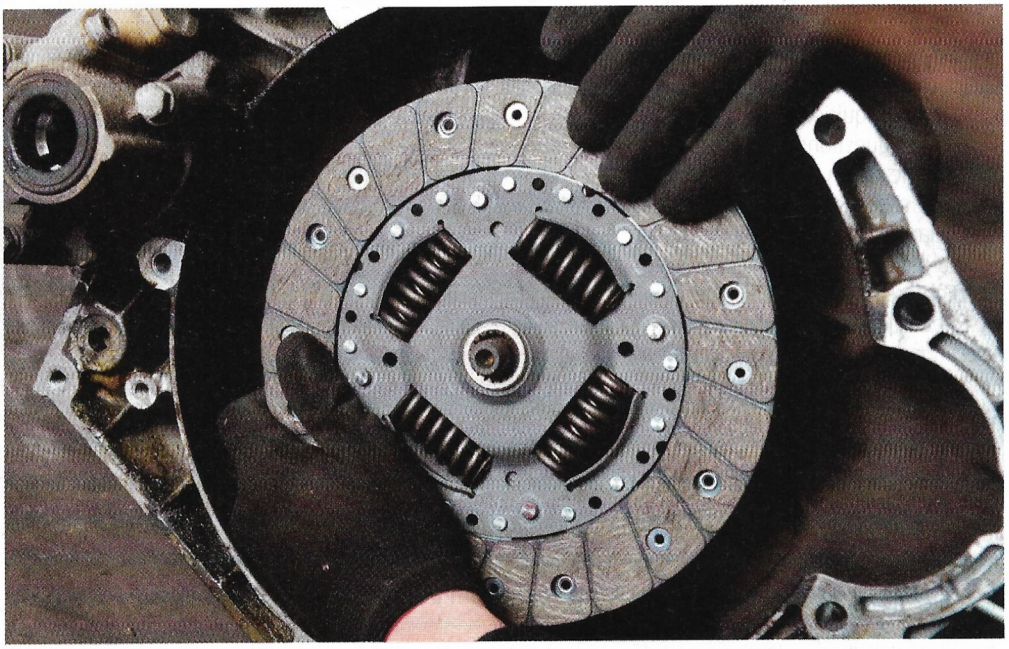
CLUTCH THE OPPORTUNITY!

Everything you need to know about working with clutch and transmission systems in order to capture more work going forward

The clutch is constantly working if a vehicle is on the move. The constant action means this area will need work sooner or later. It's pain, but it's a fact. What's also a fact is that replacing the clutch can be the cause of an argument, if you're not careful.

If you went back a few years, the idea of a clutch being controversial would seem strange. A clutch is certainly necessary, but a source of contention? It just does a job doesn't it? Well, maybe, and maybe not. As engine technology has progressed to produce lower emissions, the transmission has been adapted to work with smaller engines boosted to produce more power, hence the growth in the use of the dual mass flywheel (DMF). When it comes to replacement, some motorists might like to retro-fit a single mass flywheel (SMF), which is a more traditional option, and also mechanically simpler.



Above: Grab the clutch opportunity with both hands

Reliability

Comline's clutch range focuses on SMF kits. Business Line Manager Povilas Borisas explains why they opt for this over DMF systems and discusses the brand's quality control procedures: "The single mass flywheel is a piece of technology that has stood the test of time and has a proven track record for reliability. With no moving parts and a more simplistic structure versus DMF kits, the SMF clutch carries out the same task while offering superior value for money. Obviously, there are differences between the two technologies, but we believe in providing Comline customers with guaranteed quality at an affordable price and our range of SMF clutch kits delivers on this promise."

Povilas continues: "When it comes to ensuring the guaranteed quality of our clutches, we take several measures. Firstly, we only work with trusted world-class OEM supplying manufacturing partners. Secondly, every clutch component is subjected to strict analysis for chemical composition, tensile strength, hardness and microstructure. "

He adds: "Rigorously inspected and measured for conformity, all parts also undergo tests looking at clamp load, release load, pressure plate lift and more besides. Thanks to this absolute focus on quality we can confidently supply our impressive three-year, 36,000-mile warranty across our entire clutch range."

Original

Another option is to stick with the original. Schaeffler REPXPERT Alistair Mason comments: "Original equipment manufacturers design, engineer and produce clutches to the strictest material and quality standards available. Price is and always will be a factor – we can't escape that; however, quality, availability and value-added services also play a crucial part when it comes to technicians selecting the components they choose to fit. In addition, from my experience, a good technician wants to complete the job first time, every time, to ensure their reputation remains intact amongst their customers. A workshop can make good money by offering the best quality components available, as well as service, to guarantee customer satisfaction and loyalty. We believe technicians should make an informed choice as to whether they fit a genuine OE standard of clutch from an OE supplier, or one from a source that may not include all of the components required. The latter may not deliver the same driveability, reliability and durability expected by a vehicle owner and the supplier may also not have the support systems needed in place if anything goes wrong."

Performance

"The choice of clutch can affect performance and reliability," says Alistair. "These are examples of some of the problems that can occur:"

- Clutch lining compounds can vary in quality, affecting the life of the clutch, clutch friction and clutch lining strength at high RPM
- Cushion springs in-between the two friction surfaces should be manufactured to exact specifications and tolerances for each unique vehicle application. Generic cushion springs used in some clutches can affect clutch operation
- In a damped clutch plate, springs in the centre hub are perfectly tuned

for each application, effectively absorbing torsional vibration emanating from the crankshaft. They are designed to protect other components from damage caused by this vibration, giving the vehicle a more refined drive, all of which can be compromised if lesser springs are used

- The splines in the centre of the clutch plate need to be made from a precise grade of steel. Too hard, it may wear the gearbox input shaft splines; too soft, the splines may fail
- The design of the clutch pressure plate is matched to the vehicle, with the strength of the diaphragm spring accurately calculated to deliver consistent clamp load and pedal weight/feel
- The strength of the materials used needs to be exact, as any distortion will affect clutch operation
- The design process for a LuK clutch can take Schaeffler engineers up to four years to refine before approval is granted by the VM and mass production can begin

Alistair adds: "Clutches from non-OE clutch producers are primarily designed to replicate the original units; however, without access to the precise material specifications and engineering tolerances demanded and expected by the VM."

Demand

When you are dealing with mechanical components, everyone knows that everything wears out in the end. If you are facing the need to replace a whole gearbox, that could be a major cost to a customer if you opt for a direct replacement. That is not the only choice those, as remanufactured systems provide another option.

On the market for remanufactured transmissions, David Eszenyi, Commercial Director, at Ivor Searle says: "Demand for our remanufactured transmissions for cars and light commercial vehicles continues to steadily due to the high cost of purchasing brand new OEM gearboxes. These are generally too expensive for independent garages to replace when operating today's price sensitive market. Our remanufactured gearboxes typically cost up to 40% less than their OEM equavalents without compromising on quality, customer service or warranty

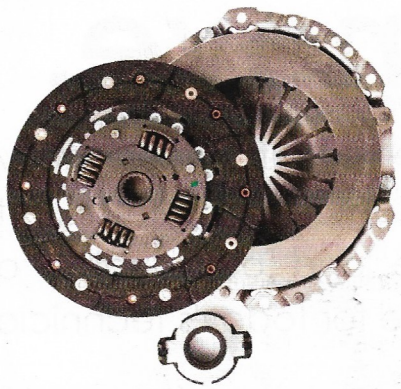
protection. These are essential factors to look out for when choosing a remanufactured transmission supplier.

"While it's more economical to source a remanufactured gearbox, product quality is key as the process of restoring the unit back to OEM standard requires significant investment, technical expertise and rigorous inspection procedures. To achieve this, we employ the same quality-focused ethos from over 70 years of engine remanufacturing expertise when it comes to our transmission remanufacturing facility that's certified to ISO 9001:2008.

On current trends, David oberves: "In terms of demand, it's interesting to note that our top five fastest-moving applications for manual gearboxes include the Vauxhall F Type, Volkswagen Group's six-speed unit, Ford's six-speed for the Transit, Peugeot/Citroën's five-speed 'box and BMW/MINI's five-speed transmission."

Gear up

Technology has a habit of moving forward, but you need to keep up yourself. As we have seen, components within the transmission have changed. There are entirely different gearbox systems being used today as well. Take the direct shift gearbox (DSG). Helen Robinson, Marketing Director at Euro Car Parts comments: "With the popularity of dual-clutch units increasing, the aftermarket must make the most of a considerable opportunity. Since 2008, many new VAG models have been equipped with a seven-speed dual-clutch gearbox (DSG) for small vehicles, or a six-speed wet clutch version for larger, high powered vehicles.



"DSGs are designed to deliver the combined advantages of both automatic and manual gearboxes, with an automated gear shift and uninterrupted traction. Unlike single clutch units, automated manuals combine the internals of two manual gearboxes linked together within a single casing, operating multiple clutches. Such systems have grown in popularity with vehicle manufacturers including Kia, Ford, Hyundai and Fiat, due to the benefits in performance and economy that dual-clutch transmission systems provide.

"Independent repairers often encounter limitations when confronted with work on dual-clutch transmissions. A lack of tools, equipment and experience can kill the job before it has even begun. While all three can seem like a significant expense, they should not be written-off immediately. It's true that specialist tools and diagnostic equipment are essential to ensuring a workshop can maintain, repair and adjust six and seven-speed DSG units, but this investment may be quickly offset."

Training

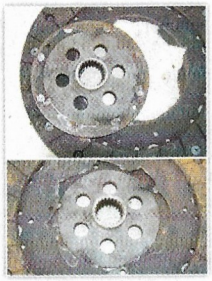
Helen continues: "Euro Car Parts has the largest range of specialist dual-clutch tools, equipment and training available in the UK, with basic packages available from £700. In a marketplace where capable DSG technicians are sparse, the required investment in equipment and training can easily be recouped through a small number of clutch replacement activities within a short-term period."

Training is also vital, as Helen explains: "As the vehicle parc for dual-clutch systems grows, we are also experiencing high demand for our DSG Gearbox training course. Through our wider Auto Education Academy platform, we offer a training programme that uses a bench-mounted DSG in combination with hands-on teaching methods."

www.aftermarketonline.net

Common clutch faults

Comline has issued some helpful tips on diagnosing common faults found on clutch systems.



Customer complaint:
Clutch does not disengage
What you can see:
Clutch disc racing segments broken

Potential causes:
- Misalignment between engine and gearbox
- Defective pilot bearing/gearbox input shaft bearing
- Defective or missing dowel pins between engine and gearbox
- Clutch disc damaged during installation (gearbox input shaft is stuck in the hub profile)
- Hanging gearbox weight on the clutch disc
- Installing the clutch disc the wrong way round

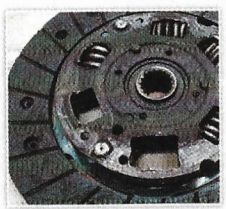
Solution: Eliminate the cause; Replace the clutch system

Customer complaint:
Slipping clutch

What you can see:
Clutch facings or clutch pressure plate appears burnt

Potential causes:
- Clutch overheated due to prolonged slipping
- Oil contamination on the clutch disc or flywheel facing, due to a leaking engine oil seal or gearbox oil seal (reduced coefficient of friction)
- Defective release system (cable or hydraulics)
- Too much or incorrect grease used on the gearbox input shaft

Solution:
Eliminate the cause; Replace the clutch system

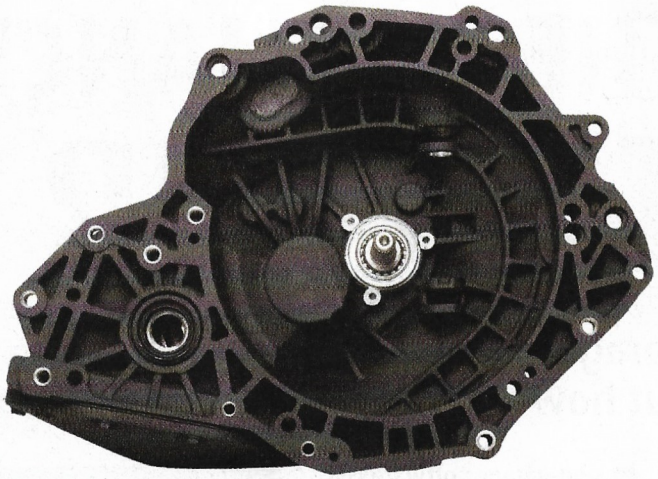


Customer complaint:
Clutch noise

What you can see:
Broken torsion spring

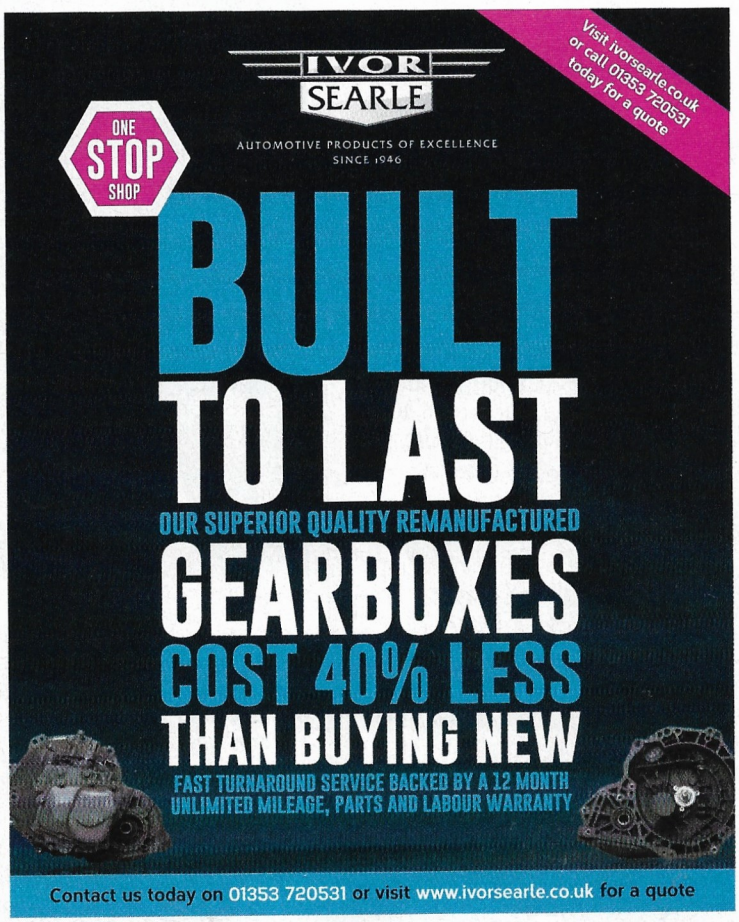
Potential causes:
- Incorrect clutch disc fitted
- Incorrect driving practice: driving in too high a gear at low revs
- Oil or grease on the clutch facings
- Judder vibrations

Solution:
Eliminate the cause; Replace the clutch system.



Remanufactured gearboxes from Ivor Searle

Ivor Searle's comprehensive programme of OEM standard remanufactured gearboxes covers virtually all five and six speed manual transmissions for front, rear and four-wheel drive cars and light commercial vehicles. All Ivor Searle gearboxes are covered by 12-months unlimited mileage parts and labour warranty and are supplied with pre-installation guidelines, as well as model-specific instructions if required. Ivor Searle holds comprehensive stocks of gearboxes to ensure first class customer service and minimum vehicle downtime. They also offer free next day AM delivery throughout the UK mainland on stock items, if ordered before 3.30pm.
www.ivorsearle.co.uk



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