

a day with **ASHCROFT TRANSMISSIONS**



Dave Ashcroft and his late father Ian are probably two of the best-known names in the Land Rover world – specifically for gearboxes and differentials. This month, Greg spends a day with Dave and the Ashcroft Transmissions team to find out what goes on beyond the reception counter

YOU have arrived," my sat nav announces. I look around and cannot see any building resembling a transmission remanufacturer. A quick Google whilst I'm parked up at the side of the road reveals that it's just around the corner. Technology, eh? As one of the office team greets me in reception, using a radio to call for Dave, I can smell the unmistakable whiff of EP90 gear oil. It's like nothing else. As I sit down in reception for a couple of minutes, I look at the new LT230 transfer box on display.

Dave greets me, and although it's been close to a decade that we last met, it doesn't feel that long. We both grab a coffee and head up to the conference room for a chat about today. I ask how the business started. "It all began as a company named Automatic Conversions in the 1980s. My Dad, a mechanical engineer in the glass industry, used to trial an ex-RAF Series IIA, that had started life as a rare two-wheel drive model. Dad and I converted it to four-wheel drive and to a V8. Using his machining skills, he made an oil cooler adapter for the V8 conversion, then an adapter for an automatic transmission, and off the back of that he used to make odds and ends for friends in the trialling club.

"When he was made redundant, he bought a milling machine and a lathe and started making parts for Land Rovers at the back of the house. That was the start of the business that is Ashcroft Transmissions today."

After chatting about products (more on that later), we take a walk down on to the shop floor. As the door opens there is a



LT230 cases being machined for a reinforced insert



The start of the build process



Differentials: almost any spec can be built

hive of activity with forklifts moving to my left and a large area of machines and people in front of us.

I ask Dave to walk me through the process. "Core units come in over on this side here." The whole side of the building is racked floor to ceiling, with gearboxes and differentials occupying every bit of space. There must be hundreds. "We either do units on an exchange basis or we can rebuild your particular gearbox or transfer box if you want to retain the original serial number."

As I look along the racking, I can identify lots of R380 gearboxes, ZF four-speed automatic transmissions and differentials. There's also a transmission I don't recognise. "These are the MT82 gearboxes from TDCi Puma Defenders. We do a lot of these now," Dave adds.

We move to the teardown area where the transmissions are first stripped. Beside the workbench is a computer with numbers on. "The gearbox is tracked right through the system, so anyone in the business knows where the unit is in the process at any time. With the number of units going through our system every week, we need to track every single one."

The process is incredibly methodical, with job cards and computers tracking the location of all components. Every component gets thoroughly cleaned and vapour blasted as required. We then walk over to a CNC milling machine. "At the moment, we are sleeving a batch of LT230 transfer box cases. Where the shaft runs within the casing, it wears into an oval shape. We machine this out and refurbish the casing with an accurate milled insert. Around half our transfer boxes have this improvement selected by the customer."

We walk through to the stores area, which again is racked from floor to ceiling with a tremendous number of parts in stock. We pause by where the bearings are stored; there must be thousands of Timken bearing boxes here. "Using cheaper bearings or cheaper seals is a false economy. We don't skimp on these parts as it makes for the most reliable and long-lasting rebuild possible," Dave comments.

As we walk to where the refurbished and new casings are, Dave picks up a differential casing and talks to me about the pinned differentials Ashcroft offers. "We manufacture new casings, as there are not enough core units to go around. We leave material on our castings so the differential can be pinned without having to weld any metal in."



Quality bearings are key for long service life



An R380 selector housing in build



Every transmission is stamped for traceability

Beyond the stores area, are two Defender 110s – one on a four-post lift and one parked up. "These are in for automatic transmission conversions, both Pumas." Dave goes on: "This green 110 is for a regular trade customer, who ships a lot of Defenders to Japan, all converted to automatic by us."

I question Dave on why he uses the electronically controlled ZF four-speed unit on Defender automatic conversions. "We've done a lot of work to optimise the unit. We have looked at the Ford six-speed gearbox, but it is not reliable in service, as many of them have issues with software out in the field. The ZF unit is completely bombproof, and with our electronic control optimisations it drives tremendously well."

We continue to the main assembly area, where I meet 'Auto Dave' – you can probably guess what he assembles. Dave explains to me the differences between the earlier purely hydraulic ZF units and the later electronic-controlled units. As he assembles the transmission in front of me, it's clear there is a wealth of experience here.

We then meet Liam, assembling an R380, offering the completely built main shaft into the casing with great skill and precision. To the right of the workstation is a computer tablet, which gives all the information about the specification of the unit being built so



Gently does it... Gearset is carefully assembled into the R380 casing

THE SCALE

In 2024, Ashcroft Transmissions turned over £8 million, supplying over 1600 LT230 transfer cases, over 1000 differentials, 1000 R380 gearboxes, and much more besides. In fact, over 4000 major units were dispatched last year, as well as 185 conversions of Defenders to automatic. The company should know its stuff after supplying that many!

January 2024 - December 2024

R380 Builds - 967
LT230 Builds - 1623
Differential Builds - 1044
Borg Warner Builds - 56
LT77 Builds - 45
MT82 Builds - 190
ZF Builds - 278

Total 2024 Builds - 4244
Average daily builds - 16 per 17 weeks

Conversions - 185

TDCi - 37
TDS - 39
TDL - 35
V8 - 24
Total conversions Sold/Fitted - 185



Dave Ashcroft knows a thing or two about differentials...

MEET THE BOSS

Dave Ashcroft's career started as an apprentice for Rolls-Royce Aero Engines, followed by a sponsored degree through Rolls-Royce. After his job was moved to Derby, he decided to relocate and join the family business. Working with his father, Ian, for many years, Dave took the reins gradually, assuming full control of the business around 18 years ago. Just like his dad was, he is a true Land Rover fan – his daily driver is a new model Defender 110.



Defender automatic conversions are done on-site



Leak testing – every box is tested before dispatch

there is no ambiguity or confusion. "We have so many different options for customers, this system is vital to ensure every unit is built to the correct specification."

Towards the back end of the assembly area, is, strangely, a large tank of water with a crane above it. My enquiry as to what this is about is met by a smile from Dave. "We connect an airline to the gearbox and pressurize it to 8psi. This is then lowered into the tank of water whilst under pressure. Any leaks on the transmission show themselves as air bubbles." What a simple and logical way of checking for leaks.

We look at some of the completed units ready to go down to the dispatch area. On the transfer box shelves alone, there are so many options – different ratios, limited-slip centre diffs, high-capacity sumps. "Many of the units we do are standard replacements, but we can build a totally bespoke unit for perhaps a dedicated application or off-roader. We supply a regular mining customer with bespoke low-ratio units – those vehicles take a real hammering."

Finally, we walk down to the dispatch area, and the difference in scale of packages is almost comical – there's a small envelope right next to a large crate containing an automatic transmission. "We supply individual components, so you could order a baulk ring, or the largest, most complex transmission we do."

As we go back to the office, Dave talks me through the website and all the options available on driveshafts, differentials, manual gearboxes and automatic transmissions and so on. Additionally, there's a whole raft of other items associated with these, such as the automatic centre console Ashcroft manufactures for converted vehicles.

As I leave to drive home, getting my head around the scale of the business is mind-blowing. It's so great for us all that companies such as Ashcroft exist to keep our vehicles running for many years to come.