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USER MANUAL





**Experienced Durham-based
marque specialist Aston
Workshop has developed
a manual transmission
modification for the Vanquish,
transforming the car into even
more of a traditional sports car.
We look at how it was achieved
before driving the prototype**

THE SEMI-automatic six-speed transmission fitted to the first generation of Vanquish is very much like Marmite. Some like it, others hate it. Personally, I can take it or leave it, which again is how I feel about the aforementioned yeast spread.

One person who clearly hates it is a customer of Aston Workshop who instructed the established marque specialist to develop a way to make the transmission a traditional, old-fashioned manual 'box complete with a gearlever instead of the original paddles. Although a complicated and time-consuming modification to get right, the company has achieved this goal. Not only is the Vanquish now arguably easier to drive, but by giving the driver better control over the V12's sizeable power, it makes it more of a genuine driver's car too.

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Aston Martin chose the 'box for the Vanquish because the company's then chairman, Bob Dover, wanted to make it more advanced than its siblings. "The technology was extremely important," said Dover in David Dowsey's 2007 book, *Aston Martin: Power, Beauty and Soul*. "The paddle shift, for instance: we could have used a manual shift very easily but the paddle shift was something I wanted to do. The V8 was getting very out of date technologically, the six-cylinder DB7 didn't break any new ground and we needed to get back at the top in terms of technology."

The transmission was the same Tremec T56 six-speed manual as fitted to the DB7 Vantage, but gearchanges were now made via paddle shifters located on the steering column behind the wheel that actuated an electro-hydraulic clutch by Italian firm Magneti Marelli (a similar system is used on the Ferrari F360 Modena).

By being sensitive, dim-witted and therefore awkward to use compared to a traditional manual or automatic transmission, it was a controversial choice and not everyone liked it. Jeremy Clarkson, for example, hated the 'box when he tested the Vanquish during a November 2002 episode of BBC2's *Top Gear*. "What was the matter with a manual?" he exclaimed when trying to complete a tricky uphill three-point turn. "Why do we have to have this?"



"The transmission takes some getting used to," was *Autocar* magazine's more diplomatic view in its 18 April 2001 issue. "Even the engineers admit that your average Aston Martin customer is going to need a little re-education." The company did indeed offer a one-day driver training course for Vanquish buyers that included a lesson in city centre motoring that no doubt helped with those awkward three-point turns.

This apathy towards the gearbox hasn't changed in the 22 years since the car was launched and it's why one of Aston Workshop's customers asked the Durham-based specialist to develop a full manual version. The car chosen for the modification was a low-mileage example from 2002 in grey that the specialist sourced from Singapore in late 2023. The work was largely completed by one of the





company's lead technicians, Luke Batty, who tells me his first job was to remove all of the Magnetti Marelli system that included several pumps and reservoirs. The original gearbox, though, remained in place. "All of our six-speed gearbox conversions for the older V8 models use the T56," says Luke, "so we're used to dealing with it."

Next was finding what master and slave cylinder would fit in the tight space to the top left of the engine bay which Luke says is just about large enough if everything is inserted in a certain way. Even though the T56 gearbox is used for the DB7 Vantage, Luke tells me that on the Vanquish there's a sensor and a cog on the input shaft that has a housing which meant he couldn't use the master or slave cylinder from the older car. After trying several different types, he eventually settled on one from a V8 Vantage. He also tried several different clutches including a twin plate, but tells me the original one turned out to be the best. "To make it feel more like a factory update, I've tried to use Aston Martin parts wherever I can," Luke tells me.

The pedal box, though, started life as a Jaguar unit although Luke has needed to cut and reshape it several times. "It's a tight fit," he admits. "One of the things that I had to modify was the orientation of where it mounts because it needed to be at a certain angle for the pivots and then for it to actually fit." This completed pedal box has been 3D-scanned so it can be re-created for future Vanquish customers wanting the same modification.

Change any part of a modern car – including making a semi-automatic gearbox fully manual – and it will set off several warning lights on the dashboard. To get around this, the team worked with a software specialist in the States who previously developed the ECU for Aston Workshop's existing fully automatic gearbox conversion for the Vanquish. The fix they decided on was a new TCU (transmission control unit) with a purpose-made program that makes the ECU accept the mechanical modifications.

Luke then drilled a hole into the carbon fibre transmission tunnel for the gearlever. Amazingly, when he bolted it onto the top of the 'box, and found that the knob was in exactly the right place, he

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thinks Aston Martin might have originally considered giving the car a traditional manual transmission when it was still in development. "There's actually a tiny, raised circle underneath the tunnel just in front of where I drilled my hole that looks as though it may have been a marker for a gearlever hole," says Luke with amazement. "I was quite happy I was in the right place because drilling into the tunnel was probably the most daunting bit of the project."

Despite the car being up and running by early 2024, it would still take several months of fine-tuning before it was right. "Sometimes I would hit on something and I'd be like, 'Oh, that improves that'. And other times I'd have to change this, change that, change the master cylinder, slave cylinder, the pipes, everything."

Although mechanically finished on the day of my visit in mid-April, the car is still a few days away from being totally completed. For example, when I open the door of the otherwise standard-looking car, the carpets (which have been cut





away to give Luke and other technicians better access to the OBD ports) have yet to be replaced. But the chrome gearknob sourced from a VH era of DBS doesn't look out of place and any non-experts would think it's standard. The areas where the two paddles would have been fitted have been blanked off. Although the plastic plates are clearly visible (not when you're behind the wheel), it's a simpler and cheaper option than a brand-new steering column case. Just as importantly, it keeps with Aston Workshop's desire to make the modification reversible. "I haven't cut up the bulkhead or the interior," says Luke. "Everything I've taken off can fit exactly where it was." Two nice little touches at the behest of the owner are the buttons to the right of the starter button that originally would have put the transmission into reverse and auto shift manual (ASM) mode but are now marked **MISSILES** and **GUNS**. Although obviously not real, they're still appropriate for a model that was once used by James Bond and certainly more interesting than if they'd

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been left alone or simply blanked off.

As I pull away from Aston Workshop's facility, what strikes me first about its conversion is how the weight of the pedals and the physical throws of the gears make the 'box feel like it was always a full manual rather than an aftermarket conversion developed by a specialist. When I hit the open road and nail the throttle, the car responds instantly, the acceleration feeling similarly swift as the standard model. What's different is when I dip the clutch and change up to second and then third it's a much smoother and easier action than using paddles that in my admittedly limited experience can be jerky if you fail to get the timing right when lifting off from the throttle.

The gearbox might lack the kind of short, sharp and sudden shifts you'd expect from a modern transmission but it's no worse than how the T56 feels in a DB7 Vantage or any other sports car from the era that used the same transmission. It is accurate, though, slotting into position with little persuasion. Manually changing down in preparation for a corner is far easier than when the Magnetti Marelli system is in charge.

In my view, the higher control over the gearbox together with its ease of use makes driving the Vanquish much more of a pleasant experience than with the Magnetti Marelli system. It also makes the car into more of a sports car rather than the big, comfortable grand tourer

it was originally. Slicking the box down to third before flooring the throttle of this V12 performance car is a pure and old-fashioned moment of joy especially since large-engined models like this with a manual 'box are becoming rarer.

As I said at the start, the Vanquish's original gearbox cuts opinion like a well-known yeast spread and I realise that some owners will love it. But like preferring peanut butter or jam, for those that don't, Aston Workshop's clever and inventive conversion is an excellent alternative, especially since it doesn't lose any of the car's character but adds to it. **AMD**

● **Thanks to: Aston Workshop**
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