

PARTICULAR OPPORTUNITY

Despite alternative powertrains, a major chunk of the car parc is still made up of diesels, so garages need to make sure they can handle them



Julian Goulding, Marketing Manager Northern Europe, Delphi Technologies Aftermarket, said: "While diesel vehicles are losing favour and will eventually make way for those powered by alternative fuels, that day is a very long way away. Most people choose a diesel for fuel economy, and being able to efficiently diagnose and rectify any issues that compromise this continues to be a big benefit."

"A notable area that often requires attention are high pressure common rail fuel injectors, due to them injecting fuel at up to 30,000 PSI through clearances as small as one micron. Because of how hard they work, they are unfortunately very susceptible to wear and tear. Being able to interrogate the vehicle's OBD with a quality diagnostic tool, such as our Bluetech VCI item can quickly and very accurately pinpoint if the injectors are at fault."

Above:
BM Catalysts continue to support the aftermarket with quality product lines

Sensitivity

Tim Heide, Application Engineer at LIQUI MOLY observed: "The price for the efficiency of modern diesel engines is their sensitivity to contamination. The first aspect to consider is the injectors. If deposits accumulate on the fine nozzle openings, the fuel is no longer atomised so finely. The result is incomplete combustion, reduced engine performance, higher fuel consumption and even more deposits on the injectors.

"This vicious circle can be broken with the Pro-Line Diesel System Cleaner from LIQUI MOLY. Simply pour this additive into the fuel tank. When the engine is then running, its cleaning agents also reach the injectors and gradually remove the deposits. For thorough cleaning, the car must be driven a good 1,000 miles, with a new can of Pro-Line Diesel System Cleaner added every time you fill up with fuel."

Tim continued: "In addition, the workshop can remove dirt from the intake system with the Pro-Line Intake System Cleaner Diesel from LIQUI MOLY. Its application is somewhat more demanding. First of all, access to the intake system must be provided as close as possible to the engine and downstream of the air flow sensor. The engine is then run at 2,000 RPM and the cleaner is sprayed in short bursts. This cleans the entire intake manifold, which would be very difficult to achieve mechanically. On diesels at the MOT, Tim added: "If older vehicles without a DPF fail through the MOT test due to an excessive turbidity value, Diesel Smoke Stop from LIQUI MOLY provides a remedy."

Reaction

Mike Schlup, MD of Kalimex the UK distributors for JLM Lubricants, observed: "The modern diesel engine incorporates a wide range of emissions control devices including the EGR, DPF, CAT and SCR in order to trap and reduce particulate and gas emissions. When functioning correctly the net result is that diesel emissions are lower than ever but the trade-off is that these emissions become trapped inside the engine, and within the emission control components, leading to blockages and potentially component failures."

Mike continued: "When any of these components begin to struggle or cause problems, the immediate reaction might be to replace the component but not only is this expensive, it is often unnecessary. Darren Darling, the founder of the DPF Doctor Network, explained this very well in his presentation on DPF maintenance and cleaning to the 2022 Garage Show in Birmingham. Using an overflowing wheelie bin as an example, Darren asked why the bin was overflowing. Either, it can't cope with the level of rubbish being put in the bin, or the bin isn't being emptied properly. The wrong solution would be to simply buy a new bin, this wouldn't solve the problem. Darren emphasised that you must first understand why the bin is overflowing, either reduce the amount of rubbish or find out why it's not being emptied properly. Once you know that you can address the problem and, after a quick clean, the bin, i.e. DPF, will be fit for purpose again."

He added: "This is why JLM's message to the trade is, don't just throw bottle after bottle of cheap additive in the fuel tank hoping it will solve the problem. Identify the underlying issues, fix those and then use a quality additive to clean the system and help prevent the same problem recurring. The JLM DPF Cleaning toolkit is just part of a wide range of professional diesel cleaning solutions and additives trusted by the trade to work."

For more information, visit: www.jmlubricants.com

Remedy

Launch Tech UK National Sales Manager Richard Collyer said: "We're finding more demand for our DPF gun and cleaning foam. This allows technicians to spray a cleaning fluid straight onto the DPF via the pressure sensor or vacuum hole. The gun is filled with Launch DPF cleaning fluid and connected to a compressed air line, so the cleaning fluid can be sprayed at the DPF in-situ and at pressure."

"The accompanying DPF cleaning fluid dissolves soot build-up in the DPF filter, even from DPFs that will no longer respond to a forced regeneration. The process will reduce soot levels, allowing the DPF software to force a regeneration and recover the DPF filter."



Above: The JLM DPF Cleaning toolkit is part of a wide range of professional diesel cleaning solutions

With a blocked DPF, diagnostics equipment may fail to accurately find faults. Until the DPF is cleared of contaminants, sensor faults and air leaks often cannot be found, so it is best practice to ensure the DPF is cleaned out prior to starting diagnostic work. The DPF cleaning equipment is soaring in popularity as not only a remedy of fixing blocked DPFs, but also as a preventative measure to prevent emissions-related issues and avoid requiring removal of the entire part."

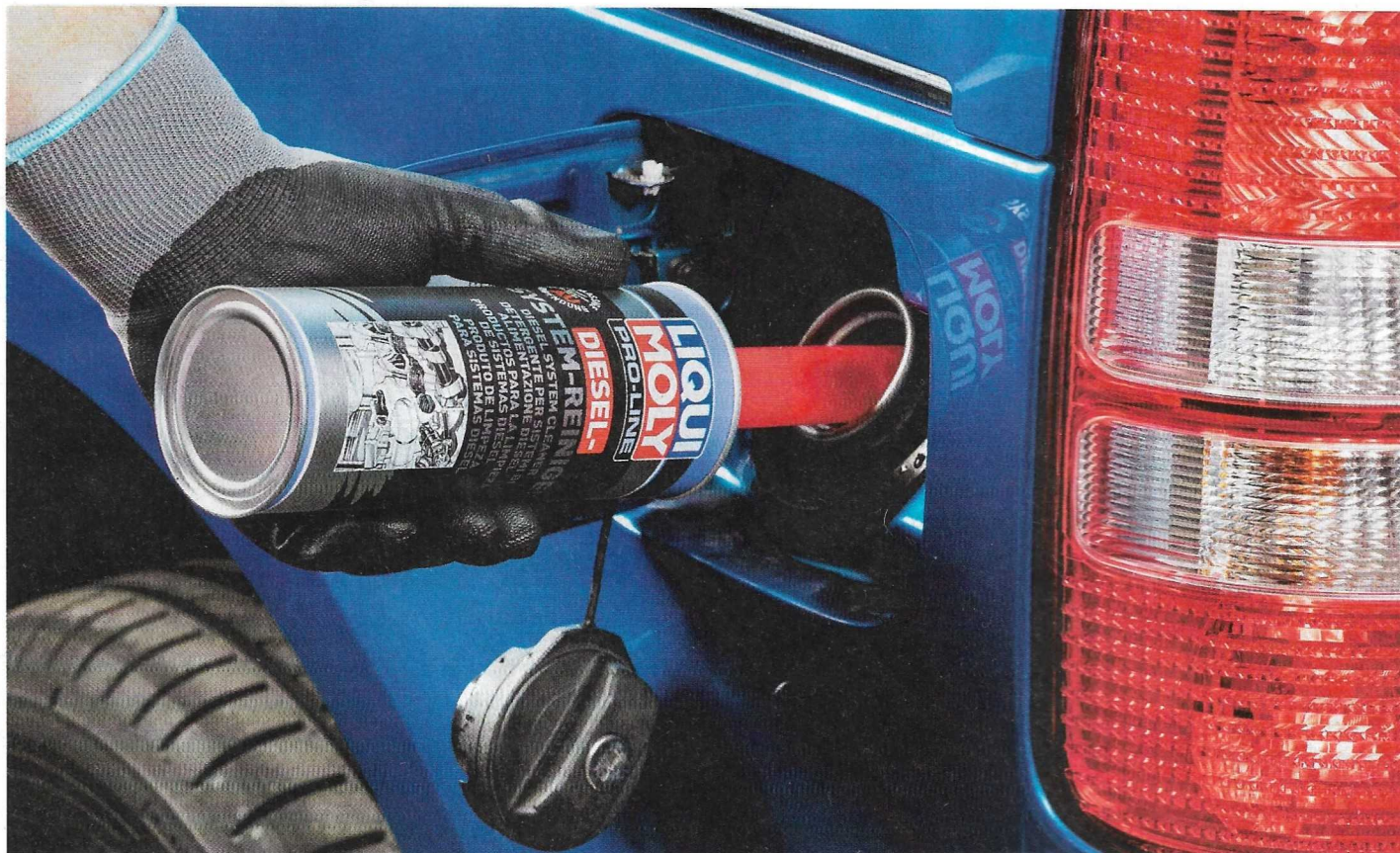
Future-proofing

The cost of living crisis is impacting on how vehicle operators treat their diesels, as Phil Dowd, Managing Director at TerraClean distributor Randstad, observed: "We are finding that during the current economic climate, garages and fleets are futureproofing by taking out a TerraClean treatment on their vehicles, potentially avoiding inflated repair and servicing costs associated with a bigger issue."

The 2030 ban on new internal combustion engine vehicle sales, and the shift to EVs, is set to change the car parc, but as Phil is concerned, more could be done to make existing vehicles run as they should: "With charging infrastructure remaining a challenge, plus continued anxieties over range, compounded by increasing electricity costs, TerraClean argues that through regular preventative maintenance and the current annual MOT inspection, vehicle emissions can be more closely monitored. More can be done to embrace current technologies that can reduce vehicle emissions. The automotive aftermarket has solutions available now to help clean up the country's vehicle parc and reduce carbon emissions."

Demand

Diesel drivers are keen to keep their cars on the road, and in some cases remanufactured components are the ideal solution. Commenting on the trends in the market, Ivor Searle Commercial Director David Eszenyi said: "Demand from workshops for Ivor Searle's OEM quality remanufactured engines, gearboxes and turbos for diesel applications continues to be strong. The LCV segment is particularly active with best-selling diesel major units including the 2.0 litre, four-cylinder TDCI engine for Ford



Transit EcoBlue. Ivor Searle also offers a professional DPF cleaning service which uses water-based Flash Cleaning technology to remove all contamination, including PM10 particles, cerium oxide deposits and oil residues, from the unit. We have also introduced an off-the-shelf DPF programme for a number of high demand Ford Transit applications."

For more information, visit: www.ivorsearle.co.uk

Preventive maintenance

Additives can really help with diesel engines according to Lucas Oil Sales and Operations Director Dan Morgan: "For garages looking for an additive that can help achieve the aim of saving their customers money over the long-term, certain additives are not only solutions that can be trusted, but they are also able to add significant revenue streams at the same time. For example, although Lucas Oil's Diesel Deep Clean is a product with a reputation for cleaning injectors, restoring power and increasing MPG, its prowess as a cleaner of DPFs is often underestimated. When added to the fuel tank, it removes and dissolves harmful exhaust products that could plug the DPF. That makes it a preventive maintenance tool that mechanics can use, while promoting the preventive maintenance benefits to the car owners themselves. Regular use of Diesel Deep Clean increases intervals in DPF regenerations, which reduces the risk of engine damage from forced regens, that can sometimes be required if carbon build-up is left unchecked."

EGR valve replacement

Getting into specifics, commenting on EGR valve failure and replacement, Nissens Marketing Manager Jan Zieleskiewicz said: "The EGR valve is an integral part of the vehicle's

Above:
LIQUI MOLY Pro-Line Diesel System Cleaner in use

emission control system. There are a number of common reasons for EGR failure. The most frequent is the valve getting stuck in an open or closed position. This happens because of unusually high levels of carbon deposits and the reason for the contamination must be eliminated and typically it is linked to improper, unclean combustion in the engine, or frequent short-distance journeys. Using dedicated tools and recommended methods, as well as by simple visual inspection, check exhaust lines related to the EGR, the vacuum pump connection and lines, EGR electrical connections, EGR air connection and coolant connections to EGR cooler, if applicable. To determine the cause, perform a OBD diagnostic scan to specify the failures related to the valve, but remember that error codes for a specific sensor or malfunction may not reveal the root cause of the problem."

On installation, Jan observed: "After disconnecting the battery and removing the faulty EGR valve, thoroughly clean all gasket surfaces and flanges and check the condition of the supply pipes and cables, then fit the new EGR valve. For some vehicle models it may be necessary to reset the ECU unit in order to clear any stored fault codes relating to the previous EGR failure."

You then need to test the EGR by inspecting engine operation: "Run the engine at idle to warm up to the normal operating temperature of around 90°C. It should idle smoothly and evenly. Inspect for any leakages of air, exhaust gas or coolant. If any are spotted, they must be fixed immediately. Then perform another OBD inspection for any EGR-related errors, and examine the exhaust gases emission. Finally, take the car out for a drive and check that the engine operates properly."

For more information, visit:

<https://showroom.nissens.com/egr-valves>

Increased demand

Then, of course, there is the issue of glow plugs. As NGK Spark Plugs (UK) Marketing Manager Mark Hallam noted, winter is the peak season for glow plugs: "Glow plugs sales spike in the winter months as temperatures fall and NGK is here to help garages cope with the increased demand by ensuring we stock the right profile of glow plugs to leverage this sales opportunity."

He continued: "Glow plug replacement should be part of the winter service as they play an integral role in a vehicle's economy and emissions' performance. Instead of changing one faulty glow plug, workshops should upsell by replacing all of them. If one plug has failed, it is extremely likely that the remaining plugs will shortly suffer a similar fate. By replacing the vehicle set, not only will the tight emissions legislation be complied with, but as the glow plug is now an integral part of the engine management system, the starting and cold drive quality will be kept at its maximum."

On installation, he observed: "If there is doubt that a glow plug can be removed without damage, then if accessibility, circumstances, and time permits, then apply penetrating oil around the glow plug, then a squirt of engine oil. The vehicle should then be continued to be used and tackle the job another day - to allow the oil to penetrate and do its work. Remove the glow plug whilst the engine is still hot, using obvious precautions to protect hands. To avoid damage to a new glow plug, follow the installation advice on the NGK packaging. Always install on to the taper seat by hand, do not over tighten the glow plug - or the terminal if the electrical connection is secured via a nut."

Mark added: "Because glow plugs are now a vital part of the engine management system it has never been more important to ensure that the installer is fitting the correct specification item. Avoid budget alternatives as the engine management system can pick up very quickly the fact that they are not to the correct specification. The glow/engine management light will illuminate, performance of the vehicle will suffer, and worst case would be that consequential damage could result."

For more information, visit: www.ngkntk.com/uk

It's important that the UK considers introducing more appropriate emissions testing for diesel vehicles

**Below:
Launch Tech UK's
DPF cleaning gun**

Excessive

On what to do with a faulty glow plug, DENSO Europe Pan European Strategic Marketing Manager Fatiha Laauich said: "The majority of glow plug failures are caused by excessive voltage or heat. Therefore, it is advisable to check the entire electrical ignition system to identify the underlying fault. Overly advanced injection timing, leaky injectors, or diesel running in the engine will cause the combustion temperature to increase too much, which can also damage the glow plugs. So, finding faults quickly will help to minimise engine damage."

"When installing DENSO glow plugs, use an appropriate wrench and socket for the glow plug and terminal. Also, when replacing the glow plug, make sure that any oil, dirt or debris etc. on the outside of the old glow plug, does not enter the cylinder. Before inserting the new glow plug, clean the engine side of the flange and the top of the thread on the cylinder head and then, once the two screw threads are correctly in line, tighten it by hand until it cannot be tightened any further. Finally, use a torque wrench to tighten the plug accurately to the torque specified by the VM."





Above:
NGK glow plug

Legislative changes

Looking ahead, according to BM Catalysts Commercial Director Mark Blinston, the sector needs to prepare for changes to the diesel market: "Diesel vehicles remain a major part of the UK car parc, and when it comes to the second-hand market it goes without saying that regular servicing and maintenance is a must.

"However, the aftermarket needs to look beyond these everyday expectations and take it one step further to ensure diesels can continue to be a viable option and remain integral to the UK car parc. We need to look at the topic on a broader scale and consider how the UK aftermarket can continue to meet legislative changes around emissions, which affect diesel vehicles in particular. The current UK MOT does not include emissions testing for diesel vehicles. The inspection as it stands only includes a smoke meter test, visual checks on smoke of any colour being emitted from the exhaust tailpipe, or for evidence that the DPF is present and has not been removed or tampered with. We're now seeing legislative changes in countries such as Belgium, Germany, Switzerland and the Netherlands in the way that they carry out periodic vehicle inspections on diesel vehicles. The method used allows them to accurately measure the particles that are emitted from the exhaust of diesel cars, commercial vehicles and trucks. It is designed as a more effective means to detect and remove from circulation diesel vehicles with manipulated, removed or damaged DPFs.

"This is something that is now being discussed in UK government too, with the Westminster Commission for Road Air Quality (WCRAQ) gathering evidence to shape policy and improve legislation around the quality of air we breathe. The WCRAQ supports the All-Party Parliamentary

Group, which consists of MPs and peers who work together to promote measures to tackle poor air quality. Barry Sheerman, MP for Huddersfield and one of the individuals who set up the commission, is a keen campaigner around the importance of updating the MOT test for diesel cars, specifically in the testing of DPFs and proposed a Ten-Minute Rule Bill on the topic at the start of 2022. As is the case in the Netherlands, Barry Sheerman is arguing for the introduction of a DPF efficiency test during an MOT, to identify faulty DPFs emitting a high level of dangerous particulates, proposing for an emission limit to be set at 250,000 particles per cm³ in a bid to tackle air quality. The proposed Bill is evidence that the longevity of internal combustion engines is still considered, with the debate about clean running of diesel-powered cars set to intensify. It's therefore essential that the whole aftermarket plays its part and prepares for any changes in legislation to stay ahead of the curve and ensure emissions are reduced as much as possible."

Mark continued: "As a company with strong export links, we are very interested in the legislation already in place in Belgium, Germany, Switzerland and the Netherlands, and make continual investments to ensure we can go above and beyond to deliver the highest-quality hot-end emission control products throughout the European aftermarket. Despite the 2030 legislation, which will ban the sale of new petrol and diesel cars in the UK, edging ever closer, vehicles with internal combustion engines will still have a considerable life even after they can no longer be sold as new."

He added: "It's important that the UK considers introducing more appropriate emissions testing for diesel vehicles, including advanced particle measurements. No official plans to adopt the legislation being rolled out in other countries have been formally introduced – yet."



Left: Diesel Deep Clean from Lucas Oil Products