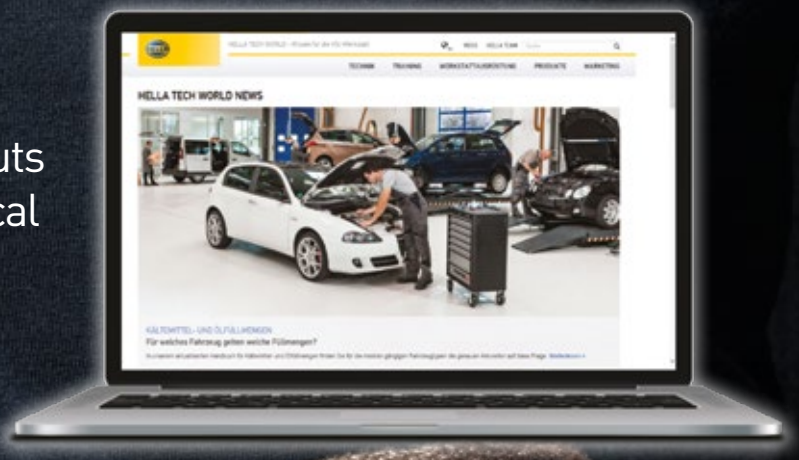
INSIGHT

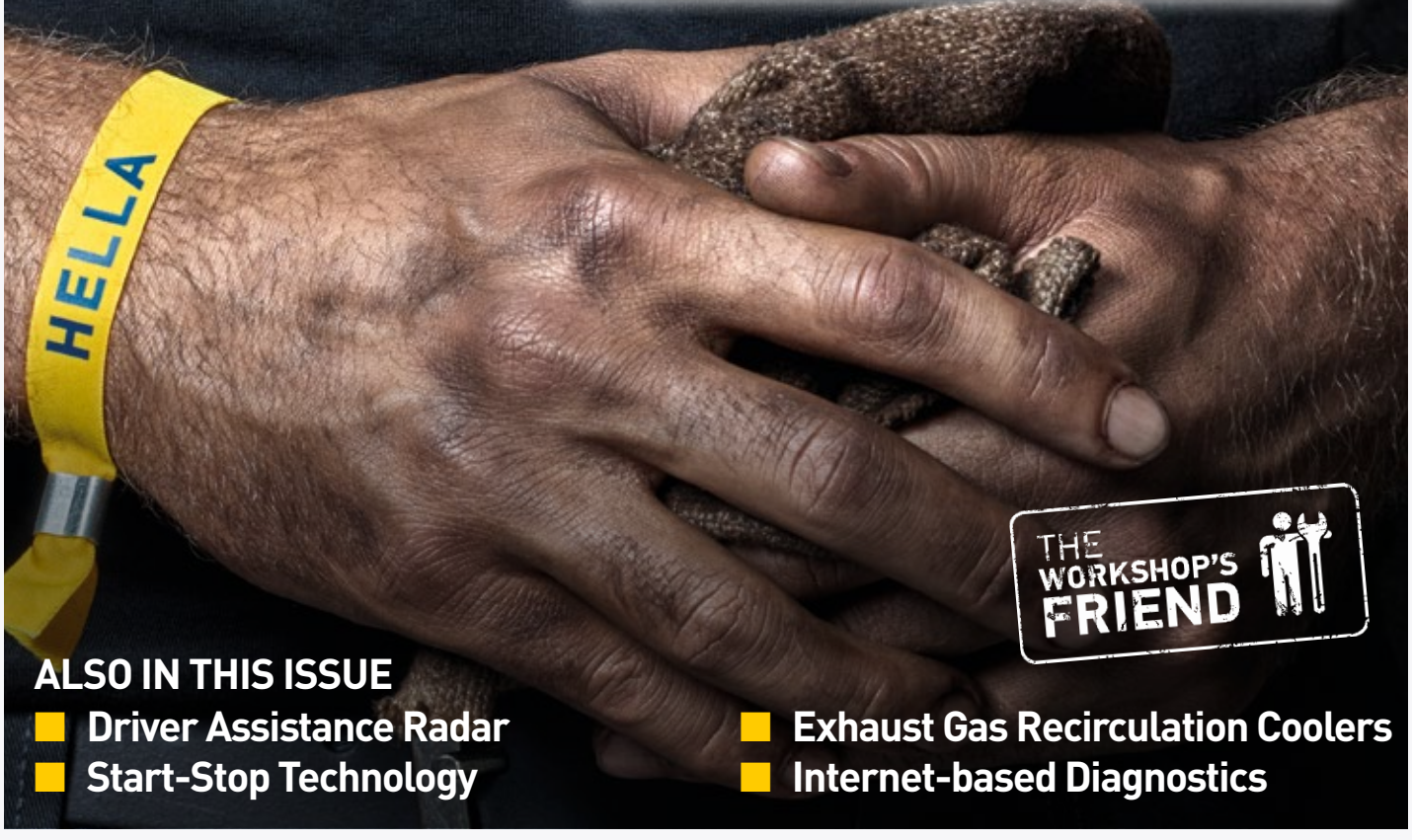
HELLA'S MAGAZINE FOR THE INDEPENDENT AFTERMARKET

ISSUE 15

THE WORKSHOP'S FRIEND

How HELLA TECH WORLD puts comprehensive online technical support at your fingertips





ALSO IN THIS ISSUE

- Driver Assistance Radar
- Start-Stop Technology
- Exhaust Gas Recirculation Coolers
- Internet-based Diagnostics

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DEAR READER,

Welcome to the first INSIGHT of the year.

I am sure you will agree that during the last twelve months the Independent Aftermarket has witnessed many changes. For our part, we have continued to grow our business successfully and introduce new products that we believe add value to our partners and end users. Our Filter and Paint business continues to flourish and the market clearly has an appetite for quality products in a free to choose industry.

We continue to witness significant change to the new technologies being applied to vehicles. As one of the innovation and technology leaders in the automotive industry, particularly in digitalization, autonomous driving and electric mobility, HELLA is well placed to grab these new market opportunities. We continue to invest significantly in our Research and Development Teams and currently employ 5,000 staff that are charged with developing the very latest technology. These are exciting times for all of us. Together we can benefit.

I am delighted to advise that during our recent HELLA Gutmann conference in Germany, we launched our new ground breaking mega macs 77 – it is the fastest and most complete diagnostic and repair support ever provided by Hella Gutmann Solutions. We will showcase at Automechanika Birmingham in June.

In this issue we cover many topics. You will see our regular features on Hella Gutmann, Behr Hella Service and HELLA Hengst Filters. We welcome your feedback and trust you will find the articles interesting.

As always, we thank you for your continued support of our brand.

Matthew Say
Managing Director
HELLA Limited

INSIDE THIS ISSUE

WE WOULD LIKE TO HEAR FROM YOU...

To comment on any INSIGHT article or to let us know if there are topics you'd like us to cover in future issues contact us at: **insight@hella.com**

For more information on HELLA products or anything featured in this magazine, please contact our customer service team on **01295 662400** or email: **hella.sales@hella.com**

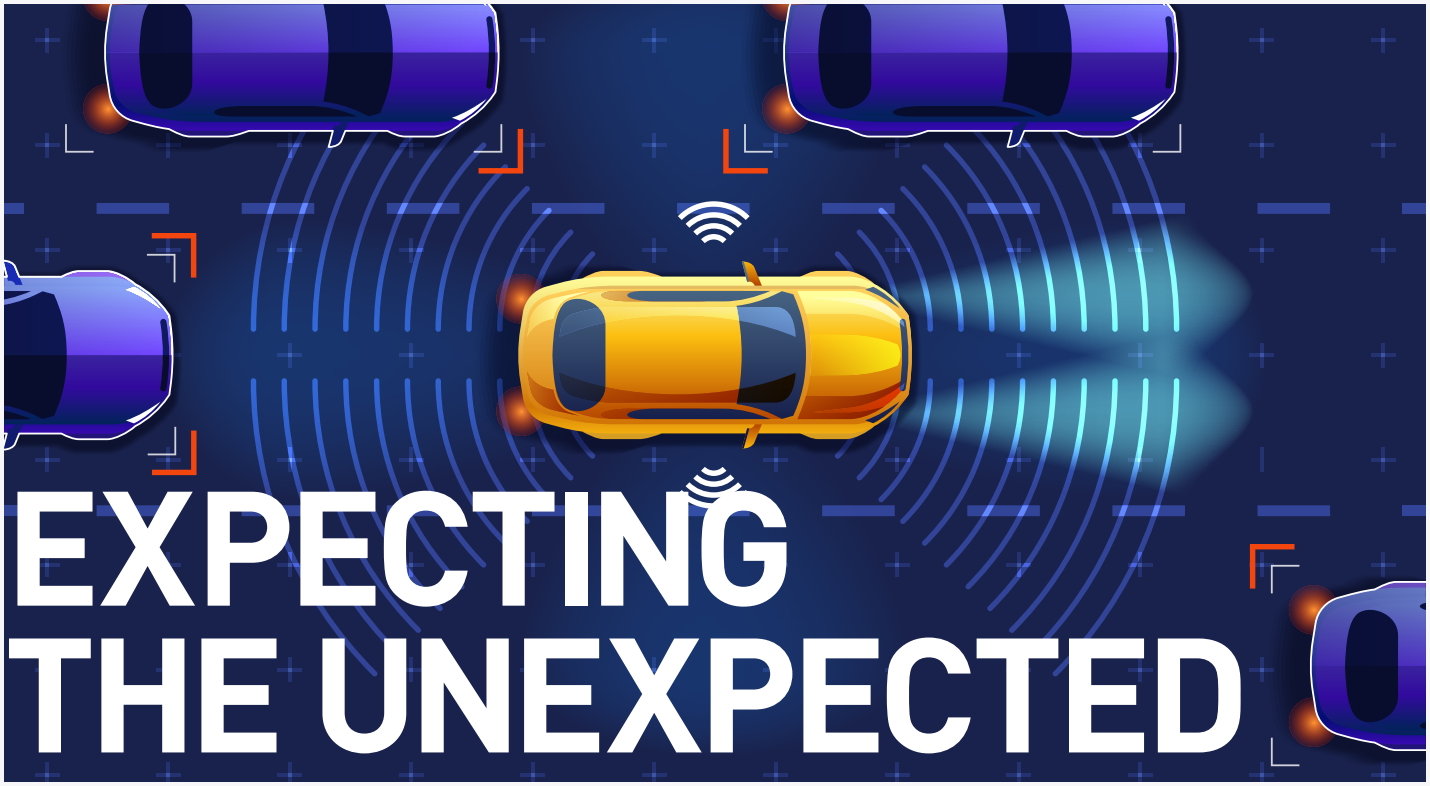
EXPERT VIEW FROM BILL JOHNSON

SALES DIRECTOR

More and more vehicles are increasingly being fitted with radar sensors for driver assistance systems at the front and rear. Radar sensors for front applications, such as adaptive cruise control and lane tracking assistance, have been available from HELLA in various vehicles for several years. Indeed, HELLA have produced more than 15 million Radar sensors, since they were introduced.

As driver assistance systems for preventing accidents continue to develop, there is more and more interest in radar sensors for assistance systems to the rear of the vehicle. An increasing number of vehicle models are being equipped with these sensors as standard. Sooner or later, the issue of diagnostics and repairs will therefore become part of everyday workshop life. These sensors and many more form part of the HELLA Electronics range and can be tested and repaired with the latest Diagnostic Equipment from Hella Gutmann Solutions.

To find out more contact our Customer Service Team on 01295 662400 or email hella.sales@hella.com



INTRODUCING HELLA'S DRIVER ASSISTANCE SYSTEMS RADAR (DAS)

HELLA's highly cost-effective 24 GHz radar system enables vehicle manufacturers to offer their customers advanced driver safety assistance features in all vehicles, including compact cars. The 24 GHz narrowband technology has been widely adopted and is currently awaiting worldwide frequency approval, making it the ideal solution for the international automotive industry.

HELLA's driver assistance radar provides 5 driver-focussed functions for increased road safety:

BLIND SPOT DETECTION (BSD)
This function monitors the driver's blind spot area and warns the driver of unsafe conditions when attempting to change lanes. The sensor covers a range from the side of the vehicle three metres and beyond behind the rear bumper. Various vehicle manufacturers have adopted this system.

LANE CHANGE ASSISTANT (LCA)
Lane Change Assistant promotes safer driving conditions by warning the driver when it may be dangerous to change lanes. A warning distance of 70 metres allows enough time and distance for the driver to react and take any necessary actions, which is particularly beneficial for motorway travel, where closing speeds are higher. LCA is also fitted by various vehicle manufacturers.

REAR PRE-CRASH (RPC)
In the event of an impending collision, various safety measures are activated, such as the airbags and seat belt pre-tensioners. Rear-Pre-Crash is currently in production.

REAR CROSS TRAFFIC ALERT (RCTA)
Rear Cross Traffic Alert warns the driver of approaching vehicles when backing out of a parking space. This safety system is only activated when the vehicle is in reverse gear, and it has a detection range of up to 30 metres.

VEHICLE EXIT ASSISTANT (VEA)
Vehicle Exit Assistant monitors the area to the right and left of the vehicle's doors; both passenger and driver, front and rear. The feature warns the occupants if the car door cannot be opened safely (eg if another vehicle or a cyclist is approaching).

With DAS, HELLA shows how the latest technologies can improve vehicle safety – and mark a further step towards autonomous driving.

MAKING LIGHT WORK

Xenon headlamps are becoming a popular choice for vehicle owners as they give out substantially more light than conventional halogen headlights. HELLA offers an extensive range of replacement Xenon ballasts, plus comprehensive advice on the do's and don'ts of Xenon headlamp diagnosis and repair.

Examples of HELLA Xenon ballasts

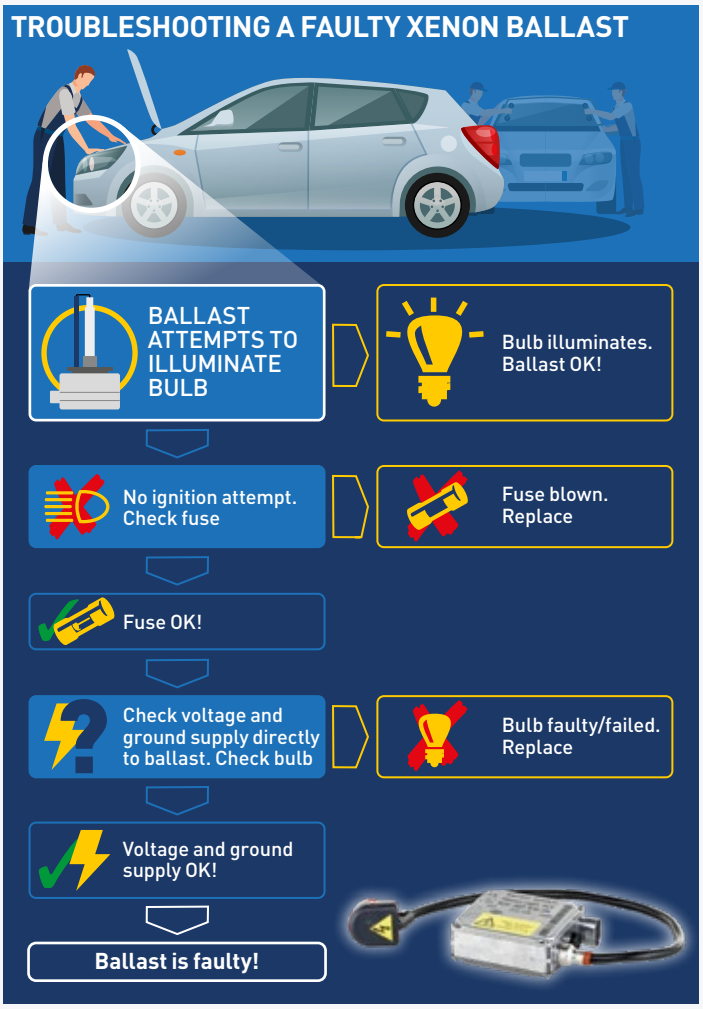
Unlike halogen headlamps, Xenon units do not feature a bulb but instead utilise a gas discharge tube and Xenon ballast to provide illumination. The electronic ballast sends a very high voltage (up to 30,000 volts) spark through the inert gas mixture inside the tube as it arcs from one electrode to the other. This creates the distinctive intense blue/white light associated with Xenon headlamps.

SAFETY FIRST

With such high voltages involved, safety when working with Xenon ballasts is paramount. HELLA takes the safety of its end-users very seriously and as such our Xenon systems switch off within just 0.2 seconds in the event of a missing or faulty burner, a damaged wiring harness, bulb component or differential current greater than 30mA is detected (the higher the differential the shorter the switch-off time). In addition, a counting circuit ensures a faulty bulb ignites no more than 7 times to protect the ballast.

FAULT-FINDING

A defective ballast will cause the complete failure of the headlamp. The causes of a ballast failure can include lack of voltage supply, lack of ground correction, faulty electronics in the device itself or internal short circuits.



GUIDANCE ON RETROFITTING

Because of the improved visibility and intense, bright light they give out, it is tempting to replace standard-fit halogen bulbs with Xenons. However, this is illegal, making the general vehicle certification invalid.

By law, Xenon headlamp units must be fitted with washers and some form of automatic self-levelling system so that they don't dazzle oncoming drivers.

Legally, only a complete Xenon headlamp system – comprising a set of Type-approved headlamps (with E1 identifier on the cover lens, for example), automatic levelling system and a headlamp cleaning system – may be retrofitted, as per ECE Regulation R48 or national legislation.

STARTING OVER

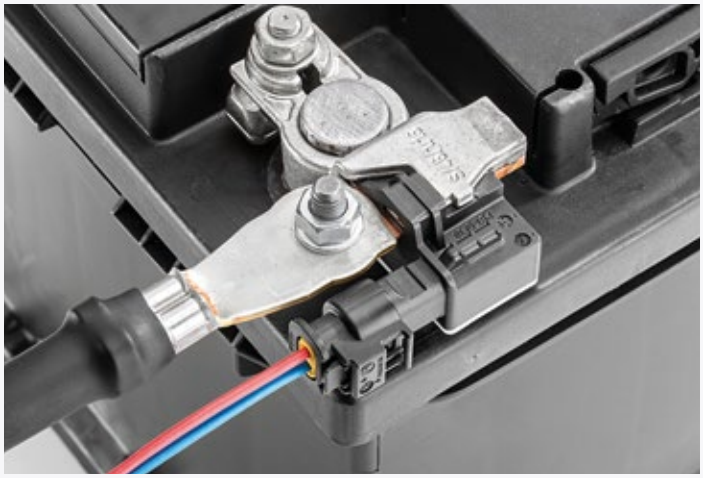
HELLA'S LATEST START-STOP TECHNOLOGIES FOR THE AFTERMARKET

The start-stop systems fitted to an increasing number of vehicles today are in themselves nothing new, but battery management will be crucial to increasing their effectiveness.

Although start-stop systems in their present form have been around for many years, they have not been universally embraced by a sceptical car-driving public, who increasingly switch the systems off using the manual override button provided by the vehicle manufacturer. However, this is set to change as legislation will no longer permit vehicle manufacturers to fit an override and so, as a result, workshops should be prepared to carry out more start-stop diagnostics, service and replacements as the systems are finally put to the use they were originally fitted for.

A BRIEF HISTORY OF START-STOP

A form of start-stop technology first appeared as far back as the 1980s, but it's in the past decade that its implementation has come to the fore, alongside the adoption of other systems such as drive-by-wire, as vehicle VMs have attempted to meet increasingly stringent emissions and fuel consumption standards. But effective battery management will be key to creating ever more effective and efficient systems in the future – which is where HELLA's Intelligent Battery Sensor (IBS) comes in.

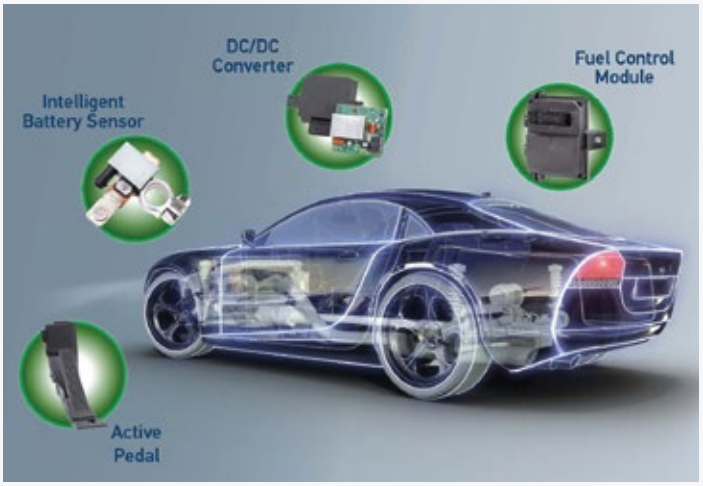


An IBS unit gives precise and on-demand current, voltage and temperature measurements from the battery. This information allows for accurate "state of charge" and "state of health" calculations to be performed, ensuring that the vehicle's electrical system operates at the highest level of efficiency.

HEART OF THE SYSTEM

At the heart of a start-stop system is an Absorbed Glass Mat (AGM) battery. Developed to cope with the increased demands of these systems, an AGM battery can be called upon to make 350,000 engine starts during its service life, as opposed to just 30,000 for a traditional starter/lighting/ignition (SLI) battery.

For less demanding, 'entry-level' start-stop applications, Enhanced Flooded Batteries (EFB) have been developed as a more cost-effective solution. Unlike AGM batteries, the EFB type is based on improvements to the existing flooded technology type – principally the addition of carbon during plate manufacture – rather than being a bespoke design. As a result, an EFB battery can provide approximately 85,000 starts during its service life.



Many components and systems work together to maximise a vehicle's fuel efficiency

THE LATEST BATTERY TECHNOLOGY FROM HELLA

As you would expect, HELLA's battery range includes AGM and EFB types alongside the more traditional Classic, Premium and Supreme product lines, covering all possible applications. The AGM range features the latest Grid Protection Technology for increased efficiency and long service life, has an excellent cycling capacity, and provides up to 50% more starting power.

The HELLA Battery Range

HELLA TECH WORLD:

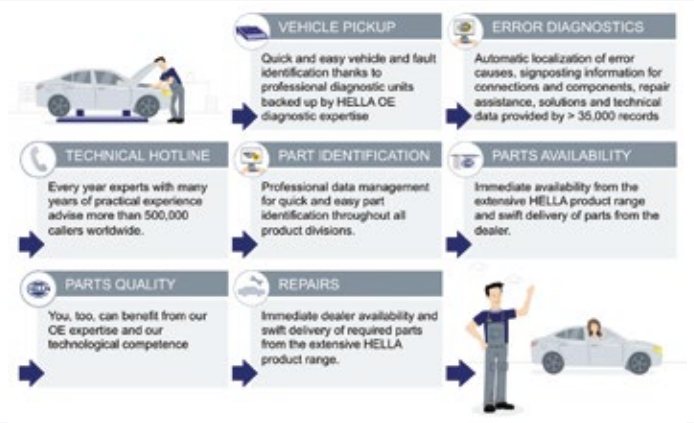
OPEN FOR BUSINESS

As a company, HELLA has always prided itself on the highest quality products and technical support available to customers worldwide.

HELLA is now expanding on this customer-focused philosophy and introducing 'The Workshop's Friend' concept.

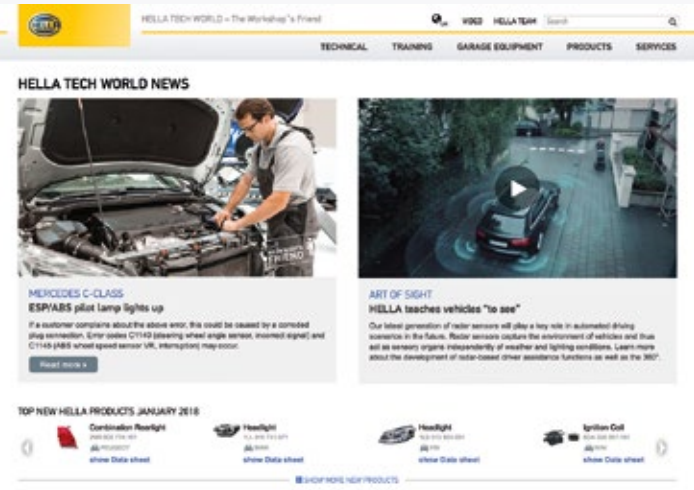
In short, our aim is to get vehicles back on the road as easily and quickly as possible, through a targeted and straightforward support package designed to assist workshops at every stage of the fault diagnosis and repair process.

From professional diagnostic units through Hella Gutmann Solutions to our technical database covering over 38,000 vehicles, HELLA has the workshop at the forefront.



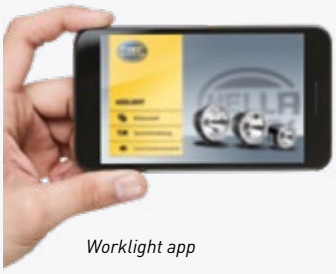
HELLA TECH WORLD RE-LAUNCH

To complement this philosophy, HELLA has re-launched HELLA TECH WORLD to provide open access to over 1,500 vehicle-specific repair references, numerous videos, tips and technical information, alongside training modules on all our OE components from lighting to electronics and thermal management.



The portal has been redesigned to improve ease of use, making the numerous technical features easier to access, and to provide an enhanced user experience.

Highlights include range extension listings that are updated monthly and links to HELLA's online catalogues, giving instant access to all Behr Hella Service and Hella Gutmann Solutions products and services. In addition, there are links to supporting online tools such as the Eliver light comparison, EVE electronics tool and Behr Hella Services compressor apps, as well as technical briefing sheets, giving detailed information on specific products and features. All detailed technical information and diagnostic tips are regularly updated to aid the servicing and repair process.



Worklight app

Eliver light comparison

EVE electronics tool

Compressor app

COMPREHENSIVE TECHNICAL SUPPORT

To discover the comprehensive support available from HELLA TECH WORLD please visit: www.hella.com/techworld/uk/ Alternatively, for more information about the OE quality products available from HELLA, please call our customer services on: 01295 662400 or email hella.sales@hella.com

EXPERT VIEW FROM NEIL HILTON

HEAD OF BUSINESS DEVELOPMENT, GARAGE EQUIPMENT

The advanced technology fitted to modern vehicles dictates that even the most simple of service or repair operations for the independent garage involves capable Diagnostic Equipment to enable them to compete with Main dealers.

Service functions such as oil depletion, electronic handbrake, condition-based servicing, DPF regeneration and adaptive top-up are just a few functions once considered dealer-only operations. Add to this basic settings, adaptations and coding, which are required after replacing components, and you soon realise the complexity of a modern vehicle. The latest models may also include radar sensors and cameras (ADAS) which must be recalibrated following many, even quite simple, repairs. Hella Gutmann Solutions are the market leaders in this field.

To cope with this leap in technology, Hella Gutmann Solutions have a very capable and competitive range of Diagnostic equipment, known as the mega macs range. The tools are very simple to use without the need for extensive training and are one of the most in-depth and capable on the market today. Factor in the capability to calibrate advanced driver assist systems (ADAS) and you soon realise that an all-round competent tool, such as mega macs, is required for servicing today's vehicles.

The two targets – made of durable, coated fabrics – are rolled out like long carpet runners and positioned to the left and right side of the vehicle to be inspected

STAYING ON THE STRAIGHT AND NARROW

Cameras and radar systems are becoming an increasingly common – and popular – addition to the growing list of equipment fitted to today's cars. Initially a component of safety systems such as adaptive cruise control (ACC) and Lane Departure Warning systems, they also provide invaluable parking and manoeuvring assistance for the driver.

If a vehicle that is fitted with camera and radar systems is involved in a collision, has the windscreen replaced, or undergoes a wheel alignment procedure, it is essential that these systems are recalibrated to maintain their accuracy. For this reason there is now a demand for workshops and garages, not just replacement windscreen and body repair specialists, to be able to be able to perform this task.

HELLA stresses the importance of undertaking an accurate calibration procedure. When it comes to calibrating safety-relevant vehicle systems, accurate measuring equipment is not just advisable, but indispensable. This applies to camera-based driver assistance systems just as it does to modern headlamps. At the same time, the quality of the measurements being taken is important. A key factor for a correct result is the exact alignment of the measuring equipment to the x, y and even z (height) axes of the vehicle. If the latter is loaded unevenly during the measurement, or the surface it is standing on is not level, the measurements won't be accurate and – crucially – the safety system will no longer function correctly.

SO WHAT DO I NEED?

To calibrate a surround view camera system you'll need a mega macs, the CSC Tool wheel sensor and the Rear Cam II Side Kit or Rear Cam I – Basic or Addition, depending on the vehicle being worked on.

Initial preparations

Before you begin the calibration process it's good practice to check the vehicle's tracking using the Wheel Sensor Control accessory. Whilst this doesn't remove the need for a full evaluation of the vehicle's wheel alignment, it's worthwhile in that the cameras, radar sensors and even the Matrix LED headlamps cannot be calibrated if the vehicle has a misaligned drive axle, as the process is not permitted by the vehicle's own system control units. The additional wheel sensor control accessory can be used after the wheel sensor containing the laser unit (part of the CSC Tool basic equipment) has been correctly positioned in order to align the target with the rear axle.

The Wheel Sensor Control enables a fast, trouble-free check of a vehicle's tracking

Checking the axle geometry

1. Position the Wheel Sensor Control on the right or left front wheel. An integrated bubble-type spirit level helps to make the alignment vertical.
2. Align the laser beam of the rear axle wheel sensor so that it is central on the scale of the Wheel Sensor Control.
3. Lock the scale and position the Wheel Sensor Control on the other front wheel.
4. Activate the laser of the rear axle wheel sensor and see if there is a deviating scale value.
5. Adjust the value in line with the tolerance specified by the vehicle manufacturer and provided in the list from Hella Gutmann.

HOW DO I CARRY OUT THE CALIBRATION PROCESS?

To begin the calibration process, select the relevant vehicle under 'Basic Settings' in the 'Diagnostics' menu. Then, under 'Calibrate camera control unit', select the surround view camera.

Next, carry out the operations specified by the mega macs, such as turning of the air suspension (if applicable) and checking the tyre pressures. Having done that, you'll be guided through the remaining steps in the calibration process by the mega macs.

AN EXAMPLE CALIBRATION PROCEDURE:

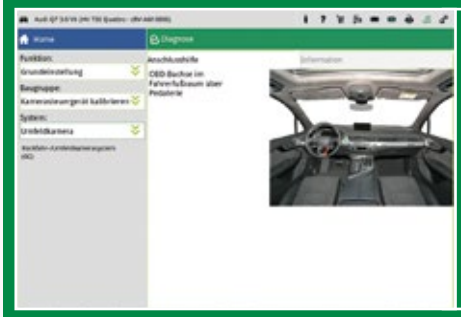
Audi Q7 (current model) with surround view camera

1. Roll out and adjust the side optical targets so that they are in the position required by the manufacturer and specified by mega macs. The CSC Tool wheel sensors are also attached to the front wheels. The light from the integrated laser must hit the position marks on the targets.
2. Start the calibration procedure on the mega macs. It only takes a matter of seconds and can be monitored on the vehicle display.
3. Confirm the message "Calibration carried out successfully" and save as documentation.

Your vehicle calibration procedure is complete!

INSPECTING AXLE ALIGNMENT:

A STEP-BY-STEP GUIDE



1 **Begin by establishing communication with the vehicle**

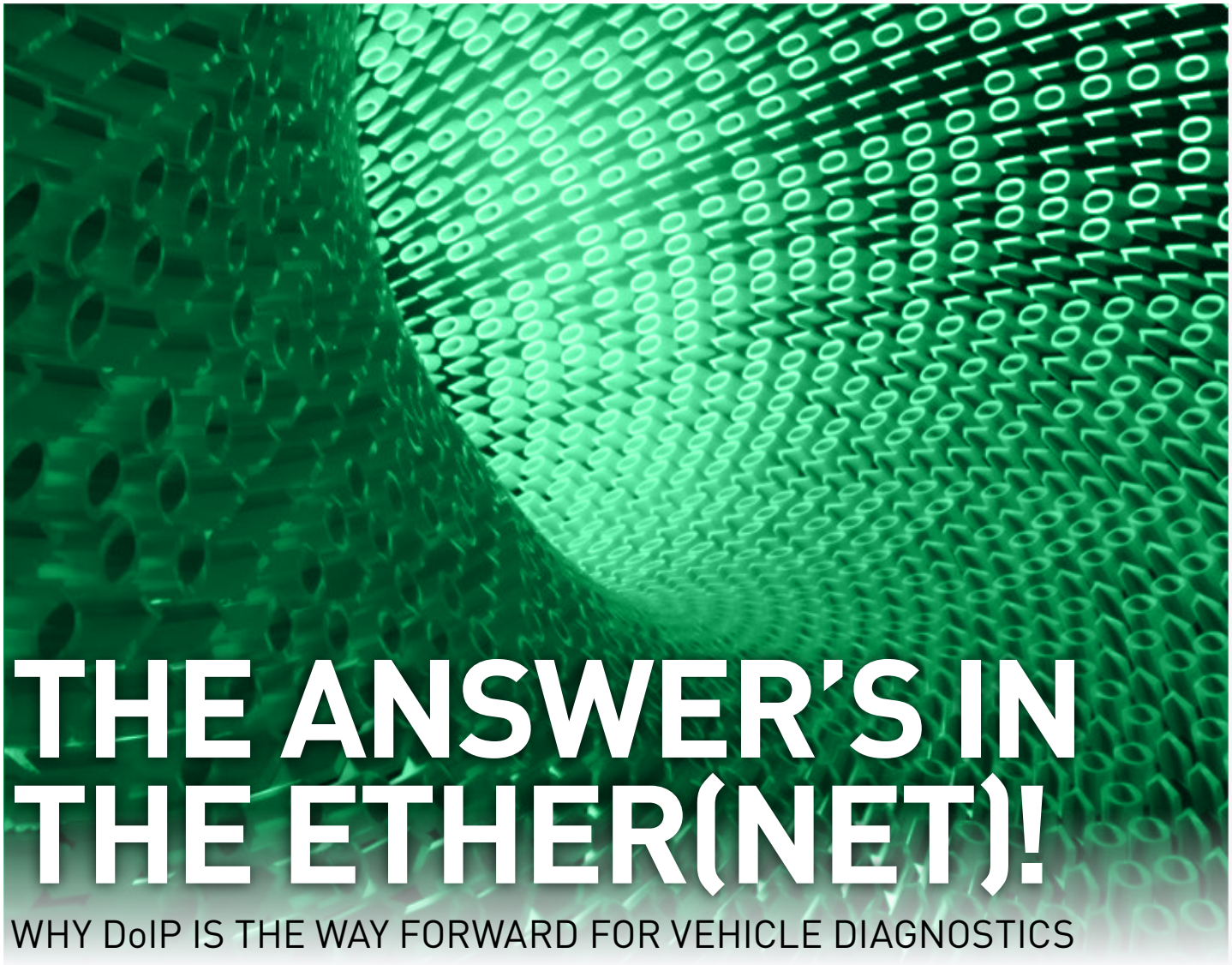
2 **Adjust the Wheel Sensor Control until the laser point meets the marking**

3 **The vehicle must be correctly positioned relative to the targets (ie parallel to them and the specified distance away)**

4 **Now begin the calibration process on the mega macs**

5 **Calibration of the four cameras can be monitored on the display**

6 **A multi-piece target module is used for calibration with certain models – please refer to the mega macs documentation for more details**



THE ANSWER'S IN THE ETHER(NET)!

WHY DoIP IS THE WAY FORWARD FOR VEHICLE DIAGNOSTICS

Vehicle diagnostics has become an everyday job for today's workshops. As cars become increasingly complex with more and more advanced electronic systems fitted to them, so too has the volume of data needing to be transferred between the vehicle, the manufacturer's portal and the diagnostic tool. As a result, data transfer via the CAN bus can be time-consuming – which is not good for your customers or your business. The solution is DoIP (Diagnostics over Internet Protocol).

DoIP is an advanced, Ethernet-based data transfer method that can be up to 200 times faster than using the traditional CAN bus, allowing diagnostics data and software updates to be performed with ease. In addition, DoIP is specified in ISO 13400 and is included in the WWH OBD (World Wide Harmonized OBD) standard. The latest Audi A4, BMW 5 Series and Volvo XC90 models already communicate via Ethernet, and it is expected that other major manufacturers will switch to Ethernet data transfer for their future models too.

The good news for workshops and garages is that although Ethernet-equipped vehicles can't be recognized from the outside, they still communicate via the familiar OBD socket. (In fact it is assumed that CAN, LIN and most bus systems will continue to be fitted for the purposes of internal vehicle systems communication.) And by keeping your mega macs software up to date, you can work on these vehicles as usual, with no problems, as Ralf Gutekunst, Head of Product Management for diagnostic products at Hella Gutmann explains: "Our software developers have implemented the new requirements in mega macs so that – for technicians – vehicle diagnostic procedures, including calibrations and codings, stay the same. Mega macs automatically detects that it is dealing with a DoIP-equipped vehicle and operates accordingly."

Due to the increased reliability of data transmission, it is assumed that in the near future other manufacturers will also switch to Ethernet protocols in their new models. The Hella Gutmann developers are also preparing for other possible diagnostics scenarios.

For more information regarding DoIP and the latest mega macs diagnostic products please contact our technical team on 01295 662402 or email hgs.support@hella.com

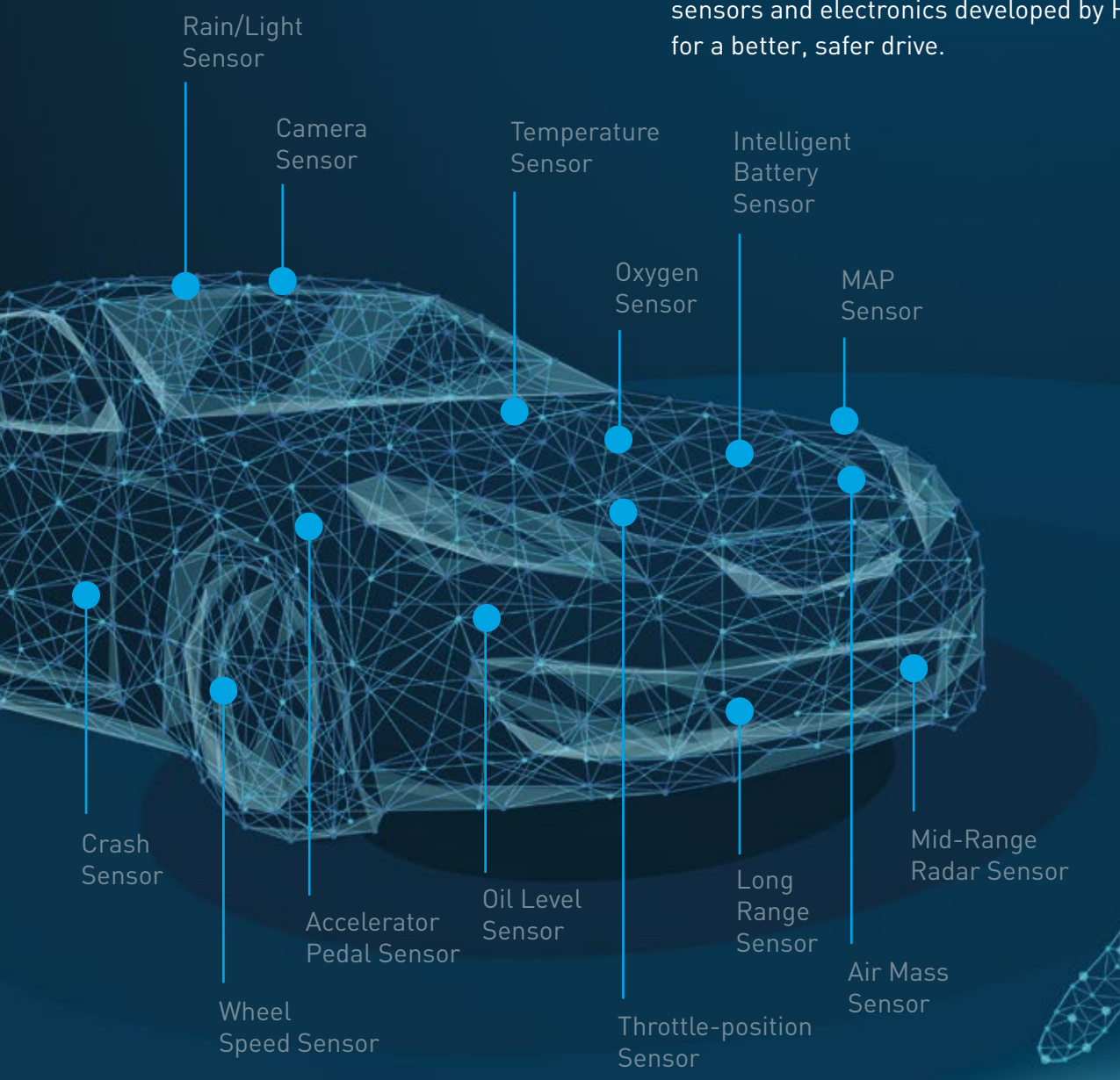
Data is transferred to cars such as the latest BMW 5 Series and Volco XC90 via DoIP

HELLA

Technology with Vision

A GROWING SENSE OF THE FUTURE

Smarter vehicles are becoming increasingly sensitive. Many are fitted with intelligent OE sensors and electronics developed by HELLA for a better, safer drive.



MAKE THE CONNECTION

Advanced Driver Assist Systems (ADAS) and smarter vehicle technologies demand smarter diagnostic and calibration tools only from Hella Gutmann Solutions.

The future is here. The future is HELLA

THE WORKSHOP'S FRIEND

For more information contact
Customer Service on 01295 662400
or email hella.sales@hella.com

EXPERT VIEW FROM CARSTEN LUTTERMANN

FILTERS

HELLA Hengst premium quality air filters protect engines and electronic components by cleaning the intake air efficiently and reliably. The air filter is one of the most important filters in both petrol and diesel engines. For example, depending on the capacity, the average PC/LCV engine can easily draw the best part of 2,000 litres of air a minute, so needs to be in good condition to maintain the correct air/fuel mixture and maximise fuel efficiency.

HELLA Hengst filters are manufactured to exacting Original Equipment (OE) standards. In fact, filters developed for the OE industry are mirrored in the aftermarket programme, thereby using the same OE quality filter medium – this ensures the vehicle is always protected.

With leading vehicle manufacturers, including Volkswagen, Audi and Mercedes-Benz, putting their trust in HELLA Hengst air filters, fitting them in popular models such the Audi A4 and Mercedes A-Class, so can the independent workshop!

HELLA HENGST FILTERS:

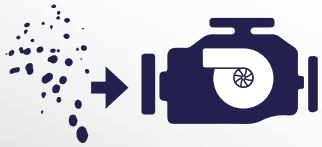
A BREATH OF FRESH AIR IN THE AFTERMARKET

The humble air filter is arguably the most important. Fitted to both petrol- and diesel-engined cars, it removes harmful foreign particles from the air that might otherwise cause a drop in performance or serious damage to the engine.

THE IMPORTANCE OF AIR FILTERS

Modern air filters form part of a sophisticated induction system that may also contain an airflow sensor or maintenance (ie service) indicator. They help prevent excessive wear and also protect sensitive electronic components. Therefore it is essential to fit high quality replacement air filters that are especially resistant to heat.

Features and consequences of low quality Air Filters



Unfiltered Dirt

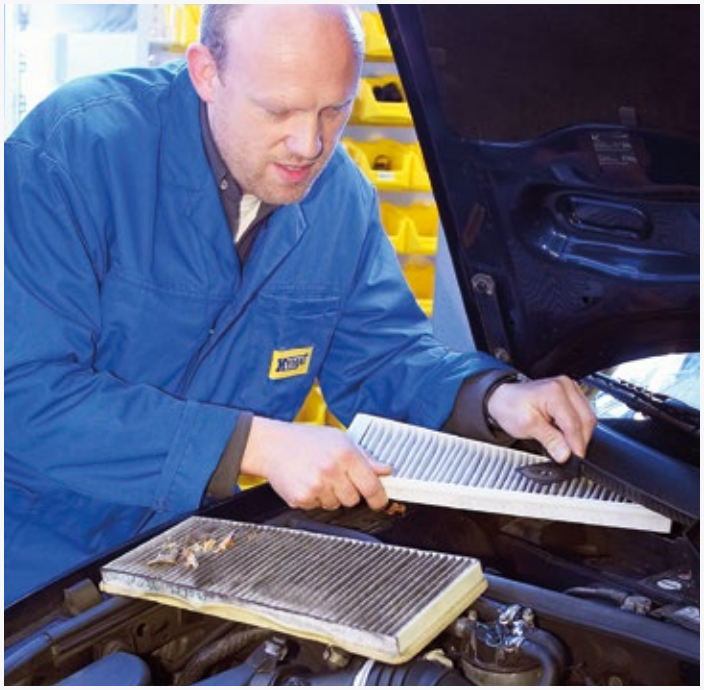
Dirt, fine dust and water can get straight into the combustion chamber, potentially causing:

- Impaired engine performance
- Water contamination
- Reduction in the effective filter surface
- Complete loss of filtration capacity

REGULAR MAINTENANCE AND SERVICING

To maintain a healthy engine with optimum performance and fuel economy it is essential that the air filter is replaced regularly, and that the vehicle manufacturer's recommended service intervals and procedures are followed.

How effectively the intake air is filtered has a major effect on how well the vehicle's engine performs, so fitting a high quality replacement filter at the specified service interval can extend the life of the vehicle and lessen the chance of unexpected and expensive repairs.



» To maintain optimum performance and fuel economy it is essential that the air filter is replaced regularly «

DIFFERENCES IN FILTER DESIGN

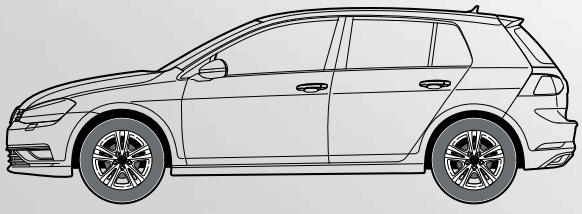
It must be stressed that not all air filters are the same! Today, there are fundamental differences in the design and construction of air filters.

Ring-type filters are no longer fitted to modern cars, having been replaced by panel filters and air filter cartridges. Safety elements are used where the vehicle's operating conditions are particularly harsh, such as in a high dust environment; the safety element provides protection against dirt particles when replacing the main air filter.

HELLA Hengst filters are manufactured to exacting Original Equipment (OE) standards and benefit from extensive industry experience. Their high efficiency in operation is due to the OE quality of the filter medium – the vital element in every filter. HELLA Hengst's focus on quality ensures excellent engine performance, an extended service life thanks to high dirt absorption characteristics, and reduced intake noise.

DID YOU KNOW?

There are now over 690 references in the HELLA Hengst Air filter range making it the largest and most diverse product group. Popular applications covered include Audi, Hyundai, Mercedes-Benz, Porsche and VW. For more information on the range, contact your local distributor or email hella.hengst@hella.com



EXPERT VIEW FROM STEVE HUDSON

HEAD OF BUSINESS DEVELOPMENT, BEHR HELLA SERVICE

With "air con season" fast approaching, an ever-increasing number of vehicles will need their air conditioning systems serviced in time for the warmer weather – which is good news for the well-prepared workshop.

For this reason, Behr Hella Service is encouraging workshops to plan ahead and update their product knowledge with advanced training to ensure the right part is always fitted correctly, thereby taking advantage of this potentially lucrative seasonal business opportunity.

Behr Hella Service's Advanced Training Academy (ATA), launched in 2017, makes specific high quality training available to all workshops, enabling technicians to brush up on their knowledge of heating, venting and air conditioning (HVAC) systems in general, learn best practice and time-saving fitting tips, and gain an insight into the very latest air conditioning products and technologies – all from one of the leading HVAC experts in the aftermarket.

For garages that don't currently offer air conditioning service, the ATA provides an opportunity to expand the range of services they are able to offer, increasing both customer loyalty and business revenue, particularly as air conditioning is one of the most profitable and growing segments in the market. Access to Behr Hella Service's ATA is available through local motor factors, so signing up couldn't be easier. And as an added bonus – the courses are free too! To find out more contact your local distributor or register your interest at www.strengthenyourpotential.com

COOL RUNNINGS

Air conditioning systems, once the preserve of high-end, luxury vehicles, are now fitted to the majority of cars to provide the occupants with a comfortable, pleasant environment while travelling. But with the increase in the number of hybrid and fully-electric cars now available, modern air conditioning systems are being called upon to perform an additional role: that of cooling the high voltage components.

To achieve this, in the absence of an internal combustion engine, or when a hybrid vehicle is relying solely on its battery for propulsion, an electrical compressor is fitted rather than a traditional belt-driven compressor to run the A/C system.

Modern electrical compressors feature a high-voltage electric motor and are up to 20% lighter than a comparable wobble plate compressor.

Modern electrical compressors feature a high-voltage electric motor and are up to 20% lighter than a comparable wobble plate compressor. They employ a scrolling principle similar to a G-supercharger, with two interlocking spirals to provide compression of the refrigerant. An added advantage is that electrical scroll compressors are particularly resistant to wear because the compression of the refrigerant is achieved through a rotary action.

Behr HELLA Service has been supplying scroll-type compressors with integrated electric drive for over six years, developing a particular specialist expertise in the process. The Premium Line range now includes units from Japanese manufacturer Sanden, who developed the first compressors specifically for electric vehicles way back in 1990, and who hold numerous patents on their designs. Their latest E-compressors feature compact design, high efficiency, low oil circulation across a wide operating range, and fast acceleration, as well as integrated mufflers and internal balancing. As a result, Sanden's units are especially durable and resistant to extreme operating conditions, such as fluid slogging, low lubrication and motor vibrations, to the operational benefit of the vehicle to which they are fitted.

Is this the future for A/C compressors? BMW's i3 model features an optional heat pump

Looking to the future, manufacturers are turning to heat pumps (currently optional on the BMW i3 and VW e-Golf) to warm lithium-ion batteries to their optimal operating temperature range of +10°C to +40°C when used in particularly cold conditions. Since, in principle, heat pumps operate as the opposite of an A/C system, both cooling in summer and warming in winter could be provided solely by a compression heat pump.

To discover more about Thermal Management in hybrid vehicles, visit https://www.hella.com/techworld/uk/

SAYING "NO" TO NOx

As a part of Behr HELLA Service's continuing commitment to reducing vehicle emissions and their effect on our environment, they have recently expanded their Engine Cooling range to include Exhaust Gas Recirculation (EGR) coolers. But why do EGR coolers have such a vital role to play?

Basically a heat exchanger, the EGR cooler makes this reduction possible by recirculating the exhaust gases, cooling them and feeding them back into the intake air. This results in a lower combustion temperature inside the engine and consequently lowers the amount of NOx emitted.

WHAT CAN GO WRONG?

Fortunately the EGR cooler is not one of the cooling parts that's prone to high levels of wear. However, it can still fail under a variety of circumstances, such as extreme fluctuations in temperature, which can cause leaks. In a similar way, a lack of appropriate coolant additives – and the use of an incorrect formulation – can result in internal or external leaks.

HIDDEN DANGERS

When the engine is running, a leak and subsequent loss of coolant may not be noticed due to the higher exhaust gas pressure in comparison to the coolant pressure. However, restarting the engine may result in serious mechanical damage due to the build-up of coolant, causing a "water hammer effect".

Reduced engine performance may be an indicator of a cracked EGR cooler. Escaping exhaust gases result in a drop in boost pressure, adversely affecting the engine.

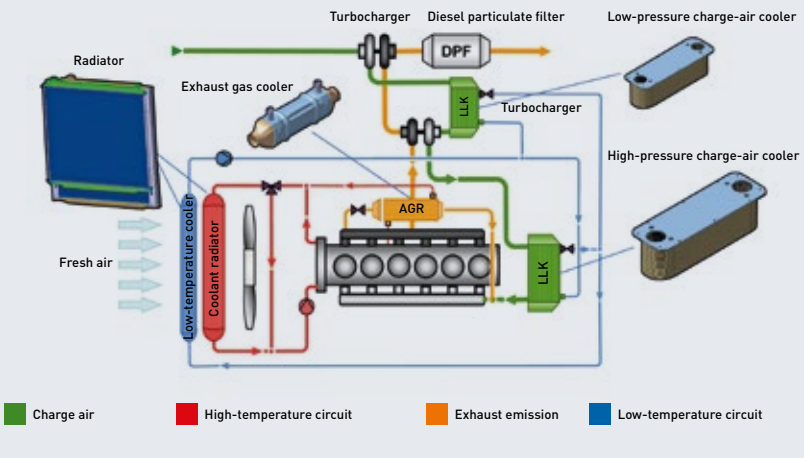
Other possible faults include torn diaphragms, coking inside the EGR cooler itself, and electrical or mechanical faults affecting the actuators used in the system. Many of the faults are identified by the vehicle's electronic control unit (ECU), which alerts the driver by illuminating the engine warning light on the dashboard display.

For further advice and tips on troubleshooting EGR coolers please visit www.hella.com/techworld/uk/

How do EGR coolers work?

- A proportion of the post combustion exhaust gases is passed through the EGR cooler
- The gases are cooled and removed from the EGR cooler in metered amounts
- Pneumatic and/or electrical actuators control the rate at which the exhaust gas is fed back into the combustion chamber via the air intake system
- The cooling performed by the EGR cooler reduces the engine's combustion temperature and lowers the amount of nitrogen oxide produced as a result

EXHAUST GAS RECIRCULATION RADIATOR: OPERATING PRINCIPLE



EXPERT VIEW FROM PAUL TREDGOLD

HEAD OF PAINT DIVISION

In previous editions of INSIGHT I have explained about the importance of colour accuracy to the bodyshop and how the Sonne colour tools are the "best in class" for the "free to choose" segment of the UK refinish market. I have heard people comment that spectrophotometers are not advanced enough yet to give consistently accurate readings that can be totally reliable. I would disagree with that sentiment as the most common issue is the person using the spectro or the preparation of the panel to be colour checked.

Firstly, I would like to point out that spectro's are not a "magic wand" that will ensure an "edge to edge" finish every time. What they will do is find the closest match to the colour that when blended in to the adjacent panel will ensure an invisible repair. However, to get the closest match the operative needs to consider many things before taking a reading from a vehicle panel.

The first step is to ensure the panel is cleaned properly using the appropriate cleaners and polishes. Using the wrong polish on dark colours can often result in "swirl patterns" or fine scratches on light colours, interfering with the reading. Secondly, the camera needs to be clean, at ambient temperature and needs to be regularly calibrated to ensure it is used maximising optimum performance. Lastly, to get the colour you want you need to ensure that you input the correct information in to the camera and software to ensure you narrow down the possibilities and pin point the available colours that will ensure that right first time, every time job.

If you are interested in finding out more, register your details at www.sonnepaint.com or call our Customer Service Team on 01295 662400.

HELLA SONNE SHINES!

Eighteen months on from its launch into the UK aftermarket, HELLA Sonne director of refinish, Paul Tredgold, spoke to a number of distributors and bodyshops to gauge how the brand's products had been received.

In a crowded refinishing market, HELLA Sonne offers the right products and equipment at the right prices, benefiting the distributor and bodyshop professional alike. Following a high-profile launch at the first Automechanika event to be held in Birmingham, the brand has been picked up by 18 distributors and 120 bodyshops. Bill Skingsley, a director at Car Colour Services, Romford, said: "HELLA

Sonne has given our business the ability to confidently approach new prospect accounts knowing that we have products and equipment manufactured to the highest quality that will perform in any size bodyshop".

He went on: "Our business is focused on the free to choose markets and in my opinion, there is no other product on the market today that offers the exceptional quality and value that HELLA Sonne provides".

A POSITIVE EXPERIENCE

Another bodyshop manager, Leon Evans, from The Trade Centre Wales, described similar positive experiences with the HELLA Sonne range. "We had previously used various products aimed at the mid-market or free to choose sector that didn't perform and we were only completely happy using premium products but they came at premium prices", he said.

» In my opinion, there is no other product on the market today that offers the exceptional quality and value that HELLA Sonne provides «

"As a business we are focused on cost per unit and could not afford to keep using premium priced products and were open to try HELLA Sonne but not really expecting anything different from our previous attempts to reduce costs", he added.

"However, we have been using HELLA Sonne products at The Trade Centre Wales in Neath for the last six months without any problems or issues. The spectrophotometer is extremely reliable and as a fast-paced, volume bodyshop we need to know that the colour we use will reproduce to the manufacturer's original shade every time.

In November, we made the decision to install HELLA Sonne in our site in Wednesbury and have enjoyed exactly the same results as we have at the Neath site. We are also delighted at the service and support we have received from FMP Motor Factors – and of course the HELLA Sonne team."

» We have been using HELLA Sonne products at The Trade Centre for the last six months without any problems or issues «

NEW YEAR – NEW ADDITIONS!

The HELLA Sonne paint brand has been very well received by both distributor and bodyshop customers alike. 2018 will see HELLA Sonne building on this overwhelmingly positive initial reaction, with further high quality, cost-effective additions to the product range, together with an expansion of the support team to respond to the needs of the ever-increasing distributor and bodyshop customer base.

SOCIAL MOBILITY

HELLA has recently begun a wide-ranging social media campaign to help workshop technicians get their customers' vehicles back on the road, and which also aims to raise awareness of the HELLA brand and our high quality products.

Launched at the end of 2017, the campaign sets out to make HELLA the technical voice of the aftermarket by sharing our wide-ranging expertise in vehicle electronics, lighting and thermal management with the end users of our products – skilled workshop technicians. Regular technical and fitting tips, together with step-by-step troubleshooting and fitting videos and new-to-range updates are all available through the HELLA Facebook page, Twitter feed (@Hella_GB) and YouTube channel.

To be keep up to date with the very latest product releases and aftermarket technical support from HELLA simply follow the links below:

www.facebook.com/hella.uk/

www.twitter.com/Hella_GB

www.youtube.com/hellagroup

HELLA GOES GREEN!

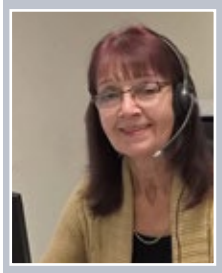
HELLA is working in partnership with environmental champions ACM to improve on-site waste management and to achieve ISO 14001 accreditation – and we've set ourselves 6 months in which to do it!

greener path programme

Towards a Zero Waste Outcome

Started on 1st November 2017, HELLA'S aim is to improve the segregation of recyclable materials through the use of appropriate contractors for each waste service: Dry mixed recycling (eg cardboard, paper, plastics, tin cans etc) and general waste, such as black bag waste, floor sweepings, polystyrene and all food types and associated packaging. Our ultimate objective is to reach zero landfill waste by the end of the year, which will not only be good for the environment, but should also benefit the business financially – an outcome that's a "win-win" for everyone!

MEET THE TEAM...



Pauline Hall

Pauline Hall, Customer Services Advisor

In this issue we have a special focus on customer services advisor Pauline Hall, who will be retiring from HELLA after 25 years of dedicated service. Thank you Pauline, for all your hard work and commitment.

1. ***Where do you most want to travel, but have never been, and why?***
   Canada in the Fall, as it would be picturesque.
2. ***What are some of the biggest rewards of your position?***
   Praise from customers and positive feedback.
3. ***Have you ever met anyone famous? If so, who?***
   Johnny Kidd from *Johnny Kidd and the Pirates* at the Winter Gardens in Banbury.
4. ***Who would you want with you if you were stranded on a deserted island – and why?***
   Ed Sheeran, as he has a great voice and would be very entertaining.
5. ***What's something that would surprise people about your day-to-day at HELLA?***
   My workload.
6. ***Would you rather... watch sports or play sports?***
   Watch motor bike racing, in particular Valentino Rossi.
7. ***What's one thing you wish somebody had told you before going into this field?***
   After 25 years experience nothing needs to be said.
8. ***What previous professional experiences have helped you most in this role?***
   Telephone manner and dealing with awkward situations.

CHARITY SKYDIVE EVENT

Two of our colleagues at HELLA have recently completed a skydive for charity.

Management Accountant Claire Wackrill and Pricing Manager Chris Griffin each had their own reason for wanting to jump out of an aircraft: Claire as part of her list of "things to do when you're 50" and Chris to face his fear of heights!

The brave pair finally got to jump on Saturday 11th November 2017 at Hinton Skydiving Centre in Brackley, when a break in the weather that day gave them the fine conditions they needed. This was the second time of trying – the original planned jump had to be cancelled due to adverse weather conditions!

Claire and Chris successfully completed their respective jumps and raised over £1,000 for Katharine House Hospice in Banbury and The Fire Fighters Charity in the process. Well done to them both!

Technology with Vision

THE INTERNATIONAL SYMBOL FOR OE QUALITY

HELLA's long standing commitment to quality is just one of the reasons that many of the world's leading vehicle manufacturers choose HELLA as an OE partner.

Quality is also an intrinsic feature of each and every one of the 45,000 replacement parts within HELLA's diverse aftermarket product portfolio, which is why leading wholesalers and garages choose HELLA too.

hella.sales@hella.com

BEHR HELLA SERVICE

HELLA GUTMANN SOLUTIONS

sonne