



Automotive  
Parts Distribution Ltd

# SMART CHOICE

ISSUE 69 • MAY - JUL 2023

THE SMART CHOICE FOR TODAY'S TECHNICIAN!

## IS 4-1-1 TESTING ON ITS WAY?

AND WHO REALLY WANTS IT?



**READY FOR AIR CON SEASON?**  
FULL RANGE OF AC PARTS AND  
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### IN THIS ISSUE

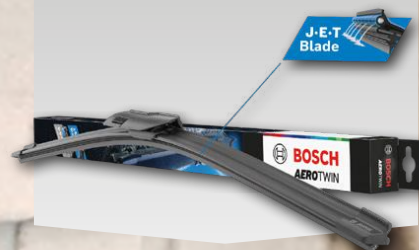
**CODING NEW  
INJECTORS  
WITH  
CARWOOD**



**BGA TIMING  
CHAINS - THE  
FULL KIT**



**NEW  
AEROTWIN  
J.E.T BLADES  
FROM BOSCH**



BATH: 01225 424 221 GLASTONBURY: 01458 832 915 HIGH WYCOMBE: 01494 321 636 NORWICH: 01603 486 020  
READING: 01189 110949 SWINDON WESTMEAD: 01793 821 715 EXPORT: 01777 700 075



Automotive  
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# THERE'S NO VALID REASON TO EXTEND THE FIRST MOT TEST, SO WHY DOES THIS CONSULTATION FEEL LIKE A 'FAIT ACCOMPLI'?

One can be forgiven for being completely exacerbated with yet another attempt by a government to undermine the sector and the work it does.



Because looking at all the information presented by the government, it would appear the proposition of a 4-1-1 MOT test frequency is closer than even before.

Yes, the MOT test needs modernising, testers know that and have been saying this long before the government put the test under the microscope again.

But it is any suggestion of a change in frequency that gets the sector really riled and rightly so. Go on any MOT forum and you'll hear cries from workshops the length and breadth of the UK that openly invite any lawmaker to visit their garage and see the importance the MOT test has on keeping our roads the second safest in Europe.

But it's not just the trade that is against the change, a recent poll conducted by Sky News suggests that most drivers in the UK fear that extending the MOT period will risk lives on the road. The survey found that 76% of drivers oppose the idea, with only 11% supporting it. Moreover, 62% of respondents believe that

the current three-year MOT period is sufficient and that extending it would be a mistake.

So, if it's not broke, why fix it? Every conceivable argument to change the MOT test has been put forward by the govt to change the MOT test frequency, but it is also everything we've heard and overcome before.

**Govt: Cars are more reliable** The MOT is a roadworthiness, not a reliability, test. And it's the same wear and tear items, tyres and brakes, that commonly fail.

**Govt: It will save motorists money if we extend the first test to four years.** Those affluent enough to own a car younger than four years old will probably fear not that they will have to cut back on a skinny latte each month to afford the yearly MOT test. Why pick up a safety defect at three years when you can drive another 8,000 miles and pick up a worsening fault at four?

And what about "Not Zero", sorry Net Zero, the saviour of the UK economy? Moving to four-year

testing will see vehicle emissions increase, because quite simply they won't be checked at their annual inspection.

The 'offsetting' of the impact by better servicing is unlikely to be an effective solution, as most new vehicles are mileage / use based, or require a specific service schedule to maintain their warranty. However, it is highly unlikely that brakes or emissions would be checked unless specifically requested by the vehicle owner.

So where do we go from here? In addition to the plentiful, well-resourced and compelling arguments from within the trade, it will be people power that is needed to get the Government to listen to the automotive industry and stop this assault on the safety of motorists and other road users.

The challenge isn't a new one for the aftermarket - we've been fighting for years for the recognition we deserve.

Article written in conjunction with the IAAF.



## GARAGES INCREASINGLY BEING RESTRICTED ACCESS TO DATA AND RMI, UK AFCAR FINDS



UK AFCAR is gathering mounting evidence that independent workshops are facing increasingly restricted access to data and repair and maintenance information (RMI).

The coalition comprising trade associations, such as GEA, IAAF, NTDA and UKLA, recently invited independent garages to register any restrictions they face on gaining access to this data, or other restrictions in their ability to complete a vehicle repair via a new on-line form.

The findings, which are ongoing, shows independent operators reporting some concerning issues, across a number of vehicle makes and models, including: Mazda, Hyundai, BMW, Audi, Range Rover, Porsche, Citroen, Bentley, Alfa Romeo, Mercedes, Peugeot and Vauxhall.

One garage responded, saying: "We had problems with the Mercedes A Class radar, as there were no fault codes but distance warning and emergency braking were not working. It was diagnosed as the radar control unit. We were unable to replace the part, as it requires Mercedes OEM and C5 SCN login."

Another garage could not access a Hyundai vehicle's online service

record, meaning they could not record servicing or repair work, while another had difficulty in finding any information to update a Citroen vehicle's digital service records, with the problem remaining unresolved. The same problem was reported for a Mazda CX 5.

More specifically, one technician came across a stumbling block when replacing a diesel particulate filter (DPF) additive tank to a Peugeot Partner, as they were unable to programme the part to the vehicle and had to take it to the dealers for secure configuration.

UK AFCAR fights to ensure the rights of the independent aftermarket that are enshrined in MV-BER and vehicle type approval legislation, both of which are upheld in the post-Brexit era.

It looks to allow all multi-brand operators to be able to access technical information, supply spare parts of matching quality to original equipment (OE) parts, and perform service, maintenance and repair (SMR), providing vehicle

owners with a choice of the supply of SMR services, as part of an open, competitive, and transparent marketplace.

Mark Field, UK AFCAR chairman and chief executive of the Independent Automotive Aftermarket Federation (IAAF), said: "The findings have confirmed what we already knew; independent garages are being locked out of repair and maintenance activities by some vehicle manufacturers. It's imperative that the independent aftermarket works on a level playing field – as detailed in legislation – and can provide drivers with an effective choice of where they take their vehicle to be repaired or serviced, and it's clear that as it stands, this is not the case in a number of instances."

"We encourage technicians to continue to come forward so we can continue to collate solid evidence and lobby the Government to ensure this ongoing issue is resolved and the aftermarket remains protected."

# FERODO®

## PREPARED FOR AN ELECTRIC FUTURE

FERODO®, DRiV Motorparts OE braking brand, is committed to helping workshops capture EV brake service opportunities

**Five years ago, conversations about the advent of electric vehicles typically began with “If.” Today they are centred around “how fast” the now-real shift to EVs will occur. And then, how will this shift change the nature of the relationship between consumers and their vehicle service providers?**

A recent study indicated that the service waiting period for customers relying on vehicle dealerships has surpassed a full day. Aftermarket providers who can provide faster service and greater convenience – whether for an ICE or EV – will have a significant competitive advantage.

**What We Know** - Recent data shows that despite a 500% increase in EV sales since 2019, ICE vehicles still comprise more than 98% of the passenger car population on European roads. This massive share will decline only gradually over a period of several years. We also know that today’s ICE vehicles are better performing, longer lasting and more valuable as personal assets than any earlier generation of passenger vehicles. Average vehicle age now exceeds 10 years (UK) overall and continues to rise thanks to a variety of factors: increased quality/durability; the rising cost of new and used cars; and, at least temporarily, supply chain shortages that have reduced the availability of new vehicles. Bottom line, existing parts and service opportunities tied to the ICE car parc will likely remain strong well into the next decade.

**What We Expect** - Every major change in automotive technology – from rear-wheel drive to front-wheel drive and the introduction of electronic fuel injection and engine controls – was initially viewed as a threat to the aftermarket, only to become a new source of industry growth. There is a similar opportunity in the shift to EVs.

In addition to more frequent tyre replacement, the weight and positioning of EV battery packs can exert added stress on components in a variety of driving situations. This is good news for the aftermarket and brake servicing will remain strong.

With the long-term reduction of oil changes and other services specific to ICE vehicles, brake service will take on even greater prominence for workshops. While there has been some concern raised about the reduction of friction wear due to regenerative braking, the reality is that the availability of EV- and HEV-specific braking technologies will help independent workshops earn new customers at the expense of OE dealers.

Once again, the key is to focus on what we know vs. what we expect. What we know is that EVs place severe demands on brake system components. Due to the weight of battery packs for example, EV brake pads often must provide greater stopping power. Additionally,



the significantly faster acceleration of EVs could increase the incidence of sudden, severe stops – again requiring high-performance stopping.

We also know that brake noise and vibration are leading causes of driver complaints. Given the near-silent operation of battery-electric vehicles, brake squeal and other noises will be far more obvious to the vehicle owners.

Another consideration with battery-electric and hybrid vehicle brakes is that regenerative braking is much tougher on the brake pads. Because regenerative braking reduces the number of times the friction material contacts the brake disc, the material often doesn’t have a chance to reach an ideal operating temperature. This means the friction formulation must provide greater consistency and stability across a comparatively wide thermal window.

As one of the world’s largest OE manufacturers of brake pads, we have a unique insight into the demands of today’s EV brake technologies, which will ultimately benefit independent workshops that rely on FERODO® replacement pads. We already offer coverage of 95% of battery-electric and hybrid vehicles in the European car parc. This strong, early investment will help ensure that when it’s time for the first brake repair on an EV, workshops can win the business by choosing FERODO®.

**OE DNA - FACT:** Ever since the Austin 7 rolled off the factory floor in 1922, we have been dedicated to Original Equipment (OE) braking power. And that dedication shows: today, 1 in 4 new cars leaving the factory stops with us. We are the OE choice for nearly 25 million vehicles a year.

**Factory fitted as Original Equipment to:** - Abarth, Alfa-Romeo, Audi, Bentley, BMW, Buick, Cadillac, Chrysler, Citroën, Dacia, Fiat, Ford, GM, Hyundai, Isuzu, Jaguar, Lamborghini, Lancia, Land-Rover, LDV, Maserati, Mazda, Mercedes-Benz, Mini, Mitsubishi, Nissan, Opel, Peugeot, Renault, Seat, Skoda, Smart, Tesla, Toyota, Volkswagen & Volvo.



## MODULAR COOLANT HOSES: TYPICAL FAILURES AND BEST MAINTENANCE PRACTICES



Modular coolant hoses with built-in components have become the norm, containing plastic connectors, such as quick connectors, T- and Y-shaped branches. While they make for lighter cars, hence less CO<sub>2</sub> emissions, they also fail earlier and more frequently, due to the plastic connections becoming brittle. In this article, we zoom in on 1.6 diesel engines (fitted to popular vehicles such as the Citroen: C3, C4, C5, Berlingo, Jumpy; Peugeot: 206, 207, 307, 308, 407, Expert, Partner; and Ford: C-MAX/Fiesta/Fusion) to explain what can go wrong when removing a modular coolant hose for routine maintenance. Read on to find out why a new Gates modular hose assembly should be installed whenever you install a Gates PowerGrip® Kit.

### MODULAR HOSES FOR COMPLEX COOLING SYSTEMS

We've come a long way since the traditional rubber-shaped hoses of the eighties and nineties, and even from those of 2000 onwards, which already had one or two branches. These days, with hybrids and electric vehicles taking the market by storm, cars are outfitted with various modular hose assemblies. Their built-in components control the coolant flow to supplementary areas, such as turbochargers and battery packs.

### WHY MODERN HOSES FAIL EARLIER AND MORE FREQUENTLY

It's not all good news though. While old-style curved hoses needed replacing after ten to fifteen years, the life span of modular coolant hoses has shortened to eight to twelve years (with failures occurring typically between 90,000 and 150,000 kilometers or 60,000 to 95,000 miles). The culprits? Engine vibrations and increased under-bonnet temperatures.

As with traditional curved hoses, high temperature and prolonged exposure to fluids cause the rubber of the modular hose to become soft, expand and lead to hose failures. Plastic connectors, in turn, become brittle and susceptible to breaking due to engine vibration and the stresses of circulating coolant. Finally, quick connectors can fail when hoses are removed for general cooling system maintenance.

### WHAT DOES THIS MEAN FOR MAINTENANCE?

During scheduled servicing intervals, such as timing belt system renewal, quick connectors usually have to be removed to aid draining and flushing of the vehicle's cooling system. During the removal or installation process, the brittle plastic of the quick connectors, as well as of the T and Y connectors, can fracture, causing leakage within the cooling system. Changing the coolant at correct service intervals may help reduce early life failures (ELF), but that's not the only precaution that should be taken.

We recommend carrying out a thorough check of the modular coolant hose and plastic connectors for signs of damage when removing and installing a timing belt system and water pump to (PSA) 1.6 diesel engines. After all, due to the location of the plastic connectors of the modular hose in relation to the water pump, removal and installation procedures require handling of both the water pump and the modular hose assembly, which can lead to fracture damage occurring around the plastic connectors. Our advice would be to install a new Gates modular hose assembly 02-1730 whenever you install [Gates PowerGrip® Kits](#) KP15598XS, KP15656XS, KP15688XS, KP25598XS to vehicle applications containing Gates water pump WP0055, Gates modular hose assembly 02-1730 or their original Citroen, Peugeot or Ford equivalents 1201.G9 and 1336.X3, 1230674, 13464681.

# KEEP TO THE CODE!

Although common rail technology has been around for over 20 years, there's still some uncertainty around injector coding. Leading remanufacturer, Carwood, explains why recalibrating a newly installed injector, is just as important as the quality of the part you're fitting.

## What is an injector code?

In short, an injector code - aka a calibration, correction or trim code - is a unique hexadecimal or alphanumeric code designed to improve the precision and timing of the injected fuel for optimum engine performance, fuel consumption and emissions. Bosch call it an IMA, IQA, or ISA, Delphi, a C2i, C3i and C4i, Continental an IIC, and Denso a QR code. All do the same thing.

The code details the individual traits of each injector such as flow rates, response times and performance at different pressures. These are recorded to a code during manufacture and attached to the injector. When it is installed into a vehicle, the injector to cylinder configuration must be noted, and the code programmed into the ECU, so it knows how to function.



## Why are injector codes required?

Although common rail injectors are machined to extremely fine tolerances, variations are unavoidable. Nozzle orifice jet size, piston to bore clearance, solenoid magnetic force, moving component weight etc, can all cause very slight variations in flow. At 2000+ bar pressures, even the tiniest difference in the amount of fuel delivered, can have a big effect on engine performance.

By managing and adjusting the pulse width and injection timing applied to each injector, however, correct fuel delivery and injection timing can be achieved, and with it, optimum cylinder combustion. This adjustment is what forms the code.

## When should injectors be coded?

Most injectors will feature a code. Whenever it is installed in a vehicle, the code must be reprogrammed into the ECU, to ensure that the timing, and quantity of fuel delivered, are realigned.

**NOTE!** all Continental/VDO injectors have an ECU self-adaption process that must be performed, even if they are coded - otherwise engine knock will occur.

## What about remanufactured or repaired injectors?

When an injector is remanufactured, reconditioned or repaired, its characteristics will change too. Which is why it's equally important that a new code, detailing its new properties, is allocated to remanufactured or repaired injectors as well.

Generating the code is a complex procedure and requires specialist equipment and software. Fortunately, as an approved remanufacturer for the leading OEMs, Carwood has this capability. Many so-called reconditioners, however, will either skip this step, or use broad or repeated codes. As a result, the ECU will work off the wrong parameters, and the vehicle outside of its validated parameters.

## What happens if you don't recode an injector?

The ECU will actuate the injector based on the previous programmed injector grading code, essentially meaning that it now has to guess how to perform. This can cause reduced engine performance, lower fuel economy and higher emissions. In some vehicles, it won't even start, if the correct code isn't entered.

**NOTE!** applications fitted with Bosch Piezo injectors will not start if the IMA learn voltage code is outside a predefined learn band, typically +/-2 bands. This is a single alpha character of the grading, or on some later injectors, a 3-digit number at the end of the grading code.

## How to recode an injector?

- First, note both the calibration code on each injector, and which cylinder it will be fitted to – it's advisable to recode the injector before installing it on the engine.
- Using a diagnostic tool, enter the new code into the correct cylinder. If the ECU does not accept the code, check you have input the correct vehicle details, ECU manufacturer, and/or calibration code.
- Note, some models will require a pilot relearn, or small quantity learning, after the injector has been reprogrammed and installed, to teach the ECU the ideal pilot injection for the engine. The procedure will vary by manufacture so it's important to follow the VM's guidelines.



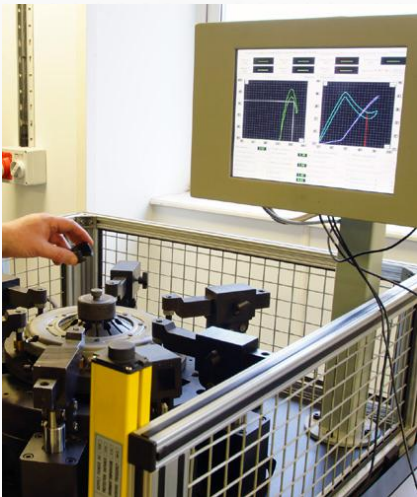
For more expert advice call Carwood's technical hotline on 0121 543 5266



CLUTCH & BRAKE TECHNOLOGY

## DEFINITIVE RESOURCE FOR TOP-NOTCH CLUTCH PRODUCTS BY NATIONAL AUTOPARTS

**Commitment to Exceptional Clutch Products** - National Autoparts, a premier supplier of high-quality clutch products for the automotive industry, boasts 30 years of experience, earning a reputation as a reliable provider for vehicle repair technicians.



**Unrivalled Quality Through Expert Manufacturing:** Our clutch products meet stringent quality standards, designed and crafted by our in-house technical team. Utilising computer-controlled test rigs and OEM or OES parts as a foundation, we guarantee clutch products matching original equipment quality.

**Optimal Performance in Hot and Cold Conditions:** Our clutch products excel in varying temperatures. Friction materials maintain a friction coefficient of  $\geq 0.3\mu$  up to 350°C, suitable for high-temperature environments. Premium friction materials counteract cold and damp weather effects, preventing clutch judder.

**Helping Technicians Work Efficiently:** We offer helpful tips for technicians working with our clutch products. For example, when replacing a Vauxhall Corsa, Astra, or Zafira's concentric slave cylinder (CSC) rubber seal, it's crucial to use a sharp pick to remove the old seal, preventing hydraulic oil flow restriction and eventual failure.

**Installation Guidance for Peak Performance:** Proper installation is vital for optimal clutch product performance. We advise technicians to clean gearbox threaded fixing holes of old thread lock compounds before installing CSCs with riveted backplates. Bolts should be tightened to the correct torque, and the CSC should be flush against the gearbox casing to prevent performance issues.

**Comprehensive Warranty for Peace of Mind:** We support our products with an extensive warranty covering material and workmanship defects, ensuring customer confidence in our clutch products' superior quality and longevity.

**Quality and Manufacturing Processes:** Our in-house technical team sets specifications for National brand clutches using OEM or OES parts as a starting point. We utilise computer-controlled test rigs for accurate analysis and comparison of results with our suppliers.

**Common Vehicle-Specific Issues:** For Vauxhall Corsa, Astra, and Zafira models, remove the rubber seal from the master cylinder's female connector when replacing the CSC to prevent hydraulic oil flow restriction and failure. In Mk1 Aygo, C1, and 107 models, adjust the clutch pedal free play to the manufacturer's specifications to prevent bearing noise and slip.

**Conclusion:** National Autoparts' 30 years of experience supplying unique, top-quality clutch products has made us a preferred choice for UK technicians and garage owners. Our commitment to quality ensures that customers receive affordable, reliable products. We offer a wide range of clutch kits for passenger cars and heavy-duty trucks, all manufactured using the highest quality materials. Choose National Autoparts for trusted, long-lasting clutch products and exceptional service that exceeds expectations.



# Good is in the details

## SKF Engine Timing Belt kits

SKF, a pioneer in the automotive aftermarket, introduced the timing belt kit concept over 30 years ago and remains committed to offering top-quality products for modern workshops. These comprehensive kits, including belts, tensioners, and water pumps, meet or surpass OEM standards and are adaptable to each vehicle's specific requirements.

### Inspection and Considerations

Technicians should thoroughly inspect before removing the timing belt cover, checking for leaks, oil, motor mounts, and accessory drive belt components. Considering both mileage and elapsed time as factors affecting belt wear is essential. Oxidation, caused by exposure to oxygen and ozone, is a common form of damage to belts, even when not in use.

### Ordering and Installing Replacement Belts

When ordering a replacement belt, use the VIN or engine code to ensure the correct belt is received. SKF belts, designed to align with OEM specifications, minimise length discrepancies compared to original belts. A reference photo of the old belt in place can aid in the correct installation and save time during the replacement process.

### Water Pumps and Cooling System Maintenance

Water pumps should be replaced concurrently with timing belts if they share the same drive system. This prevents potential contamination and alignment issues due to a failing pump. Consider a cooling system flush and refill, as maintenance intervals are often closely aligned.

### SKF Timing Kit Components

SKF offers a range of kit components, including high-quality belts with HNBR rubber material, glass cord, and aramid reinforcement, as well as tensioners engineered to maintain optimal belt tension. SKF Aquamax water pumps, featuring top-quality mechanical seal materials and bearings, provide robust performance, surpassing some OEM pumps in certain applications.

### Choosing the Right Kit Solution

By providing high-quality, dependable maintenance kits, SKF empowers workshops to select the most suitable solution based on customer requirements and budgets. Options include individual kit components for a custom repair solution, Timing Belt Kits without the Water Pump for a cost-effective service, or Water Pump Timing Belt Kits for a comprehensive system overhaul at an optimised service expense.

### Following Manufacturer Instructions

Always adhere to vehicle manufacturer instructions and recommendations to ensure safety and optimal performance during maintenance and repair tasks. Or for more information, then simply scan the QR code below.

## What is inside matters

Beyond dimensional fit parts there is a technology in materials, design and performance that follows each component that has been tested and secured per car application. **SKF systems knowledge expertise is inside our kits.**

For technical support and insights, visit: [vehicleaftermarket.skf.com](http://vehicleaftermarket.skf.com) or scan the QR code to know more about the SKF products.



[SKFAftermarket](https://www.youtube.com/SKFAftermarket)

[SKFAutomotive](https://www.facebook.com/SKFAutomotive)

[skfautomotive](https://www.skfautomotive.com)

Contact SKF Technical Support to help resolve your automotive problems and answer your questions:

[helpline@skf.com](mailto:helpline@skf.com)





## MY AIR CON ISN'T BLOWING COLD ENOUGH!

A phrase heard by many of you, I'm sure. Diagnosing why a vehicle's AC system isn't blowing cold enough can be tricky. As you know, there are many components that make up the AC system and any of these can cause poor performance.

**A common cause can be low refrigerant levels. Even a slight loss of refrigerant, possibly due to leaky O-rings or seals, can affect the temperature through the vents. A sign of low refrigerant is the compressor short cycling (clicking off and on). Locating refrigerant leaks can be difficult, even for professional technicians. Oil stains on the condenser, compressor, hoses or fittings are a good clue to the whereabouts of a leak, but always remember to check the service ports where Schrader valves, caps and O-rings are located.**



Check cooling fan operation

Check to make sure the cooling fans are running when the AC is operational. Leaves, dirt, debris or bent cooling fins blocking air from passing over the condenser and/or evaporator will increase the refrigerant pressure - raising the temperature and resulting in poor performance.



Check for damage to the blower motor fins

The compressor can be a shared cause. Check to make sure the

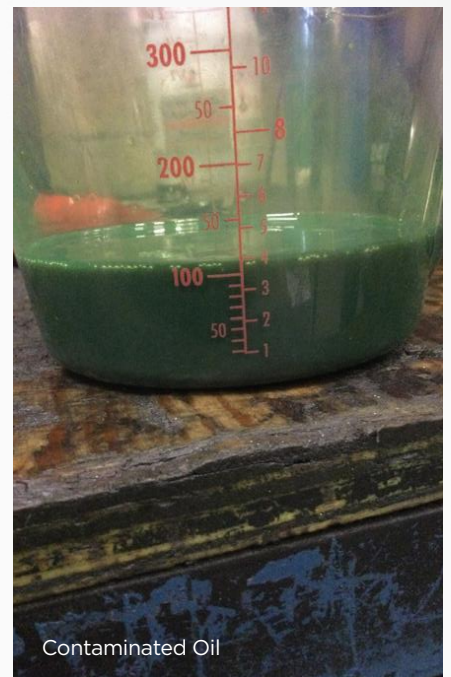
clutch assembly is engaging. With the engine running, the blower fan on max and the AC controls set to the coldest temperature, the clutch should be spinning. You may hear a click or a change in the engine when the clutch engages. If the clutch is not engaging, the refrigerant is either very low, the clutch itself has failed or there could be an electrical problem.

The Accumulator / Receiver Drier uses desiccant bags to absorb moisture running through the AC system. Moisture enters a leaking system and reacts with refrigerant to form a corrosive sludge. As a result, oversaturated desiccant can ooze into the AC system, blocking every AC component.

Contaminated refrigerant from corroded internal parts can also block components, but most importantly will eventually damage the compressor. This is why it is essential to flush the system every time it is opened up to the elements.



Inside a failed scroll compressor



Contaminated Oil

It could be something more complex, such as any number of fuses, pressure/temperature sensors or switches that can affect the AC system's operation and cooling performance. Check all electrical connections are clean, tight and secure. Remember, the engine control module can keep the AC from turning on.

One component which is often overlooked when diagnosing an AC system problem is something as simple as a dirty cabin air filter, which can lead to poor AC cooling output.

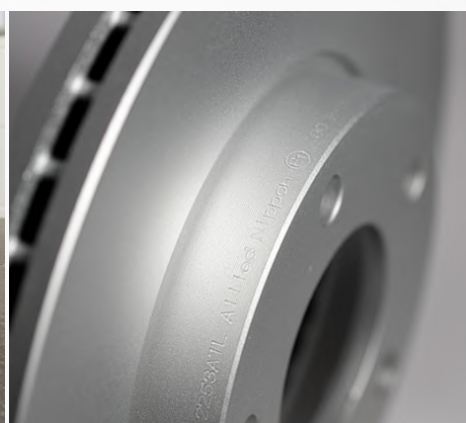
Recommending to the customer that running the AC system for 10 minutes a week, even in the winter, helps circulate refrigerant oil and lubricate the compressor, and condition the O-rings/seals.



## ALLIED NIPPON ILLUSTRATES THE ADVANTAGES OF ITS COATED BRAKE DISCS



For many years, independent workshops have placed their trust in the world-class performance of Allied Nippon brake pads.



**During this time, the brand has earned an enviable reputation for quality, producing a range that blends high-calibre materials, processes, and manufacturing, to deliver outstanding results.**

Building on this legacy of success, Allied Nippon is excited to announce that workshops now have access to its entire range of European, Japanese, and Korean coated brake discs via their local branch. Available with immediate effect, this focused range has been developed following careful analysis of the UK vehicle parc to ensure coverage of the nation's most in-demand makes and models.

### **The benefits are clear**

Allied Nippon coated discs are finished with an advanced formulation, anti-corrosion coating which delivers two notable benefits. Firstly, the coating removes the need for a technician to clean or degrease prior to fitment. Allied Nippon coated discs go straight from box-to-axle, saving time and money for the installer.

Furthermore, the protective coating delivers a premium, long-lasting, and corrosion-free appearance, which is a clear selling point for the workshop in appealing to the

vehicle owner. Motorists will doubtless appreciate the aesthetics behind the alloy wheel every bit as much as the outstanding stopping power on offer.

With the coating carefully applied to all areas of the disc, including the hub and friction surface to a maximum thickness of 25 microns, Allied Nippon's water-based formula is proven to offer superior corrosion protection versus traditional, oil derived painted options.

The brand is also keen to stress that coating the friction surface has no impact on performance. Tests have shown that the coating quickly dissipates during early use, exposing the friction surface with no drop-off in braking efficiency. With an Allied Nippon coated disc, instant and impressive stopping power is assured.

Together, Allied Nippon brake pads and coated discs are an impressive combination. With each part packaged in the brand's distinctive and much-loved 'blue wave' livery, the products are sure to impress.

The relationship between pad and disc is paramount for a vehicle to come to a safe, efficient stop, so what better way to optimise braking efficiency than by pairing an Allied Nippon brake pad with an Allied Nippon coated brake disc?

## **For more information...**

To discover more about the Allied Nippon range, installers can download a comprehensive product brochure at <https://tinyurl.com/Allied-Nippon-Brochure>.



## "IMPROVING FUEL ECONOMY, REDUCING ENGINE EMISSIONS"

### WHAT ARE VG TURBOS AND HOW DO THEY WORK?

Variable Geometry (VG) turbos. A variable geometry turbo which is usually fitted to a diesel engine, controls engine exhaust gas flow through the turbine housing using a row of vanes. These vanes open and close which either increases or restricts airflow to match the engine's exact boost requirements. This technology features a sliding nozzle ring and at low speeds, the vanes close, which restricts exhaust airflow through the turbine (this increases exhaust housing pressure) providing a higher performance boost. VG technology provides the most fuel-efficient means of driving short-route Exhaust Gas Recirculation (EGR), which is used to reduce NOx levels, this also improves driveability of the vehicle dramatically.

### OUR REMANUFACTURING PROCESS

At SCM Turbomotive, we conduct intensive research and development programmes, to ensure we are the front runners in the remanufactured turbocharger market. All turbochargers processed through our remanufacturing programme receive a detailed diagnostic report to identify the cause of failure and then we repair or replace all components to the highest manufacturer specifications.

### BENEFITS OF USING SCM VG UNITS

SCM now offer remanufactured Variable Geometry turbochargers.

At SCM we have a market leading workshop and remanufacturing operation which repairs units to the same specification OE manufacturers use on new units. We are so confident in the quality of our product that we offer a no quibble warranty on all SCM remanufactured turbos. SCM would repair or replace the remanufactured unit without further charge if the turbo fails within 12 months of invoicing. After the first 12 months, a further 12 months of standard warranty terms apply.

**For more help and information on turbo problems and fitting tips, go to:  
[www.scmturbo.com](http://www.scmturbo.com) and click "Tech Desk"**





**ORIGINAL QUALITY**

# THE MOST COMPLETE KITS IN THE AFTERMARKET

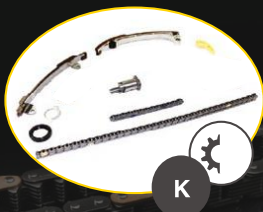
## ALWAYS REPLACE ASSOCIATED PARTS!

When replacing one engine component, it is best practice to replace all associated parts. By doing this, the condition of the timing components are uniform to help optimise the service lifespan of the system.

Installers now understand the importance of replacing the sprockets with the timing chain, tensioner and guides (all in BGA's Full Kit (FK)). This change in purchasing habits has surfaced due to a greater understanding of the impact of sprockets:

- Part repair can result in premature/instant failure.
- As the timing system is a precision system, failure of one part will compromise the others.
- Dirty sprockets (oil contaminated) will impede performance of other components.
- Hooked sprockets will damage the chain and severely limit its lifespan.

As a result, BGA's Full Kit (FK) and Full Kit with VVT Sprockets (VFK) have seen a surge in installer demand.



**K**

### KIT

The [K] KIT contains:  
Chain, Tensioner and Guides.



**FK**

### FULL KIT

The [FK] FULL KIT contains:  
Kit Contents + Sprockets, Timing Cover Gasket, Oil Seal, Feed pipe and bolts where applicable.



**VFK**

### FULL KIT + VVT

The [VFK] FULL KIT with VVT sprockets contains:  
Full Kit Contents + VVT sprockets.

### TC0177VFK example:

#	Description
1	Timing chain
2	Tensioner guide
3	Guide
4	Camshaft sprocket
5	Crankshaft sprocket
6	Crankshaft sprocket
7	Tensioner
8	Oil seal
9	VVT sprocket
10	VVT bolt
11	Guide bolts
12	Tensioner bolts
13	Sleeve
14	Cam sprocket bolt
15	Timing cover gasket
16	Crank bolt
17	Cover seal



Mechanics now understand the importance of replacing all components when installing a Timing Chain. With the customer always in mind, BGA ensures their Timing Chain Kits are loaded with all parts necessary for a complete installation.



**CHAIN  
SHIELD  
TECHNOLOGY**

## THE COMPLETE REPAIR SOLUTION.



BGA is the only supplier offering sprockets in the TC7301FK kit. Fitted to the Renault 0.9 and 1.2 TCe engines found in Dacia's, the Mercedes Benz Citan, Nissan Juke and Qashqai, Smart ForFour and the Renault Captur, Clio, Grand Scenic, Kadjar, Kangoo, Megane, Scenic and Twingo.

**TC7301FK TIMING CHAIN KIT**

BGA is the only supplier supplying both guide arms in the TC5670FK kit (there is a choice at OE level (the length of the guide is different). This Kit can be fitted to the Mercedes OM651 family of engines – A Class, B Class, C Class, CLA, CLS, E Class, GLA, GLC, GLK, M Class, S Class, SLC, SLK and Sprinter, V Class, Viano and Vito.

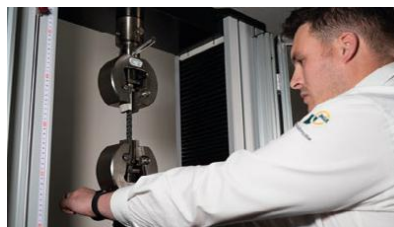


**TC5670FK TIMING CHAIN KIT**

## ORIGINAL QUALITY TESTING GUARANTEE - 3 YEAR WARRANTY



**VVT**  
BGA VVT's are mounted in a bespoke fixture which enables real world evaluation of torque performance, critical to its operation within the engine valve train.



**TENSILE TESTING**  
BGA Chains are subjected to control pulling force with a range of different parameters measured, presented as a line graph showing elongation, yield point.



**SPRING RATE TEST**  
BGA evaluates the core element of the tensioner [the spring] as the spring is responsible for more than 90%+ of the applied tension to the chain.



**GUIDE SIZING**  
BGA uses CMM Machines to evaluate Guide sizing against OE, guaranteeing an original specification alignment and fitment.



## REV UP YOUR WORKSHOP WITH COMMA'S OEM APPROVED PRODUCTS AND PROFESSIONAL PARTNER PROGRAMME

If you're a workshop technician looking for a reliable partner for your engine oils and lubricants, Comma Oil's OEM Approved Product range and Professional Partner Programme (PPP) might just be what you need. Here's how your workshop could benefit.

### OEM APPROVED PRODUCT RANGE

Comma Oil offers an OEM Approved Product range that provides over 99% vehicle parc coverage, which means you can be confident that you have the right product for most vehicles that visit your workshop. This range is designed to meet or exceed OEM specifications, so you can be sure that you're using high-quality products that are compatible with the latest vehicle technologies.

### WHAT IS THE COMMA PROFESSIONAL PARTNER PROGRAMME? (PPP)

Comma Oil's Professional Partner Programme (PPP) is designed to support workshops with a range of benefits, including access

to technical advice, marketing materials, and training resources. The PPP is also linked to a mobile app that can assist with VRM lookups, making finding the right product for your customers' vehicles easy. Additionally, workshops can benefit from online technical messages and MOT status updates to ensure they know of any important changes that may affect their business.

### SERVICE IN-WARRANTY VEHICLES

Comma Oil's OEM Approved Product range is approved for use in warranty vehicles, so you can service these vehicles without worrying about invalidating the manufacturer's warranty. This is an important consideration for

workshops that want to provide a full range of services to their customers.

### 100% FULLY GUARANTEED

When using Comma Oil's OEM Approved Product range, you can be sure that you're getting a high-quality product that is fully guaranteed. Comma Oil guarantees that its products meet or exceed the relevant specifications, so you can be confident that you're using a reliable product that will perform well in various conditions.

### IN SUMMARY

To rev up your workshop with Comma Oil's Professional Partnership Programme, visit our website at [www.commaoil.com](http://www.commaoil.com)





AFTERMARKET



Fast and practical installation for optimum transmission reliability

All necessary parts are included for total convenience and simplicity

# SACHS CLUTCHES FOR PASSENGER CARS

- **SACHS** clutch range is suitable for passenger cars, vans and minibuses
- **SACHS** offers quality Original Equipment (OE) clutch replacement parts for your vehicle
- **SACHS** clutch warranty – 2 year unlimited mileage
- **SACHS** offers a clutch fitment tool set for all makes of clutches, including XTEND (self adjusting) clutch which requires special tooling when fitted
- **SACHS** offers a Dual Mass Flywheel (DMF) tool for testing purposes.

Exceptional OE quality. Optimised reliability. Long Service Life. SACHS clutches for passenger cars. Better for your workshop and better for your customers.

Choose excellence in every part. Find out more at [aftermarket.zf.com/sachs/pc-clutches](https://aftermarket.zf.com/sachs/pc-clutches)

**PROVEN PERFORMANCE  
DESIGNED TO LAST**



## DAYCO EXTENDS ITS BEST PRACTICE ADVICE FOR FORD'S 1.0-LITRE ECOBOOST 'FOX' ENGINE

Dayco is a leading supplier of original equipment (OE) components to vehicle manufacturers across Europe and around the world. It is also a major player in the aftermarket, with power transmission components forming a large part of its growing range of products, many of which are supported by technical advice and installation guidance.



As the OE supplier of the timing and auxiliary drive systems used for the Ford 1.0-litre EcoBoost engine, not only is Dayco able to provide a genuine like-for-like replacement for the independent aftermarket, it's also the source of much helpful technical advice and direction, which is available in print, online and through various instructional videos.

In its latest bulletin, Dayco has extended this advice further to address some of the wider issues of the timing belt replacement on this unit because, although with the correct locking tools, the belt and tensioner replacement and timing reset are not particularly complicated tasks in themselves. Several associated steps need to be understood and applied correctly, to ensure a full and thorough repair.

This begins with the sealant that must be used on the timing belt cover and the sump, to ensure there is no leakage when the engine is refitted and refilled with oil. It is strongly recommended that this is sourced through a Ford dealer, as its specification is crucial and as it only has a 10 minute window before it starts to become hard and unmanageable, it's important for technicians to have all the tools and the cover bolts laid out and ready, before applying the sealant. However, further preparation is necessary before the application stage.

First, it is wise to replace the crankshaft oil seal before refitting the timing belt cover, but easier to fit the new one once the cover is secured in place and second, replacing the water pump is another best practice procedure and as two of the seven bolts that secure it are incorporated into the timing belt cover, it's also an obvious thing to do.

As the pump comes in a Dayco timing belt and water pump kit (Dayco KBIOWP020 or KBIOWP030 dependent

on the engine variant), it's also an easy option for workshops when ordering the parts, but installing the water pump properly is equally important. So, cleaning the mating surfaces and flushing out the old coolant, as well as priming the new pump, must not be overlooked and, as to seal correctly, it only needs the new gasket supplied with the kit, no sealant should be used.

To ensure that the sealant applied to the timing belt cover is in the correct quantity, on the right surfaces and the specified tightening sequence and torque values are followed, technicians must refer to a reputable source of service and repair data, such as that supplied by Autodata or HaynesPro. Likewise for the refitting of the sump.

Two crucial steps remain on this side of the timing belt installation, one is to fit a new friction washer, which is a part that is not fitted when the engine is originally built and only comes into play when a timing belt replacement is carried out, and the second the correct torque value and process for tightening the replacement crankshaft pulley bolt.

Although, providing the mating surfaces have been cleaned with brake and clutch dust remover, fitting the friction washer is straightforward, installing the new pulley bolt and applying the correct torque, without the pulley slipping, is less so.

The correct torque for the bolt is 300Nm plus 90°, so a torque multiplier will need to be used for the final tightening, but before that value is applied, the bolt first needs to be tightened to 25 and then 75Nm. However, as there is not a keyway in the pulley/crankshaft, to prevent it from slipping during the tightening procedure, a locking tool (supplied with the timing locking kit) must be inserted through a hole in the pulley, into the matching hole in the timing belt cover.

By using the appropriate Dayco timing belt kit (Dayco KBIO02 or KBIO03 dependent on the engine variant) and following these additional best practice procedures, technicians can tackle the replacement process with confidence and in the knowledge that they are able to make a first class repair.

For more information regarding the OE quality power transmission products in the Dayco range, please email: [info.uk@dayco.com](mailto:info.uk@dayco.com) or visit: [www.daycoaftermarket.com](http://www.daycoaftermarket.com)



# Anti-Freeze

## Can your Anti-Freeze do all this? **Ours Can**

Many brands of antifreeze are based on methanol which is toxic, highly inflammable and evaporates readily. AD Anti-Freeze is ethylene glycol based which does not suffer either of these disadvantages.

In addition, the NAP free (Nitrite, Arnine, Phosphate) formula provides a more environmentally friendly product. To protect the modern engine through extremes of temperature, a corrosion inhibitor is also included.

### The Major Benefits of AD Anti-Freeze

#### 1. Cold Weather Protection

This is defined by two temperatures, the minimum temperature at which normal coolant circulation is maintained the "Safe Driving Limit" and the minimum temperature at which the engine is protected from frost damage that may be caused to the engine, radiator, hoses, etc, by ice expansion.

#### 2. Corrosion protection

AD Anti-Freeze contains corrosion inhibitors to reduce corrosion within the cooling system. These inhibitors will last up to 5 years or 100,000 miles for OAT & Si-OAT long-life grades. Blue and H-OAT for 2 years.

#### 3. Low Foaming

Low foaming additives in AD Anti-Freeze suppress foaming, which could otherwise result in loss of coolant. Low viscosity, raised coolant boiling point and a high flash point.

#### 4. Summer cooling

Undiluted AD Anti-Freeze have a boiling point of 160°C. This is 60°C higher than the boiling point of water and also 10°C above the level demanded by British Standard 6580: 1992. The effect of such a high boiling point is to allow the temperature of the radiator coolant in hot weather to exceed the boiling point of water in safety.

### How Much AD Anti-Freeze to Use

- For corrosion protection a minimum 33% concentration of AD Anti-Freeze must be maintained for the inhibitors to work.
- The optimum concentration of AD Anti-Freeze lies between 33% and approximately 60%. The following chart illustrates the effects of commonly used concentrations:

Concentration of AD Antifreeze by Volume	Safe Driving Limit normal coolant circulation down to	Safe against frost damage down to
33%	-20°C	-23°C
40%	-25°C	-31°C
50%	-36°C	-49°C

**Never mix antifreezes.  
For extra safety,  
always drain and refill.**



## NISSENS – HELPING INDEPENDENTS EXPERIENCE THE DIFFERENCE IN CLIMATE SYSTEM SUPPORT

Technicians are at the frontline when it comes to air conditioning (AC) and climate control systems and as service and repair of these areas is far from simple and requires specialist knowledge, they need to have the right partner when it comes to the premium quality parts they need, as well as the technical advice to allow them to tackle the work with confidence and do the job right, first time. With decades of thermal management expertise, and as a dedicated aftermarket focused business, Nissens Automotive (Nissens) is therefore their perfect partner for the 2023 climate comfort season and beyond.

As more new energy vehicles (NEVs), which include hybrid and electric vehicles, take to the roads, more will come into the workshop for routine climate system maintenance or repair. However, the technicians undertaking this work need to be aware that they require special handling and safety procedures, as well as a deeper level of specialist knowledge to complete it successfully.

Using the thermal system as an example, many NEVs rely on a heat pump solution, which is an advanced system compared to a standard AC loop, so adds further complications.

As a result, the first thing on the wish list for independents in a busy workshop is access to reliable technical support and this is an area that Nissens excels in. The company openly shares its expertise on the AC system's maintenance, troubleshooting and component installation. Its technical insights cover the newest technology trends and include the latest, aforementioned NEV thermal management systems. This technical support is easily accessible in various forms, from online assets to highly effective live training.

The second and third things on the list are replacement components of premium quality that ensure easy instal-

lation, which are standard features for Nissens' parts.

Every component in the range is manufactured to 'Genuine Nissens Quality'. This premium standard is benchmarked to match the same level as the original equipment (OE) part quality, ensuring optimal performance and durability. In addition, all of the AC system's critical importance parts are designed as a 'First Fit' replacement, which means all the necessary parts are included in the product box so that technicians can undertake an easy, safe, and proper right-first-time installation.

Fourth on the wish list are components that, provided they are fitted correctly, last, which is another Nissens strength, as many of its products incorporate unique features that prolong the lifespan of each component and deliver years of value to vehicle owners. All the company's condensers are corrosion protected, for example, and by applying this specially designed coating, it is able to produce a replacement with a considerably longer lifespan than would normally be possible.

In short, the Nissens climate system parts programme is designed to enhance the competitiveness of the independent workshop and provide it

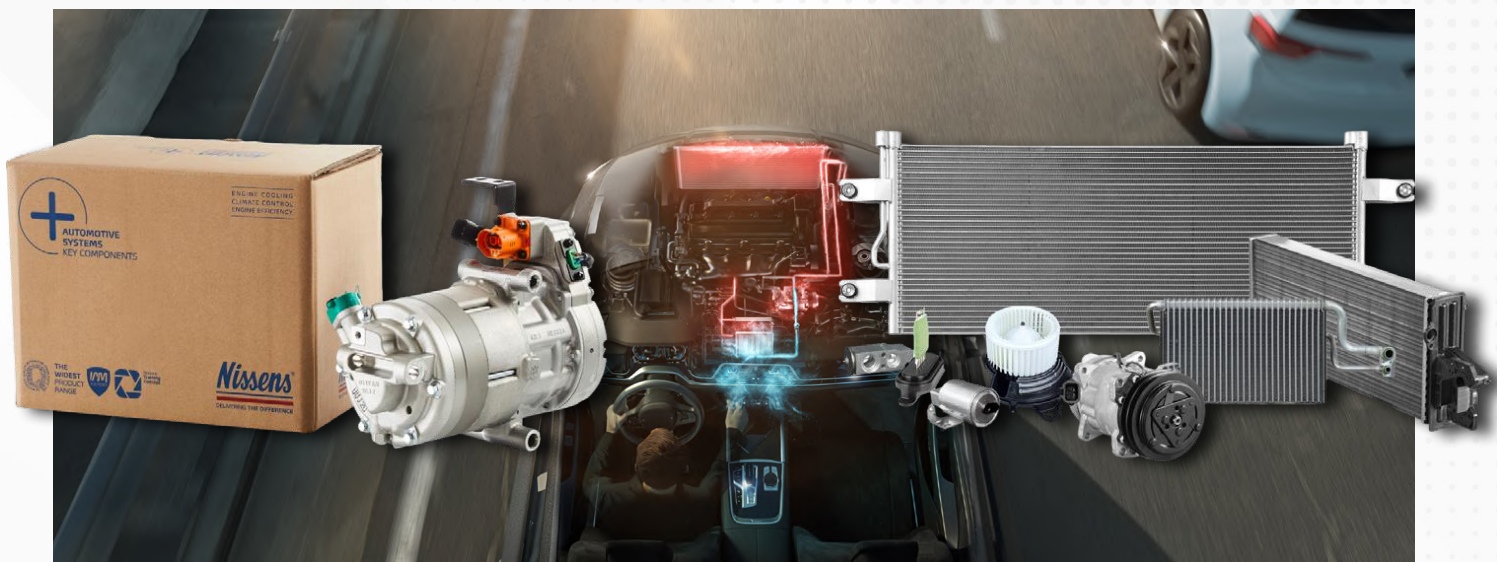
with an offering that enables it to be fully prepared to serve its customers during the busy AC season.

The complete range comprises more than 3,600 part numbers and offers exceptionally high car parc coverage, including 450 AC parts for NEVs. This range is constantly expanding and grew by 150 last year alone, and of these components are 40 AC system pressure sensors that cover 160 OE part numbers and high-voltage AC compressors for Tesla Model 3, Kia Niro, Hyundai Ioniq and others. To find out more visit: [www.nissens.com/climate](http://www.nissens.com/climate)

### NEVER STOP LEARNING

NEVs will soon become commonplace in the aftermarket, so the ability of the independent sector to troubleshoot and fix their climate control systems and carry out routine maintenance will be vital for its future viability.

Nissens publishes a great deal of learning resources regarding NEV climate systems, including how to flush the heat pump loop or replace the HV AC compressor. It will continue with more NEV-related stories, all of which can be accessed, alongside many more technical articles, via its expert knowledge portal at: [www.nissens.com/experts](http://www.nissens.com/experts)



# Wiper Blades

## Prepare for any weather with Bosch wiper blades

The story of Bosch wiper-blades began in 1926 when the first electric wiper system was launched. Since then constant innovation has resulted in a comprehensive and diverse product range which offers a solution for almost every vehicle. Many years of experience in development and production make the difference. The result is reliable performance and a high level of safety, in any weather.

### Development, production and quality tests:

#### Development and innovation

High comfort, pioneering design

- All components are developed in a vehicle specific manner and the wiper system is adjusted down to the last detail by means of latest tools
- At the wind tunnel, Bosch tests e.g. different wind conditions and speeds

#### Large-batch production

Special Bosch rubber compound received numerous awards

- Consistently high series-production quality of the rubber compound ensured by sophisticated analyses at the laboratory prior to release for production
- Durable wiper rubber thanks to its high resistance to wear, UV radiation and aging as well as to its high thermal elasticity

#### Performance and resilience tests

Bosch performs stringent performance and resilience tests as basis for the consistently high quality of Bosch wiper blades. Our wipers are engineered and tested to perform in all driving conditions without damage.

**Performance Tests** - Including: Wiping Quality, Noise Level, High Speed Quality & Impact Resistance

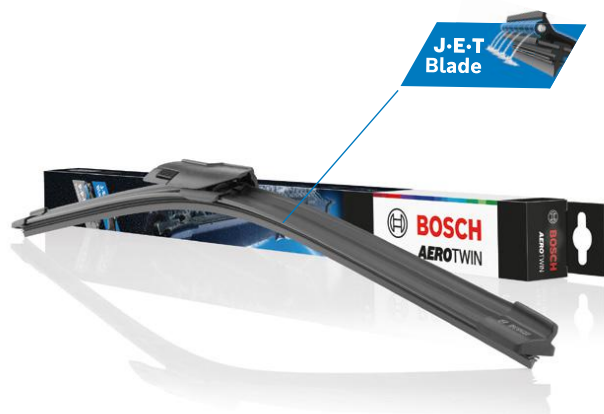
**Environment Tests** - Including: Corrosion Resistance, Temperature Cycle, Heat Aging & UV Resistance

**Overstress Tests** - Including: Freezing & Snow-Load

**Chemicals Tests** - Including: Chemical Resistance



## NEW LAUNCH Bosch Aerotwin J.E.T Blade with Jet Evolution Technology



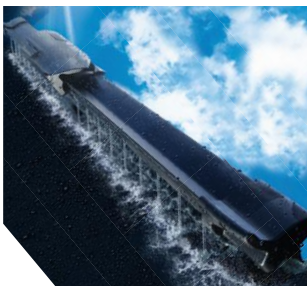
**The Bosch Aerotwin J.E.T Blade with the new Jet Evolution Technology (J.E.T) ensures more targeted cleaning of the windshield and therefore a clearer view and improved safety.(1)**

(1) compared with wiper blades without integrated spray function

### Advantages at a glance...

- Provides greater efficiency in wiping, leading to a safer drive
- Power Protection Plus wiper rubber and patented coating
- Long-Life wiper rubber formula with innovative additive to the wiper rubber and Evodium spring strips
- Pre-assembled vehicle-specific adapter

### Clearer view, improved safety



The Aerotwin J.E.T Blade sprays the water jet precisely on the windshield! Equipped with all the advantages of the Bosch Aerotwin wiper blades to ensure outstanding performance even under extreme weather conditions.

### Ready for aftermarket applications...

A whole series of Volvo, Ford, Tesla and Mercedes-Benz vehicles are originally equipped with wiper blades featuring an integrated spray function. These vehicles can now also be equipped with Bosch Aerotwin J-E-T Blade wipers.

Wiper blades without integrated spray function cannot be replaced by wiper blades featuring Jet Evolution Technology.





## USING A HIGH-QUALITY OIL IS ESSENTIAL

Consumers and mechanics do not have an easy time when it comes to choosing the best engine oil, it can be daunting and very confusing due to the vast selection of products available on the market.



Engine oil should not be chosen purely based on the viscosity grade as there are other criteria which are defined by vehicle manufacturers and international standards. If the precise properties of the engine oil do not match those of the manufacturer's recommended specifications, excessive wear and reliability issues will occur as a result.

Manufacturing high-quality lubricants not only involves the careful selection of specific base oils and high-performance additive technology, but engine oils also must be precisely blended to ensure any imposed limitations are met.

These factors will greatly influence the performance of the oil, although using a poor-quality oil will result

in reduced drain intervals, poor fuel economy, high levels of emissions and cause the build-up of sludge and harmful deposits on vital components.

The use of a high-quality oil is essential for optimum engine health and performance, with proper maintenance and the use of high-quality oil, engine components such as a turbocharger can last for the lifetime of the vehicle.

Planet automotive engine oils use high-quality base stocks which are synergistically blended with the latest additive technology in the UK by lubrication specialists. Our expert team in our on-site laboratory continually test the quality and compliance of all our lubricants so our customers know that Planet is a brand they can trust.

# The Stabiliser - an underrated component



The stabiliser bar is a suspension component and connects the wheel suspension of an axle with the body structure. Many cars are equipped with a stabiliser bar on the front axle and some of them with one on the rear axle as well.

Stabiliser bars have been installed in passenger cars for many decades and have remained practically unchanged in this time.

The stabiliser bar (or anti-roll bar) is little known to many motorists, although this component plays a major role in ensuring a safe and comfortable journey. The simple reason: Without a stabiliser bar, vehicles would overturn in corners and driving comfort would be drastically reduced when driving straight ahead as well. As a rule, even knocking noises from the suspension are attributable to a fault in the stabiliser bar area.

Failure of or damage to the stabiliser bar is mostly inexpensive. This is due to the relatively low material costs and straightforward installation.

But beware: If the stabiliser bar is damaged, the vehicle should not be moved. Failure increases the risk of the rolling motion of the body structure getting out of control and the vehicle overturning.

## DESIGN AND FUNCTION

The stabiliser system also consists of other components, e.g. stabiliser links and stabiliser bearings. The stabiliser bar is mostly mounted on a subframe and in rubber bearings. The stabiliser links connect the stabiliser bar to the suspension struts or, alternatively, to the control arms. Special ball joints on the stabiliser links ensure the necessary freedom of movement to allow the stabiliser bar to do its job flawlessly.

When a wheel deflects, the torsion of the stabiliser bar ensures that the other wheel is also raised and likewise lowered upon rebound. This prevents excessive rolling (lateral tilting) of the body when cornering.

If the two wheels deflect simultaneously, the stabiliser bar does not activate.

## FAILURE SYMPTOMS

In the event of failure or damage to the system, loud knocking noises frequently occur in the suspension when driving over bumps or potholes. These are mostly caused by worn bearings or defective ball joints on the stabiliser links.

In the case of worn bearings, an unintended play arises between bearing and stabiliser bar, and the stabiliser bar begins to rattle in the bearings on deflection and rebound.

A frequently installed type of stabiliser link features ball joints that are protected by a rubber boot from spray water and external influences. They are also packed with grease to make movement as frictionless as possible. Every now and then, the rubber boot or the associated seal is damaged. This allows water to enter and provides for unnaturally high wear. The consequence: too much play in the joint, which leads to the aforementioned noises.

When replacing the stabiliser link, it must always be ensured that the correct torque is applied during installation. Otherwise the ball joint can be damaged, wear prematurely, or even break off.

Place your trust in febi stabiliser bars in OE matching quality. The complete passenger car spare part range can be found at: [partsfinder.bilsteingroup.com](https://partsfinder.bilsteingroup.com)



[www.febi.com](https://www.febi.com)

**bilsteingroup®**



**Das Original**

## ELRING'S INNOVATIVE LEAP: ADVANCEMENTS IN CYLINDER-HEAD GASKETS AND OPEN-DECK DESIGN

Pioneering Efficiency and Reliability for Tomorrow's Engines with Elring's Cutting-Edge Solutions

In recent years, engine technology has evolved significantly, resulting in modern engines becoming more powerful, smaller, and lighter. This has been achieved through extensive structural modifications to both the cylinder head and crankshaft casing and the introduction of aluminum alloys to replace gray cast iron.

Cylinder-head gaskets continue to provide a seal between the cylinder head and crankshaft casing, despite the challenges posed by modern combustion engines. These challenges include changes in temperature, pressure, and dynamic sealing gap oscillations, which are essential to maintaining the sealing function.

Modern engines are designed with a focus on thermal balance, aiming to keep the warm-up phase as short as possible. Pistons and cylinders ideally expand evenly during this phase, allowing for minimal tolerances between parts. This ultimately impacts exhaust emissions and engine efficiency. Aluminum alloys are often used to construct engines to satisfy these requirements, enabling engineers to use less material and create lighter components.

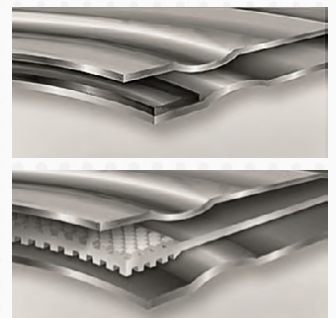
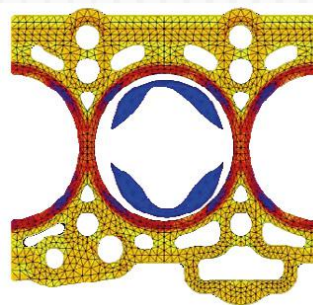
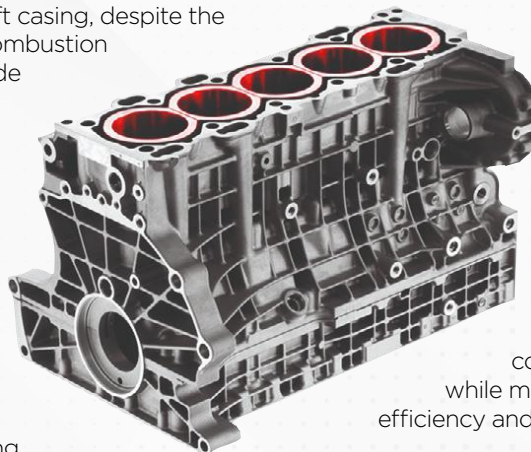
The open-deck design represents the latest technology for modern combustion engines, where cylinder tubes are cast into the crankshaft casing as an integral part. This design, however, results in a highly dynamic sealing system, with greater sealing gap oscillation than older engines. This uneven force can cause cylinder deformation, requiring new-generation cylinder-head gaskets to function reliably with minimal bolt force.

In the early 1990s, traditional ferrous metal and soft material gaskets were replaced with multi-layer cylinder-head gaskets made of high-alloy spring steel (MLS technology). These gaskets were

more dynamic, matching the needs of modern engines. The sealing function is achieved by line compression, with a preloaded "bead" in the functional layer that remains flexible and can follow the movements of the engine components.

To ensure the durability of these beads during the 250,000 km engine cycle, various stopper technologies are used, such as welded-in or embossed stoppers. Today, it is also possible to integrate a folded segmented stopper into the functional layer.

In conclusion, the design of multi-layer steel cylinder-head gaskets is fully adapted to the technical needs of each individual engine, combining the number of layers with different styles of beads and stoppers. This innovative technology ensures that modern engines continue to provide reliable performance while meeting the demands of increased efficiency and reduced emissions.



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information,  
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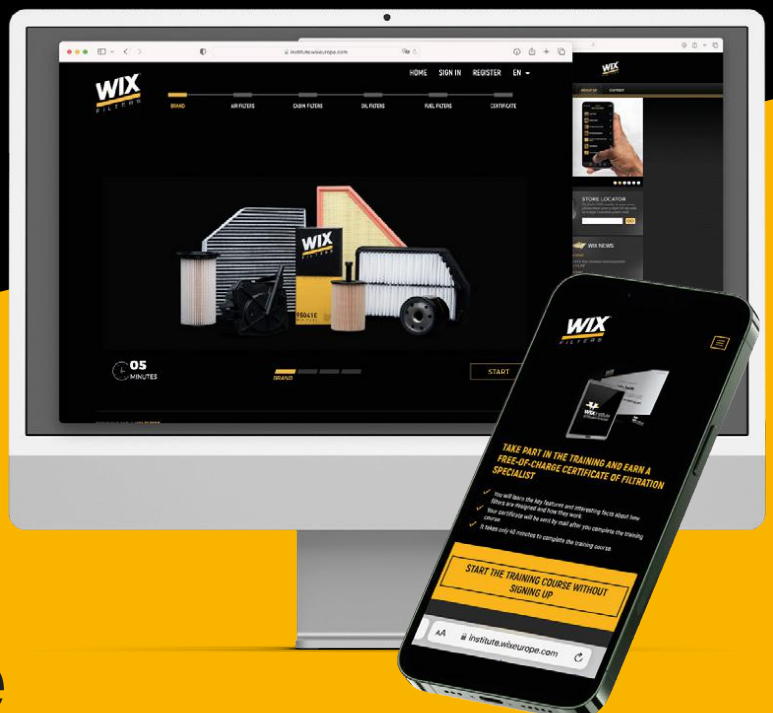


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**WIX** Institute  
of Filtration Technology



# Simon's SPECIALIST STUFF

A selection of hard-to-find niche parts that are available!

PART NO: 103-0001



**REAR MAGNETIC  
ABS RING**

**TO FIT:** Vauxhall



**HOT  
PRICE!**

**CALL FOR  
OUR BEST  
PRICES!**

PART NO: 103-0012



**ABS RING - 48T  
97MM OD**

**TO FIT:** BMW/Land Rover



**HOT  
PRICE!**

**CALL FOR  
OUR BEST  
PRICES!**

PART NO: 116-0002



**SECONDARY - AIR  
FILTER WITH HOUSING**

**TO FIT:** Ford



**HOT  
PRICE!**

**CALL FOR  
OUR BEST  
PRICES!**

PART NO: 125-0007



**AIRBAG  
CLOCK SPRING**

**TO FIT:** Ford



**HOT  
PRICE!**

**CALL FOR  
OUR BEST  
PRICES!**

PART NO: 140-0002



**BONNET RELEASE  
REPAIR KIT**

**TO FIT:** Ford



**HOT  
PRICE!**

**CALL FOR  
OUR BEST  
PRICES!**

PART NO: 140-0004



**BONNET RELEASE  
CATCH**

**TO FIT:** Ford



**HOT  
PRICE!**

**CALL FOR  
OUR BEST  
PRICES!**

PART NO: 175-0047



**TRAILING  
ARM BUSH**

**TO FIT:** Toyota



**HOT  
PRICE!**

**CALL FOR  
OUR BEST  
PRICES!**

PART NO: 217-0004



**CLUTCH MASTER  
CYLINDER - OEM**

**TO FIT:** Ford



**HOT  
PRICE!**

**CALL FOR  
OUR BEST  
PRICES!**

PART NO: 260-0003



**BLOWER  
MOTOR OEM**

**TO FIT:** Vauxhall



**HOT  
PRICE!**

**CALL FOR  
OUR BEST  
PRICES!**

PART NO: 349-0020



**EXPANSION  
TANK- AM**

**TO FIT:** Vauxhall



**HOT  
PRICE!**

**CALL FOR  
OUR BEST  
PRICES!**

PART NO: 375-0020



**FUEL FILTER - INC  
HOUSING**

**TO FIT:** Ford/Vauxhall



**HOT  
PRICE!**

**CALL FOR  
OUR BEST  
PRICES!**

PART NO: 375-0021



**FUEL FILTER - INC  
HOUSING**

**TO FIT:** Ford



**HOT  
PRICE!**

**CALL FOR  
OUR BEST  
PRICES!**



# Simon's SPECIALIST STUFF

A selection of hard-to-find niche parts that are available!

**PART NO: 398-0001**



**PEF RESERVOIR PUMP  
REPAIR KIT INC 3LTR  
FLUID AND FILL KIT**

**TO FIT:** PSA Group



**HOT  
PRICE!**

**CALL FOR  
OUR BEST  
PRICES!**

**PART NO: 414-0014**



**GEAR LINK  
REPAIR CLIP**

**TO FIT:** PSA Group



**HOT  
PRICE!**

**CALL FOR  
OUR BEST  
PRICES!**

**PART NO: 418-0002**



**GLOW PLUG - WITH  
PRESSURE SENSOR**

**TO FIT:** VAG Group



**HOT  
PRICE!**

**CALL FOR  
OUR BEST  
PRICES!**

**PART NO: 462-0001**



**IGNITION COIL  
REPAIR KIT (4)**

**TO FIT:** Vauxhall



**HOT  
PRICE!**

**CALL FOR  
OUR BEST  
PRICES!**

**PART NO: 484-0001**



**ADBLUE  
INJECTOR**

**TO FIT:** PSA Group



**HOT  
PRICE!**

**CALL FOR  
OUR BEST  
PRICES!**

**PART NO: 533-0018**



**FUEL FILTER HOUSING,  
NO FILTER**

**TO FIT:** Ford



**HOT  
PRICE!**

**CALL FOR  
OUR BEST  
PRICES!**

**PART NO: 584-0017**



**TANK UNIT - UREA  
INJECTION -  
ADBLUE - OEM**

**TO FIT:** PSA Group



**HOT  
PRICE!**

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PRICES!**

**PART NO: 668-0001**



**LOWER STEERING  
COLUMN - OEM**

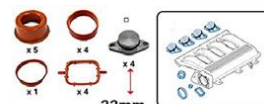
**TO FIT:** Ford



**HOT  
PRICE!**

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OUR BEST  
PRICES!**

**PART NO: 681-0001**



**REF :** 681-0001 (18PCS)

**O.E.:** 11612246942,  
11617792019

**Compatible:** BMW  
3 (E46) / 5 (E39)

**SWIRL FLAP  
22MM KIT - 4 CYL**

**TO FIT:** BMW



**HOT  
PRICE!**

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OUR BEST  
PRICES!**

**PART NO: 705-0034**



**THERMOSTAT  
MODULE - OEM**

**TO FIT:** PSA Group



**HOT  
PRICE!**

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OUR BEST  
PRICES!**

**PART NO: 705-0035**



**THERMOSTAT  
MODULE - OEM**

**TO FIT:** Ford



**HOT  
PRICE!**

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OUR BEST  
PRICES!**

**PART NO: A1076746A**



**NOX SENSOR - AM**

**TO FIT:** PSA Group



**HOT  
PRICE!**

**CALL FOR  
OUR BEST  
PRICES!**

# UFI FUEL FILTER FOR FORD TRANSIT



UFI Filters is a global leader in filtration technology and thermal management. It serves a wide range of sectors from automotive, aerospace and marine to specialised industrial and customised hydraulics applications.

The new UFI fuel filter **26.074.00**, **100% OEM compatible**, guarantees more than 98.5% filtering efficiency at 6 µm. Made of **FormulaUFI.Cell** material, the “green” cartridge with helical shape, as well as having a unique design, is compatible with renewable diesel, tested with B30 biodiesel according to Ford requirements.



## HOW TO INSTALL THE FILTER?

Scan the QR code and watch the video about the installing procedure

more than 98.5% filtering efficiency at 6 µm

Internal cartridge made with

**FORMULA UFI.CELL**

compatible with renewable diesel,  
tested with B30 biodiesel



## CARTRIDGE CODE

**26.074.00**

## MAIN APPLICATIONS

FORD

Transit MY.2012 2.2 TDCI 100 74KW 100HP  
10/11 ›

Transit MY.2014 2.2 TDCI 155 4WD 114KW  
155HP 01/14 ›

Tourneo Custom 2.2 TDCI 100 74KW 100HP  
09/12 › 12/15

## PLUS

- + 100% OEM compatible.
- + more than 98.5% filtering efficiency at 6 µm.
- + Internal cartridge made with **FORMULA UFI.CELL**
- + compatible with renewable diesel, tested with B30 biodiesel.



## SETTING HIGHER STANDARDS FOR MORE THAN 50 YEARS

We've been defining new routes in filtration technology and thermal management since 1971.

Meeting new needs, facing higher standards.

That's how we've become one of the most respected Italian companies in filtration technology: with over fifty years of research, passion and innovation.

# MADE TO SHAPE THE FUTURE



## EuroFlo looks at the importance of a high quality emission system

Modern vehicles are generally very efficient in all aspects and feature an array of highly technical on-board management systems which regulate a huge number of functions, all of which are dependent on the specific operating conditions at any given time.

You may be surprised to learn that a vehicle's exhaust system is also absolutely crucial in maintaining that efficiency.

A good quality exhaust system, such as EuroFlo, is essential because it performs several crucial functions that affect the performance, efficiency, and safety of the vehicle.

### 1. Engine Performance:

A well-designed and good quality exhaust system helps to improve the engine's performance by allowing it to breathe more easily. When the engine has a good flow of exhaust gases, it can operate more efficiently and produce more power.

### 2. Fuel Efficiency:

A properly functioning exhaust system can also improve fuel efficiency. The system helps to regulate the engine's temperature, which can impact how efficiently fuel is burned.

### 3. Emissions Control:

The exhaust system is also an important component of a car's emissions control system. It helps to reduce the amount of harmful pollutants that are released into the environment.

### 4. Noise Reduction:

A good exhaust system controls and regulates the amount of noise that the engine produces. This can make for a more pleasant driving experience, for both the driver and passengers.

### 5. Safety:

A well-maintained exhaust system is important for safety reasons. Leaks or damage to the system can cause toxic fumes to enter the car's cabin, which can be harmful or even deadly to occupants. Additionally, a damaged exhaust system can impact the handling and performance of the car, leading to accidents or other safety issues.

### 6. Back Pressure:

Maintenance and regulation of correct back pressure.

### What's so important about Back Pressure?

At low and mid-range engine speeds, the correct degree of back pressure can help to improve the engine's torque, the twisting force that drives the wheels.

Torque is particularly important for acceleration and low-speed driving, such as when starting from a stop or climbing a hill.

The correct amount of back pressure creates a scavenging effect in the exhaust system, where exhaust gases from one cylinder help to pull in air/fuel mixture into the next cylinder, thereby improving the engine's combustion efficiency.

However, at high engine speeds, too much back pressure can limit the engine's ability to breathe, leading to reduced power and performance. This is why performance-oriented cars often have exhaust systems with larger diameter pipes, silencers, and fewer restrictions, to reduce back pressure and improve engine performance at higher RPMs.

A good quality exhaust system will balance the need for back pressure with the need for optimal engine performance at different engine speeds.

Often the tail-pipe is the only visible part of an exhaust system but that is just the tip, quite literally, of a system that has a major influence on the economy, performance and efficiency of any vehicle.



### Delivery and Availability:

EuroFlo's regional warehouses offer fast, frequent same day deliveries to the vast majority of EuroFlo stockists in the UK which means that the chances of even the most exotic or unusual vehicle clogging up your ramp while waiting for a EuroFlo emissions component are extremely low. After all - Time is money!

For more information on EuroFlo's full range  
Please visit [www.euroflo.co.uk](http://www.euroflo.co.uk) or contact your local stockist

# Timing Chain Kits

## Vehicle Focus

### Jaguar / Land Rover Ingenium 2.0 d

The Ingenium engine is emerging as a popular application for components, especially those centred around engine timing. FAI's range for this powertrain is growing fast.

Full listing: [faiauto.com/ecat](http://faiauto.com/ecat)

### Range Highlights:

Description	FAI Ref.
TIMING CHAIN KIT Without VVT Hubs	TCK357
TIMING CHAIN KIT Without Gaskets Or Hubs	TCK357W0
TIMING CHAIN KIT Full Kit	TCK357VVT



## Built to Last

As with all FAI products, the TCK range is subjected to numerous testing phases to ensure the best production standards. A combination of endurance, durability, destruction and thermal shock testing paired with stringent inspection ensures a long and reliable service lifespan. FAI timing chain kits include the latest technologies adopted by OE vehicle manufacturers including newly developed 'High Torque' chains for many modern applications. Flex in FAI chains are confined to a maximum tolerance of 0.3%, maximising the chain lifespan and exceeding the aftermarket average of 1 – 3%.

## Oil Control Valves

Oil control valves (OCV) are an often-overlooked area of repair for applications with variable valve timing (VVT) and can be the root cause of a chain drive failure. FAI recommends checking that the customer has considered the OCV when purchasing any FAI part number containing the initials VVT. Partially blocked control valves starve the chain drive set-up of oil and ultimately lead to further failures, not to mention an irate vehicle owner.



# PREMIUM QUALITY CABLES

AVAILABLE FROM FIRST LINE

## DON'T GO TO THE DEALER!

**With more than 280 Gear Control Cables available, you don't need to go to the dealer!**

The demand for premium quality replacement Cables to service the gear control mechanism on numerous automotive and light commercial vehicles is growing rapidly year on year. Similar to a traditional gear linkage, the Gear Control Cable selects and engages the different gears within the transmission system. To ensure a smooth gear selection it needs to be in good condition and replaced with a high quality product when it becomes worn.

In some instances, it is still a common thought that these are dealer only products, when in fact, First Line offers an extensive range containing more than 280 references for passenger car and light commercial vehicle applications, all of which are available from your local branch.

## WHY DO THEY FAIL?

**There are a number of reasons Gear Control Cables fail, here are some of the more common ones:**

1. Cold weather can have a particularly adverse effect, as freezing conditions can cause the gearbox system, including the gear cable, to seize up and excessive force can inadvertently be applied by the driver. As a result, the inner wire can break when they attempt to change gear.
2. Cables five years or older are the most likely to fail, as the lubricant inside the outer sleeve loses its performance as its viscosity increases, which causes the inner wire to bind and therefore, not move properly.
3. A secondary reason is that there is an issue with the function of the gearbox, a gear failure for example, which can also result in excess force being applied to the gear cable, causing the inner cable to break.
4. Similarly, a problem with the gear arm lever or mechanism, which can cause the cable to operate at the wrong working angles, can also result in the failure of the cable at its connection points.
5. Finally, if the vehicle is operating in extremely hostile conditions, such as off-road and in mud or dust, debris can get inside the gear cable and block or restrict the movement of the inner wire, meaning the gear cable cannot correctly control the gear selection.



**MOST  
REQUESTED**

**Here are the most requested applications entering the workshops today.**

Ford Ka 1.2, 1.3 TDCi 2008>17  
**FKG1273**

Nissan Primastar, Vauxhall/Opel Vivaro,  
Renault Trafic 2001>15  
**FKG1003**

Fiat 500 with Stop/Start 2009>15  
**FKG1098**

Citroën Relay/Jumper, Peugeot Boxer 2.2Hdi  
2006>20  
**FKG1100**

Citroën Dispatch, Fiat Scudo, Peugeot Expert  
2007>17  
**FKG1009**

Hyundai ix35 1.6 6 speed 2010>16  
**FKG1303**

Renault Master, Vauxhall/Opel Vivaro 2.3CDi FWD  
2011>  
**FKG1254**

Ford Transit FWD / RWD 2006>12 applications,  
5 and 6 speed gearboxes  
**FKG1076, FKG1077, FKG1078 & FKG1079**

**MAKE FIRST LINE YOUR FIRST CHOICE FOR GEAR CONTROL CABLES.**

**FIRST LINE**  
THE ALL MAKES SPECIALIST

[www.firstline.co.uk](http://www.firstline.co.uk)

## LOCAL AND RELIABLE: YOUR ONE-STOP SHOP FOR NICHE PARTS

We pride ourselves on being the local and reliable one-stop shop for all your OE parts needs. Our extensive range now includes door locks and actuators. Browse our selection and see how we can help you keep your customers secure.

### PART REF: 172112 | DOOR LOCK

#### FITS:

- SEAT LEON
- SKODA OCTAVIA
- VW GOLF

#### YEARS:

- 1998>2006
- 1996>2010
- 1997>2006

OE REF: 3B4 839 016 A



### PART REF: 172123 | DOOR LOCK

#### FITS:

- SKODA YETI
- VW GOLF

#### YEARS:

- 2009>2017
- 2008>2014

OE REF: 5K4 839 015 M



### PART REF: 173907 | ACTUATOR

#### FITS:

- SKODA RAPID
- VW GOLF

#### YEARS:

- 2011>
- 2012>

OE REF: 5C6 810 773 K



### PART REF: 177556 | DOOR LOCK

#### FITS:

- BMW 1 & 3 SERIES
- BMW 4 SERIES
- BMW X1
- MINI COOPER, ONE

#### YEARS:

- 2004>
- 2014>
- 2009>2015
- 2010>2016

OE REF: 51 22 7 202 147



### PART REF: 178559 | DOOR LOCK

#### FITS:

- DISCOVERY
- EVOQUE

#### YEARS:

- 2009>2018
- 2011>2019

OE REF: LR091524



### PART REF: 179855 | DOOR LOCK

#### FITS:

- BMW 1 & 3 SERIES
- BMW 2 & 4 SERIES
- BMW 5 SERIES
- MINI COOPER, ONE

#### YEARS:

- 2004>
- 2013>
- 2006>
- 2010>2016

OE REF: 51 21 7 229 461



### PART REF: 178834 | DOOR LOCK

#### FITS:

- AUDI A1
- AUDI A4
- AUDI A5, Q5

#### YEARS:

- 2010>2018
- 2015>
- 2016>

OE REF: 8X0 839 015 C



### PART REF: 174507 | ACTUATOR

#### FITS:

- VW GOLF
- VW TIGUAN

#### YEARS:

- 2007>2014
- 2007>2018

OE REF: 5N0 810 773 F



### PART REF: 179674 | DOOR LOCK

#### FITS:

- VW BEETLE
- VW TRANSPORTER

#### YEARS:

- 2001>2010
- 2003>2009

OE REF: 3B2 837 015 AM



### PART REF: 177552 | DOOR LOCK

#### FITS:

- SEAT LEON
- VW GOLF
- VW TRANSPORTER

#### YEARS:

- 1998>2006
- 1997>2014
- 2003>2009

OE REF: 3B1 837 016 CF



**CALL YOUR LOCAL BRANCH TODAY FOR ALL YOUR  
DOOR LOCK AND ACTUATOR REQUIREMENTS**

# IN PARTNERSHIP WITH OUR KEY SUPPLIERS



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**SMART  
CHOICE**  
MAGAZINE

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APD Glastonbury	Butt Close, Glastonbury, Avon, BA6 9HY	01458 832 915
APD High Wycombe	Unit 1, Network 4, Lincoln Road, Cressex Business Park, High Wycombe, Bucks, HP12 3RF	01494 321 636
APD Norwich	3 Spar Road, St Faith's Industrial Est, Norwich, Norfolk, NR6 6BZ	01603 486 020
APD Reading	Suttons Business Park, Reading, RG6 1AZ	01189 110 949
APD Swindon Westmead	Unit 1, Glenmore Business Park, Bridgemoor Cl, Swindon, Wiltshire SN5 7AU	01793 821 715
APD Export	APD Retford Warehouse, Unit 2, Hallcroft Industrial Est, Aurillic Way, Retford, DN22 7PX	01777 700 075

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