CLUTCH AND TRANSMISSION UPDATE

Clutch and transmission systems are complex; proper maintenance will prevent problems arising and keep customers satisfied

To keep a customer happy, you want to make sure they don't have to spend money needlessly. 'Prevention is better than cure' as the old saying goes. On this basis, making sure the clutch and transmission system is kept in top working order will prevent larger problems occurring later – and by larger, we mean pricey.

"The clutch is often an expensive consumable part of any manual vehicle," says Gary Killpack, chief race mechanic for Power Maxed Racing, Vauxhall's manufacturer team in the British Touring Car Championship, "which can be very time-consuming to reach to remove and replace. Therefore, it's very important to ensure the clutch is installed properly and kept clean to reduce wear and increase longevity."

Manual clutch systems

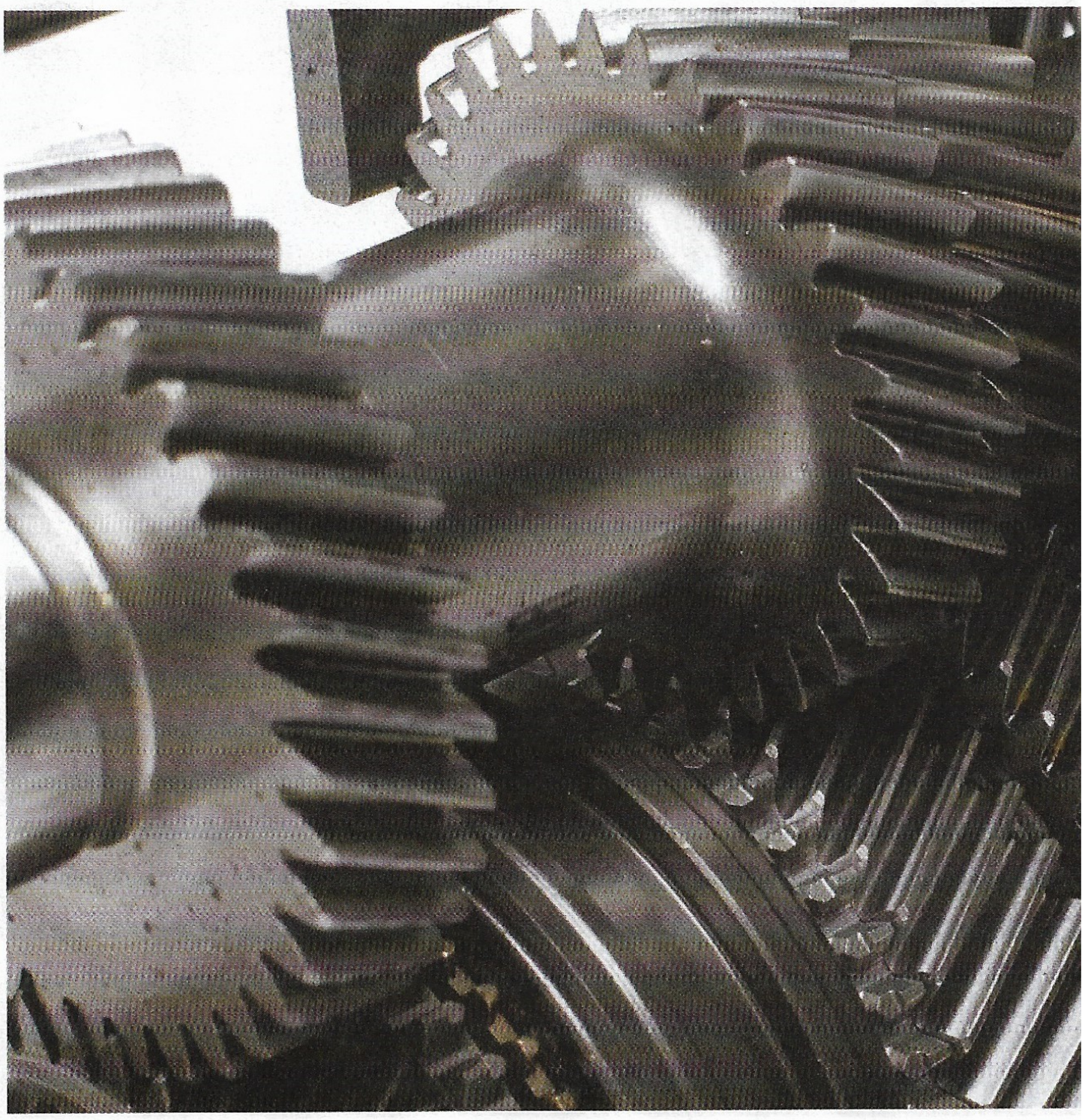
"When installing a new clutch, it is very important to remove the protective, anti-corrosion grease which coats both the flywheel and the pressure plate of the clutch," continues Gary. "This area does not need to be greased once assembled as these two areas need to grip each other to remain connected. For this, a good brake and clutch cleaner made from virgin solvents is the way forward; No synthetics or reused solvents. A good cleaning product ensures fast reactions which penetrate through the surface grease, dissolving it and allowing it to be wiped away easily, leaving the surfaces clean and ready to be assembled."

If left to nature, problems can occur, as Gary explains: "If the clutch is not kept clean of contaminant build-up, increased or uneven plate wear causing slippage or even cracking can occur. It is also worth noting that a good brake and clutch cleaner will inhibit dust, which is particularly important when working with older parts which could be affected by asbestos, and even newer parts where the dust after use can be harmful if inhaled. Cleaning brakes and clutches before and after dismantling and assembling can make the work safer for the mechanic."

Automatic gearboxes

On automatic gearboxes, Gary observes: "The automatic gearboxes of most road vehicles do not have a clutch, per se. Instead, the running of the gearbox is caused by the pressure of gearbox fluid circulating a sealed drum, which in turn causes friction bands to jut out and retract in turn, altering the pressure inside the gearbox and effectively changing gear.

"As with manual clutches, contaminants can impact the effectiveness of gear changes, as gearbox fluid tainted with particulates can damage the system. Leaks in the gearbox can also reduce the amount of fluid in the gearbox, reducing the amount of pressure in the gearbox and therefore causing slippage of gears affected by the friction bands, and potentially losing upper gears entirely due to the lack of pressure. Additives can be poured into the gearbox fluid filler which recondition seals in the system, stopping and preventing leaks."



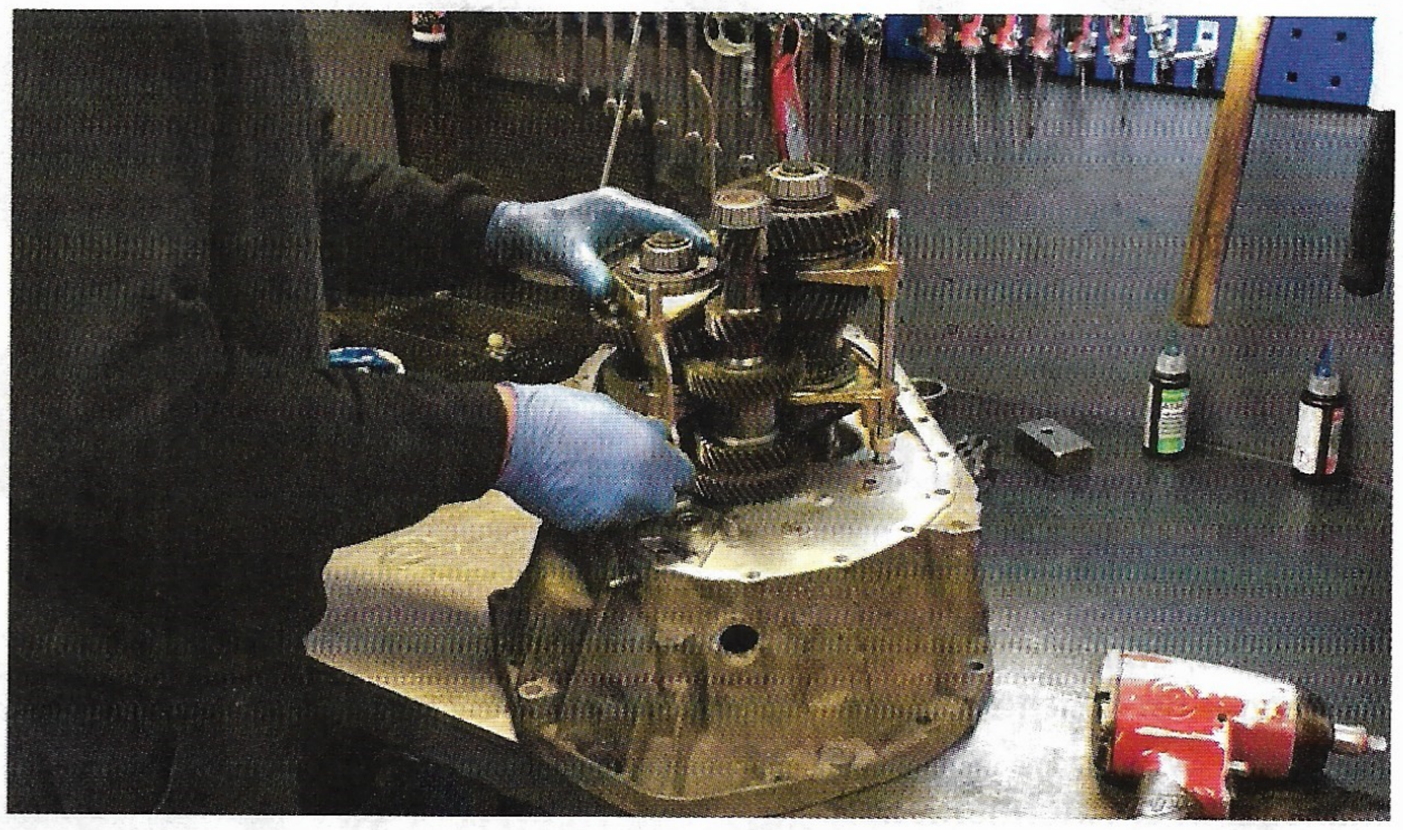
Above:
Gearbox cogs

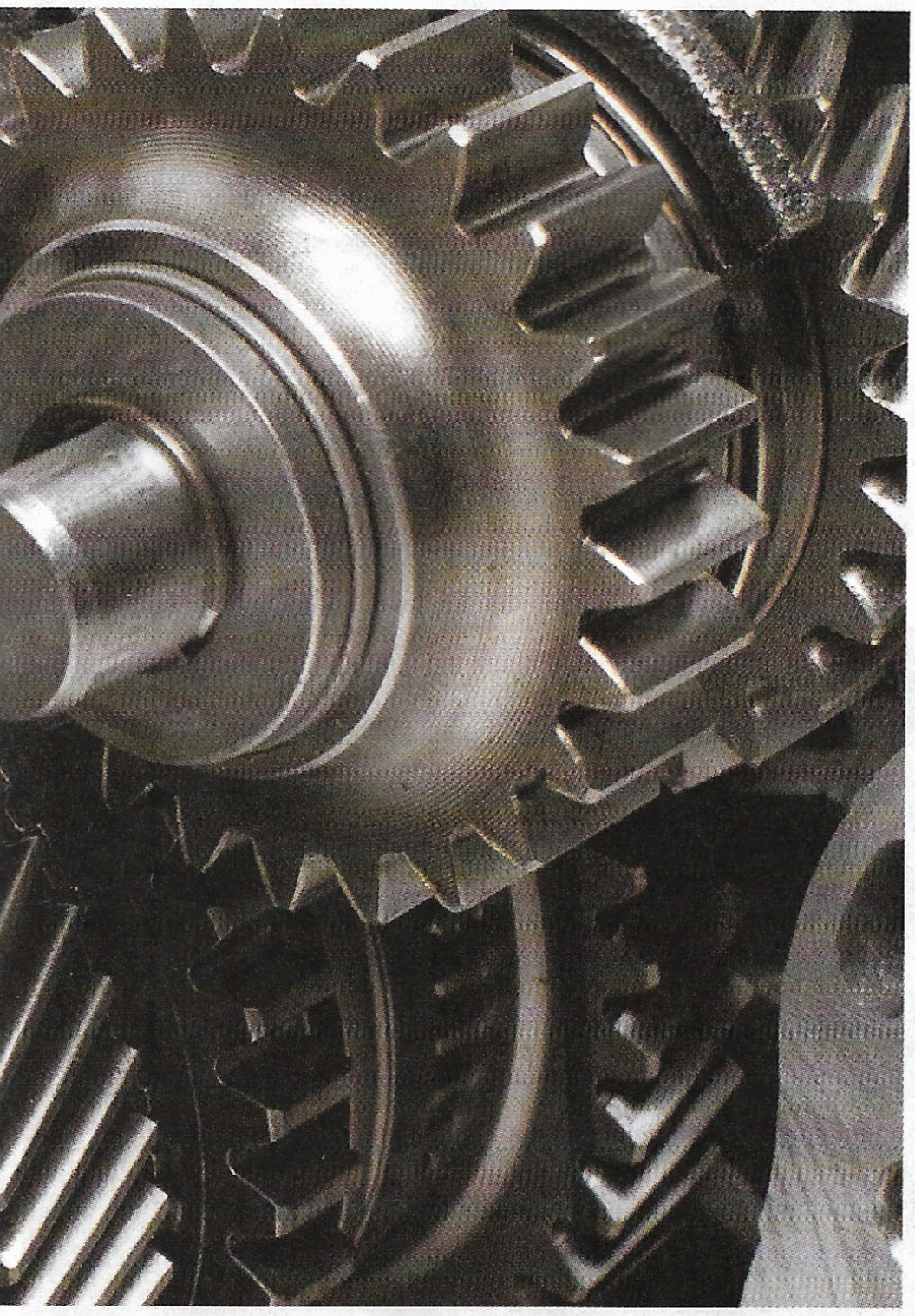
Remanufacture

As we have discussed, clutch and transmission systems can be very expensive to replace if key components completely fail. If this does happen, one option garages can offer customers is to go down the remanufactured route. Ivor Searle commercial director David Eszenyi tells us about the market for for remanufactured transmissions:

"Demand is steadily growing for our remanufactured gearboxes because of the high cost of purchasing a brand new OEM unit. In terms of demand, our top five fast-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."

This does not mean manual transmissions are about to disappear though: "Although there's been some speculation about the manual gearbox coming to an end, alongside and the introduction of sophisticated automatic and semi-automatic transmissions, around three quarters of new cars purchased are manual. There's no doubt that manual gearboxes will feature in a significant portion of the vehicle parc for the foreseeable future, which of course means that problem transmissions will still need to be replaced."





Above: Ivor Searle gearbox assembly

Intensive

Transmission remanufacturing is an involved process, as David explains: "The remanufacturing process starts with the careful disassembly of the donor gearbox, which is stripped back to its component parts. These are then subjected to an intensive multi-step cleaning process and detailed inspection against OEM specifications before the skilled procedure of reassembly gets underway. Any part failing inspection is discarded and replaced with an OEM item. Ivor Searle remanufactured gearboxes are also fitted with all-new bearings and all seals and gaskets are replaced as a matter of course.

"In addition, all gears are checked for wear to the tooth profiles to ensure the transmission does not produce excessive noise. Synchromesh hubs and baulk rings are also inspected and renewed, where necessary, to ensure quiet gear selection. Selector forks are checked for wear and alignment to ensure the gearshift is smooth. The gearbox is then repainted in the final stage of the remanufacturing process, prior to being carefully packaged, ready for delivery to the customer.

David adds: "All of our gearboxes are covered by a transferable 12-month unlimited mileage parts and labour warranty and are supplied with pre-installation guidelines, as well as model-specific instructions if required."