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ULTIMATE GUIDE

ESCORT & FIESTA RS TURBO



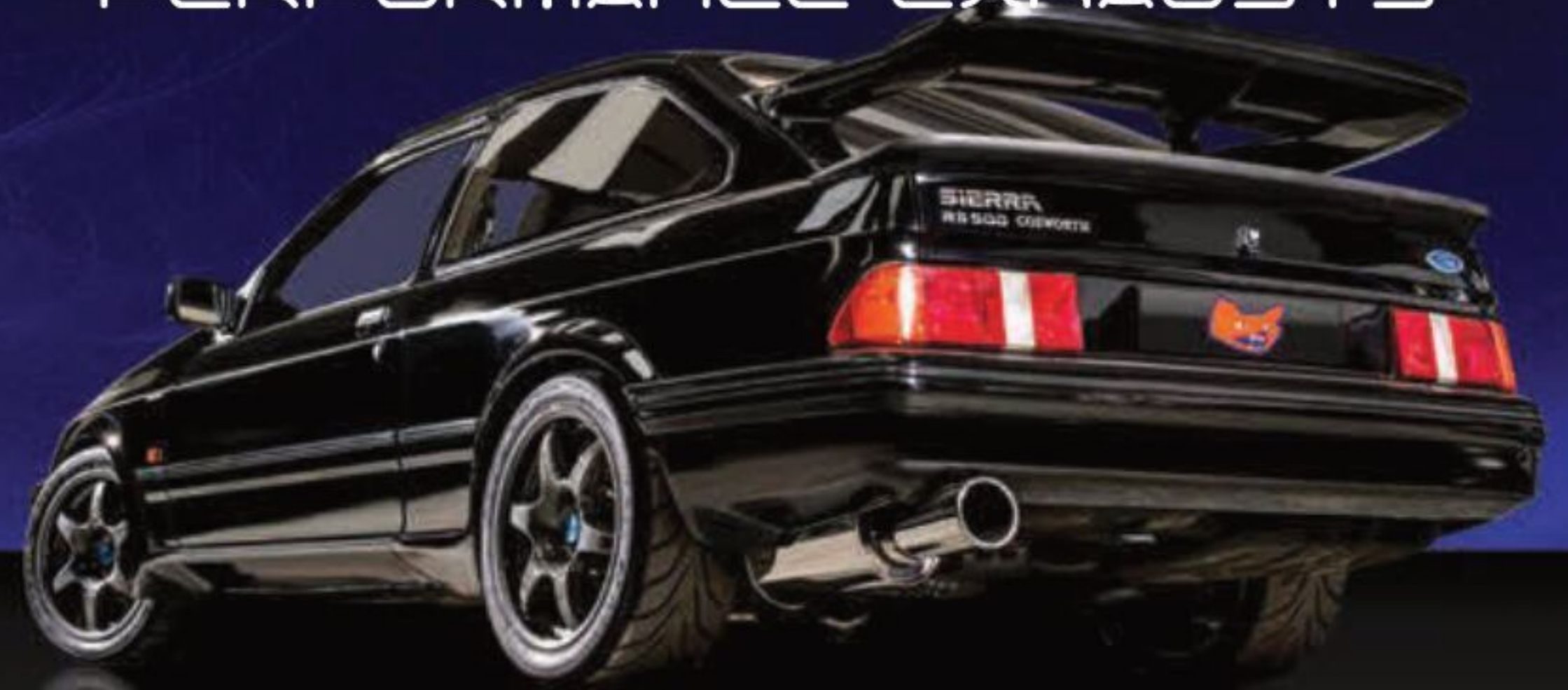
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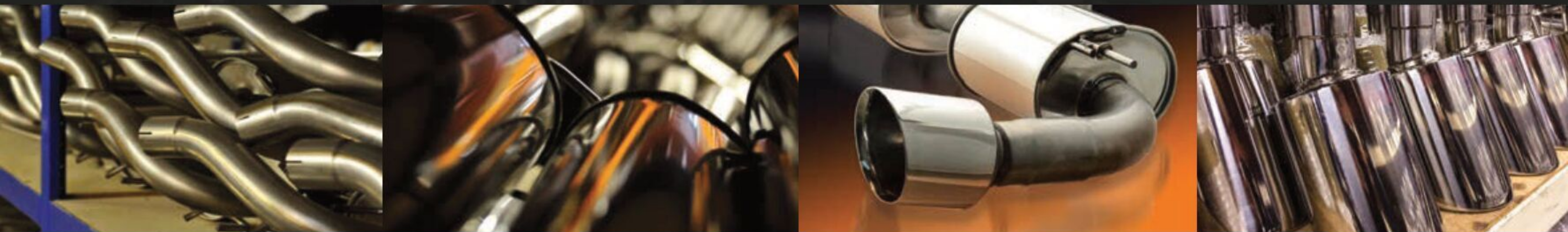
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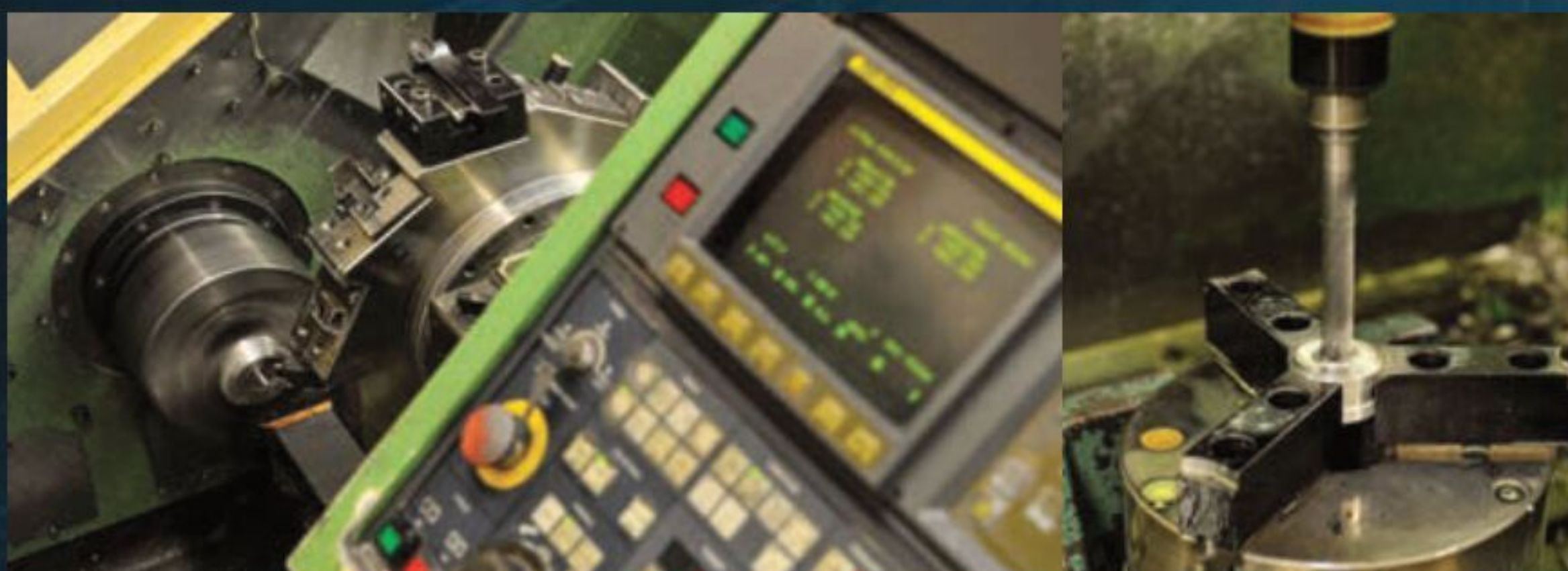
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ESCORT & FIESTA RS TURBO

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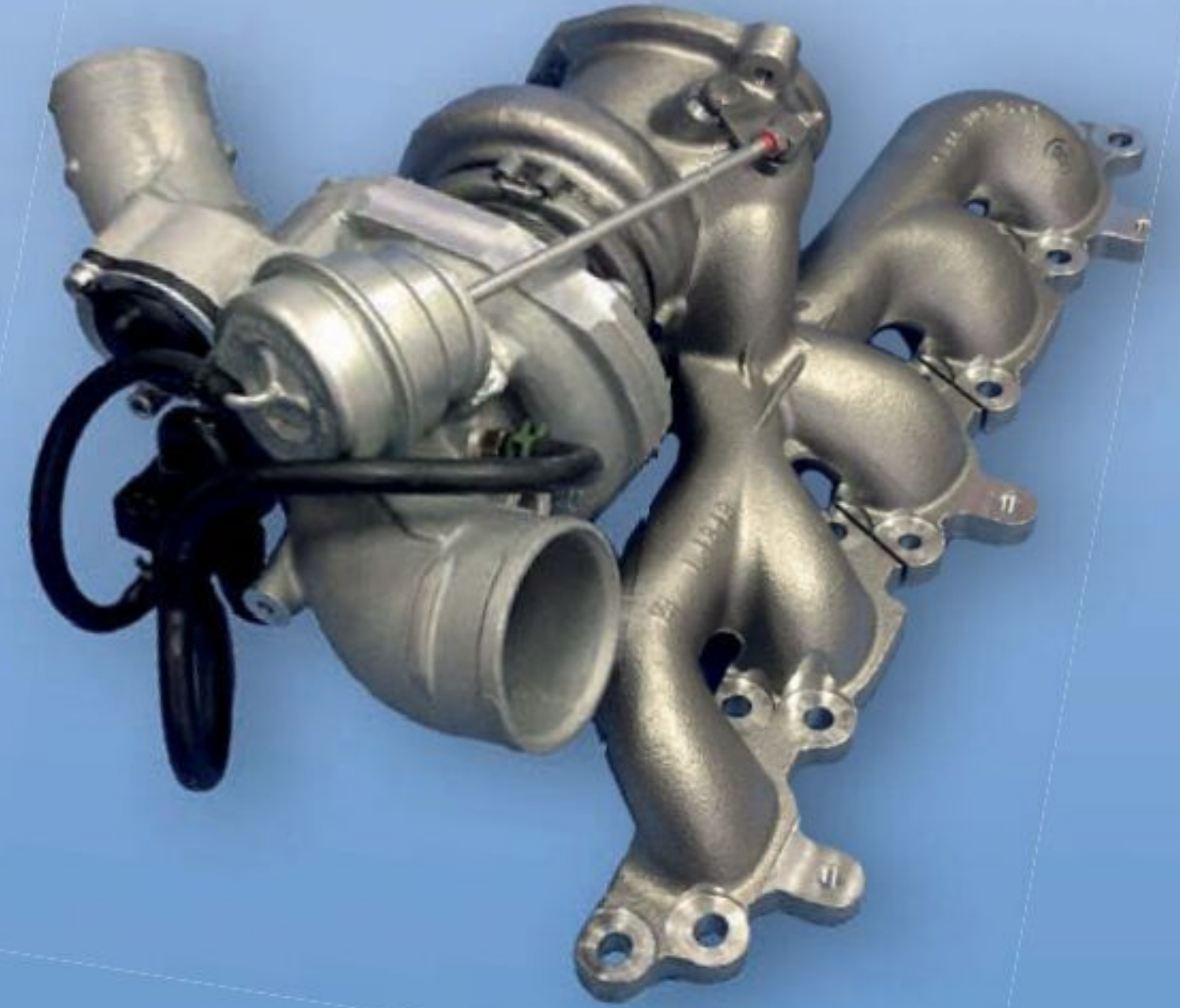


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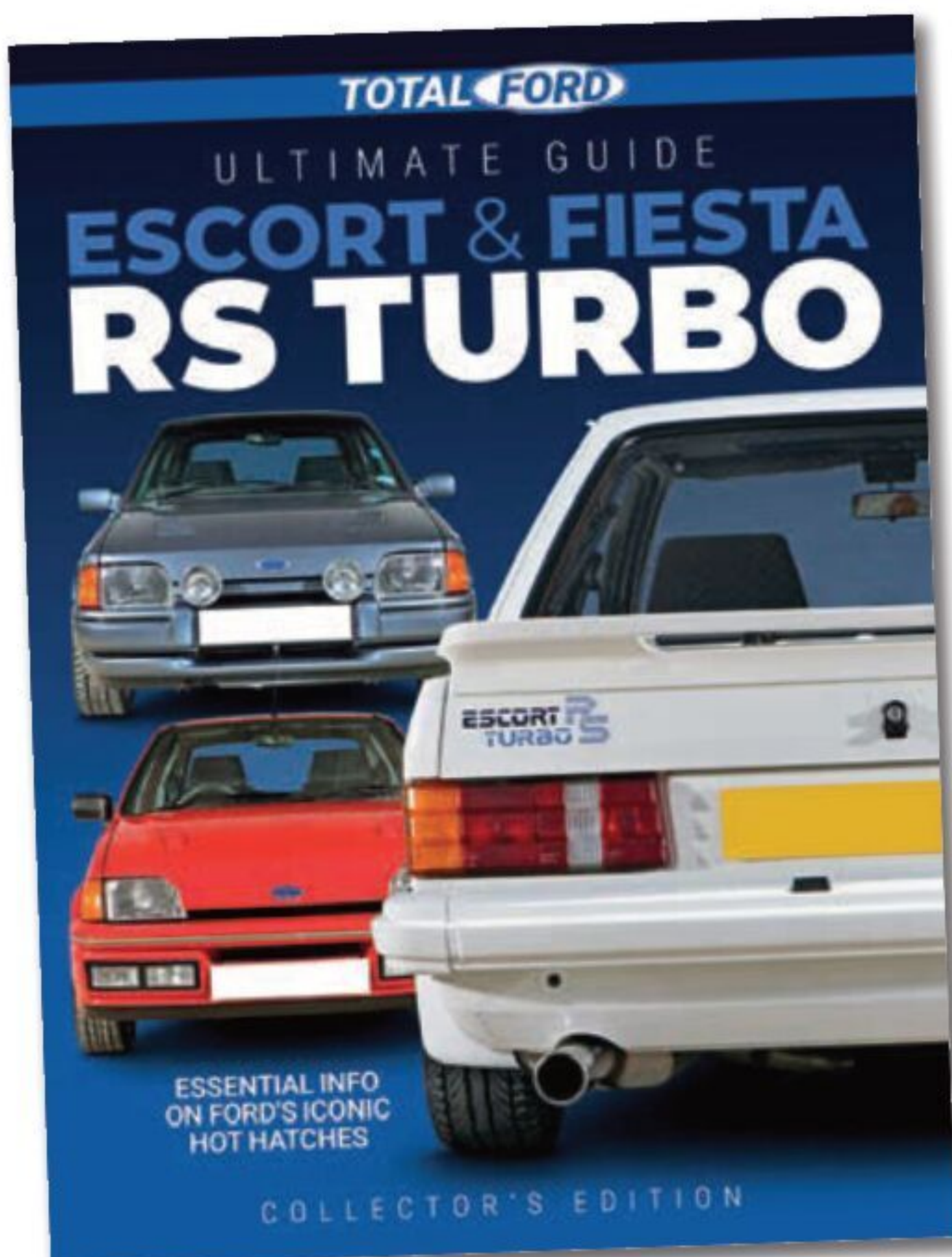
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WELCOME



WELCOME

Show me a fast Ford fan that doesn't love an RS Turbo.

Some cars are so intrinsically woven into the fabric of a culture, that culture simply wouldn't exist without it. The RS Turbo is one of those cars.

It was the icon for an entire generation of modifiers back in the Nineties and early 2000s; the original king of cruise; a tuner's dream – or nightmare when it all went wrong and needed yet another rebuild!

Times have moved on, but the appeal of a fast Ford bearing the words 'RS' and 'Turbo' is still as strong as it ever was. And while some of the more lairy mods associated with RS Turbos during those early days are, thankfully, now a thing of the past, today's tuning scene is arguably better than ever.

Of course, as the cars' values continue to rise and attract the classic collectors, the modifying scene today sits hand-in-hand alongside an excellent RS Turbo restoration culture – and frequently the two blend to create resto-modded examples that look the part but have been subtly updated to meet our 21st century demands.

And it doesn't matter if you hankered after that dream car in all the advertising brochures back in the Eighties, misspent a youth tearing up tyres in a tuned RST, or idolised your mate's big brother who owned one when you were a kid, nearly every fast Ford fan today has been influenced in some way by an RS Turbo.

Over the next 100 pages we look back at how and why the RS Turbo models came to be and what that meant in terms of specification and performance figures, coupled with contemporary buying and tuning tips and our pick of health checks to keep your RS Turbo in top condition.

As a motorsport homologation special, we also look back at the RS Turbo's time on both the world's rally stages and the circuits of the British Touring Car Championship too.

And conveniently linking the story together, we've got fantastic feature cars that showcase the diverse approach taken by today's owners.

It really is the Ultimate Guide to all things RS Turbo, and an issue I'm sure all fast Ford fans will enjoy and be able to relate to.

Enjoy the issue!

JAMIE KING EDITOR

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THE STORY OF THE RS TURBO

What started as a motorsport homologation special quickly evolved into one of the most desirable fast-road cars of an entire decade

Words **DAN WILLIAMSON** / Photos **FAST FORD ARCHIVES**

The rear-wheel-drive Ford Escort was dead. Old-fashioned engineering was ousted, and in came efficiency, practicality, and new technology. Early 1980s' Britain was gagging for a hot hatch with a Ford badge, so in came the XR3 for fast Blue Oval fans to hold their heads high, proud that a new Escort could keep up with the Germans.

Only, in all honesty, it wasn't quite keeping up. True, the XR3 of autumn 1980 was pretty

fast, and contemporary road tests compared it favourably with the outgoing Mk2 RS2000, but its gearbox lacked the fifth gear its rival boasted, and a 96bhp 1596cc CVH was still fed through an old-fashioned Weber carburettor instead of modern fuel injection.

Something had to be done. And that something wasn't just an improved XR3 – it was, rather bizarrely, a pair of cars designed by different teams for different purposes.

On home turf, Ford's SVE (Special Vehicle

Engineering) department in Dunton developed mainstream improvements to the suspension, steering, interior, rear brakes and fuel system – now adopting Bosch K-Jetronic injection – to give us the 104bhp XR3i.

COMPETITIVE BEGINNINGS

Meanwhile, over in Germany, Ford Motorsport was already working on a homologation version for Group A rallying and circuit racing, which required a minimum of 5000 examples to be



RS1600i was direct predecessor to the RS Turbo



built. It would also introduce the Rallye Sport brand to the new Mk3 Escort model and spawn a generation of competition-inspired Fords.

Starting with a carburettor-fed XR3, the regular 1.6-litre CVH engine was reworked, with ported cylinder head, raised compression ratio (9.9:1 instead of 9.5:1), high-lift camshaft, solid lifters (allowing the engine to reach higher revs than the XR3's hydraulic tappets), finned cam cover, four-branch exhaust manifold and Bosch K-Jetronic mechanical fuel injection – the first on any production Escort. There was also a funky AFT distributorless ignition with twin coils and electronic rev limiter, allowing for 113bhp at 6000rpm, and a respectable 160bhp in race tune.

Still, even a stock RS1600i was quick, hitting 60mph in 8.7 seconds and 118mph flat out.

XR3s were by this point equipped with a B5 five-speed, but the RS1600i used an 0.88 fifth instead of the regular 0.76. More importantly, the RS's suspension really set it apart from lesser Escorts, featuring the XR3's springs and 26mm front anti-roll bar, plus oil-filled Koni dampers with 1in lowered front spring platforms, an alloy crossmember and links from the track control arms to the body mountings.

The only letdown was the braking system, with tiny XR3-type 239mm ventilated discs up front and awful 180mm drums at the back; it was made worse when converting the RS1600i to

right-hand drive, using a floppy linkage to join the pedal box to the left-hand servo – resulting in a decidedly vague action.

LOOKING THE PART

Launched at the October 1982 British motor show alongside the XR3i, many folk (SVE included) reckoned the RS was an inferior product. But that hardly mattered, because the RS1600i looked magnificent.

No one could miss those seven-spoke 6x15in RS alloy wheels wrapped in Dunlop 195/50x15 rubber – massive by 1982 standards – or the distinctive decals applied to the bonnet and both sides. Its hard-as-nails appearance also →

“LIKE ITS PREDECESSOR – AND LIKE ALL THE GREATEST FAST FORD LEGENDS – THE ORIGINAL ESCORT RS TURBO HAD ONE TRUE PURPOSE: TO WIN. AND, JUST LIKE THE RS1600I, IT WAS BUILT FOR GROUP A”



binned the XR spoilers and spats in favour of a bigger rear wing and deeper front airdam. UK models gained a set of round driving lamps and front fogs.

Adding to the RS1600i's appeal was the cockpit, where a pair of grey Scheel seats and RS-badged rear bench were joined by a four-spoke RS steering wheel. Just perfect.

Unlike the XR, all RS1600is were built at Saarlouis in Germany. And by May 1983 they were ready for a few changes. Along with the regular 1983 Mk3 Escort bodyshell alterations, the RS received a bigger fuel tank (48-litre rather than 40), revised suspension fixing points, new top mounts (a rubber disc and one central nut instead of the earlier two bolts into the tower), and smooth velour upholstery.

RS1600i production stopped in July 1983, after 8659 had left the lines. Its success as a motorsport machine was limited to class honours but its prominence as a hot hatch was destined to live on.

ADDED BOOST

Like its predecessor – and like all the greatest fast Ford legends – the original Escort RS Turbo had one true purpose: to win. And, just like the RS1600i, it was built for Group A motorsport, with 5000 road-going versions required.

As always, that meant Blue Oval buyers were in for a real treat: a factory-built Escort with bundles of trick kit. Enter Ford's first turbocharged European production car, and the world's first front-wheel-drive to use a viscous-coupling limited-slip differential.

By 1983, Ford's Escort Turbo Rally Championship (in which Turbo Technics 125bhp T3 turbo kits were fitted to carb-fed XR3s) was showing promise, so SVE started work on a road car with the basic ingredients needed for motorsport. The brief was pretty simple: a turbo specced for power rather than usability, a chassis to cope with 200bhp, wheelarch extensions to cover 8.5in-wide rims wearing slick tyres, and an LSD to harness the torque.

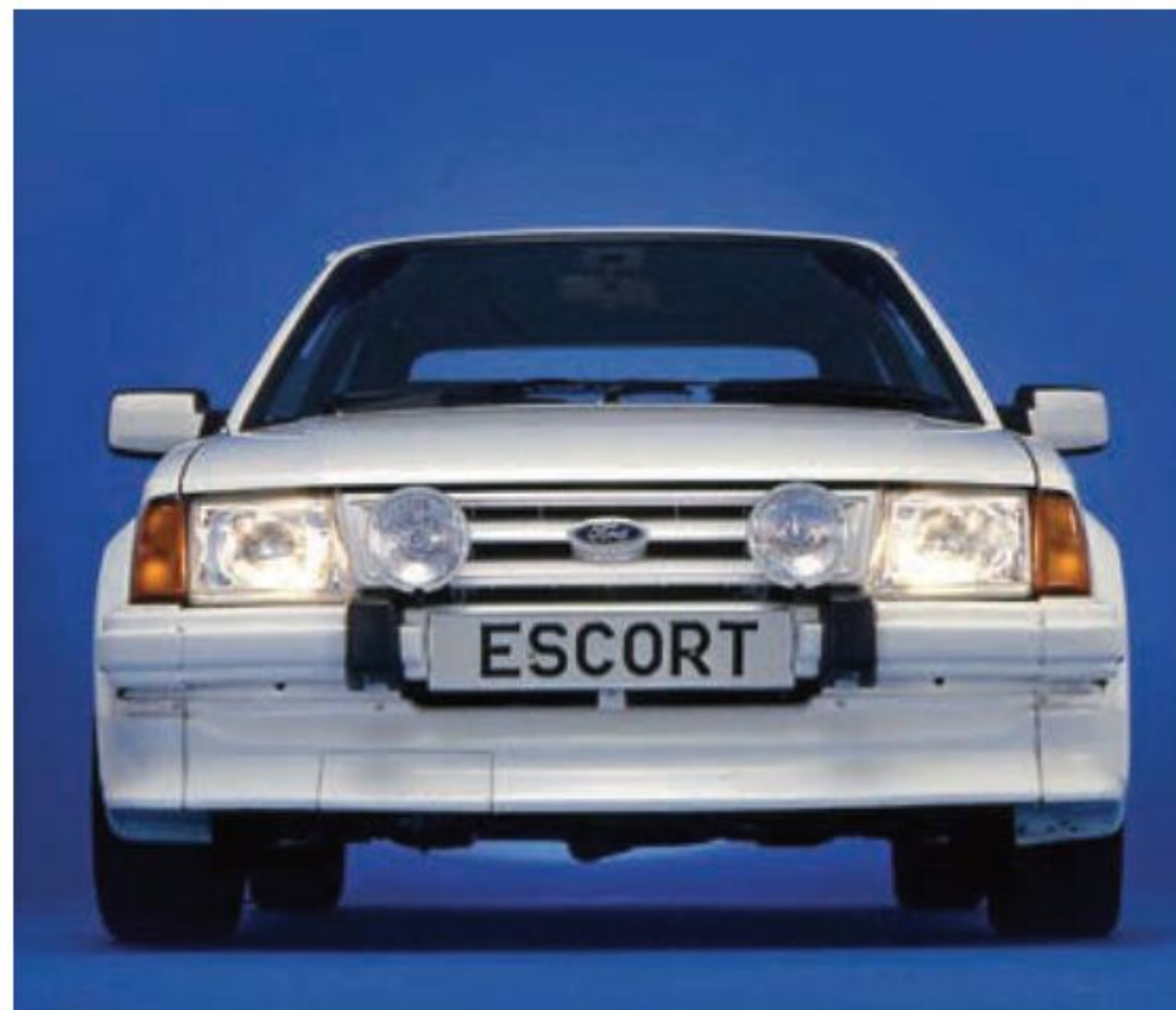
Using the omnipresent XR3i as a base, the RS Turbo's 1596cc CVH engine was reworked with uprated big end bearings, flat-topped pistons (dropping the compression ratio to 8.3:1) and a hybrid cylinder head, mixing the RS1600i's flowed inlet and exhaust ports with the XR3i's hydraulic tappets and cam, plus new sodium-cooled exhaust valves.

Its Bosch KE-Jetronic fuel injection was an efficient development of the previous system but still harked back to the Rally Championship setup. As did the choice of oversized Garrett T03 turbocharger (a T02 was deemed more suitable for a road car), which SVE reckoned was capable of 260bhp.

In standard trim, using a specially cast manifold and big-bore exhaust, the RS Turbo produced 3.5 to 7.1psi boost, in turn kicking out



An RS Turbo in its intended environment – getting dirty



“THE RS TURBO WAS A TOTAL FLOP, BUT AT LEAST IT MADE ITS MARK IN MOTORSPORT – SOMETHING FUTURE FRONT-WHEEL-DRIVE RALLYE SPORT FORDS WOULD ONLY DREAM ABOUT...”

130bhp at 6000rpm. That meant 128mph top speed and 0-to-60mph in 8.1 seconds.

Acceleration was aided by a 4.27:1 final drive ratio inside a beefed-up XR3i transmission, which received bracing ribs, stronger bearings, bigger teeth and a heavy-duty clutch. Most importantly, it gained an FF Developments viscous-coupling differential, using silicone fluid friction rather than a mechanical LSD's clutch plates. Well-proven in Rally

Championship Escorts, it offered fantastic traction without steering wheel-snatching torque steer.

SVE also re-engineered the XR3i's chassis to combine softer-valved dampers, an Orion rear anti-roll bar and a more civilised version of the RS1600i front end, featuring separate anti-roll bar and tie bars. But the standard XR3i brakes were a disappointment, sorely lacking the AP callipers approved for Group A competition.



GREAT WHITE

Still, RS1600i-style 15in alloys (shod with Michelin 195/50x15s) were inarguably sexy, nestling within funky flared wheelarches and a bodykit picked from the parts bin: XR3i rear spoiler, Orion grille, Rallye Sport dealer-option side skirts and front spoiler with cooling ducts. In pukka 1980s' tradition, almost everything was colour-matched to the RS Turbo's mandatory Diamond White paint scheme. Blue decals and driving lamps completed the look.

The regular XR3i also donated its Monza velour-trimmed cabin, albeit boasting a pair of Recaro front seats. Fortunately, most buyers opted for a £470 Custom Pack, which included central locking, electric front windows and tilting/sliding glass sunroof.

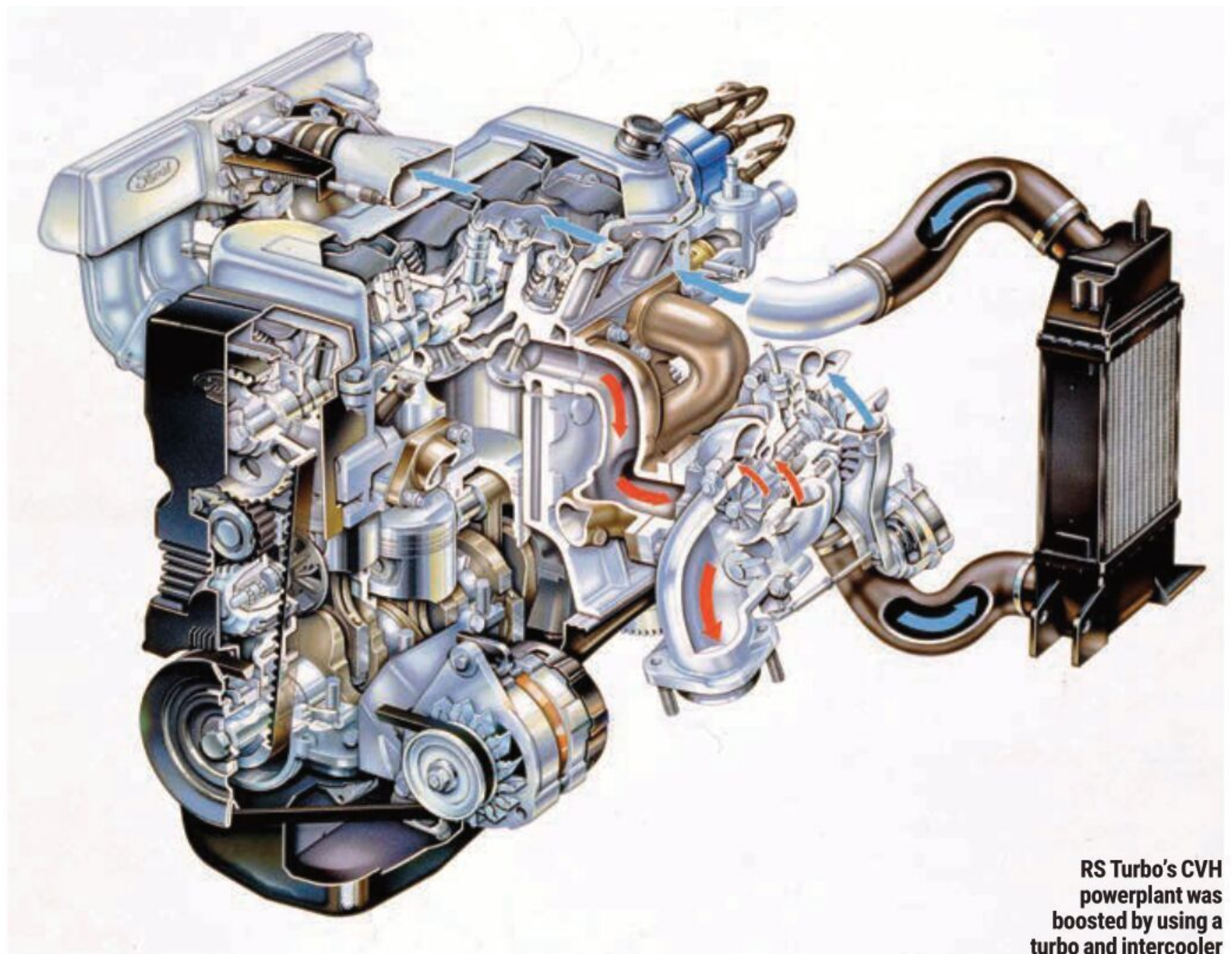
The RS Turbo made its debut at October 1984's Paris motor show, with Saarlouis assembly starting just two months later, in left- or right-hand drive. Production ended on 20 December 1985; after 8064 examples had been built; of those, 5576 were UK cars.

On track, the RS Turbo proved more successful than the RS1600i, scoring multiple BTCC class victories thanks to a whopping 270bhp in race trim and 300bhp when qualifying with the boost turned up.

But despite being designed for rallying, the RS Turbo was a total flop, cursed with poor handling and unreliability. Still, at least it made its mark in motorsport – something future front-wheel-drive Rallye Sport Fords would only dream about... →



S1 RS Turbo's comfy cockpit



RS Turbo's CVH powerplant was boosted by using a turbo and intercooler



Series Two was an RS Turbo for everyone



Rosso Red was one of several S2 colours

“ESSENTIALLY, SVE CREATED AN AMALGAMATION OF XR2I AND ESCORT RS TURBO, MEANWHILE USING CRITICISMS OF THE SPORTY FIESTA TO BUILD A DRIVER-FOCUSED HOT HATCH”

COME AGAIN?

When the Escort Mk3 was replaced by the smooth-nosed Mk4, Ford could have ditched the RS model altogether. The outgoing RS Turbo had fulfilled all needs for competition homologation, and there were no plans to take the facelifted Escort rallying.

What's more, the freshly-revised XR3i was proving immensely popular, boasting enough speed and standard kit to keep showrooms buzzing. But Ford still needed that halo-model hot hatch. And, besides, all the ingredients were on hand.

Starting, as always, with an XR base, SVE created an altogether more civilised machine than the Series One. The Series Two RS Turbo was now a fully-fledged road car rather than detuned track weapon, but it was no less potent than its predecessor.

Still pumping out 130bhp from a turbocharged 1.6-litre CVH, the Series Two's engine had been modernised in line with Ford's 1986 Lean Burn updates, including a reduced compression ratio (8.2:1), revised cylinder head, pistons and oil pump. The Bosch engine management system was refined, the intercooler and one-piece inlet manifold were improved for smoother running, and the Garrett T3 turbo gained a water-cooled centre bearing.

The B5 five-speed gearbox stayed too, now tamed with a toned-down limited-slip differential (the coupling plates were modified to give a softer action), a bigger clutch and a motorway-friendly 3.82:1 final drive ratio. Although the official performance figures (128mph and 0-to-60mph in 8.2 seconds) were similar to the Series One's, the Series Two felt considerably numbed.

Much of the reduced sensitivity was

attributed to the new suspension setup, which ditched the race-bred tie-bar front suspension in favour of regular XR3i-type kit plus an Orion 16mm rear anti-roll bar. On the plus side, the Series Two's braking system was a vast improvement, featuring Sierra XR4i 260mm front discs, 229mm rear drums and basic ABS.

BUILT FOR THE STREET

Better road manners were reflected in a comfy cabin, although the oh-so-important Recaro front seats were now on the RS Turbo's options list. Instead, the Series Two's cockpit was the same as an XR3i unless an extra-cost Custom Pack was specified, which added electric windows, central locking and glass sunroof. A heated windscreen, electric mirrors, trip computer and upgraded sound system were available too.

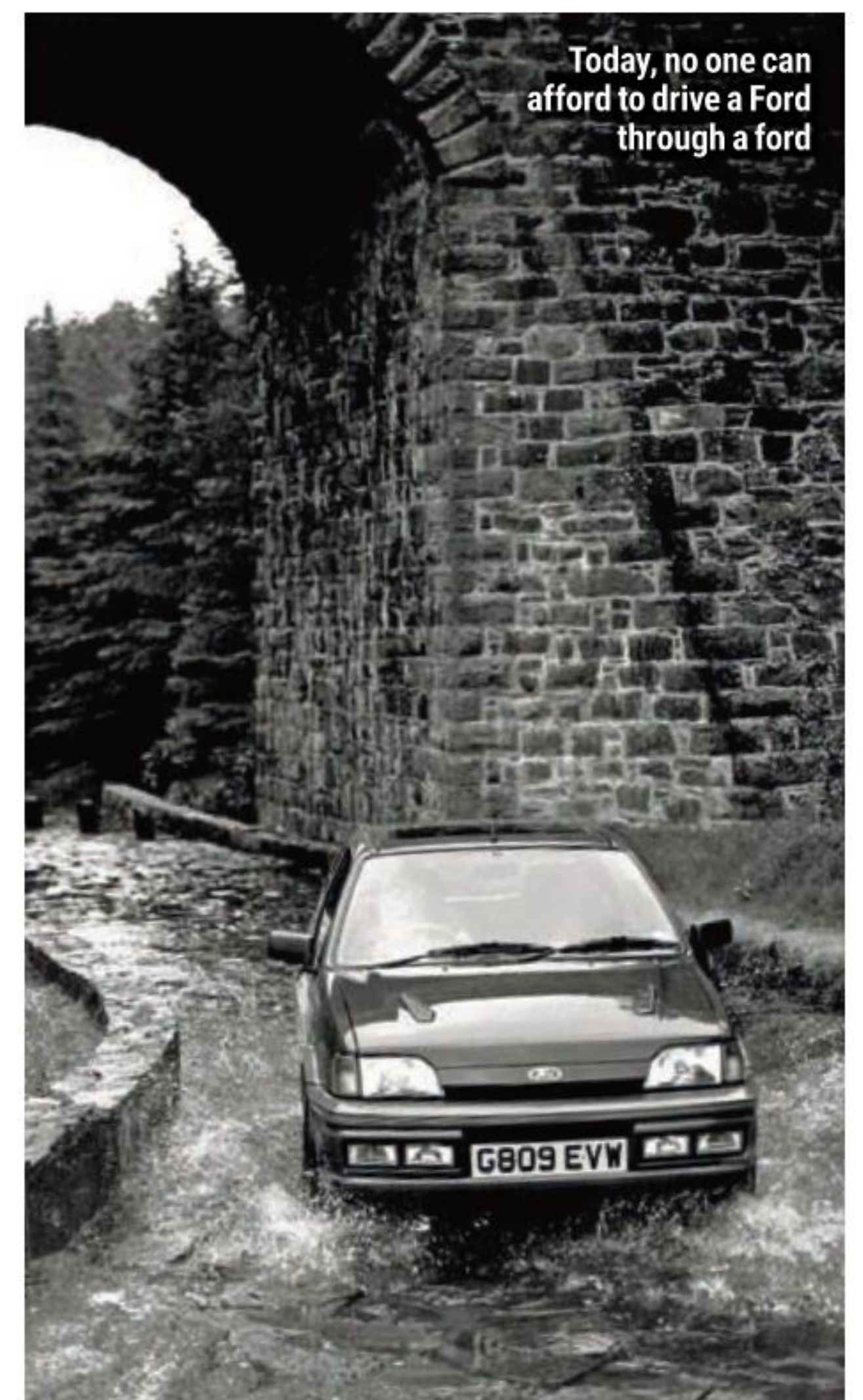
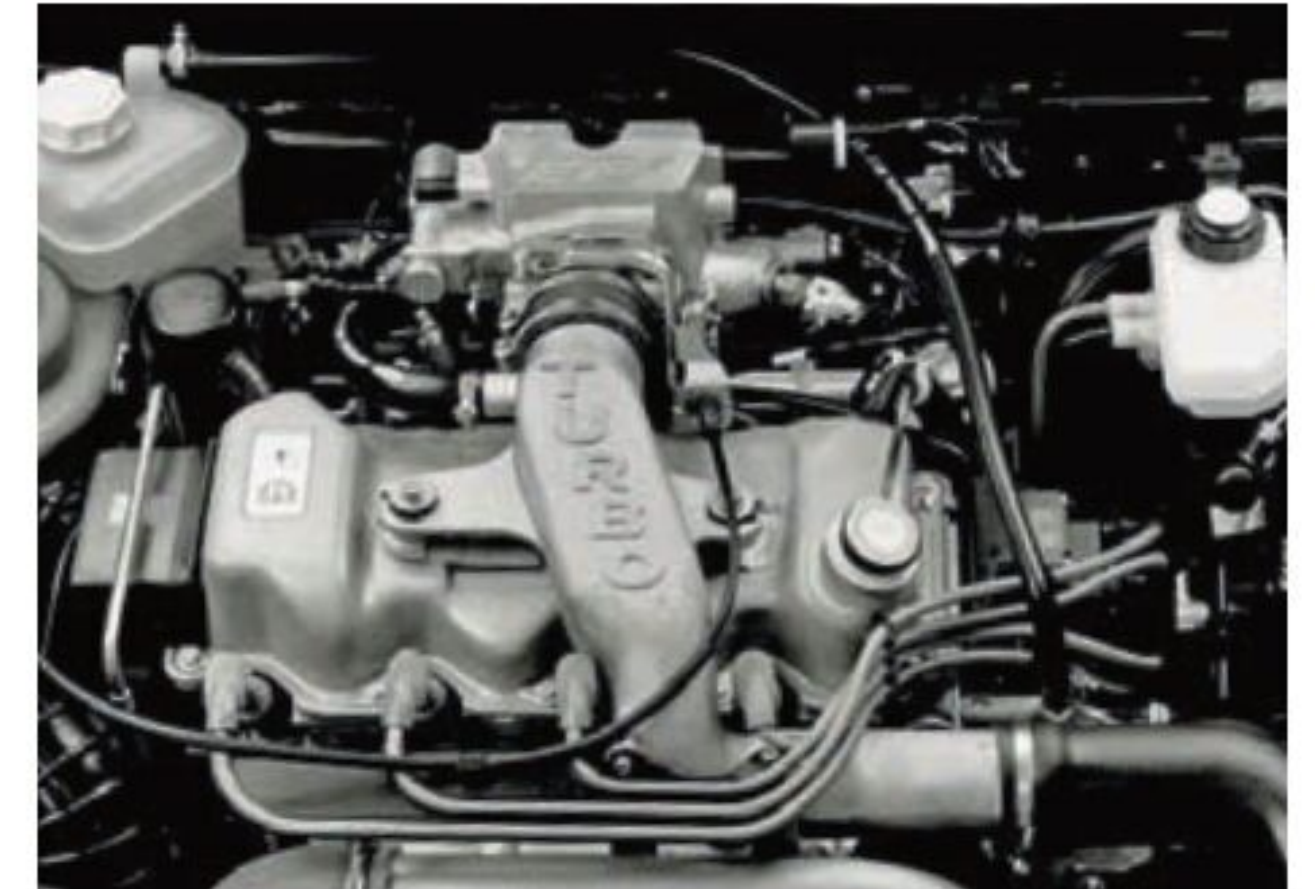
XR3i origins were also abundantly obvious from outside, where the RS came in matching colours (Diamond White, Rosso Red, Black or Nimbus Grey), boosted by slim wheelarch extensions, side skirts and Cosworth-style bonnet vents. Unlike the XR3i, the Turbo had a colour-coded rear spoiler and window surrounds (the cheaper car's were black) but it was tough for the casual bystander to tell the pair apart. Even the RS's 6x15in dog-leg alloys looked similar to the XR's 14in rims.

Yet no one really cared, because the RS was an instant hit, grabbing huge sales (22,108 in the UK alone) from its July 1986 launch until its demise in summer 1990.

In true Ford fashion, the Series Two improved along the way. A knock sensor for the ECU was added in April 1987, and in July the Custom Pack became standard – after which all RS Turbos wore Recaro front seats and sunroof.



Fiesta RS Turbo's standard stance had its nose up and ready for take-off



Today, no one can afford to drive a Ford through a ford





Better still, the September 1989 facelift brought a so-called '90-spec, complete with deeper front bumper, wrapped-over rear spoiler and Zolda cloth upholstery (introduced in '88).

By then, of course, it was a generation away from a homologation special – and in most respects a thoroughly better machine. So good, in fact, that Ford couldn't resist the urge for another final fling with the Fiesta.

DOWNSIZING THE RECIPE

Debate raged – even inside Ford – about whether the Series Two RS Turbo deserved its Rallye Sport tag, reckoning that only a motorsport-bred homologation machine was entitled to wear the badge. But strong sales, a UK market besotted by the brand, and a highly-effective turbocharged powerplant meant the RS Turbo simply had to live on.

So, in 1987 Ford began work on the Escort's successor, opting to transplant its mechanicals into a smaller package – the yet-to-be-launched Mk3 Fiesta. Again entrusted to SVE, the project was based on the 1.6S but soon swapped to the XR2i, which hit UK roads in 1989.

Essentially, SVE created an amalgamation

of XR2i and Escort RS Turbo, meanwhile using criticisms of the sporty Fiesta to build a driver-focused hot hatch.

Instead of the Escort's homologation-spec Garrett T03 turbocharger, SVE fitted a smaller T02, which was better suited to a 1.6-litre road car, increasing mid-range pull and reducing lag. It also helped to squeeze the powerplant beneath the Fiesta's bonnet. Similarly, the radiator and intercooler needed careful placement, resulting in a narrowed rad with hacked-away front bumper and grille to accept the electric fan.

The Series Two's 1596cc bottom end remained unchanged, with 8.2:1 compression pistons, but it was topped with the XR2i's cylinder head and camshaft, along with multiple alterations to pulleys, brackets, manifold, pumps and pipework. Major modernisation was applied to the fuelling and ignition, replacing the Escort's ancient Bosch system with the XR2i's EFI and remapped Ford EEC-IV management.

Power was 1bhp up on the Escort but the Fiesta was far more flexible and a fair bit quicker, pulling 129mph and scorching to 60mph in 7.9 seconds – the fastest front-wheel-drive Ford yet.

But it wasn't all good news, because budget cuts meant the Escort's LSD was binned in favour of a regular five-speed 'box. Instead, SVE reworked the XR2i's humdrum handling with a faster steering rack (3.75 rather than 4.2 turns lock to lock), new front suspension lower arms and ball joints, and uprated Armstrong dampers alongside the existing XR springs. The rear springs were 12mm lower and substantially stiffer, aided by a rear anti-roll bar.

XR2i discs and drums remained in place, and the Escort's standard-fit ABS was relegated to the options list. Worst of all, the brakes sat inside Ford's tackiest-ever alloy wheel design – 5.5x14in three-spokes with naff fake disc effect.

At least, though, the rims distinguished the RS Turbo from the XR2i, which otherwise looked remarkably similar. It had the same front bumper, wheelarch extensions, back bumper and tailgate spoiler (albeit colour-coded on the RS), but added bonnet vents (more for marketing than cooling), green bumper inserts rather than blue, and body-colour window surrounds instead of black.

The cabin was heavily XR2i-based too, but with Recaro front seats, 150mph speedo, Turbo-badged steering wheel and leather gearknob.

Unveiled in April 1990, the FRST was built in Valencia, Spain alongside mainstream Fiestas, receiving an RS badge in the UK alone (where 4183 were sold); overseas it was simply called the Fiesta Turbo.

But it wasn't to last. Ford pulled the plug in 1992, replacing the CVH-powered machine with the Zetec-engined RS1800. It was the end of a flame-spitting, tyre-shredding era. ■



The internet is awash with nonsense, that goes without saying. Perhaps the most nonsensical thing of all is when you see people replying to for-sale listings, ads or threads with the phrase ‘if only you were closer’. The idea that the perfect car might rule itself out of the running simply because it’s a few hours’ drive away is daft; it’s not beyond the wit of humankind to travel somewhere and then travel home again, particularly given that the car itself is a means of locomotion.

Neatly illustrating this point is Robert Hamilton. He wanted a tidy and honest Series One RS Turbo and, when he found this example

for sale on eBay in the early 2010s, he knew it was the one. The fact that it was an 800-mile round-trip away was something to be relished rather than baulked at. After all, driving hundreds of miles in your newly-acquired ride is a really good way to get to know it, isn’t it.

“The Series One is, in my opinion, the best-looking Ford,” says Robert. And with the evidence presenting itself before Ade’s lens today, it really is hard to argue.

Robert’s a man with a fair few fast Fords notched up in the back catalogue, having previously enjoyed a brace of Escort RS Cosworths (one big-turbo, one small), a Series Two RS Turbo and, most recently, a Mk1 Focus

RS, plus a couple of other S1 RSTs.

He knows what he likes, that’s for sure. They’ve all been modified to some degree, and while the stock-looking vibe of this S1 may fool the casual bystander into thinking they’re looking at some manner of concours attempt, these still waters run deep.

It’s telling that Robert’s also built and comprehensively thrashed a couple of dedicated track cars, in the form of a Nissan Sunny GTi-R and a Vauxhall Astra GTE 16v.

So with this richly textured context informing the back story, it shouldn’t come as any surprise that the Escort’s OEM skin hides a pumped-up heart of pure malice. →



CLOAK AND DAGENHAM

This stealthy RS Turbo contains hidden swells of flame-spitting power, with regular trips from Scotland down to Essex making it ever-angrier each time...

Words **DAN BEVIS** / Photos **ADE BRANNAN**





“The car had already been converted to EFi by Jano at Oddkidd Creations, which was a large part of the appeal. It was in excellent condition overall, and well worth the trip from Scotland down to Essex,” he recalls.

Suffice to say, Robert had plans from the off, and today we can mark the progress during his ownership with two clear evolutions.

SERIES ONE RS TURBO

ENGINE 1596cc CVH, Garrett T34 turbo with 0.48 A/R exhaust housing, Accralite forged pistons, Piper 285 T2 cam, EFi conversion, Cosworth P8 management, Cosworth light blue injectors, anti-lag, water/methanol injection, Mongoose stainless exhaust system, Bailey header tank, Bailey catch tank, Samco hoses, Airtec radiator, Airtec front-mounted intercooler

POWER 250bhp @ 21psi

TRANSMISSION S2 RS Turbo gearbox with Quaife internals and cryogenic treated gears, paddle clutch, Puma gear linkage

SUSPENSION Avo adjustable shocks, H&R springs, fully poly-bushed, rose-jointed adjustable wishbones, front strut brace

BRAKES Cosworth four-pot front callipers, custom grooved and drilled discs

WHEELS AND TYRES 7x16in diamond-cut RS seven-spokes, ET35 offset, 195/45x16 Toyos

EXTERIOR Factory RS Turbo, bare-shell rebuild

INTERIOR Original RS Turbo interior, 3D-printed pod with Stack boost and oil pressure gauges, Alpine speakers, two subwoofers in custom box

The first occurred around seven years ago, when the RS was stripped right down to a bare shell to have every single iota of corrosion ruthlessly eradicated, with the freshly reinvigorated body then built back up with an as-new and showroom-fresh vibe. Better than new, in fact, because Ford never gave us an engine bay this tidy.

The car has been a regular and trusted companion, getting used as frequently as possible, with Robert being a keen and committed member of the Scottish Old Skool car club. This is a group of like-minded enthusiasts who love using their cars as they were meant to be used; no cotton wool or trailer queens, this is all about hunting the redline on winding back-roads. And with this sort of eager usage, it was only a matter of time before our man would start seeking out a little more grunt from his boosted CVH.

It's at this point that we arrive at the second key phase of the Escort's evolution. Much as Robert was entirely unfazed by the 800-mile round-trip to collect the car, and very much of the mind that Jano at Oddkidd was the man to trust with further power mods (“I won't take it anywhere else,” he assures us), he's made the trip back down there more than a few times to amp up the power in the RS Turbo.

The spec today is highly impressive, with the addition of a hybrid Garrett T34 turbo with quick-spooling 0.48 A/R exhaust housing (from the smaller T3 unit) working with forged Accralite pistons, Piper cam, uprated fuelling, a whacking great Airtec front-mount and →





3D-printed gauge pod



Stock S1 Recaros are unbeatable



RS Accessories steering wheel is a subtle addition



Tanked up

“THE BIGGEST HURDLE HAS BEEN GETTING PARTS, AS WE ALL KNOW THAT THE RS TAX IS A KILLER, BUT IT WAS ALL WELL WORTH IT”



Meth addict



Braced for action

Mongoose exhaust system helping to literally boost the numbers.

In addition, the CVH is running Cosworth P8 management, water/meth injection and – Robert’s favourite part – anti-lag. Jano’s created a real monster here, and the upshot is 250bhp at 21psi, all thoroughly exploitable and, thanks to the ALS, spitting flames like an absolute mentalist. Forget your popcorn and fashionable crackle maps, this is rally-stage thunder of the most organic type; old-school muscle with an anti-social attitude.

With great power comes great responsibility, and with the best will in the world it’s probably not a brilliant idea to nigh-on double a car’s power output and not do anything to improve the chassis. With this in mind, Robert’s

thoroughly upgraded the suspension and braking systems.

“I removed the tired old Koni suspension, bushes, brake and fuel lines, as well as all wishbones, and replaced and repainted everything,” he says.

“When building it back up, I fitted bigger Cosworth brakes, upgraded the clutch, and custom-made new gearbox mounts to fit the S2 ‘box. The biggest hurdle has been getting parts, as we all know that the RS tax is a killer, but it was all well worth it.”

What Robert’s created here, thanks to endless levels of elbow grease, along with the expertise of an engine-building superhero, is a proper fast-road weapon wrapped up in the form of an appreciating classic.

That’s probably the most impressive thing about this car: that it looks so close to factory S1 spec from the outside, and yet it’s harbouring such malevolent potential within.

And not only is this Escort a hard-driven back-road hooligan, it’s proven time and time again that it’s got the legs to act just like it did back in the Eighties.

Eight-hundred miles at 21psi? Easy-peasy. There’s no such thing as ‘too far away’. ■

THANKS “Big thanks to Jano at Oddkidd Creations”



Diamond-cut seven spokes: the ultimate S1 rim

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THE KNOWLEDGE

SERIES ONE ESCORT RS TURBO

The S1 has an important place in Ford's hot-hatch history. Read on to find out why

Words **DAN WILLIAMSON** / Photos **AS DESIGN**

The Escort RS Turbo. Ford's first turbocharged European production car, the world's first FWD road car to use a viscous-coupling LSD and the first Ford to bear the now-legendary RS Turbo tag.

Like all the greatest Blue Oval-badged machines, the S1 Escort RS Turbo was built to take motorsport victories. Following the mildly successful 1983-84 Escort Turbo Rally Championship – in which dealer-supplied

125bhp T3 turbo kits were fitted to carburettor-fed 1.6 CVH Escort XR3s – Ford's Special Vehicle Engineering (SVE) began work on the road-going RS Turbo during April 1983.

The idea was to produce a homologation special (5000 examples had to be built) for rallying, designed around Group A regulations. Ford Motorsport's requirements were therefore pretty straightforward: suspension to handle 200bhp, wheelarch extensions to house 8.5in-wide wheels, a turbo specced for power rather

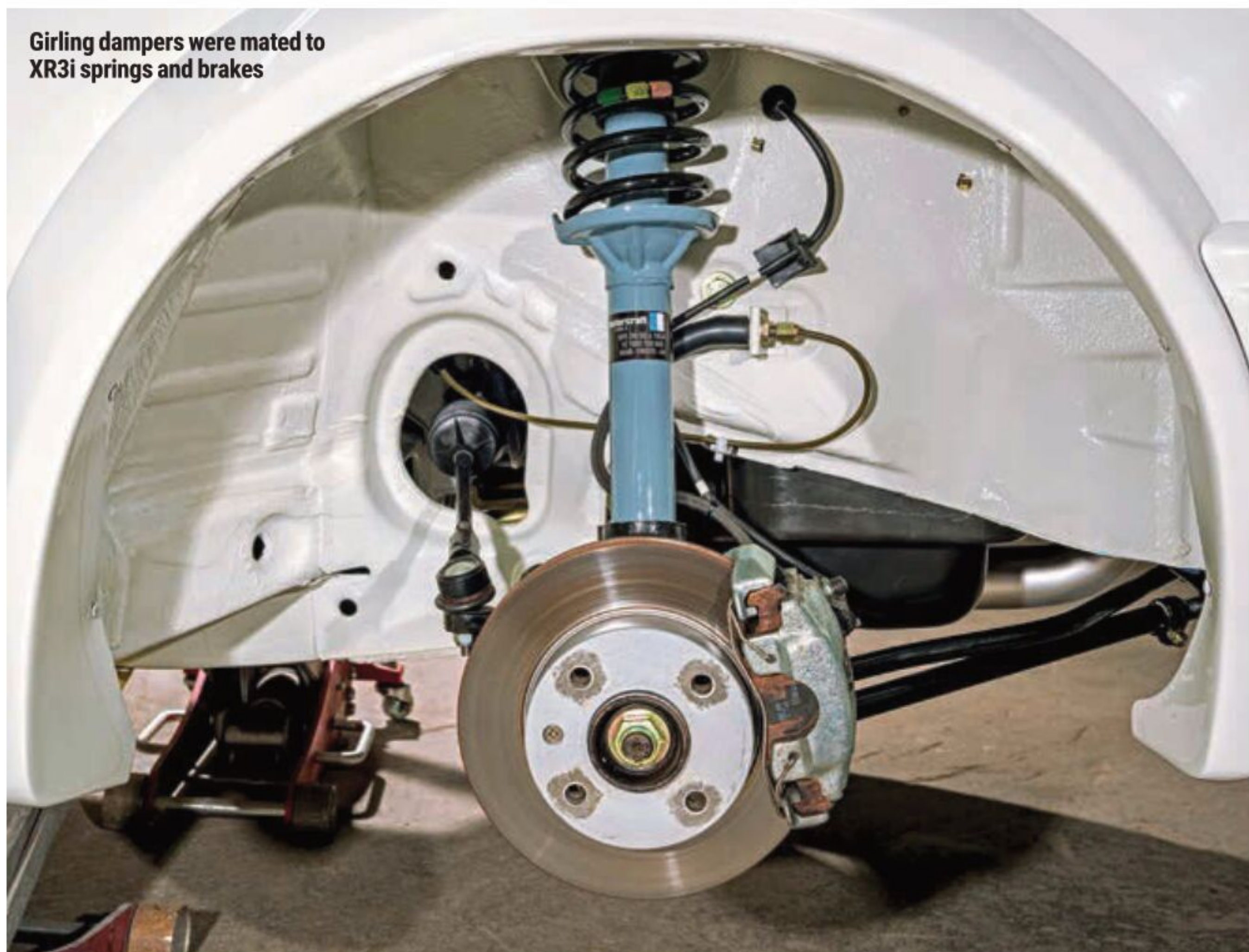
than usability, an intercooler, and a limited-slip differential to harness the torque.

Ford opted for a new viscous-coupling diff, invented by FF Developments using silicone fluid friction rather than a normal mechanical LSD's clutch plates. The unit's effectiveness had been proven in 250bhp rallycross Fiestas and later Rally Championship Escorts, providing excellent traction without the steering wheel-snatching expected of a powerful front-driver.

The diff was housed within an XR3i transmission, reworked to cope with more than the standard item's 150bhp limit. The gearbox received bracing ribs on its casing, stronger bearings, bigger teeth, a heavy-duty clutch and 4.27:1 final drive ratio for Group A eligibility.

Beefing up the transmission was essential for the stresses of forced induction, but the stock CVH bottom end was relatively strong. SVE moderately reworked the regular XR3i's 1596cc powerplant using enlarged gudgeon pins, uprated big end bearing shells and flat-topped pistons to drop the compression ratio from 9.5:1 to 8.3:1. The cylinder head was a cross between RS1600i and XR3i, using the former's flowed inlet and exhaust ports alongside the XR's hydraulic tappets and cam. The RS Turbo also added sodium-cooled exhaust valves, and an Escort 1.3 cam sprocket was used to retard the ignition timing.

The RS Turbo gained a more advanced fuel injection setup than previous models, using Bosch KE-Jetronic for increased efficiency. Meanwhile, Bosch-Motorola engine →



Girling dampers were mated to XR3i springs and brakes



RS1600i-type layout with tie bars and anti-roll bar

“MOTORSPORT DEMANDED A BIGGER TURBO THAN ENGINEERS DEEMED SUITABLE FOR ROAD USE (A GARRETT T03 RATHER THAN IDEAL T02)”

CUSTOM PACK

Two versions of the S1 RST were offered for sale to the public – the standard model (retrospectively referred to as the non-Custom, although never officially receiving that name) costing £9250, and the Custom Pack for an additional £470.

For anyone splashing that kind of cash on a car in 1984, it made sense to spend the extra money and receive the Custom's central door locking, electric front windows and tilting/sliding glass sunroof. All S1s benefited from tinted glass and opening rear quarters.

Of the 8064 built, only a small – but unfortunately unrecorded – number of RSTs weren't equipped with the Custom Pack. Naturally, a number of these cars were used in competition – the RS Turbo bodysell was basically an XR3i item, and no motorsport-specific model was produced.

Non-Custom production figures in the hundreds are suggested, and a fair few remain. It's much debated, but today's non-Custom prices tend to be identical to those of Customs.



Just 130bhp standard, but 200bhp was easily achievable

management could balance timing with fuelling and turbocharger requirements. It was a considerable step forward, but the overall design was still very much based on the aftermarket Turbo Technics setup of Rally Championship machines.

Motorsport demanded a bigger turbo than engineers deemed suitable for a road car (a Garrett T03 rather than the ideal T02). But despite SVE finding 260bhp potential in the engine, the production RS Turbo was remarkably flexible, running 3.5 to 7.1psi boost. The T03 was bolted onto the head with a specially cast manifold, itself linked to a bigger-bore exhaust system. A small intercooler was inserted beside the radiator to reduce intake temperatures.

Standard RS Turbo power output was rated at 130bhp – modest by today's standards but impressive for a small hatchback almost 40 years ago; likewise the claimed performance figures of 128mph maximum and 0-to-60mph in 8.1 seconds. Even so, Ford knew all along that more boost and accompanying power was a mere remap away – a major reason why the RST captured the public's imagination.

SVE's ever-increasing FWD Escort experience led to the RS Turbo receiving the best suspension of any Mk3. It benefited from the ongoing

ANY COLOUR YOU LIKE...

Following the traditional Henry Ford slogan of 'any colour you like as long as it's black', the S1 was offered only in Diamond White with blue stripes and RS logos. But that's not to say other colours weren't available for special order.

A total of three black S1 RS Turbos left the factory, the most famous of which was photographed being driven by Princess Diana. It was owned by Ford and loaned for Royal duty, featuring a normal Escort five-bar grille – presumably to aid inconspicuousness.

Two other black cars were confirmed genuine by Geoff Fox of Ford SVE, who was in charge of non-standard special orders for VIPs.

Several others hit the streets in non-white shades, but were repainted from white before registration. These include red Datapost RSTs, a blue (long-dead) star of TV show CATS Eyes and a Mercury Grey machine. How many were built? Nobody really knows...

improvements to the XR3i's chassis, plus softer-valved dampers, an Orion rear anti-roll bar and a more civilised version of the RS1600i front end, including separate anti-roll bar and tie bars.

The Turbo's brakes were its only real letdown, much to Ford engineers' annoyance. Adequate at best, its 240mm XR3i vented front discs and rear drums were no match for the Group A-spec APs



An XR3i three-spoke steering wheel was standard; this four-spoke an RS accessory



Twiddly joystick was for speaker balance



Recaro front seats and stock XR3i rear bench

COMPETITION HISTORY

Although it was developed primarily for rallying, the RS Turbo proved itself more effective on circuits than the loose stuff.

Mark Lovell's factory-backed Group A rallying RS Turbo never produced the results – reckoned to be unreliable and poor-handling. The best it managed was fourth overall in Ireland before it was running full power or even homologated, which didn't happen until June 1985.

On the flip side, the RS Turbo proved extremely successful on circuits – especially in touring car racing, where the Datapost monsters produced 270bhp in race trim, and 300bhp when qualifying. They scored multiple British Touring Car Championship class victories and came second in the 1985 season – despite missing the first five events thanks to late homologation.





Without doubt, the white-lightning RS Turbo was one of the 1980s' most iconic Ford shapes

“FORD KNEW ALL ALONG THAT MORE BOOST AND ACCOMPANYING POWER WAS A MERE REMAP AWAY – A MAJOR REASON WHY THE RS TURBO CAPTURED THE PUBLIC’S IMAGINATION”

offered in the Ford Motorsport catalogue.

No one could argue with the choice of chunky RS1600i-inspired seven-spoke, 15in alloy wheels, fitted to make use of the most common competition tyres. Road cars were shod in Michelin MXV 195/50x15s, which gave greater stability than rival rubber.

Covering the wider rims were wheelarch extensions, designed to allow track RS Turbos to take 10in-wide tyres. The flares were mated to a bodykit picked from the parts bin as a half-marketing, half-aerodynamic exercise. It comprised front spoiler with cooling ducts and side skirts from the RS (dealer-fit option) range, plus XR3i rear spoiler and three-bar Orion grille. In true 1980s' fashion, almost everything was colour-coded in the RS Turbo's mandatory Diamond White paint scheme. Blue decals and driving lamps completed the look.

Inside, the cockpit was sedate, offering little beyond an XR3i interior. The sporty three-

spoke steering wheel and Monza velour trim remained, with only the addition of Recaro front seats to set the models apart. No wonder so many customers opted for the £470 Custom Pack.

Development of the RS Turbo took little more than a year, the road car debuting at the Paris motor show in October 1984. Production began two months later in Saarlouis, Germany, with a few examples on sale in the UK before the end of the year. They were priced at £9250 (at a time when the XR3i was £7035) and available only through official Rallye Sport dealers.

Manufacturing of right- and left-hand-drive RS Turbos ceased in December 1985, after 8064 examples had been built. In total, 5576 made it to British shores.

The S1 was superseded by the S2 RS Turbo, a sanitised and in many respects superior car. But the mainstream S2 lacked a good deal of its predecessor's charm, instantly affirming the S1's status as a classic fast Ford. ■

SERIES ONE RS TURBO

ENGINE Turbocharged 1596cc, four-cylinder, eight-valve, overhead cam CVH with new pistons giving 8.3:1 compression ratio, tapered rings, enlarged gudgeon pins, copper-lead big-end bearing shells, sodium-filled exhaust valves, revised inlet and exhaust ports, hydraulic lifters, Garrett T03 turbo, intercooler, Bosch KE-Jetronic fuel injection, Bosch-Motorola engine management, 3.5 to 7.1psi boost, cast four-branch exhaust manifold and large-bore exhaust system

TRANSMISSION FWD, uprated XR3i five-speed manual gearbox with 4.27:1 final drive ratio, uprated 218mm clutch and Ferguson viscous coupling limited-slip differential. Gear ratios: 3.15:1 first, 1.91:1 second, 1.27:1 third, 0.95:1 fourth, 0.76:1 fifth

SUSPENSION Front: MacPherson strut suspension with Girling dampers, XR3i coil springs, RS1600i-style tie bar layout with cast iron mountings and anti-roll bar; rear: independent suspension with transverse trailing arms, XR3i coil springs, telescopic dampers, Orion 12mm anti-roll bar

BRAKES Front: XR3i 240mm ventilated discs; rear: 203.2mm drums

WHEELS AND TYRES 6x15in RS seven-spoke alloy wheels, Michelin MXV 195/50x15 tyres

EXTERIOR Pressed steel monocoque Escort three-door hatchback shell with colour-coded bumpers, Orion grille, XR3i rear spoiler and unique RS bodykit comprising front spoiler, wheelarch extensions and side skirts, tinted glass, opening rear quarter windows, driving lamps, standard Diamond White paintwork with blue RS stripes and decals

INTERIOR Recaro front seats in two-tone grey Monza crushed velour, three-spoke XR3i sports steering wheel. Custom Pack includes electric front windows, central door locking and tilt/slide glass sunroof

DIMENSIONS Height: 1384mm; width: 1638mm; length: 4071mm; wheelbase: 2400mm; weight: 971kg

PERFORMANCE 130bhp @ 6000rpm, 133lb. ft @ 3000rpm, 128mph, 0-60mph 8.1secs

PRODUCED 1984 to 1985

PRICE WHEN NEW £9250 (Custom Pack £470)

NUMBER BUILT 8604 (5576 UK cars)



BLOWN AWAY

Joe Barlow restored one of the rarest Mk3 Escorts – the XR3 Turbo – which meant load of parts-hunting and some very careful research

Words MIKE RENAUT / Photos CHRIS FROSIN



Joe Barlow got used to having a certain conversation whenever he displayed his Escort XR3 Turbo. It usually started with him having to prove his car is the real deal.

“Many enthusiasts think the Series One was the first turbocharged Escort production car, but this was available earlier,” says Joe. “There were around 30 built — you bought the kit for fitting by your Ford dealer or at home. I know of three cars left, including mine.”

Joe’s Escort is a 1981 XR3 purchased new through Jack Hooley’s of Nottingham, an RS dealership. It was fitted with the kit – numbered MS-4 – which comprised a Weber 32/34 DMTL carb, an AIRsearch T03 turbo with integral wastegate and associated pipework, Serck air-to-air intercooler, 1-bar electric fuel pump, plus

an appropriate wiring loom. Also included was a Weber fuel pressure regulator fitted in place of the mechanical part, an airbox as used on the ill-fated RS1700T rally car, and a 12in electric fan, since the turbo fouled the original fan in the standard location.

Joe explains, “They used the standard bottom end and machined the crown ears off the pistons, dropping the compression from 9.5:1 to 8.5:1 while still avoiding detonation.

“That took the output as high as 140bhp, gave 0-60 mph in 6.7 seconds and a top speed of 125mph. The XR3 pre-injection CVH was used to keep costs down and because Bosch couldn’t make injection units fast enough to supply to Ford’s XR3i as most were going on the Golf GTI.

“The conversion also used the XR3 inlet manifold and an RS plenum, with a unique

52mm single-silencer exhaust that exited the turbo with a 90-degree bend under the sump. To avoid butchering the original exhaust when fitting a stainless steel system, I used a Series One housing.”

Joe continues, “I knew nothing of its rarity when I first bought the car. It’s still hard to get information today. I found it in a lock-up in Birmingham in 2014 while buying an electric roof for my Mk3 Cabriolet. It was a stripped rolling shell – the bits were everywhere, and it needed a new floorpan and front wings.

“There was no history, so I did a DVLA check and discovered there were 15 owners, including six dealerships. I was discussing the car and a mate said Mk3 Escorts were the next big thing, agreeing it was worth restoring.

“Back then, front wings were £75



RESTO LOG

Discovered partially stripped in a lock-up, Joe didn't know it was a rare turbo car at first.



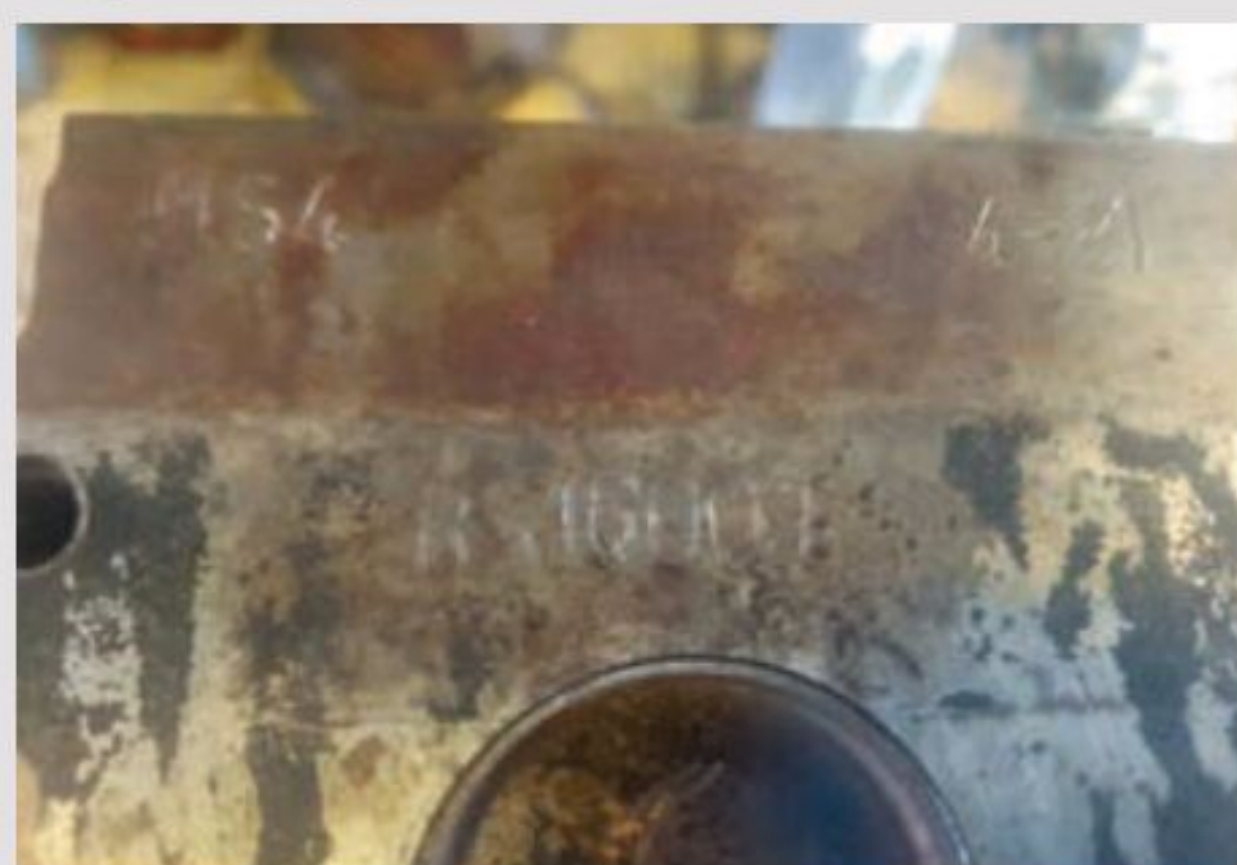
With all the parts stuffed inside, Joe towed the XR3 home and began to go through what he'd bought.



The body had gone in all the usual Mk3 places, needing work to the A-pillars and front panel.



With repairs to the body complete, the shell was prepped and primed ready for coats of A9 Black.



Meanwhile, Joe sorted the mechanicals. Cleaning up the block, he found it was stamped with 'RS1600T'.



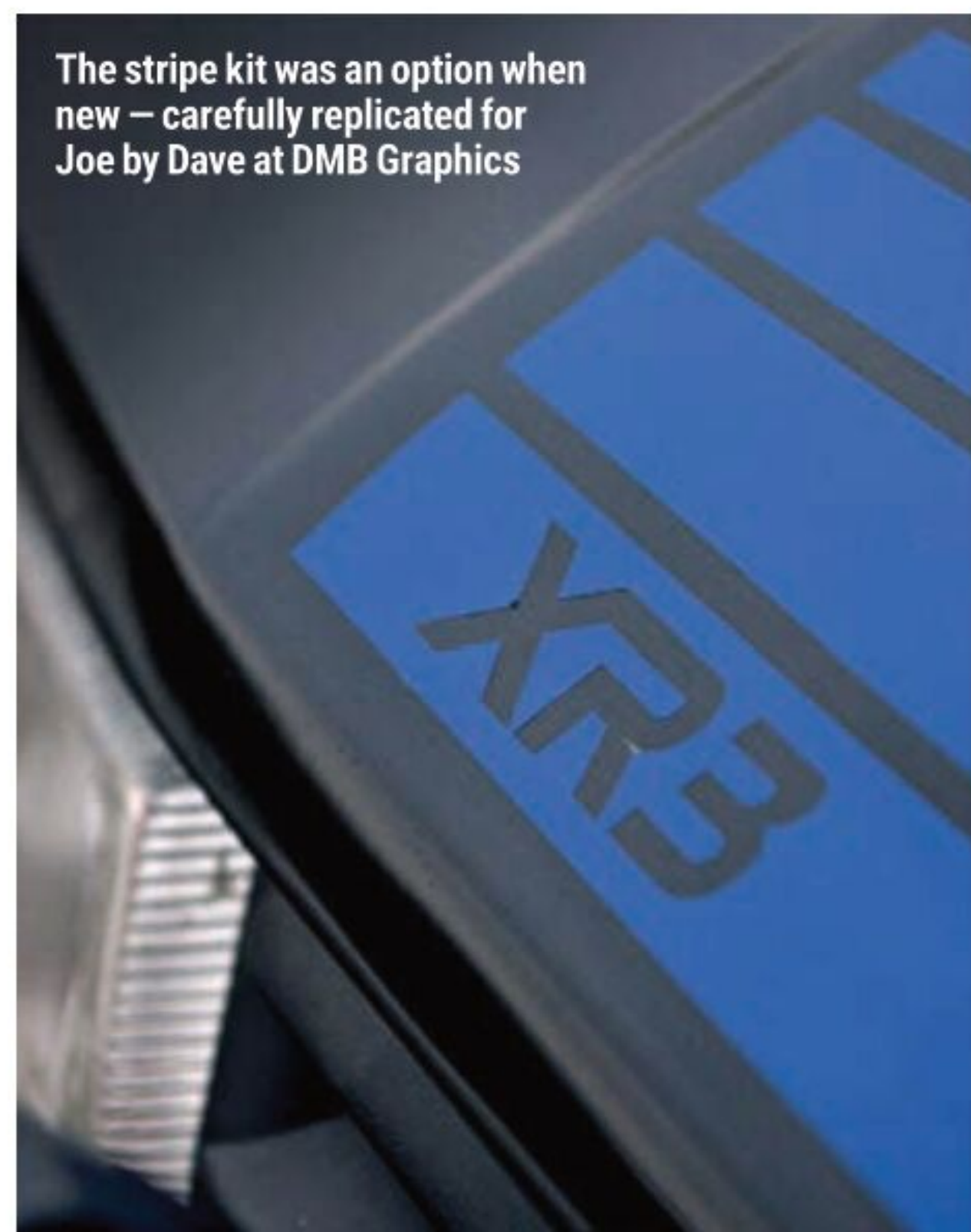
With no filters available for the RS1700T-pattern airbox, Joe had to make his own from foam offcuts.



The complete Ford kit was £1300 and could be DIY or dealer-installed - Joe's XR3 was the latter, and is one of three survivors he knows of



The turbo kit used a blow-through setup, with an RS-badged plenum mounted on top of a DMTL carb



The stripe kit was an option when new - carefully replicated for Joe by Dave at DMB Graphics



Much of the interior was missing, so Joe had to track down some correct-style seats and get them retrimmed in the correct Laser material, found in Holland



each; now they're £1000. Mk3 panels seem to be the hardest to find and I also needed a new passenger door, tailgate, front panel and bonnet. While most people were still chasing Mk1 and Mk2 parts, I was searching scrapyards for any Mk3 GL or Ghia parts I knew I could use.

"As I was going through everything, I kept finding bits of turbo pipework, but had no clue why. I still thought I had a standard 1600. When I realised what it really was I had to restore the car to standard specification because it's so unusual. I started buying any magazines with mentions of the turbo Escort and bought every book I could find, even if there were only a few lines included about the cars.

"There was virtually nothing published at the time beyond a 1983 mention in *Hot Car* magazine, so I also sought out older guys who worked for Ford and remembered the cars. I did a hell of a lot of research before I even put the engine in because I knew people would always

XR3 TURBO

YEARS PRODUCED 1983 to 1984

ENGINE 1598cc CVH, overhead camshaft, Weber 32/34 DMTL carb, AIResearch T03 turbo

POWER 140bhp

TOP SPEED 125mph

0-60MPH 6.9 seconds

question its authenticity. I'd have to prove these cars even existed.

"I'd realised it's a well-specced Escort after carefully going through the wiring loom and finding lots of extra strands.

"Along with bronze tinted glass, opening rear quarter windows, electric windows, tilt-and-slide sunroof and upper and lower fog lights, it has the Executive Pack with electric aerial, shelf speakers and headlamp washers in the overriders. The overriders – along with the door solenoids for the locks and much of the wiring – were also used on the Mk2 Granada. I found a pair in Germany.

"I had the door cards but the rest of the interior was missing. It's the Laser pattern only used on the carburetted XR3 (with the pre-Monza interior). I found suitable seats in Wigan and Laser material in Holland. I paid 70 Euros for the roll of original cloth – I couldn't spend thousands on the car and neglect the interior."

Joe continues, "The dashboard was knackered. I'm a builder by trade, and on one site I was chatting to a security guard when a Mk4 Escort drove past. He mentioned he'd



"IT'S A BIT OF A SLEEPER REALLY. THE TURBO CUTS IN AT 2500RPM. IT WOULD BE UNCONTROLLABLE WITHOUT THE LSD"



Laser seats were stock for the XR3; steering wheel was an RS option



Blue bulbs are a later addition



Joe added aftermarket gauges

owned a Mk3 and still had some bits. I bought the mint dashboard off him for £50. The boost and oil gauges are aftermarket, but blue LEDs were fitted because the original-style bulbs were quite weak. I used to box and had the nickname Mr Bump – so black and blue became my colours.

“It was a four-speed, but I fitted a five-speed ‘box since I use the car most days. Usually I’ll only add updates to cars if people can’t see them, but there’s also a Mk4 Escort stereo with an amp from a Series Two RS Turbo.

“A mate painted it in A9 Black two-pack in return for me fitting his kitchen. It was gun-finished – straight out of the paint gun and not flatted – then waxed, so it had a little orange peel just like the original Ford finish.

“The stripe kit was another option, later fitted to the RS1600i – Dave at DMB Graphics

offers official replica stripe kits and even does dealership window decals.”

The suspension got all new-old stock Ford bushes, again found in Germany.

Joe says, “My brother’s wife is German, and she’d hunt out parts for me. She bought a box of bushes for 22 Euros that, amazingly, contained 90 per cent of what I needed.

“I added the correct Bilstein shock absorbers that were an optional extra, and the front and rear anti-roll bars and boot spoiler, which were RS accessories also later used on the RS1600i. Then I saw a period magazine photo of one of the turbo cars wearing Rally Giants spotlights, so fitted a pair of those, too.

“It’s a nice little monster, a bit of a sleeper really. The turbo cuts in at 2500rpm. It would be uncontrollable without the LSD and anti-roll

bars. They’re primitive – just two 20mm bushes and U-shaped mountings – but do a superb job. It easily lights up the tyres through third gear and is almost undriveable in the wet. I put gallons of Waxoyl in, so I do take it out in the rain.

“It drives like an Escort – you feel the bumps through the steering and it needs the Gunson tuner on the carb every 500 miles. It’s nippy, though; wherever you point the wheel it goes.

“I can’t think of anything I’d swap it for. I’ve always fancied an RS1600i and a BMW C2 2.7 Alpina, but this is by far the rarer car. It’s the genesis of Ford’s era of turbocharging family production cars and done years before White Lightning, the Series One RS Turbo.”

THANKS Sid, Dabz and Peter at Holme Pierrepont for providing our photo location. ■

BLOWING IN THE WIND

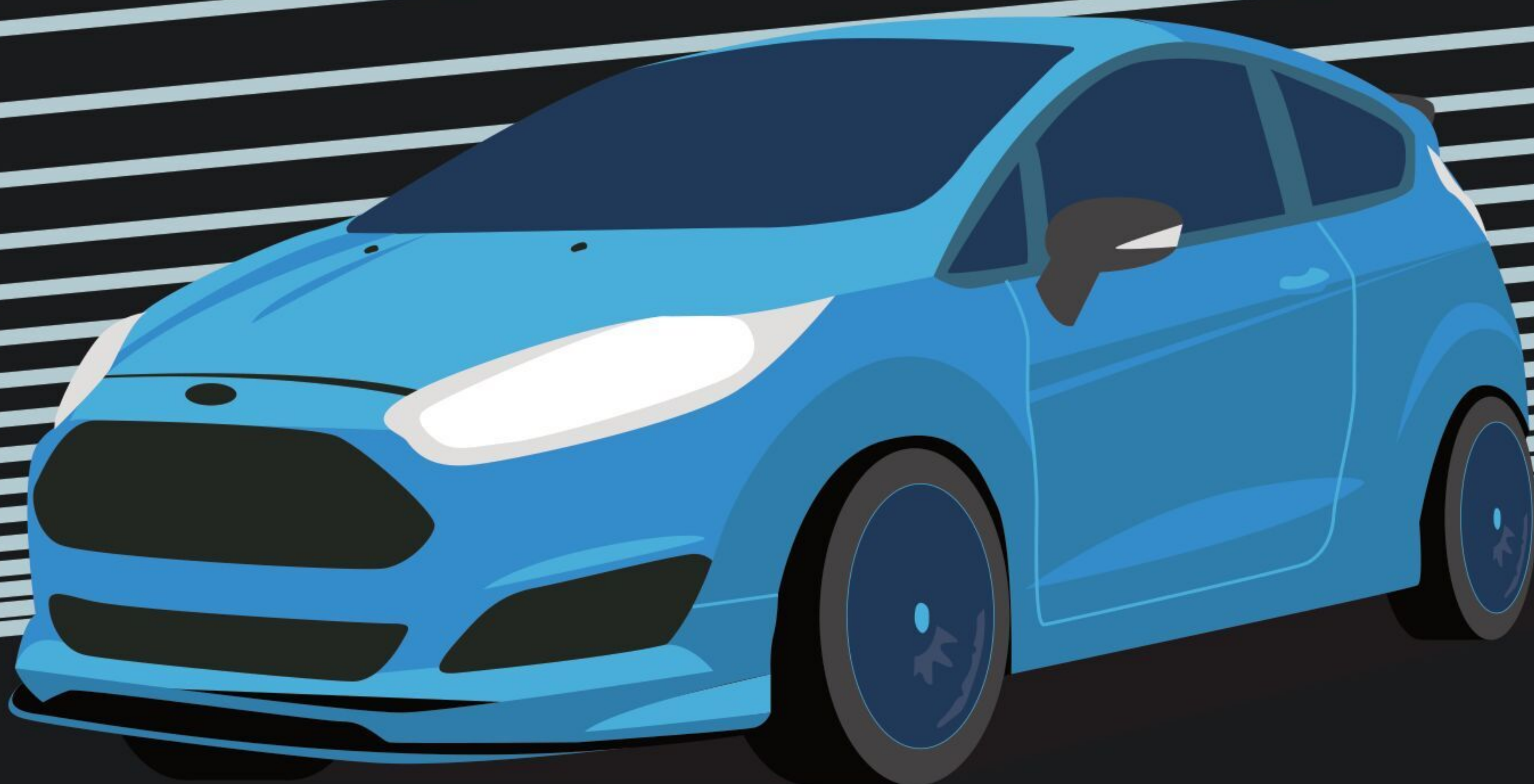
Think of this as the Escort RS Turbo’s older brother, slotting into Mk3 Escort history alongside the XR3, and unofficially known as the RS1600 Turbo (or RS1600T), it predates the RS1600i. In late 1979, Ford Motorsport chief Bill Meade was asked to produce a turbo CVH. By October 1980 he, Peter Ashcroft and Terry Bradley had built a prototype XR3 at Boreham with assistance from Jeff Kershaw at AIResearch – in the days before it became Turbo Technics. Powered by the ‘AIResearch T03 turbo charger’ (later known as the Garrett T3) the intention was to compete in the 1983/84 Escort Turbo Rally Championship.

Sent to Cologne for evaluation, it passed with flying colours, so Ford sold the turbocharging kits through Rallye Sport dealers for £1300 to anyone wanting to enter a CVH Escort in the championship.

But it turned out that turbo Escorts were far better suited to tarmac than dirt. The scheme was superseded by the 1984 Escort RS Turbo homologation production model.



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FAMILY VALUES

Dan Terry's RS Turbo fuses a lifelong passion for hot Fords with a keenness to involve his young family. And a whole bunch of new friends have found their way into the extended family...

Words **DAN BEVIS** / Photos **DAN PULLEN**



W

e know what you're thinking: 'He's still got his towing eye cover... And his battery tray's all in one piece.'

You're right, Dan Terry's Series

One is sufficiently clean to make other RS Turbo owners shiver with inadvertent jealousy – but the quality of the thing goes far deeper than having all the right bits in the right places.

Dan says, "The Blue Oval's definitely in my blood. My first car was a Mk2 XR2, and I've since had another couple of them, along with half-a-dozen or so Series Two RS Turbos – all money pits, but lots of good memories.

"The Series One has always been my dream car, though – I'd just never been in a position to

own one and spend money on it. I always said to myself that if I was ever lucky enough to own one, I'd build it how I wanted without fear."

Stirring stuff, and it was inevitable that a man of such forthright ambition should find his dreams realised before too long.

He recalls, "When the time was right for me to start looking, it didn't take long before I found a nice standard example in Stockport. Andy, the owner, was a really honest guy, and I pretty much bought it without even clapping eyes on it thanks to his thorough descriptions over the phone. Still, it was a relief to see it in the metal and find it was all as I was expecting."

The car was a straight, honest example

needing welding to the battery tray, chassis legs, and all the usual trouble spots; all the bits were present and correct, and ready for Dan to fulfil the vision he'd been conjuring for the past goodness-knows-how-many years.

He remembers, "Once I got the car back home I started to plan the build. The first thing I did was research. Don't get me wrong, I know plenty about RS Turbos, but I wanted to get everything right first time. I started by getting all the parts together on the list, which comprised pretty much everything.

"Part of the plan was to go EFI, and I managed to get my hands on a low-mileage Ian Howell 2.1 ZVH engine and running gear for a →



SERIES ONE RS TURBO

ENGINE Ian Howell-built low-compression 2.1-litre ZVH, Stage 3 head, Newman cams, oversized valves, double valve springs, solid lifters, OFAM ECU, Gizmo boost control, hybrid T3 turbo, Cosworth fuel pump, Airtec alloy radiator and front-mounted intercooler, Group A air filter

POWER 270bhp (owner's estimate)

TRANSMISSION Stage 2+ CTS gearbox, Quaife ATB, RS1600i fourth-gear set, AP Racing cerametallic paddle clutch

SUSPENSION Gaz coilovers, poly bushes throughout

BRAKES Front: Wilwood four-pot callipers; rear: Cosworth disc conversion

WHEELS & TYRES 8x16in ET20 Japan Racing JR11 wheels in matt carbon, 195/40x16 Toyo Proxes

EXTERIOR Polar White, delocked doors and boot, carbon-dipped Focus RS bonnet vents, Mk5 RS2000 boot spoiler with carbon lip, smoked front and rear lenses, Escort Cosworth carbon-fibre splitter, modified open-mouth grille

INTERIOR Digital dash with carbon-fibre fascia, Pro-sport digital boost and oil pressure gauge, Racetek air/fuel ratio meter and digital boost control display panel, in-car Wilwood bias valve, seats retrimmed in two-tone grey Italian leather with electric blue piping

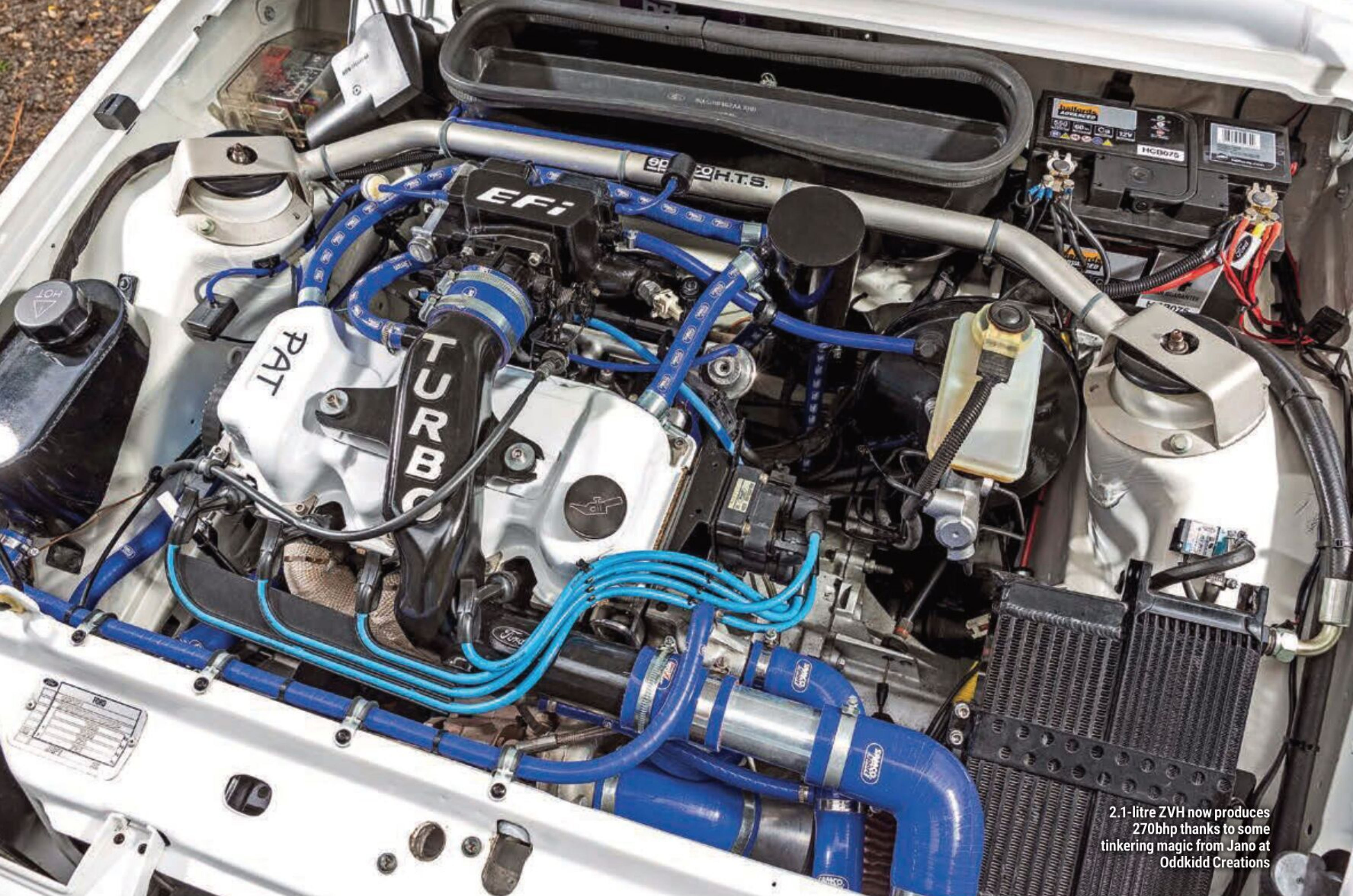


Japan Racing JR11 alloys are an unusual choice for a fast Ford, but they suit this S1 perfectly



T3 turbo is soon to be replaced by a larger T34





2.1-litre ZVH now produces 270bhp thanks to some tinkering magic from Jano at Oddkidd Creations



“JANO WAS STRAIGHT AND HONEST IN HIS APPROACH, AND THAT’S JUST ABOUT AS PERFECT A SCENARIO AS YOU NEED WHEN IT COMES TO TUNING YOUR PRIDE AND JOY”

good price.” A strong start, and with the parts collected it was time to begin assembling them. Enter stage left: Ben Carter.

Dan explains, “I’d put the feelers out locally, and a friend put me in touch with Ben. After long discussions, he was booked to do the welding and engine conversion, so then it was time to find a bodyshop for the minor resto, mods and respray. I lined up Custom Paint Solutions, and with the dates set I starting collecting all of the final parts needed, helped by my daughters Roxy and Lexi.”

The Escort was at the bodyshop for four weeks (“I was over the moon with the results,” he beams) before being handed back for Ben and Dan to work their magic.

Dan says, “At this point Ben was doing all the work in his spare time and, looking back it was inevitable that he’d take the plunge and go it alone. We could have done the car in half the time, but we’d end up talking so much it could be hours before we even lifted a spanner. Great times, he’s a real character. And there’s been so much local interest in this build that he’s set up

his company, Custom Creative; I’m proud that my RS helped him push on.

“Anyway, once the conversion was complete, the car went back to the bodyshop to have the Mk5 RS2000 spoiler and Focus RS bonnet vents fitted. I thought they would have the purists seething, but all worries were banished once they were fitted – it looked awesome.

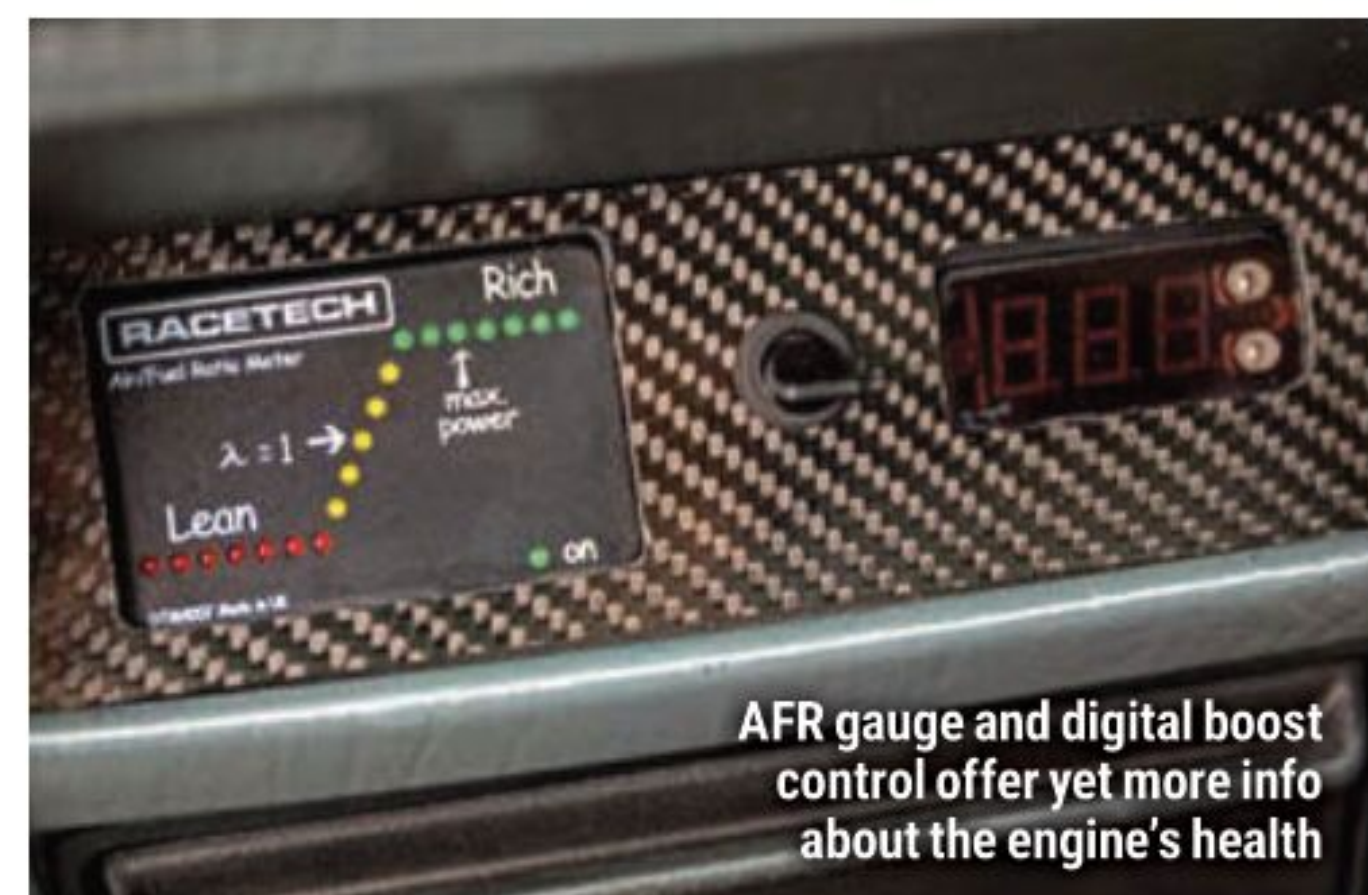
“All the car needed was some new rims to pull the look off; I eventually found a perfect wheel – Japan Racing JR11s. The offset and size changed the look of the car completely, and so my modern take on the S1 was nearing completion.”

Along with the engine conversion, Ben also fitted four-pot Wilwood front brakes and converted the rear to discs, wired in a hyper-intelligent digi-dash, battled clearance issues to install an AP Racing paddle clutch, and generally sprinkled his own brand of excellence all over the car.

A sumptuous interior retrim was undertaken by local supremo Jackie Brown, and the final piece of the puzzle was to make it go like it looked – fast and aggressive. →



Digital gauges mean Dan can keep a close eye on that potent ZVH up front



AFR gauge and digital boost control offer yet more info about the engine's health



Recaros have been retrimmed in two-tone grey Italian leather with blue piping



Dan says, "After following his builds for years in *Fast Ford*, there was only one place it was going to be tuned – OddKidd Creations. This was my first time dealing with Jano, and I can honestly say that all the things I've seen, read and heard were true.

"As with everyone that's helped with the build, Jano was straight and honest in his approach, and that's just about as perfect a scenario as you need when it comes to tuning your pride and joy. His workshop was like an operating theatre, and it was great to see some of the cars I'd seen in the mags. I certainly left the car there in the knowledge it was in safe hands."

Jano had a few hurdles to overcome – worn cams, incorrect injectors and so on – but he ploughed through in his inimitable style and pulled the job together perfectly. The fastidious live-mapping meant Dan was overjoyed with the resultant performance, and he really raves

about OddKidd's atmosphere and how nothing's too much trouble when it comes to keeping the customer satisfied. The results, naturally, speak for themselves.

He says, "It's been a great journey, and I've made some good friends along the way. Most of all I've been able to involve my daughters, who loved every minute. They're so proud of the car and it's become part of the family – hence the name Pat on the rocker cover, as that's what the girls call it."

All in all, the project took two years, with its debut planned for RS Combe... And the guys only got the car running at midnight before the show.

Dan says, "I'd promised the girls we'd make the parade lap, so no pressure... We arrived really late – not on purpose, but it was perfect as this was the first time anybody had seen the car. It stopped everyone in their tracks as we weaved our way through. We still had to wire up the

fans before the parade, and the only space left to work was on the concours stand, which didn't impress anyone.

"But we just made it in time. It hadn't turned a wheel before that so I was a bit nervous, but it did all four laps and was a real proud moment."

This car truly is one of the family, both blood and extended, and Dan's justly proud that the research, part-sourcing and project-planning has all been spearheaded by himself.

"There are big plans for the future as well," he concludes, with a knowing smirk. "Bigger turbo, intercooler, watch this space..."

We certainly shall. We feel like part of the family too. ■

THANKS "OddKidd Creations, Custom Creative, Custom Paint Solutions, Jackie Brown, A1 Dipping, Roxy and Lexi for all their help, Dad for all the hours he's put in, and Sonia for being so supportive."

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RALLY MK3 ESCORTS

The RS Turbo brand was born to go rallying, so let's take a closer look at how the story unfolded

Words GRAHAM ROBSON & JAMIE / Photos FORD PHOTOGRAPHIC ARCHIVES



The year was 1981, and the great days of the Mk2 Escort were over. So, how was Boreham going to continue its fight for supremacy in the gruelling rallies of the world? Rear-wheel-drive, after all, was on the way out. It looked as if all future Escorts would have transverse-engine with front-wheel-drive layouts, and, technically, it might be difficult to turn them into winners.

In 1980 there were high hopes, but by mid-decade Boreham and its associates had turned to other models and other priorities. Thereafter, Escorts were always around, always credible, but usually overshadowed by other fast Fords dominating the top tiers of motorsport all around the world.

You could argue – very loosely – that the first Escort RS Turbo to go rallying was the fabled RS1700T. It looked a bit like a Mk3 Escort, was

turbocharged, and came from the Rallye Sport stable. Only, it wasn't a proper RS Turbo. And it barely went rallying before it was cancelled and developed into the RS200 Group B monster.

Previous Escorts had always boasted a rally-special in the line-up, which not only dominated the world's stages but also bolstered sales of the regular models. The RS1700T was initially intended to do same for the new Mk3 Escort, but things didn't play out how Ford hoped.

RS1600i

The hopes for a rally-winning Escort then fell to the RS1600i. Invented by Ford-Germany Motorsport for use in German saloon car racing, the Escort RS1600i (whose engineering and tune-up equipment was based on that of the XR3 Mk3) went on UK sale at the end of 1982. It was homologated for motorsport use on 1 January

1983, and immediately started to appear in rallies and circuit races later that year.

The works rally cars were built and maintained by RED of Merseyside, and despite being piloted by talented drivers Malcolm Wilson and Louise Aitken-Walker, the RS1600i enjoyed limited success. Notably because the standard transmissions were frail and often broke down; the model's high spot was taking two sevenths overall (on the Circuit of Ireland and Welsh events), though Malcolm Wilson also won his class in the RAC Rally that ended the season. Louise, though, managed to take fifth place in the Czech Skoda rally of 1984, which was really the height of its success.

ESCORT TURBO CHAMPIONSHIP

On the streets, the Mk3's image was saved by the arrival the XR3i in 1983, which took the

fight to VW's Golf GTI. So, in 1983 and '84 Ford decided to use the XR3 as a base for a new rally car, the Escort Turbo, and Boreham set up a fixed-spec Escort Turbo Championship to run in British events. Private owners were invited to buy their own XR3s (not XR3is, as a Weber carburettor was part of this championship), and Ford provided a complete turbocharging kit (and added viscous-coupling limited-slip differentials for 1984) and closely monitored the UK series.

The cars, which had the newly-launched five-speed transmission, had about 130bhp. Although the rally cars were not very fast, they handled well, and were fun to drive. The series was very competitive, and in 1983 the series was won by an aspiring young rally driver from a small town in Somerset – that man was Mark Lovell, who would go on to be entwined with Escort story and who we would hear much more of in future.

The whole point of this series was that all the cars were nominally specced and should all have had equal performance. Ford appointed scrutineers to keep a very careful eye on them, and there seemed to be little deviation between types. Professional preparation helped a lot, of course – and although Mark Lovell was clearly an outstanding driver, the fact that his car was prepared and maintained by RED of Widnes must have been a factor.

For the average enthusiast there was one good after-effect, for as a direct consequence of this series, Ford's mainstream product planning department liked the idea of selling turbocharged Escorts in numbers, which directly led to the launch of the Series One Escort RS Turbo at the end of 1984.

ESCORT RS TURBO

The Series One RS Turbo was one of the first new products tackled by Boreham under the arrival of Stuart Turner. Ford liked the Turbo Championship cars so much that they initiated a series-production programme, which Special Vehicle Engineering ran and in which Boreham's engineers – notably Terry Bradley, John Griffiths and Bill Meade – played an important role. This car was important to Ford's high-performance production-car strategy, as it would be the first small model to have a turbocharged engine, and the first Ford to be sold with a viscous-coupling limited-slip differential as standard.

Perhaps it is not surprising that Boreham always looked rather half-hearted over the programme built up around this car, as by 1984 the team and many of their suppliers had become deeply involved in the RS200 project – which was not only more glamorous, but potentially more exciting, as it was to compete in world rallying's top tier, Group B.

The fact is that Boreham's involvement with works Escort RS Turbos in rallying was a failure,

whereas the exploits of Richard Longman's Datapost-sponsored cars in the British Touring Car Championship was an exhilarating success (see page 40 for the full story).

Boreham built two pre-production prototype RS Turbos for rallying in 1984; one being a proposed Group N car, the other being an ever-developing Group A machine. Soon after the Group N car was written off after hitting a sheep on the Manx Stages event, all work on that derivative was abandoned and work on the Group A was intensified. With public launch of the 130bhp road car slated for October 1984, it was always intended that Mark Lovell should be the works driver, and that homologation would take place early in 1985.

Although homologation was delayed until June 1985, development of the car was well-

advanced by then, including boosting the 1.6-litre engine to approaching 200bhp, to have a well-balanced chassis by that time, and with a brand-new optional gearbox – the AF100 – in the specification. This was always the problem. The AF100 was heavy, cumbersome to use, and had an awkward gearchange layout.

Early in the year, Mark achieved fourth overall in the West Cork Rally but managed to finish only once more in seven outings: he was therefore delighted to be promoted to drive RS200s in 1986. By then Boreham had washed its hands of the RS Turbo rally car project.

The RS Turbo was then quietly withdrawn from works rallying, and it wouldn't be until the arrival of the Escort RS Cosworth in the Nineties that Ford would use the Escort in competitive rallying again. ■

"IT WOULD BE THE FIRST SMALL MODEL TO HAVE A TURBOCHARGED ENGINE, AND THE FIRST FORD TO BE SOLD WITH A VISCOUS-COUPPLING LSD"



Louise Aitken-Walker (above) and Malcolm Wilson were heavily involved with the RS1600i rally cars



After winning the Escort Turbo Championship, Mark Lovell was Ford's main man for the Escort RS Turbo rally programme



It all started with the Escort Turbo Championship for turbocharged XR3s

The first of the fast front-wheel-drive Escorts came from Germany, but it was Christchurch-based Richard Longman who made the most of the new machines.

Ford's Peter Ashcroft invited Longman to return to the fold (he had once struggled with Fiestas, and left in disgust). For 1983 Richard thought he could see promise in the fuel-injected CVH engine – and for 1600cc category, Escorts looked as if engines could produce up to 160bhp and might even be dominant in their class.

It was a professional programme. Ford provided the cars, Datapost (the Royal Mail's high-speed delivery service) and Duckhams presented a great deal of sponsorship, and Avon furnished the rubber, while Longman's company found the power.

When the last Datapost RS1600i was independently tested, Longman claimed it had measured 144bhp (at 7400rpm) at the front wheels, on the rolling road, while using virtually unmodified Bosch K-Jetronic fuel injection, with traction aided by the latest FF viscous-coupling limited-slip differential.

He said, "Our development showed that the original 1983 cars needed to improve, so for 1984 we changed the shells, altered the suspension geometry, and they were a lot better after that. We did all our own engine development — camshafts, pistons, breathing, the lot."

In the first season, things did not always go well for the Datapost team, as a privately-sponsored Escort RS1600i driven by Chris Hodgetts (his car being prepared by Brooklyn Ford, the RS dealership from Redditch) provided most of the competition. In an 11-round series, the Escort glory was shared – with Hodgetts and the Datapost cars winning three times each.

In 1984, though, Longman won his class six times (Hodgetts won only twice), while the RS1600i monopoly of the 1.6-litre category was impressive: team mate Alan Curnow also won once and was usually well-placed. Longman came close to winning the championship outright, finishing second overall. By any standards Car 77 was remarkable, but not yet at its peak. For Ford, this sort of consistency also helped to win the manufacturers' prize.

POST HASTE

Then came the legendary Datapost Escort RS Turbos – used in the BTCC in 1985 and 1986 – which were memorable for their unmistakable colour scheme. They were, no question, the fastest front-wheel-drive Escorts of all time.

Richard's team only ever needed to build three cars – one for himself, one for his second driver Alan Curnow, and a one as a spare.

From June 1985 to the end of 1986, the Datapost cars were the fastest Escorts of all – with Ford providing hardware and money, Datapost, Avon and (this time) →





ESCORT TOURING CARS

It's nearly 40 years since the Datapost Escorts broke into the BTCC and changed the establishment's perception of front-wheel drive forever. Here's why

Words GRAHAM ROBSON / Photos FORD PHOTOGRAPHIC



Has there ever been a prettier car in the BTCC than the Datapost Escorts?



Longman's team fielded a pair of Mk3s in the BTCC



Esso chipping in with the balance of funds or materials. They were spectacularly powerful – road cars had 130bhp, the Datapost cars raced with 270bhp, and were always potential class winners. Richard's RS Turbo usually finished in the top six overall, sometimes on the podium.

Always blisteringly quick in the opening laps, when its hard-pressed front tyres and the turbocharger were in 100 per cent condition, it was always competitive, and often promised to be an outright winner.

It was an extrovert machine. At engine idle – lumpy, noisy and bubbly – that big exhaust pipe sounded merely hoarse, and droned. Then,

once moving, the drone became a full-throated, gruff, roar. Gear change points? About 7500rpm. Redline? 8000rpm. When did you last get those sort of figures out of an RS Turbo road car?

"Because of the homologation delay, we were six months behind the others – but it wasn't all bad news. We got rid of a lot of the problems before we were allowed to race," he said.

There was only one such Datapost race car in 1985, and it was blindingly fast. On Silverstone's GP circuit it was only three seconds a lap slower than Andy Rouse's 300bhp championship-dominating 2.3-litre turbocharged Merkur XR4Ti, and that gap would actually be narrowed

in the following season.

As an *Autosport* report confirmed: 'Richard Longman campaigned the Ford Escort RS Turbo... which exhibited truly breathtaking straight-line speed, if a dislike for slowing down, and turning corners. When the car is fully developed, it is going to be very hard to beat.'

HARD TO BEAT

Which it was, in every way, as an inspection always showed. Dominated by its intercooler, and acres of aluminium-shaded lagging to keep the temperatures down, the engine bay was full – so full that an engine oil cooler had to live

under the floor, behind the rear suspension, which explains why there was braided pipework threading its way through the cabin.

Fuel consumption? Probably best not to ask, but it must have been horrendous, as the complex line-up of petrol pumps, high-pressure pumps, spare units and crossover connections in the boot area all confirmed.

With 270bhp, revving up to 7000 or 7500rpm, and with more than 300lb.ft of torque, all from an engine running 1.2-bar of boost with a lowered nominal compression ratio of 7.25:1, this was a fiercely competitive machine.

Richard said, “We spent a lot of time working on airflow, on the heads, and on the camshafts. It was our own cam profile, which we developed after we had tried lots of different ones.”

Occasionally, with qualifying positions at stake, Richard would screw up the boost to 1.5-bar, at which he reckons the engine was producing a rather perilous 300bhp.

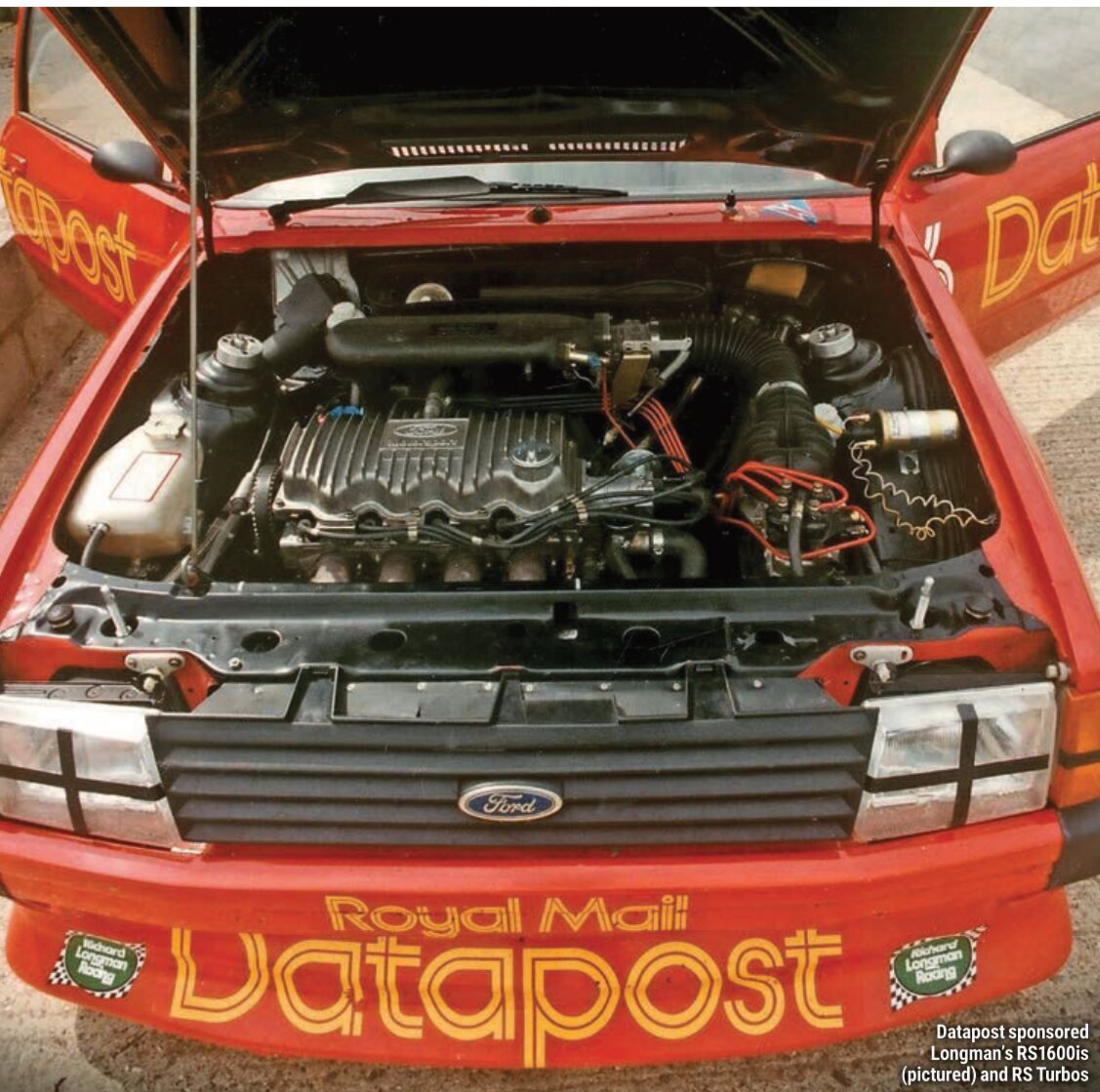
“But the turbo was overspeeding, and didn’t last long at that pressure. That’s why I have to laugh when I see some of the horsepower claims made for CVH road-car conversions.”

“There was so much torque with 1.5-bar boost that in qualifying the Compomotive front rims actually rotated inside the front tyres, by a full 3in...” Which might have amazed everyone, not least the Avon tyre fitters, but it didn’t do much for wheel balance.

SECOND BEST

In the team’s second year, 1986, the two Datapost RS Turbos were so well-developed that they were always favourite to win their class, or even to challenge for outright victory. Once again, to quote *Autosport* about the 1986 season: ‘Richard Longman was in untouchable form this year, often qualifying well up with the big class cars. Usually he was able to stay with them for the first four laps before dropping away to stay

“THERE WAS SO MUCH TORQUE WITH 1.5-BAR BOOST THAT IN QUALIFYING THE COMPOMOTIVE FRONT RIMS ROTATED INSIDE THE FRONT TYRES”



Datapost sponsored Longman's RS1600is (pictured) and RS Turbos



ahead of his opposition.’

Amazingly, this flying machine used basically standard transmission, though long-term reliability was usually suspect.

Richard said, “Basically it was a standard Escort ‘box, with an Orion final drive – we used reinforced sandcast casings, and a metal strengthening plate for that casing. The only weak link was fifth gear, but there weren’t many circuits where we used fifth. With regular rebuilds it was just about good enough.”

Like almost everyone, Richard hated the alternative Group A AF100 transmission developed at Boreham, because the gearchange quality was poor, and the change very heavy.

Clearly it wasn’t always easy to get all that power down to the front wheels, even through two ultra-wide sticky Avon tyres, because there was lots of torque steer (and no power steering), but the use of tightened-up FF viscous-coupling limited-slip helped, as did 9in-wide front wheels: 8in rears balanced the handling.

Lots of rubber (as much as homologation regulations allowed: “We’d have gone wider, but we had to keep the tyres within the wheelarches to meet the regulations,”), lowered suspension, fat anti-roll bars at each end, and the latest damper technology by Leda all helped, but this was never a car meant to look, and behave, like a pussycat. The steering was heavy, the brakes needed a good heave to warm them up.

Richard, though, never made it look hard work, as one press report made clear: ‘Longman’s style belies his downright speed. Motionless at the wheel, staring out of an open-faced helmet, Richard hardly looks the part of a flailing arms, saloon racer.’

The squat red Escort race car made up for all that. As Richard pointed out: “I don’t suppose the car was yet at its peak, but at the end of that year, 1986, Datapost decided it had completed promotion work in motor racing – we’d been with them for seven years.

“With the Sierra Cosworth coming along, and with Datapost pulling out, it was the end of an era, and there wasn’t anything else for the Escort to do. I kept it, looking for another formula to race it in, but there wasn’t one. It was such a nice car, and it was the last one I drove in the British Touring Car Championship. I loved it when I raced it. Still do.” ■

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BUYING GUIDE

ESCORT RS TURBO

Escort RS Turbos have long been the most sought-after FWD Escorts, but buying one today can be fraught with danger. To help you navigate around any potential pitfalls, here's our basic guide to things you should look for when considering an RS Turbo...

Words DAN WILLIAMSON & JAMIE / Photos FAST FORD ARCHIVES

THINGS TO LOOK FOR

If you're buying any RS Turbo, be it an S1 or S2, you'll need to make sure it's the real thing. Faking a Series Two is especially easy if it's based on a Mk4 XR3i, which was even available in the same colours. Replicas are fine if they're priced realistically (many are built on better-condition bodysHELLS than the real RSs), but if you're spending serious cash, check the VIN

plate on the slam panel matches the stamps in the sill beside the driver's seat (under a flap in the carpet) and what's on the logbook. The VIN should read WFOBXXGCAB, followed by numbers that correspond with the engine code (also found on the cylinder block). If the VIN doesn't tally, walk away.

RS Turbos also had different bodysHELLS from most other Escorts; including triple-

skinned steel in the engine bay rather than the standard double-skin, factory-made drillings where the ECU bolts to the bulkhead, and longer rain gutters on the roof of the S1. Don't forget, you'll want to see the authentic tie-bar front suspension and an (Orion) anti-roll bar on the back of any S1, while any S2 should also have a rear anti-roll bar, along with ABS (unless it's been removed by a previous owner – if so, →



HOW MUCH TO PAY

£2500 TO £8000

We've seen S2 projects at £1k but for that price you're buying a logbook and a bag of rust. A £2k rotter will need huge restoration, while double the money could find a tatty but running RS. Just ensure it's not a ringer.

Rotten S1s with all the right bits will start at £3500 but be prepared to replace every panel and piece of trim. An £8k car should be usable but will need some work.

£8000 TO £15,000

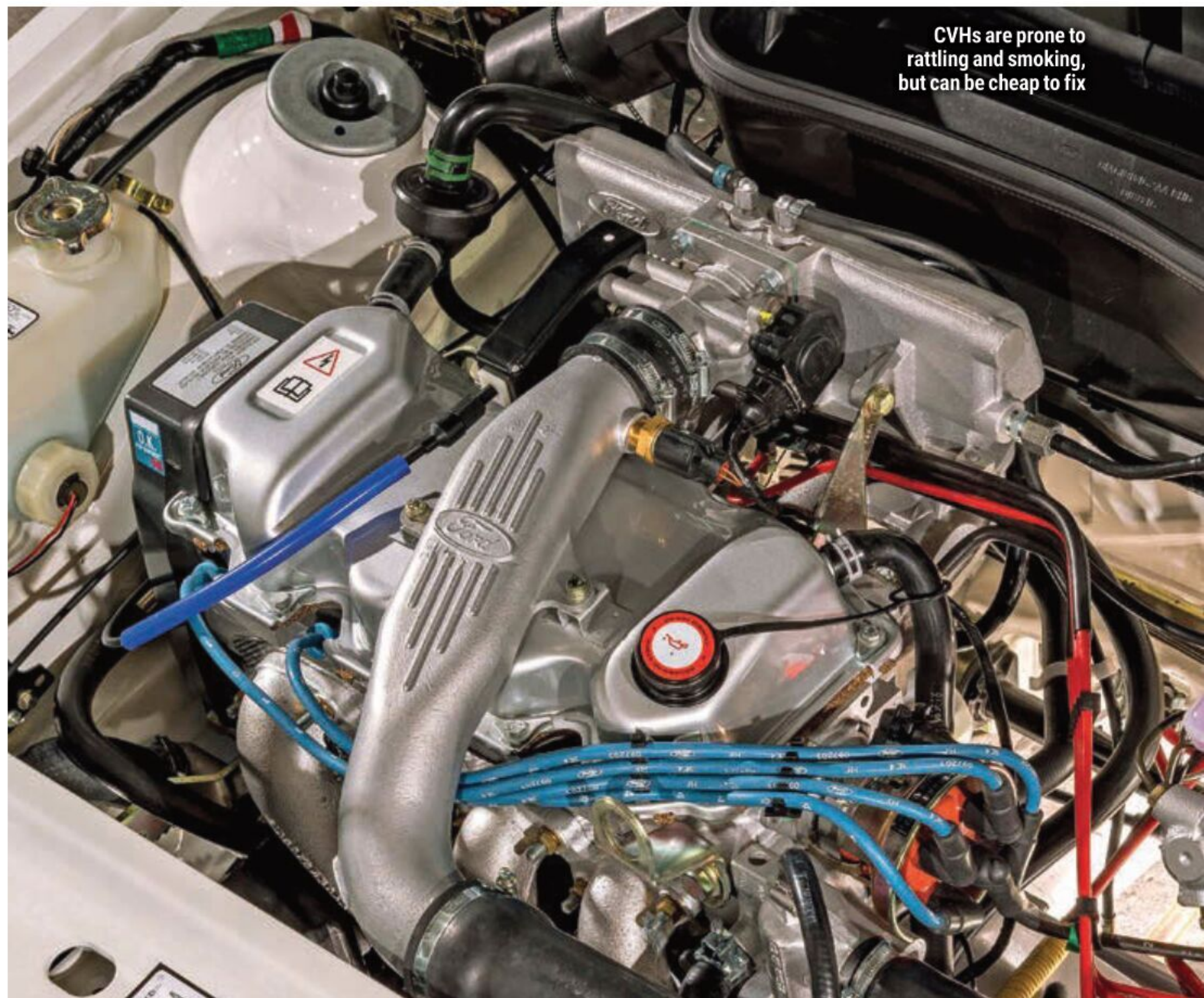
Usable and MOT'd RS Turbos can seem cheap, but they'll need big cash to make good. Five-figures should bag a very nice high-miler or mint modified motor.

In this price bracket, most S1s are clean cars with over 100,000 miles on the clock. But check for projects pretending to be mint. Beware of reshelled machines, worth half the price of a pukka RS.

£15,000 TO £30,000-PLUS

Box-stock, low-mileage, low-owner Escorts are most desirable, and sellers of the best can name their price – to date, the record for an ultra-clean S1 is more than £60k.

Show-stopping S2s need to be box-stock for big money, with original panels and (preferably) paint too. Sellers of sub-10,000-mile RSs can name their price – well above our top figure.



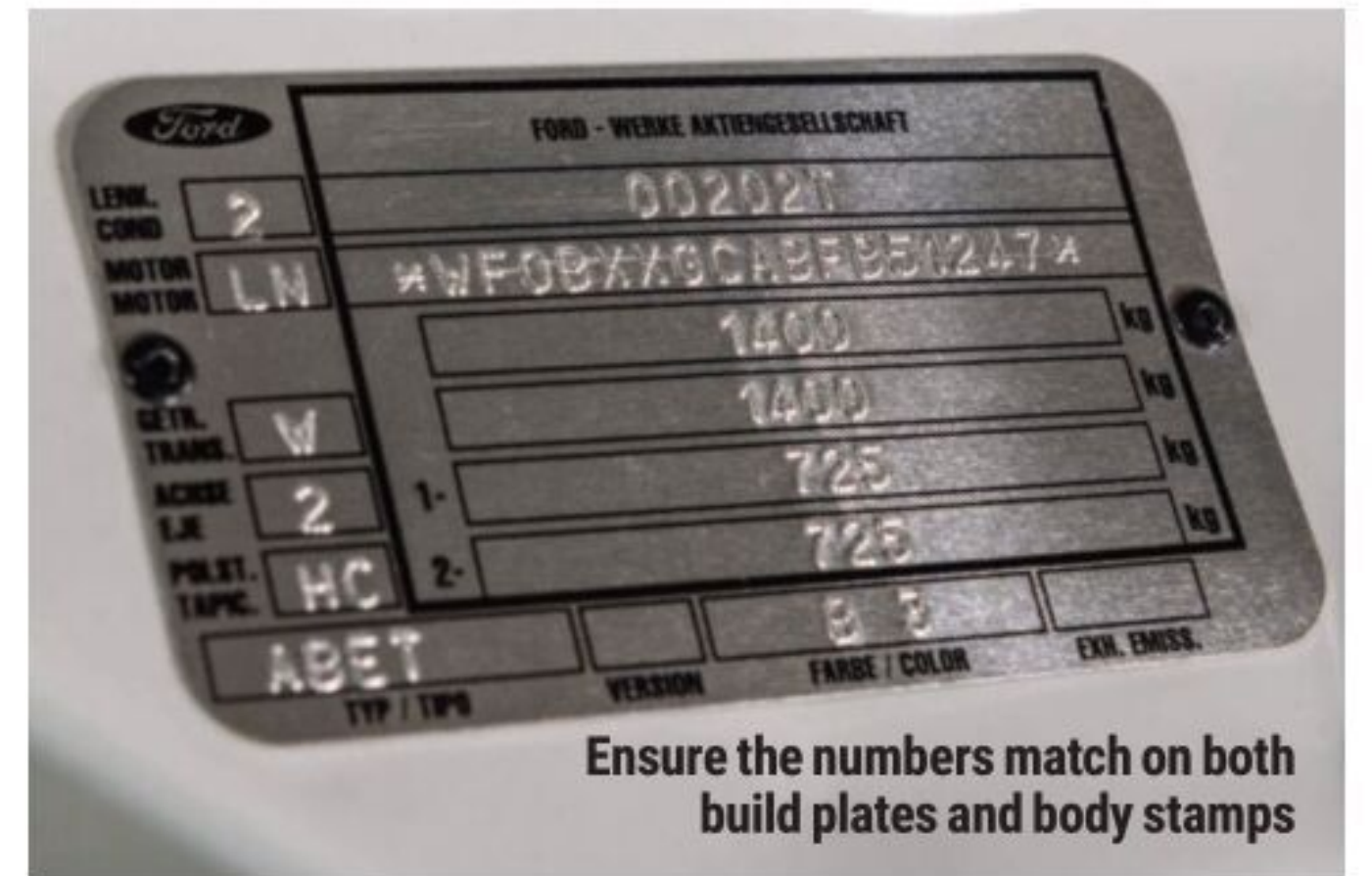
CVHs are prone to rattling and smoking, but can be cheap to fix



S1 dashboard could be cracked – just like your bank balance if you need to replace it



Genuine driving lamps cost big bucks



Ensure the numbers match on both build plates and body stamps

“BOX-STOCK, LOW-MILEAGE, LOW-OWNER ESCORTS ARE MOST DESIRABLE, AND SELLERS OF THE BEST CAN NAME THEIR PRICE – TO DATE, THE RECORD FOR AN ULTRA-CLEAN S1 IS MORE THAN £60K”



WHERE TO BUY ONE

With around 1000 survivors and 400-or-so still on the road, the demand for Series One RS Turbos outstrips supply. Unsurprisingly, the best or cheapest cars sell quickly.

With S2s, buyer beware... They vary massively in price and condition; the unwary get burned.

It's preferable to buy directly from an enthusiast who's taken pride in their car. So, your first move should be to contact an owners' group or club, where members may know of owners ready to sell. Similarly, they could be familiar with the history of cars currently on the market.

So if you spot that dodgy-looking motor for sale, chances are someone will have a valid opinion of its potential pitfalls.

Some of the priciest examples are seen at specialist auctions and classic car dealers; if you're looking for an ultra-low mileage machine it may be your best bet.

Finally, try not to be tempted by eBay bargains and too-cheap-to-be-true Escorts on social media. There are just too many scammers around the RS world.

ensure it's been done properly). On early non-Custom Pack S2 RS Turbos lacked a sunroof (they also had wind-up windows and lacked central locking). Look for a date sticker on the sunroof slider, which should tally with the car's age.

RS Turbo trim is getting rare, so make sure the bodykit is present and correct (wheelarch extensions are often cracked), although some repro bits (such as towing eye covers and decals) are readily available.

Likewise, tatty driver's seats are common, so it's not unusual to see a passenger-side Recaro in its place. And as for the S1 dashboard, you'll be lucky to find one without splits – good examples fetch a fortune.

RS Turbos built from September 1989 onwards are known as '90-spec, and are more desirable thanks to improved equipment; look for the wrapped-over rear spoiler, deeper front bumper, extended centre console, different dials, variable-speed intermittent wipers, rear courtesy light and plastic sill protectors. Zolda cloth upholstery (grey with blue/red flecks) was in all RS Turbos from September 1988. →



An ultra-low-mileage RS fetches big figures





Inner wings on '90-spec machines were altered too, along with revised coolant/washer/brake fluid reservoirs; when retrofitted to an earlier shell, the later header tank sits at a weird angle, and gives a good reason to worry.

Above all else, if you discover a clean, unmolested RS Turbo for a reasonable price, don't hesitate to buy it. Values are only going one way. But if the RS Turbo you've seen turns out to be a fake, you've got two choices: run away, or pay a realistic (much lower) price.

If it's a good shell and you're planning mods, it might even be a bonus...

THINGS TO AVOID

Rust will kill any Mk3/4 Escort – even the best RS Turbos aren't safe – and you'll need to dig deep for repairs.

It's essential to search everywhere for rot. Start with the obvious stuff: sunroof mechanisms are often rusty, as is the roof behind it – there's no fix other than a new skin. Pricey! Front wings, doors, tailgates and fuel filler surrounds rotted from new, and the bonnet could be scabby too.

Don't be afraid to dig deeper, to the extent of dismantling as much trim as the seller will allow. Start underneath, scouring the floorpan, chassis, boot floor, rear valance, front crossmember, plus outer and inner sills – take off the plastic to investigate. Likewise, remove the back seat, then the inner rear quarter panels to examine the rear wheelarches – Ford's foam packing traps water, which causes corrosion. The same foam surrounds the wiring loom, leading to problems.

Slide out the glovebox and look around at the

wiring, fuel pump relay and how well (not if) the battery tray has been welded. How much of the inner wings have been replaced? See what state the A-pillars are in, too.

The CVH engine wasn't Ford's finest design, but many plod along for years, puffing plumes of smoke from the exhaust. If the car's misfiring, underpowered, struggling to start or not making boost, don't simply assume there'll be an easy fix; it's not unusual to spend serious cash resolving issues with sensors, relays, fuel meters and wiring faults.

Mechanically, everything is fixable – but don't spend top money on a tired Escort. A rattly top end is normal, and a growling cam is cheap to replace. Knocking from the bottom end is more serious, as is blue smoke from the exhaust; suspect failed pistons and/or rings or a blown turbo, although the odd puff could merely be burnt valve stem seals. As always, beware of white smoke, high temperatures and oil/water mixing – sure signs of head gasket failure.

Finally, if you're looking for a showpiece, beware of cars with tatty cabins. A mint RS Turbo interior is a rare and pricey thing.

THINGS TO BE AWARE OF

The best thing you can do for an RS Turbo is also one of the cheapest: a simple service costs only a few quid yet could avert catastrophe.

The CVH benefits from regular oil changes (ideally every 3000 to 6000 miles), and it's wise to swap the cambelt if it's not been done recently. Old oil can result in a rattling camshaft and noisy tappets (which may also cause oil starvation issues); swapping to solid lifters is wise if you're seeking power, or fit genuine Ford

hydraulic tappets if you can find them.

Maintenance of the cooling system is equally vital. Keep it flowing freely by checking/replacing the water pump, gasket and bearing; ensure it's a genuine pump, with holes in the front face of the impeller. Fit an 82-degree thermostat and a rear-wheel drive Cosworth fan switch, which cuts in sooner than standard. Refresh the antifreeze and, for best results, add a pair of Kenlowe fans.

Big financial failures can be caused by ignition/fuelling problems, so consider a new loom if your wiring has seen better days; likewise swapping to a better management system if you're looking for more power.

Finally, fitting an upgraded oil breather system should also pay dividends by relieving pressure from a clogged-up old CVH. ■

INSURANCE COSTS

Twenty years ago, RS Turbos had reputations similar to Cosworths for being uninsurable – thanks to their similar habit of being nicked, crashed, stripped and torched.

But these days that's far from the case. That doesn't mean you can jump on comparison sites and opt for the cheapest cover you can find, though; specialist brokers are well aware of the RS Turbo's status as a classic car, and you should now be able to secure a very reasonably-priced policy if you opt for limited mileage and drive a different everyday car. Joining an owners' club should secure a bit of discount, and some schemes operate solely for members.

Young drivers can also achieve cover this way, and for a modified RS it's undoubtedly the best option. Agreed-value is vital, regardless.

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MERCURY RISING

Once favoured by modifiers, this Mercury Grey Series Two RS Turbo was restored by Andrew Fewkes and brought back looking factory-fresh

Words and photos JON CASS



A

bout 25 years ago, the Series Two RS Turbo was the car to have when it came to extreme and sometimes verging on daft modifications.

Crazy spoilers, huge bling rims, wild bodykits and major engine mods, the Series Two has seen and endured them all.

Occasionally, the chosen colour for the RS Turbos selected for such treatment was Mercury Grey, so it's refreshing to now see a rare survivor in that same colour, painstakingly restored to near-factory specification.

Andrew Fewkes fondly remembers the Series

Two when it first hit the Ford showrooms and saw the attraction immediately. So much that in his 20s he bought a Diamond White example, and cherished it before progressing on to a Sierra Cosworth.

"I've always liked them and still think they have a modern appeal for an older car; more so than earlier Escorts," Andrew explains.

Andrew decided to get back into an Eighties Ford around two years ago.

"I chose the Series Two RS as I still missed the car I had and reckoned owning another would bring back some fond memories for me,"

Andrew smiles. As is often the case, selecting the right car to base a long-term project upon was a major priority, hopefully saving some time and expense along the way.

Andrew says, "I spent hours trawling through the classifieds, but the photos of this particular car seemed to keep drawing me back to it. I also quite liked the registration number."

Fortuitously, the RS also had the benefit of being located not too far away, so it was well worth a trip out to have a look.

"This car came with a lot of history, including receipts for work being done, as well as →



THE RESTORATION



Once stripped, Andrew found the bodyshell was pretty good, but it still needed complete sills on both sides.



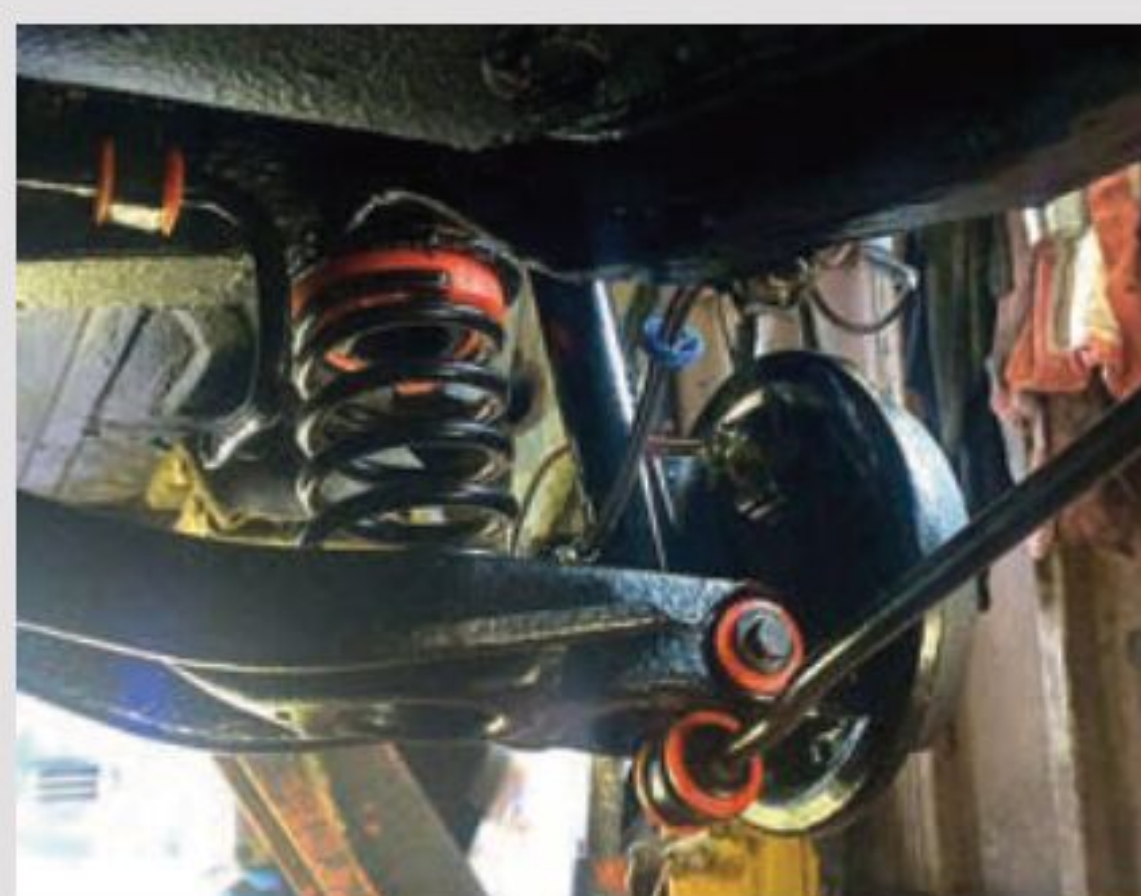
Once the rust had been cut out and fresh metal let in, the shell was taken to AB Paintworx for paint.



The engine ran fine, but at 100,000 miles, Andrew played safe and had it professionally rebuilt.



Now finished in stunning Mercury Grey, Andrew had the enjoyable task of fitting the shell back up.



The original suspension components were blasted and powder-coated, and had poly bushes installed.

the usual servicing, and even had the original handbook and radio," Andrew recalls. "The bodywork was fairly good, but corrosion had started on one arch and it had failed the MOT on corroded sills and the front crossmember, but overall this was a very genuine car."

Originally, Andrew's plan was just to make the Series Two roadworthy and enjoy it on weekends and summer evenings, but typically as the project progressed, that idea soon went out of the window.

"I'd just repaired a small car with slight damage that I'd bought for my son as his first car, and seeing the end result prompted me to make a good job of this car, too," Andrew tells us.

The first task was to strip the shell completely to see what work was needed, which included burning off all the underseal to inspect the chassis and floor properly.

"I had to chop out and replace various sections of chassis that had corroded, then moved onto the sills, which I already knew would need work," Andrew remembers.

Both outer and inner sills were removed completely and replaced with a new set, then the offending wheelarch was cut out and replaced.

Filler repairs were found in the nearside wing and tailgate, as you'd expect on any car of this age, so these panels were replaced. A small bubble previously unnoticed on the roof was then led by a friend of Andrew's at AB Paintworx, while Andrew tackled the spraying of the engine bay himself.

A subtle exterior upgrade was the '90-spec spoiler, added solely because he just prefers the shape to the earlier version.

SERIES TWO RS TURBO

ENGINE Standard 1.6 CVH, turbocharged, fully rebuilt with all new pistons and bearings, new oil pump, new water pump, unleaded head, new valve springs and camshaft lifters, reconditioned ceramic-coated turbo, new injectors, new radiator, alternator and starter motor, ceramic-coated exhaust

TRANSMISSION Standard five-speed

SUSPENSION Standard Ford Motorcraft dampers, Kilen springs with polyurethane bushes fitted all round

BRAKES Front: 260mm grooved discs; rear: 228mm drums with Mintex shoes

WHEELS AND TYRES 16in RS diamond-cut alloy wheels with Nexen 195/45R16 tyres

TOP SPEED 128mph

0-60MPH 8.3 seconds

THE ENGINE ROOM

One area where Andrew's immaculate RS Turbo really does stand out is the engine bay, as wherever you look, it's totally flawless throughout. What's more, he's gone to great lengths to keep things to factory spec – unheard of in Series Two circles a decade ago. The 1.6 turbo CVH has been fully stripped and rebored by local company RES, with all new pistons and bearings, new oil pump and new water pump fitted. The head has been converted to run unleaded petrol and new valves, valve springs and camshaft lifters were installed, while new injectors, radiator, alternator and starter motor had to be sourced. Basically, it's like 1988 all over again – everything in there is new.





"I HADN'T PLANNED TO TAKE THINGS THIS FAR, BUT I BUILT IT TO ENJOY, AS WELL AS TO TAKE TO SHOWS AND MEETS, SO IT DOES GET USED"



Diamond-cut seven spokes are a period mod

Once all the rust had been banished and the necessary fresh metalwork fitted, the shell (followed shortly after by the panels) made a return to AB Paintworx for a full respray in the original Mercury Grey.

"They completed the work to a very high standard, and I was really pleased with the outcome," Andrew adds.

Attention then turned to the engine, which with just over 100,000 miles on the clock still ran okay, but Andrew wanted to ensure it was just right. This involved a full rebuild at RES Engineering, along with reconditioning of the original turbo, which was then ceramic-coated along with the exhaust.

Once the engine was back in place, red boost and water pipes were fitted, but Andrew wasn't keen on them, so they've recently been replaced in the more familiar black.

The idea of adding lowering springs or coil-overs at this stage must have seemed hugely tempting, but Andrew was determined to keep his RS Turbo as original as possible. This involved sourcing new-old stock (NOS) springs and shock absorbers, along with adding →



Four-spoke steering wheel was added by Andrew



'90-spec Recaros just needed a clean



Original stereo and speakers still work

new polyurethane bushes all round for that touch of better handling. New standard brakes were then fitted, Andrew keen to point out that many hours were spent scouring adverts for NOS parts.

"I had to phone my wife while on night shift at 4am to ask her to buy two genuine boxed headlights and spotlights that had appeared for sale," Andrew laughs. "That's how committed I was at the time."

One aspect of his Series 2 that Andrew was keen to retain was the ABS, often dismissed by most who've modified these cars.

"This one still had the ABS fitted, which I was surprised about, and as I'd already replaced the brake pipes, I made new ABS pipes and fitted new belts at the same time too," he points out.

Although the original 15in RS Turbo wheels came as part of the deal, Andrew opted for a simple reversible change, making his car stand out just that bit from a standard concours RS.

"I managed to track down a set of 16in RS wheels, which I had diamond-cut as I reckoned these would suit the car," Andrew tells us. "I love the way they look, but I still have the original Series Two wheels in my shed."

Incredibly, the 30-year-old interior had held up well, and after some intense cleaning, the Recaro seats looked like new. The original stereo had somehow survived the days of obligatory upgrades, as had the speakers; even the joystick is still in working order. In fact, the only change Andrew has made inside was to upgrade the steering wheel to an RS four-spoke version.

It may have taken him two years to complete – and we're surprised it didn't take longer, considering Andrew often works nights – but end result is a credit to him.

"I hadn't planned to take things this far, but I built it to enjoy, as well as to take to shows and meets, so it does get used often," Andrew smiles.

The long hours spent don't seem to have put him off tackling a follow-up project, and he quite fancies the idea of an Escort Cosworth next. ■

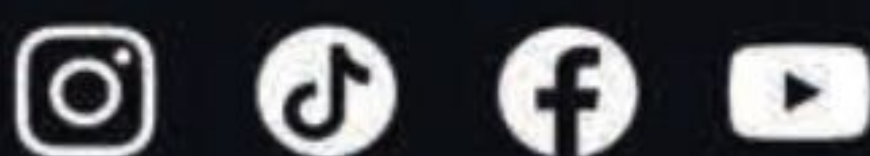
THANKS "Sarah Fewkes for putting up with it all and being on hand to order parts, AB Paintworx for all the hard work they put in to make the car look amazing, RES for the engineering work on the engine, Raven Blast for all the ceramic/powder coating, and all my Ford friends who helped out along the way."



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THE KNOWLEDGE

SERIES TWO ESCORT RS TURBO

Unlike its predecessor, it wasn't developed with motorsport in mind, but the S2 was still a great performer

Words **DAN WILLIAMSON** / Photos **MATT WOODS**

For many Ford enthusiasts, the Series Two Escort RS Turbo fell short of making the grade as a proper Rallye Sport model, mainly because it wasn't developed for use in motorsport and had no competition career.

Yet the S2 followed fast Ford tradition of the Mk2 Lotus Cortina and Escort RS2000, which combined the go-faster goodies of a

homologation special with added refinement and availability, to make an awesome all-round performance machine.

The range-topping RS Turbo S2 was launched in July 1986, five months after the rest of the Mk4 Escort line-up. Like its stablemates, the RS gained rounded styling to improve aerodynamic efficiency, with curvy nose and plastic bumpers.

It followed in the wake of the successful

UK SALES FIGURES

1986	1317
1987	4748
1988	5786
1989	6965
1990	2795
1991	497
TOTAL	22,108

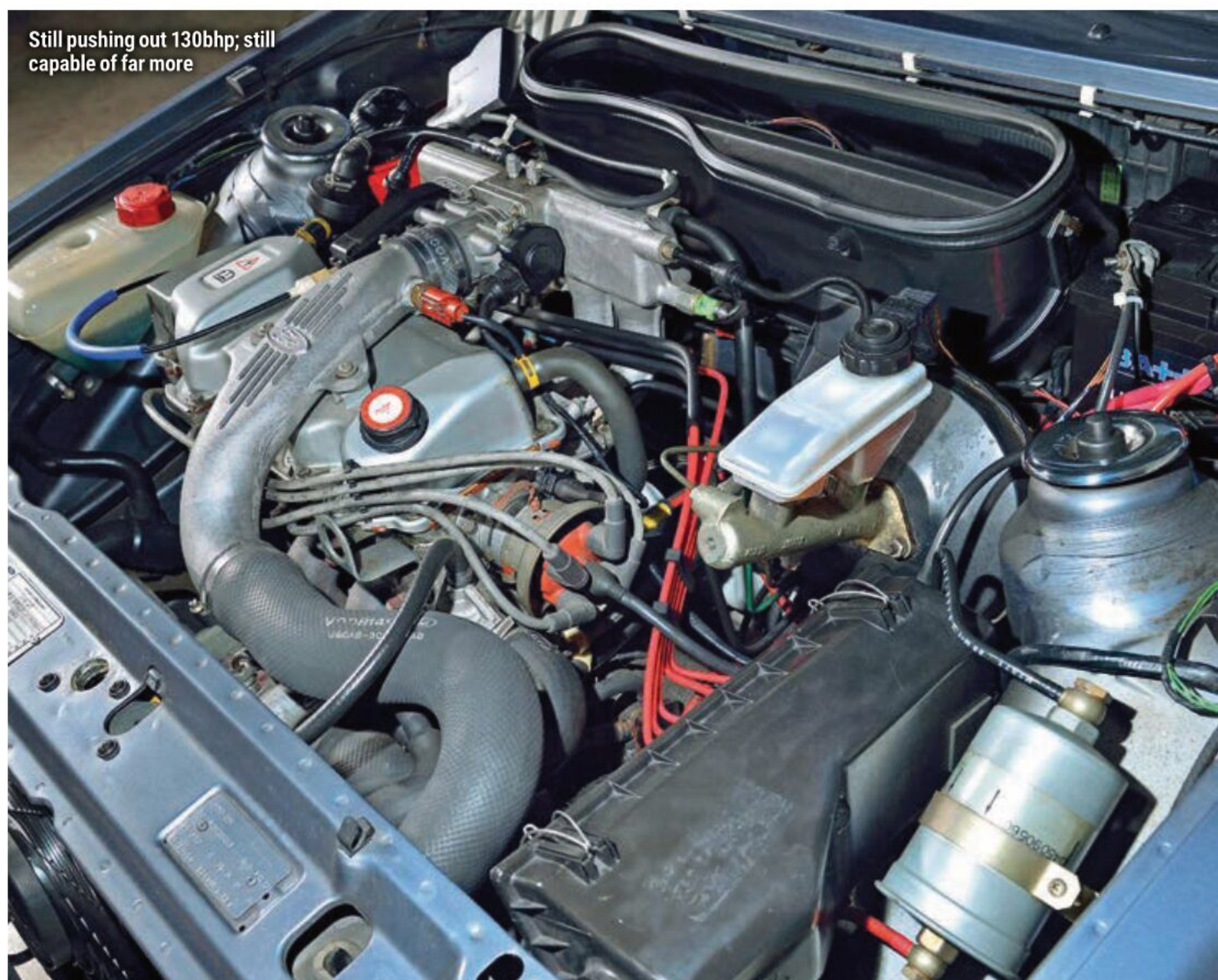
Owing to its July 1986 introduction, very early S2 RS Turbos were registered on C-plates. Long after the introduction of the Mk5 body style, final cars were sold on J-registrations; there are even one or two S2s around on K-plates too.

Escort RS Turbo Series One, a limited-edition machine developed around Group A regulations. This original car was equipped with a forced-induction version of Ford's successful 1596cc CVH powerplant, boasting 130bhp from its Garrett T03 turbo, intercooler and Bosch KE-Jetronic fuel injection.

To meet motorsport needs, it was fitted with an uprated XR3i five-speed gearbox with viscous coupling limited-slip differential and 4.27:1 final drive ratio.

Various other competition-derived tweaks made it onto the road version, including RS1600i-type front suspension with separate tie bars, 15in alloy wheels and wide-arched bodykit.

By the time it ceased production in December 1985, the S1 hadn't achieved the desired motorsport success, and Ford's plans had changed. No longer did the firm need something



Still pushing out 130bhp; still capable of far more

to take on forest stages – this time the UK’s A-roads and motorways were the intended playing field.

So, the Series Two became a sanitised and in many respects superior incarnation of its predecessor. Now it was a serious road car, and a proper hot hatch to hold the Blue Oval’s head high while the contemporary XR3i lagged behind foreign competition.

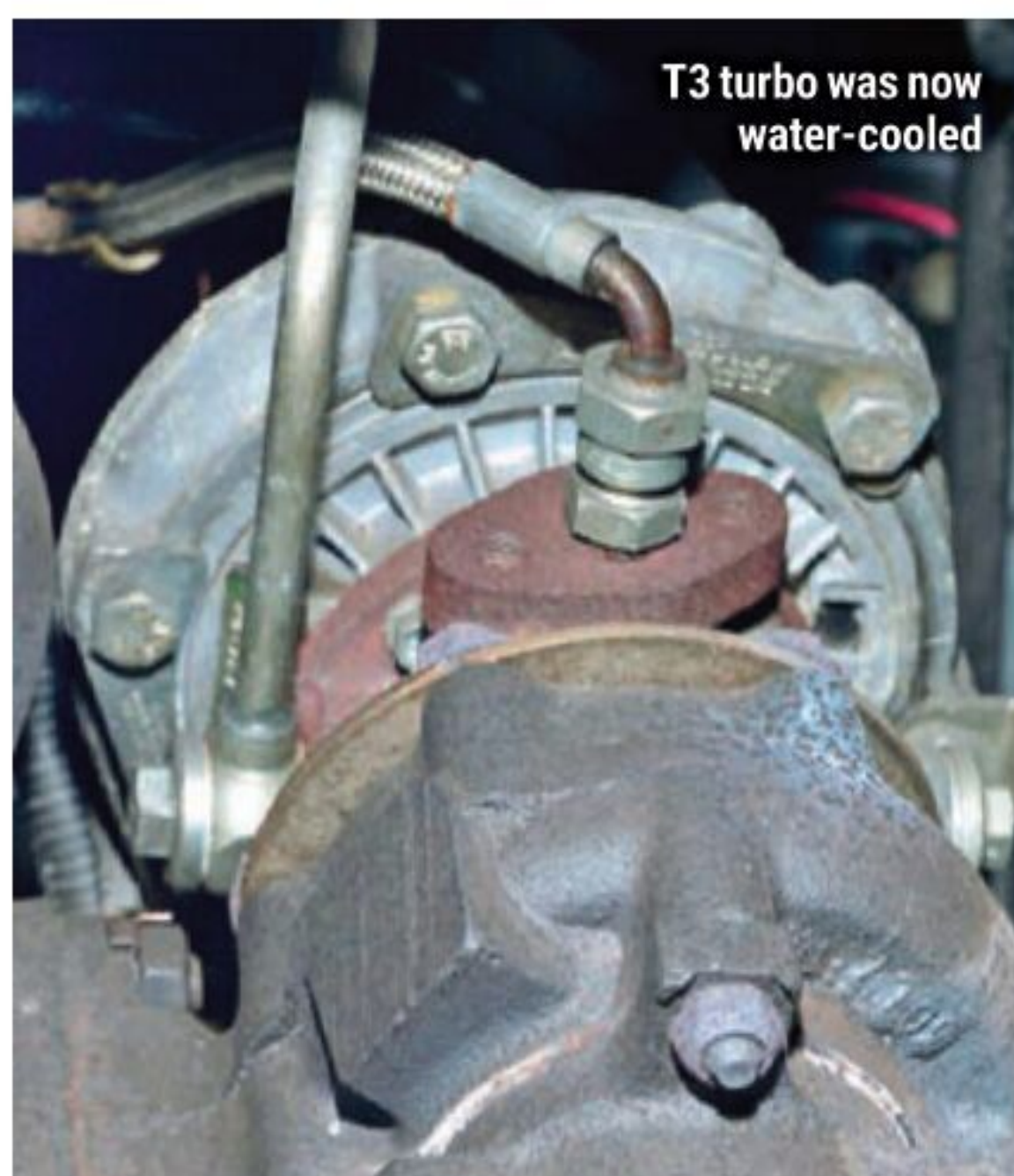
In fact, if the S2 had a failing, this was it. Becoming a mainstream model had sucked away some of the RS Turbo’s charm, and brought its appearance closer to its lesser XR-badged counterpart. Unlike its forerunner, it was even offered in a variety of colours – Diamond White, Rosso Red, Black (an extra-cost option) and metallic Nimbus Grey (also optional).

Again built in Saarlouis, the RS shared the XR3i’s three-door bodyshell with colour-coded bumpers (with black inserts, as opposed to red on the XR3i) and door mirrors. The RS also gained a body-coloured XR3i rear spoiler plus side skirts, small wheelarch extensions and Cosworth-style bonnet vents. As another identifying feature, the RS deleted the XR3i’s black window surrounds.

Nevertheless, the public struggled to tell the cars apart, and even their alloy wheels shared a styling theme – although at 6x15in, the Turbo’s were an inch taller than XR rims.

But it was under the skin where the magic happened. Taking most of the S1’s mechanicals, Ford’s Special Vehicle Engineering team toned down its raw character. Crucially, the

“THE SERIES TWO BECAME A SANITISED AND IN MANY RESPECTS SUPERIOR INCARNATION OF ITS PREDECESSOR. NOW IT WAS A SERIOUS ROAD CAR, AND A PROPER HOT HATCH”



T3 turbo was now water-cooled

PRODUCTION HISTORY

JULY 1986 – S2 Escort RST launched in Mk4 Escort body style, with turbocharged CVH engine, vented bonnet and ABS. Available in white, red, black or grey. Custom Pack optional extra (£572).

JULY 1987 – base-spec RST dropped. All cars have Custom Pack including sunroof.

SEPTEMBER 1988 – heated windscreen and Zolda cloth as standard.

SEPTEMBER 1989 – facelift S2 launched with new bumpers and spoiler, extended centre console and variable-speed wipers.

SUMMER 1990 – production ends.

S1's limited-slip differential was left in place, albeit with revisions to the coupling plates for a smoother action. Its eager 4.29:1 final drive ratio was swapped for a leisurely 3.82:1, which allowed more relaxed motorway cruising – 90mph at 4000rpm in fifth, rather than the previous model's 81mph.

The 1596cc powerplant featured minor alterations in line with Ford's 1986 Lean Burn modifications, including revised oil pump, cylinder head porting and pistons, with compression ratio dropped to 8.2:1. The intercooler, engine management system, one-piece inlet manifold and turbo were improved for smoother running, with the Garrett T3 now featuring a water-cooled centre bearing to aid longevity. A knock sensor was phased in during April 1987, allowing the ECU to alter the ignition curve for different fuel octanes.

Despite the changes, the RS Turbo's power remained at 130bhp, alongside 133lb.ft of torque. Having piled on the pounds since its predecessor, the S2's performance was understandably muted, although factory figures suggested otherwise. Improved aerodynamics (0.36Cd) and higher final drive ratio helped the top speed and aided fuel consumption too.

Like the rest of the package, the Series Two's chassis was reworked, in part to please Ford bean-counters but also to aid user-friendliness. The S1's fancy tie-bar front suspension was binned in favour of mainstream components, coupled with revised front anti-roll bar mountings, spring rates and softer XR3i-spec Fichtel & Sachs dampers.

A chunkier Orion 16mm rear anti-roll bar was



Two-spoke steering wheel had perforated rim



Pre-September 1988 Daytona cloth



Note '90 spec bumper and rear spoiler

'90-SPEC

What we know as a '90-spec Escort RST featured a list of desirable upgrades made standard in the September 1989 facelift, although several (marked *) were added the year before. Here's what a '90-spec RST should include:

- Deeper front bumper
- Rear spoiler with wrapped-over sides
- Boot decal changed to outline rather than solid text*
- Zolda cloth upholstery (grey with blue and red flecks)*
- Extended centre console
- Rear courtesy light
- Grey headlining*
- Variable-speed intermittent wash/wipe
- Fuel and temperature gauge positions reversed
- Revised rocker cover with repositioned charge carrier mountings and bracket
- 'Hearts and diamonds' ECU, allowing up to 10.2psi boost
- Plastic dipstick handle
- Windscreen washer reservoir with narrower neck
- Revised brake fluid reservoir
- Revised header tank

'90-spec factory-fitted optional extras

- Trip computer
- Upgraded sound system and separate power amplifier
- Mercury Grey metallic paint
- Black paint



Pre-facelift RS Turbo had separate rubber front splitter

“HAVING PILED ON THE POUNDS SINCE ITS PREDECESSOR, THE S2’S PERFORMANCE WAS MUTED BUT FACTORY FIGURES SAID NOT”

used, again alongside XR3i springs.

Better still, the S1’s inadequate brakes were radically updated, now featuring Sierra XR4i 260mm front discs, 229mm rear drums and a primitive belt-driven ABS set-up, known as Stop Control System.

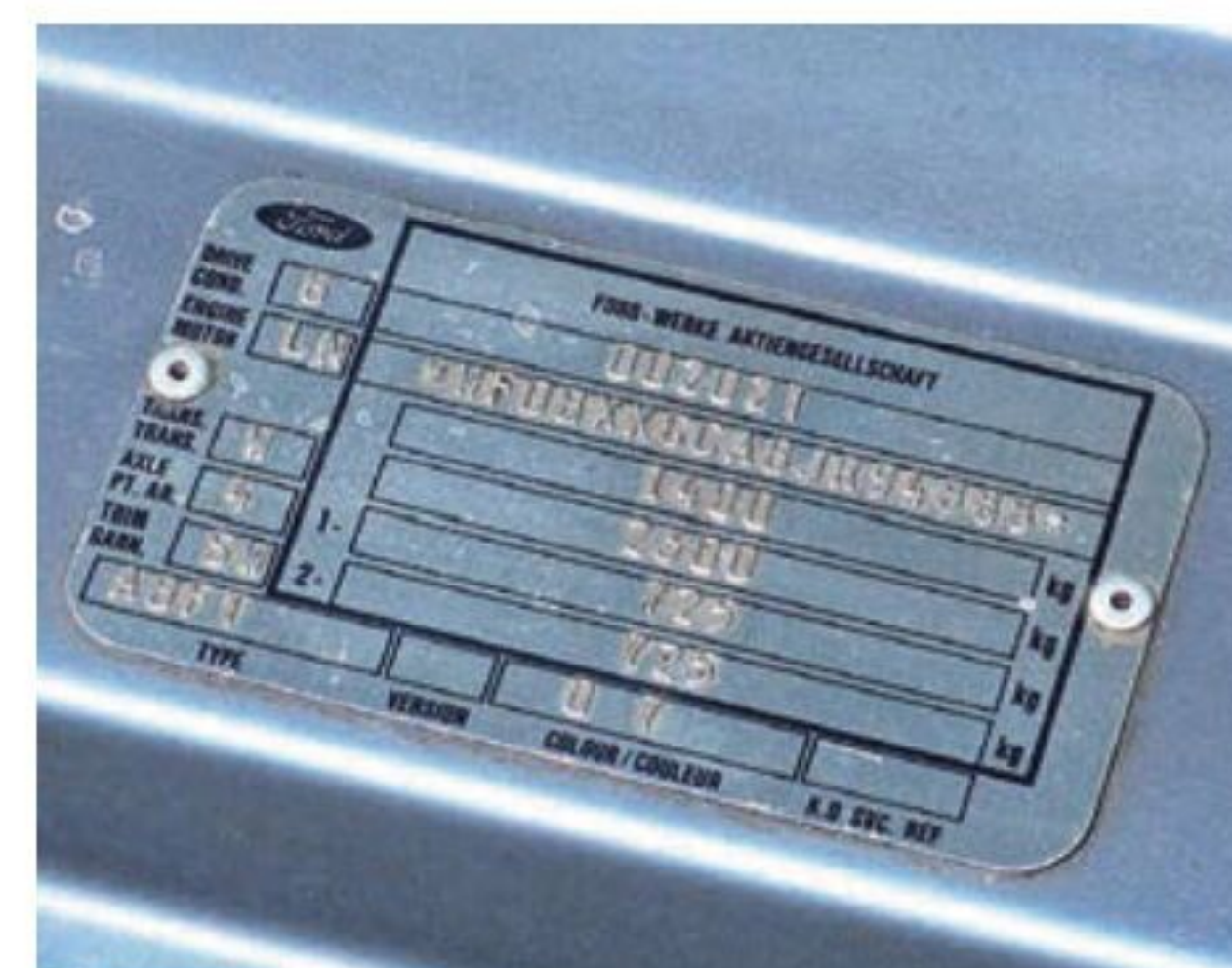
Like its predecessor, the S2’s cabin was almost identical to XR3is of the era, even using the same seats. Still, Recaros were initially optional at extra cost, as was the traditional Custom Pack featuring electric front windows, central locking and glass sunroof. Other options on top of the RS’s £10,028 price tag included electric mirrors, heated windscreen, trip computer and upgraded sound system.

From the start of 1987 Recaro seats became part of the Custom Pack, and by July the base-spec RS had been dropped from the range, with all cars now featuring entire Custom Pack accoutrements and suitably increased cost.

Subtle changes were gradually implemented, including replacement of optional Nimbus Grey with Mercury Grey, and Rosso Red with brighter Radiant Red. A heated windscreen became standard in September 1988, the badges received a fresh font, there was a switch to Zolda cloth upholstery, and the black headlining was replaced with regular pale grey.

A minor facelift of September 1989 later became known as ’90-spec. It featured desirable extras including distinctive wrapped-over rear spoiler, deeper front bumper, extended centre console and rear courtesy lamp.

By the time the RS Turbo ceased production in mid-summer 1990, UK buyers had snapped up 22,108 examples, then costing £13,985 each. It was replaced by the more powerful, normally-aspirated, 16-valve RS2000, but it wouldn’t be long before another turbocharged Escort RS – the Cosworth – hit the road. ■



SERIES TWO RS TURBO

ENGINE Turbocharged 1596cc four-cylinder, eight-valve, overhead cam CVH with new pistons giving 8.2:1 compression ratio, hydraulic lifters, water-cooled Garrett T03 turbo, intercooler, Bosch KE-Jetronic fuel injection, Bosch-Motorola engine management, revised inlet manifold, cast four-branch exhaust manifold and large-bore exhaust system

TRANSMISSION FWD, uprated five-speed manual gearbox with 3.821:1 final drive ratio, uprated 218mm clutch and viscous coupling limited-slip differential. Gear ratios: 3.15:1 first, 1.91:1 second, 1.27:1 third, 0.95:1 fourth, 0.76:1 fifth

SUSPENSION Front: MacPherson strut suspension with F&S dampers and uprated 134.4lb.in coil springs, 24mm anti-roll bar; rear: independent suspension with transverse trailing arms, F&S telescopic dampers, uprated 291.2lb/in coil springs, Orion 16mm anti-roll bar

BRAKES Front: XR4i 260mm ventilated discs; rear: 229mm drums, Girling SCS ABS

WHEELS AND TYRES 6x15in RS six-spoke alloy wheels, 195/50x15 tyres

EXTERIOR Pressed steel monocoque Escort three-door hatchback shell with body-coloured wheelarch extensions and side skirts, body-coloured bumpers with red inserts (black on red cars), colour-coded door mirrors, body-coloured XR3i rear spoiler, bonnet vents, tinted glass, driving lamps, red, white, black or metallic grey paintwork with RS decals

INTERIOR XR3i or optional Recaro front seats in grey Daytona cloth (Zolda on later models), leather two-spoke sports steering wheel. Custom Pack includes electric front windows, central door locking and tilt/slide glass sunroof

DIMENSIONS Overall height: 1384.7mm; overall width: 1587.5mm; overall length: 4046.2mm; wheelbase: 2400mm; weight: 1017kg

PERFORMANCE 130bhp @ 5750rpm, 133lb. ft @ 2750rpm, 128mph, 0-60mph 8.2secs

PRODUCED 1986 to 1990

PRICE WHEN NEW (1986) £10,028 (Custom Pack: £572)

NUMBER BUILT 22,108 UK sales

RS TURBO HEALTH CHECK

All RS Turbos are more than 30 years old, and as such there are a number of issues to keep an eye out for. Thankfully, we've spoken to the UK's leading tuners and come up with a list of what to look out for to keep your RS Turbo in good health

Words STEWART SANDERSON, JANO ODDKID AND JAMIE KING / Photos FAST FORD ARCHIVES



POOR IDLE AND STALLING

If the air/fuel mixture has been set correctly, poor engine idle and stalling can often be caused by air leaks. Common culprits are the oil filler cap, crankshaft oil seal, and auxiliary air pipes.

A faulty seal on the oil filler cap or crankshaft oil seal can introduce a fresh air source to the cam cover and/or crankcase, which in turn is piped into the metering head. So, technically, air leaking in via the oil filler cap or crank seal is

no different from air entering through a leaking intake pipe, or any other part of the intake system. The same goes for dipstick tubes; make sure they are sealed and airtight or the same can happen.

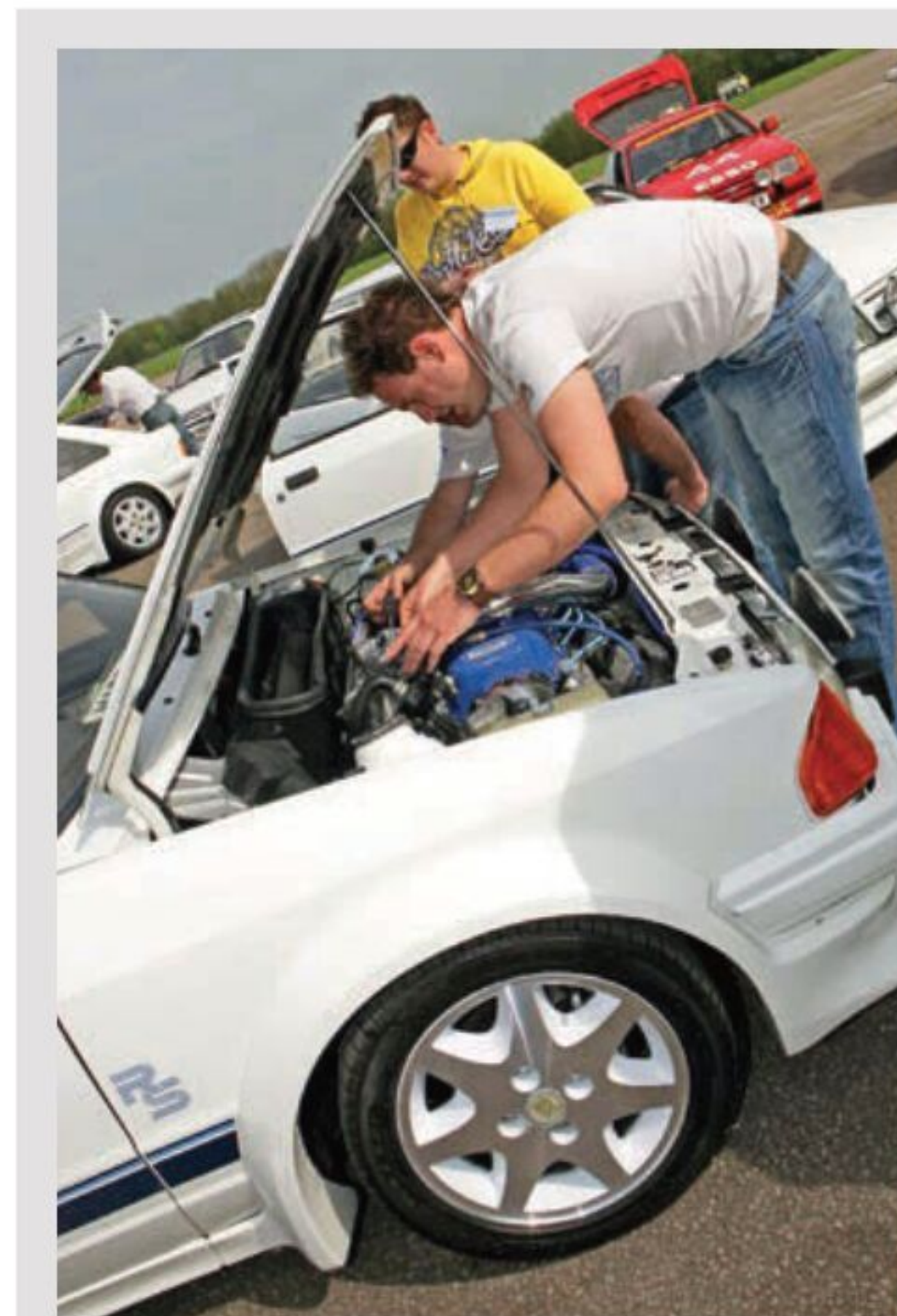
The rigid auxiliary air pipes have a rubber-sleeving inside them, which perishes with age and can introduce air leaks. A smear of sealant usually makes this airtight again and restores idle quality.



INCORRECT IDLE SPEED

It's not uncommon to find an increased idle speed being caused by an auxiliary air valve that's seized in the open position, allowing extra air through to increase idle speed. Close the pipe down between that item and the throttle body. If the speed drops, the valve's open and you need to find out why.

The most common cause of idle speed being too low is that the air bypass channels in the throttle body and the area around the throttle butterfly are filthy. Often a good clean of these items will result in a nice idle speed again. Failing that, a tweak of the idle speed screw under the throttle body normally has you back to speed again, if everything else has proven to be correct.

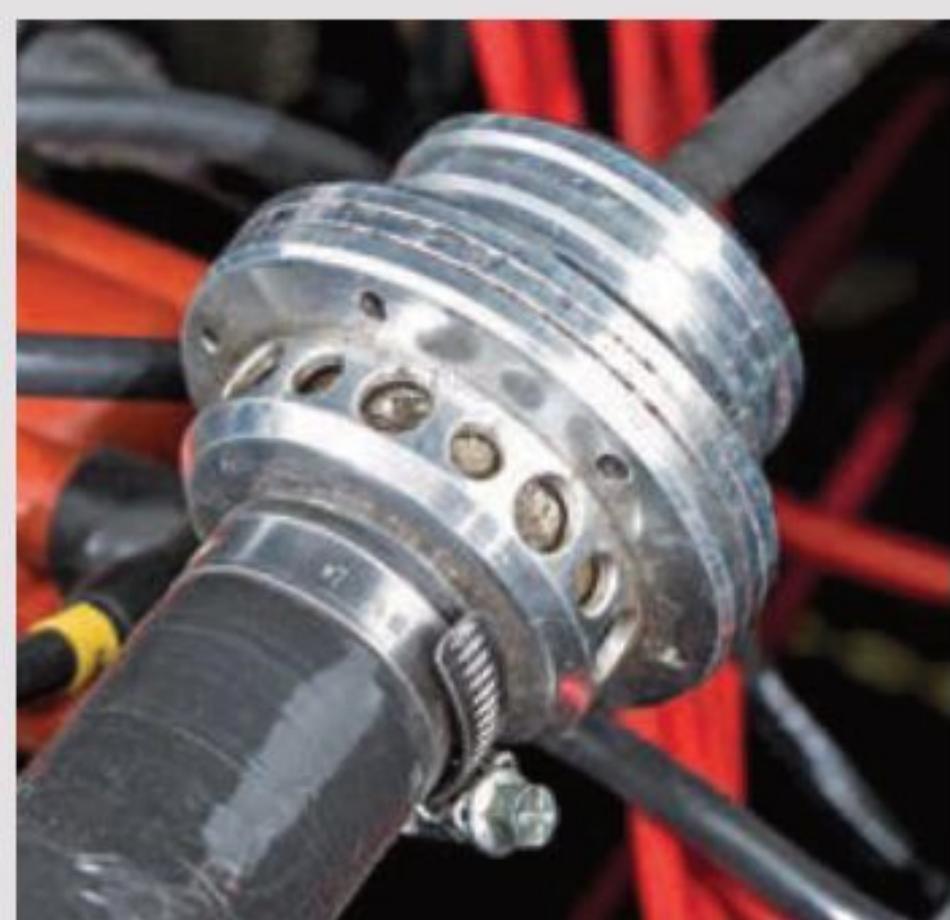


REVS HUNTING UP AND DOWN

Hunting revs is almost always caused by the air/fuel mixture running too lean or too rich at idle. The cure is quite simple; have it adjusted so that it is correct.

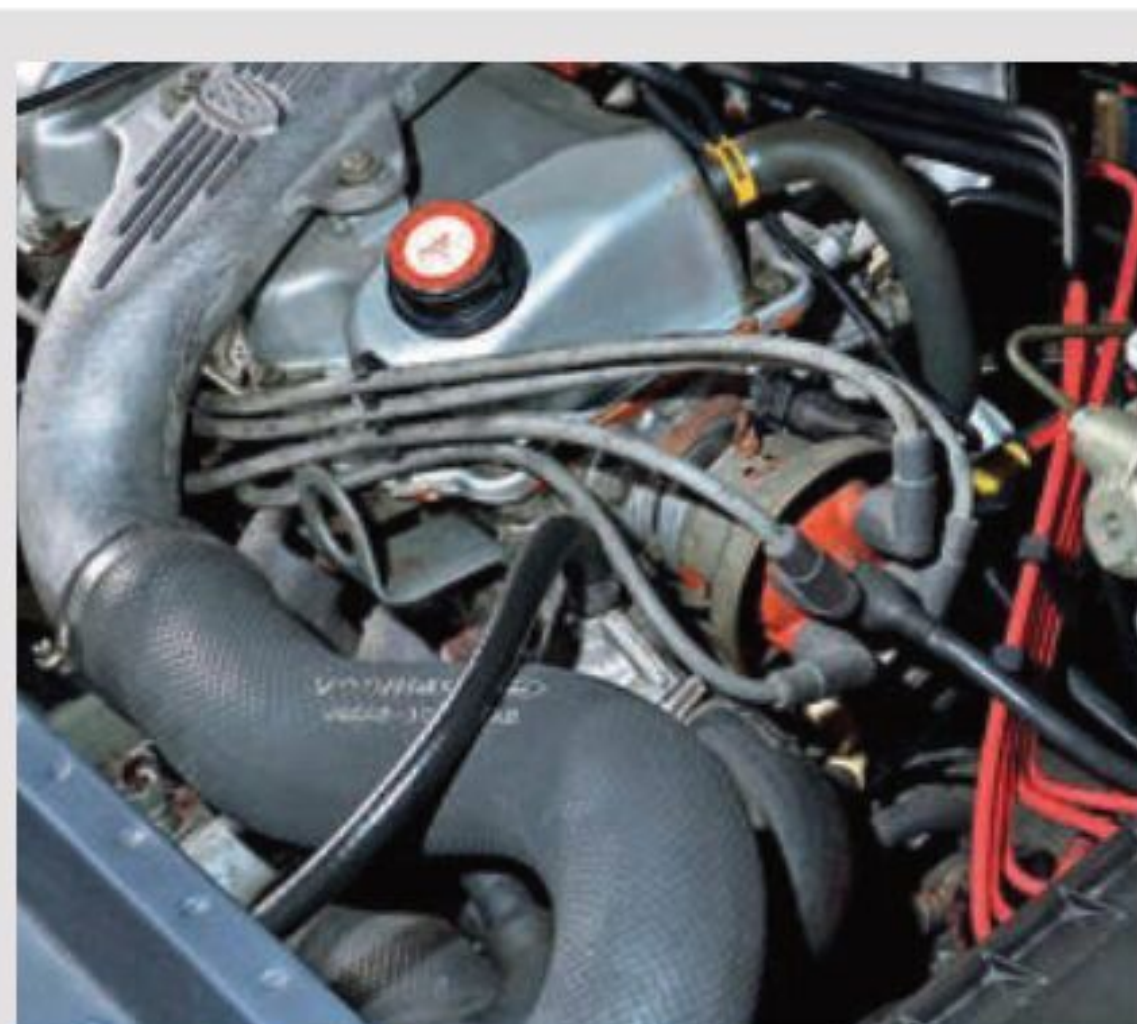
INCORRECT DUMP VALVE

Back in the day, nearly all RS Turbos were fitted with an aftermarket dump valve, and many of those Nineties and Noughties mods still lurk on cars today. The best thing is simply to remove it and refit the original setup, but some owners still like the sound associated with a dump valve. If you insist on running one, make sure it is the correct type. A single piston or diaphragm dump valve should be open when the throttle is closed, and Bosch K and KE fuel injection systems cannot meter the correct amount of fuel for idle passing through the air flap if there is a big hole in a pipe somewhere – in this case the dump valve. RS Turbos require a dump valve that only opens when under positive pressure. If you're unsure, get a pro to check it out for you.



ENGINE CUTS OUT WHEN USED HARD

Causes for the engine cutting out can vary, but a couple of common culprits are the mechanical rev limiter built into the rotor arm on early cars, and the overboost limit built into the ECU, which cuts ignition if the boost is too high. Both are worth investigation as potential causes.



SUDDEN LOSS OF POWER ON BOOST

This can be a number of things, and if your boost hoses are standard, then it's possible the intake hose is collapsing with the inlet depression. It's not easy to diagnose because you need to be able to see the hose in action (like on a dyno), but a good clue is the boost gauge reading falling off at the same time.

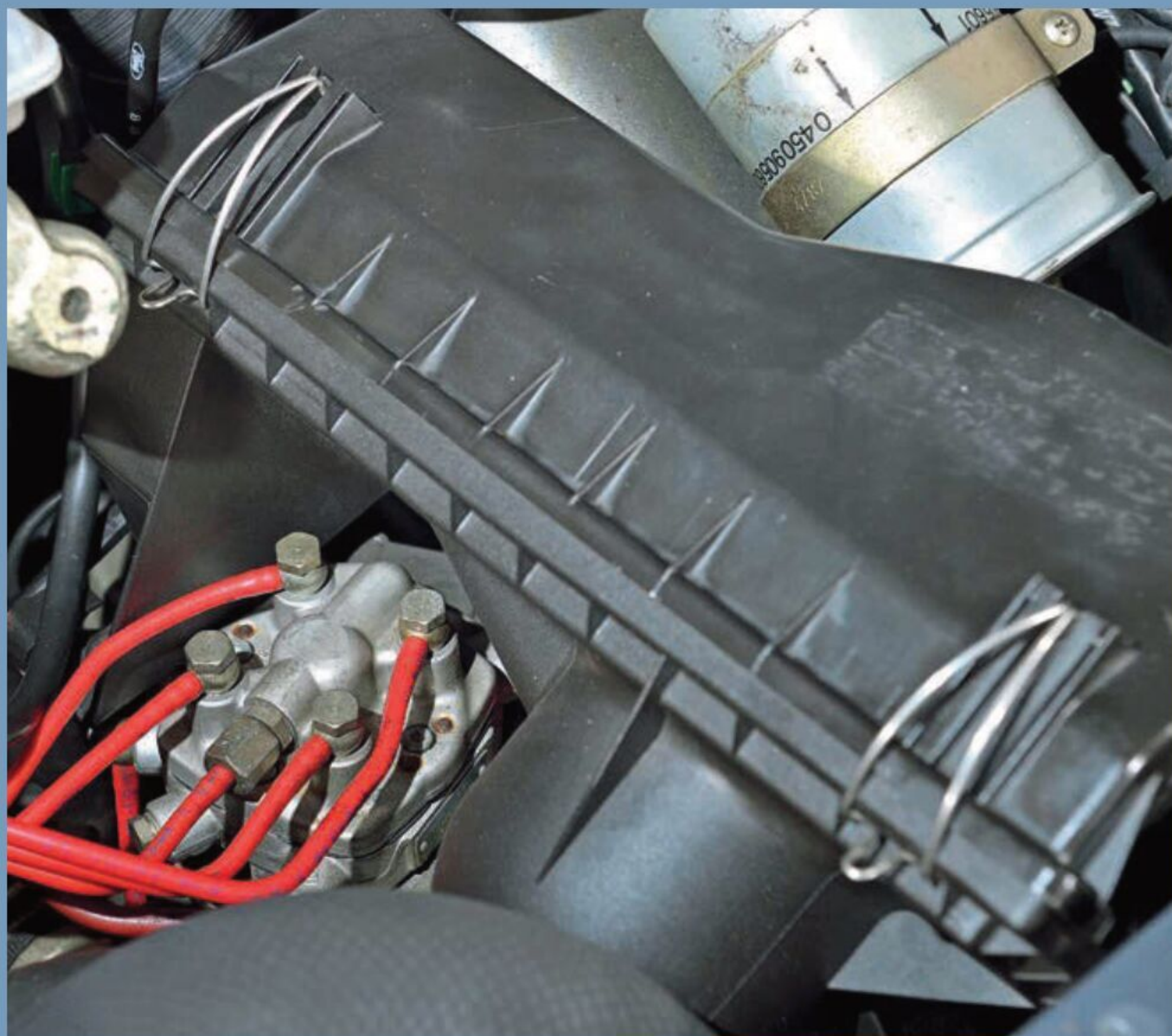
EXCESSIVE FUEL CONSUMPTION

Excessive fuel consumption could be caused by a leaking cold start valve; unplug it and see if that helps. If it does, bear in mind that the thermo time switch could be activating it when it's not required. Don't just assume it is faulty.

It could also just as easily be a faulty coolant temperature sensor causing the problem, telling the ECU the engine is cold when in fact it is hot.

But perhaps the most common cause is simply poor tuning. Take it to a reputable RS Turbo specialist for diagnostics and a proper repair.





HOT AND COLD STARTING PROBLEMS

Hot- and cold-start problems can be particularly annoying and are often difficult and time-consuming to diagnose. One of the most common offenders on Escort RS Turbos is the black box that controls the extra fuel for cold start via the electro-hydraulic pressure actuator. This can be faulty for a number of reasons; one of the simplest could just be a missing fuse, but it's not uncommon for the box to fail totally and supply either none, or too much, current at all times.

Which yours has done would depend on whether it affected hot or cold start. If your having hot-starting issues, unplug the pressure actuator and

see if the engine starts easier. If it does, look at the black box or any input signal that may cause it to think that the engine is cold.

Another culprit could be a faulty coolant temp sensor; it may be telling the ECU the engine's cold when it's hot, or vice versa. This will mean start-up fuelling will be incorrect and it may not start, or it may run poorly once it does.

It could also be a leaking or inoperative cold-start valve. But these tend to cause bad warm starts. If it is activating and causing poor warm start, the thermo time switch could be activating it when it's not required.

GENERAL MISFIRES

RS Turbos aren't particularly prone to misfires, so look at general ignition system condition and pay attention to rotor arms when they have the mechanical rev-limiter built in.

Spark plugs, gaps, HT leads and distributor caps all need to be in good condition, as does the main ignition coil or coils. Don't overlook coil voltage, which needs to be around alternator voltage for a good system but can often be significantly less if the wiring has degraded.

Escort RS Turbos are afflicted with two common but hard-to-find misfire problems. One is the green signal wire that comes out of the distributor. This wire goes all the way to the front of the car, and then across the lower crossmember, before travelling up the inner wing on the driver's side, and across to the ECU. It's possible for this wire to have rubbed through near the intercooler area, causing intermittent ignition misfires and sudden power loss.

If you have a misfire that seems impossible to trace, one final thing worth trying is unplugging the wastegate control solenoid – even if it's not plumbed in. When these fail internally, it shorts the ECU out and causes problems.



IRREGULAR BOOST PERFORMANCE

Complaints like having full boost one minute and none the next are most likely caused by a faulty wastegate control solenoid valve or a poor connection to it.

The wastegate control solenoid bleeds signal away from the wastegate and increases the boost pressure. If you turn it off/remove the plug from it, your boost will drop. Check the connection is clean and that it doesn't have an intermittent or broken connection on the valve.

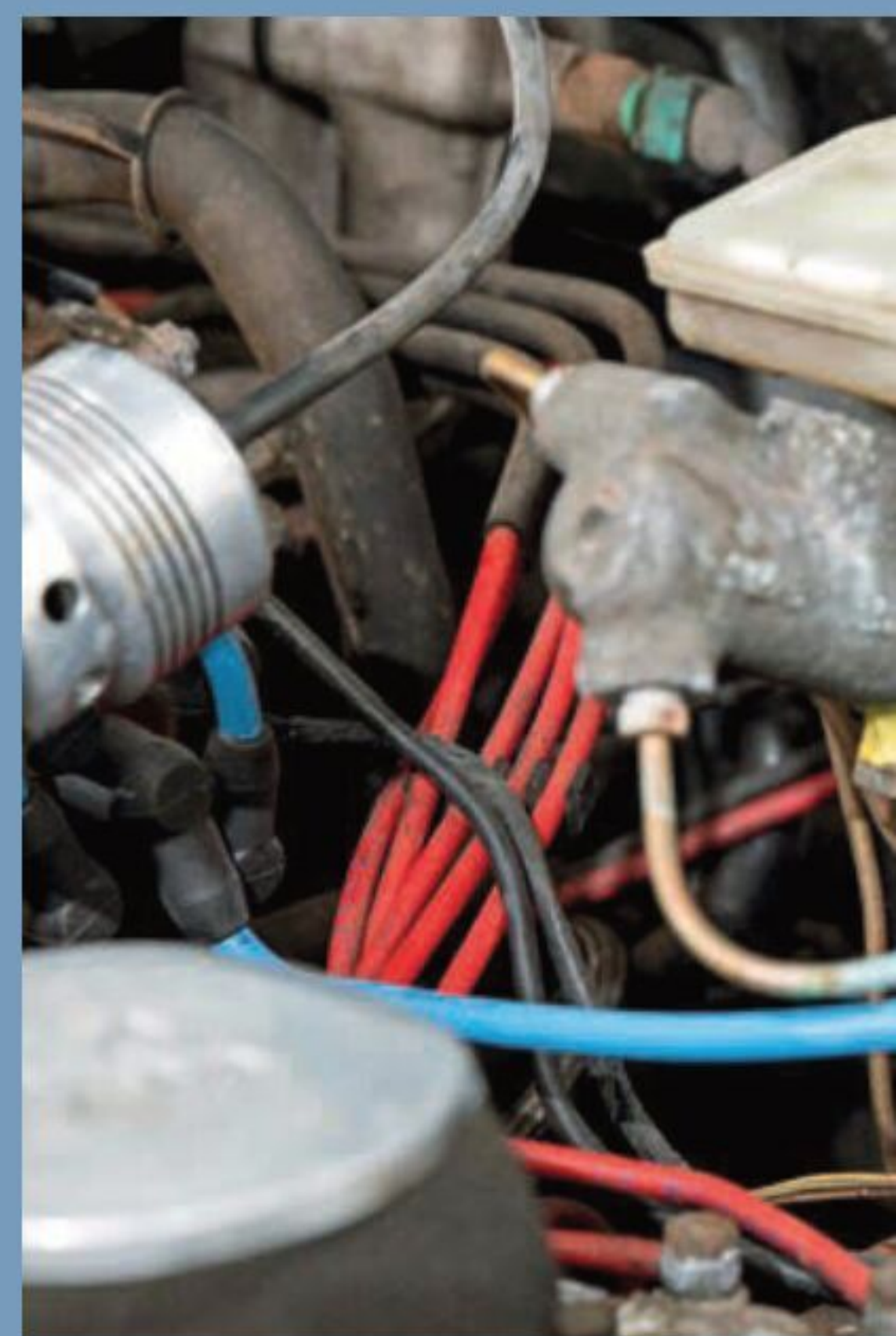
Another common cause is a sticking wastegate: wastegates jam halfway open, so that after boost has been achieved and you back off, the wastegate doesn't fully close. As a result, you will have a very lethargic boost response, or in some cases no boost at all.



FAULTY ABS

The mechanical belt driven ABS system on the RS Turbo is flawed from the start; simply it must be changed.

To do this is very simple. Remove all the metal brake lines, leaving just the flexi hoses attached. Then fit the six brake lines and the compensators (fitted just below the engine mount) from a Mk3/4 Escort without ABS (or a custom braided six-line kit from a reputable tuner). You can even make the compensators adjustable if you mount them in slotted holes, as the altering the angle at which they are fixed will adjust the front/rear bias.



GEOMETRY

Most RS Turbos have seen the geometry altered in one way or another: by lowering the suspension, fitting larger wheels, or simply from tired and worn bushes.

The first step to a well-handling car is to correct the negative effect these changes have had on the car's geometry. Simple tracking adjustments can help, especially if the settings are tailored towards your desired use.

But if you really want to improve the handling, you will need to add some adjustable components so that you can alter the car's geometry to suit any changes/upgrades you have made.

The parts you use will depend on budget and preference, but a tried-and-tested setup includes S1/RS1600i anti-roll bar, Bilstein dampers converted to coilovers, adjustable TCAs, Group A Cosworth top mounts, adjustable rear tie bars, and swapping the rear trailing arms for a wishbone setup.

This won't win you any originality points at concours events, but it will give you a fully adjustable suspension setup that can be tailored to suit your needs and driving style. And it gives a 30-odd-year-old Escort a setup that not many other models, even much newer cars, can rival.



CHEAP TYRES

This isn't RS Turbo-specific, but make sure your tyres are the best you can buy. If it means something else has to wait for a while, then so be it.

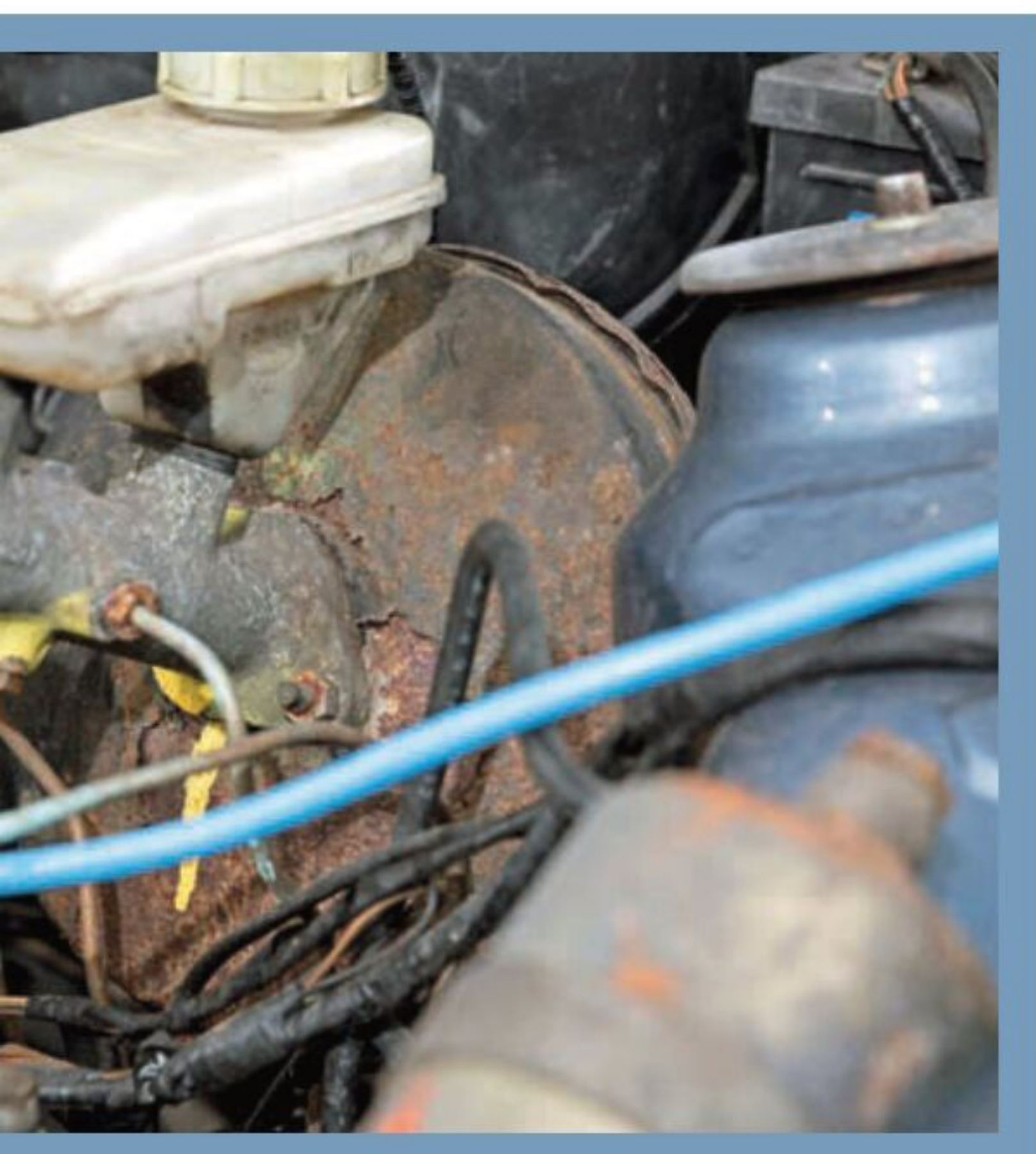
If modifying the car, most owners find 16in wheels are the best all-rounders, using 205/40 tyres on the front and slightly wider 215/40 on the rear with modified arches to suit.



KNOCKING STEERING

Knocking, shaking steering is common when you drive an old Escort that hasn't been kept up to scratch. The first thing to check is the steering bush located inside the bottom of the steering column. When removing and refitting the steering wheel, most will forget to guide the side tab on the bush back into the column. As it has a sprung loaded tension it's easy to break it by clamping it between the column and knuckle when tightening the steering nut.

It's also worth looking to mount the steering rack slightly higher than the standard position (custom brackets are available), which helps eliminate bump steer. Also, when coupled to the S1 RST or RS1600i adjustable tie-bar and roll bar (and adjustable TCAs) it makes for a fantastic-handling car.



ELECTRICAL INSTALLS

Over 30 years of ICE installations, gauges, turbo timers, alarms, lights and sat navs has taken its toll on most RS Turbo's old wiring looms. Many are at a point where they could be considered plain dangerous. If the car has a gauge that has been wired into the ignition switch or lighting circuit, be warned that trouble is brewing. Any gauge or added piece of electrical equipment needs its own source of power through a controlled relay.

Other common electrical issues include the fuel pump experiencing a drop in voltage due to old wiring, and larger/extra cooling fans placing an extra demand on the original wiring. For safety's sake, both need to be looked into as soon as possible, even if the car is totally standard. ■



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RAISING THE BAR

The idea behind Mat Grafton's big-power RS Turbo was born in the pub. But when tragedy struck, Mat had to reassess what was truly important, and set about raising the bar in tribute to a lost friend...

Words **DAN BEVIS** / Photos **WILL ARON**

What you're looking at here is three separate and distinct things. First and foremost, it's a largely stock-looking Series Two RS Turbo, the only giveaway that anything's out of the ordinary being a slightly lower stance over some pretty Raceline RL7s.

Second, it's a bit of a wolf in slightly smaller wolf's clothing; not a sleeper as such, as the RST has an inherently boisterous vibe, but there's an incredible amount of horsepower and modern tech hiding under the bonnet.

And third – and most importantly – it's the product of friendship. The genesis of the project lies with a bunch of best buds, while all the build decisions were made in pubs and curry houses. It's not just a car, it's a social lubricant.

Carl Sagan, the astronomer and cosmologist, once came out with this mind-bending quote: "If



you wish to make an apple pie from scratch, you must first invent the universe.”

It's a troubling notion for anyone creative, as it effectively strikes out the concept of true originality. What he was saying was that everything in existence is at the end of a long chain of actions and consequences; if you wish to go back to first principles, it's not just a case of unscrewing all the bits and seeing how it works. True originality can only come from jump-starting the second big bang and creating a whole new universe for yourself, crossing your fingers and hoping something similar to Earth will evolve, with a breathable atmosphere and plenty of crushed dinosaurs beneath the rock to use as petrol in the cars you also hope will exist.

You might think this notion would leave the world of car modifying bereft and hopeless, but no: with the burden of organic originality lifted,

we're free to take what's established and find new ways of reworking it.

What this essentially means in the case of Mat Grafton's RS Turbo is that it's not just an out-of-the-blue project: no, it's the product of a long string of interconnected events. It couldn't have come into being without all of the human and automotive interactions that formed and shaped Mat as a person.

He says, "I've owned and modified RS Fords since I was 17, when my older mates – Andrew Dawes (aka Gus) and Craig Barnes (Barnsy) – took me out in their RS Turbos and Cosworths.

"So the reason for buying this RS Turbo a few years ago was for nostalgia, to bring back the memories of the first RS I bought back in 1999, and me and Gus and the lads having so much fun and mischief."

It was New Year's Eve in 2016 when, sat in a

curry house with the boys, Mat came across this particular S2 RST for sale locally on Facebook. He arranged a viewing, and a few days later found himself checking out an Escort in really quite impressive condition; it had covered only 180 miles in the previous eight years, and while it had a definite Nineties vibe with its smoked lights, clear indicators and underbonnet chrome, he could clearly see the potential.

The engine spec was quite enticing too, running around 170bhp thanks to a tweaked T3 turbo, Pace Stage 2 intercooler, Mongoose exhaust and a few other tweaks.

With the car duly and eagerly acquired, job one was to start returning all the lights and various other mods back to standard, as well as swapping the steering wheel for an original-option three-spoke RS item. The Escort was then booked into Motorsport Developments for →



SERIES TWO RS TURBO

ENGINE 1596cc EFi CVH block (8.3:1 CR), blueprinted build by Andrew Lindley at AL Developments: standard-size crank (polished and balanced), EFi flywheel with 36-1 CPS pickup and ARP flywheel bolts, ACL main and little end bearings, new CVH oil pump, Wossner forged pistons, PEC forged rods and ARP rod bolts, AL Developments baffled/gated sump and MSD magnetic sump plug, AL Developments big-port CVH 8V cross-hatch cylinder head, Harland Sharp roller rockers, Newman PH4 cam, Newman 200lb springs, Newman solid lifters, adjustable vernier pulley, standard head bolts and head gasket, Gone Racing modified S1 inlet manifold (match-ported by AL Developments), Fiesta RS Turbo fuel rail, Deka 630cc 60lb injectors, Sierra RS Cosworth throttle body with PF09 TPS, Turbosmart FPR800 fuel pressure regulator, ND Fabrications FPR bracket, OddKidd Creations throttle cable kit, ND Fabrications sidewinder exhaust manifold and brace, ND Fabrications modified CVH thermostat housing, MSD 82C thermostat, Garrett GTX2867R Gen-2 turbo with 0.48 modified exhaust housing, RamAir cone filter, ND Fabrications downpipe with lambda sensor and EGT sensor, Mongoose exhaust system with 3in outward-rolled tip, Mac 3-port electronic boost controller, Gone Racing breather tank, Gone Racing cam trigger bracket, Cherry GS100502 cam trigger sensor, billet crank pulley, Fiesta RS Turbo coil pack, Mr-Retro-Leads bespoke ignition leads, Vauxhall 3-bar map sensor, ACT sensor, Alunox fabricated charge carrier, Pace RS500-style single-pass intercooler, Airtec alloy radiator, two Spal 12in fans, red hoses, Simtek Pro engine management (fitted by Steve Simpson), Raychem DR25 engine loom, Autodynamix fuel pump loom, Autodynamix fan loom, Bosch 044 fuel pump, RS Turbo fuel filter, braided fuel lines/feeds, 16-row Setrab oil cooler, Zeitronix lambda controller and engine monitor, Transit Connect starter motor, Reveltronics EGT amplifier, Zeitronix lambda sensor, Mark Knight three-position switch, anti-lag (latch switch button style), launch control (momentary switch button style), Simtek traction control, Simtek boost-by-gear, Simtek safety features (fuel, boost, temps, pressures), setup by Mark Knight, mapped by Stu at Motorsport Developments, additional wiring and pin-outs by Mark Knight

POWER 224bhp at 9psi, 242bhp at 13psi, 303bhp at 24psi

TRANSMISSION IB5 gearbox casing with bigger bearings, Ka first-fourth shot-peened gear set, Puma fifth shot-peened final drive, Quaife ATB LSD, Rally Design quickshift, electronic gearbox speed sensor, AP Racing CP2000-35 clutch kit, IB5/BC hybrid thrust bearing

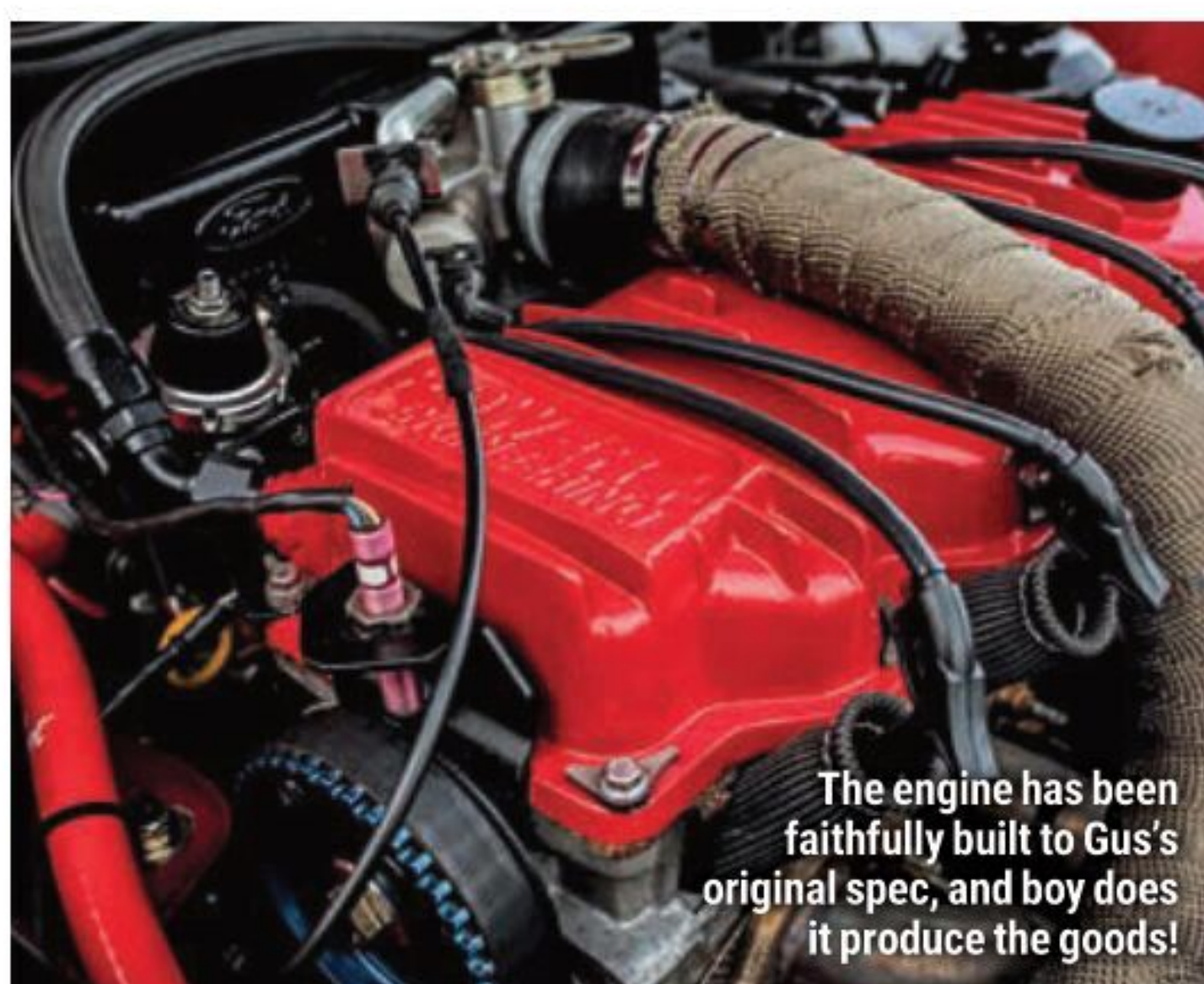
SUSPENSION Gaz Gold coilovers (300lb front, 225lb rear), full SuperPro bush kit (supplied by C&J Auto Services), MK Motorsport WRC bladed front anti-roll bar, MK Motorsport adjustable track control arms, rear camber bolts, adjustable tie rods

BRAKES Front: AP Racing 335mm four-pot brakes; rear: RWD Sierra RS Cosworth brakes; Goodridge braided lines, MSG bespoke pedal box

WHEELS AND TYRES 17in Raceline RL7 Motorsport wheels, custom '88 Gus' centre caps, 205/40x17 Toyo R888 tyres

EXTERIOR '90-spec front bumper, '90-spec rear spoiler, OEM-option headlight protectors and spotlight protectors, mud flaps

INTERIOR Original RS Turbo Daytona trim, OEM-option RS three-spoke steering wheel, Zeitronix monitor in centre console, Stack boost gauge in clock shroud, Simtek ECU USB port in glovebox, Kenwood head unit, Infinity front speakers



The engine has been faithfully built to Gus's original spec, and boy does it produce the goods!



Garrett GTX2867R provides punchy spool-up and enough boost to crack 300bhp from the 1.6-litre CVH





Fair play to Mat for using the RS in all weathers

a proper setup, although the discovery that the compression was down on cylinder three changed the direction of the project somewhat.

Mat recalls, “Gus told me to bring it over and leave it with him. Bear in mind that I live in North Wales and he was in Sheffield – but as an epic mechanic and a very fast one too, I knew it’d be in safe hands with him.

“After many investigations, he informed me that I needed to get another engine. So I did a bit of searching and found a freshly-built CVH; I bought it, dropped it off with Gus, and one Saturday morning we set about fitting it... Although once fitted, primed and fired up it was apparent that it was a bad build. The crank was knocking; I was gutted, but I knew I was in good hands with Gus as he always took the worry out

of what seemed to me like major jobs.

“So later that night we went to a mate’s pub, and after quite a lot of alcohol (me drowning my sorrows) Gus was suggesting a big-spec modern build. With a pen and a notepad in the pub, while tipsy, he wrote a spec out as I kept us topped up with beer.”

The following day, Mat went out on a mission with his little notepad, pulling together all of the parts that Gus had suggested for this crazy motor build. With everything eventually ticked off, a few important jobs needed doing for the sake of belt-and-braces – boring the block, checking the crank, facing the flywheel – and these tasks were farmed out to Andrew Lindley at AL Developments in Leeds.

“Gus and I had planned for me to get



“GUS WAS SUGGESTING A BIG-SPEC MODERN BUILD. WITH A PEN AND A NOTEPAD IN THE PUB, WHILE TIPSY, HE WROTE A SPEC OUT AS I KEPT US TOPPED UP WITH BEER”





The interior remains period-perfect, with an RS-option steering wheel



Boost gauge grafted seamlessly into the dash surround



up to Leeds to pick up all the parts on a Friday afternoon, take it all over to his and build it up over the course of that night with the help of some beers and a kebab, then take it straight for an MOT on the Saturday,” says Mat. You certainly can’t fault the confidence, or the enthusiasm. But there was a slight delay on collecting the parts, so Mat rang Gus to explain the situation and cancel the MOT appointment.

Mat adds, “Gus was fine with that, saying that he would have a run out on his motorbike instead, and do the engine the following weekend when the parts were ready. So my good friend Gus went out on his motorbike, and he was involved in an accident. He died in hospital nine days later.”

A devastating turn of events, and quite understandably the car was put on the back burner as Mat struggled to process the emotional chaos of having lost his lifelong friend.

After a period of time and as the mental fog began to lift, Mat was struck by a thunderbolt of serendipity: “Andrew at AL Developments offered to finish off the engine build, carrying it all out exactly as Gus had described it in the pub. This set the ball rolling to finally sort the car out according to Gus’s plan – building it with

modern features to change how the RS Turbo behaves with big power.”

And that’s precisely what happened: Andrew’s blueprint build boasts a frankly astonishing list of ingredients, as you can see from the larger-than-average spec panel accompanying this feature, all mapped out according to Mat’s beer-stained notepad.

The EFi block sports a stock crank, which has been polished and balanced, joined by forged Wossner pistons and PEC forged rods, while at the top end there’s a proprietary AL Developments big-port eight-valve head with uprated valve-gear and Newman PH4 cams.

A modified S1 inlet manifold comes courtesy of Gone Racing, working with a Fiesta RS Turbo fuel rail and Deka 630cc 60lb injectors. There’s a Sierra RS Cosworth throttle body, and perhaps the most seismic alteration is the Garrett GTX2867R Gen-2 turbo; sitting on a sidewinder manifold from ND Fabrications, it’s mated to RamAir induction and a Pace RS500-style single-pass intercooler.

It’s all managed by Simtek Pro software, set up by Mark Knight and mapped by Stu at Motorsport Developments, which features anti-lag, launch control and traction control.

The three-stage switchable boost means it all adds up to a relatively friendly (but still pretty serious) 224bhp at just 9psi of boost, a rather more forthright 242bhp at 13psi, and an utterly astonishing 303bhp at 24psi.

Gus was really onto something here, mapping out a truly incredible engine build, and Andrew’s fastidious and painstaking work meant it’s all come to fruition in epic style.

Mat grins, “I use the car hard around North Wales, and I also love cruising in it. People at local meets seem to love the car – especially the fact that I use it all year round.”

And why wouldn’t he? With the memory of his old friend acting as his co-pilot, Mat’s got the perfect tool for everyday thrills. It’s not just a car. It’s a bundle of memories. And now he can spend every single day raucously and joyously making new ones. ■

THANKS “Andrew Dawes (Gus), Craig Dawes, Barnsy and Moony, Judi Roberts, Daniel Roberts, RC Motors Wrexham, Brother Muz at Gone Racing, Dave Fox, Andrew Lindley, James Ainsworth, Mark Knight, Stu and the team at Motorsport Developments, Nikky Davies at ND Fabrications, Mark at MK Motorsport, and Raj at Autoflock.”

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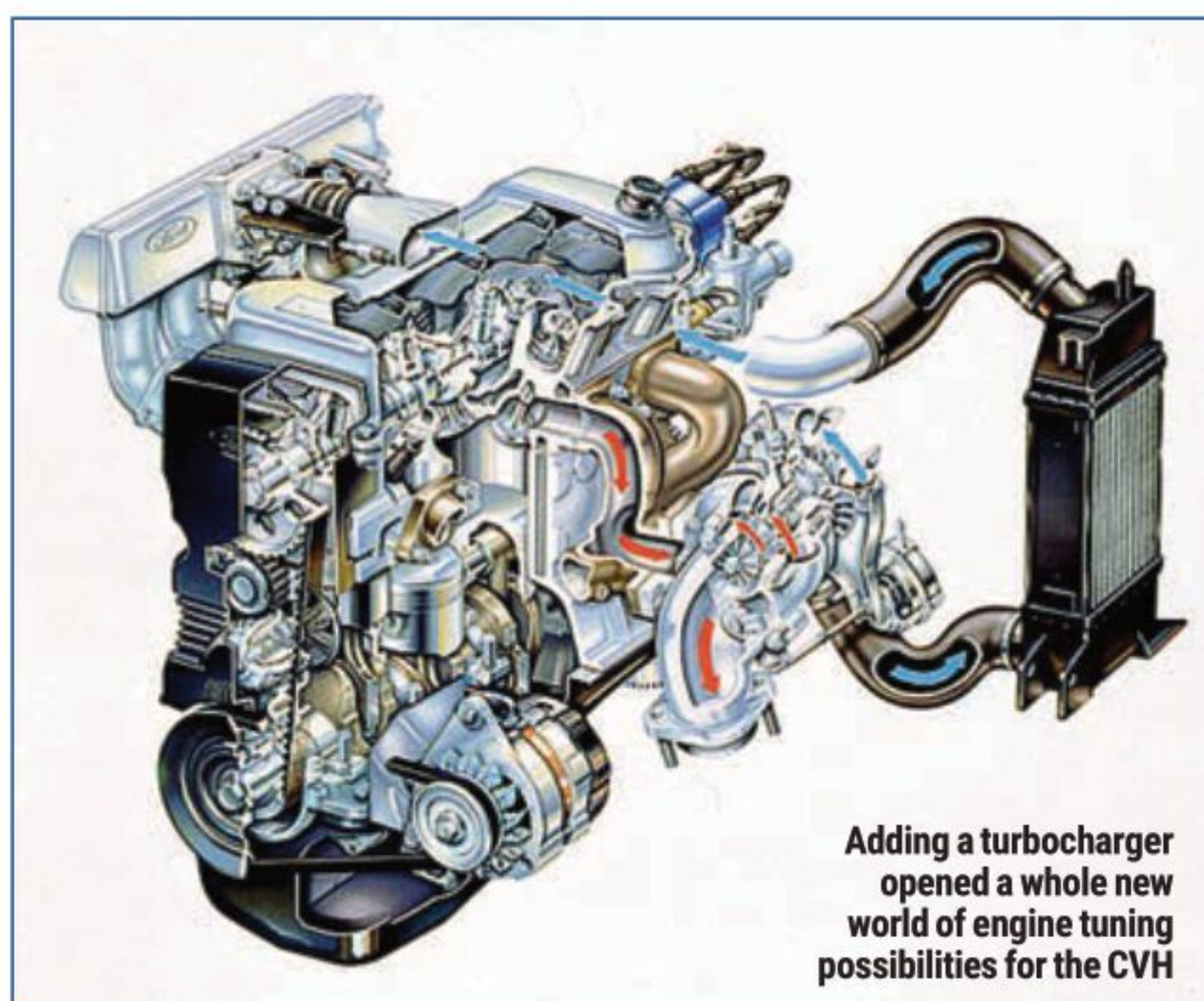
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TUNING THE CVH TURBO

Simple, easy to tune, and reliable – there are many reasons to love the CVH Turbo. And with loads of ways to extract more power, we find out what you can do to the humble unit...

Words JAMIE / Photos FAST FORD ARCHIVES



Adding a turbocharger opened a whole new world of engine tuning possibilities for the CVH

HISTORY

The CVH was first introduced in 1980, replacing the Crossflow unit in the Fiesta, before finding its way into Escorts, Orions, and even the Sierra.

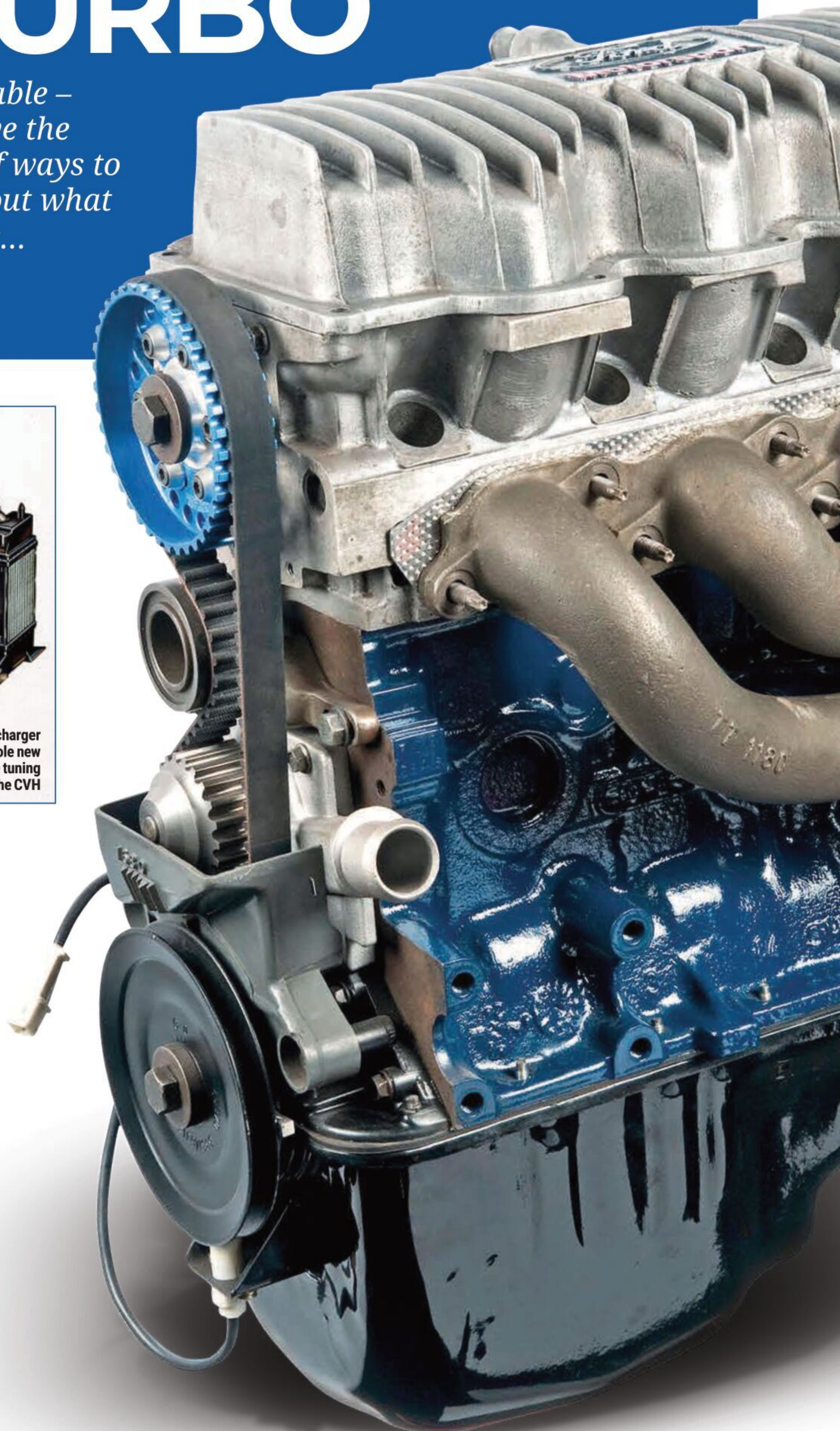
CVH stands for Compound Valve Hemispherical – the compound valve part relates to the angle of the valves, and the hemispherical part relates to the shape of the combustion chambers.

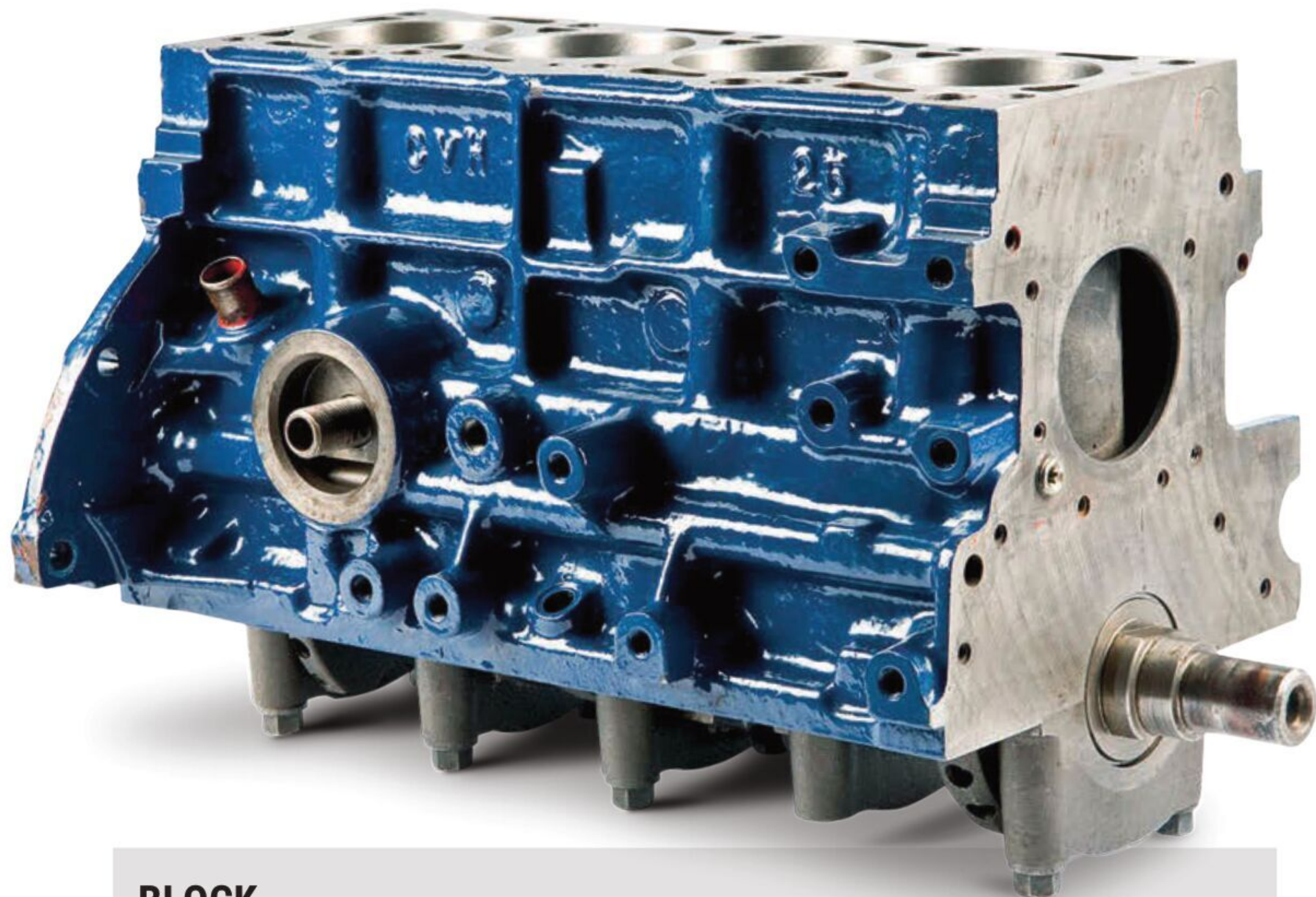
Being easy to tune, the CVH soon became the benchmark engine of the hot hatch, powering icons like the XR2 and XR3, and was very popular with kit car enthusiasts too.

In 1984 Ford added a turbocharger to the CVH for the S1 RS Turbo. With 130bhp (132PS) as standard, and the potential for significant gains from simple bolt-on components, it was an instant success.

The S2 RS Turbo saw some slight revisions to the CVH Turbo motor, such as a one-piece inlet manifold. The engine then appeared again in the Fiesta RS Turbo, with a smaller T2 turbo and EFI.

The CVH was available in 1.1, 1.3, 1.4, 1.6 and 1.8-litre (Sierra only) capacity in European Fords, while Americans saw the same engine in 1.9- and 2.0-litre guise. The CVH was phased out when the Zetec was introduced in the '90s.





BLOCK

The original 1.6-litre block is fairly tough, but it does have limits. Back in the day, people were striving for silly power from the original block, and while it was possible to achieve, the block almost always cracked. Over 300bhp is achievable with the right setup and engine management, but most tuners set the upper limit for any engine builds based on the factory CVH block at around 250bhp. Some blocks had slightly thicker castings and would hold together slightly better than others, but nothing's guaranteed.

Instead, there are better options to begin with. The American 1.9-litre 'tall' block is stronger, due to additional material and strengthening at the front of the block. This can be sleeved back to 1600cc using liners if required, or bored out to 2000cc.

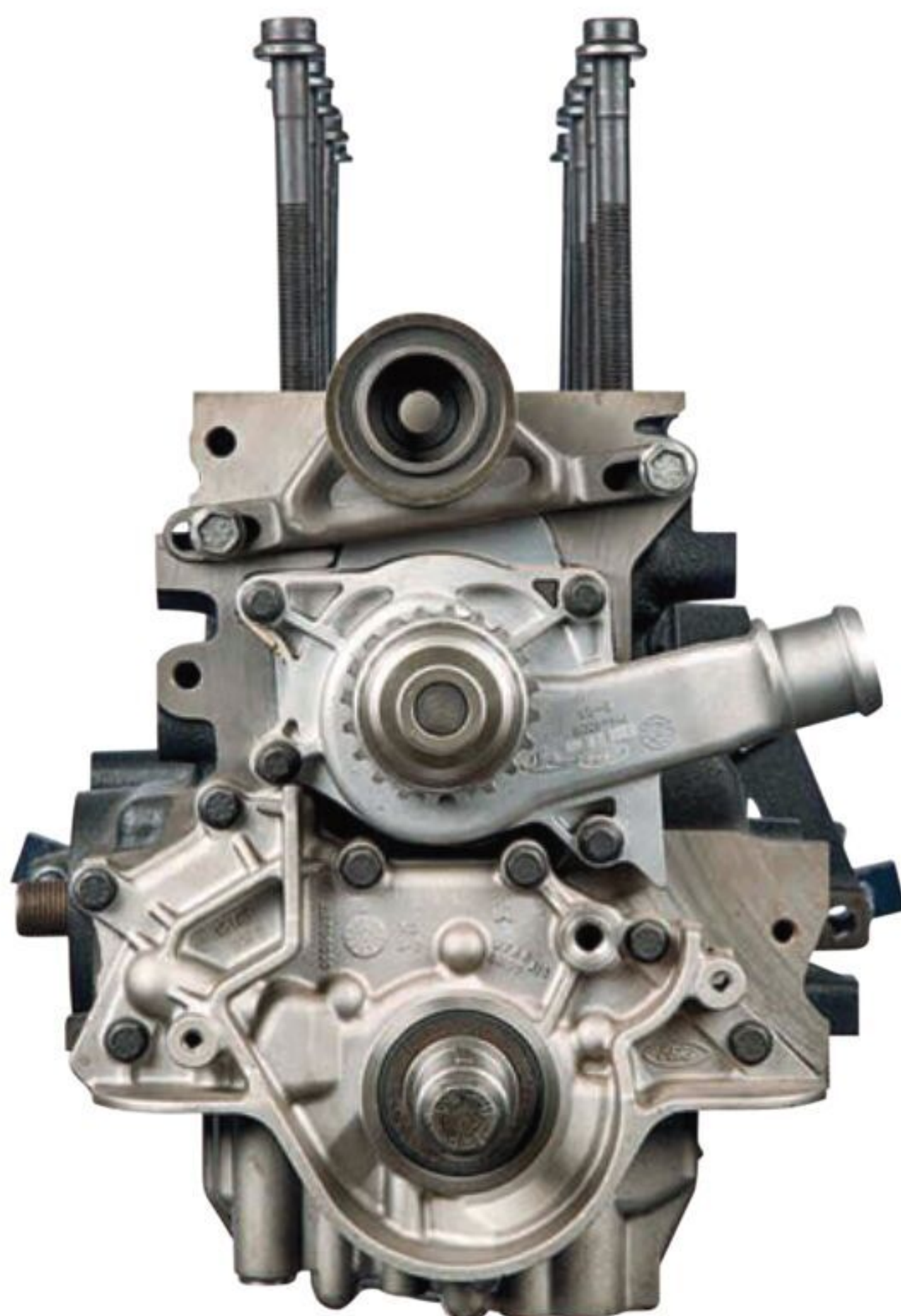
Some specialists also offer a bit of a hybrid conversion – using the 1.6 crank and the 1.9 block, slightly longer conrods (which will need changing anyway), and 83mm pistons – which results in 1720cc capacity. This gives a strong block capable

of handling the power, and retains the original crank to help keep the costs down.

A more common option uses the Zetec block. Technically, this engine has become known as the ZVH, but it basically involves modifying the Zetec block to accept the CVH head. Again, the result is a strong bottom end, but as Zetec blocks are readily available and cheap they are often a more attractive option than paying out for an expensive 1.9 CVH block (and that's if you can even find one). There is one caveat, though – use a Black Top bottom end, as they are much better suited to this conversion than the earlier Silver Tops.

The reason the capacity is increased is because it's the safest way to increase the power of a CVH. You can't increase revs because the rocker geometry won't like it. And increasing the boost pressures to beyond 2-bar comes with its own set of problems. Therefore, increasing the displacement is the only safe way to improve performance.

“MOST TUNERS SET THE UPPER LIMIT FOR ANY ENGINE BUILDS BASED ON THE FACTORY CVH BLOCK AT AROUND 250BHP”



VITAL STATS

DISPLACEMENT 1596cc

BORE 79.96mm

STROKE 79.52mm

COMPRESSION RATIO 8.2:1

PISTONS Cast aluminium alloy

CYLINDER HEAD Cast aluminium

BLOCK Cast iron

VALVETRAIN Two valves per cylinder, SOHC

INLET VALVE 42mm

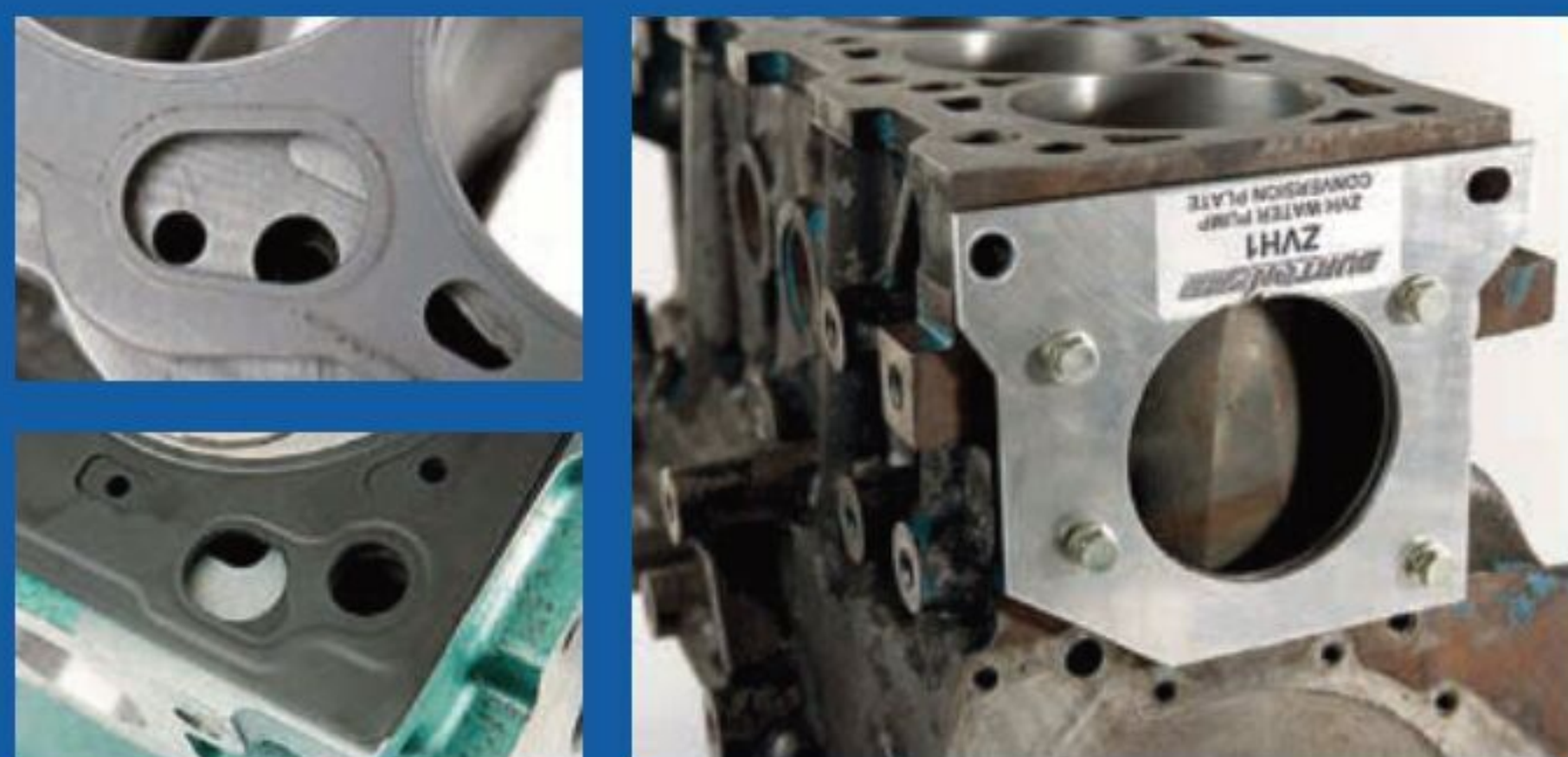
EXHAUST VALVE 37mm

ASPIRATION Turbocharged Garrett T03 (FRST – T02)

ENGINE MANAGEMENT Ford OFAB/OFAC, or Bosch KE-Jetronic

MAX POWER 130bhp

MAX TORQUE 134lb.ft



ZVH

Using the Zetec block and crankshaft as a replacement for the weak standard 1.6 block has led to a hybrid engine – known as the ZVH. To make the CVH head compatible with the Zetec block, some extensive machining is required. The oilways, which are made redundant by fitting the CVH head, will need blanking and machining flat, and the block needs machining to accept the CVH water pump

and tensioner too. Some tuners also machine the block to accept larger head bolts at the same time, and a custom head gasket is also required.

Using the Zetec block also means using the Zetec oil pump – which has been known to give problems. Fortunately, these problems are all related to revs, and given that the CVH doesn't like revving it's not usually a problem in these applications.

HEAD AND CAMS

As with any engine, the cylinder head holds the key to big power on the CVH. Good job it already has relatively big valves and decent-sized ports to begin with, then?

With 42mm inlet and 37mm exhaust valves as standard, an untouched CVH head will flow enough to give 240bhp at 2-bar of boost. Give it a clean-up and smooth things out a bit and you'll see a further 40-to-50bhp at the same boost level.

There is a bit of an urban myth surrounding the so-called 'cross-hatch' cylinder heads being better than others – it's not true. What is true is that some heads have thicker castings than others, and the only way to tell is with a visual inspection. The thicker heads can be ported more aggressively due to having this additional material in the first place.

Of course, the valves can go larger too – the first big-valve upgrade usually uses 43mm inlet and 38mm exhaust valves. These are as large as possible while retaining the standard valve seat. The port throats are opened from the stock 31mm to 34mm, which is large enough to support up to 320bhp at 2-bar.

Upping the valve size again will involve machining the head to accept larger valve seats, but 45mm inlets

are good enough for 360bhp. That's as big as you can go on valve sizes – any larger and the valves will physically touch each other.

It's worth pointing out the standard two-piece valves are renowned for dropping heads, so it's a wise investment to replace with one-piece 214N stainless items at any power level.

Clamping the head to the block also poses a problem on CVH Turbos – high boost pressures will cause the head to lift. To cure this issue, some specialists use a special M12 head stud conversion, which offers greater clamping force and therefore eliminates the problem.

Due to the weight and nature of the valvetrain, high revs are out of the question – simple as that. The safe maximum rev limit for any CVH Turbo is around 7500rpm, although most fast-road engines will be capped at about 7000rpm.

The standard camshaft will comfortably rev to around 6000rpm, but at higher revs it'll need replacing with something more aggressive. There are various profiles available, but generally speaking a cam with longer duration and slightly higher lift is ideal for the majority of fast-road engines. Most updated camshafts will require the use of solid lifters too.

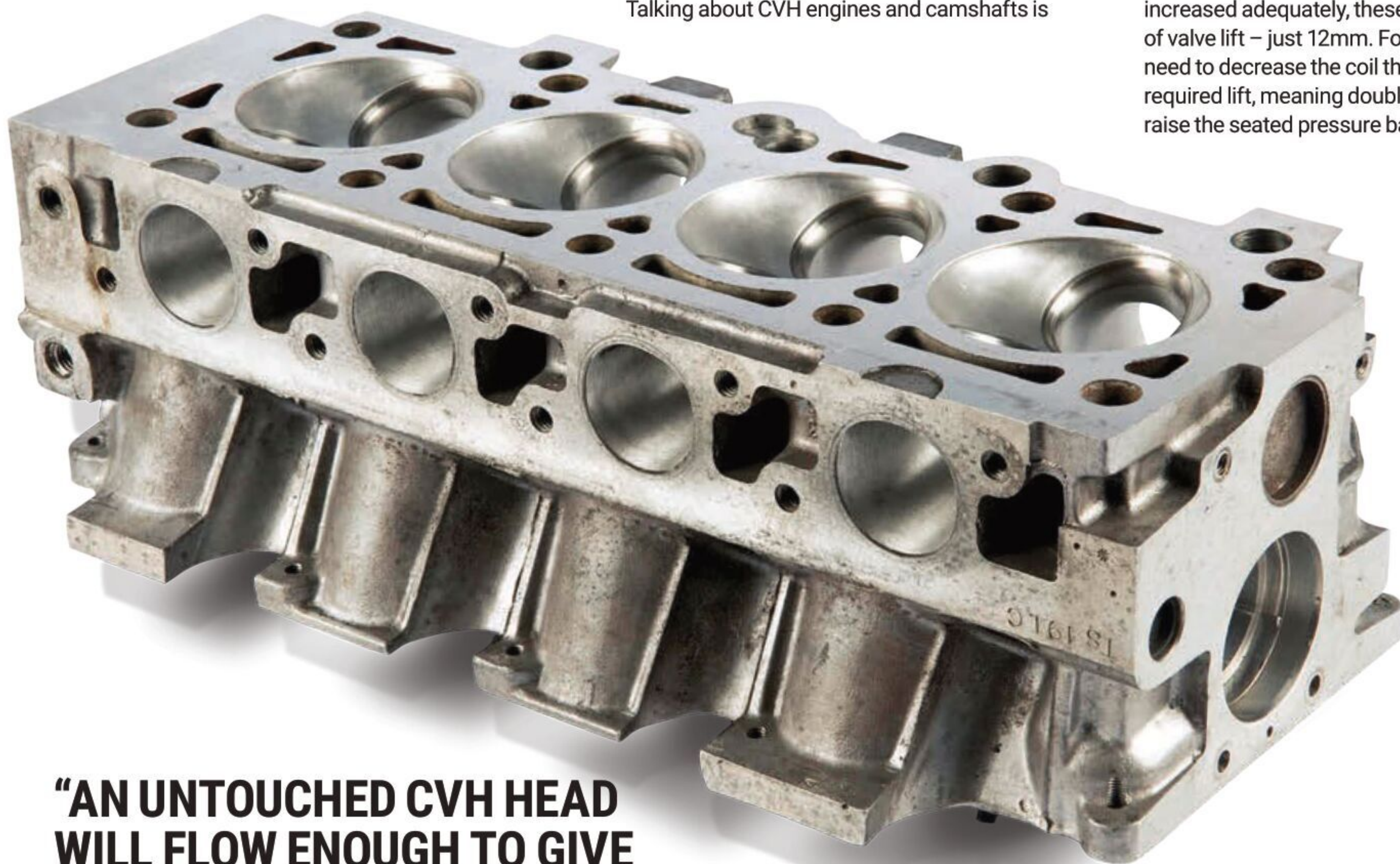
Talking about CVH engines and camshafts is



CVHs are known for high cam wear

inevitably going to raise the subject of the notorious high cam wear. This is due to the high load exerted on the nose of the camshaft – something that is exaggerated with more aggressive cam profiles. A fast-road cam should be inspected at around 10,000 miles for excess wear.

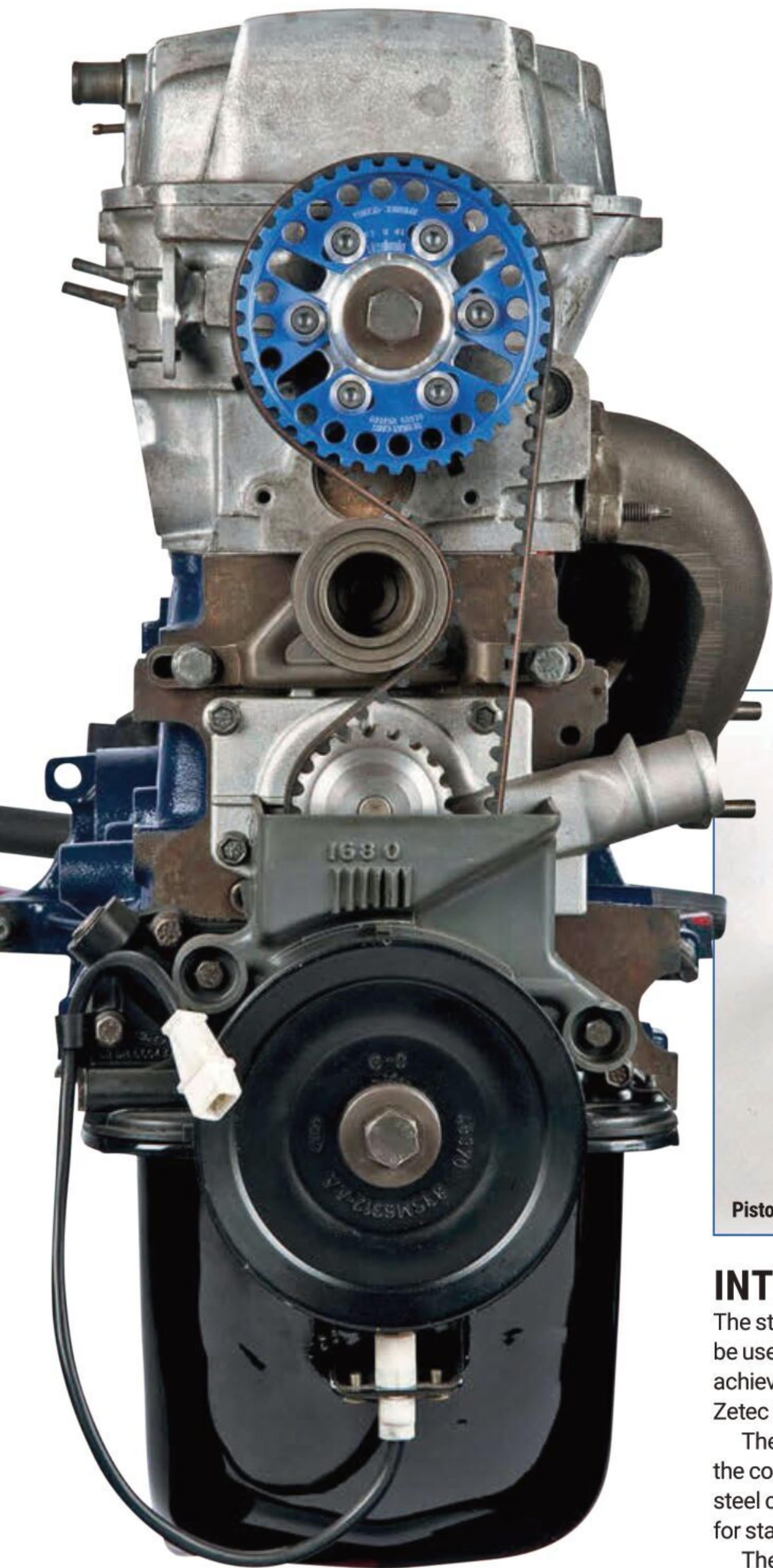
The valve springs will also need consideration, especially if the cam is updated. The standard springs will coil-bind at just 11mm of valve lift, and obviously have a lower seated pressure than aftermarket items. Many tuners prefer sticking with single valve springs if possible, and while the seated pressure can be increased adequately, these too are limited in terms of valve lift – just 12mm. For valve lift over 12mm, you need to decrease the coil thickness to achieve the required lift, meaning double springs are needed to raise the seated pressure back to where you want it.



“AN UNTOUCHED CVH HEAD WILL FLOW ENOUGH TO GIVE 240BHP AT 2-BAR OF BOOST”



Swapping to EFI is needed for anything over 200bhp



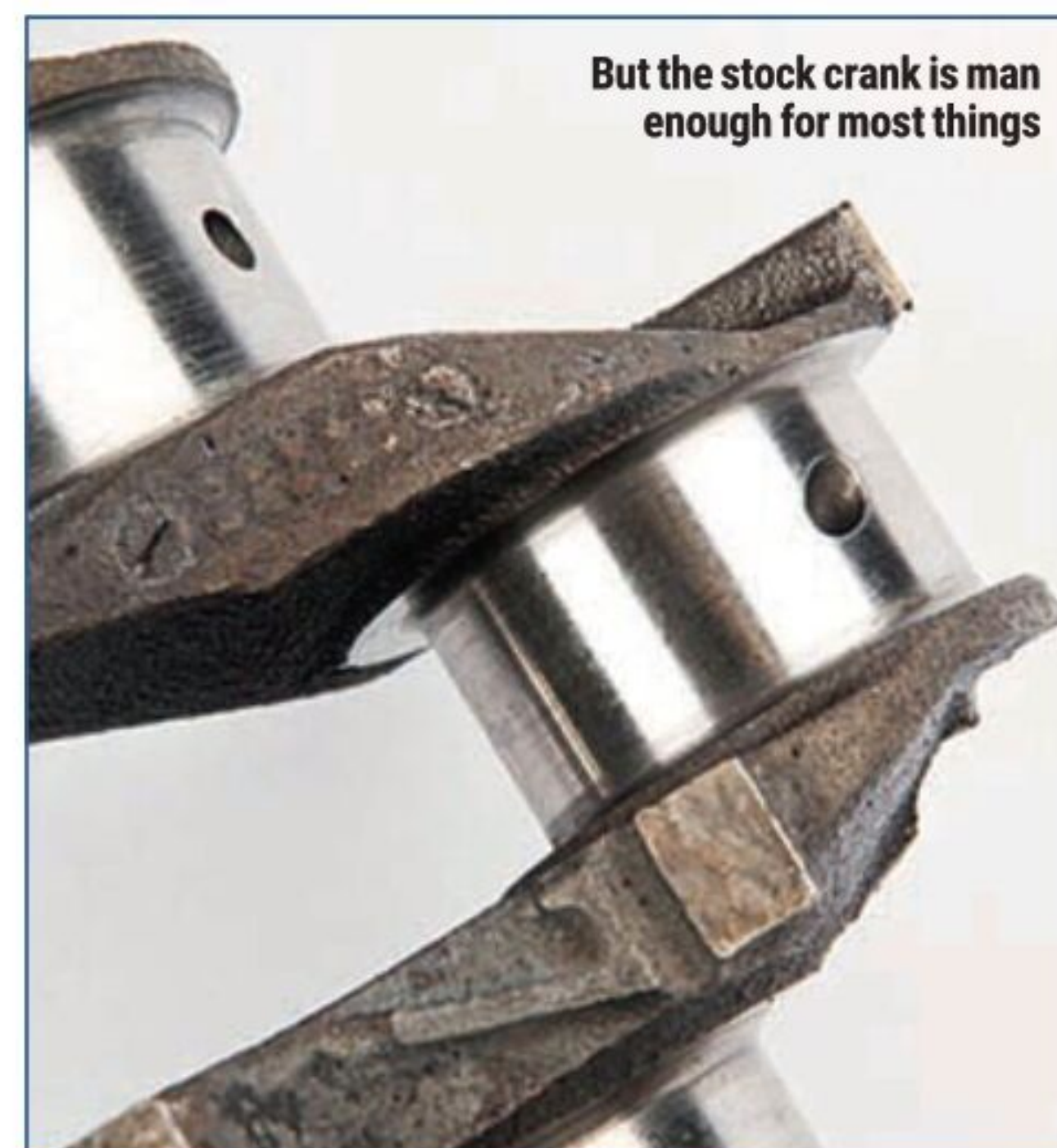
REV LIMITS

The compound valve angle of the CVH is one of its main characteristics and is what gives many of the engine's benefits. Unfortunately, it is also the cause of one of its biggest drawbacks – the inability to rev. The rocker geometry required to operate the awkwardly angled valves is not suited to high revs. The valvetrain components are also quite heavy, again reducing the ability to rev freely.

It's recommend to set the rev limit at around 7000rpm for a moderately tuned fast-road engine. A real screamer of a track engine could potentially raise this limit to around 7500rpm, but anything above this and there's a serious risk of valvetrain failure.



Pistons and rods will need uprating....



INTERNALS

The stock crankshaft is a very strong unit and can be used for almost any power level you want to achieve – as can the Zetec crank if you're using a Zetec bottom end.

The weak links are the pistons, and in particular the conrods. In fact, it's recommended to fit forged steel conrods in any CVH build that's not intended for standard power.

The standard rods are basically just too measly to take any serious power. The construction and materials used mean they simply bend, or worse still, break in half if we start increasing the pressures exerted on them.

The same can be said for the stock pistons. Increased boost levels and higher power levels certainly don't help the standard pistons, but the

real killer is when we start increasing the revs. At higher engine speeds, the conrod simply tries to pull itself off the bottom of the piston, resulting in cracked pistons.

Ideally, we also need to lower the compression ratio. The standard 8.2:1 is too high, because with any meaningful amount of boost it will start to introduce detonation (especially if the mechanical injection is retained). It's preferred to lower the compression ratio to around 7.5:1(ish), depending on the desired characteristics of the engine. It's worth noting that a variety of displacements can be achieved, but if you want anything other than 1596cc (using 1.6 crank and block), 1720cc (using 1.9 block and 1.6 crank), or 1998cc (using 2.0 Zetec crank and block), then a custom billet crank will be required – adding at least £2000 to any build.



INDUCTION

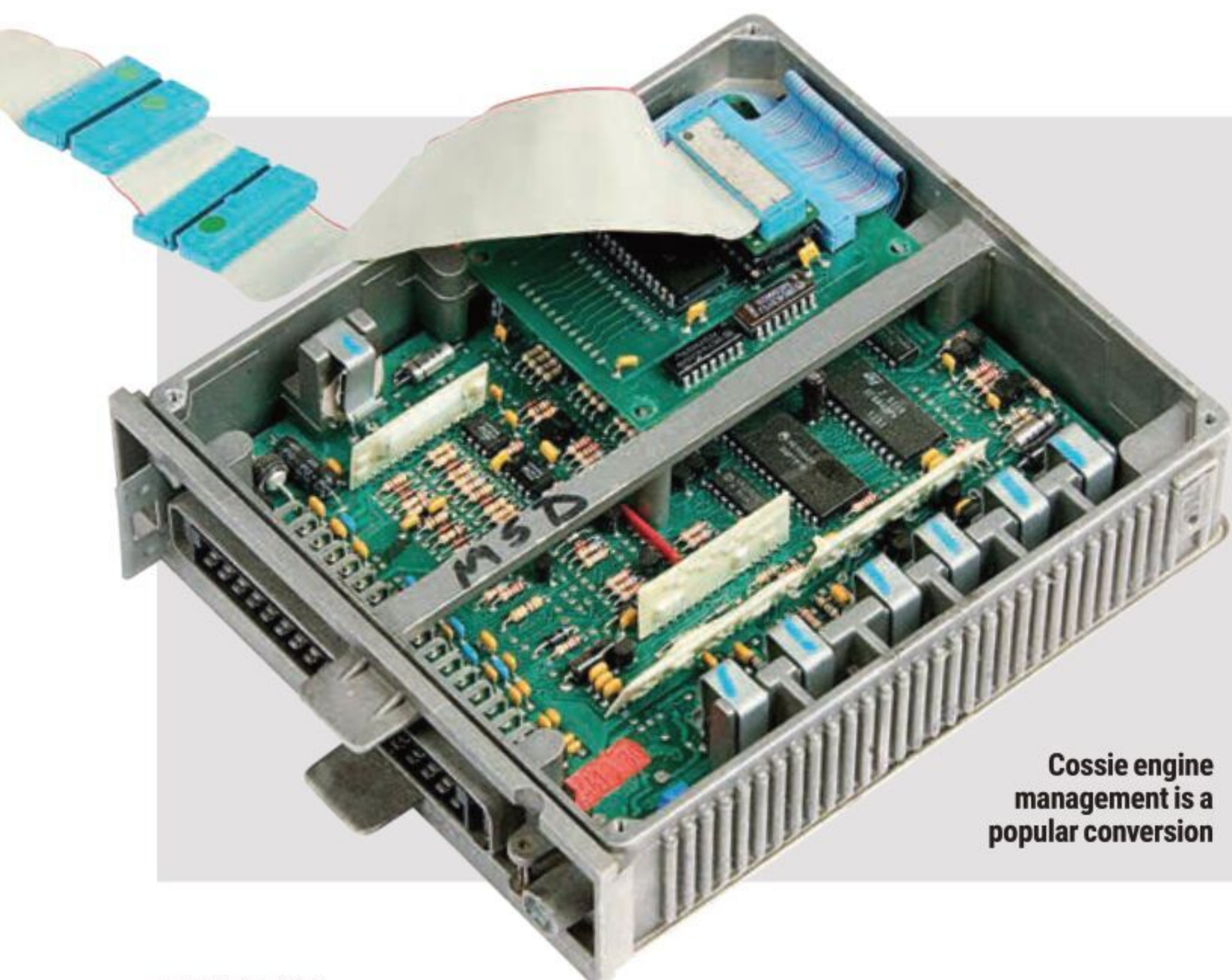
First things first – for anything over 200bhp you're going to need to switch to EFI. That's not to say that the original inlet manifold can't be retained, it just needs modifying.

Of course, you could bolt a CVH EFI manifold straight on, but these aren't great in terms of flow and do pose several restrictions in higher-power turbocharged engines.

The S1 RS Turbo manifold is probably the best of the bunch, as it is of split construction, which means tuners can open it up and port it out to improve the flow. The S2 RS Turbo inlet is very similar in design but is cast from one piece. This means you're stuck with the original 32mm

port sizes, so there's no point fitting this inlet to a heavily ported, big-valve head. It is still good enough for 300bhp at 2-bar boost, though.

Making either RS Turbo manifold work with EFI requires several modifications – the main one being fitting injector bosses and a fuel rail. Bosch green 803 injectors are man enough for 300bhp. Over this and you're best-off switching to Siemens larger-flowing items. The standard throttle body will support 300bhp, but for more powerful engines you can fit a Cosworth YB throttle body – which requires minor modification and relocation of the idle speed control valve. A simple fix.



Cossie engine management is a popular conversion

ENGINE MANAGEMENT

The Bosch KE-Jetronic mechanical injection as fitted to early RS Turbos is never going to support big power – on a good day you might see 200bhp, but realistically, to make the most of any engine work you're going to need to go down the electronic fuel injection route.

There are many aftermarket ECUs that are capable of running the CVH, but a few key RS Turbo specialists are fans of using the Weber-Marelli management from the Cosworth range, in particular the L8 system.

To convert the CVH to run any of these systems, there are a few modifications

that need to be made. Aside from physically mounting the injectors, there are a couple of sensors that also need to be fitted. The main ones are the crank position sensor, and (if running sequential injection as used in the Weber-Marelli and most modern aftermarket ECUs) a cam position sensor will be required too.

Really fancy modern ECUs can even now utilise drive-by-wire throttle bodies, as well as add a host of gadgets and trickery such as boost-by-gear, traction control, and anti-lag. They also offer fantastic data-logging capabilities.

TURBO

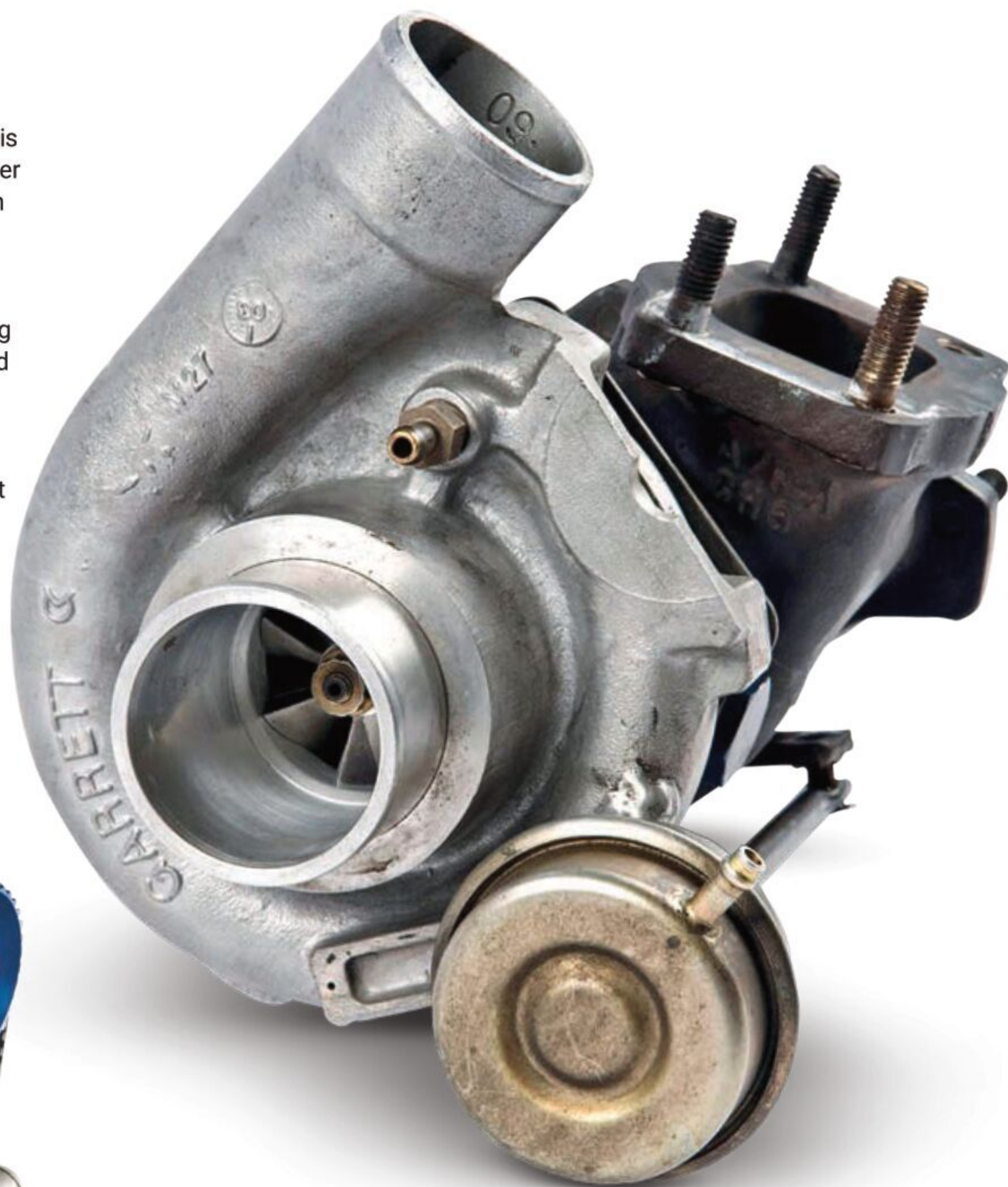
The good news here is that the stock RS Turbo exhaust manifold is good for 300bhp without even touching it. Some porting will see it support in excess of 400bhp.

Using the original manifold means you can fit almost any turbo with a T3 flange (disregard the Fiesta RS Turbo manifold as it has a smaller T2 flange). The original T3 turbo can still support impressive increases, but it does need tweaking. The first step is commonly to go for a 55-trim compressor wheel and a 0.48 A/R exhaust housing. This is good for a solid 250bhp.

The original turbo setup uses an

elbow attachment on the exhaust housing, to which the rest of the exhaust system is fitted. This elbow is very restrictive and literally robs power potential. By changing to a Cosworth housing and downpipe, the same turbo will support up to 280bhp. The next step would involve upping to a T34 hybrid with 0.55 exhaust housing (good for 330bhp) or even a modified T4 for higher power levels.

Of course, there are plenty of modern options available now too, so speak to a trusted turbo specialist to discuss options for your specific application and requirements.



BUILDING ONE AT HOME

Building a highly-tuned CVH does require specialist machining, so you're not going to be able to do all the work yourself at home. For example, you don't have to be that brave to start porting your cylinder head in your shed, but welding injector bosses onto an inlet manifold or converting a Zetec block to work with the CVH cylinder head might be a different matter.

But if you outsource some of the machine work it is still possible to build a strong and reliable CVH at home. Use the right parts, together with the right people to carry out the machining work, and assembling a 250-to-300bhp CVH is something a competent mechanic could comfortably do at home. The key, as ever, is to remember – if you're unsure, get someone else to do it. ■



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Fiesta RS had heavy steering and sporty ride

THE KNOWLEDGE

FIESTA RS TURBO

Despite being more than 30 years old, the Fiesta RS Turbo was the only Fiesta to combine a turbocharged engine with Rallye Sport pedigree

Words **DAN WILLIAMSON** / Photos **FORD UK & FAST FORD ARCHIVES**

Today, the Fiesta RS Turbo's 0-60mph time of 7.9 seconds is nothing to get excited about. Indeed, it's closer to a modern 1.0-litre Fiesta's (8.7 seconds) than the latest hot ST version's 6.3 seconds.

But back in 1990, that sprightly dash and respectable 132mph top end offered better performance than its immediate predecessor – the S2 Escort RS Turbo – which ceased

production when the Fiesta began in May 1990.

Like the Escort, many Ford insiders felt the turbocharged Fiesta wasn't a proper RS because its existence owed nothing to motorsport. Instead, it was selling on the UK's love of the Rallye Sport brand – and in Europe was badged simply Fiesta Turbo. But that shouldn't detract from what was still a very hot hatch, providing forced-induction thrills for not much cash.

Ford engineers started work on the Fiesta

RS Turbo during 1987, long before the Mk3 Fiesta hit the streets in February 1989. At first, the sportiest of the enlarged little Ford line-up was the tame 1.6S, which soon gave way to the XR2i. Each car used a 1596cc CVH powerplant; fuel-injected in the XR2i and controlled by Ford's EEC-IV engine management system.

With sub-nine-second 0-to-60mph capability, the XR2i wasn't just quick but also remarkably civilised. Motoring hacks weren't keen, yet the public bought XR2is by the lorry-load.

Meanwhile, Ford's Special Vehicle Engineering (SVE) division (which was also designing the Sierra Cosworth 4x4 and Escort Cosworth) used criticisms of the XR to develop the RS into a driver-focused machine. According to Jeremy Walton's indispensable book *RS: The Faster Fords*, SVE built nine Fiesta 1.6S-based prototypes, plus five from XR2is.

In essence, SVE amalgamated the Escort RST and XR2i, but the Fiesta RS Turbo was much more than an engine-swapped hot rod. Homologation requirements gave the Escort RS Turbo a Garrett T03 turbocharger, intercooler and beefed-up XR3i five-speed gearbox with viscous-coupling LSD. But with a shorter bonnet and no budget to rework the bodyshell, the Escort's CVH powerplant was a tight squeeze in the Fiesta's engine bay. Its T03 turbo was simply too big for the space available, so a smaller



Quad lamps shared with the XR2i



Ford's five-speed gearbox lost the Escort's LSD

Garrett T02 with custom housing was implanted instead – a more suitable size for a 1.6-litre road car, which increased mid-range pull and minimised lag.

The S2 Escort RST's bottom end remained unaltered (despite contemporary brochure claims of an 8.0:1 compression ratio), with 8.2:1 compression pistons. Above it sat the new XR2i cylinder head and camshaft, running an Escort RS pulley and valve timing for increased torque.

A mass of detail revisions to the Escort spec included alternator brackets, uprated fuel pump, turbo oil feed, exhaust manifold, intake setup and intercooler pipework. Replacing the Escort's Bosch fuel injection and engine management were the XR2i's EFi and remapped EEC-IV, plus Sierra Cosworth 2bar MAP sensor and wastegate solenoid. Power was similar to the Escort, but the Fiesta was more flexible from low revs, providing a fantastically flat torque curve from 2400 to 5000rpm.

Again thanks to the tight confines of the standard XR2i shell, the RS's radiator and 'cooler were mounted carefully, resulting in a narrowed Escort rad with chopped-out grille and bumper to accept the electric fan.

A significant change from Escort Turbo spec was the deletion of its limited-slip differential from inside the five-speed gearbox. Ford had no intention of rallying the Fiesta, so this cost-



Recaros and three-spoke wheel were standard

cutting move pleased engineers who disliked the Escort's wayward on-road characteristics.

Instead, SVE made an exerted effort to transform the XR2i's humdrum handling. Already incorporating a longer wheelbase than the turbocharged Escort, the Mk3 Fiesta platform was substantially reworked.

The XR2i's lethargic steering gave way to an RS replacement non-assisted rack with 3.75 (rather than 4.2) turns lock-to-lock. Treating the front suspension to new lower arms and ball joints, which increased negative camber and reduced castor, helped turn-in.

The XR2i's front springs and anti-roll bar remained, accompanied by 20 per cent-uprated Armstrong dampers. Rear springs were 12mm lower and substantially stiffer than the XR's, boosted by the addition of a rear anti-roll bar. Grip was improved, while ride quality was on the harsh side of sporty.

Unlike the Escort RS, the turbocharged Fiesta wasn't fitted as standard with anti-lock brakes, although Ford's Stop Control System was a £435 optional extra. Even the stock XR2i discs and drums stayed in place, albeit with Cosworth-spec-compound pads.

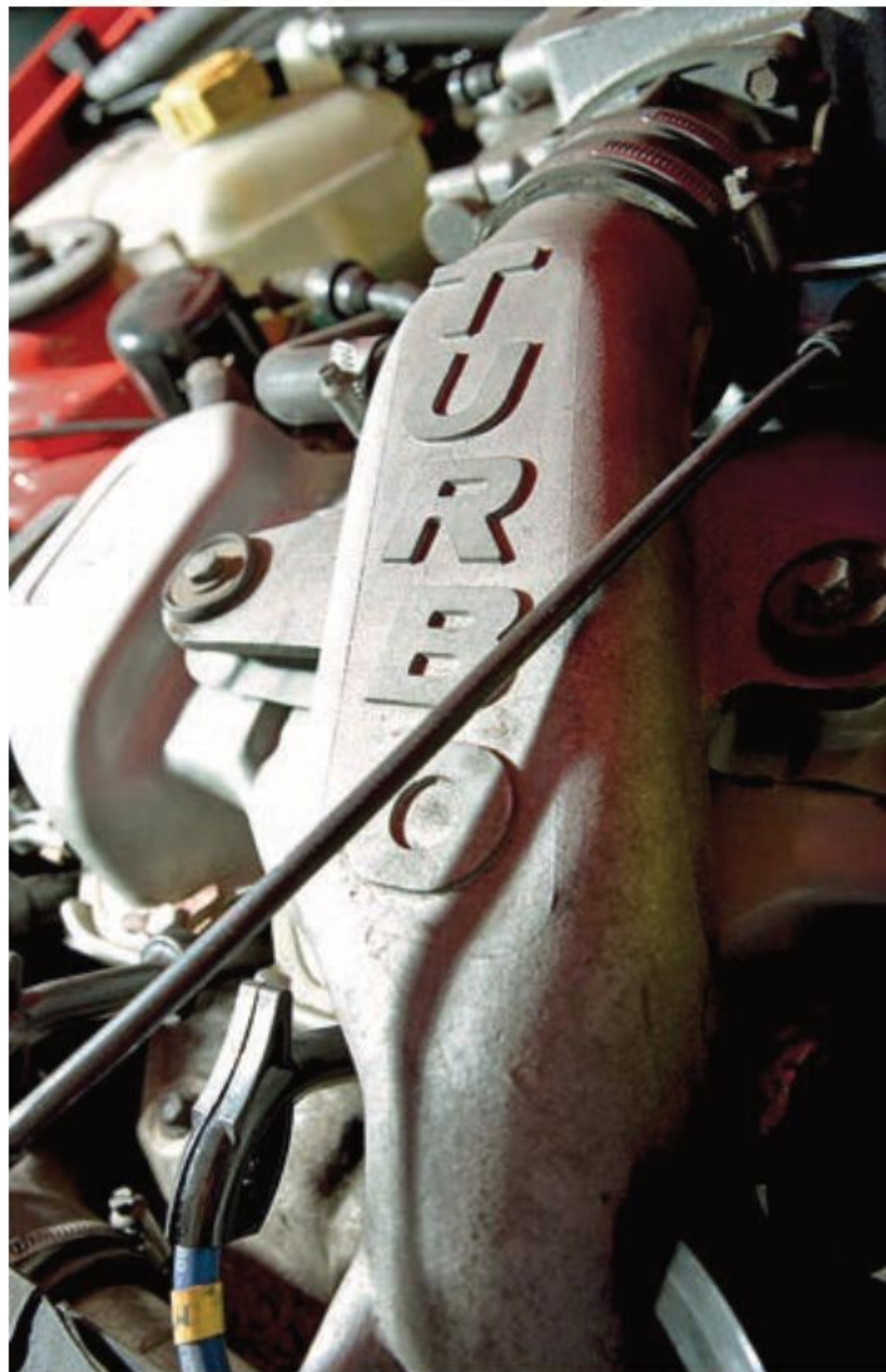
They were housed behind the naffest wheels ever to leave Ford's design desk – not just nasty three-spokes, but with a fake brake disc effect

COLOUR CHOICE

If the public was easily confused by the RS Turbo's similarity to its lesser XR stablemate, Ford added to the puzzle by offering both cars in identical colour schemes.

Like the XR2i, the Fiesta RS Turbo was only available in Radiant Red, Diamond White, optional Black or metallic Mercury Grey. All featured green waistband stripes, rather than the XR2i's blue.

Figures for each colour were, as far as we know, not recorded. But what we're more convinced of are the numbers of RS Turbos built in Moondust Silver. These last-of-the-line machines were offered before production was cancelled in early 1992, most being sold as J-registrations but a few hanging around until August that year, ending up as K-platers. In total, 73 left the Spanish factory. Probably.



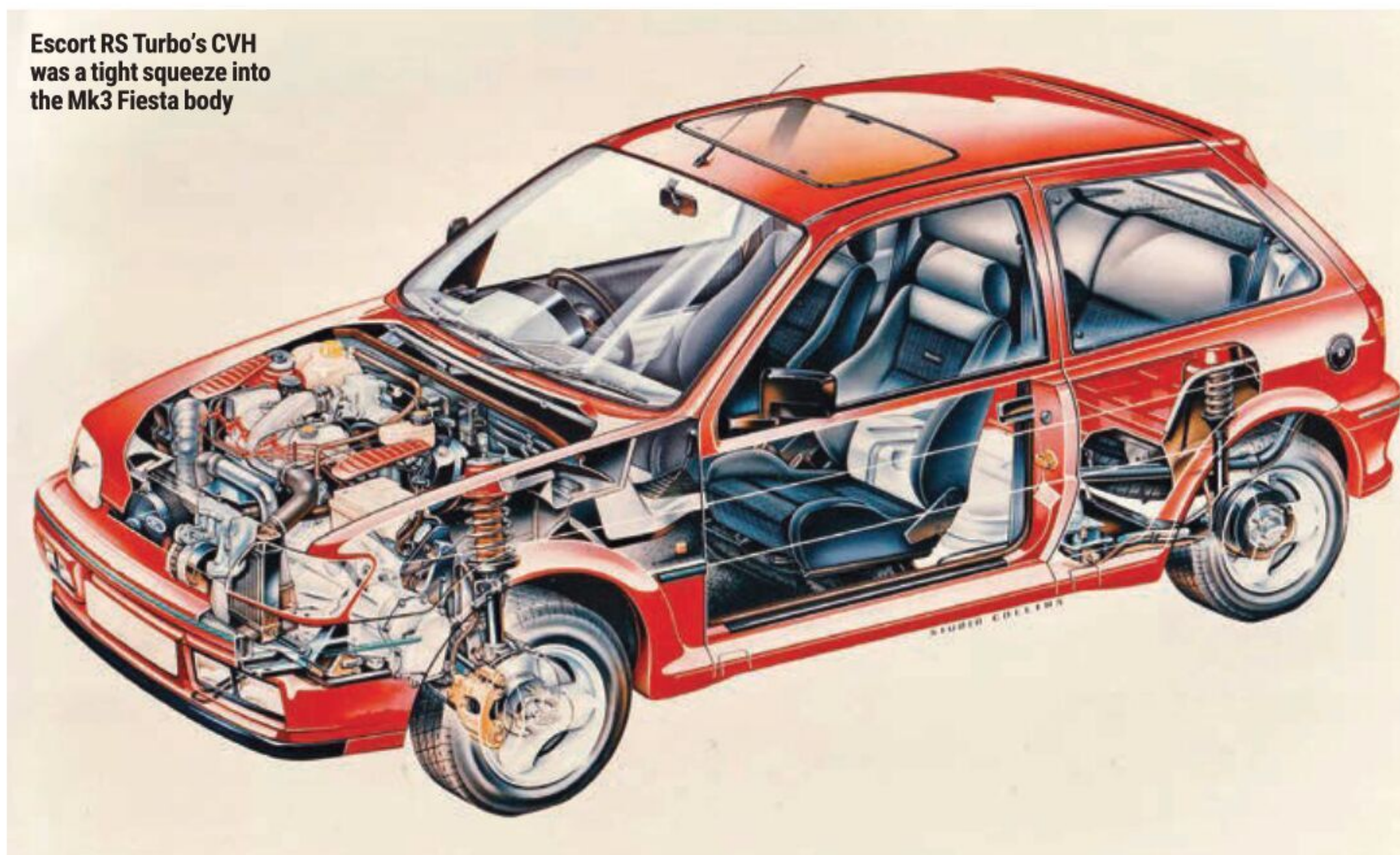
Tweaks to the CVH upped the grunt to 131bhp

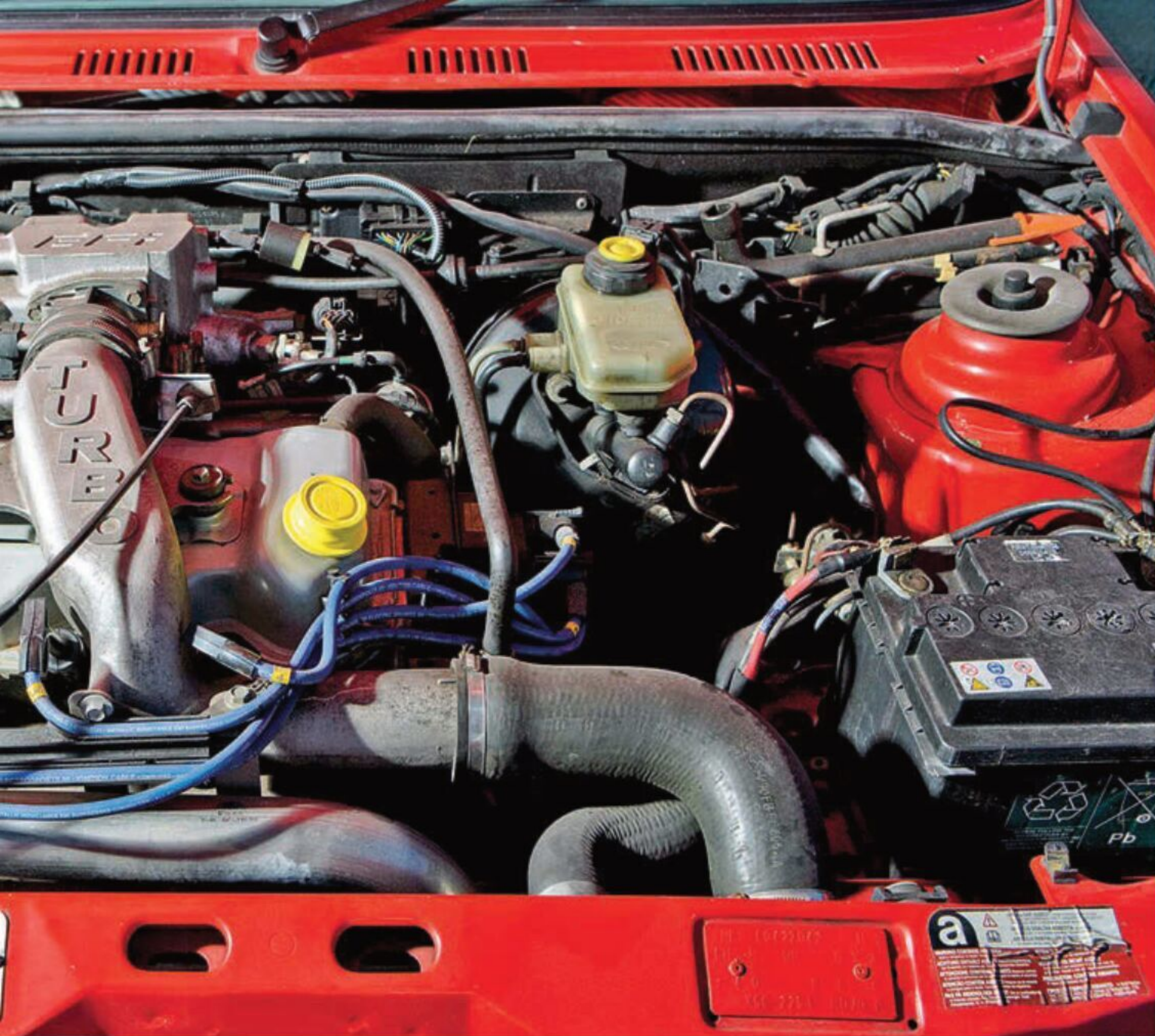
Fiesta RS Turbo proudly parked in front of its SVE stablemates



Three-spokes: the wheels that style forgot

Escort RS Turbo's CVH was a tight squeeze into the Mk3 Fiesta body





FIESTA RS TURBO

ENGINE Turbocharged 1596cc, four-cylinder, eight-valve, SOHC CVH, Escort RST block with 8.2:1 CR, XR2i EFI cylinder head and camshaft with hydraulic lifters, Escort RS Turbo camshaft pulley, water-cooled Garrett T02 turbo, intercooler, EFI electronic fuel injection, Ford EEC-IV engine management, revised intake manifold, updated 88l/h fuel pump, cast exhaust manifold and 55mm bore exhaust system

TRANSMISSION FWD, B5 five-speed manual gearbox with 3.82:1 final drive ratio, updated 218mm clutch. Gear ratios: 3.15:1 first, 1.91:1 second, 1.28:1 third, 0.95 fourth, 0.76:1 fifth

SUSPENSION Front: MacPherson strut suspension with Armstrong gas-filled dampers and XR2i 186lb/in coil springs, unique A-arms and ball joints, 16mm anti-roll bar; rear: semi-independent suspension with torsion beam and trailing arms, shortened Armstrong gas-filled dampers, updated 204lb/in coil springs (12mm lower than XR2i), 20mm anti-roll bar

BRAKES Front: 240mm ventilated discs; rear: 203mm drums; optional Girling SCS ABS

WHEELS AND TYRES 5.5x14in three-spoke alloy wheels, 185/55x14 tyres

EXTERIOR Pressed steel monocoque Fiesta three-door hatchback shell with XR2i body-coloured wheelarch extensions and side skirts, body-coloured bumpers with green inserts, body-coloured tailgate spoiler, bonnet vents, tinted glass, fog lamps and driving lamps in front bumper, Radiant Red, Diamond White, optional Black, Mercury Grey or Moon dust Silver (late cars) paintwork, Fiesta RS Turbo decal on tailgate

INTERIOR Recaro front seats in grey Benetton Ascot cloth, grey leather three-spoke sports steering wheel, grey leather gearknob, 150mph speedo, electric front windows, central locking, remote boot release and tilting/removable glass sunroof; heated windscreen and in-car telephone optional at extra cost

DIMENSIONS Height: 1326mm; width: 1630mm; length: 3801mm; wheelbase: 2446mm; weight: 920kg

PERFORMANCE 131bhp @ 5500rpm, 135lb.ft @ 2400rpm, 132mph, 0-60mph 7.9 seconds

PRODUCED 1990 to 1992

PRICE WHEN NEW £11,950

NUMBER BUILT 4183 (registered in the UK)

Even looking at water would make a Mk3 Fiesta turn to rust



too. Still, at 5.5x14in on 185/55x14 rubber they were an inch taller than XR2i rims, and went some way to distinguishing between the models.

Like the S2 Escort, the RS Fiesta looked similar to its XR stablemate, featuring the same bodykit of front bumper with fog lamps and driving lamps, wheelarch extensions, back bumper and tailgate spoiler. Although this was colour-coded on the RS, SVE's plan was a low-lift Mondeo estate-style wing that sadly didn't make production due to quality concerns.

The XR's blue bumper inserts were replaced with green, while its black window surrounds were deleted, and an RS Turbo sticker was slapped on its arse. Most noticeably, the Turbo wore a pair of traditional RS bonnet vents, fitted more for marketing than cooling purposes.

The interior was based heavily on the XR2i,

"THANKS TO CRIPPLING INSURANCE AND CATALYTIC CONVERTER LAWS, THE RS WAS DESTINED FOR A SHORT, FRANTIC LIFESPAN"

adding Recaro front seats, 150mph speedo, plus chunky Turbo-badged steering wheel and gearknob in grey leather.

Built in Valencia, Spain alongside mainstream Fiestas, the RS Turbo was offered to the public at £11,950 – £1100 more than the XR2i. Thanks to crippling insurance premiums and no plans to

pass impending catalytic converter laws, the RS was destined for a short, frantic lifespan.

From its unveiling at the Turin show in April 1990 until its replacement by the RS1800 in May 1992, 4183 Fiesta RS Turbos were registered in the UK. That – and a propensity to rust – makes them rare today, even by RS standards. ■

GO YOUR OWN WAY

Fiesta RS Turbos may be getting increasingly rare, but that doesn't mean they have to be kept stock, as Jamie Hurley proves with this hardcore example...

Words and photos **DAVY LEWIS**

There's a lot of heated debate about what you should and shouldn't do to your fast Ford. From advocates of keeping it original and pristine, to those who say 'to hell with that, let's go all out with the mods', there's no real right or wrong way of doing it.

One thing's for sure, though: the older a car gets, the more likely the purists are to shout: 'leave it standard!'

And that's something Jamie Hurley, owner of this awesome Fiesta RST, knows only too well.

He says, "When I told people I was going to cut the roof out and replace it with carbon fibre, some people thought I was mad. Mind you, if that got them going, the fact that I ripped out the stock interior and binned it, would probably make them have a coronary."

Jamie is a straight-talking kind of guy. He's passionate about his cars and believes that you should build it for no one but yourself.

"It's a Marmite car; you either love it or hate it." The Fiesta is the culmination of five months' hard work, and the end



result is truly stunning.

Just stop and take a look at it for a moment. From that aggressive front end, with gaping hole in the front bumper designed to get as much cool air into the engine as possible, to those stunning magnesium wheels (genuine items from Compomotive, no less), through to the immaculate interior; every single area of this car has been refreshed, replaced or modified.

“It all started when a chap offered to buy my Escort Cossie,” says Jamie. “We ended up agreeing a price, so I sold it to him; that’s when I started looking for a Fiesta.”

Having owned six of the little Fords, Jamie

fancied doing another Fiesta and was so set on the idea that he’d already bought the Omex management in preparation.

“Efi is getting a bit old now, so I knew I wanted to go with Omex,” he says. Now all he needed was the car.

“I put posts up saying I was looking for a Fiesta RS Turbo, and this chap said he’d had one as a project for ten years, but wanted to sell it. It was a bare shell, with a Silver Top engine and a load of parts, so I went up to Stoke with a van and bought the lot.”

This was September 2018; the Fiesta then sat in a mate’s garage until January 2019. But once

they got started on it, progress was fairly rapid.

Jamie says, “We started off working Saturdays, but the days just got longer and longer until sometimes, I wouldn’t get home until 5am the next day. I don’t know how my missus Charlotte put up with it.”

With the project in full swing, Jamie began collecting a list of parts that would transform the car. The previous owner had already forged the bottom end and, as it was all stripped down, it turned out to be in great condition.

“Shall we remove the bonnet so you can see the engine better?” asks Jamie. How can we refuse such an offer? →



Five minutes later, and the pristine bonnet is gently laid on a handy piece of hedgerow and the bay is now fully exposed for our cameras.

And what a treat it is. Gone is the original CVH, replaced with something more reliable and easier to tune. It may look like the original CVH to the untrained eye, but what you see here is actually a 2.1-litre bored-out Silver Top Zetec bottom-end mated to the CVH eight-valve cylinder head to create a ZVH. And it looks brand new, complemented by a plethora of supporting upgrades, immaculately presented and gleaming.

But while many Blue Oval fans will favour the shiny polished look, Jamie has gone for a more subtle style, with lots of OEM-looking black. It all contrasts really well with the factory grey paint and simply oozes quality.

The effect is more pronounced thanks to the wire tuck that's been implemented, and the fact we can see right into the bay without the bonnet to get in the way.

Jamie says, "We had to lengthen the loom to get it all to work. And because of the manifold, I couldn't fit the brake servo, so we had to install a pedal box instead. The 3in exhaust system was also very tight with the gear selector, but we got away with it."

The 2.1-litre engine has been built using

only the best components. Go-faster goodness includes Accralite forged pistons and steel conrods, a Newman Ultimate ZVH cam, solid lifters and ARP bolts. Jamie's thinking was do it right and do it once; sensible man.

A rather large Garrett T34 takes pride of place at the front of the bay, utilising 0.63 exhaust housing and mated to a tasty Jamsport tubular manifold. With supporting upgrades and an Omex 600 ECU running the show, this 30-year-old Fiesta now delivers 255bhp at the wheels. That may not sound much by today's standards, but it's the way the power is delivered to this 800kg Ford that makes it so much fun.

Jamie laughs, "When you put your foot down and hear the whistle of the turbo, it's like an aeroplane. People said a T34 would be too laggy, but there's no lag – it just rips it up when it comes in. Dan at Page Motorsport has set it up bang-on."

Given the spec, there's potential for a lot more, although the gearbox would need uprating to cope with it.

Jamie says, "We made 290bhp on the dyno, but had to wind it back down for reliability. With an uprated 'box it'll do 350bhp easy."

Jamie has beefed-up the chassis to cope with the new power, so it now handles as well as it goes. Escort Cossie front brakes do a decent job of stopping it, while Avo adjustable coilovers →

"WHEN YOU PUT YOUR FOOT DOWN AND HEAR THE WHISTLE OF THE TURBO, IT'S LIKE AN AEROPLANE. PEOPLE SAID A T34 WOULD BE TOO LAGGY, BUT THERE'S NO LAG – IT JUST RIPS IT UP"



Custom flocked interior trim and leather Recaros make for a very comfortable cabin – even if it is a bit loud in there



Recaros were retrimmed in black leather



Comprehensive cooling packaged uses an Airtec radiator for the Escort RST with twin fans

FIESTA RS TURBO

ENGINE 2.1-litre ZVH; Silver Top 2.0-litre Zetec bottom end bored to 2.1; 86mm Accralite forged pistons; steel H-section conrods; Felpro head gasket; new core plugs; Newman Ultimate ZVH cam and solid lifters; stock valves; ARP conrod and flywheel bolts; ARP main crank stud and nut kit; piston oil spray jets; stock crank with Mahle bearings; genuine Ford water pump; Motorsport Developments cambelt and tensioner kit; Motul Motocool Expert coolant; Motul 10w40 300V oil; Garrett T34 turbo with 0.63 exhaust housing from Turbo Performance; Collins Performance -34 actuator; Jamsport tubular manifold; Mk2 Focus RS Group A K&N air filter; full custom 3in turbo-back exhaust with Sierra Cosworth backbox heat-wrapped from start to finish; Cosworth Swedish plenum with Cosworth RWD throttle body and Oddkidd Creations bracket; Mk1 Focus RS 400cc injectors; Omex 600 ECU and custom loom with sensors; live-mapped by Dan at Page Motorsport; MSD relocated coil pack; custom-length HT leads with Funk Motorsport heat sleeves; Ford 071 spark plugs; Airtec Stage 2 intercooler; Airtec Escort RS Turbo radiator with twin 9in fans; custom-made silicone hoses; custom stainless steel main boost hose; Bailey breather kit with custom catch-can setup; Bailey Cosworth water swirl pot; RS1600i Motorsport rocker cover; new steel fuel lines covered with heat proof sleeving; Sytec fuel filter; Walbro 255 fuel pump; new fuel tank; all wiring tucked and redirected where possible to give a cleaner look; removable carbon fibre front panel and carbon tags; alloy washer bottle; carbon fibre cambelt cover; Magneti Marelli 3-bar map sensor

POWER 255bhp at the wheels (detuned for reliability)

TRANSMISSION Fully rebuilt Escort RS Turbo LSD box, painted to match car; Alcon six-paddle clutch machined to match flywheel by CG Motorsport; B&M short shifter; Zetec engine mount; Vibratechnics gearbox mounts

SUSPENSION Avo fully adjustable coilovers; poly bushes throughout; front strut brace; rear beam powder-coated; front subframe and cradle powder-coated; new arms and drop links; Fiesta Mk3.5 hubs

BRAKES Front: Escort Cosworth brake setup with Ferodo pads and drilled and grooved discs; rear: RS2000 disc conversion; Comp Brake pedal box setup with billet pots and brake bias adjuster; braided flexis and all brake lines have been run inside the car

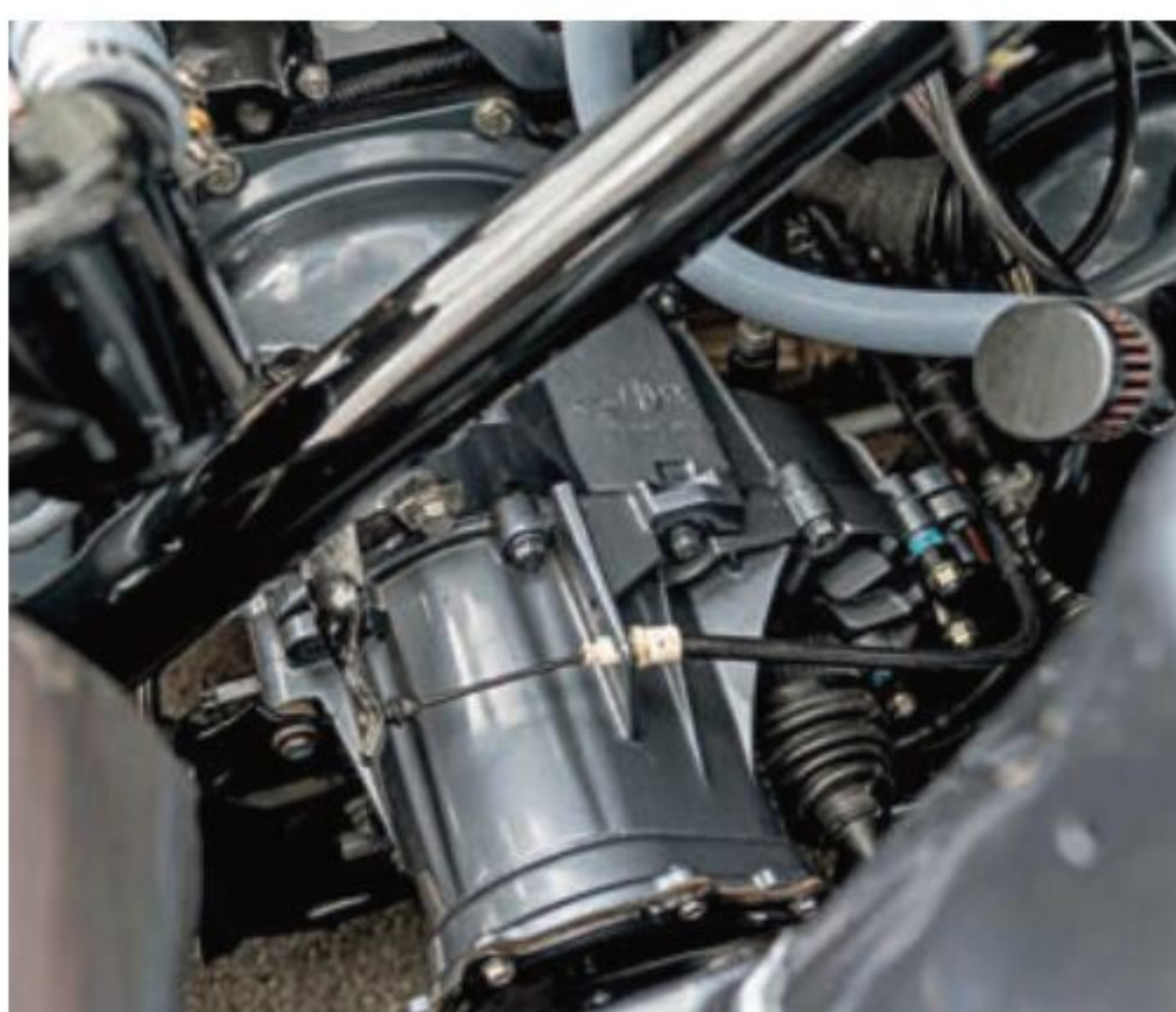
WHEELS AND TYRES 7x16in magnesium Compomotive TH2s with 195/40x16 Toyo Proxes T1R tyres

EXTERIOR Full bare shell resto; all rot cut out, new genuine inner and outer wings, genuine rear quarters, full respray underneath, inside and out in original Mercury Grey, custom front bumper by Alcester Car Care to allow better flow for intercooler; Autoflock genuine carbon-fibre front splitter and genuine carbon-fibre roof skin; Mk5 Fiesta door mirrors colour-coded with gloss black bases; roof rails also gloss black; Aerocatches on bonnet; Morrette twin headlights with cold-air feeds; Ford accessory rear lights; front lights/indicators and fog lights all tinted; tailgate with wiper-delete and cut-down number plate; original green stripes; new matching lock set and petrol cap

INTERIOR Full leather Recaros; dash/pillars/kick panels/handles centre console etc flocked in custom anthracite by Autoflock; Sparco steering wheel; battery relocated to boot in custom box with fire extinguisher; AEM wideband AFR gauge and boost gauge; Pioneer head unit; Escort Cosworth 170mph speedo; black non-sunroof headlining and sun visors; black carpet



T34 turbo puffs enough air for well over 300bhp





Jamie searched high and low to find these magnesium Compomotive TH2s



Morettes feature cold-air feed



Heat-wrapped Sierra Cosworth backbox

keep it planted on the road.

When it came to the exterior, Jamie wanted it to be a mix of subtle but aggressive styling – just enough to beef up the stock Fiesta, but without going too far. The front end certainly gets your attention with its gaping bumper and twin headlights, with cold air feeds incorporated. Then there's that carbon splitter and, if you look up, a carbon roof, too. But the rest is all nice and subtle, from the rear lights to the Mk5 mirrors and even the smoked repeaters.

The quality is bang-on and testament to the skill of Adam at Alcester Car Care. It's had a full bare shell resto with all the rot cut out and new genuine inner and outer wings and rear quarters added, followed by a respray underneath, inside and out in original Mercury Grey.

The outside is finished off with a set of very rare, genuine magnesium wheels from Compomotive. Jamie says, "I'd had three other sets of wheels, but kept seeing other Fiestas with the same ones, so I called Compomotive to ask if they'd do me a set of TH2s in 7x16in. No matter how much I begged them, even offering to pay

more for them, they said no."

Not a man to give up on his dreams, Jamie began to put the word out and eventually heard from a guy who had a set for sale. The wheels sit perfectly in the arches and look bang on the money, although the story has a slight twist.

"Annoyingly, after saying they'd never do another set in 16in, Compomotive then started making them; not in magnesium, though," smiles Jamie.

Inside, there's black leather and a full complement of flocking, courtesy of Raj at Autoflock, plus expensive gauges from AEM.

"One thing I may change is the lack of sound-deadening," says Jamie. "It's so loud, my little one has to wear ear defenders when we go out in it."

The car made its first outing at the highly acclaimed Players show, where Jamie says the car went down really well, with the Nineties' Fez clearly impressing the retro-focused crowd. Since then, it appeared on the *Fast Ford* stand at Ford Fair, where it got even more attention – and rightly so.

Jamie says, "I like it because it always starts a

conversation. People either like it or they don't; that's why I added the Marmite dipstick. Mind you, that was also a pain as I had to cut up an antique silver dealer spoon that I won on eBay to make it."

With plans for some bigger brakes and maybe a carbon tailgate at some stage, Jamie was happy to enjoy his fully refreshed Fiesta, but when he was offered top dollar to sell up, he made the difficult decision to part with the RS Turbo.

A Mk2 Focus RS followed for a brief spell, but it wasn't long before Jamie found himself wanting another Fiesta, and he's now busy putting his stamp on his latest purchase – the third FRST he's owned to be featured in *Fast Ford*. And whether you agree with his choice of upgrades or not, he deserves a huge nod of respect for going his own way. ■

THANKS "Missus Charlotte and daughter Thea for being patient; Adam at Alcester Car Care for all his help with the with build; Raj at Autoflock for the flocking and carbon bits; Dan Page at Page Motorsport for setting up the Omex management."

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BUYING GUIDE

FIESTA RS TURBO

Here's what to watch for when viewing any potential purchase

Words **DAN WILLIAMSON** / Photos **MATT WOODS**

Right now, the fast Ford world is crying out for a turbocharged Rallye Sport Fiesta – yet it's 30 years since such a car was available from the factory.

Launched in April 1990, the aptly-named Fiesta RS Turbo aimed to spice up the brand's image after criticism of the underwhelming XR2i, meanwhile replacing the outgoing Escort Series Two RS Turbo.

Ford's Special Vehicle Engineering (SVE) division took charge of blending both machines, focusing on driver enjoyment to produce something special. Admittedly, the new Fiesta didn't exactly deserve its RS name (in overseas markets it was badged Fiesta Turbo) because it wasn't developed for motorsport. But that at least meant SVE could tweak the specification to improve road manners (and reduce costs).

The Escort's 1.6-litre CVH powerplant

received a revised cylinder head and much-improved electronic fuel injection with modern Ford EEC-IV management. No longer needing a big turbo for homologation, a tiny T02 was fitted to reduce lag, along with new intercooler.

Power rose to 133bhp, while the Fiesta's smaller body meant 0-to-60mph in 7.9 seconds and 129mph top speed.

The Escort's limited-slip differential was abandoned but SVE instead added quicker steering and uprated suspension, offering anti-lock brakes as an extra. The Fiesta also gained bigger alloy wheels than its XR2i sibling, running awful three-spoke 5.5x14in alloys (complete with fake brake discs), which were one of only a few clues to set it apart from the XR2i – others being bonnet vents and green bumper stripes rather than blue. Even the interior was XR2i-based, boasting little extra other than a pair of Recaro front seats.

By May 1992 the RS Turbo had been replaced by the slower, less-tuneable Fiesta RS1800. Just 4183 RS Turbos were UK-registered, most of which were abused, wrecked, rotted and thrown away.

Survivors today are increasingly rare, and prices are rising. Right now is the time to buy.

VITAL STATS

MADE BETWEEN 1990 and 1992

PRICE WHEN NEW £11,950

PRICE NOW £2000 to £15,000-plus

TOP SPEED 129mph

0-60MPH 7.9 seconds

POWER 131bhp @ 5500rpm

TORQUE 135lb.ft @ 2400rpm

WHERE TO BUY ONE

Fiesta RS Turbos are rare, so you'll not be spoiled for choice. And there are generally two types on the market: tuned and abused or mint and cared-for.

If you'd like a project, trawling internet forums, classified ads and auction sites is fine; bear in mind that the cost of restoration could exceed the car's eventual value. If you're in the market for a modified example, remember it's probably worth more in parts, so be prepared to find plenty of bodes; receipts for recent work from reputable tuners are a bonus.

The classic car market is chasing everything with an RS badge, so the best Fiestas often turn up with specialist dealers for a premium price. You can bypass the trader by dealing privately with the owner – it's best to ask clubs and groups on social media if they know of any cars tucked away in collections or about to hit the market. Highest values accompany low-mileage, unmolested and unrestored machines.

HOW MUCH TO PAY

£2000 TO £5000

Rotting restoration projects come in at the bottom of this bracket, while decent-looking machines with dodgy history are at the high end. A bucket of rust may be uneconomical to repair.

£5000 TO £10,000

Pay this sort of cash if you're looking for a usable RS – especially a modified machine or something needing some love and cosmetic attention.

£10,000 TO £15,000-PLUS

Standard specification, low mileage and rot-free bodywork should warrant this kind of money. If you need a time-warp concours car for your collection, don't be surprised to spend double this sum.

INSURANCE COSTS

Even the youngest RS Turbo is now 30 years old, so wave goodbye to overpriced high-street insurance policies and say hello to limited-mileage schemes and low-cost premiums.

Mint, standard cars can be covered by a collector's car policy, which will often offer an agreed value – which is crucial for a car of this kind; if the worst were to happen, the last thing you'd need is an insurer giving you bottom-book price for any old Fiesta.

If yours is a modified example or daily driver, check out the various schemes available from specialist brokers advertised in *Fast Ford*. Many offer extras such as track-day cover and will agree to insure the cost of any upgrades. If you own an everyday car, most underwriters will mirror your no-claims discount or supply an NCD-free policy.



RS Turbos featured grey leather steering wheel and matching gearknob



Standard Recaro front seats



IDENTITY

It's fair to say that an alarming number of existing RS Turbos are fakes, ringers or reshells, so make every effort to ensure you're buying a genuine example – right down to tracing previous owners if needs be.

Sadly, there's little to differentiate an RS from an XR2i if someone's swapped the bits across. Be sure to see all the proper kit, including bonnet vents, rear spoiler, tinted glass, electric front windows, glass sunroof, opening rear quarter windows (with factory fixing points), 150mph speedometer and rear anti-roll bar. Inclusion of ABS and a heated front windscreen give added credibility.

Note that the XR2i's blue bumper inserts were replaced with green, while its black side-window surrounds were deleted for colour-coded on the RS.

It's also worth spinning the steering wheel and counting the rotations. While it's easy enough to drop a turbocharged CVH engine into a lesser Fiesta, few folk also upgrade the steering rack because they're difficult

INTERIOR

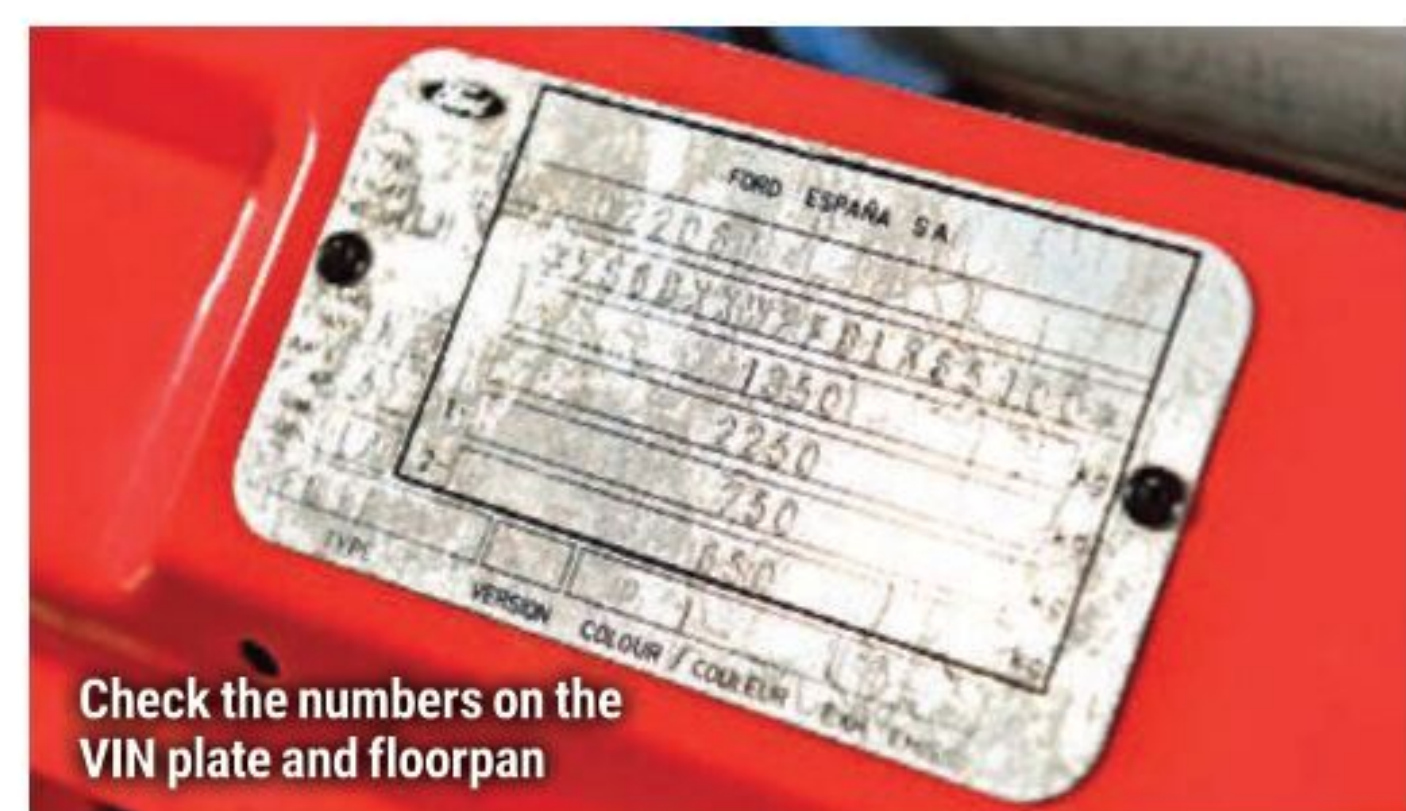
So closely related to an XR2i that you'd be hard-pressed to tell the two apart, only an RS Turbo's Ascot cloth Recaro seats are an instant give-away to the Rallye Sport pedigree.

Dig deeper, though, and you'll need to see a grey leather-covered three-spoke steering wheel and matching gearknob (very rare), 150mph speedometer, electric front windows, central door locking and remote boot release – all of which were standard RS Turbo kit in the UK. If they're not there, you could be looking at a ringer or a fake.

As you'd expect, the trim isn't especially hard-wearing, and may be tatty and rattly by now. Many plastic parts are common to other Mk3 Fiestas but the unique Recaros in particular are very difficult to source in decent nick; you'll usually find shabby upholstery, worn bolsters and saggy bases, even in a low-mileage machine.

Check the headlining around the sunroof for dampness and stains, and examine the carpet for moisture; a leaking sunroof inevitably leads to a rotten floor. Talking of carpets, early XR2is had different carpets from RS Turbos, with blue plastic inserts along the inner sills – don't get caught out.

Cabin condition can make or break a tidy car, so don't hesitate to pay more for a Mk3 with mint trim.



to source – the RS Turbo rack (always non-PAS) was faster-g geared, with fewer turns lock-to-lock – 3.75 rather than 4.2.

More importantly, check the chassis number on the V5 matches the codes on the car, stamped into the driver's-side floorpan (beneath a flap in the carpet) and VIN tag on the slam panel; the engine number (if original) should match the last five digits. If anything looks like it's been tampered with, walk away.



CVH could be smoky but can be persuaded to produce big bhp

FIESTA RS TURBO

ENGINE 1596cc in-line four-cylinder, eight-valve, SOHC CVH with cast iron block and alloy head, 8.2:1 compression ratio, XR2i EFI cylinder head and camshaft with hydraulic lifters, Escort RS Turbo camshaft pulley, water-cooled Garrett T02 turbo, intercooler, EFI electronic fuel injection, Ford EEC-IV engine management system, revised intake manifold, uprated 88l/h fuel pump, revised cast exhaust manifold and 55mm-bore exhaust system

TRANSMISSION Front-wheel drive with B5 five-speed manual gearbox, 218mm clutch and 3.82:1 final drive ratio. Gear ratios: 3.15:1 first, 1.91:1 second, 1.28:1 third, 0.95 fourth, 0.76:1 fifth

BRAKES Front: 240mm ventilated discs; rear: 203mm drums; Ferodo 3432 friction materials; optional Girling SCS ABS

SUSPENSION Front: MacPherson struts, Armstrong gas-filled dampers, XR2i-spec 186lb/in coil springs, XR2i 16mm anti-roll bar, unique wishbones and ball joints to modify camber and castor; rear: semi-independent with trailing arms and torsion beam, 12mm lower/stiffer (than XR2i) 204lb/in coil springs, shortened Armstrong gas-filled dampers, 20mm anti-roll bar

WHEELS AND TYRES 5.5x14in three-spoke alloys and 185/55VR14 tyres

INTERIOR Recaro front seats in Ascot cloth trim, grey leather-covered three-spoke steering wheel and gearknob, 150mph speedometer, electric front windows, central door locking, remote boot release and tilting/removable glass sunroof

EXTERIOR Three-door Fiesta XR2i body with body-colour bumpers, wheelarch extensions, side skirts, bonnet louvres and tailgate spoiler, black lower front bumper extension, fog lamps and driving lamps in front bumper, black bodyside mouldings with green inserts, tinted glass, electric front windows, opening rear quarter vents, tilting glass sunroof, optional heated front windscreen. Colours: Diamond White, Radiant Red, Black, Mercury Grey (early models) or Moondust Silver (late models). Fiesta RS Turbo decal on tailgate

ENGINE

Not exactly Ford's finest hour, the Fiesta's CVH powerplant is capable of producing big power. But if left neglected, even a standard motor becomes a bag of nails.

The cambelt needs changing regularly, the coolant requires refreshing, and oil swaps should be done every 3000-to-6000 miles – otherwise the tappets rattle and the camshaft growls.

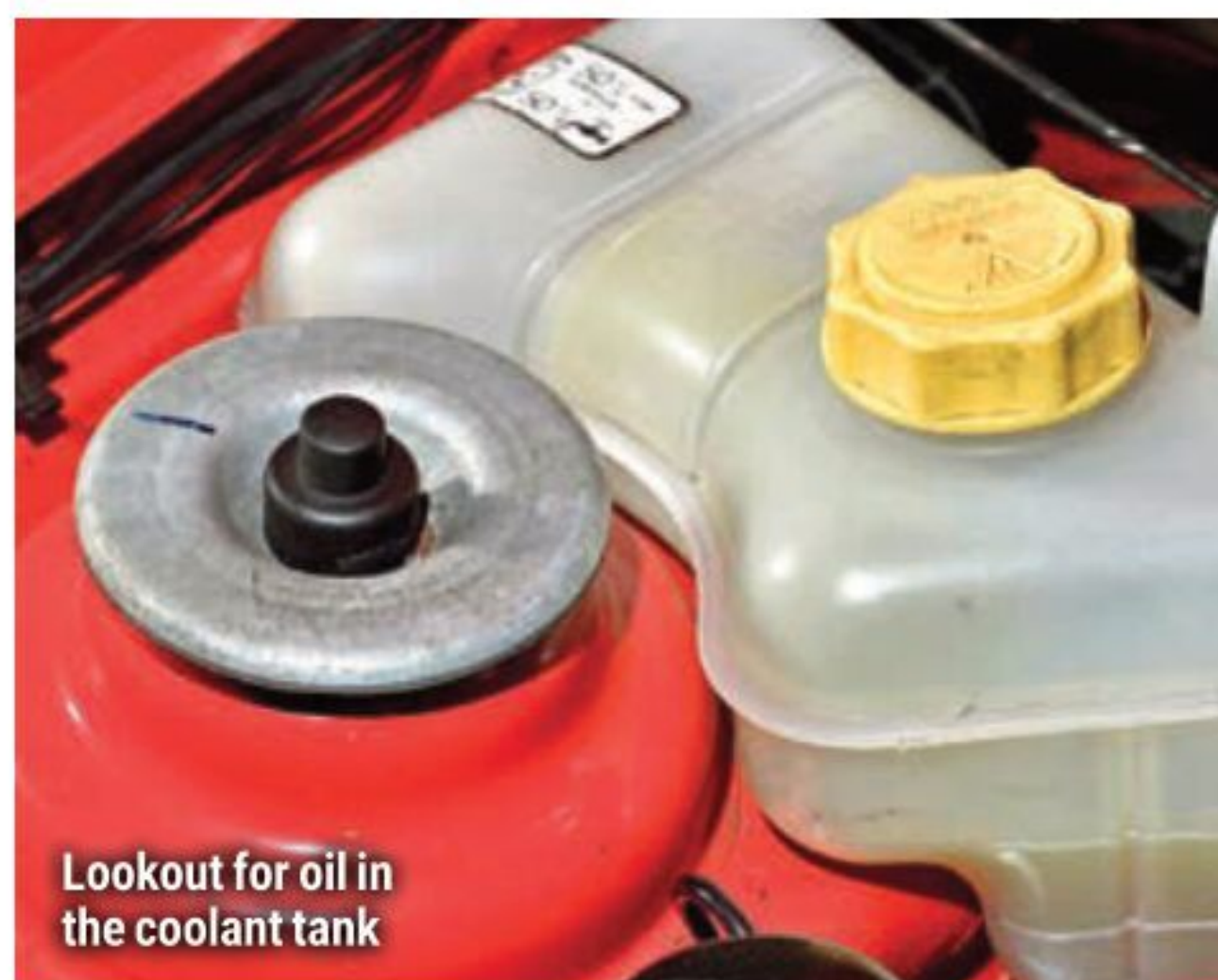
A knocking engine is a major no-no, possibly from heavy cam wear but probably knackered crankshaft bearings. Blue exhaust smoke points to tired pistons and/or rings, burnt valve stem seals or a blown turbo (check for excessive play by removing the inlet hose and jiggling the shaft), while white clouds suggest head gasket failure – check for

evidence of water in the oil or vice-versa – or worse, such as a cracked cylinder head.

Many RS Turbos run badly, even though the EEC-IV electronic engine management system is less trouble-prone than the Escort's mechanical setup. RS Turbo expert Odd Kidd Creations (OKC) reckons 70 per cent of Fiestas have issues – some problems are obvious, such as kangarooing when running too rich (or too lean...), while others might feel fine unless you know what you're looking for – such as bad tuning that runs more boost than the factory 2-bar MAP sensor can take. Costs mount up when finding faults because only specialists have access to the proper diagnostic equipment. And then it's a case of ensuring replacement parts are available: some sensors are no longer stocked, while others need an expert's opinion – for example, a BMW air temperature sensor can be used.

Throttle sensors are especially problematic, and the ECU can also cause complaints – being mounted upside down in the bulkhead, prone to water ingress when disturbed.

Cooling is another issue thanks to the Fiesta's cramped engine bay and small radiator. Expect an RS to run hot due to excessive heat-soak, and don't be surprised to see a T3 turbo in place of the T2, which is better value and makes more power; if the T2 hasn't already been rebuilt, it's possibly due for work. Similarly, a modified RS running the standard intercooler is asking for trouble.



Lookout for oil in the coolant tank

SUSPENSION

SVE-tweaked underpinnings made the RS Turbo unique among Fiestas, but its failings are much the same as any other Mk3.

First and foremost, front suspension drop links fail with frequent regularity (they're simple to fix) and the lower arms become floppy, leading to knocking and banging. Replacements are available but they're RS-specific and around 10mm longer; it makes sense to fit poly-bushes for longevity.

Similarly, polyurethane strut top mount rubbers (or fronts from an Escort Cosworth) are a worthwhile upgrade.

Despite its age, the standard RS Turbo should feel sharp and agile – if not, there's something wrong. Chances are the springs or dampers are

old and worn out or broken. Many Mk3s have also been modified, often with inferior-quality shock absorbers or overly-low springs; any more than a 30mm drop is considered detrimental to the RS Turbo's handling.

Fiestas are also prone to eating wheel bearings, so listen for rumbling on the test drive.

If there's a general vagueness, check the steering for play. Yes, the track rod ends or (unassisted) rack may be floppy but it's more likely a bush in the column – notable if you can pull the steering wheel towards you.

Finally, the suspension is one area to check for authenticity: regular Mk3s lacked a rear anti-roll bar, so start asking questions if it's absent from an RS.



Genuine gearknob is rare and ultra-pricey

TRANSMISSION

Unlike its Escort RS Turbo predecessor, the Fiesta's transmission was nothing special – just a regular B5 five-speed gearbox without a limited-slip differential. But that's not necessarily a problem, because many Fiestas have had LSDs retrofitted, and – if the Escort is anything to go by – you'd be lucky to find the gearbox fully-functioning anyway...

But that's not to say the Fiesta will be trouble-free. The standard transmission is relatively weak, and won't last long when asked to cope with lots of grunt. Most commonly you'll hear rumbling when driving, which points to mainshaft failure but may also be caused by growling driveshafts; leave them to their own devices and they'll wreck the gearbox too.

Crunching when changing gears is a sign of worn synchromesh, especially when swapping from second to third; again, a rebuild or replacement 'box is the only solution.

Gear selection trouble may also result from a faulty linkage (exhibited in a floppy or notchy shift) or worn clutch ratchet, both of which are inexpensive to repair; in contrast, a low biting point or slipping is a sure sign of a blown clutch – especially if the car's running high boost. Take a test drive to be sure.

Don't worry too much about clonking when pulling away, which will probably be due to a tired gearbox mount. Likewise, clicking under full steering lock is the result of worn CV joints.



Fog lamps and driving lamps could be cracked



Look for creases and rot in the boot floor

BODY

The Rallye Sport Fiesta was Spanish-built alongside every other Mk3, and shared the same bodysell as a basic model. Only the bodykit fixings around the wheelarches were different, although they were also found on the XR2i. Likewise, opening rear windows were standard on the RS (optional on lesser models), so if they're not attached on factory drillings there's something dodgy going on.

Many XR2i-based replicas neglect to swap the front bumper, which differed on the RS by having a small cut-out to make room for the cooling fan on the outside of the radiator; also, because the RS Turbo had no front grille, its bumper lacked the XR2i's three fitting holes.

But even a fancy badge won't hold back the tinworm, and it certainly makes a meal of the RS Turbo – maybe even enough to reduce it to scrap.

Begin by checking the bulkhead, which is a good pointer to the car's past. If it's been abused or modified (and put back to standard) the chassis and inner wings could be cracking through the welds – which also happens when crashed, along with ripples in the inner wings. Repairs in this area can be extensive and expensive.

While you're there, examine the battery tray and windscreen scuttle panel, followed by the A-pillars and front footwells (by lifting the carpets and scouring the floorpan from underneath, and removing the front wheelarch liners to look behind). The inner sills are also rot-prone (beneath the door rubbers), and it would be wise to look behind the bodykit (skirts and arch extensions) if you're spending big money on a Mk3 because the outer sills and wheelarches can corrode in a big way, staying secret until it's too late.

At the back, look for rust around the fuel filler cap and tailgate. Inspect the boot floor and suspension turrets, and keep an eye out for signs of accident damage, such as creases, cracks, poor alignment and fresh underseal and/or paint.



BRAKES

The standard RS Turbo braking setup was identical to the XR2i on which it was based, designed to cope with hauling up 106bhp rather than 131bhp – never mind a 200bhp-plus modified machine.

Needless to say, the stock stoppers struggle to cope with power hikes, leading to juddering front brake discs due to overheating and/or contamination. The prehistoric rear drums are prone to simple problems such as leaking wheel cylinders, resulting in a poor handbrake: nothing to worry about but fiddly to fix. Beware if it feels like there's too much braking to the back end, which could be due to a seized bias valve – not a major concern unless you're attempting an emergency stop and find the car swapping ends.

ABS was an optional extra, fitted to quite a few RS Turbos. Sadly, it's a primitive belt-driven system with a multitude of potential faults – from something

simple such as a snapped (or removed) belt to pump failure.

Check it's working by ensuring the dashboard light comes on with the ignition and goes off again after a few seconds. It's common to find the warning lamp bulb removed or the system blanked off, which is a big concern. Simply bunging up a hole disables the dual circuit's diagonal split, which is illegal at best and dangerous at worst.

To do the job properly you need to remove every component, right down to the brake lines – worthwhile on a heavily-modified car but a world of worry in an otherwise-standard Fiesta.

Likewise, if you see a modified braking setup, make sure it's not been cobbled-together from scrapyards junk; rear disc conversions in particular can result in aggro.



Have you ever seen a worse Ford wheel design?



KEY POINTS

ENGINE

Smoke and rattles could be bad news – from worn camshaft to knackered crank. Except poor-running from iffy wiring and knackered sensors.

TRANSMISSION

A groaning, growling gearbox is getting desperate for a rebuild but many common faults – such as a tired gear linkage – are cheap and easy to fix.

BODY

A hot spot for rot, RS Turbos are especially prone to corrosion behind the bodykit, front footwells and bulkhead.

ELECTRICS

Dodgy wiring and melted relays could be anywhere... Check behind the fuse box for the infamous green relay.

IDENTITY

It's hard to tell a real RS Turbo from a replica, so insist on seeing genuine spec, including bodykit fixings, sunroof, opening rear quarter windows and rear ARB.

ELECTRICS

Melted wiring and bodged-up repairs can be a nightmare – and they're also very common. Dodgy sensors and chafed looms cause big problems, and they're often difficult to trace.

First, check the fusebox – undo the two screws and drop it down from its holder in the dashboard. Examine the green (cooling fan) relay and wiring, which could well be scorched and melted. If it's been repaired in the past, make sure the job's been done properly with strong soldering and heat-shrink rather than Scotchlocks and tape; expect to spend £150-plus to get it repaired.

Fuel pump and sender connections are equally problematic (often causing non-starting and poor running), so lift the back seat and look beneath the rubber bung in the floor; if you see dodgy plugs and wiring, start to worry. Repair involves dropping the petrol tank, fitting a new sender and refreshing the pump loom, which is neither cheap nor easy. Renew the fuel lines while you're at it, which can be prone

to dangerous leaks.

Check the cooling fan wiring but don't be surprised if the temperature gauge seems to be running hot (or cold) – often a symptom of using the wrong-colour water temperature sensor in the cylinder head (purple, green and brown are interchangeable but give different readings). That said, most Fiesta RS Turbos do run a little hot...

If the fog light switch glows dimly when you turn on the ignition, it's probably a wiring loom fault and sign of further trouble. Indicators that don't self-cancel are most likely caused by a faulty column stalk, while a battery warning light generally points to a failed alternator.

For complete peace of mind, new looms are available from OKC – which will also remove all those headaches caused by three decades of aftermarket alarms, gauges, immobilisers, ICE and so on. ■



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www.adrianflux.co.uk

BRENTACRE

www.brentacre.co.uk

GRAHAM SYKES

<https://graham-sykes.co.uk>

NEED TO INSURE

<https://needtoinsure.co.uk>

RESTORATION

ANDY'S AUTO BODY

www.andysautobody.co.uk

ALDRIDGE TRIMMING

www.aldridge.co.uk

AUTOTRIM

www.autotrimltd.co.uk

CLASSIC CAR PARTS DIRECT

www.classiccarpartsdirect.co.uk

DMB GRAPHICS

www.dmb.uk.com

EAST KENT TRIM SUPPLIES

www.eastkenttrimsupplies.com

ENGINE PARTS UK

www.enginepartsuks.net

EX-PRESSED STEEL PANELS

www.steelpanels.co.uk

FORD PARTS R US

01934 820792

MAGNUM CLASSIC FORD PANELS

<http://magnumclassicfordpanels.co.uk>

TUNING

BURTON POWER

www.burtonpower.com

COLLINS PERFORMANCE

<https://collinsperformance.com>

COMPOMOTIVE

www.comp.co.uk

GLENCOE LTD

www.glencoeltd.co.uk

MOTORSPORT DEVELOPMENTS

<http://motorsport-developments.co.uk>

NORRIS MOTORSPORT

www.norrismotorsport.co.uk

ODD KIDD CREATIONS (OKC)

www.oddkiddcreations.co.uk

PRO ALLOY

www.proalloy.co.uk

SCC PERFORMANCE

www.focusrparts.co.uk

SPECIALISED ENGINES

www.specialisedengines.co.uk

TURBO TECHNICS

www.turbotechnics.com



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June 24

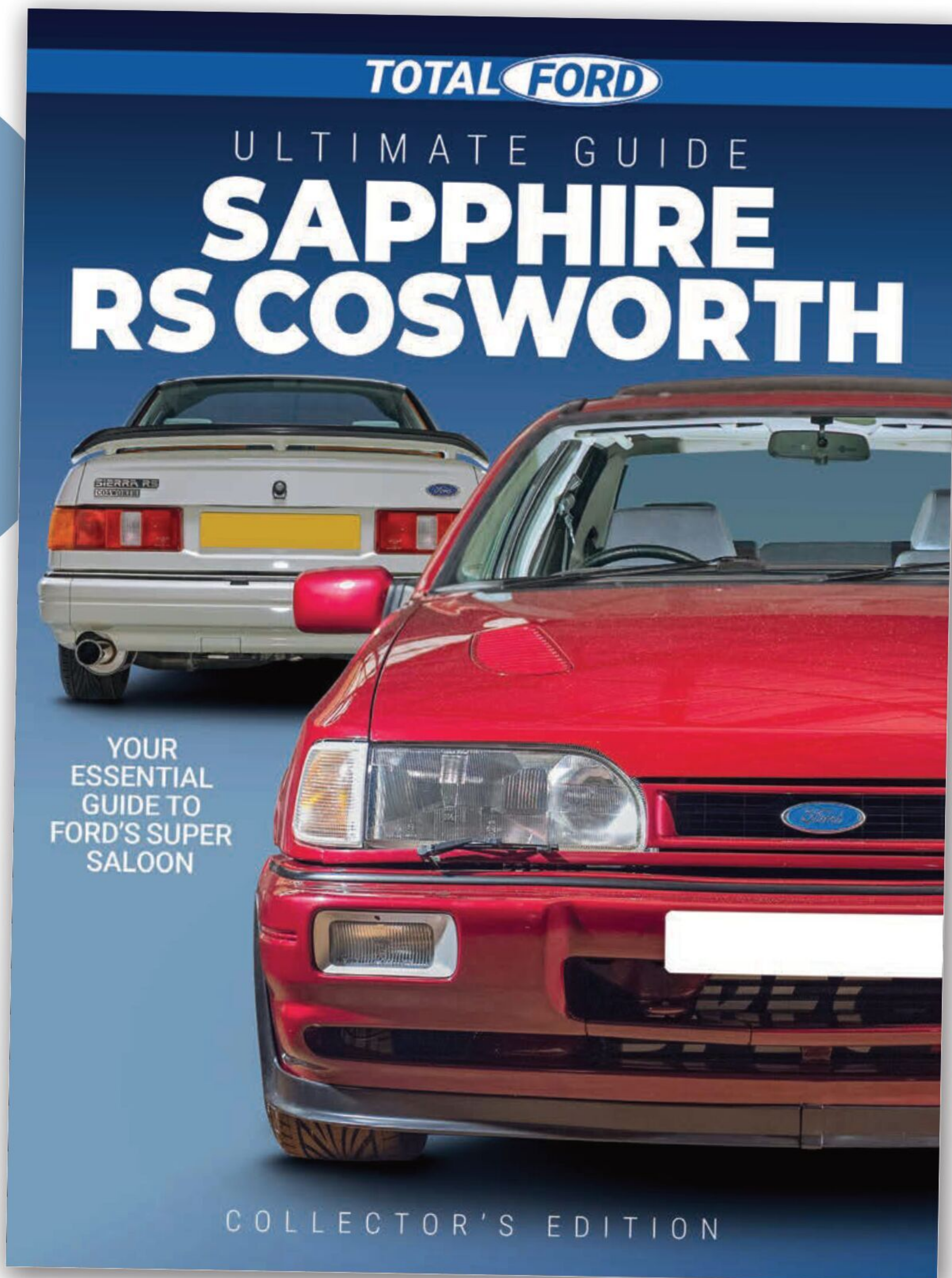
TOTAL FORD VOLUME 5 ULTIMATE GUIDE: SAPPHIRE RS COSWORTH

Coming up in the next issue of Total Ford, we're celebrating all things Sapphire RS Cosworth. For many years the 'taxi' was seen as the entry level to Cossie ownership, but thanks to its awesome performance, exhilarating power delivery and perfect poise, the Sapphire is now regarded as the driver's pick of the Cosworth range.

Inside Total Ford Vol. 5 we look at the full story this car has to tell; from humble beginnings as a dumping ground for surplus YB engines no longer needed for three-door production, through rallying success and laying the foundations for its Escort Cosworth successor, to hooligan's favourite and donut-king, right through to today's bonafide classic car status.

Along the way we'll look through the archives for in-period stories and images from when the cars were launched and campaigned in top-flight motorsport, offer buying and tuning guides as well as maintenance tips to make sure you not only buy the best you can but also keep it that way too, unearth all the technical info you'll ever need to know about these cars, and, of course, serve up some of the very best feature cars for a good dollop of inspiration too.

A packed issue full of vital info, top advice and brilliant cars, it really will be the Ultimate Guide for any Sapphire RS Cosworth fan. Don't miss it!



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ULTIMATE GUIDE

ESCORT & FIESTA RS TURBO



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MOTORSPORT SUCCESS



TUNING AND MAINTENANCE TIPS



FANTASTIC FEATURE CARS

If there's one model that epitomises an entire generation of fast Ford fans, the RS Turbo is it. Born so the Mk3 Escort could go rallying, the first breed of RS Turbo road cars were uncompromising homologation specials. Then followed the Series Two, which may have lacked the motorsport pedigree but packed all the same ingredients into a better all-round on-road performer. Finally, the same package was applied to the Mk3 Fiesta to create one of the hottest hot hatches ever built.

Over the last four decades, the RS Turbo models have seen it all; from top-level motorsport success, to king of the modified car cruising culture, to victim of spiralling insurance costs, and now a genuine collector's classic. Over those years, the RS Turbo brand has built up an enormous following of fast Ford fans, and is supported by a network of specialists and enthusiasts.

In this special 100-page bookazine, we celebrate all things RS Turbo. Inside you'll find detailed historical accounts retelling the unique stories of these very special cars, in-depth buying guides, tuning tips, maintenance checks, and some of the very best feature cars too. All supported by a blend of beautiful contemporary photography mixed with period archive images.

If you like RS Turbos, this bookazine really your ultimate guide.

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