



Santiago de Chile



Melbourne

ATR World



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Dear readers



We are happy to present you this year's first issue of ATR World in which we warmly welcome two new shareholders in our key growth markets: Motores de los Andes S.p.a. (Andes Motor) from Chile and hsy Autoparts Pty Ltd. from Australia. Andes Motor is a leading distributor of spare parts for commercial vehicles in the Chilean Independent Aftermarket and a flagship player in electromobility offering its customers a wide range of products with high quality

standards all over Chile. Hsy was established in 1963 as an importer of Porsche engine components for snowmobiles and has since diversified and grown into Australia's leading national independent importer/distributor of automotive parts offering a comprehensive range for both passenger and light commercial vehicles. We are looking forward to a fruitful collaboration! Read more about Andes Motor and hsy on pages 08-11.

Speaking of shareholders, we would like to congratulate our Israeli shareholder Aaron Montecchio Ltd. on its 75th anniversary. Sammy Konfidan takes us on a journey through the company's history, present and future on pages 12 and 13.

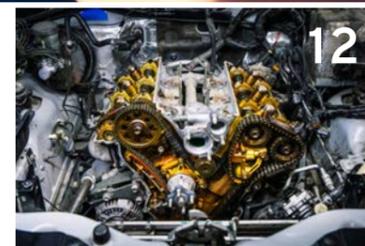
We conclude this issue with an interesting contribution about green hydrogen in Chile which was prepared by Guido Goyeneche from ATR LatAm. Did you know that Chile has one of the world's largest solar and wind power reserves? Please browse page 41 for more information.

Enjoy reading!

Warren Espinoza
CEO, ATR International AG



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Pandemic perseverance: how the aftermarket kept the world moving

As we emerge from the worst of the COVID-19 pandemic and begin to see the new path forward, let's take a moment to reflect on the incredible efforts of the independent aftermarket and how the sector has helped to keep the world moving over the past few years – despite numerous lockdowns, staff shortages, logistical challenges and component shortages. Indeed, from heavy-duty vehicles and passenger cars, to delivery scooters and small business fleets, the aftermarket has been critical to supporting essential services.

As it turns out, the aftermarket has proven one of the most pandemic-resistant parts of the automotive industry¹. While new vehicle sales may have almost ground to a halt – as we saw throughout 2020 and 2021 – the overall vehicle parc continues to thrive, which is obviously a hugely important factor for

the aftermarket. However, while opportunities have remained widespread, the aftermarket has not escaped the pandemic's grasp completely unscathed.

In fact, at the height of the pandemic in 2020, German garages reported that business was down more than 50%. With nobody driving for leisure, working from

home restrictions limiting commuting and many cars sat unused on driveways, total vehicle miles – and the associated maintenance and crash repairs they bring – had almost disappeared. In some regions, rules around mandatory inspections were also relaxed, leading to further revenue losses for garages and workshops.



KEY FACTS

The global automotive aftermarket not only rebounded in 2021, but it also reached record levels.

Many aftermarket businesses looked to implement critical changes during this time and played close attention to winning custom, hiring well and reducing expenses wherever possible. Equally, it was a chance to prepare for the future and discover how their business could play a critical role in servicing electrified vehicles in the future. At the same time, online part sales and

deliveries were moving from strength to strength – with many motorists assuming responsibility for repairs to their vehicles, providing a lifeline for parts distributors.

Moving forward into 2021, countries were opening back up and travel was more frequent, yet most were still avoiding public transport. This initiated something of a rebound within the aftermarket, with many motorists looking to catch up on missed maintenance, preparing for upcoming travel or simply using their vehicles to avoid packed commuter transports. Meanwhile, the widely-reported microchip shortage bottlenecked manufacturing, resulting in reduced production volumes and a corresponding decline in new vehicle sales.

Back to life

Not only did this have a direct impact on secondary market vehicle prices, which reached record levels in some regions, but it also translated to greater spending within the aftermarket. With motorists pushed to buy used vehicles or keep existing vehicles on the road for longer, the number of vehicle miles travelled in higher age cars skyrocketed. The result was an increase in maintenance and repairs across the car parc. With an increasing percentage falling outside of warranty, it was a huge opportunity for the aftermarket.

Initially, the aftermarket's recovery was

predicted to be much slower, but 2021 proved decisive in bringing the aftermarket back to life. While almost every business managed to improve on 2020 revenues, some businesses even set record years. This return to form is leading some to predict that the global automotive aftermarket will reach US\$950 billion by 2027, up from US\$694 billion in 2020 – a compound annual growth rate of 4.6%².

Now, in 2022, we can see that the picture is becoming ever-more positive. While there are some restrictions in place and supply chain issues remain, the acute impact of the pandemic is hopefully far behind us. At the same time, new car sales remain suppressed, with European automakers still below pre-pandemic volumes – and predicted to remain that way into next year and beyond³.

This highlights 2022 as an important commercial opportunity for the aftermarket. With Europe now moving into Spring, motorists are set to spend more time driving older, higher-mileage vehicles throughout the warmer months. The resulting increased revenue will keep aftermarket employment strong and we can expect growth trends to continue as the fraction of out-of-warranty vehicles within the parc continues to expand.

¹ <https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/beyond-coronavirus-the-road-ahead-for-the-automotive-aftermarket> ² <https://www.globenewswire.com/news-release/2022/01/03/2360341/0/en/Automotive-Aftermarket-Size-to-Hit-US-950-Billion-by-2027.html> ³ <https://www.bloomberg.com/news/articles/2021-10-26/europe-s-car-makers-warn-2022-output-will-fall-short-of-demand>

Urban mobility ecosystems: More movement as an opportunity



Author Enno Däneke

Electrification, digitisation, automation, and servicing are ushering in a new era of mobility, particularly, in densely populated urban environments.

connecting with providers of new charging infrastructures. Platform providers are addressing new customer needs and implementing mobility-as-a-service with vehicles from electric scooters to car and bike sharing. Ride-hailing and shuttle services are on the rise. The integration of various mobility services are also expanding public transport offerings.

The desire for flexibility among customers is continuously increasing the degree of intermodality of the mobility services offered. In the medium to long term, these services will be supplemented by automated solutions, i.e., autonomous vehicle fleets will partially replace classic public transportation, and air cabs will offer a new premium segment, for example, for business travellers who want to get from A to B quickly.

All of this must and will be orchestrated in a platform-based and increasingly AI-supported manner. Only in interaction, in the seamless meshing of the various services, can efficiency advantages be tapped and real added value offered to customers (e.g., convenience, flexibility, speed, low costs, etc.). Cooperation is therefore not only a success factor, but a must. Platform-based services and business models are becoming the modus operandi, as in other industries. The prerequisite is an open and interoperable data structure.

Mobility ecosystems can and must cover more and more aspects, even beyond pure mobility services. It is conceivable that meta-ecosystems will emerge in the long term, for example at the interface between mobility and commerce or mobility and housing. Cannibalising services that offer the same effect as mobility but do not require physical passenger transport must also be considered. These include virtual presence or remote access

to systems and machines, as well as delivery services and virtual leisure activities.

New mobility products and mobile services

Mobility ecosystems play an important role in cities in particular. High population density and a correspondingly high volume of traffic will meet intensifying sustainability requirements that arise from combating global climate change and enhancing local quality of life. In short, mobility ecosystems are designed to make cities more sustainable and more attractive as places to live and work. Electrified micro mobility is expected to grow disproportionately in the coming years. For retailers and workshops, this means taking a broader stance, i.e., focusing on the sale and repair of 'mobility products' rather than focusing solely on cars.

The good news is that mobility will continue to increase. In the urban transport of the future, autonomous electric driving platforms will be equipped with various functional modules as needed. Whether passenger transportation, logistics, or services (the service provider comes to or transports the customer – this could be a mini-shop, a nail salon or the workshop). In the future, rather more will be moved.

KEY FACTS

The growth and success of current and future mobility ecosystems are being fed by a number of trends that are currently revolutionising the mobility industry and its environment: electrification, digitisation, automation and servicing.

Growing ecosystems

Online platforms and digitally networked ecosystems will determine how and if companies do business in the future. Ecosystems offer competitive advantages, but are at the same time redefining the principle of competition. It is less about opposing each other and more about working together. This also applies to mobility ecosystems.

The growth and success of current and future mobility ecosystems are being fed by a number of trends that are currently revolutionising the mobility industry and its environment. Electrification, digitisation, automation and servicing are ushering in a new era of mobility. In this, established and new providers, some of them from outside the industry, are coming together to form new systems of mobility.

Investments in start-ups in the automotive marketplace are currently booming. Electric cars which are specifically designed to meet urban requirements are



KEY FACTS

Both national and international trends show that IT systems are becoming increasingly networked: Online booking systems are being docked directly onto dealer management systems so that customers can book their workshop easily, online, around the clock and from anywhere in the world.

Potential use of vehicle data?

Up to now, independent workshops have had little pressure pushing ahead with digitisation. Regular customers and word-of-mouth recommendations have been sufficient for workshop capacity utilization. Looking at developments in other sectors, it quickly becomes clear that independent workshops must also act and embrace digital developments. Even if a workshop is doing an excellent job, digital processes and data-based business models are going to shape the workshop of the future.

And here lies an opportunity, but also a great threat, for independent workshops. Imagine workshops being able to automatically inform customers that their vehicle has a specific problem and needs to go to a workshop. Valuable customers are retained, and workshops will be able to compensate for normal fluctuation with new customers in the future.

Even simple basic information such as mileage, last service or general inspection date can be used to create business models that easily generate additional sales for workshops. If the customer is approached in good time, it is probably the approaching workshop that makes the sales. Or the customer is informed automatically that the tires will have to be replaced again this year. Making an appointment before the peak times of the tire changing season - with a special offer for loyal customers - does more than just ease the burden on the workshop calendar. Digital systems can be used to make offers and place orders in advance. Inconvenient paper-

work is no longer necessary.

These examples are intended to show what is possible with the data that is already 'on the road' today. It is becoming increasingly important for the aftermarket to develop solutions that will route the vehicles of the future to workshops. Both national and international trends show that IT systems are becoming increasingly networked: Online booking systems are being docked directly onto dealer management systems so that customers can book their workshop easily, online, around the clock and from anywhere in the world. Interfaces to sales-promoting modules that offer customers additional services or products as soon as they book their appointment will be firmly embedded in the mid- and long-term. And one key to this is the data from the vehicles. As an international trading group, ATR has a good overview of which solutions are already in use and in which countries. This is a clear confirmation that country-specific digital business models will soon reach other markets and become established. But neither wholesalers nor workshops can develop all the necessary digital systems for these business models themselves.

ATR, together with its partners, other ITGs and suppliers, is developing an open industry solution that addresses just that: Repdate, an aggregation infrastructure that integrates existing solutions and systems rather than replacing them and adding additional modules.

If a partner does not currently have its

own booking solution, it can draw on Repdate's modular system. Two examples of this would be a white-label booking solution or a fleet management solution (including integration of telemetry data and fully integrated booking capability). Further modules and enrichment of existing solutions with data relevant to the workshops are being planned.

With these and other modules in the future, we are strengthening the existing value chain and all those involved in it and increasing the competitiveness of the IAM in the face of the strong activities of the OEMs, but also of new competitors in online retailing who have not been involved in the industry to date.

Tobias Finck,
Senior Manager
Digitisation, ATR

Andes Motor: more than a decade of offering mobility solutions and services for its customers

Andes Motor is widely identified as the flagship player in the electromobility market, offering a wide range of zero-emission transport solutions with a strong focus on the current needs of society, the market, and its customers.



The headquarter of Andes Motor in Pudahuel, Chile

The company, which represents and distributes leading brands in Chile such as Maxus, Iveco, Foton, SANY, Agrale and Karry, has managed to consolidate a varied and complete portfolio of products aimed at the commercial segment. Andes Motor offers a comprehensive sales and after-sales service that seeks to meet the needs of its users. A new milestone has been added to its history with the signed agreement with ATR, which will allow the availability of new products, parts, and components to provide a better service to its customers.

With a long history and experience in the Chilean market, Andes Motor's mission has from its inception aimed at becoming a strategic partner for its customers, providing customised solutions for their requirements. Since 2008, the company has paved a path of growth that has allowed it to continue expanding commercially. With the integration of new brands in its line-up and the connection with new brand representatives, Andes Motor's presence in the Chilean automotive market has formed a distribution network throughout Chile.

This path today has transformed Andes Motor into a representative of the main manufacturers of trucks, vans, buses, light trucks and machinery in the world and into a solid and consolidated company that has strengthened its mobility solutions to become a leader in the market for commercial vehicles and machinery in the industry. Hand in hand with brands such as Maxus, Iveco, Foton, SANY, Agrale and Karry, the company set sales records, with a total of 13,777 units (wholesale) sold all over Chile in 2021.

"Our aim is to provide our customers with expert advice and comprehensive solutions, accompanying and guiding them to make informed decisions. Therefore, along with our varied and complete product portfolio and the understanding that the relationship with our customers does not end with the sale of a vehicle, we have also promoted an after-sales service throughout the country that complements and strengthens our value proposition," said Luis Izquierdo, General Manager of Andes Motor.

Thus, through its six brands, and with a vast experience and highly trained staff to meet the needs of the market, Andes Motor delivers professional service to its customers that is based on the trust and quality of its products. Behind the day-to-day management, there is a set of core values that define the company's identity: passion, efficiency, collaboration, agility, and service. These concepts make the difference and have made it possible for thousands of customers to prefer the brands that are part of the Andes Motor portfolio.

A line-up of products and services tailored to customers' needs

The history of Andes Motor began in 2008 with the official representation of Agrale, a renowned Brazilian chassis and bus company, with which it has followed a path of growth. Among its recent milestones, the brand has managed to reach the regions of Chile with a series of units that meet the country's new public transport standard, called RED. Then Foton joined the company, a firm that has been instrumental in establishing a strong presence in the truck market, in addition to its electric buses, vehicles with high safety standards, which have become ideal mod-



Luis Izquierdo



View of the Andes Motor's logistics centre

KEY FACTS

With brands such as Maxus, Iveco, Foton, SANY, Agrale and Karry, Andes Motor set sales records, with a total of 13,777 units (wholesale) sold all over Chile in 2021.

els for passenger transport in the Chilean public transport system. With 215 units circulating in the Chilean capital, the brand is a major player in the electromobility boom in Chile.

Subsequently, Maxus, a brand with a wide range of products including vans, utility vehicles, and small trucks, joined its portfolio. In addition to this, a series of fully electric alternatives have enabled the brand to lead sales of this type of vehicle in Chile, with 261 units sold in 2021. The figure represents 48% of electric vehicle sales in the country, making it the manufacturer with the highest presence of all-electric variants in the last year.

Complementing its product offering for various types of industries, Andes Motor took over the representation of SANY, the leading machinery manufacturer in China, in 2019. The firm has achieved an outstanding participation by ranking top five in global sales, a reality that has been replicated in Chile by being one of the leading brands in the marketing of excavators and mini-excavators, which are part of a wide range of products.

In addition, the company's credentials boosted the integration of brands with a strong international presence during 2021. Among them is Karry, a manufacturer of

commercial vehicles that is becoming an attractive alternative for entrepreneurs and logistics companies that need a dependable and versatile city truck. Finally, in October 2021, Andes Motor was awarded the official representation of Iveco, the renowned European manufacturer of trucks, vans, buses, and minibuses. An integration that has consolidated the company's growth and positions its portfolio as the broadest in the industry, particularly in the commercial vehicle sector.

Leaders in electromobility

Andes Motor is widely identified as the flagship player in the electromobility market, offering a wide range of zero-emission transport solutions with a strong focus on the current needs of society, the market, and its customers.

Also, in line with the challenges facing the country, it configured a comprehensive solution, consisting of an ecosystem composed of the most complete line-up of commercial vehicles on the market; the representation and authorised technical service of CATL, the world's largest supplier of lithium batteries for the automotive sector; in addition to a comprehensive concept that provides advice, support, training, telemetry and financing to its

users. All cross-cutting subjects that provide a long-term vision for taking charge of the evolution of the electric mobility process in Chile.

A new strategic alliance is born

In order to strengthen its after-sales service, Andes Motor has taken a new step by becoming a shareholder of ATR, one of the largest aftermarket companies in the world, a relationship with which the company expects to generate new opportunities, to share experiences in the aftermarket, and to improve the buying experience of its consumers.

"ATR is one of the largest and most important automotive trade cooperations globally. We are proud to be able to establish alliances that allow us to share and observe new experiences in different markets and companies around the world and, above all, to strengthen our after-sales management as a company. This new alliance will allow us to make available to our customers a series of spare parts, parts and components in a timely and efficient manner," concluded Luis Izquierdo.



'People are our most important part'

Approaching 60 years of growth and success in Australia, hsy autoparts celebrates joining the ATR family in 2022

We are hsy. Our people, our customers and our suppliers form the very fabric of our unique wholly owned and operated Australian business.

From humble beginnings in 1963, importing Porsche engine components for snowmobiles, the business has expanded significantly to become Australia's leading national independent importer and distributor of automotive parts, servicing passenger and light commercial vehicles, across BMW, Mercedes, VAG, Volvo and the French makes.

While the distribution of automotive replacement parts may not be unique, nor complex, for the hsy team, it's all about how we do it, and at every turn people are our most important part.

We have grown thanks to our relationships and putting our customers first. 99%

of our business is direct to independent automotive workshops across Australia, providing a comprehensive range of new OEM, OES, OE and quality aftermarket components.

When it comes to the parts we stock, we aim to work directly with the manufacturer, delivering quality products via our distribution network direct to customers, and typically offer four delivery runs per day, per branch.

Equal to the value we place on our customer relations is that of our supplier relationships.

From the first supply agreements settled with a handshake, the hsy team have worked hand in hand with our supply partners to this day. Linking parts to people, sharing information, training, technical advice, and awareness to ensure our customers are successful with the parts we supply.

As with all businesses, we have our golden rules, though our standouts are honesty, integrity, and reciprocity. Putting oneself in somebody else's shoes and listening (not just hearing) opens so much opportunity and brings us closer.

We have succeeded well with this culture. Our conversations today are rarely about parts, but rather about assisting in our customers' success and how we can grow together.

Discussions quite often include developing concepts around technical training and business advice/planning and keeping pace as our automotive aftermarket industry changes. We consider our customers, employees, suppliers' part of the hsy family, 'independent together'.

From day one, our goal has been, and always will, to be the very best at whatever we do. This drives our entire group, and it



KEY FACTS

The hsy business is Australia's leading independent importer and distributor of automotive parts, servicing passenger and light commercial vehicles across BMW, Mercedes, VAG, Volvo and the French makes.

is why we remain relevant and strong in Australia's competitive car parts space.

As our business is part of many communities across Australia, we take pride in contributing to a select number of charities and implement social programs into our work environment.

We are also planning a number of environmentally focused initiatives, including the implementation of solar and removal of single use plastics. We also have the very hsy unique initiatives, such as the 'greening' of our central warehouse external walls and converting them to a living feature – imagine how wonderful that would be.

Becoming part of the ATR family in 2022 is not only exciting for the team involved in the initial discussions, but also for the entire hsy team who are learning, more and more, about the ATR group and

what it means to join such a select group of businesses that work together on a global scale.

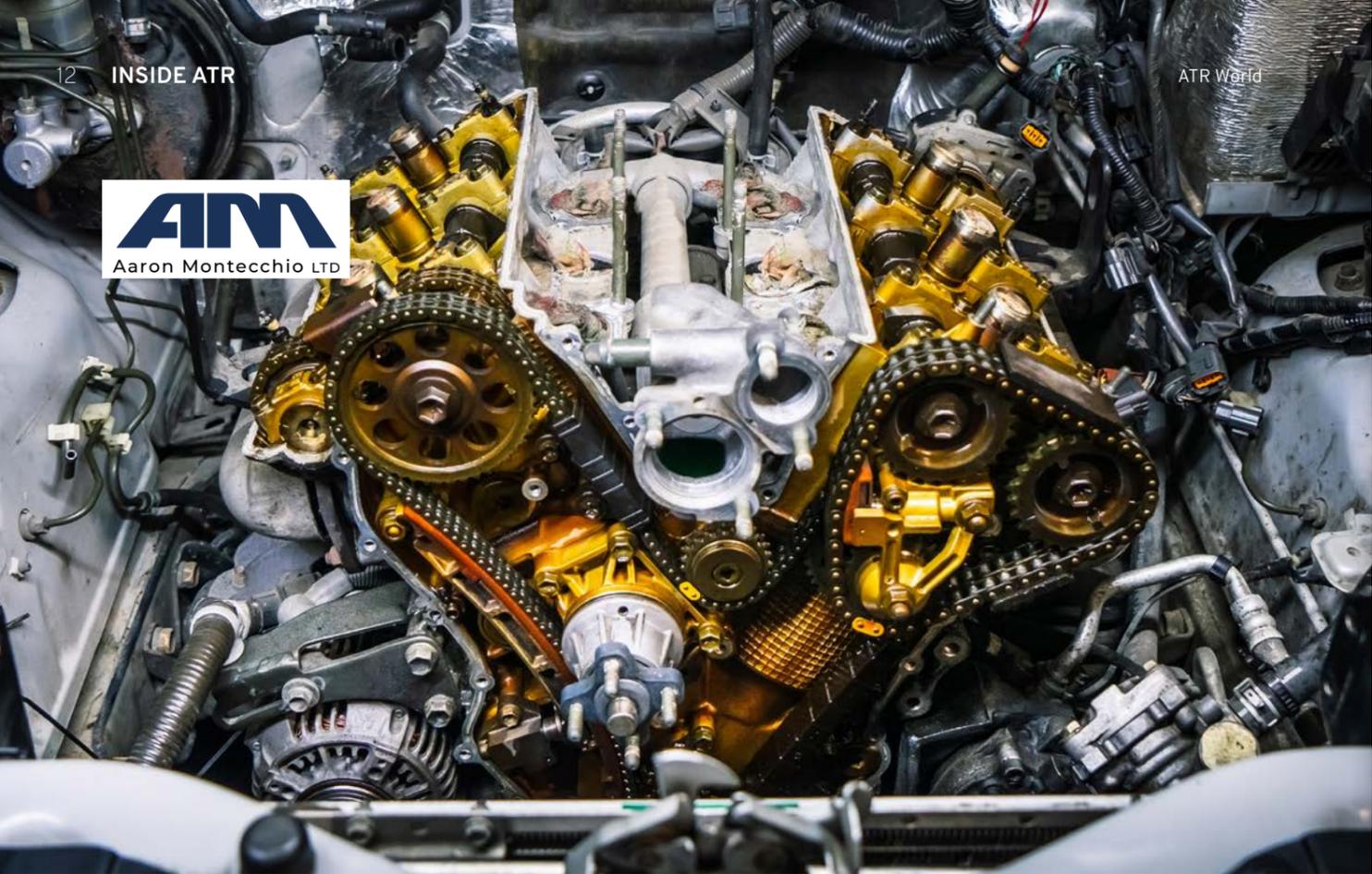
We see this as an immense opportunity to be challenged, which we love and consider it a privilege to contribute to the ongoing success of ATR and its shareholders. Also, being the relationship driven business that we are, forming new ones will be stimulating.

We see our future as bright, and ready to succeed in both the current and developing market of electric mobility, we welcome these future trends and are excited about where this may transition hsy and its family.

We are hsy, we are passionate and love what we do.

Hsy at a glance:
100 Team members
6,000+ Automotive workshop customers
14 Branch locations across Australia
8 Planned locations in development
Melbourne Based central warehouse, training centre & head office
5,300sqm Approx. Warehouse space
50,000+ SKU's listed





The story of an exceptional company in an ordinary business environment

On the occasion of Aaron Montecchio Ltd's 75th anniversary, Sammy Konfidan takes us on a journey through the company's history, present and future.

We are part of a major automotive group in Israel. Kogol, the company directly holding Montecchio, is the largest and most reputable tire business in Israel, officially representing the Michelin Group in Israel. Mayer Group, partial owners of Kogol, is one of the largest automotive groups in Israel with an annual turnover reaching €3bn.

We are deeply familiar with many companies from a wide variety of activities. I have known Montecchio for many years as a very reputable, admired and almost feared company by both its competitors and customers.

Kogol bought Montecchio in 2019 and I got the honor of managing it. A company that was established in 1947 by Mr. Aaron Montecchio, an aftermarket store of around 12sqm (yes 12...) in Tel-Aviv, managed and developed many years later by Mr. Joseph Montecchio (RIP) and his brother-in-law Mr. Joseph Topaz (strong and kicking).

What I found was a very different company from any other that I've ever come across with. I think that many features in this company exist mainly in fairytales, but in Montecchio's case all are true.

So here are some fairytale-like facts:

Aaron Montecchio Ltd. is the largest aftermarket player in Israel according to all public information available. Like all other ATR shareholders. Not so exceptional...

Montecchio does not approach potential customers. They approach Montecchio and are registered in a waiting and evaluation list. Every quarter, we sit with the relevant area managers (there are three of them) and decide who can be added as a new customer. We admit very few new customers every year. Currently there are

70 candidates on our waiting list.

Montecchio does not start working with customers with purchasing volumes lower than €17,500.

We have only 161 customers, all of them are wholesalers and local distributors, who were chosen over many years. There are no garages or workshops among our customers. Only the most significant local aftermarket distributors can be Montecchio's customers. However, we have not shut off old and loyal customers who scaled down during the years.

The big majority of our customers will turn to our competition, only when they need product categories which we do not have or when we have missing items in our portfolio. They will always buy our products even if we are more expensive up to a reasonable gap. Our customers will buy from us any new category that we launch.

The company has no sales reps and has no capacity to accept orders by any other means but through our App which is used by 600 users within the customer shops. They all walk around inside their shops and give answers to their customers directly from our App.

Montecchio has been getting 100% of its orders from an app for 12 years! When nobody had even imagined using the phone to buy anything. We replaced our old app only in 2021.

We only have two people in our customer service thanks to the App which provides our customers all the information they may need from us in a very transparent and reliable manner.

Montecchio does not need to take any type of action to collect payments from its customers. If a payment is not made strictly on time, it is enough to remove



Sammy Konfidan - Managing Director Aaron Montecchio Ltd

the tick mark from 'App Active' in the SAP. I did it once and seven minutes later the customer sent the bank transfer certificate to the Customer Service Whatsapp. I still cannot believe the collection report of this company - by mid-February 22, December 21 is fully paid with bank notes to the agreed dates. There is nothing like this in any wholesale business in Israel that I know of. We do not negotiate prices with our customers. We have equal discount levels for all customers regardless of their size of activity. We set higher monthly targets for the bigger customers and make sure the smaller ones can cope with the bigger players in their areas. This is done in order not to lose our smaller customers and become dependent on a few big players.

Montecchio never tries to gain market share by reducing prices. We learned that no matter how much we reduce our prices, our competition has no choice but to further decrease theirs. That is the only weapon they can use to compete with us.

A short story summarizing everything: Almost a year ago, I got a phone call from

a good customer. He told me that he was offended because we opened a new customer about one hour drive from his store. I asked him how that new customer has anything to do with him. He told me that he sends a vehicle twice a day to that area and that some of his biggest customers reside just next to that new customer. I said, "OK, so that new guy would have bought everything we have to offer from our competition instead of buying it from us. So, what does he gain if we give that customer up?" He told me "Sammy, who cares what he sells? Without Montecchio, he'll need six different suppliers, which all of them together won't be able to provide the variety and service level he can get from Montecchio alone. Now you gave him Montecchio." True story...

Of course, the obvious things such as overall good pricing, very high availability, rapid and accurate service, widest range in the market, strong R&D for new products are the key factors for all of us in our markets. Without these key features no

KEY FACTS

- 28,000 SKUs**
- 170 product categories**
- 100 employees**
- 7500 sqm Warehouses**
- 161 Customers**

company can lead in the extremely competitive environment we all live in. In Montecchio there are many more exceptional elements in the way we conduct business, which has built this special position throughout the years, on which I won't elaborate here due to obvious reasons.

Since my group bought Montecchio we have built new warehouses, launched new ERP and IT systems, replaced our APP to a new one, built new offices and rescaled the capacity of this very special company.

Now we are a 75-year-old company with a new Bi-Turbo engine inside, with the exact same look from the outside, Aaron Montecchio and his sons built over 73 years.

The biggest effort was to replace the inside without breaking anything. According to our results, it seems that it worked.



Just click on the picture and you can take a look inside Montecchio's new facilities.



Car parts on the counter, but RPA processes and data science behind the counter

The pandemic did accelerate the digitisation process, but the digital transformation of the Tokić company began much earlier. The ‘first digital steps’ were already taken in 2015, a long time ago. Demanding business with over 300,000 items, 300 brands, and over 140 branches in Croatia and Slovenia.

Tokić confirmed its image as an ‘early adopter’ by being the first in the region of Zagreb for logistics and distribution, to test the Gideon Brothers’ autonomous robot. In this way, in 2019, the domestic company, which seemingly only sells auto parts, became a European pioneer in regard to robotics. Since taking those first digital steps, the company today employs about 40 people who are through Tokić’s 4.0 stream initiative

focused on digital transformation and digitisation.

Five million robotic processes annually, and growing

Digitisation in Tokić is not merely a trend, but is an integral part of the company’s business and a base for its strategic development. At Tokić, employees within its growing technology departments are the favourite and most wanted colleagues

one can meet in the hallways, as their finished products raise the efficiency of basically everyone’s daily performance. In the end, Tokić’s capacities are confirmed by the employees in numerous competitions, as well as memberships in artificial intelligence associations.

Specifically, Tokić in Croatia and Bartog in Slovenia currently operate with as many as 170 robotic-automated processes that perform over 400,000 operations per



Josip Kelava, Head of Digital Transformation and Digitisation (left), and Hrvoje Lovrić, Deputy Head of Digital Transformation and Digitisation for Research and Development

month. At the annual level, it is almost five million robotically operated processes. At the same time, the company has already stepped into Big Data and machine learning. In this way, the remaining employees of Tokić, regardless of whether they are in sales or management, have more time to focus on quality and added value tasks. At the same time, on paper alone, the company pollutes less, which means saving 400,000 sheets or two tons of paper every month. Despite global problems in supply chains, Tokić and Bartog warehouses haven’t yet had a problem in product availability – thanks to the technologies and prediction processes that were implemented. By combining machine learning and artificial intelligence in RPA (robotic process automation) processes, Tokić’s products are being created and improved every day, which is making the job more efficient.

The Croatia-based company, which is known primarily for its large network of

branches and rapid growth throughout Croatia and Slovenia, bases its strength on the internal development of human resources. By 2021, the Tokić Group’s employees had grown to a thousand, with numerous experts from IT, finance, and logistic sectors. Many were inspired to join one of the 50 most innovative companies in Europe, named by the London Stock Exchange in 2019 and awarded the Elite Certificate.

Progressive when it comes to the technology, but traditional when it comes to

people, Tokić has successfully grown from a family business to a transparently operated regional leader in the field of auto parts and tires, and now gives the concept of agile development the right meaning.

From the start of 2020, the Tokić Group invested more than € 30 million in business expansion, which includes the acquisition of the Slovenian company Bartog, but also the development of branch network, equipment, and, of course, in people. The company is now optimistic about its regional future, but is strategically looking forward to further expansion. All within their Kaizen business philosophy – constant progress is made by taking small steps every day.

Josip Kelava, Head of Digital Transformation and Digitisation at Tokić Ltd

“The level of business automation in Tokić is already at a high level, while through Tokić 4.0 stream initiative and all associated departments we see a lot more things that we can develop and set at a high technological level. Together with new reinforcements and monitoring of global trends (technology/innovation) we already operate as an advanced tech company.”



Constant progress is made by taking small steps every day.

KEY FACTS

By 2021, the Tokić Group’s employees had grown to a thousand, with numerous experts from IT, finance, and logistics, who are focused on digitisation.



LKQ Europe central distribution center in Berkel en Rodenrijs, Netherlands, with an area of more than 50,000 m² for more than 130,000 articles to be stored.

‘Logistics Without Borders’ – LKQ Europe introduces its state-of-the-art logistics network

LKQ Europe prepares its European supply chain and logistics operations for the Aftermarket of the future, contributing to the company’s vision to become the Leading Auto Service System in Europe.

With the 1 LKQ Europe Program, LKQ Europe is driving a large-scale program of fast transformation to streamline its operations, including logistics and supply chain. For the leading distributor of automotive aftermarket parts for cars, commercial vans, and industrial vehicles in Europe, agile, resilient, efficient, future-proof and pan-European logistics and supply chain operations are critical key success factors to meet and exceed customer requirements.

The automotive world is undergoing a fundamental change. The increasing focus on sustainable and clean mobility is accelerating digitization and the rise of alterna-

tive drive technologies is changing the whole automotive value chain. LKQ Europe is actively driving the change and adapting its logistics operations to the new normal.

“Our vision is to support existing and newly acquired customer propositions with our ‘Logistics Without Borders’ mindset. We will be industry-leading in logistics and drive logistics innovation to deliver LKQ Europe’s customer promise consistently in an environmentally sustainable way in every region, business model, and channel,” says Claudia Martins, Vice President Logistics and Supply Chain of LKQ Europe.

To achieve ‘Logistics without Borders’, LKQ Europe has joined forces with external



Claudia Martins, Vice President Logistics and Supply Chain of LKQ Europe

logistics and supply chain experts to run an analysis of its European end-to-end distribution network. With its logistics net-

works historically grown in different countries and regions for dedicated markets, every single material and information transport flow is now visualized and analyzed. More than 30 GB of network data have already been collected and consolidated, creating the foundation for a new European-wide End-to-End network design. LKQ Europe uses software to create a digital twin of the European network, including virtual copies of each storage facility, simulating all warehouse flows.

Physical and information flows, as well as transport and delivery routes to and from LKQ Europe’s central distribution centers (CDC) will be streamlined across country borders and further improve availability and service levels.

Based on the associated analysis, LKQ Europe is reorganizing its CDC network and has already invested more than 100 million euros into its state-of-the-art central distribution centers, boosting the company’s strategy of building an efficient and more consistent base for customer deliveries. Inbound flows are targeted to be consolidated and supplier collaboration is further increased to ensure greater parts availability, reduce stored inventories and working capital. In almost all regions, initiatives are underway to optimize the company’s logistics infrastructure.

“Another major goal is to establish a standard European operational excellence setup, driving continuous improvement. Our pan-European network optimization will provide clear service and cost benefits, foster our competitiveness, and enhance the customer experience,” states Claudia Martins.

This pan-European setup will help LKQ Europe to be at the forefront of the transition in the Independent Aftermarket regarding operational excellence, automation, electrification, and digitization.

Product assortments will grow further, especially in the light of future product diversification. More electrical and software components will alter the structure of supply chain logistics with additional products on top of the existing networks. In Scandinavia alone, LKQ Europe expects to get between 1,000 and 2,000 traction batteries from battery-electric vehicles into its process in 2022. LKQ Europe can use its agile logistics network, its scale, and its last-mile delivery expertise to offer logistics solutions for traction batteries and related components for its 127,000 inde-

pendent workshop customers.

One of the key considerations in the new logistics network design is sustainability. LKQ Europe’s new optimized setup will save thousands of miles driven for its customers. Besides other CO₂ reduction measures like driver training, the company is running several pilots with battery-electric delivery vehicles in Germany and the UK to reduce emissions of its more than 6,000 delivery vehicles.

LKQ Europe’s sustainability roadmap aims for a reduction of fleet CO₂ emissions of up to 30% within the next ten years. The CDC’s feature newest clean technologies including photovoltaics and LED lighting. With respect to environmental aspects within its operations, LKQ Europe’s spearhead into sustainability, automation, and digitization makes it one of the most progressive companies in the European Automotive Aftermarket.

LKQ Europe is working closely with all key suppliers to help them bring their service to the aftermarket to the level that can keep cars on the road across Europe. Fast

and reliable delivery of high-quality parts and services is key for LKQ Europe. The company is not only a supplier for customers, but also a partner. Customers can rely on extensive services, including short-term availability. LKQ Europe delivers several times a day, even for unplanned orders. Out of 20 orders, 19 are delivered on the same day. The streamlined logistics network will be a cornerstone for LKQ Europe to continuously fulfill that promise, meet all customer demands, and master the challenges of the Independent Aftermarket of the future.

KEY FACTS

LKQ Europe’s strategy is driving a pan-European supply chain and logistics set up on the foundation of excellence, to meet the rise of alternative drive technologies that changes the logistics of the whole automotive sector.



Battery electric delivery van of the pilot project of LKQ Euro Car Parts on the Isle of Wight in the United Kingdom.

Environmental protection through Martaş's Parcel Project

The Parcel Project that was launched by Martaş Automotive during distribution processes will prevent 1,000 trees from being cut down in one year!



Serdar Maviş, Erdem Çarıkçı and Murat Öge (from left to right)

reached 30,000 parcels – a 70% parcel utilization capacity. We expect to handle all our shipments through the Parcel project in mid-2022. Thus, we aim to circulate the delivery of a total of 1 million cases over a year.”

The project will meet an important need of the sector!

Murat Öge, General Manager of Lift Logistics, which undertakes the distribution processes of Martaş Automotive, emphasized that they aim to bring a breath of fresh air into the logistics industry with personalized distribution services and technology-focused initiatives. Öge emphasized that the company has developed tailor-made solutions for customer demands as it approaches urban and intercity distribution with an organi-

Martaş Automotive, a sales, marketing and distribution company operating in the automotive spare parts' independent renewal market, undertook a model project. The company is transitioning from cardboard boxes to recycled plastic crates, in order to achieve sustainable logistics cycles with the “Parcel” Project and to prevent the cutting of thousands of trees every year.

Martaş Automotive General Manager Erdem Çarıkçı stated, “With our project, we are reducing the environmental impact of recycled cases used in the shipping processes of our distribution centers and the cardboard boxes carrying products. By stopping the use of cardboard boxes, we aim to prevent about 1,000 trees from being cut down annually”

According to Çarıkçı, parcels that have two different sizes could be digitally tracked using QR codes, “which shows our commitment to sustainability. We are

contributing to the further improvement of our logistics processes, by monitoring the entire journey of our recycled parcels end-to-end, and by increasing efficiency by repeated use of the parcels.”

Stating that the application has been put into use in all of their distribution centers, Martaş Logistics Manager Serdar Maviş said, “From now on, our goal is to implement the application in all interim processes between our warehouses. When we first started the project, we added 13,000 parcels to our shipping processes. We also launched the project in our European Distribution Center in January and



zational mentality. “With our technology-based micro-distribution solutions, we aim to become the most preferred and popular logistics company in the automotive industry. In this context, we believe that the Parcel project will fulfil an important need of the industry with its digital infrastructure.”



KEY FACTS

Martaş Automotive has the most advanced spare parts supply and distribution organization in Turkey.

Martaş Automotive brings together its 42 years of industry experience with the heavy vehicle spare parts market

Martaş Automotive plans to maintain its growth in the industry by entering the heavy vehicle spare parts market in 2022. Martaş Automotive has been operating in the passenger and light commercial vehicle group since 1980. The company is one of Turkey's largest and most trusted spare parts distributors.

“We are ready to bring a new service approach”

Erdem Çarıkçı, General Manager of Martaş Automotive, emphasized that the company's primary priority since its foundation has been creating customer trust through its excellent products and dependable service. “Martaş Automotive is prepared to bring a new service approach to the industry by entering the heavy vehicle spare parts market with the strength that comes from its core roots: current sales-marketing, distribution power, and technical infrastructure.

Covers the entire country with its wide distribution network

Martaş Automotive has the most advanced spare parts supply and distribution organization in Turkey. It serves over 5,000 customers through eight distribution centers, partnerships with over 150 international and national brands, stocked products of over 150,000 varieties, and a daily distribution organization covering all countries. As a leading company in the industry, the Martaş organiza-

tion has become stronger and closer to its customers through this investment in the Heavy Vehicle Business Unit.

Martaş Heavy Vehicle Business Unit Manager Uğur Tıraş said that they would grow steadily in the market, thanks to the strength they draw from Martaş's current structure and its experienced heavy vehicle team.

“We aim to make a difference in the market through a new service approach”

According to Uğur Tıraş, “Martaş Automotive is providing services to nearly 18 million passenger and light

commercial vehicle groups in the Turkish market. We have also started to serve over 1.5 million heavy vehicle groups with this investment. We will rejuvenate the market with our eight distribution centers and a multi-country daily distribution organization. Our service vehicle brands include Mercedes-Benz, Man, DAF, Volvo, Scania, Renault Trucks, Ford Trucks, and Iveco. For these brands, we will provide service in engines, cooling systems, fuel systems, exhaust systems, clutches, transmissions, brake systems, suspension, electricity, mineral oil, and battery products.”



Uğur Tıraş and Erdem Çarıkçı (right side)



Development, perspectives and plans for 2022

Despite all of the difficulties in 2021 caused by the global epidemic, Phaeton had an impressive year. The company expanded its business capacities: by developing and implementing new products and processes, Phaeton provided more efficient service for its customers.

It should be noted that in 2021 the company's warehouse total space increased by 20%, the vehicle fleet in Kazakhstan and Kyrgyzstan increased by 15%, more than 90,000 product items were stored in the warehouse, and more than 6,000 orders were processed per day.

The ongoing modernisation of all processes has contributed to the overall improvement of the quality of customer service. This makes it possible to provide services more efficiently and quickly, and enables customers to receive prompt feedback on all issues.

The private brand Winkod, which positions itself as absolute quality at an affordable price, has shown unprecedented growth of 40%. Different product groups of this brand have been severely tested by poor road quality as well as complete off-road conditions. After all these tests of extreme temperature deviations, Winkod has shown high quality

and reliability as a confident brand. Being confident in Winkod quality, Phaeton provides 24-month warranty on the auto parts that demonstrated reliability and durability.

Thanks to the cohesion of the team, as well as friendly and trusting relationships with its partners and customers, Phaeton managed not only to overcome all of its difficulties, but also to achieve all of its major goals in 2021.

Strategy for 2022

Phaeton plans to expand its production and launch new exclusive products on the Kazakhstan market in 2022.

The high confidence of consumers in the Kazakhstan market and excellent performance of products form the basis for a large-scale expansion of the line of their own brand of auto parts under the WINKOD trademark, which is planned in 2022.

KEY FACTS

Phaeton provides 24-month warranty on the auto parts that demonstrated reliability and durability.

In 2021, Phaeton presented several exclusive products on Kazakhstan's automotive market:

- The company became the exclusive representative of AFINOL motor oils for the markets of Kazakhstan and Kyrgyzstan. The AFINOL brand is produced in Germany according to strict global quality standards. AFINOL is the leader in lubricants in Germany. Motor oils were created for operation of engines in extreme conditions, which is important for Kazakhstan with its harsh continental climate. An important event was the delivery of the Japanese brand of brake pads AKIKA to the Republic of Kazakhstan.
- This high quality Japanese brake brand is always associated with reliability and safety. In 2021, the company also expanded the product line of the Winkod trademark and opened four warranty car services.

The 'Open B2B' market has the mission to collaborate with the automotive industry



Even with all of the advances that we have had in the technology segment through the past years, the consumer is still leading the industry evolution – from distribution to final sales – and demanding what is to happen in the world. Without the customer, the automotive industry would not have shown much progress, innovative technologies would not be available for us, whether smartphones or cars.



Luis Norberto Pascoal is chairman of Companhia DPaschoal de Participações and superintendent director of Comercial Automotiva SA

They are proposing a new vision related to the data analytics reality, exploring the information in a predictive way to connect themselves with clients and suppliers, anticipating behaviours and identifying problems and opportunities in real time, by using a system called 'DPKonect'. This platform offers information that helps the improvement of the pricing process and also the control over production and stock management in industries.

Understanding what their customer needs and how he or she wants to be assisted is a big challenge, a goal that can only be achieved by an agile interconnection between all the supply chain players in this environment: from the feedstock supplier to the sales team. In that sense, each actor in this chain can add value to any phase of the process.

To give the adequate fluidity to this environment, it is necessary to develop the interaction of two dimensions: the human dimension and the digital dimension – or 'BIOsmart'. DPaschoal Group can only understand the whole scenario and have an accurate overview on how they can help and assist their customers with the combination of human intelligence along with the available tools.

Using the BIOsmart technology in an open way – or in 'B2B Open' market – is essential for anticipating the demands and needs of the automotive maintenance market. (The emergence of data analytics support – when people search for automotive parts and components, when retailers seek for technical training courses, when the tire and car selling markets start to grow (both new and used), when the Brazilian agro production rises, among

KEY FACTS

'DPKonect' platform offers information that helps the improvement of the pricing process and also the control over production and stock management in industries.

other examples – made possible that some of those components, when combined and using technological support, brought DPaschoal Group important information on how they can assist their customers, both in the physical world as in the digital world, or 'phigital'. All of this information should support the players of this environment to fit, as if they were in a 'Lego' structure, in a perfect match to create a 'masterpiece'.

The challenge here – when we facilitate this cooperation – is to eliminate difficulties that arise from the supply chain ecosystem (the 'BIO' part) and search for the best way of offering the right product, with the most adequate price, in the right moment, in the right place.





Latest Bosch HDEV6 high-pressure injection valve is now also available on the aftermarket

Growing aftermarket business related to maintenance and repair of gasoline direct injection engines

In 2023, more than half of all newly approved combustion engines will be equipped with gasoline direct injection (GDI) systems. As a result, there is also a growing demand for repair and servicing of GDI engines. The number of vehicles equipped with Bosch gasoline direct injection systems is also continuously growing. In order to enable workshops to perform repair tasks on these systems, Bosch has now expanded its aftermarket range with DEV6 high-pressure injection valves. Following on from HDEV5, it is the latest generation of high-pressure injection valve technology. HDEV6 high-pressure injection valves are designed for nominal injection pressures of up to 350 bar.

- Latest generation of high-pressure injection valve technology complements the Bosch aftermarket range.
- Growing number of vehicles with direct injection systems due to hybridization.
- Modern repair concepts, spare parts and the new BTG 5120 tool kit for professional servicing of high-pressure injection valves.

Additional growth through hybrid powertrain concepts

Gasoline direct injection engines stand out for their high performance combined with low consumption and emissions. Engine developers also rely on gasoline direct injection systems for the combustion engines of hybrid powertrain concepts. The market related to the large amount of direct injection systems already in operation will continue growing thanks to powertrain hybridisation. Car manufacturers are currently equipping more and more engines with HDEV6. Bosch supports workshops providing know-how, repair kits and suitable spare parts – such as the most recently included HDEV6. This allows automotive workshops to increase their turnover potentials and thereby benefit from this growing service market.

Professional repair using BTG 5120 tool kit

For diagnoses and removal of Bosch high-pressure injection valves, Esitronic 2.0 Online diagnostic software includes error and signal patterns, measured values as well as disassembly and installation instructions. In case, a removed high-pressure injection valve is to be reinstalled after ultrasonic cleaning, for instance,



KEY FACTS

Bosch supports workshops providing know-how, repair kits and suitable spare parts – such as the most recently included HDEV6, thus, allowing automotive workshops to increase their turnover.

the seal rings will need to be replaced, among other things. For this specific purpose, Bosch developed the BTG 5120 tool kit. It allows professional replacement of combustion chamber sealing ring (Teflon seal), O-ring and decoupling elements of almost any HDEV5- and HDEV6-type injection valve. The compact case comprises a special pair of pliers, calibration sleeves and pilot cones. Furthermore, there are also Bosch-produced video instructions available online which explain the removal and installation of high-pressure injection valves.

<https://youtu.be/qB8DdJsNPnU>



The role of 12 volt batteries in electric vehicles

When the main battery of an electric car fails, the 12 Volt battery steps in to support the electrical consumers and systems

KEY FACTS

AGM and EFB batteries are far from becoming obsolete. Their sturdy construction and behaviour as well as their lack of electronics make them a reliable and robust power source.

The role of lead acid batteries in electric vehicles

Have you ever wondered what happens when the lithium-ion battery in a modern electric or hybrid electric vehicle stops working? You will find your answer under the bonnet, inside the boot or sometimes even behind the driver's seat. Alongside the high voltage lithium-ion traction battery there is another one: a 12 Volt battery working as a secondary power source to ensure the uninterrupted function of safety critical systems, in case of a high voltage system failure, but also key off-loads like the central locking system.

For example, even in an electric car, it must be ensured that the power steering continues to function in an emergency situation so that manoeuvrability is maintained. This calls for a reliable, high-performance power supply. VARTA® AGM and EFB batteries have for years proven their

reliability in this regard, making them the perfect companion in supporting the 12 Volt electrical system of electric or hybrid electric vehicles.

Old but not old-fashioned

Lithium-ion technology is considered the successor of lead-acid when it comes to battery technology. However, it is not as inherently robust as other rechargeable technologies and requires continuous monitoring. Lithium-ion cells need protection from being overcharged and deep discharging. A special protection circuitry is mandatory to maintain the voltage within safety limits. Additionally, the cell temperature distribution must be controlled by either passive or active cooling systems.

This is where proven solutions like AGM and EFB play to their strengths. When the high voltage battery fails or switches off,

they serve as a buffer for the electrical system, making sure that essential systems like the locking mechanism continue working. They supply all 12 Volt consumers in the vehicle which include important safety functions such as ABS and ESP as well as the driving assistance systems. AGM and EFB batteries are far from becoming obsolete. Their sturdy construction and behaviour as well as their lack of electronics make them a reliable and robust source of power.

The VARTA® 12 Volt battery portfolio is ready to support both today's as well as future electric vehicles. Clarios' VARTA® batteries deliver energy for crucial safety systems, comfort features and fuel-saving functions. They even have sufficient spare capacity to power vehicle systems that are yet to come. Today and tomorrow.

Learn more about the VARTA® products [here](#).

EVEN ELECTRIC VEHICLES REQUIRE 12V POWER.



ALL CONSUMERS WITH 12-VOLT SUPPLY



IN CASE OF FAILURE OF THE HIGH VOLTAGE BATTERY



The rise of the exhaust gas temperature sensor

As engine temperatures rise, so too has the market for exhaust gas temperature (EGT) sensors

Here, Delphi Technologies, a brand of BorgWarner, takes a look at how these heat protecting sensors have become an increasingly important part of today's modern vehicle. And how they can become an equally important part of the workshops' business too.

A few years ago, you would have been able to tell how powerful and fast a car was just by the size of its engine. Not any longer! In a bid to meet increasingly stringent emission legislation, vehicle manufacturers are finding more meaningful ways to squeeze more power from smaller amounts of fuel – in other words, downsizing. The result? Today's smaller, more fuel-efficient engines, which thanks to the use of turbochargers and superchargers, offer the same, if not more power than their predecessors.

As with all forced induction systems, the engine and its internal components were exposed to higher pressures and higher temperatures, which made them more vulnerable to damage. That was until

the exhaust gas temperature sensor came into its own.

Originally designed to monitor the catalytic converter, exhaust gas temperature sensor technology has become increasingly complex.

Now, its main job is to protect key components from high temperatures in both diesel and petrol engines. So, if the sensor detects too much heat, the ECU will step in and take appropriate action to reduce it. For example, by lowering boost pressure in the case of the turbocharger, or by increasing the quantity of fuel injected for the catalytic converter. In diesel engines, they are also used to monitor the temperature of the diesel particulate filter (DPF) to establish the correct temperature for DPF regeneration. Making them a crucial part of any modern vehicle and the workshops' business too! With three or more of these high failure parts fitted to many of today's vehicles, the workshop is likely to be seeing plenty of these needing a high-quality replacement. With the Delphi Technologies



EGT sensors featuring film RTDs, greater protection is being provided from environmental and mechanical stresses, whilst offering improved response times - taking less than 11 milliseconds to jump 300°C – and wider temperature ranges – from as low as -40°C, all the way up to 900°C.

With a range covering over 46 million vehicles in operation in Europe, and over 2,500 individual applications including many of the most popular cars on the road today, be ready to capitalise on this fast-growing market, by choosing a quality exhaust gas temperature sensor from an OE engine management provider like Delphi Technologies.

KEY FACTS

Heat protecting sensors have become an increasingly important part of today's modern vehicle as well as an important part of the workshops' business.

Scan the QR to learn more about our exhaust gas temperature sensor range.



Delphi Technologies Exhaust Sensors Portfolio



Wide-ranging product portfolio & training

Pioneering leadership, OE Innovation

OE-level diagnostics & technical support

Technology driven



DENSO

KEY FACTS

DENSO is a major supplier of control technology and possesses deep knowledge and considerable experience in the field of mobility-product control technologies, which enables it to build systems that effectively coordinate mobility with infrastructure and to harmonise the complex mechanisms as one system.

Charging on the move

The electric vehicle (EV) revolution that is so obvious on the street is also setting the pace in the workshops as training and knowledge of EV technology is now a major aftermarket trend that is clearly here to stay. However, where is charging these vehicles headed?

The growing popularity of EVs is largely driven by environmental issues and principally the short term gain they provide in terms of the reduction of exhaust emissions and the consumption of fossil fuels, primarily in the form of petrol and diesel. However, although the range they can travel is improving with every new model, charging the batteries they rely on can still be problematic, particularly as competition for public charging points is likely to intensify. So, is there a solution?

Well, a team of engineers at DENSO's Electrification Systems Engineering Division envisions a future when EVs will be charged while on the move and are now hard at work to make the chore of plugging in, a thing of the past!

IMPORTANT NOTE:
While DENSO Aftermarket is proud to share technical knowledge and experience, please note that some of the technology mentioned in this article are OE technology and, therefore, not yet available in DENSO's aftermarket range.

Wireless power transfer technology is already being widely used to charge devices such as smartphones and electric toothbrushes. By applying it to the world

of electric mobility, EV batteries will soon be able to be charged on the move, or more precisely expressed, when a vehicle comes to a stop during a journey, which will enable EVs to keep running without stopping to charge.

With this development, not only will driving an EV have a less harmful impact on the environment, it will also reduce the competition of finding and using – often for lengthy periods – a public charging point thus providing an advantage that is just not possible with a traditionally fuelled vehicle. Although the concept would be able to operate wherever the technology is integrated into the infrastructure, it will really come into its own during city driving, where in busy areas vehicles often spend a lot of time sitting at red lights or at rest due to congestion.

Although sophisticated control systems are required to develop this type of technology, DENSO is a major supplier of control technology and possesses deep knowledge and considerable experience in the field of mobility-product control technologies, which enables it to build systems that effectively coordinate mobility with infrastructure and to harmonise the complex mechanisms as one system.

DENSO has been conducting collaborative industry/academia demonstration

testing based on an open innovation approach and it will in 2022 gradually start experimenting. Around 2025, it plans to start practical applications of the technology in compact mobility systems within DENSO's plants.

The technology is expected to work particularly well with vehicles that serve distribution centres, plants and other facilities that operate nonstop throughout the day. By installing electric power charging systems in these locations, the potential use of automated guided vehicles and greatly improved task automation and efficiency can be expanded.

Through development of this technology, DENSO will continue striving to achieve the seamless interconnection of infrastructure and mobility to deliver a better future for people everywhere, and a better future for the planet.

The full 'Driving an electric vehicle as far as you want without stopping to charge lifestyle' story is available in the Stories section of the DENSO Global Website, or via this link:

<https://www.denso.com/global/en/news/stories/all/210610-01/ev-battery/>
Further details of the DENSO Aftermarket programme are available online at:

www.denso-am.eu

DRiV brands helping distributors, workshops capture emerging opportunities

Pandemic and related supply chain challenges highlight importance of strong partners and world-class brands



Audrey A. Harling

The automotive parts and service industry might not be as glamorous as the tech sector, but it certainly offers greater resilience. In spite of the pandemic, supply chain disruptions, labour shortages, the rise of electrified powertrains and the ever-growing influence of e-commerce, the aftermarket's fundamentals remain rock-solid. The current state of the market also points – perhaps more clearly than ever – to the importance of close collaboration among leading parts manufacturers, distributors, and their mutual customers, through cutting-edge products and trusted brands driving success on the street.

"The end customer's reliance on the independent aftermarket has never been greater than it is today," said Audrey A. Harling, group vice president and general manager, Tenneco DRiV Motorparts. "In spite of all the unprecedented challenges providing opportunity for life impacting flexibility since the beginning of the pandemic, we are all working longer and hard-

er and, consequently, have less time to shop around for vehicle maintenance and repair. Consumers want to establish lasting relationships with convenient, trusted service providers who can help keep their cars in safe, reliable condition. And aftermarket workshops – backed by a highly sophisticated and effective parts supply chain – are increasingly seen as that preferred choice."

Ironically, one global supply chain issue, the shortage of computer chips, is causing many consumers to invest more in their current vehicles, since the supply of new models has been extraordinarily tight. Additionally, consumers' increased reliance on internet-based research and mobile shopping is playing to the strengths of the most web-savvy workshops and the industry's premier brands.

"In the e-commerce world, there's virtually no way for the consumer to accurately evaluate the quality of one product versus another," Harling said. "That's why established brands are so important and can play a role in which shop the vehicle owner ultimately chooses."

DRiV Motorparts' brands include leaders in each of their respective categories. From Monroe® and MOOG® to Ferodo®, Payen® and Champion®, DRiV brands have been the predominant choices of workshop owners and mechanics for multiple generations. "It is very difficult for a brand to remain relevant over several decades, but each of our leading brands is even more appealing today for professionals and consumers who want the confidence of a high-quality repair with no surprises," Harling said. "Our investment in R&D and world-class manufacturing facilities throughout Europe bring confidence to the installer and ultimately the driver."

Partnering with a leading supplier can also help businesses avoid supply disruptions during global emergencies, according to Harling. "As one of the world's largest suppliers of OE and replacement parts, we have more (sourcing) options and flexibility available through our network of



manufacturing facilities," she said. "Our objective is to always provide best-in-class service to our distribution customers so they can help their own customers capture the market's growth opportunities."

KEY FACTS

Tenneco is one of the world's leading designers, manufacturers and marketers of automotive products for original equipment and aftermarket customers, with full year 2021 revenues of \$18 billion and approximately 71,000 team members working at more than 260 sites worldwide.



A universe of information

The online and printed range from Elring – Das Original



Das Original

The product range from Elring – Das Original is growing daily and ranges from exhaust manifold gaskets to cylinder head screws. In between are the familiar liquid sealants, as well as valve covers made from polyamide and, of course, all engine gaskets.

But it's not just the product range that has to be right, the service does too. To make the entire portfolio easy to find for the user, Elring offers a wealth of information.

Specific global and regional product information

This need is reflected in two commercial vehicle brochures for the Detroit/Diesel DD15® and the PACCAR MX13 engine, which are particularly popular in North America. Both are available to download in PDF format on the homepage.

To serve the commercial vehicle customers on the other side of the Atlantic, a 36 page brochure was produced for the HDEP engine range from Mercedes-Benz. For all four engine sizes from 11 to 16 litres, there are the exploded views of the engines, the OE part numbers, dimensions of gaskets and much more. The brochure features images of gasket sets specially compiled for these engines for easier service work.

Gaskets for all other commercial vehicle engines available worldwide with corresponding exploded views can be found in the expanded commercial vehicle paper catalogue. It sets the standard on the market with around 800 pages. All exploded views are also available to download individually in PDF format on the homepage.

But even in a heavyweight like the commercial vehicle paper catalogue, the professionals from Elring cannot include all information that is important for the workshop or retail.

To resolve this issue, Elring offers an online catalogue that can be accessed via the website without registration. Here, visitors will find high-resolution images for gaskets and full gasket sets that show even the smallest O-ring clearly. With over 16,000 individual references in the online catalogue, this is a truly mammoth task.



For 75% of all parts, this task is already completed and Elring is way ahead of the competition in the market for engine gaskets.

For passenger car information requirements, a paper catalogue will remain available as in the past. The catalogue had to be divided due to the massively expanded portfolio. Combined, the two publications include 1,700 pages and 12,000 articles, and weigh 8 kg. This catalogue also sets standards. Due to the enormous amount of work that goes in to compiling the data, there will be for 2023 an updated version. Meaning that we will most likely have a trilogy in place then.

General Motors Small Block LS Engines – THE catalogue

Elring will be providing its customers with a 100 page catalogue in time for the leading aftermarket trade fair for North America, the AAPEX/SEMA Show in Las Vegas. For all three generations of the extremely popular engine series from General Motors, there are: exploded views, all OE part numbers and important information on individual gaskets.

Something new every day

New engines reach the aftermarket constantly and result in an ongoing need for new products. Those are added to the online catalogue daily, meaning that this medium is an up-to-date source of information 24/7. With around 1,000 new products added in 2021, the daily update is also

the only way of managing this data.

Users will soon have the additional option of creating new products lists conveniently as an Excel download. There is also the option of filtering for specific vehicle manufacturers, selecting engines and product groups. Because the search can be tailored to a much greater extent, it takes practice to get to the desired result, however. Anyone who wants to take an easier approach and would also like to stay up-to-date also with other news can subscribe to the monthly newsletter.

What else does Elring offer?

The "Elring – Das Original" YouTube channel is attracting an ever-increasing number of viewers with its practical and entertaining videos. The channel enjoys an exceptional status with 36,600 subscribers and around a million views in the engine parts segment in 2021.

In the future Elring – Das Original will continue to expand its range of information to offer its customers the best possible service and set new standards.

KEY FACTS

Elring offers its customers a wealth of information on commercial vehicle parts, from paper to online catalogues that can be easily accessed via the website without registration.



KEY FACTS

There are more than five million motorhomes and caravans in Europe.



Exide strengthens its Marine & Leisure Equipment range with six new Li-ion batteries

Exide has enlarged its Marine & Leisure Equipment battery offer with a powerful new range of six Li-ion (LiFePO4) batteries that are perfect for boats, caravans and motorhomes requiring dedicated battery banks for equipment supply, such as navigation, emergency, safety, and comfort.

These new types represent the pinnacle of Li-ion technology, ensuring an extremely high level of safety, outstanding performance and an extended lifespan compared to standard batteries.

Plus they come with a Bluetooth connection and a free smartphone app. The Exide ML Li-ion Monitor App, enables boat and RV owners to monitor the state of charge and other important health parameters of their battery bank at any time.

Boasting excellent coverage, suitable for most applications within the Marine &

Leisure Equipment market, the Exide Equipment Li-ion offers a wide range of choices:

- 12, 24 and 36V options.
- From 50 to 200Ah capacity, from 640 to 3800Wh.
- Various box sizes (including L05) and terminal options.

Monitor:

- Charge/discharge currents
- OCV
- State of charge
- State of health
- Cycle counter
- Temperature and more...



Main features and benefits:



Cuts operating costs:

3x the lifespan and 2x the available capacity vs. conventional batteries reduce the total cost of ownership



Faster recharge:

Exceptional charge acceptance



Lightweight:

70% lighter than a conventional battery



Heating function*:

Essential feature for cold climates down to -20°C*



Battery Management Systems (BMS):

For safe operation and best performance



Bluetooth connectivity*:

The Exide ML Li-ion Monitor App connects directly to the BMS

*where available

Gates introduces a new range of Variable Valve Timing Solenoids



For more than a century, Gates has pushed the boundaries of materials science to engineer products that exceed expectations in many sectors of the industrial and consumer markets. In the last months, Gates has now expanded its range of solutions for timing belt drive systems for cars throughout the EMEA region, with the addition of OE-quality Variable Valve Timing Solenoids (VVTS).



The VVTS plays a key engine management role in modern internal combustion engines by monitoring and adjusting the opening and closing of valves inside the camshaft. The result is smoother idling and acceleration across a wider range of RPMs. It contributes to greater fuel economy and lower levels of emissions.

Gates new VVTS range serves as an ideal complement to the extensive range of Gates PowerGrip® Timing Belts and Timing Belt Kit solutions are already available for synchronous belt drive systems.

The range of 54 VVTS part numbers covers vehicles manufactured in the US, Europe, and Asia. The full list of applications includes cars built between 1995-2020 from: Audi, BMW, Chevrolet, Chrysler, Dodge, Honda, Hyundai, Jaguar,

Jeep, Kia, Land Rover, Lexus, Mazda, Mercedes-Benz, Mini, Mitsubishi, Nissan, Opel, Peugeot, Seat, Skoda, Toyota, Volvo, and VW.

Gates has also included popular applications from the Audi range, such as A3, Q3 and TT. BMW examples include 118i, 218i, 318i, X1, x3, 225e/MINI Cooper and MINI One. Model ranges from Nissan include Micra, Juke and Qashqai. Toyota models include Corolla and Camry; while significant VW references are Beetle, EOS, Golf, Passat, and Tiguan.

New applications are continuously being researched and developed, and further extensions to the VVTS range will be added later in the year.

Added value and sales opportunities

Indicators that a VVTS is failing include increased fuel consumption, rough idling, poor acceleration and subsequently, a warning light. Fault diagnosis and fitting a replacement are relatively straightfor-

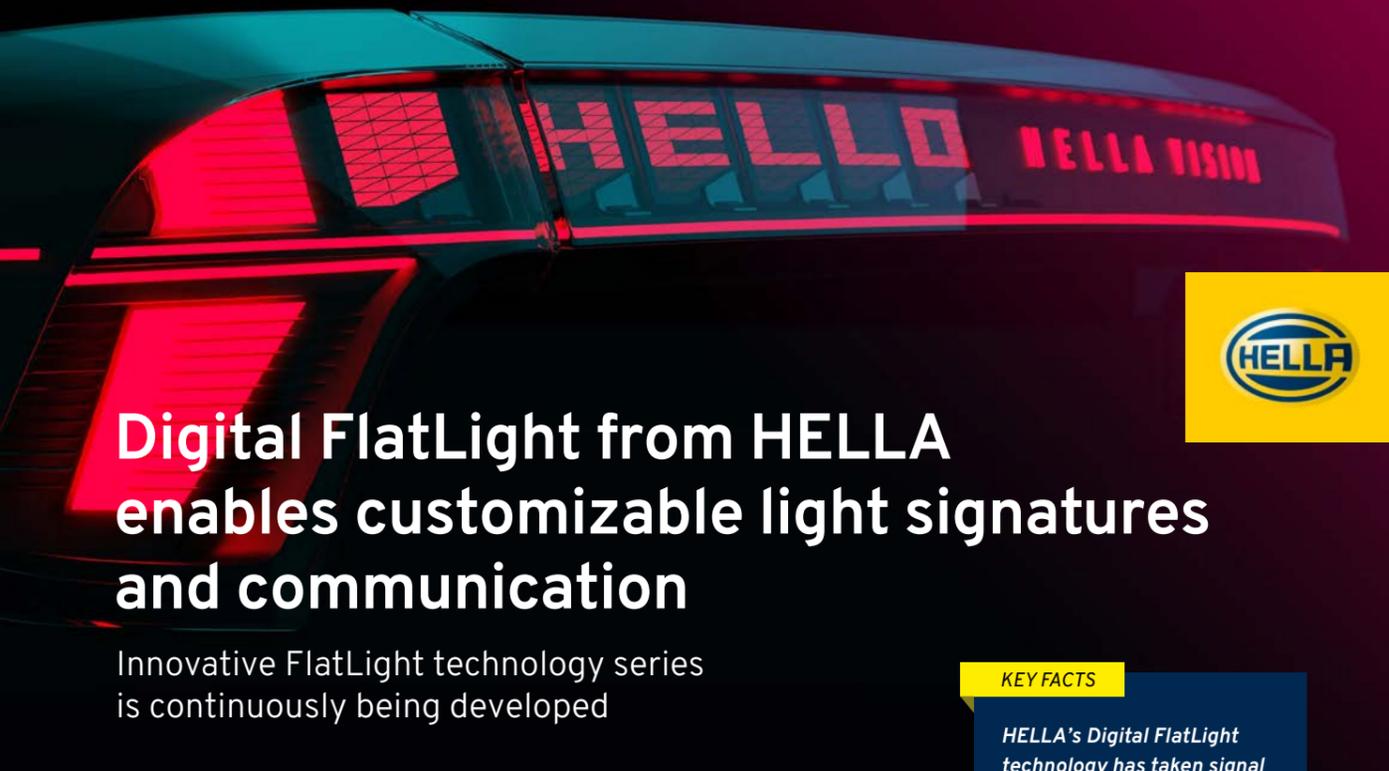
ward procedures for professional mechanics. Consequently, little technical support is required.

Gates distributors can add value and increase their competitive edge by offering these competitively priced OE quality replacement VVTS units alongside the PowerGrip range of Timing Belts and Timing Belt Kits. Garage customers will benefit from a single source for all timing belt drive system related products.

Technical details and specifications are available online via www.gatetechzone.com and a technical webinar series addresses related installation issues.

KEY FACTS

Gates new VVTS range serves as an ideal complement to the extensive range of Gates PowerGrip® Timing Belts and Timing Belt Kit solutions are already available for synchronous belt drive systems.



Digital FlatLight from HELLA enables customizable light signatures and communication

Innovative FlatLight technology series is continuously being developed

KEY FACTS

HELLA's Digital FlatLight technology has taken signal lighting to a new level.

Minimising installation space, increasing efficiency, and designing freedom and a degree of individualisation are what is important in headlamp development, as well as rear lighting. For a long time now, rear lighting has not only fulfilled important safety functions, but also offers a wide range of possibilities for creating individual lighting signatures. For example, dynamic direction indicators are already integrated as an attractive functional feature in the compact class. "Our lighting developers have long been thinking far beyond that. In order to be able to display more complex animations, graphics and later also fonts for communication between the vehicle and the environment, it is above all necessary to further increase the segmentation of the rear combination lamps," says Dr. Frank Huber, Managing Director responsible for the Lighting division, at the internationally positioned automotive supplier HELLA. "Our Digital FlatLight technology takes signal lighting to a new level. By integrating a SmartGlass display, our FlatLight has now become digital. Appropriately equipped rear combination lamps can be controlled with fine granularity. This allows for a variety of customisable signatures and significantly expands the feature set."

With the FlatLight | μ MX technology,

HELLA has since the beginning of 2021 been offering an innovative light guide concept through its use of micro-optics. It enables particularly homogeneously illuminated surfaces with an extremely low module depth of only 5 millimeters. At the same time, the technology combines high efficiency with a wide range of design options, as the front surface of the module can be masked with different decors.

Digital FlatLight uses exactly this technology. By using a SmartGlass display, the functionality is increased many times over. In the HELLA VISION | Digital FlatLight prototype presented for the first time at the IAA Mobility 2021, for example, the SmartGlass in front is divided into 44 triangular segments that can be individually switched and dimmed by software. In contrast to a classic display, not only can the size and number be individually designed, but so can the shape of the individual segments. This eliminates the need for masks and decors. In the case of a series application, vehicle manufacturers are instead given the option of creating different designs, e.g. for each equipment variant, by using the HELLA GAIN software.

The Digital FlatLight is based on the FlatLight | μ MX optical system. On this basis, it is possible to equip simpler equipment variants with FlatLight and, for example, expand the functionality of the

better equipped variants by adding a SmartGlass display. With the Digital FlatLight, new signatures can be easily programmed for a possible facelift. New business models such as the installation and adaptation of graphics via app or software update are also conceivable in this context. Another plus point: when switched off, the Digital FlatLight impresses with its 'Black Panel' look, a homogeneous glossy black surface. Alternatively, the SmartGlass can be used to make the selected signature visible even when it is not illuminated.

"Our Digital FlatLight technology represents a big step towards the future of lighting. Already today it allows for the display of fonts and symbols. In addition, light signatures that adapt to the driving modes, text or symbols that warn road users of traffic jams or icy roads, or graphics that display the battery charge level of the electric vehicle can also be realized with this technology," says Dr. Huber. In order to further increase the resolution of the rear combination lamp and thus the range of functions, HELLA is working to further increase the segmentation, i.e. the number of pixels. This is possible, for example, by integrating Active Matrix Displays. This means that the vision of a communicating vehicle is becoming more and more of a reality.

Spotlight on Advanced Suspension Manufacturing in Europe

KYB
Our Precision, Your Advantage

KYB Advanced Manufacturing Spain (KAMS) is at the forefront of specialist high-tech shock absorber manufacturing and was built specifically for that purpose



KAMS is based in Los Arcos, near Pamplona. Production began in 2009 with the first OE project between KYB and BMW, the supply of front and rear shock absorbers for the 5 Series. In 2010, supply for PSA and Audi was transferred from KYB's other Spanish factory KYBSE.

There are six production lines and production capacity is currently 1.45 million shock absorbers per year. KAMS has 184 employees, and 145 of those are based on the production lines. The two main types of specialist shock absorber manufactured by KAMS are the REAS and the IDC.

REAS is a damper system that controls vertical vibration and damping force on cornering without electronic devices. It links shock absorbers by a special third shock, which has a floating piston and distributes a damping force on the left or right shock absorber.

The system controls the behaviour of the car during braking, cornering, and acceleration to manage weight transfer and minimise body roll. It improves contact between the tyres and the road through

balanced tyre forces, improves tyre wear, improves handling, and provides safer driving in critical situations.

It is used on Audi RS 6 Avant, Audi RS 5 Coupé, and Sportback and Audi RS 4 Avant vehicles under the name Dynamic Ride Control. Each set of REAS shock absorbers is connected to the central valve unit, ensuring optimum operation and precision for these high-performance vehicles.

KYB's Intelligent Damping Control (IDC) suspension system is innovative technology that is used on a selection of prestigious vehicles. In Europe, it is used by PSA on the Peugeot 508 and on the DS7 and DS9 under the name DS Active Scan Suspension. In Japan, it is available on the Lexus LS and LC and Toyota Crown and Avalon.

This smart technology analyses the road profile and sends it to the IDC electronic central unit. It works with four height sensors and three accelerometers to measure the vehicle's reactions including speed, braking, and steering angle.

The control unit continuously calculates the optimum shock absorber settings to

mitigate any irregularity; improving comfort to create a unique and smooth driving experience. It does this via a proportional solenoid valve on each damper, which adjusts the inner pressure between the upper and lower chambers, giving individual control to both the compression and rebound of all four wheels.

Smoother driving means all four wheels will maintain a better contact with the road, allowing for safer steering and braking.

KYB has three shock absorber factories in Europe, two in Spain and one in Czech Republic – all supplying OE and the aftermarket. KYB also has one purpose-built coil spring factory in Czech Republic.

KEY FACTS

There are six production lines and production capacity is currently 1.45 million shock absorbers per year. KAMS has 184 employees, and 145 of those are based on the production lines.



KEY FACTS

MAHLE is a reliable partner for all your thermal management needs, providing products and technical services for its partners and workshops for a smooth and successful working day.

Simply trust!

Put your trust in MAHLE's original equipment expertise in thermal management. Because your customers trust in you.

MAHLE

The summer is finally here! It's time to take a break from it all, and plans are already in place for long drives to warm southern climes. Before they hit the road, your customers place trust in their cars and into your experienced hands for servicing and repairs.

That's why you should simply trust in MAHLE! Its comprehensive OE expertise as one of the world's leading suppliers, broad and innovative product range, and extensive services and additional workshop equipment solutions make it a reliable partner for all your thermal management needs, ensuring a smooth and successful working day – today and tomorrow!

Once again, it has put together a unique, complete package you can benefit from over and over—not just in the coming spring season!

materials designed to provide active sales support for this important vehicle maintenance task.



2. Repair and maintenance

MAHLE not only provides technical assistance for a wide variety of day-to-day workplace needs, it also offers its partners and workshops high quality products and services, as well as technical support materials. With its technical support materials, from air conditioning compressor replacement/flushing to the correct filling quantities of refrigerants, or air conditioning compressor oils, MAHLE's partners and workshops are ideally positioned for a smooth and successful working day.



3. MAHLE products

All-round peace of mind! Whether they're hybrid or electric or have a combustion engine, all cars have one thing in common: they contain parts that need to be serviced and, when necessary, replaced. And this is exactly where MAHLE comes in

with its comprehensive thermal management product range!

Vans and commercial vehicles are also well served. That's because MAHLE covers the majority of the world's vehicles, and not just in terms of engine components, starter motors, alternators, filters, and turbochargers – it's also leading the way in thermal management with its extensive range!

And of course, while MAHLE believes that the internal combustion engine will be with us for some time to come, it also knows that the future belongs to e-mobility as well as to other alternative powertrain technologies and fuels. That's why it'll continue to pursue both paths by supplying the right products and comprehensive service solutions for each option – today and tomorrow.

4. MAHLE Insider

The compact and concise MAHLE Insider provides a monthly update on new products, technical information, promotions, and other MAHLE Aftermarket topics.

Would you like to stay informed by e-mail? Register now at mahle-aftermarket.com/mahle-insider

Visit mahle-aftermarket.com for more information.



1. A/C-Check

With MAHLE's sales support for air conditioning checks, it creates clear added value by helping workshops to actively sell these services and draw motorists' attention to the associated benefits: health, financial advantages, and safety! With these points in mind, MAHLE offers a range of effective advertising

Changes in the automotive industry

MANN FILTER

Interview Mr. Simon Frick, Senior Vice President Sales IAM Europe Automotive Aftermarket, MANN+HUMMEL

Mr. Frick, how are you dealing with the much-discussed changes in the automotive industry, and what is your view of the future?

The market has been characterised by displacement and concentration, and new players have emerged on the European stage. Workshops have become increasingly professionalised, frequently using workshop concepts. As the market leader, we have a wide range of different instruments available that are of interest to new customers.

Not long ago, we weren't talking about alternative drives at the same level as we are today, electromobility wasn't yet part of every vehicle manufacturer's portfolio, and we certainly weren't philosophising about the end of combustion engines – so what's in store for the future? That's a really tough question!

Individual mobility will continue to be very important and there will definitely be different forms of mobility. In today's aftermarket, characterised by a vehicle fleet with an average age of around ten years and combustion engines, alternative drive technologies do not yet play a decisive role. Therefore, I do not expect any fundamental changes for the aftermarket in the next ten years. One thing is certain, however, we cannot avoid topics such as digitisation, access to vehicle data, customer loyalty measures (customer journey) or price transparency. These issues are more relevant than ever and are evolving at a rapid pace.

Even though it will still be a few years before the first changes in the aftermarket are noticeable, do you still feel well-prepared for the tasks ahead?

Yes, we are well-prepared for the filtration tasks in future vehicles. This is because we are in the advantageous position of being able to transfer our decades of experience in filtration to the requirements of alternative drives. Regardless of which drive technology prevails in the future, or whether there will be a future with different technologies on an equal footing, filters will continue to be used, and we can continue exciting our customers with a wide range of innovative products for future filtration requirements. We combine intelligent technologies with our filtration know-how. This is how we can strengthen our position as market leader.

After all, electric vehicles also need filtration. In addition to the cabin air filter, which is becoming more important and has to meet ever-growing performance demands due to increasing environmental pollution (keyword: filtration of particulate matter and nitrogen oxides), our battery pressure equalisation elements or filters for transmissions are used in electrically powered vehicles. We are constantly facing new requirements and are developing solutions to address them.



About MANN+HUMMEL

MANN+HUMMEL is a leading global expert for filtration solutions. The company group with its headquarters in Ludwigsburg, Germany, develops filtration solutions for automotive and industrial applications, for clean air in indoor and outdoor spaces and for the sustainable use of water. In 2020, the group achieved sales of approx. 3,8 billion euros worldwide with more than 21,000 employees at more than 80 locations. The products manufactured by the group include air filtration systems, intake manifold systems, liquid filtration systems, engineered plastic components, filter media, cabin air filters, industrial filters as well as membranes for water filtration, wastewater treatment, and process applications.

KEY FACTS

With decades of experience in filtration, MANN+HUMMEL is well-prepared for the filtration tasks of the future. After all, electric vehicles also need filtration.

Visit www.mann-filter.com for more information on MANN+HUMMEL.

The cooling line – an increasingly complete range

metelligroup

One of Metelligroup's strengths has always been the completeness of its range – in terms of both the number of codes and the coverage of European vehicles – that aims to meet the needs of customers from mechanics to spare parts dealers and distributors

KEY FACTS

Metelli is adapting water pumps for both new hybrid and electric engines.

The cooling line, which includes water pumps, auxiliary water pumps and timing belt kits with water pump, now has more than **1,200 part numbers**, covering 96% of the European car park.

The water pump range is made up as follows:

- Over 900 codes for PC and LCV vehicles, covering 96% of the European and Asian car park.
- More than 120 references for Truck applications for Scania, Volvo, Mercedes, Daf, Man Iveco, Renault.

Our pumps for specific applications are also equipped with a cover, which may be in plastic or alternatively aluminium, as in the case of the Audi-Volkswagen 1.8/2.0 TFSi applications that have an **aluminium cover, sensor, and thermostat**.

The latest developments also include the Audi-Volkswagen pump with cover for 1.0 TSI, 1.2 TSI and 1.4 TSI engines. We chose aluminium as opposed to the OEM standard plastic because it's less subject to deforma-

tion and therefore leaks due to high engine temperatures.

Being a market leader also means providing a product range that covers not only fast moving applications but also those that are less common on the market, such as luxury or micro cars.

Endothermic engines are increasingly giving way to hybrid and electric engines, so water pumps are evolving technologically to adapt to these new engines. Here are some of the types that Metelli can supply:

Switchable pumps regulate the flow of water through a pneumatic gate valve operated either pneumatically or electronically. The Metelli range has **18 codes** (for 14 of them, Metelli holds its own patent) covering more than 6.3 million EU vehicles; these pumps are used mainly on engines of the VAG Group, Mercedes, Jaguar, and Land Rover.

Electromagnetic pulley pumps receive an electrical impulse which activates the magnets that in turn rotate the water pump via the pulley. They're mounted on

Volkswagen and GM engines for passenger cars, whereas for truck applications they're found primarily on Renault, Volvo and Daf.

Primary electric pumps operate by means of an impulse emitted by the control unit, activating an electric motor inside the pump and thereby allowing it to rotate.

Metelli has a range of **5 codes** to cover the main vehicles that use this technology, such as BMW, Toyota and Lexus, covering 2 million vehicles in Europe (e.g. Toyota CHR, Yaris, Prius, Corolla, Auris hybrid engines - BMW Series 1, 2, 3, 4, 5, 6, 7, X1, x3, X4, X5, X6).

Auxiliary electric water pumps are a new line that was introduced in 2020. They help cool the batteries, turbochargers, and gearboxes, but their main function is to help maintain a constant temperature in the passenger compartment of vehicles fitted with start/stop.

Metelli currently has more than **30 codes** covering 46 million European vehicles, and that number is constantly expanding.

Recent additions include Audi Q3 II (F3B), Citroen C3 III Aircross, Mercedes A-Class (W177), B-Class (W247) GLB, Sprinter (907), Man Tge, Seat Tarraco, Skoda Kamiq, Volkswagen T-Roc.

As a specialist and manufacturer of traditional and automatic tensioners too, for more than 10 years, Metelli has been supplying not only the basic water pump but also a timing belt kit complete with pump. The timing belt comes exclusively from premium manufacturers.

A high-quality product with a 5-year guarantee which, combined with the wide range of over 200 codes covering more than 150 million vehicles, makes it a first-choice brand on the market.



Switchable pumps



Electromagnetic pulley pumps



Primary electric pumps



Auxiliary electric water pumps

The real difference in the AC business

Nissens
DELIVERING THE DIFFERENCE

In the busy air conditioning season, spare parts play a crucial role both for distributors and technicians. Nissens Automotive comes with a comprehensive, yet competitive solution for all levels of the aftermarket

Increasing distributors potential

Nissens offers an impressive range of air conditioning parts that caters to around 3500 SKUs. The program covers the AC system's key components for nearly all makes and models, and all vehicle segments from cars to commercial vehicles and trucks. Since last summer, Nissens added more than 200 new parts to their catalogue, and the new products are specifically for newer vehicle models which take to the road every year. Due to increased market demand, parts for many hybrid and electric cars are equally featured in this year's line.

In addition to the large collection of items and hot new parts available this sea-

son, the spare parts market can also benefit from another significant feature of Nissens' AC parts. The high car park coverage for some of Nissens' product groups – like condensers – exceed 94% of the EU-running vehicle applications. This feature makes a real difference in this highly competitive market.

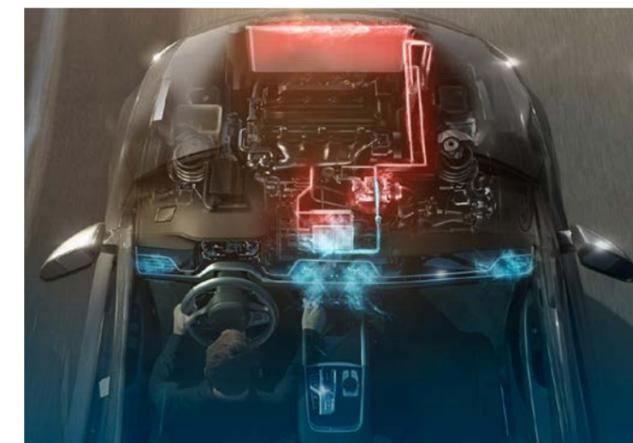
Product manager of the Climate Category at Nissens, Jonas Ewald Kristensen elaborated on the clear benefits to the aftermarket.

"We combine our wide range of premium-quality products with the exceptionally high car park coverage and consider this one of the fundamental differences we supply to the aftermarket. Our product range means a perfect adaptation to market needs, and it is a solution that increases our partners' sales potential."

Full support to AC technicians

At the other end of the market, system technicians want happy car owners, which links to successful and no-return system repairs. Their objective is best-in-class AC system service. Therefore, all parts throughout the process must support optimal system performance and a long, trouble-free lifespan.

When selecting Nissens products, garages can perform services easily, safely and successfully. All Nissens products follow the Genuine Nissens' quality standards. So all parts ensure optimal system performance and allow for fast, trouble-free installation. Unique features such as corrosion protection guarantee a long lifespan. Garages can also take advantage of the technical Nissens support, which is essential for many modern HVAC systems in new energy vehicles.



Kristensen continued:

"As the premium aftermarket brand supplier, our mission is to set system technicians up for success. First with excellent products – thoroughly tested, high-quality parts that match OE components. Furthermore, we share valuable knowledge, which facilitates the day-to-day work on the front lines and addresses the technological evolution, e.g., with more advanced car systems such as heat pump systems."

Along with the premium products, Nissens offers comprehensive tech support with a wide variety of knowledge-sharing literature. Technical training, self-learning modules, technical bulletins, repair tips, and detailed installation and troubleshooting guides are all available at the company's support page www.nissens.com/support.

To learn more about the climate comfort system parts program from Nissens, visit www.nissens.com/climate

KEY FACTS

Nissens offers an impressive range of air conditioning parts that caters to around 3,500 SKUs.



A reliable aftermarket part and added value, that's NRF

NRF offers a range of 9,500 aftermarket parts. Whether you're buying a small thermostat, an interior blower or a large truck radiator, you always receive a reliable product. The quality control starts from the moment NRF decides to add a part to their aftermarket range. Due to strict testing procedures NRF wants to offer a perfect replacement of the original part. NRF products always fit and are packed in solid boxes, which optimally protects the product. And for any questions, mechanics can always count on a team of dedicated technical specialists who can be called directly.

Quality control before introduction

NRF offers a wide range of engine cooling and climate control parts. Each product group is different and requires a different testing approach. The comprehensive quality control and testing process includes:

- Total appearance of the part.
- Measurement of all components.
- Product fit criteria.
- Connection points, location/size.
- Testing electric parameters (if needed).
- Durability tests (if needed).
- Add right Easy Fit parts (when included).
- Ensure excellent packaging.

An NRF aftermarket part is only added to the range after successfully completing all these steps.



Perfect product fit

NRF makes sure that the aftermarket parts match the original part. The overall size is very important, but crucial are the attachment points, (hose) connection points and dimensions of those connection points.

How does the workshop benefit? That's easy. Mechanics can assemble the part quickly and correctly. NRF offers the consumer a reliable and durable repair.

Durability tests

NRF has several European test centres. These locations are fully equipped with a wide range of test and measurement equipment.



Some examples of durability tests are:

- Interior blower durability test: hundreds of hours of testing at variable speed.
- Fan clutch test: quick function and long performance tests, simulating different road conditions.
- Radiator leak, pressure, and vibration tests: quality control and realistic performance tests.
- Salt spray test: Check corrosion resistance by simulating real winter road conditions.
- Compressor testing: simulation of operating conditions and performance/noise tests.

Strong and solid packaging

NRF parts are always delivered in

strong and solid boxes, resulting in optimal protection during storage and transport. In addition, the product inlets and outlets are protected to prevent contamination from within. Depending on the part, different inner packaging solutions are used.



Easy Fit = Assembly parts included

Easy Fit is an important and unique added value of NRF. When an NRF part is Easy Fit, all necessary mounting parts (such as O-rings, adapters, clamps, and clips) are supplied in the product packaging.

This saves a lot of time, which ultimately saves costs for the workshop and the vehicle owner.

TECHsupport = Direct technical advice!

NRF offers a unique technical service called NRF TECHsupport. If a mechanic has questions about the installation of an NRF part, he or she can directly contact a technical specialist from NRF. NRF has a multilingual team of specialists.

NRF also offers technical training courses, both online and on location (across Europe). Due to this training, mechanics are better trained in the correct installation of NRF parts.

KEY FACTS

NRF offers a wide range of engine cooling and climate control parts. Each product group is different and requires a comprehensive quality control and testing process.

OSRAM – driver of innovation

OSRAM has been turning night into day for over 110 years

As the leading supplier for the automotive lighting market, with a reputation for pioneering innovation and high-quality German engineering, the lighting manufacturer is going beyond the light with a range of OSRAM automotive accessories – from battery and tyre care to inspection lights, dashcams, and air purifiers.

Connected tyre care: TYREinflate Connect 650

The latest part of the OSRAM "road ready" tyre care range is the new TYREinflate Connect 650. Straight out of the box, OSRAM has made the set-up process incredibly easy to use. Simply connect the inflator to the OSRAMconnect mobile app and enter your VRM and tyre type¹. The app will automatically locate your vehicle model on Auto Database and download the relevant tyre pressure information. Once connected, this information is sent to the inflator.

Then, with one tap on your smartphone, the TYREinflate Connect 650 goes to work, inflating your tyres to the optimal pressure in up to just three minutes. The auto-stop function cuts off the air supply as soon it reaches the correct pressure, allowing you to continue with other work while the tyres are being pumped.



OSRAM

KEY FACTS

All OSRAM charging cables are five meters in length and equipped with an ergonomically designed charging handle – putting most charging points within easy reach.



OSRAM BATTERYcharge charging cables for electric vehicles – connecting you to the future of driving

The introduction of electric vehicles is powering a driving solution. Increasingly, car owners are opting for electricity as their fuel of choice, and the number of electric vehicles on the road is booming. And that's where OSRAM BATTERYcharge charging cables for electric vehicles make the connection.

Designed for charging at almost any roadside charging point, OSRAM charging cables for electric vehicles are precision-manufactured to the highest safety standards. Each cable works by making a secure connection between the charging point and the vehicle, creating a circuit that allows charge to flow to the drivetrain batteries. Once the batteries have enough charge, the cable can be disconnected and stored – and your vehicle is ready for the road.

OSRAM charging cables are designed for a broad range of different vehicles, from fully electric to plug-in hybrids. There's a cable to suit almost every model.

OSRAM offers the following types:

- 5-pin | 1PHASE (OCC11605, OCC13205).
- 7-pin | 1PHASE (OCC21605, OCC23205).
- 7-pin | 3PHASE (OCC23P05).
- 5-pin | PORTABLE (OPC10A5).
- 7-pin | PORTABLE (OPC20A05).

All OSRAM charging cables are five meters in length and equipped with an ergonomically designed charging handle – putting most charging points within easy reach. Each cable has a lifecycle up to 20,000 hours, a 2-year OSRAM guarantee² and, for extra protection, comes with its own durable, robust and compact storage case. Get more information at www.osram.com/battery-chargers.

No matter which OSRAM product you choose, you can always expect the kind of customer-focused, pioneering innovation that we've come to expect from OSRAM. You can depend on the lighting manufacturer to deliver dedicated point-of-sale, training and advertising materials for workshops to strengthen their day-to-day business when consulting end customers. If you want to find out more, check out OSRAMS' website: www.osram.com/am

Intelligent chassis systems

Pioneering innovations for autonomous mobility

Schaeffler is steadily expanding its involvement in autonomous mobility based on intelligent chassis systems. Within the last months, Schaeffler has presented a variety of technologies that will pave the way for autonomous driving:

Space Drive 3 Add-ON is the third generation of its Space Drive drive-by-wire system

Force-Feedback Handwheel Actuator (HWA) will replace the conventional steering wheel

Rolling Chassis is a vehicle platform that opens the way to completely new forms of autonomous mobility.

Space Drive ready for production

Schaeffler's Space Drive steer-by-wire system transmits driving and steering commands to the vehicle wheels via purely electronic signals, opening the way for autonomous driving. The technology has been proven in the field, with more than a billion accident-free kilometres and is undergoing fine-tuning under extreme conditions in motorsports. The latest generation, Space Drive 3 Add-ON, is ready for small-volume production. The Space Drive system is triple redundant for maximum safety and meets the exacting functional safety requirements of ISO 26262.

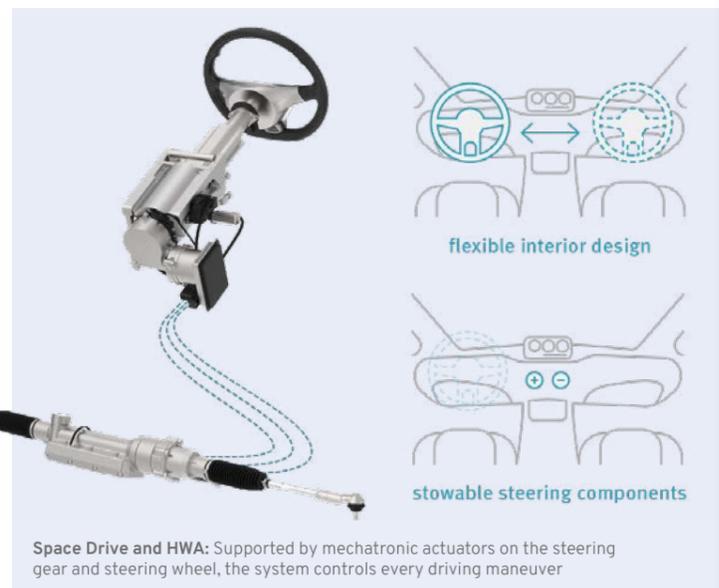
HWA opens up completely new possibilities

Schaeffler has recently unveiled its force-feedback handwheel actuator (HWA), a mechatronic solution that replaces the conventional steering wheel and mechanical steering column. This reduces the amount of space required for the steering system and opens up completely new possibilities for the design of cab interiors – such as the ability to stow the wheel in the centre console when in (semi-)autonomous driving mode. The system can further suppress undesirable feedback, such as vibrations from uneven road surfaces, and supports variable steering gear ratios, enabling new driving dynamics functions.

KEY FACTS

Schaeffler's Space Drive steer-by-wire system transmits driving and steering commands to the vehicle wheels via purely electronic signals, opening the way for autonomous driving.

SCHAEFFLER



Space Drive and HWA: Supported by mechatronic actuators on the steering gear and steering wheel, the system controls every driving maneuver

Rolling Chassis: technologies for new mobility solutions

Schaeffler's rolling chassis, a modular vehicle platform, will enable new, driverless mobility solutions for passenger and freight transport. Its flexible architecture supports a broad array of steering and drive variants to suit customer requirements – everything from single electric axles in combination with central steering to implementations incorporating four Schaeffler corner modules. Each one allows a steering angle of up to 90 degrees and comprises a wheel hub motor and a wheel suspension system incorporating air suspension that enables the vehicle to “kneel” for greater ease of access. In addition, it contains an actuator for electromechanical steering and a brake mechanism.

www.schaeffler.com/aftermarket



Rolling Chassis: One platform for all driving functions

Valeo

For Valeo, the future of Aftermarket lies in electrification and digitalisation

We have asked Eric Schuler, President of Valeo Service, and Michel Forissier, Chief Engineering and Marketing Officer of Valeo, to share their opinions on the future of the automotive aftermarket business. Here are their thoughts.



Eric Schuler: At Valeo, we see two major revolutions which will be having an outstanding impact on our aftermarket business: vehicle electrification and digitisation.

Indeed, today, the automotive industry is experiencing a radical shift towards electric vehicles. With CAFE (Corporate Average Fuel Economy) regulations becoming more global, with an increasing number of cities and states banning diesel cars in the next few years, with China imposing quotas of 40% purely electric vehicles by 2030, and with car makers significantly developing their EV offers (there

are already more than 200 electric models available in 2021), we are seeing a drastic shift in the vehicle sales mix going from less than 5% for EV worldwide in 2020 to an estimated 68% by 2030.

Michel Forissier: At Valeo, we are already N°1 worldwide for electrical systems. One car out of three on the planet is equipped today with a Valeo solution. We are ramping up production of low and high voltage solutions for hybrid and electric, and we will equip 90 new vehicles in the next three years with our technology. Our portfolio is continuously growing with new solutions, and we are looking beyond cars and LCVs as new types of eMobility are emerging. Indeed, we are already delivering ePowertrains for e-bikes, e-scooters, e-robots, e-droids, light city e-cars and last-mile delivery e-trucks. And finally, in 2022, we will be launching a new product line with our AC charging stations in order to help electrification expand.

Eric Schuler: For our aftermarket customers, our value proposition is to fulfil the future repair and maintenance needs of hybrid and electric vehicles currently present in the car park. We will offer the very best support in terms of product offer and services, growing our portfolio from 2,500 SKUs to more than 4,000 in 2022. We have created new opportunities in 2021 with the 48V iBSG systems (Integrated Belt Starter Generator) and will continue to pursue these opportunities, from 2022 onward, with technical parts linked to the new cooling technologies in EVs as well as the new power transmission devices such as e-motors, on-board chargers and DC/DC converters, including all information about the software linked to these products.

At Valeo, we are convinced that electrification will transform the car park landscape forever and that digitisation will turn into real business opportunity for workshops and for distributors. As a leading company, we are paving the way and we'll do what it takes to help our partners smoothly follow the road!

KEY FACTS

Valeo is already N°1 worldwide for electrical systems. One car out of three on the road today is equipped with a Valeo solution.

ZF offers broad spare parts portfolio for electric vehicles

Public perception of electric vehicles is often reduced to the electric drivetrain, which is reliable and requires little maintenance. However, the brakes and chassis systems of these cars are perhaps more susceptible to damage and wear than conventional vehicles due to the stresses exerted by the extra weight of the battery.



these vehicles decelerate electrically in many driving situations, the service brakes are hardly used. As a result, the brake discs tend to corrode and the pads glaze over. Because electric cars are very quiet, owners quickly notice any rattling of the suspensions or grinding of the brakes which limit driving comfort much more than with petrol or diesel cars, whose engines tend to drown out such noises.

Low-noise brake pads for electric cars

With an extensive range of spare parts from the Lemförder (steering and suspension components), Sachs (shock absorbers) and TRW (brakes) brands, ZF Aftermarket supports automotive operations in many chassis repair cases. The range extends from the Nissan Leaf to the Tesla S and X models. A special brake disc for the Tesla Model S is available under the TRW brand and the low-noise brake pad branded TRW Electric Blue is suitable for practically all electric cars on the European market.

This year, ZF Aftermarket will further expand its portfolio for battery-powered cars – for example, with steering and suspension parts for various electric models of the Volkswagen Group.

KEY FACTS

ZF Aftermarket is the supplier of choice because it offers an extensive range of spare parts for electric vehicles under its product portfolio of: Lemförder, Sachs and TRW brands.

Chassis and brake noises are more annoying in e-cars

But how great is the need for maintenance and repair? After all, the energy storage and drive technology of practically all e-cars have so far proven to be extremely durable and low-maintenance. Due to the high mass of the traction battery, weighing 300 to 500 kg more than conventional vehicles of comparable size, significantly more strain is placed on springs, dampers, and support joints. The high torque of the electric motors also puts greater stress on the chassis parts and increases tyre wear. Workshops should therefore take a close look at the chassis of these vehicles.

And the brakes? Here, too little load is more likely to cause problems. Because

ZF Aftermarket supports automotive workshops working on e-vehicles with an extensive range of spare parts under the Lemförder, Sachs and TRW brands, with important additions this year.

Ten years ago, the Nissan Leaf was the first battery-powered volume model on the market. But the breakthrough in sales of electric vehicles didn't come until 2020. So, owners of electric cars are going to be increasingly visiting independent garages in the future. ZF Aftermarket is the supplier of choice because it not only offers an extensive range of spare parts for electric vehicles under its product portfolio of: Lemförder, Sachs and TRW brands, but also high-voltage training under the ZF [pro]Tech initiative.

Green hydrogen in Chile

In light of recent developments, Guido Goyeneche from IBD, ATR's Business Partner in LatAm, kindly prepared an article for our trends chapter on the subject of green hydrogen.



Guido Goyeneche

Is it possible that a country responsible for only 0.3%¹ of the world's GDP could become one of the largest green hydrogen producers?

While Porsche, in collaboration with MAHLE, has been testing e-fuels on a series production 911 GTs, with promising results across the board from hard parts and mechanical behaviour to drive comfort, focus on green hydrogen projects in Chile have been increasing. So, let's zoom in and check the details.

Using hydrogen as an 'inexhaustible source of light and heat' was suggested by Jules Verne in his book *The Mysterious Island*, published in 1874. Nevertheless, it took almost 150 years to start building the first large-scale green hydrogen production pilot projects. Two of these projects are currently being pioneered in Chile.

First, we must understand the underlying asset: green hydrogen. In short, hydrogen fuel is created using renewable energy as opposed to fossil fuels, thus having the

potential to provide clean power with water as the only by-product. Hydrogen is the most abundant chemical element in the Universe. So why then, if it exists almost infinitely, is it not easily accessible and costing next to nothing? Because on our quickly warming planet, hydrogen virtually always exists as part of a molecule linked to other elements. It is in water, along with oxygen, and combines with carbon to form hydrocarbons such as gas, coal and oil. Hydrogen must therefore first be separated from other molecules in order to be re-transformed again and be used as fuel. To do so requires massive quantities of energy and complex equipment, resulting in a very expensive process. To obtain hydrogen, the water molecule (H₂O) is broken up and hydrogen is isolated from its molecular partner by means of an energy intensive electrolysis process, while dioxygen (O₂) is returned to the environment. Using renewable energy to do so results in a zero-emission process and our star product: green hydrogen. Also called e-hydrogen, it is highly flammable and stores almost three times more energy² than conventional gasoline for the same fuel mass. When compressed, we obtain the so called 'liquid sun,' from which energy can

be released through various processes. Numerous organisations are investing to develop technologies to use this form of stored energy in different industries, including mobility and transportation.

Among others, there seems to be two technologies that are capturing a lot of the automotive industry's attention: fuel cells and e-fuels. Fuel cells do not need to be recharged like a battery, but only supplied with fuel, in this case hydrogen. In a simplified way, we can think of fuel cells as a device that reverses the process used to obtain the hydrogen. The energy that was used initially to isolate the hydrogen is now liberated by adding oxygen and creating water.

As electric vehicles become part of our daily landscape, using fuel cells seems to be a compelling path forward. This technology eliminates the need to recharge batteries, build charging stations and reduces the need to recycle old batteries. Additionally, users would not have to worry

These e-fuels can be pumped directly into the tanks of our current vehicles, and off you go! No conversion or adaptation is needed.

whether the electricity they are 'pumping' into their batteries was produced with renewable energy sources or, for example, by burning coal.

Does this mean that over the coming years we will have to throw out decades of R&D, built production capacity, and employment sources – to name only a few items – created around the internal combustion engine? It looks like the answer is no, thanks to e-diesel. When combining hydrogen with CO₂ in a two-step conversion process, we obtain the so-called blue crude, which is then refined into different types of e-fuels. The deal? These e-fuels can be pumped directly into the tanks of our current vehicles, and off you go! No conversion or adaptation is needed for neither the vehicle nor the existing gasoline and diesel distribution infrastructure. Furthermore, e-fuels can not only power cars, buses, and trucks, but also ships and airplanes.

As mentioned, a large amount of electricity is needed throughout the e-fuel production process.

Here is where Chile comes into play. This geographically unique Latin American country has one of the world's largest solar and eolic (wind) power reserves. The north of Chile has the highest solar incidence in the world.³ By the end of 2020, non-conventional renewable energies represented a 26.6% annual share of the country's energy matrix⁴, already reaching its 2025 goal. In addition, Chile offers sufficient disposable land, a strong internal energy demand driven by the mining industry, available pipelines, ports, refineries, and an open and stable economy, capturing international green hydrogen investment attention. The Chilean Ministry of Energy also launched the National Green Hydrogen Strategy, which has three main objectives: to have 5 GW of green electrolysis capacity under development by 2025, to produce the most competitive green hydrogen worldwide by 2030, and to be among the top three exporters by 2040.

Several international agreements are also supporting Chile's development as a strong global green hydrogen producer, including counterparts such as Singapore, the port of Rotterdam, Japan, and Germany, among others. With the latter, Chile signed the so-called Energy



The north of Chile has the highest solar incidence in the world.

Partnership in 2019, an agreement driven by Germany's essential need to import green hydrogen to meet the country's 2050 energy matrix decarbonisation goal. This partnership helps Chile to access part of the 2 billion euros the German Government is investing in international green hydrogen development projects, and also facilitates the transfer of experience and know-how.

Chile has attracted international investments not only for non-conventional renewable energies power production plants in general, but also specifically for green hydrogen production projects. Competing but also collaborating with other strong players such as Australia, Chile, who has captured investments from Porsche, Siemens and Engy among others, is currently building two green hydrogen production projects: HyEx based on solar energy and HIF on eolic. Over the past few months, additional projects have been greenlighted.

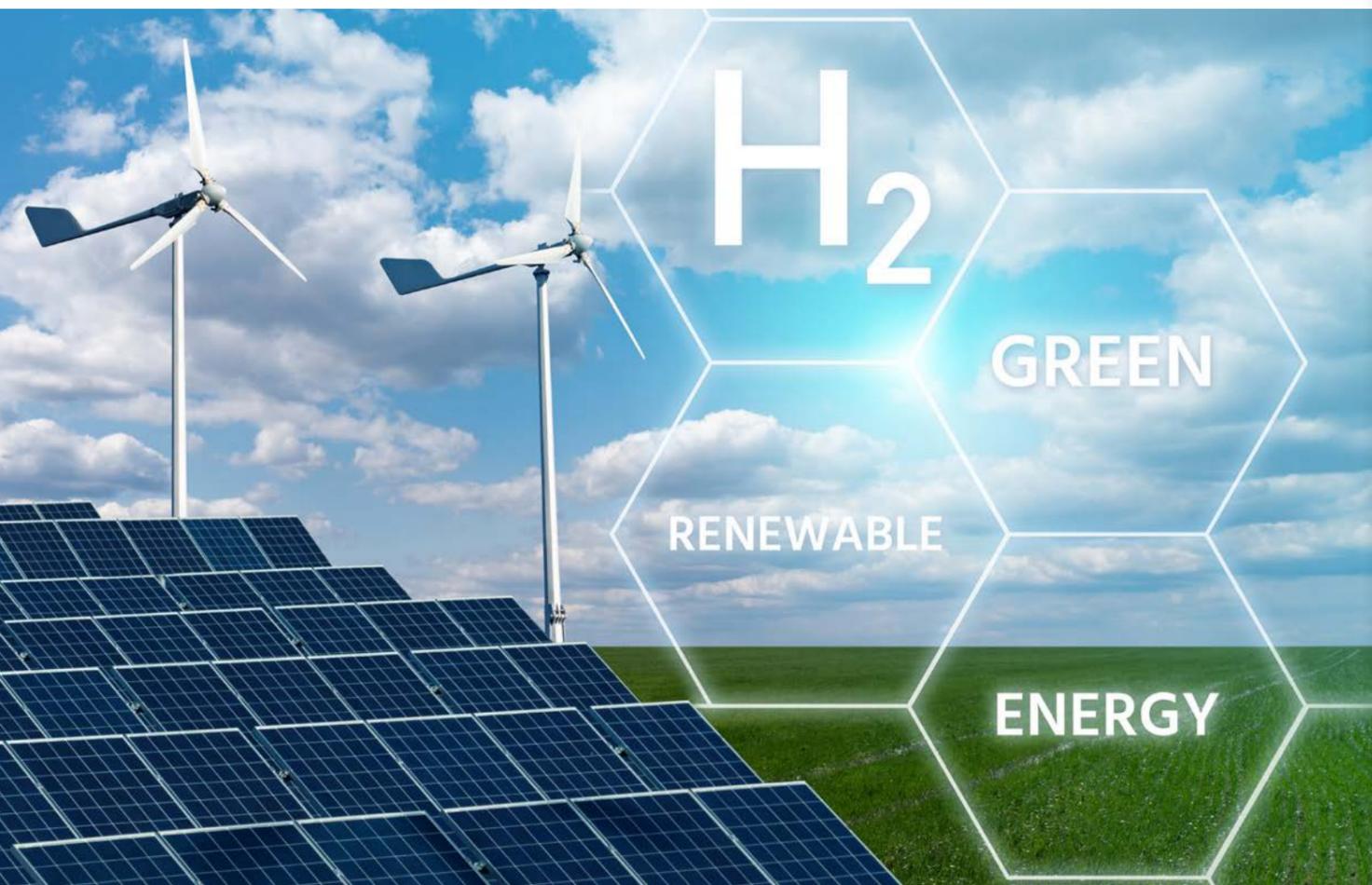
Every coin has two sides, and not all can be that fantastic. E-fuel's development and its massive deployment still has some hurdles to overcome. To be considered emission-neutral, it must come from green hydrogen, i.e., obtained from renewable energy sources and not from others such as nuclear energy. Also, green hydrogen as well as e-fuels need to be transported on

carbon-neutral tankers and trucks to truly meet their environmental promise. In addition, according to the International Council on Clean Transportation, the pathway efficiency of synthetic fuels from the non-conventional renewable energy source all the way through to the vehicle's engine is only 16%. In contrast, for electric cars, the efficiency would be 72%. Finally, at the heart of the production process is the expensive electrolyzer, driving up e-fuels costs considerably.

As with any new technology, we will have to see how it shakes out. Time will tell how innovation, competing technologies, lobbying, legal frameworks, leadership, and many other factors shape the future of decarbonisation. If a solid green light clears the way for green hydrogen to become a substantial part of the world's efforts to get their arms around climate change, it certainly will result in powerful opportunities for several new players – Chile among them.

KEY FACTS

Chile has one of the world's largest solar and eolic (wind) power reserves and northern Chile has the highest solar incidence in the world.



¹ International Monetary Fund ² US Department of Energy
³ Inter-American Development Bank (15 December 2011), "Renewable energy to power irrigation in the Atacama desert"
⁴ Chile's National Electric Coordinator

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