

Audi DRIVER

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**RS4
SPECIAL**



e-tron 2 = R4?



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RS4 SPECIAL



Andrew Chapple, who specialises in used Volkswagen and Audi sales, explains what is involved in buying a Biturbo RS4...

RS4 Biturbo buying guide

FOLLOWING IN THE footsteps of the widely acclaimed RS2, which was developed in conjunction with Porsche, the original RS4, launched in 2000, internally coded B5, continued the theme of supercar performance in a compact and discreet estate package. This time, though, development was carried out in-house by quattro GmbH, Audi's equivalent of BMW's M-sport division, with engine development by Cosworth Technology in Northampton, at that time an Audi subsidiary.

The 2.7-litre biturbo S4 was to form the basis for the RS4, meaning that there was plenty of room for improvement. Development work extended to virtually every aspect of the car, something which commentators of the time were surprised that Audi could do for the modest premium over the S4.

The most obvious changes were to the bodywork with every panel bar the roof and bonnet unique to the RS4. Particularly noticeable were the flared wheel arches, necessary to accommodate the widened track.

Under the bonnet, a pair of 10 per cent larger K04 turbochargers replaced the S4's K03s, and the cross-section of the two intercoolers was increased by 37 per cent. A redesigned cylinder head, cast in Cosworth's Worcester foundry, optimised gas flow, and was married to a strengthened block at the Wellingborough engine assembly plant before being shipped back to Neckarsulm for final assembly. In addition to the usual oil cooler plumbed into the coolant circuit, an additional air-type oil cooler with thermostatically controlled flow rate



was deployed beneath the radiator. These changes resulted in a Ferrari 355-matching 380 PS, and the highest specific output of any production car on sale at the time, with over 140 PS per litre.

The third and fourth ratios of the gearbox were lowered by 7 per cent, while the S4 clutch was replaced with a more substantial version. The gearbox bearings were also beefed up to cope with the extra torque.

Brakes were a major weakness of the S4 and a considerable effort was made to address this for the RS4. Up front, surprisingly modest two-piston callipers gripped 360 mm discs with judder-preventing floating bells, while the rear sported 312 mm discs which just happened to be the same size as those on the front of an S3. In both cases, the discs were handed

to optimise the efficiency of the vents and thus aid cooling.

Chassis development, which included track time at the Nurburgring, resulted in a 20 mm lowering over the S4, and unique springs and dampers. Numerous suspension components were manufactured in aluminium, contributing significantly to weight reduction.

Road testers of the time agreed that the engine was a work of art, with its ability to extend the massive output all the way to the heady 7200 rpm rev limiter, completely unlike a normal turbocharged engine. There was also general agreement about the steering which was deemed wooden and lacking in feel, a typical Audi trait at that time. The surprisingly long-throw gear change and heavy clutch action



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Things to look out for

Compared with the more exotic brands which offer similar performance, the RS4's reliability record is exemplary but, as they approach 10 years old, there are naturally problems to look out for.



were also berated but, with all of the 400 examples destined for the UK pre-sold well in advance, buyers were clearly bowled over by the combination of all-weather supercar performance, practicality, and restrained yet unmistakable styling.

If you approach the RS4 with the attitude that supercars have always been hard work to drive, then you will be pleasantly surprised. If, on the other hand, you expect a light, delicate track-optimised experience you will be sorely disappointed, but might be missing the point.

Walking up to it from the front, from some distance away, lets you experience how most other drivers will see it, its nose surely designed with as much emphasis on cooling efficiency as *überholprestige*, a German term referring to its outside lane emptying ability. The gaping air intakes and swollen wheel arches clearly distinguish it from lesser models and mean that even if passers-by don't know what it is, the muscle rippling stance makes it plain that it sure ain't no TDI.

Open the unique-to-RS4 door and get comfortable in the electric Recaro seats which, unlike those in the S3, allow you to sit as low as you could wish. The engine starts promptly with a V6 snarl, the unyielding clutch pedal hinting at heavyweight engineering; you soon get used to it and once you have selected first with the strangely loose-feeling gear lever, drive is

taken up progressively and smoothly. Into second and now you can give the right-hand pedal a deeper prod; initially there is some lag, though not a patch on the RS2's, which only helps build the excitement, much like lighting a firework and waiting for the bang. As 3000 rpm approaches, there is a big shove which pins you back into your seat all the way to the rev limiter. Time it well and you'll change into third right in the sweet zone with a few thousand rpm to the next limiter at over 100 mph. It's at this kind of speed where the RS4 shows its hand: it's not a rival for a fidgety M3, but a sublime continent-crossing grand tourer, more akin to a 911 Turbo than any other car. It will cruise effortlessly at three-figure speeds with impressive stability, one of the advantages of the lack of steering feedback at lower speeds. It's also supremely refined thanks to the deep reserves of power which help the engine remain unstressed.

Sure, the E46 M3 has a great chassis and ample tactility, but the RS4 is still quicker in almost all circumstances. It's certainly not the ideal track day car as its weight makes it a slothful direction changer, but it will still keep pace with almost anything thanks to its ability to put the ample power down out of the corners and its blistering straight-line shove. On real roads in all weather conditions it really shines and has to be one of the best ground coverers there is, even today. ■

Camshafts

Over the last few years reports of worn cam lobes have increased significantly, with a large proportion of cars inspected showing significant wear which usually manifests itself on the driver's side rear-most exhaust lobe.

Why this occurs is hard to pin down. Both standard and modified cars have been affected and it can afflict low-mileage examples while high-mileage cars can be fine. Audi's dubious decision to allow the RS4 to run its newly launched long-life service intervals may be a contributing factor: why a car with 140 bhp per litre was allowed to go up to 20,000 miles between services when Mitsubishi was citing 3,000-mile intervals for its similarly tuned Evo models is hard to fathom.

Driving style may also be part of it. If the wear is ignored, it can cause major engine damage, but inspection is relatively straightforward. Should replacement be required, both camshafts will have to be renewed at a cost of around £3,000.

Turbochargers

While the K04 turbos seem to be proving a lot more durable than the S4's K03s, especially when the engine has been remapped, they don't last forever. Their lifespan can be shortened significantly by failed diverter valves and boost leaks which are usually missed unless the car is serviced by a specialist. They must be replaced in pairs and this requires engine removal and a total cost of around £5000.



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Wheels

Not long after customer deliveries began, numerous owners complained about the RS4's wheels being prone to inner rim deformation when encountering relatively modest potholes. Audi UK stated that this was a design feature, safer than the impact causing damage to the tyre or suspension as the buckled wheel would result in a vibration noticeable by the driver who could then continue his journey in safety.

In October 2001, Audi UK took the unusual step of hiring Millbrook Proving Ground so that they could successfully demonstrate to both the Vehicle Inspectorate and invited owners that there were no safety issues. Realising that there was still a customer care issue, however, they agreed to a lifetime goodwill replacement programme on the original 'soft' wheels and subsequently also offered a 'one-off' change to a harder compound wheel which would end the goodwill eligibility on that vehicle.

Nearly 10 years after launch, this package still applies, but the soft wheels are no longer available so the only choice is a one-off change to the hard version. At over £2,000 to replace a set of four, it's worth checking them carefully.

Brakes

At over £1,300 for parts and labour to replace discs and pads all round on an RS4, it is fortuitous that they can be inspected thoroughly with the wheels in place. When negotiating, it is worth considering that roughly the same



amount will fund a conversion to the superior front brake set-up of the V8 RS6/RS4 models, a worthwhile upgrade.

Oil leaks

As with all V6 Audi engines, oil leaks from the cam covers drip directly onto the exhaust manifolds and cause burning smells and, in bad cases, smoke. Rectification is relatively straightforward, involving removal of the cam covers, and this offers the ideal opportunity to inspect the camshafts for evidence of possible wear.

Sensors

In common with many other VW Group vehicles, mass air flow sensors, which measure the amount of air entering the engine, need replacing at regular intervals. If ignored, lean running can occur which increases exhaust gas temperatures and can literally burn out the lambda sensors and the exhaust gas temperature sensors, both of which are located downstream in the exhaust system. There are four lambda sensors, two EGT sensors and one MAF sensor, each costing over £100 and, on some cars, replacement of most of them might be necessary. The problem is exacerbated by the vehicle's diagnostic system not being able to determine a faulty MAF sensor, so diagnosis

involves monitoring the sensor's behaviour on a road test using specialist diagnostic software. This isn't normally part of a service, so routine replacement of the MAF sensor every two to four years is recommended.

Cambelts

A camshaft drive belt change is due every 40,000 miles or four years, twice as frequently as on the S4 and, with a cost of around £700, it's worth taking into consideration. Other crucial components should be renewed along with the belt, in addition to those found in the cambelt kit: thermostat and water pump renewal are strongly recommended. Some specialists also renew the auxiliary belt and tensioner so checking exactly what is going to be replaced is important when comparing prices.

Valve timing

In common with most Audi engines of the time, the RS4 has variable valve timing operated by an oil pressure-driven hydraulic cam chain tensioner located in each cylinder head. These can seize, a symptom of which will be a rattle from the cylinder head when warm. The part alone is over £300 and fitting is a similar amount. If ignored, there have been reports of serious damage on other Audi engines.

'A camshaft drive belt change is due every 40,000 miles or four years...'

Engine modification

As with any forced induction car, the RS4 can receive a significant boost to its already generous performance courtesy of an ECU remap.

Most tuners offer a Stage 1 remap which sees the stock 380 PS swell to 420 PS, a relatively modest increase considering that a 130 PS A3 TDI can also gain 40 PS by remapping. This no doubt reflects the already high state of tune of the RS4 engine when it leaves the factory.

Stage 2 sees the addition of a free-flow exhaust system which gives a further 10 PS. Stage 3 provides free-flow racing catalysts and can yield around 450 PS. It doesn't end there, however, and some tuners offer 600 PS conversions which have allowed the RS4 to break the magic 200 mph barrier.

'The RS4 can receive a significant boost to its already generous performance courtesy of an ECU remap...'

Values

Considering that most RS4s are roughly the same age and have covered on average around 90,000 miles, there is a huge difference in values. The cheapest RS4 on the *Autotrader* website at the time of writing was £12,990. It had covered 87,000 miles and was finished in Goodwood Green, which some consider the least flattering colour.

The most expensive, at £19,990, was in very desirable Misano Red and had covered a modest 60,000 miles. It also had the Navigation Plus system with TV tuner, a £3,000 option when new and the only factory option which has much of an effect on values, even though a £99 Tom Tom runs rings around its navigational ability.

The cheapest RS4 that I have seen recently was a Nogaro Blue example, with 120,000 miles recorded, which sold for £11,000. This may or may not have been good value depending on how much work it needed. Prices haven't yet dipped below the £10,000 mark and have actually increased during 2009.

Preference for a standard or modified example is down to personal taste though it is becoming increasingly difficult to find one

which hasn't been remapped. Maintaining an RS4 correctly is an expensive business and one should be wary of examples which have received performance enhancements, yet are less than perfect in other areas.

£15,000 should be sufficient to secure a good one, though condition does vary significantly from one to another; you might find yourself paying a premium for a low-mileage example, only to find that it needs a lot of the work which has already been carried out on a cheaper, higher mileage car. As a result, an inspection by a specialist is virtually essential and will prove to be money well spent.

Compared to the fragility of certain exotic Italian exotica with similar performance, the RS4 seems to have been made twice as well for half the price. Even a Porsche 911 of similar vintage can't hold a candle to the RS4's durability. The downside, however, of this inherent Audi usability and the practical estate car body is that most RS4s have been well used. But even with a mileage nudging six figures, a well-maintained RS4 can still be a pleasure to own, with depreciation as gentle as its acceleration is brutal.



Drivebyshooters

'But even with a mileage nudging six figures, a well-maintained RS4 can still be a pleasure to own, with depreciation as gentle as its acceleration is brutal'

