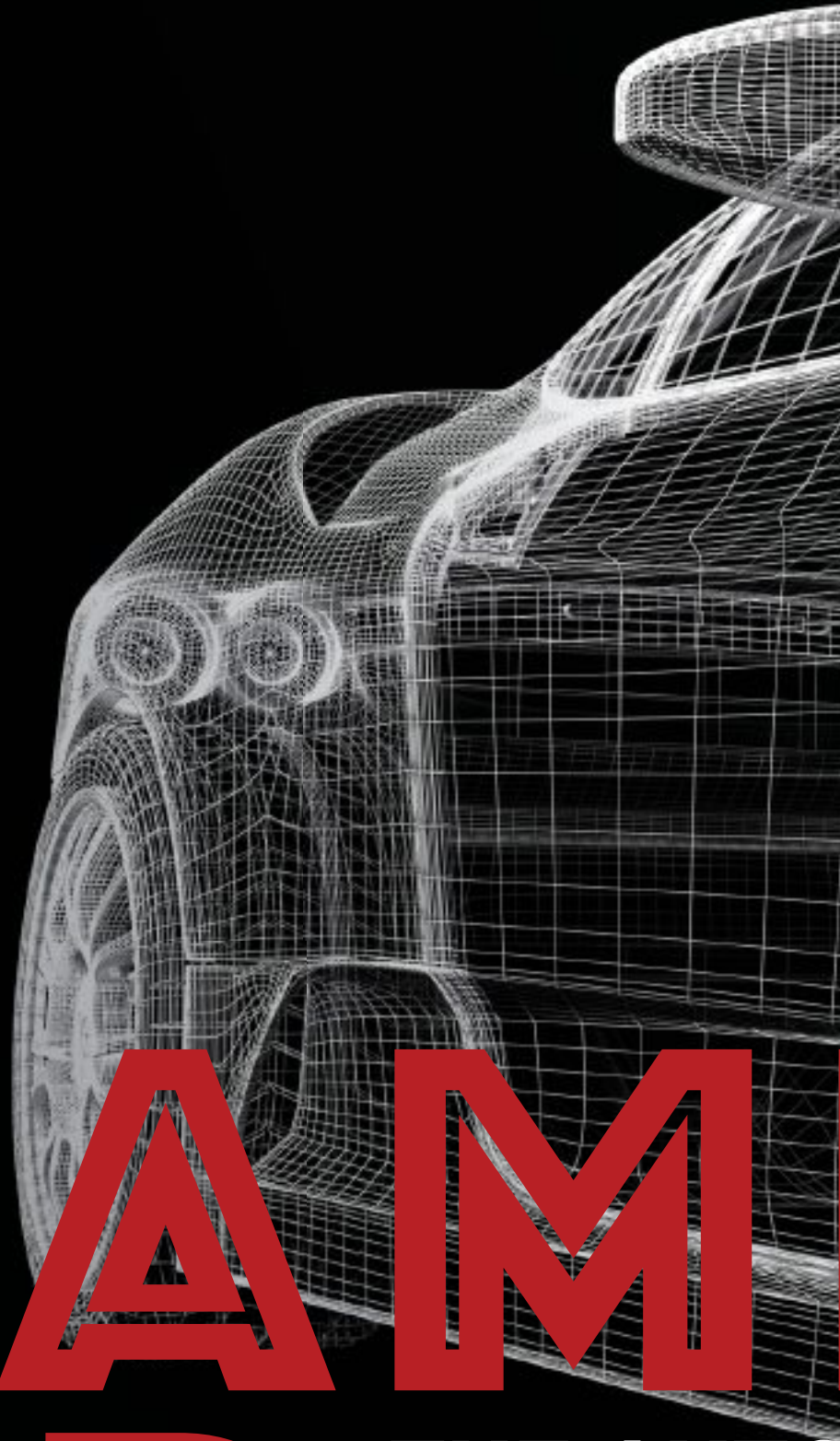


BWI GROUP

DRIVING TECHNOLOGY

There's one thing the BWI Group will never put the brakes on, and that's great performance on the road. Manufacturing superior quality chassis, brakes, and suspension equipment is driving them to new heights of market success, and into a brand new, state-of-the-art American manufacturing facility.

BWI Group produces components for the world's premiere automotive OEMs, from Ferrari, Porsche, and Lamborghini to GMC, Ford, Chevrolet, and BMW - and virtually any other automaker you can name. The company operates technical and manufacturing facilities in the U.S., Mexico, Europe, and Asia, as well as test tracks around the globe.



FRAM

JOB

**THE AUTO
EXPERTS
ARE DRIV**

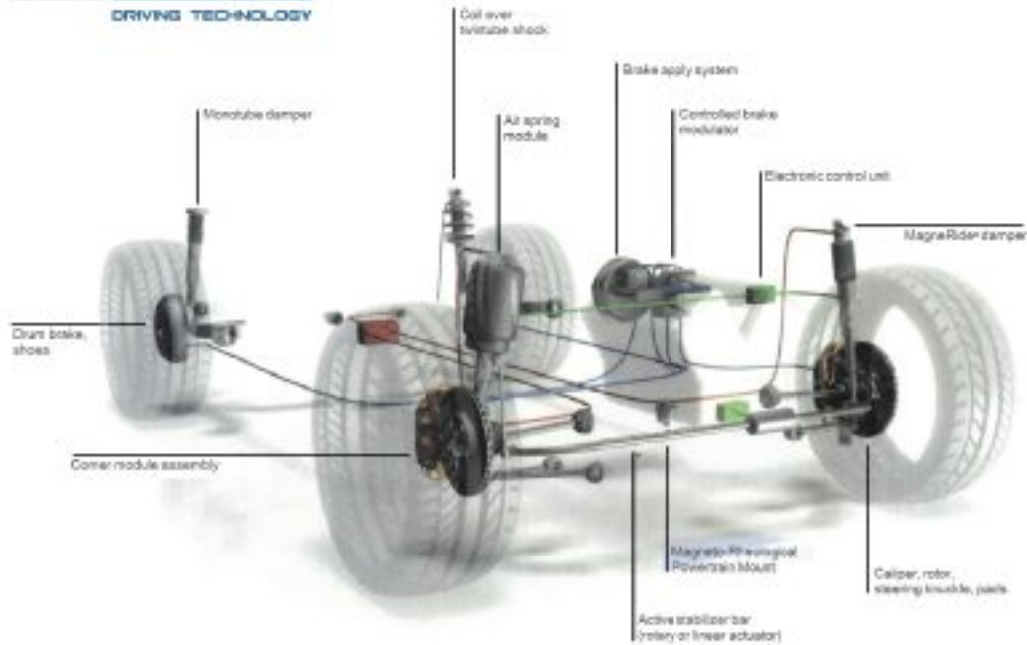
A wireframe model of a car chassis, rendered in white lines against a black background. A prominent wheel is highlighted in red, showing its spokes and hub. The overall image conveys a sense of precision and engineering.

E

**OMOTIVE CHASSIS
OF THE BWI GROUP
EN BY QUALITY**



Chassis that inspires confidence



In 2009, the BWI Group, shorthand for BeijingWest Industries Co. Ltd, was formed through the acquisition of Delphi Corporation’s divestiture of its chassis business. At the time of the purchase, in addition to a handful of stateside engineering and administrative activities, Delphi’s chassis business operated two manufacturing facilities in Europe and two in China and was also manufacturing parts in Mexico.

“Since then we’ve added an additional plant in Beijing and a third European plant in the Czech Republic,” reported company VP Tom Gold. “From the time of our sale we’ve grown from around half a billion dollars and now we’re approaching a billion dollars.”

While the trend may be for domestic firms to look to offshore operations as a way to cut labor costs, BWI Group took a different route. “We’d reached a point where our plant in Mexico was full, and it was tremendously important for us to get a site in the Midwest because we needed

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Production of devices beginning from concept design and development with their customer, all the way through to execution of machine documentation (prints), production, programming, installation and start-up at the customer’s premises.

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Area of expertise: (All automotive industry)

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such as individual assembly stations,
special machines and equipment,
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— Overhaul & Upgrading
of Machine Tools

— Execution of Special Purpose
Machines & Devices

— Short-Run Production

“WE ARE GOING TO BE MAKING A DESIGN THAT IS GLOBAL IN THE FUTURE, IN THREE DIFFERENT REGIONS. OUR QUALITY AND PERFORMANCE ARE THE SAME WHEREVER WE MANUFACTURE IN THE WORLD.”
-CRAIG DIEM

a logistical balance between the U.S. and Mexico. We got there in the reverse order that most companies do. Most companies have plants here and then go to Mexico to get low labor rates, but we did it in reverse.”

That move resulted in the construction of a state-of-the-art manufacturing facility in Greenfield, Indiana, which, upon completion later this year, will employ roughly 300 workers. “The Greenfield facility will be the most automated we have of our six sites around the world,” said Craig Diem, Global Director of Manufacturing Operations. The additional flexibility the Indiana site brings will enable BWI Group to be more competitive here in the States.

“With our legacy being General Motors, Delco, and Delphi, people expect performance and quality out of our designs



and parts,” Diem continued. “But that’s not just solely in the USA. We don’t distinguish ourselves any differently in terms of manufacturing in our plant in Beijing, or Mexico, or Poland, or in our new site. We are going to be making a design that is global in the future, in three different regions. Our quality and performance are the same wherever we manufacture in the world.”

“At BWI Group we’ve been very fortunate,” he went on. “We were purchased by a company that was interested in investing and growing a business, and they put the money into our company,” he stressed.

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The Indiana operation will build the company’s acclaimed shocks and struts. These passive dampers are made for all sizes of passenger cars, from performance

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SUPERIOR PRECISION MACHINING



and luxury cars to heavy SUVs and delivery vans.

“We’re starting with our passive dampers, and in the future we will be putting in our MagneRide controlled dampers made with magneto-rheological (MR) fluid,” Diem noted.

“MR-fluid dampers have been around before the year 2000, but we’ve continued to refine them. We supply them to General Motors, across a wide range of their vehicles, and to Ford. We also supply many high-performance sports car manufacturers in Europe like Ferrari and Lamborghini.”

The patented MagneRide technology maximizes tire-to-road contact, minimizing the effect of unexpected hazards like a dip or crest in the road, in turns or on bumpy surfaces. MagneRide improves road isolation and reduces driver fatigue. Increased damping control makes driving seem effortless, even on demanding roads.

Gold pointed out, “The most important feature of MagneRide is that it’s electronically tunable as opposed to mechanically tunable. The ability to customize the ride for each customer is infinitely more flexible than mechanical valves. That’s what makes MagneRide so special. It’s not just the tailoring of the ride, it’s the ability to quickly tune it to what the customer is looking for.” And when he says flexibility, he’s not kidding.

“In a mechanically controllable system, you have valves that open and close either with pressure or velocity and it’s mechanically driven, has springs that flex and open an orifice. MagneRide is based on a magnetic field where you vary the current into the valve. By varying

**“OUR HIGH-END CUSTOMERS ARE ALL ABOUT PERFORMANCE, THEY USE MAGNERIDE BECAUSE IT GIVES THEM WHAT THEY NEED TO GET THE ULTIMATE PERFORMANCE OUT OF THEIR VEHICLES.”
-CRAIG DIEM**

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Camas has spent more than 30 years researching and developing machines for industrial automation, with a focus on in-line assembly and testing systems. The Camas team meets with each client for a consultation to assess individual needs before developing and designing solutions specifically made for each individual client.

From semi-automated benches to fully-automated lines, Camas provides clients with made-to-measure solutions that meet the needs in a variety of sectors. Similarly, their team can create fully-customized acceptance, single-station, and line tight testing systems sure to meet the requirements of any client.

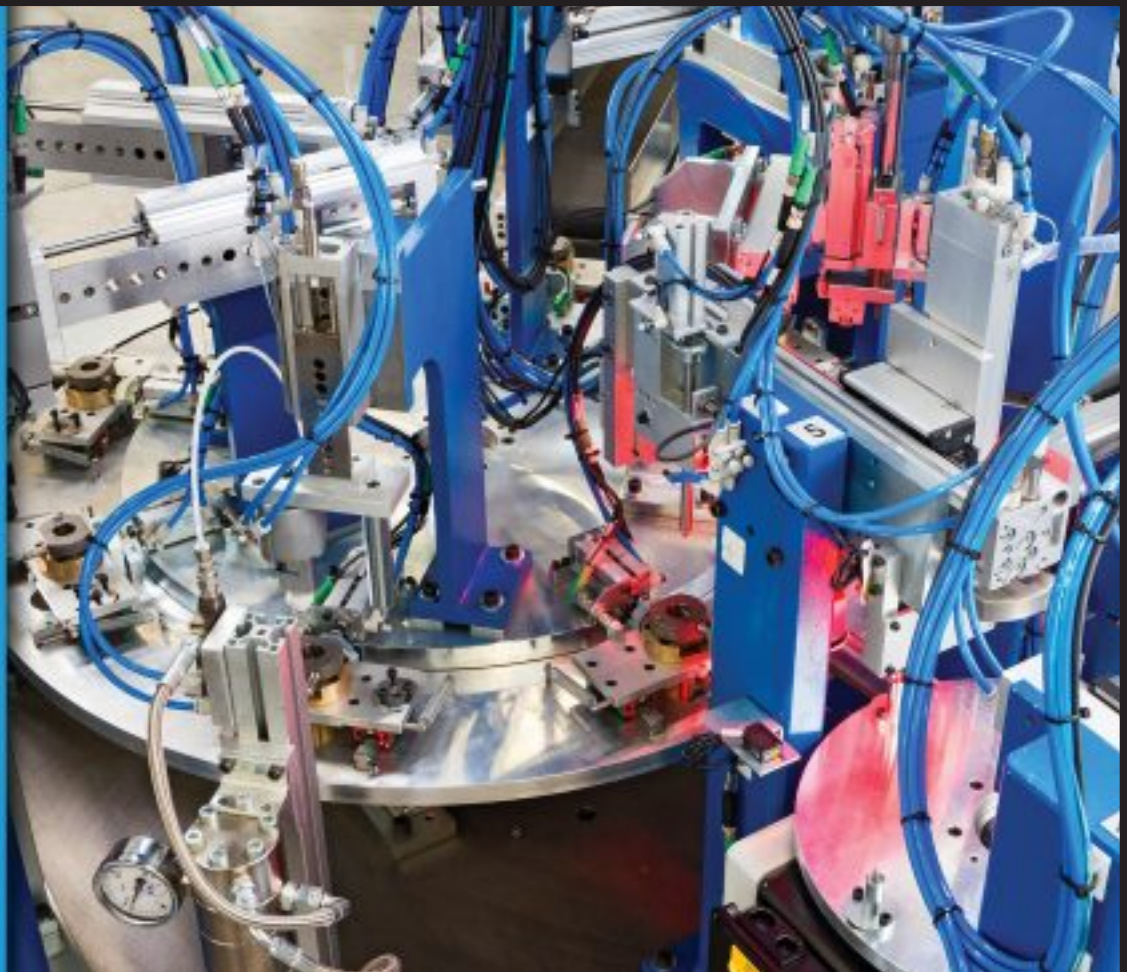
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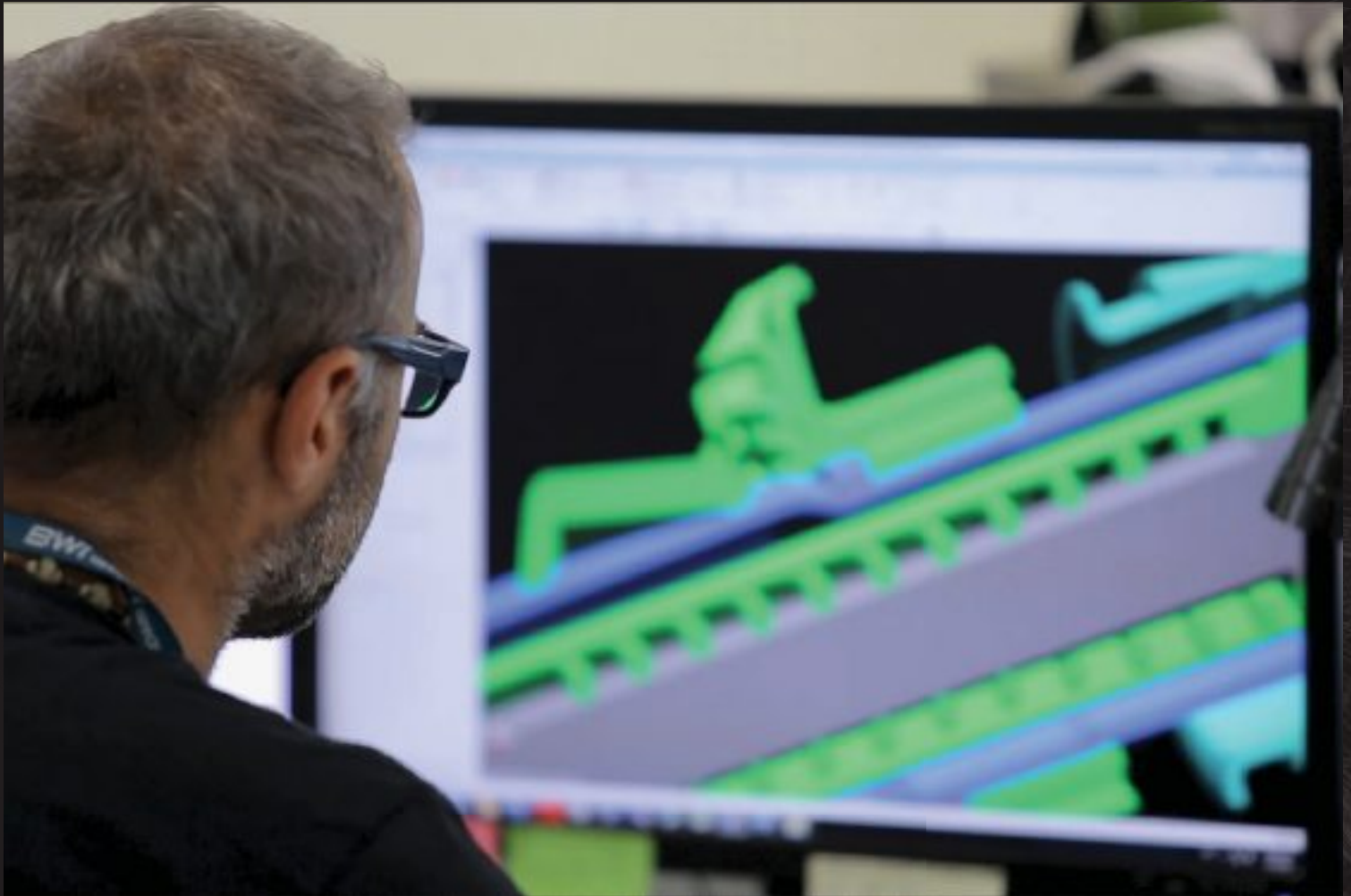


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For 30 years, Camas has specialized in the study and development of machines for industrial automation; in particular, systems for assembly and in-line testing. Whatever your needs, the Camas team is able to design and implement tailor-made solutions that meet specific requirements and apply to numerous industrial sectors.

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the current, you can vary the damping. MagneRide actually reads the road and reacts to it 1,000 times per second.”

“Our high-end customers are all about performance,” Diem interjected. “They use MagneRide because it gives them what they need to get the ultimate performance out of their vehicles.”

BWI is branching out into the manufacture of a number of different suspension and chassis related products, including a magneto-rheological engine mount it supplies to Porsche and AMG. “That’s a business that is growing,” Gold intimated. “Using MR fluid technology to isolate and provide control of the powertrain is a significant opportunity for growth as more and more electric vehicles come into the market.”

Another hot product line is the AeroRide air suspension system, which adds a critical element on the minds of all drivers: increased fuel economy. BWI Group’s air suspension is designed for high pressure and high side load applications, and it delivers proven performance in extreme conditions.

Gold added, “We see a more dynamic situation in the marketplace with the OEMs today than we’ve ever seen in our careers, especially with the combination of the drive toward autonomous vehicles, electric vehicles, and the move toward electronics and move away from mechanical systems.”

Electric cars are significantly quieter than standard vehicles — and require quieter parts. Weight is another R&D concern being explored. “Electric vehicles and their



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GFU - MASCHINENBAU GMBH

Founded in 1989, GFU - Maschinenbau GmbH has become a worldwide accepted provider of forming machines. GFU is specialized in engineering and manufacturing of rotary forging machines, reducing and expanding presses, and upsetting presses. Notably, the GFU high-speed end-forming technology has been used mainly for automobile application, including the bottom closing of airbag vessels and shock absorbers.

Around the world, leading manufacturers of shock absorbers, airbag vessels, drill pipes, tubing and casings, scaffolds, and more are using reliable GFU machines and technologies for their production.

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“THERE IS A TREMENDOUS AMOUNT OF CHANGE COMING, BUT IT’S HARD TO QUALIFY AND QUANTIFY IT. THE PEOPLE WHO ARE ABLE TO FIGURE IT OUT AND GET THERE FIRST WILL BE THE ONES THAT PROSPER. WE’RE TRYING TO BE THERE.”

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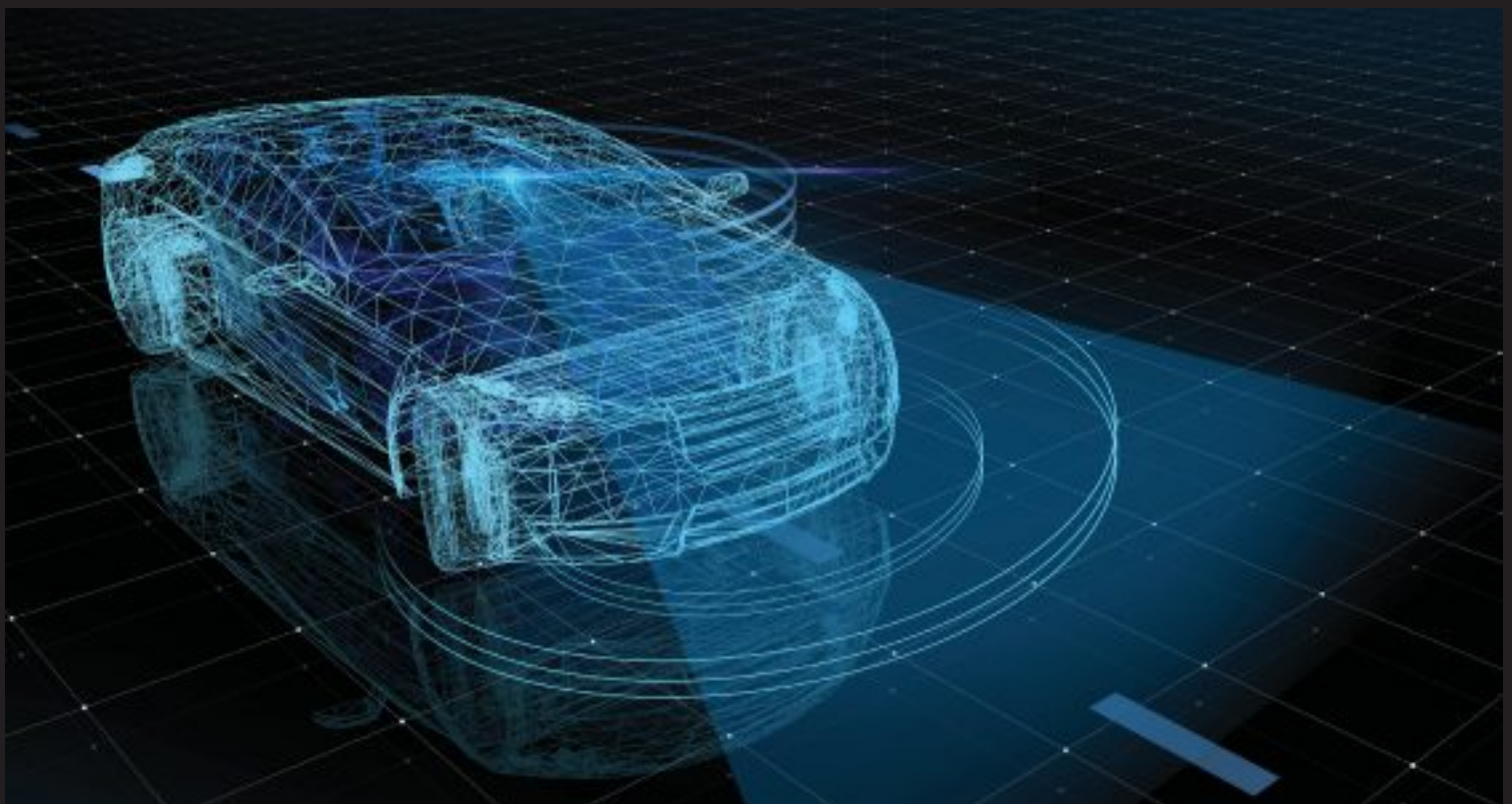
power trains are heavy, so the ability to control large masses in cornering events and in rough road events is something we have to be prepared for,” Gold said. When it comes to autonomous vehicles, the biggest issue for shock and strut manufacturers will be “comfort, comfort, and comfort,” Gold emphasized.

We have to service our customers in the cars that they’re producing now, but we also have to find a way to be prepared for the autonomous and electric vehicles,” Diem said. “It’s like trying to keep your

feet in two different canoes: keeping an eye toward the future, staying abreast of that and being ready while you’re still servicing customers with internal combustion engines.”

As these sea changes loom on the horizon, manufacturers are in caution mode. “There is a tremendous amount of change coming, but it’s hard to qualify and quantify it,” Gold added. “The people who are able to figure it out and get there first will be the ones that prosper. We’re trying to be there.”

That effort is reflected in BWI’s mission statement, which is to give customers the right solution in the right place at the right time, with a passion for excellence and a commitment to growth. Said Gold, “When we wrote those words we didn’t realize how significant it was to what we wanted to be. Over time, when we’d ask ourselves how we were going to be successful, we found ourselves using those words. We use that mission statement more so now than when we first wrote it.” ■



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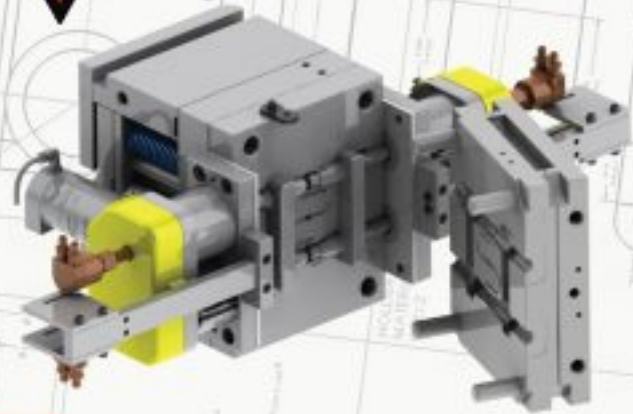
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