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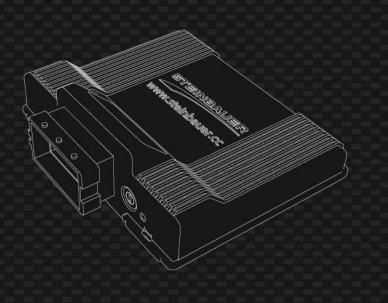
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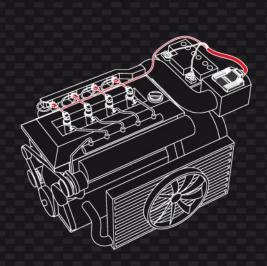


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Kelsey Media, Cudham Tithe Barn, Berrys Hill, Cudham, Kent TN16 3AG Facebook: facebook.com/PerformanceVauxhallMag Twitter: @PerformanceVaux

EDITORIAL Editor: Dan Furr, dan.furr@kelseymedia.co.uk Art Editor: Julian Jefferson

CONTRIBUTORS Andy Tipping, Emma Woodcock, Dan Sherwood, Mick O'Rourke, Si McNally, Sharon Horsley, Adrian Brannan, Dan Williamson, Daniel Bevis

ADVERTISEMENT SALES Advertising Manager: David Lerpiniere Telephone: 01732 445325 Email: david.lerpiniere@talkmediasales.co.uk

Production Supervisor: Joe Harris, 01733 362318 kelseymotoring@atgraphicsuk.com Team Leader: Melanie Cooper, 01733 362701

### MANAGEMENT

aging Director: Phil Weeden ef Executive: Steve Wright Chier Executive: steve wright Chairman: Steve Annetts Finance Director: Joyce Parker-Sarioglu Retail Distribution Manager: Eleanor Brown Audience Development Manager: Andy Cotton Brand Marketing Managers: Debra Hagger and Nikolas Lovely Events Manager: Kat Chappell Publishing Operations Manager: Charlotte Whittaker

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### **NEXT ISSUE ON SALE FRIDAY 12TH JANUARY**



### EVOLUTION OF THE SPECIES

If you'd approached me not so long ago with news that you owned a 400bhp street-legal Astra, I would have suggested you were in possession of a potential Performance Vauxhall cover star, regardless of the age of car you'd told me about. Today, however, 400bhp Astras are as common as 500bhp Mitsubishi Lancer Evolutions – every bugger seems to have one!

You've probably picked up this magazine because of the cars we've proudly displayed on its cover, namely Matt Loane's Astra H VXR and Rix Sidhu's Astra G SRi Turbo. The latter has graced the pages of Performance Vauxhall before. At the time of its earlier feature, the Flame Red hot hatch was producing a 'mere' 398bhp. We were suitably impressed, but the fact that it can now boast 540bhp just goes to show how far the Vauxhall tuning scene has come in recent years.

Of course, Rix's car isn't a one-off when it comes to Astras powered by two-litre engines chucking out mega power. You only need to attend PVS (the date for the 2018 show can be found on page 19), Thunder Road or Race Wars to be met with a variety of Griffins laying down big bhp.

As if to prove the point, Matt's sprint machine is delivering a solid 620bhp

from its Z20LEH powerplant. Back in the day, extracting anything over 300bhp from a C20LET meant custom fabrication and standalone engine management (if you don't believe us, have a butcher's at Jamie White's 366bhp Cavalier GSi2000 on page 76), but the mappable nature of Z20LET and Z20LEH ECUs, not to mention a thirst for ever-increasing horsepower from die-hard Vauxhall modifiers, has encouraged a large number of independent Griffin tune shops - many of them our valued advertisers - to emerge, offering 'off the shelf' power packages designed to get the very best out of later models. The only limit is your budget and imagination.

All of this amounts to what can only be described as a Vauxhall tuning scene stronger than ever, although I can't wait to see what power figures we're seeing from feature cars a little further down the line. If 400bhp from a sixteen-valve Vauxhall lump seems like standard fare today, think how amazing your four-cylinder creations are gonna be in the not too distant future!



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in:

MASS VXR



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### FAST FACTS

**S20bhp** Z20LEH engine BorgWarner EFR 8374 turbo KW Variant 3 coilovers Alcon six-piston brakes Lamborghini paint job

WORDS Emma Woodcock PHOTOS Andy Tipping

Transformed from off-the-road zero into standing-mile hero, Matt Loane's S204 Astra VXR has had a whirlwind year, and its owner isn't done yet...

### **ASTRA VXR**

rey glowers under the crisp morning sky. An Astra VXR broods against strips of washed-out runway in the Rutland

countryside, itching for the first opportunity to let rip in each one of six gears. The car's unique paint job turns every angle, grille and panel crease to a swirling typhoon of aggression. The location is Kendrew Barracks, the date is 21st August 2017, the event is Thunder Road, and Matt Loane is about to push his VXR to the limit for the very first time.

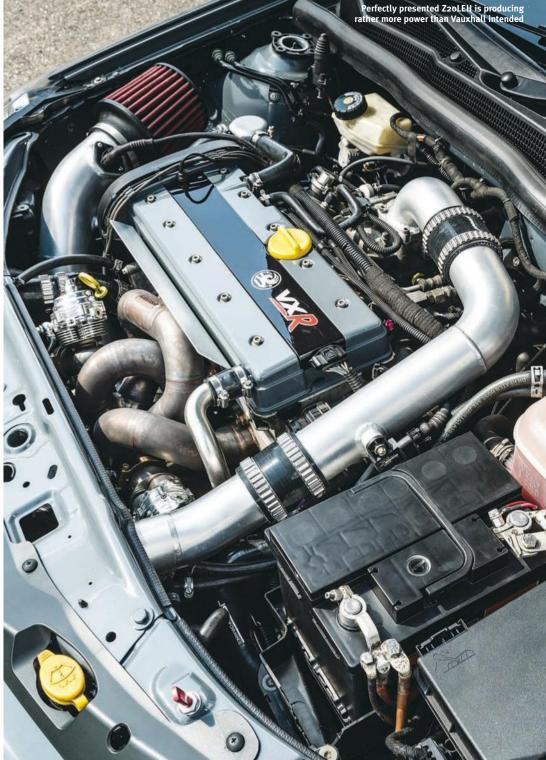
Turning out of the pit area, Matt joins a queue of cars inching towards their date with destiny and a straightline sprint. The Astra arrives at the starting line, staring down a stretch of ex-RAF airstrip that reaches to the horizon. He has a single mile with which to prove what his build is really made of. Three. Two. One. The revs rise, the VXR screeches away, requiring the deftest of throttle feet to avoid spinning maximum power through the first three gears. Slot into fourth and a Gripper limited-slip diff kicks in, Toyo Proxes R888 rubber finds traction and Matt can finally feel an astonishing 620bhp fire up through the front wheels.

### **THROW CAUTION**

He grabs fifth, shifts to sixth and holds tight, speed climbing higher with each passing second. Another blink, another heartbeat, and the Vauxhall sears across the finish line. Has the day gone to plan? Have the late nights paid off? The data is downloaded, checked and checked again. The delay in finding out how well the car has performed is nothing short of agonising. It proves itself, however, to be worth the wait.

174mph is enough to lead class B by a healthy margin, but what if Matt's





Astra could go faster still? It's time to line up and go again! The second run is even more impressive than the first, delivering a peak speed of 178.5mph, the third-fastest run of the event. Against a field of mega-powered Monaros and supercharged VXR8s, that's guite an achievement for a 1998cc hot hatch, yet Matt reckons he could have crossed the line in an even quicker time. "Thunder Road organisers didn't have a live leaderboard on display this year. Had I known I was less than 1mph short of overall victory, I would have hit the runway for a third time. My VXR was

still pulling as it flew over the finish line, and I'm sure it could pass the 180mph mark if I had a better run through the first three gears. That said, I'm happy the car survived the day – long-distance sprint events can be incredibly punishing!"

Only nineteen months earlier, the same Vauxhall was more 'down and out' than outright fast. "I knew my Astra long before I bought it," recalls Matt. "A friend of mine let it sit on his driveway for months on end. I was surprised to see a VXR with bodywork in such poor condition, which is why I started to dismantle it almost as soon as I convinced my mate to let me take the car off his hands."

As befits a professional panel beater, Matt immediately set to work with a fine-toothed comb over the body of his new toy. Indeed, as soon as the car's engine was removed, he stripped the body to a bare shell during a month of evenings and weekends. Its rear seat brackets (and plenty of other interior tabs considered to be supplementary to requirements) were ditched, their resultant holes smoothed over. Minor bodywork repairs followed, meaning that the awesome Astra was soon ready for a fresh coat of colour.

### "AS FAR AS MK5 ASTRAS ARE CONCERNED, IT'S A HUE UNIQUE TO MY CAR, AND I'D LIKE TO KEEP IT THAT WAY!"



**OWNER** 

PIRST VAUXHALL Corsa C 1.2 FAVOURITE VAUXHAL VX220 BEST THING ABOUT ASTRA VXR How fast it is LEAST FAVOURITE TH ABOUT YOUR ASTRA Constantly having to che it's in good health!

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· PERFORMANCE VAUXHALL 13

### ASTRA VXR

Though the VXR had originally been finished in Arden Blue, its new owner felt it was time for a change. "I fancied grey, but a shade different to the flat finishes so often borrowed from the Audi, Porsche, Alfa and Ford colour catalogues. During a spell of late-night online browsing, I spotted images of a striking solid grey M-badged Bimmer painted by BMW Individual. As far as I can tell, it isn't a colour that had been applied to an Astra VXR up until that point in time."

It's a genuine Lamborghini shade, but that's all Matt wants us to tell you. "As far as Mk5 Astras are concerned, it's a hue unique to my car. I'd like to keep it that way!" he laughs.

"Whenever I post a photo of my VXR online, all people want to know is what colour it is. They never ask about the extensive mechanical work that's taken place!" he sighs, although he's more than happy to lift the lid on the colour he picked for his three-door's Alcon sixpot stoppers and multi-point roll cage.

"They were painted Arden Blue too!" he smirks, before confirming that the bright green they display today is from the same Sant'Agata stable as the gorgeous grey covering every exterior panel of his pride and joy. "The green is Lamborghini Verde Ithaca, while the car's DAP bonnet vents, door mirror covers and Revolution Millennium wheels are gloss black."

Visually, the car was complete. Now it was time to get its powerplant up to scratch. Already tuned to the 330bhp mark (thanks to a semi-forged engine, a hybrid turbo and a custom map), the VXR was no slouch, but Matt wanted more. Much more. His original plan of action was to build a typical trackfriendly Astra VXR, but the potential for power soon corrupted. Steve Milton (known as Steveboyslim to MIGweb users) fully forged the car's two-litre lump, while a Nortech Performance turbocharger helped to encourage 440bhp just in time for 2016's Performance Vauxhall Show. The car

### **"THE CAR LOOKED GREAT, BUT TROUBLE WAS LURKING JUST AROUND THE CORNER"**



### **TECH SPEC**

ENGINE 1998cc Z2oLEH DOHC 16-valve built by Spec J Motorsport, block machined and wedged by Steve Milton, all casting marks removed, Omega 86.5mm forged pistons, Arrow Precision H-beam connecting rods, balanced rotating assembly, BMW under-piston oil jets, Sputter 20.3mm big end bearings, ARP fasteners throughout, Roper 20.3mm big end bearings, ARP fasteners throughout, Roper Developments cylinder head with bored inlet and exhaust ports, hand-blended valve throat area, Colsibro bronze alloy valve guides, Nimonic 80 1mm single-piece forged exhaust valves, 1mm single-piece forged inlet valves, solid lifters, deep locator shims, double valve springs with steel retainers. valve springs with steel retainers, Piper camshafts with custom grind mechanical profile, cabin-mounted Integrated Engineering dual-pump fuel surge tank, twin Bosch 044 ruet surge tank, twin Bosch o44 fuel pumps, Aeromotive Stealth 340lph fuel lift pump, BMRS AN6 nylon braided fuel lines with Pro Gold fittings, Injector Dynamics 1000cc fuel injectors, Courtenay Sport custom map on standard ECU, Nortech Performance intake pipe with 90mm MAF boss, Klasen Motors inlet manifold, enlarged top hat and boost pipes, BorgWarner EFR 8374 turbocharger with T4 twin-scroll 1.05A/R exhaust housing, twin TiAL MV-SA 38mm wastegates with screamer pipes, Garrett-cored intercooler, Nortech Performance twin scroll exhaust manifold and three-inch downpipe, Piper three-inch stainless steel exhaust system, Pro Alloy large-core radiator, twin Revotec slimline fans, frontmounted oil cooler, TigWorx custom oil catch can, JS Performance silicone hoses

### 620bhp, 48olb/ft torque

TRANSLAISSION Front-wheel drive, Getrag M32 six-speed manual gearbox rebuilt by WG Motorworks, Gripper limited-slip differential, TTV Racing lightweight flywheel, ARP bolts, Helix four-paddle clutch with uprated Sachs clutch cover plate

KW Variant 3 adjustable coilovers, 24mm front anti-roll bar, factory rear anti-roll bar, Powerflex polyurethane anti-roll bar bushes, Super Pro castor adjustable front lower control arm bushes, RnD Motorsport solid subfirme bushes subframe bushes

Alcon six-piston front calipers painted Lamborghini Verde Ithaca, Vectra VXR 345mm front discs, factory rear calipers with 278mm performance discs

WHEELS & TYRES 8x18-inch Revolution Millenium six-spokes painted gloss black, Toyo Proxes R888 225/40/18 tyres

2005 Astra H VXR, full bare metal respray in Lamborghini grey (guess the shade!), smoothed Opel front grille insert, DAP bonnet vents painted gloss black, Aerocatches, Regal Autosport RSS front splitter, gloss black door mirror covers, gloss black fog light surrounds

Stripped rear cabin, Recaro Pole Position front seats, Willans four-point safety harnesses, flocked dashboard and transmission tunnel, triple gauge mount (housing Stack oil pressure, oil temperature and boost gauges) in centre console, Innovate wideband lambda gauge, air/fuel ratio gauge housed in A-pillar gauge pod, steering wheel re-trimmed in leather, multi-point roll cage painted Lamborghini Verde Ithaca





MASS VXR





lin

### Lambo paint perfectly suits the VXR

looked great and it went like the clappers, but trouble was lurking just around the corner...

A couple of weeks after the show, the trigger wheel removed itself from the Astra's crankshaft. Given the trigger wheel is necessary for the ECU to receive information and set the engine's ignition timing, that's really bad news! Matt was left with no choice but to pull the engine out of the car in order for a replacement part to be fitted. It wasn't all doom and gloom, though. The unexpected rebuild offered an opportunity for further modification!

Matt sold his Nortech turbo and ordered a BorgWarner EFR 8374. He also bought the exhaust manifold, downpipe and intercooler kit his cool creation currently makes use of. After the engine was back in one piece and reinstated in its rightful home, it was dyno-tested and rated at an impressive 550hp. Hoorah! Sadly, the good times didn't last long.

### DARK CLOUDS

"Catastrophe came in the form of a cracked block," cries the 26-year-old from Hampshire. "It literally split in half! I had to source another bottom end which Steve Milton stripped and reassembled for me, complete with water channel wedges, Omega oversized forged pistons, BMW underpiston oil squirters and Arrow H-beam rods," he says. The unit was then sent to Jonathan Herd at Spec J Motorsport who built the tall engine. Subsequently, a mapping session at Courtenay Sport in North Walsham saw the

### **ASTRA VXR**

new motor produce a whopping 620bhp and 480lb/ft torque. It's fair to say that despite its fantastic appearance, Matt's Astra is defined by its astonishingly powerful engine, but that doesn't mean the rest of the car has been forgotten; the stock suspension has been replaced with KW Variant 3 coilovers, while a beefier 24mm front anti-roll bar, castor adjustable wishbones and RnD Motorsport solid subframe bushes further enhance handling. The original M32 six-speed gearbox, meanwhile, was replaced when its casing was irreversibly damaged by the disintegrating engine block. The substitute Getrag unit benefits from a full rebuild by the guys at WG Motorworks in Sittingbourne.

### **UNDER THE SUN**

Matt kept many of the interior updates applied by his VXR's previous owner, including the roll cage and Recaro Pole Position front seats, although recent additions have included a flocked dash, Stack gauges and a re-trimmed steering wheel. A surge tank with twin Bosch 044 fuel pumps sits in the back.

"It does get noisy inside the car," he explains, "but the system works well. A pump in the main tank moves fuel to the surge tank and it goes from there, through custom fuel pipes under the car to the engine up-front. Under low load, it only uses one of the Bosch pumps. The second of the pair kicks in at 5000rpm." It's a good job too, because this Astra will spend plenty of

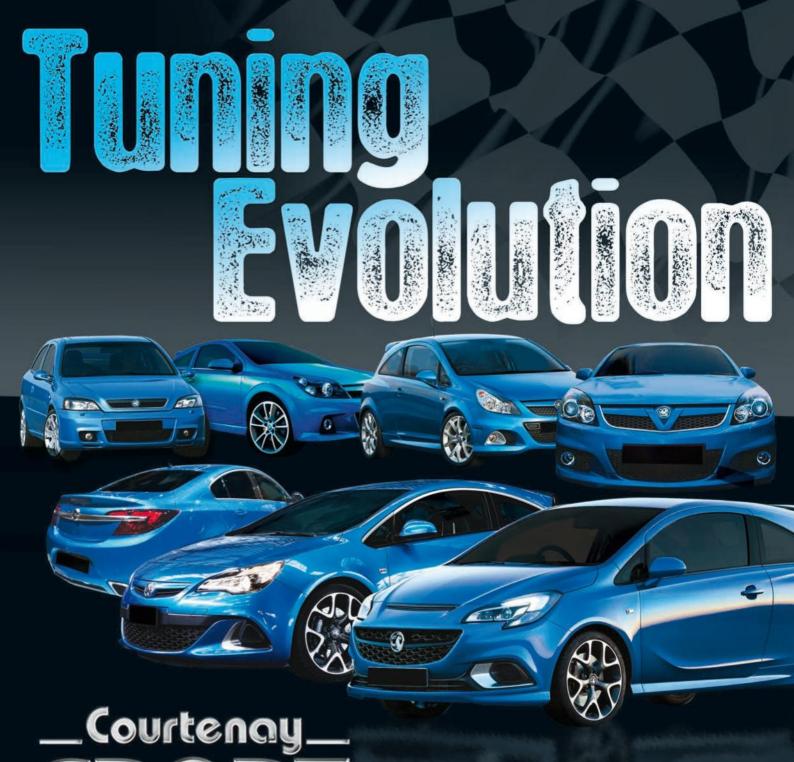








time at high revs in the near future. Yep, Thunder Road has turned Matt's head. "Standing mile and rolling halfmile events really appeal to me. I intend to participate in more of them, and I'm certain my VXR will hit the 180mph zone!" Planned changes make that claim even more likely; by the time you read this Performance Vauxhall feature, his great Griffin will be packing an aftermarket ECU, an Owen Developments map and 1700cc fuel injectors. The target? 700bhp. This storm grey speed machine is about to be classed as a Category 5 - it's a hurricane dressed like a Huracán! 🔾



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### NEWSFEED

Vauxhall news registering on our radar

### END OF THE LINE FOR VAUXHALL V8s HOLDEN AUSTRALIA SHUTS DOWN PRODUCTION AFTER SEVENTY YEARS



ne of the biggest news stories to emerge in the Vauxhall world during recent weeks has been the much dreaded closure of the Holden production line in Australia. As most readers know, the Monaro, VXR8 and Maloo are badged as Vauxhalls in the UK, but these V8 bruisers are imports from Down Under, where they were produced by Holden's HSV (Holden Special Vehicles) division.

Friday October 20th marked the last day of Holden production (the brand's dealerships will now sell rebadged Opels in Oz). To mark the occasion, Robert Kitchen of HSV & Holden Owners UK (*bit.ly/hsvholdenuk*) organised a gathering of V8-powered Vauxhalls at the manufacturer's famous Heritage Centre in Luton. The meet took place while the last Holdens were rolling off the production line the other side of the world.

"Bringing together members of a small-but-dedicated community of guys and girls who own HSV-derived Vauxhalls seemed fitting at a time when the cars we love are ceasing production. The Heritage Centre was the perfect venue for the event, allowing club members to explore Vauxhall's own extensive collection of cars," said Robert, before telling us that attendees in sixty-four different V8s had travelled to Luton from as far north as Aberdeen, and as far south as Plymouth. Vauxhall

presented a new VXR8 GTS-R on the day, one of only fifteen examples to be

imported to the UK. The 587bhp Spitfire Green giant is the most powerful production car to ever wear a Vauxhall badge. Needless to say, it attracted much in the way of admiring looks from all those in attendance!

Thanks must go to Terry Forder and Andy Boddy at the Heritage Centre for accommodating the club, and to its members for the HSV-decorated chocolate cake many were spotted munching!



### **\*WINTER WARMER**

Vauxhall is helping owners beat the winter blues when they book their vehicle for a comprehensive health check at a main dealer. For just £25, drivers can treat their car to a 25-point check, carried out by Vauxhalltrained technicians. The seasonal programme looks after vehicle and driver alike, with customers able to choose between coffee and cake, cinema tickets or headphones as a free gift. All you need to do is decide between gulp, goggle or groove! Visit your local main dealer before 31st March.



► Vauxhall's all-new Insignia GSi recently demonstrated its exceptional performance levels at Germany's Nürburgring, one of the world's most challenging circuits. Sitting 10mm closer to the road than the rest of the new Insignia range, and taking 160kg off the previous Insignia VXR, the GSi is the quickest Vauxhall production car to tackle the iconic race track. In fact, it was a massive twelve seconds speedier around the 'Ring than the currently-available Insignia VXR, performance that's beren attributed to a lightweight chassis, a more powerful four-wheel drive system and a two-litre engine linked to an eight-speed (yes, you read that correctly) gearbox. Drivers can choose from three key driving modes (Standard, Tour and Sport), while Vauxhall has also developed a fourth setting (Competition) ready for when the GSi lands in UK dealer showrooms next year. Nice.



💟 @PerformanceVaux



Following the success of this year's Z20LET Lovers Race Wars event, the single-mile sprint competition will be returning to Kendrew Barracks in 2018. Due to take place on the 12th May, the event promises to deliver hard and fast action from many of the most impressive Griffins on the scene, some of which feature in this very edition of Performance Vauxhall! Spaces for ninety drivers and thirty passengers are up for grabs, although you'll have to act fast – they're selling out quickly! Visit Z20LET Lovers on Facebook for further information, and have a butcher's at this video of 2017's event for a taste of what's to come: www.bit.ly/racewarsvid



### **PERFORMANCE VAUXHALL SHOW 2018**

The date for 2018's Performance Vauxhall Show has been announced! Taking place at Santa Pod Raceway on Sunday 24th June, the event promises to be packed full of features, with celebration stands paying tribute to ten years of Insignia, twenty years of Vectra B GSi, thirty years of Mk<sub>3</sub> Cavalier and thirty-five years of Nova. Plans are already underway to deliver an engaging programme of entertainment following your feedback regarding how the show can be further developed and strengthened



for the future. Keep an eye on *performancevauxhallshow.co.uk* for more information and the release of ticket booking functionality.



### **\*SAFETY FIRST**

It's clearly common sense not to get into your car and drive if you've been drinking, but did you know that you can still be over the limit the morning after the night before? Give the gift of safety to a friend or relative this Christmas by shouting them AlcoSense Excel (£99.99), a smaller version of the breathalyser used by the police. Visit alcosense.co.uk to find out more.



### **\*NO WORRIES**

Working on the assumption that all older cars are cherished classics, the Department for Transport (DfT) has announced that vehicles more than forty years old will no longer require an MOT after May 2018. What could possibly go wrong?! Sheesh...



### **GEAR**

🚹 facebook.com/PerformanceVauxhallMag 🛛 💟

@PerformanceVaux

### Hot products on planet Vauxhall...

### DIRENZA DECAT PIPE FOR ASTRA GTC VXR

The GTC VXR has been around for a while now, and it' the only Astra J still available to order from dealer showrooms. The model's enduring popularity has encouraged a wealth of tuning firms to produce trick kit designed to get enhanced power out of the hot hatch's turbocharged two-litre engine. Direnza has joined the party with its budget-friendly, TIG-welded GTC VXR decat pipe. Made from T304 stainless steel and utilising a built-in flexi-joint to avoid undue exhaust strain, this high quality part is yours for less than £130 including next day delivery.

### PRICE £129.99

CONTACT direnza.co.uk or call 0844 448 2002



### DEI COOL COVER GOLD AIR TUBE COVER KIT

Cold air is denser than warm air, which means the lower the intake temperature of your car, the more its engine will be able to perform at its best. To assist with keeping intake charge temperatures as low as possible, DEI has developed what it calls Cool Cover Gold, an air tube cover kit manufactured from metalised polyimide lamination bonded to a robust heat-treated fibreglass material that prevents airflow pipework from absorbing heat in the high temperature environment of an engine bay. Rated at 800°F (427°C), Cool Cover Gold will fit air intake tubes up to 71.1cm long and 7.62-10.16cm in diameter. The product is easy to cut or trim as necessary, and at just 0.7874 cm thick, takes up negligible space around your modified Vauxhall's intake tube.

PRICE £62

CONTACT designengineering.com

### NICOMAN 'SPAGHETTI' FLOOR MATS

These incredibly durable custom-fit 'Spaghetti' floor mats from Nicoman feature a 12mm thick intricate weave that traps dirt, debris and moisture, keeping muck away from your car's valuable carpets. Made to order for right-hand drive vehicles (including Insignia, Monaro, most Astras, Vectras and Corsas), each mat can be cleaned by jet wash or hose. Fire retardant, sounddeadening, UV-proof, stiletto-friendly, supercomfortable and featuring patented GECKO nonslip backing, each set of mats comes with an impressive two-year warranty and is available to order in a choice of eight different colours suiting a variety of Vauxhall interiors. Nicoman pitches the product as the most luxurious car mat available to buy. Find out for yourself by ordering a set today!

PRICE £65 PER SET OF FOUR MATS CONTACT Email order@nicoman.co.uk or visit the website nicoman.co.uk





### TURBOSMART FUEL PRESSURE REGULATORS

Turbosmart's latest high-performance EFI fuel pressure regulators are smaller, lighter and better than ever before! Featuring two 1/8" NPT, -6AN or -8AN inlet ports, one 1/8" NPT, -6AN or -8AN return port and a 1/8" gauge port, 30-90psi base pressure adjustment, 1:1 ratio, a premium diaphragm, a stainless steel valve and a matching seat, this fantastic fuelling equipment allows for any fuel type (including E85) and is suitable for engines boasting up to 8oobhp. Machined in-house from billet aluminium and stainless steel, each hand-assembled FPR is designed to provide smooth and stable fuel pressure under all conditions from idle to full throttle. A mounting bracket and retaining clip, vacuum fitting and a gauge port blank kit is included with every purchase.

PRICE FROM £163.68 CONTACT turbosmart.com



### SONIC TOOLS POCKET-SIZED RATCHET SET

Sonic Equipment, manufacturer of some of the most popular automotive tools, has released a quarter-inch nineteen-piece ratchet set that's small enough to fit in your pocket. The kit comprises shallow sockets in 6mm, 8mm, 9mm, 10mm and 12mm sizes, ten bits in a selection of designs (including slotted, Philips and hex), a 50mm extension bar and a disc ratchet featuring seventy-two teeth. Developed to the same exacting standards as the rest of the Sonic Tools range, and constructed from chromevanadium, this diminutive ratchet set is perfect for keeping in your car. PRICE £13.60

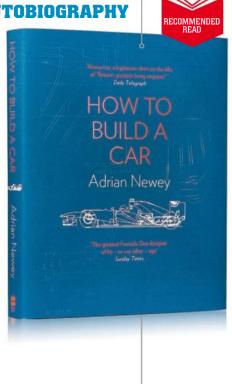
CONTACT damar.biz



### ADRIAN NEWEY AUTOBIOGRAPHY

Adrian Newey is arguably the greatest car designer in the history of Formula One. Newey has worked in both F1 and IndyCar racing as an immensely successful race engineer, aerodynamicist, designer and technical director. After designing championship-winning cars for Williams F1 and McLaren, he moved to Red Bull Racing in 2007, where he currently serves as Red Bull Racing's Chief Technical Officer. He has won no fewer than ten F1 constructors' titles (more than any other designer), helping some of the world's most famous drivers to bag championship silverware. At last count, he has contributed to more than 150 GP wins! Described as Britain's greatest living engineer, he's taken time out of his busy schedule to pull together his teasingly-titled autobiography, How To Build a Car, available to order in hard copy or digital form for Kindle.

PRICE Hardcover £13.99, Kindle edition £9.99 CONTACT www.bit.ly/neweybook



### MILLTEK METAL POLISH

**Respected British exhaust** manufacturer, Milltek, has solved a perennial problem for many conscientious owners of high-output Vauxhalls: how to restore the look of a stainless exhaust system to an 'as new' condition. After several months of testing in all markets and weather conditions, the company has released a tailored metal polish that will render any stainless steel exhaust system or metal component ready for concours or show duty with the minimum of effort. The polish has been developed in association with leading car care product specialist, Dodo Juice. The result is a high quality, high shine, midabrasive polish that can be used on all types of metal, including chrome. Shine on! **PRICE £11.76** 





### GEAR

### FORGE MOTORSPORT DUMP VALVE FOR CORSA E 1.0 TURBO

Most manufacturers are currently trying to reduce the size of their engines whilst maintaining a respectable level of power. The single-litre Corsa E Turbo is Vauxhall's offering, a model which Forge Motorsport is catering for with an all-new dump valve kit. Beautifully engineered, this 'fit and forget' part replaces the GM item with a pressure/vacuum-operated piston valve assembly. The OEM ECU retains control over vacuum actuation, which means the Forge part won't generate warning lights or fault codes. This neat dump valve really is 'plug and play'!

PRICE £209.24

**CONTACT** forgemotorsport.co.uk





### **POWER MAXED DETAILING WAX**

Power Maxed supplies a range of car care products, from valeting and detailing solutions to fuel additives and adhesives. True to trend, the company has released a deliciously scented range of limited edition Christmas gift waxes that can be personalised for the lucky recipient. Available to order in 200ml pots with a choice of Fresh Cranberry, Iced Gingerbread and Hot Cinnamon scents, each product features a new blend of carnauba and Montano waxes, boasting five times the gloss enhancers of the impressive waxes already offered by Power Maxed. And if you order now using the offer code PVXMAS, you'll receive a free detailing gift pack with your purchase. Well, go on then!

PRICE £49.99 CONTACT powermaxed.com/christmaswax



### **BTCC TRACK TOP**

**Official British Touring Car** Championship apparel provider, Dread, is promoting the sale of track tops emblazoned with the championship's distinctive branding. Made from 80% cotton and 20% polyester (and available in styles for men and women), each track top features a fitted style with ribbed side panels, a contrast-striped ribbed inner collar, a fleece lining and twin front pockets. No matter which team you're cheering for, Dread has you covered. Literally.

PRICE £40 CONTACT shop.dread.cc





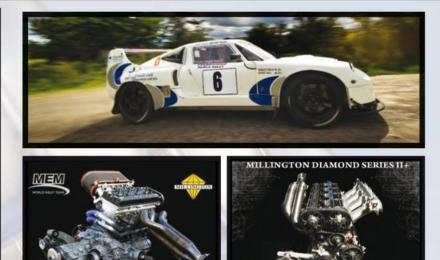




Millington Engineering, Lower Cockshutt Farm, Nr.Chetton, Bridgnorth, Shropshire, WV16 6RF, United Kingdom

Millington Racing Engines are a British engine manufacturer, well-known for producing the high performance, state of the art Diamond Series Engine.With over 40 years experience of building, designing and manufacturing competition engines, Millington Diamonds are widely known as the ultimate engine choice for motorsport applications worldwide.

Millingtons Racing Engines manufacture high performance engines for a wide range of motorsport disciplines from tarmac, gravel, cross country rally, hill climb and autograss. The lconic "Diamond" as it's referred to, has a reputation second to none for pure power and reliability. Millingtons have developed many Ford / Cosworth engines, such as the YB, Pinto and the BDA Series.



Please visit our website below and call us if you have any queries

www.millingtonengines.co.uk Email: info@millingtonengines.co.uk Tel: +44(0)1746 789268 Tel: +44(0)1746 789692 Mob: 07742 719323



### FAST FACTS

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2.5-litre **Nissan Skyline** engine Garrett **GT3076R turbocharger Bilstein B8** shock absorbers Irmscher **Manta 400** body kit **Revolution Millennium** wheels

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- A GARGER

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### help from an unlikely donor car, his dream has finally come true...

WORDS Emma Woodcock Photos Andy Tipping

ud oozes between every footstep. A squelching tide shifts with each shuffle forwards, an offbeat accompaniment to the percussive monotony of rain. Grey and brown flecks of muck seem to spit from every crevice, aiming directly for a

A BIST AND A TON A

sea of expectant faces and sodden anoraks. This is rallying.

In one corner of the crowd, a young Kenny Chisholm huddles alongside his father and waits for the car they're both here to see. The weather worsens and the crowd grows impatient, yet the Chisholms are happy to wait. And then it comes, a suggestion at first, growing into a hard-edged soprano wail.

WAA. WUH-WUH-WAAAAA! Seconds pass, the Cosworth-tuned 2.4-litre

A643 TGF

/ZLALA

motor whipping against the trees before its host Manta slews into view, mud flying from the rear tyres as four headlights and four more lightpod lamps fight against the gloom ahead. With each change of direction, the awesome Opel yaws from one extreme to another, Jimmy McRae working hard at the steering wheel in order to instigate, hold and correct drift after drift. Growing closer by the instant, the red, white and blue AC Delco-

sponsored coupe launches past and skids away into the midst. Deep in the crowd, a seed has been planted. From this day forwards, Kenny Chisholm desperately wants an Opel Manta to call his own.

The years go by, Kenny passes through school, then college and on to his first job. "I'd owned a Chevette by that point in time, but you can imagine how excited I was when I finally managed to

2334 101

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### **SKYLINE MANTA**



buy a Manta!" A childhood dream had finally been realised, but he didn't have long to enjoy his new ride; unforgiving Scottish weather caused the car to corrode in doublequick time. That was that. Life continued, and our man spent the next few years in charge of far less interesting four-wheelers.

Adult life may have started, but Kenny didn't forget about Mantas. In fact, twenty years later, at the time of the marketing manager's fortieth birthday, he afforded himself an extraspecial present: a plan of action that would result in what he considers to be the perfect Manta B.

### **CHANGE DIRECTION**

The intention was to commission the guys at Leicestershire's very own Opel restoration specialist, Retropower, to build a track-ready Manta powered by the guts of a Cavalier Turbo, but things soon took a very different turn, as Callum Seviour of Retropower relates. "That's one of the funny things about this build," he smiles. "It spiralled out of control in the best possible way. Originally, Kenny wanted a

turbocharged Manta, suggesting a twolitre C2oLET engine for the job, but then we got talking about the Astra H VXR's Z2oLEH powerplant. In truth, the VXR engine doesn't really lend itself to rearwheel drive configuration, which is why we started to look for forced induction outside of the Vauxhall stable."

The first port of call was the 200SX, a cheap coupe produced







**"THE MANTA GT/E SHELL BEING USED FOR THE PROJECT HAD A SERIOUS ROT ISSUE"** 

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Turbo power direct from the Land of the Rising Sun

PERFORMANCE VAUXHALL |27

### SKYLINE MANTA

### TECH SPEC

2498cc Nissan RB25DET 24-valve DOHC straight-six, RB Motorsport forged pistons and steel connecting rods, ARP fasteners throughout, Cosworth multi-layer steel head gasket, Magnecor KV85 competition ignition leads, NGK Iridium spark ignition leads, NGK Iridium spark plugs, Bosch 044 fuel pump, custom alloy fuel cell, swirl pot, Siemens 650cc fuel injectors, sequential fuel injection, billet fuel rail, Sytec MSV fuel pressure regulator, DTA S80 ECU, K&N open cone air filter, Garrett GT3076R turbocharger, top-mounted turbocharger manifold, Nissan Skyline R33 front-mounted intercooler, Turbosmart blow-off valve and 38mm wastegate, GReddy-style inlet manifold, enlarged throttle body, custom three-inch stainless steel exhaust system with single-exit exhaust system with single-exit tailpipe, Driftworks large-core alloy radiator, remote oil filter housing, Mocal multi-row oil cooler and oil catch tank, HKS sports oil filter

### 450bhp

Rear-wheel drive, Nissan Skyline R33 GTS-T five speed manual gearbox and limited-slip differential, short shift kit, Nissan rear-wheel High Capacity Actively Controlled Steering (HICAS) delete

Bistein B& front dampers with custom-wound 450lb springs and strengthened Manta wishbones, Nissan Skyline R33 GTS-T rear subframe with Bilstein custom coilivers, Eibach 60mm inner diameter springs and Driftworks adjustable arms polybushed throughout arms, polybushed throughout

Nissan Skyline R33 GTS-T calipers, 296mm (front) and 295mm (rear) performance discs, EBC pads, bias pedal box, Wilwood master cylinders, Tilton brake fluid reservoir

AND

8x16-inch (front) and 9x16-inch (rear) **Revolution Millennium six-spokes** painted Aston Martin Morning Frost, Toyo Proxes T1-R 245/45/16 tyres

1983 Opel Manta GT/E, complete bare metal shell restoration, full respray in metal shell restoration, full respray in Aston Martin Morning Frost, bespoke floor pan, new boot floor, new chassis legs, relocated rear bulkhead, multi-point weld-in roll cage, refabricated front end (to allow mounting of radiator, oil cooler, intercooler and air-conditioning condenser), sculpted inner front wing to allow for position of boost pipe, Irmscher Manta 400 body kit, bonnet vents, hydraulic bonnet lifters, Aerocatches, carbon-fibre rear spoiler with exposed weave, carbon-effect door mirror cases. carbon-effect door mirror cases, Irmscher wind splits on front wings, four-lens lightpod, clear indicator lenses, shortened registration plates, Irmscher Manta 400 graphics

ULTIME:

mint

Recaro reclining bucket seats re-trimmed with Irmscher Manta 400 'Blitz' cloth, re-trimmed door cards, leather-trimmed door handles, flocked dashboard, custom deep-pile carpets, Irmscher steering wheel, bespoke centre console housing fuse box and centre console housing fuse box and plaque signed by Jimmy McRae, aftermarket air-conditioning system and heater blower, custom instrument panel, VDO gauges, brake bias control, USB charging point, drilled aluminium pedals, Pioneer head unit, twin Genesis amplifiers, Genesis subwoofers, Infinity 6x9-inch rear speakers and 6.5-inch two-way front component speakers in custom speaker pods

My family and friends for buying me car parts at Christmas time and birthdays, Clean and Shiny in Aldershot for their detailing genius, Callum and the crew at Retropower

### **"ONCE A FRESH MAP IS PROGRAMMED INTO THE STANDALONE ECU, POWER SHOULD JUMP TO 450BHP"**



OWNER

AGE 47 JOB Marketing manager PIRST VAUXHALL My first car – a Chevette! PAVUORITE VAUXHALL Mk2 Cavalier SR1130 MK2 Cavalier SR1

It was built to my specification MOST EXPENSIVE MODIFICATION All of it!

PERFORMANCE VAUXHALL 29

### **SKYLINE MANTA**





by Nissan in a number of different iterations throughout the 1980s and 1990s. Thanks to its longitudinally-mounted engine, viscous limited-slip differential and highly tuneable SR20 engine, the model seemed like an obvious choice. There was just one thing Kenny and Callum hadn't counted on: the sudden popularity of drifting. Indeed, just as they were searching for a donor car, the art of going sideways hit the mainstream in a big way, and before you could say 'clutch kick', wannabe skidders all over the world were buying up every last sample of the SX, having become enamoured of the nifty Nissan's easy over-the-limit manners. Demand outstripped supply almost

immediately. Prices hit the roof. It was time for a Plan B.

The dynamic duo soon found themselves looking at another Nissan – the Skyline R33 GTS-T. Those of you well versed in JDM (Japanese Domestic Market) lore will know that a Skyline is something special. This long-running nameplate has been affixed to some of the most iconic Nissans to roll off the production line, with the range offering at least one go-fast model for every year of the last half-century.

While very early Skylines are highly prized by collectors around the globe, it's the Skylines of the 1990s that turn eyes green in the UK. Equipped with the strong, turbocharged RB series of straight-six shooters, the R32, R33 and



R34 generation cars were one of the main targets of the grey import boom, remaining a common choice for drift, drag and tuner builds to this day. The most desirable variant of Skyline is considered to be those wearing the GT-R badge, but there are bargains to be had further down the food chain.

### **NEW BEGINNINGS**

The rear-wheel drive Skyline R33 GTS-T Retropower secured for Kenny is one such steal. With a 2.5-litre RB25 engine and a single turbocharger, it produced 247bhp in standard trim and was the second quickest model in the range at its point of production. Considering Callum bagged one for two grand, what better place could there be for the Manta project to start?!

"I wanted my car to have an independent back end in the interests of refinement," explains Kenny. "The Skyline R33's rear fitted the Manta's dimensions perfectly. This led Callum and I to start thinking about fitting the donor car's engine and gearbox, and here we are today!" he chuckles.

There was much to do. The Manta GT/E being used as the base for the project had a serious rot issue, and the overall structure of the vehicle needed extensive work before it could take new running gear. Things began mildly, with Retropower strengthening the Opel's front subframe and sculpting an inner wing to accommodate the RB25's boost pipe, but everything behind the engine bay seemed to pose a problem. Taking place across a number of years, the car's chassis legs, floor pan, boot floor, rear axle assembly and bulkhead were all custom fabricated from scratch.

The car's driveline also saw thorough upgrades. While the five-speed manual transmission and limited-slip diff used are standard Skyline parts, their accompanying engine benefits from RB Motorsport forged pistons and rods, a Garrett GT3076R turbocharger, a Turbosmart 38mm wastegate, a GReddy-style inlet manifold, Siemens 65 occ fuel injectors and plenty more. On minimal 'running in' boost, the result is 312bhp and 261lb/ft torque, but once boost control and a fresh map are programmed into the car's standalone DTA S80 ECU, power should jump to around the 450bhp mark. Were that not enough for Mr

Chisholm, his Opel's suspension has moved far away from its stock Manta beginnings. The original wishbones remain at the front, though they've been extensively strengthened and are joined by Bilstein B8 dampers and custom-wound 450lb springs. At the back, the Skyline's entire subframe has been utilised, with the addition of Driftworks arms, Eibach springs and Bilstein custom shocks, bringing a welcome degree of adjustability.

Meanwhile, braking is handled by the Nissan's factory calipers, a set of

### "AS BEFITS A CAR COATED IN ASTON PAINT AND CARBON, KENNY PLANS TO USE HIS MANTA ON ROAD TRIPS"



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grooved discs and trusty performance pads from EBC Brakes.

"It's been one of my team's biggest learning experiences, not to mention one of Retropower's longest projects," reflects Callum. "It was one of the first builds where we carried out wiring and plumbing during the metalwork stage, something we now do with every car we restore. The assembly of Kenny's Manta repeatedly sent us off in different directions. It was our first truly ambitious project, and I'm pleased to say we got it right," he beams.

### **FROSTY RECEPTION**

The results speak for themselves. Sparkling in the sun, a freshly polished coat of Aston Martin Morning Frost paint subtly accentuates the aggression of the finished Manta's Irmscher 400 body kit and Revolution Millennium six-spokes. It's a striking car, and one that garners attention wherever it goes. "I've covered just 1200 miles so far," confirms Kenny. "Nonetheless, I'll never forget driving home from Retropower and seeing fellow road users giving me the "thumbs up' as they slowed down to have a good look!" Inside the Opel's cabin, liveability – a

major focus of the build – really stands out; reclining Recaros have been trimmed in genuine Manta 400 Blitz cloth, while air-conditioning, deep pile carpets, an Irmscher



### **SKYLINE MANTA**





201 - 01

Steering wheel and a custom centre console make themselves known. The door cards are trimmed to match the seats. Even the door handles are wrapped in leather.

As befits a car coated in Aston paint and genuine carbon weave, Kenny plans to use his Manta on long road trips. "That's what it was built for. It needs to be driven, and it will be. I'll take it around the North Coast 500 next year before hitting the Le Mans Classic," he tells us. With rally-inspired lightpod pointing down the open road, throttle open and straight-six on song, his modern classic is proof that your dreams can become a reality, no matter how many Nissan parts you need to pilfer along the way!







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\*Compatible phone required

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### **PIONEER AUDIO**

### **PIONEERING GIFTS FOR PICKY PETROLHEADS**

Stuck for which in-car audio kit to buy the petrolhead in your life? Pioneer is on hand to help with its latest offerings...

most of you want to avoid the dreaded C-word (that's Christmas, not the other one!) for as long as possible, but there's no getting away from the fact that the jingle of bells is just around the corner. At least you won't have to worry about yuletide gift selection for the Vauxhall nut in your life; Pioneer, one of the most respected names in the in-car audio business, has recently unveiled its expanded range of cutting edge equipment designed to transform the way your nearest and dearest listen to music on the move.

e realise that

This unique offering is able to strike the perfect balance between performance, technology and price, holding its own against more expensive products. Yep, the AVH-Z5000DAB majors on ease of connectivity, meaning it can swiftly and seamlessly connect to smartphones, allowing user access to the myriad applications supported by your favourite Apple and/or Android-equipped hardware.

The unit's 6.2-inch touchscreen can be used in conjunction with Apple's much vaunted CarPlay system, making music on the move a doddle. This is never more apparent



than when using Spotify. Indeed, the world's most popular music streaming application is easy to use via the AVH-Z500DAB's full-colour display, while the unit's Bluetooth capability allows flawless streaming from your connected mobile hardware. There's little worse than being left out in the cold when it comes to technology, which is why the AVH-Z5000DAB functions just as brilliantly when linked to an Android device as it does when linked to Apple software. Similar in concept to CarPlay, Android Auto enables streaming and app access without distracting you from the most

important job on the road - driving!

Pioneer also recognises the continued importance of radio, hence the AVH-Z5000DAB's built-in DAB/DAB+ digital radio, a handy feature which takes on greater significance when you consider the fact that the government plans a digital switchover for radio in the near future. Factor in Auto EQ and Auto Time Alignment, and it becomes clear why Pioneer has been the audiophile's choice for generations.



The SPH-DA230DAB builds upon Pioneer's long history of developing lightweight in-car audio equipment with a plethora of trick functions. It can handle all connectivity options (including navigation via Waze) enjoyed by the AVH-Z5000DAB, and comes complete with both Apple CarPlay and Android Auto links. The former was something Pioneer pioneered on the SPH-DA230DAB's sibling, the SPH-DA120, and it continues to be an attractive feature, even more so if the intended recipient of your Pioneerpackaged gift is a die-hard Apple fan!

Much like the AVH-Z5000DAB, the SPH-DA230DAB features an impressive

Bluetooth receiver, perfect for transmitting tunes from music streaming services (such as Spotify) through the head unit via your mobile device. The receiver can handle two separate smartphone connections at the same time, ideal for those with business and personal phones, and it allows for handsfree calling and automatic contact list transfer. In a further nod to on-theroad safety, Siri Eyes Free technology is also a welcome inclusion.

Just like Pioneer's more expensive head units, the SPH-DA230DAB includes an advanced DAB/DAB+ radio receiver, but to fully appreciate the capabilities of each of the manufacturer's products, visit the Pioneer website and view the full feature list. You'll be glad you did! www.pioneer.eu

### TS-WX70DA £TBA

feature which effectively allows the user to toggle between two different bass modes whenever he or she feels the need. The modes in question are labelled as 'Deep' and 'Dynamic', with each able to produce bass that's strong, rich and deep, yet audibly distinct. This is of particular importance, because it allows the TS-WX70DA to handle a huge variety of musical genres, all of which demand their own audio characteristics. In other words, whether you're buying for a Mozart or Metallica fan, he or she will be well covered by the TS-WX70DA!

Far from a one trick pony, the unit is backed up by 200W of output, not to mention Pioneer Class-D sub technology and twin 16cm drivers. Fortunately, this immense power doesn't come at the expense of practicality; the TS-WX70DA's compact chassis measures

a mere 97mm in height, thus ensuring the unit is small enough to fit the vast majority of installs, even where space is at a premium.

In fact, the TS-WX70DA is so sturdy that luggage can be loaded on top of it!

### **PIONEER SPEAKERS** From £21.99

Pionee

2016

awesome app connectivity is only part of the Pioneer puzzle; the Japanese tech giant is well placed to offer supporting hardware, including active subwoofers. Of course, the sub you choose to give as a gift this Christmas will undoubtedly be determined by budget and how much space is available in the lucky recipient's car, which is why we think the TS-WX70DA and its compact size, innovative design and considerable punch makes it a good bet.

Trick features, dazzling displays and

DIGITAL BASS

Pioneer Digital Bass Control lies at the heart of the TS-WX70DA, a unique

### TS-D SERIES

The Pioneer speaker range is nothing if not all-inclusive. The company prides itself on being able to offer advanced audio upgrades for all, no matter the budget. The TS-D speaker series is a case in point. Comprising products that

make use of much of the technology (including 'Open & Smooth' functionality) found in the aforementioned TS-Z product range, these budget-friendly speakers boast soft dome tweeters for

frequency performance, their hemispherical shape proved to resist breakup when subjected to heavy vibration under load. The upshot is exceptionally low levels of distortion and smooth, natural sound.



### **TS-Z SERIES**

As you may have already twigged, the Z designation at the end of Pioneer product names signifies extreme audio capability, so it should come as no surprise to learn that the TS-Z range of speakers is winning praise from audio geeks around the world. Benefitting from Pioneer's 'Open & Smooth' sound concept, these

speakers promote smooth off-axial frequency response, superior directivity and an extended frequency range. While those phrases may not mean a great deal to the layman, their impact is impossible to mistake, with the TS-Z series offering an incredibly pure sound that's about as close to the original performance as it's possible to get.

extended high



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## FAST FACTS

453bhp Z20LEH engine Garrett GTZ2867R turbo Quaife limited-slip diff 3M Black Rose vinyl wrap Cavalier Turbo wheels P

# JRICK JRICK JREAT?

It may look like a mildly-modded Corsa C, but beneath this vivacious Vauxhall's bonnet lies a tweaked and tuned Astra VXR engine producing 453bhp...

WORDS Emma Woodcock PHOTOS Matt Woods

L999 CY

# **CORSA Z20LEH**

allowe'en has recently been and gone, yet the memory of that frightful night remains clear. Club nights spread

themselves across shadowy warehouse districts, cinemas aired films featuring ill-fated characters being attacked with power tools, house parties offered the year's best opportunity to bust out fishnets and gallons of fake blood.

Meanwhile, a gaunt and feverish figure hangs over the bowels of his latest victim. Cold fingers toil tirelessly, working their relentless route to the source of a seemingly endless woe. The skies above crackle, turning black and heavy as they rain down upon an unsuspecting Lowestoft. Bloodshot visage turns to the heavens, the phantom laments, chilling the souls of all Suffolk as he casts judgment on the Corsa C before him. "This will not do! This. Will. Not. Do. You have failed me again! I must tear you piece from piece. I'll sell your remains, then you may finally be of some use!"

He lurches away, torn and twisted by the latest setback on his journey towards higher horsepower. Teeth set and focus intense, apparitions of a new path burst before his tortured mind. A new body will be required, he knows this much to be true. A fresh home for the vital organs harvested from other projects. Finally, after seven years of trying, his dream of big bhp will finally be realised.

Days later, the shadowy figure – he answers to the name Dean Francis – relocates to six acres of wasteland hidden from prying eyes. Armed with



OWNER DEAN FRANCIS AGE 24 JOB On a break! FIRST VAUXHALL Corsa B 1.4 Sport FAVOURTE VAUXHALL Cavalier Turbo

The screamer pipe exiting out of the car's bonnet LEAST FAVOURT TOUR ABOUT YOUR CORSE It keeps breaking!



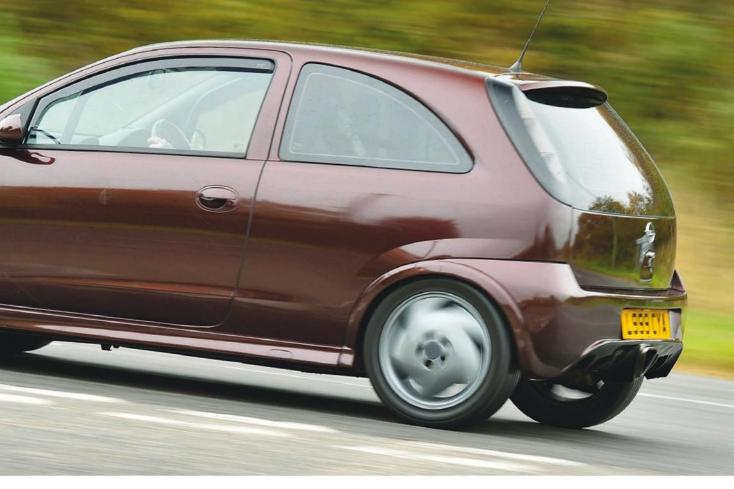


It ain't pretty, but it does what it's supposed to





# "I THOUGHT 390BHP WAS THE MOST I'D BE ABLE TO ACHIEVE WITHOUT SERIOUS SPEND"



little more than a Halfords took kit, he enters a makeshift workshop with just enough room to rehome the sordid remains of his dead Vauxhall. There, aided and abetted by devilishly talented friends, Dean pulls the guts out of an accident-damaged Astra H VXR and ceremoniously transplants them into a Corsa C shell he's picked up for little more than £180.

"My original plan was to build a car far tamer than what I've ended up with," he confesses. "I intended to drop a VXR engine into a Corsa C, map the car to a safe 300hp and be done with it. To be honest, my primary objective was to ensure I actually finished an automotive project after abandoning so many of my previous builds partway through assembly. Needless to say, the Corsa I'm in possession of today is a far cry from the mildly modified three-door I imagined I'd end up with!"

From the outside, this cool Corsa doesn't holler its intent. Detail changes abound, from the SRi rear spoiler to the sparkly Morette headlight conversion, those Hagus door mirrors and the obligatory Team HEKO wind deflectors, but the overall effect is understated. The car's Irmscher



# **CORSA Z20LEH**



front end and Corsa D VXR diffuser – both purloined from a Suffolk scene car that was being broken for parts – are more likely to draw a reaction from the Corsa cognoscenti, yet even these parts leave the car's standard silhouette unbroken.

## **WRAPPED UP**

The colour scheme errs on the side of subtlety; tinted windows and matching rear lights deliver dark undertones, giving prominence to the gorgeously gothic VTA Customs 3M Black Rose vinyl wrap and sixteen-inch Cavalier Turbo 'fanblades' covered in Aerocoat graphite grey powdercoat. Taken together with the other exterior changes, the result is a street sleeper capable of slipping under the radar during daily driving duties. After all, the most aggressive monsters know how to go undetected.

Open the bonnet! Rip off the mask! Let's see what's going on inside that cramped engine bay! The two-litre



# **"FUTURE PLANS INCLUDE** A TRIP TO THE 'RING AND THE PURCHASE GTX30 TURBO" Δ



1998cc Z20LEH DOHC 16-valve, 1998CC 220EEN DURL 36-Valve, new GM crankshaft bearings, Astra G GSi main engine mount with Powerflex Black Series insert, FCP H-beam connecting rods, King Racing rod bearings, ARP fasteners throughout, skimmed cylinder head, carbon-dipped cam cover, new GM Z20LEH gaskets and piston rings, new GM timing belt kit and water pump, carbon-fibre lower timing belt cover, clear camshaft pulley cover, gomm intake pipe with Aerocoat ceramic coating, gomm MAF sensor, replica EDS inlet manifold, Garrett GT22867R turbocharger, Roose Motorsport silicone turbocharger water feed hose, Klasen Motors tubular exhaust manifold, TiAL 44mm wastegate, Collins Performance dump valve, universal new GM crankshaft bearings exhaust manifold, IAL 44mm wastegate, Collins Performance dump valve, universal intercooler, bespoke 2.5-inch intercooler pipework with Aerocoat ceramic coating, three-inch custom stainless steel inch custom stainless steel exhaust system, screamer pipe, Protec 340lph fuel pump, Siemens DEKA 630cc fuel injectors, Astra H VXR fuel lines, 4bar map sensor, RnD Motorsport custom map, Z20LEH wiring harness with Corsa C 1.2 ECU conversion, NGK Iridium spark plugs, Courtenay Sport air-conditioning system delete, 42mm Astra G GSi alloy radiator, slimline electric cooling fans, MTC blue silicone coolant hoses, MTC blue silicone coolant hoses, Bosch oil filter, Petronas 5w40 engine oil

### 453bhp, 38olb/ft torque

Front-wheel drive, Getrag F23 Front-wheel drive, Getrag F23 five-speed manual gearbox, gearbox conversion bracket, TTV Racing lightweight solid flywheel, Helix six-paddle clutch, Quaife limited-slip differential, Corsa C 1.7 CDTi gearshift cables and selector, Astra G GSi driveshafts,AMS

power than the 300bhp I original had in

75w90 gearbox oil, Powerflex Black Series gearbox mount insert, Vibra Technics Astra G GSi gearbox stabiliser mount

# Prosport Astra G GSi front coilovers, Bilstein B8 rear dampers with Astra G GSi factory springs, Powerflex Black Series wishbone bushes, custom track rod ends and anti-roll bar links, new GM ball joints, top mounts and top mount bearings

Astra G GSi calipers with 308mm front discs, Ferodo DS2500 pads, HEL braided hoses

6x16-inch Cavalier Turbo 'fanblade' alloys powdercoated Aerocoat graphite grey, Astra G GSi five-stud hubs, 20mm hubcentric wheel spacers, Nankang NS2-R tyres

2005 Corsa C 1.2, VTA Customs wrap in 3M Black Rose vinyl, screamer pipe cutout in bonnet, Irmscher front grille and upper bumper trim, modified rear bumper with Corsa D VXR rear diffuser and centre-exit exhaust outlet, Corsa C SRi rear spoiler, Morette headlamps painted black sparkle, Hagus door mirrors, Team HEKO wind deflectors, personalised registration plate, Opel 'blitz' badges

DYXR Recaro front seats, MSA-approved six-point weld-in roll cage, Astra H VXR steering wheel, VXR-style dash clock fascia, boost gauge

My best friend, Mitchell, for the late My best friend, Mitchell, for the late evenings and giving me the workshop space to build the car, Carl Smith at Code-A-Weld in Great Yarmouth for the welding and fabrication work, Stevie Boost Developments for fitting the engine and always being on hand when it comes to repair work, Dan and Will at RnD Motorsport for helping to get the car up and running, and to Simon and Ryan for keeping me focused on the project when I felt like giving up!

never owned a car pumping out more than 400bhp, and I fancied a slice of the action. I had high hopes for that kind of power in a Corsa C, but thought 390bhp was the most I'd



Z20LEH nestled within has been treated

to a bevy of improvements, enough to

bring power up to 453bhp and 410lb/ft

torque. That's pushing the Siemens

their limit, so the boys at RnD Motorsport have enabled a safe 443bhp and 380lb/ft to be dialled down for reliability's sake. Not that Dean is complaining. "It's much more

mind!" he chuckles fiendishly. "The turning point came when a mate of mine was fitting a big ol' Garrett turbocharger to his Astra G GSi. I'd



# **CORSA Z20LEH**



be able to achieve without serious spend. You can imagine how pleased I was with the results achieved by RnD!"

As you'd expect, the car's engine has been treated to upgrades in every area. A custom 90mm intake pipe and a replica EDS inlet manifold promote easy breathing, while a Protec highflow fuel pump sends a plentiful supply of jungle juice to the aforementioned injectors. Within the Zedlet itself, FCP H-beam connecting rods, ARP fasteners and a set of exhaust-side stem seal retainers and shims help to keep everything in one piece.

Revised-profile camshafts provide part of the power lift, with the majority of the upswing coming from a Garrett GTZ2867R turbocharger joined by a TiAL 44mm wastegate and a Klasen Motors tubular exhaust manifold.

Keeping everything cool, an Astra G GSi alloy radiator and a large frontmounted intercooler with custom boost pipes round off the tightly packed engine bay. These components provided the only challenge when Dean attempted to shoehorn the car's beating heart into its new home. "I had to shave slivers of material off the inside of the Irmscher bumper with a Dremel in order to get the parts to fit," he reveals.

His intriguingly named friend, Stevie Boost, fixed the nuts and bolts into place before a highly anticipated first



turn of the key, while Code-A-Weld in Great Yarmouth supplied a custom downpipe, a bespoke screamer pipe and a three-inch centre-exit stainless steel exhaust system.

## **FRESH BLOOD**

The engine is mated to a Getrag F23 five-speed manual gearbox. Suffice to say, the unit needed plenty of work to withstand the prodigious output of its neighbouring powerplant. Changes include the gear cables and selector from a Corsa C 1.7 CDTi, Astra G GSi driveshafts, a Powerflex Black Series gearbox mount insert, a Vibra Technics transmission stabiliser mount and a necessary Z2oLEH gearbox conversion bracket. A lightweight TTV Racing flywheel, a Quaife limited-slip differential and a Helix six-paddle clutch complete the system.

Taken at face value, Dean's car is a nicely dressed hot hatch, but look further and you quickly realise that there's so much more to the build than an engine swap. Astra G GSi calipers feature at both ends, with 308mm front discs clamped by Ferodo DS2500 pads. To carry the Cavalier rims that surround them, GSi five-stud hubs have been put to good use. In truth, much of Dean's Corsa's chassis equipment is derived from the mega Mk4, including Prosport Astra G GSi front coilovers and GSi rear springs wrapped around Bilstein B8 dampers. Elsewhere, custom track rods mesh the wheel hubs with the Corsa's standard steering rack.

VXR equipment continues in the



car's sparse cabin, where re-trimmed Corsa D VXR seats join an Astra H VXR steering wheel and VXR-decorated dash clocks, leaving Dean to wonder what he should do next. "My future plans include a trip to the Nürburgring, and I'm tempted by the purchase of a GTX30 turbo as the start of a transformation that will see the car become a dedicated drag racer. It's incredibly fast as it is, but there's no getting away from the fact that it serves as my daily drive, which isn't ideal if I want to strip the remaining interior furniture in an effort to reduce weight," he muses. You have been warned: beneath the façade, this Garrett-kitted ghoul is on the prowl and likely to be looking for victims to out-accelerate along the quarter-mile! 🔾

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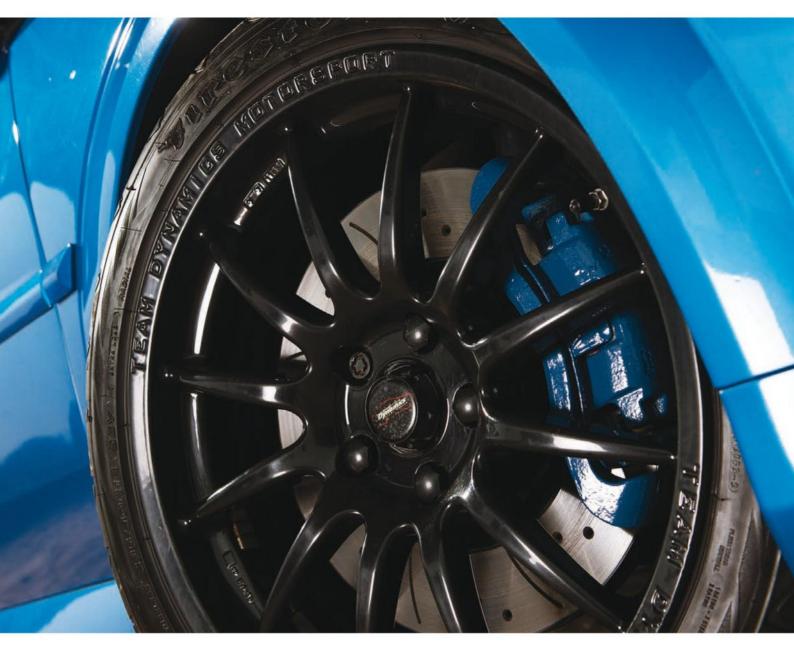
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# REINVENTING THE WHEEL

In the second part of our guide to understanding alloys, we look at the different properties and methods used to make wheels, as well as the finishes that keep your Vauxhall's rims looking tip-top...



# WHEELS TECH

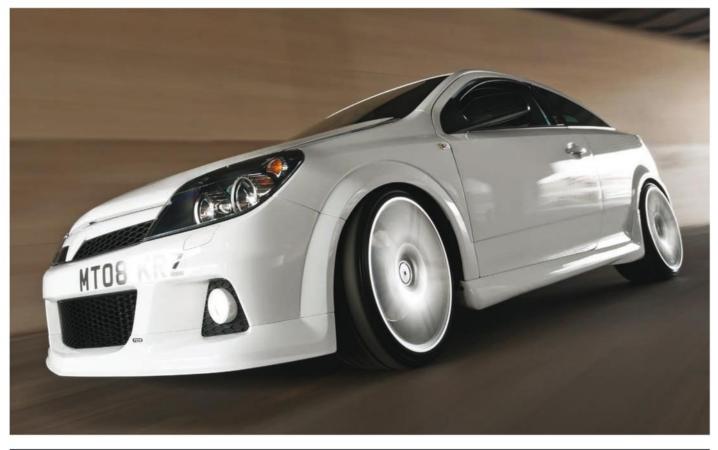
# **ALLOY COMPOSITION**

Most manufacturers keep the materials used in the composition of their wheels a closely guarded secret, although it's true to say that the most common ingredient is a derivative of aluminium alloy known as 'LM9'. This compound includes copper, silicon and titanium. It's light and strong, making it perfect for motorsport and fast-road use.

other materials, including magnesium or carbon-fibre. Magnesium wheels can be as much as 30% lighter than alloys, meaning that more material can be used to create greater strength without increasing overall weight. This explains why magnesium wheels were so popular with motorsport teams during the 1980s and 1990s. There are, however, drawbacks. For a start, magnesium is porous and highly combustible. The material has to be carefully stored, and wheels made out of the stuff have a short shelf life before needing to be replaced. They're banned in many modern motorsport environments on the grounds of safety.

Carbon-fibre wheels are exceptionally light and strong, but the astronomical cost of production means that they're seldom used on anything other than big budget supercars and vanity projects.







# CAST ALLOYS

The vast majority of alloy wheels will have been produced using a casting method. This process is relatively inexpensive compared to other means of manufacture. It's easy to control and allows for quick production, keeping the price of the finished wheel low.

There are two main casting methods used in alloy wheel production: gravity casting and negative pressure casting. Gravity casting involves pouring molten alloy into a mould and allowing it to cool. Once cooled, the mould is opened and the cast wheel is removed. Negative pressure casting works in a similar way, but instead of pouring molten alloy into a mould with a gravity cast system, it's drawn up into the mould using a highpressure vacuum. This helps to eliminate gas that can sometimes get trapped as a result of the casting process, resulting in a stronger wheel that's less porous.



# FORGED WHEELS

Unlike casting, forging an alloy wheel doesn't involved melting the alloy into a liquid state. Instead, the forging process uses intense heat (to make the alloy malleable) and enormous pressure to push the ingot of alloy into the shape of the wheel. One of the main advantages of the forging process is the way it affects alloy's grain structure; the ingot would have been cast, and as such, the grain structure will be nondirectional. Effectively, it would be as it landed when poured during the casting process.

With huge pressures during the forging process pushing the material in the desired direction, the grain structure is manipulated to provide hugely improved strength. This process also means that the grain structure can be forced to run from the centre of the wheel outwards, along the wheel's spokes and not always in the same direction. This is largely the reason why a forged alloy is rated as being up to three hundred times stronger than a regular cast wheel.

When the forging process has forced the alloy into a wheel-shaped blank, the blank can be machined into the final product. This is usually carried out by a CNC milling machine and involves turning the wheel to the final dimensions. The spokes are milled, as are the bolt holes at the required PCD and the mounting hub at the required offset. So now you know!



# FLOW-FORMED WHEELS

A fairly recent technique in the world of alloy wheel construction is a process known as flow forming. It sits neatly between the forging and casting processes and results in a wheel that's lighter and stronger than traditional cast alloys, but not as expensive as a forged wheel. The process of flow forming involves spinning the wheel after it has been cast, with pressure then being applied to the inner barrel of the wheel while it's spinning. This stretches and compresses the alloy (similar to the forging process), thereby increasing the wheel's tensile strength and resistance to shock. A flow-formed wheel is lighter and stronger than a traditional cast alloy and has a higher load capacity.



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# **CENTRE-LOCK WHEELS**

Unlike conventional wheels, centrelock rims don't take their drive from the wheel studs. Instead, they feature a splined centre that mates to the wheel hub, else they have drive pegs in the hub that slot into the back of the rim. A centre-locking nut then holds the wheel to the hub. This allows for a precise and quick wheel change, ideal for motorsport applications. Before you get too excited, keep in mind that centre-lock

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wheels require a completely revised, one-piece hub flange (or adaptors) to make them work. They're costly and are rarely used on anything other than race cars.

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# SPLIT RIMS

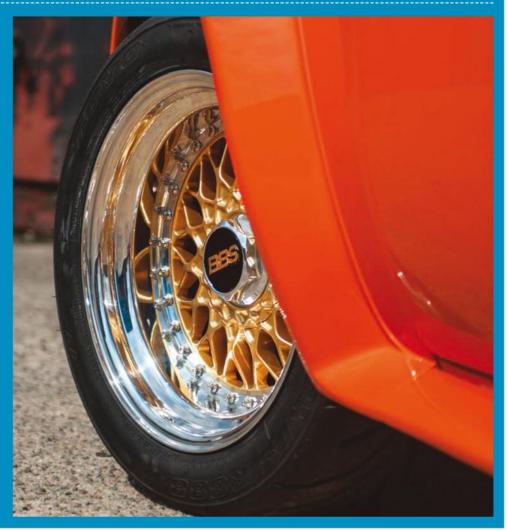
Split rims are made from two or three separate components. The most common split rim is a three-piece design comprising an inner rim, a centre and an outer rim.

Split rims can trace their history back to motorsport in the 1960s, when limitations to the casting process meant that wheels could only be produced with widths of around six-inches. To overcome this problem, wheel manufacturers used a cast alloy centre (modern split rims from the likes of Image Wheels use a centre CNCmachined from billet alloy) and then bolted-on spun aluminium inner and outer rims to form a three-piece wheel. By using different size rims, it was easy to alter the width and offset of a wheel.

It's also possible to buy a two-piece split rim, where the centre includes the inner or outer lip as part of the same piece. A spun aluminium inner or outer lip (whichever isn't part of the centre), usually polished, is then bolted to the centre in order to form the completed wheel.

Split rims used to be very popular in circuit racing because they're light and will accommodate large tyres, but they're not much good for road use due to the spun aluminium being so soft (if you used a split rim on a rally stage, it'd be deformed before you reached the finish line!). Today, split rims are often fitted to older cars as a styling upgrade.

They certainly look cool, but the soft aluminium rims require the driver to avoid potholes at all costs. And keeping that unprotected chrome safe against road salt and other detritus may end up with you spending more time cleaning your wheels than you do driving your car.





# **FINISHES**

Aluminium alloys used in the production of wheels offer many benefits, including strength, reduced weight and heat dissipation. The one thing they don't offer is protection from the elements! Your Vauxhall's alloys need to be coated or treated to ensure they can cope with the negative effects of road salt, brake dust, water, dirt, oxidisation and the muck they'll encounter when in use on a day-to-day basis.

The most common finishes are paint and powdercoating, or as is increasingly the case, a combination of the two. Painting is quick, easy and relatively cheap. Powdercoating is more involved, but offers better durability and resistance to stone chips and flaking. In the case of 'Shadow Chrome', wheels are coated in a base of solid black powdercoat and then painted in an light dusting of silver before lacquer is applied.

Both paint and powdercoat finishes are great for protecting the alloy material, but they do change the finished colour of the wheel. If you want a finish of raw alloy, then diamond-cutting is the way forward. It's a process that involves using a specialist cutting machine to skim the surface of the alloy wheel (ordinarily after paint or powdercoat has been applied) in order to reveal fresh alloy. It's a popular finish seen in each corner



## WHEEL NUT INSERTS

Due to the fact that alloy wheels are softer than the steel studs or bolts that are used to secure them, motorsport rims often feature a steel insert. This prevents the alloy wearing away against the steel studs or bolts during frequent wheel changes. The majority of production and aftermarket allov wheels don't include steel inserts because most road wheels aren't changed often enough to require them.





# ALLOY WHEEL PROTECTORS

Most alloy wheel cleaners are acidbased, and while there's no doubt that these products are effective at cutting through dirt and brake dust, covering your wheels in acid on a regular basis isn't a good idea. Moreover, it's an absolute no-go if your wheels are polished, diamondcut or chrome-plated. Fortunately, there are plenty of professional wheel cleaning products to choose from, each with slightly different

detailing characteristics. Products such as Meguiar's Hot Rims and Auto Finesse Imperial are great for removing dirt and brake dust with little effort, while Power Maxed nonacidic wheel cleaner is safe to use on all wheel surfaces and coatings. Wheel protectors, such as those available from Rimsavers, will also protect your car's alloys by preventing them from suffering regrettable kerb damage.

of many modern sports cars. The downside to diamond-cutting is the fact that the exposed part of the wheel needs a specialist lacquer to protect it from harm. This makes diamond-cut finishes more delicate than paint or powdercoated surfaces. Special wheel cleaners must be used.

Polishing is very similar to diamond-cutting, but rather than having bare alloy machined by a cutting tool on a lathe, it's buffed and polished to a high shine before being lacquered. In some cases, this is the next step after diamondcutting, removing score marks from the machining process to leave a high-gloss shine.

The inner and outer hoops of split rims can be left free of lacquer, but they'll require regular polishing to prevent oxidisation. To get around the problem, the parts can be chrome-plated.

Another finish proving popular is modern spray film. Products from Foliatec can be easily applied directly over the top of a wheel's existing finish, quickly and cheaply changing its colour. Then, when you want to change back to the original colour, peel away the spray film!

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The ultimate way to take your motor from standard to the high-performance and stylish level you desire is undoubtedly with a set of Stuttgart alloy wheels. Sleek, modern and characteristic styles are at the bare-bones of the Stuttgart philosophy.





# NATTERS OF THE HEART

After regretting parting with his tuned Astra SRi Turbo, Rix Sidhu has reunited with the car, now a **540bhp** Flame Red vamp...

> hey say it's better to have loved and lost than it is to have never loved at all, but how many of you would go back to the object of your desire if the

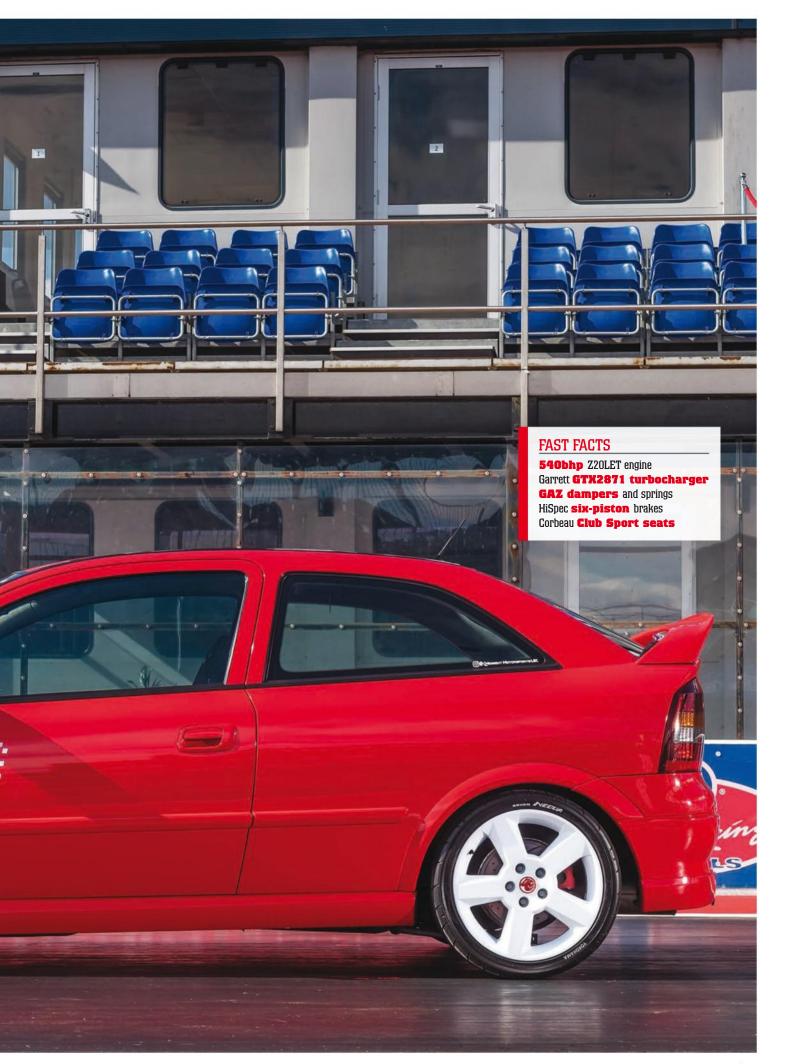
opportunity arose, even if you'd previously thought the relationship had reached the end of the road? For Rix Sidhu, it was a no-brainer, especially when his new flame failed to live up to expectation.

"I sold my modified Mk4 Astra SRi Turbo after being won over by the lure of a Volkswagen Golf R," he tells us. "The Vauxhall had served me well over a number of years, but I was determined to buy a VW to call my own. I did exactly that, but you can imagine my surprise when I soon discovered Golf life isn't all it's cracked up to be," he howls, rolling his eyes.

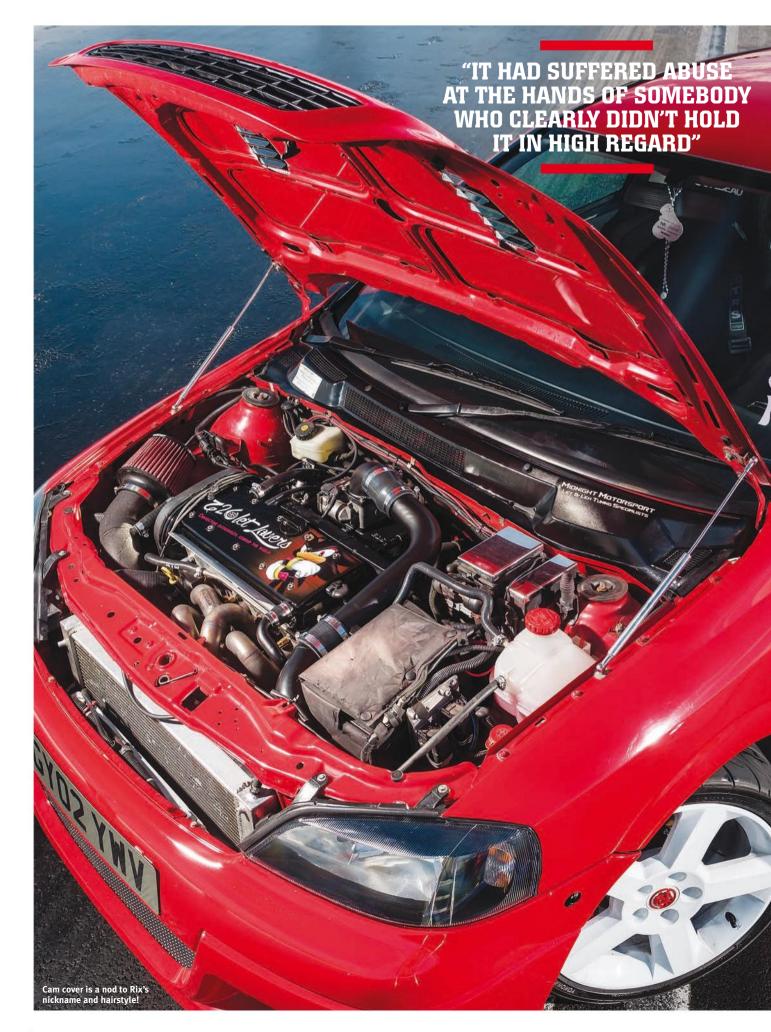
The Astra he sold in order to make way for the 'Dub is well-known on the Vauxhall scene due to its star turn in Performance Vauxhall back in September 2012, not to mention numerous appearances on prominent stands at PVS and the car's status as the chariot of choice for a man who acts as administrator of the Z20LET Lovers Facebook group (a 19,000-strong global community of likeminded Griffin fans in charge of Astras, Corsas and other vehicles powered by the immensely tuneable two-litre lump). When the Golf came along, the Flame Red SRi was delivered to its new owner in



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# **ASTRA SRi TURBO**





Scotland, but less than a year later, Rix found himself returning north of the border in the hope of being able to drive back to his home in Hertfordshire in the Vauxhall he was desperate to be reunited with.

Unfortunately, in the few short months that had passed since he last saw his Flame Red sweetheart, it had been mistreated to such an extent that its engine was making worrying tapping noises, its wheels were damaged and its paint was in a bad way. With such strong emotional attachment to the car, Rix was understandably upset to discover it had suffered abuse at the hands of somebody who clearly didn't hold it in high regard.

## **BACK FOR GOOD**

Determined to return the Astra to a life of being loved, the 27-year-old Autoglass technician handed over a wedge of cash, reinstated his name on the Vauxhall's logbook and set sail for the south. Sadly, a subsequent evaluation of his purchase revealed damaged cylinder bores. C2oLET and Z2oLET engine guru, Steve Milton, swiftly wedged and decked a replacement block for the car before sending the prepared part to Carl Scrivens at CAS Engineering in order for it to be built into a powerful tall engine.

At the time of its last *Performance Vauxhall* feature, Rix's turbocharged SRi featured Mk5 Astra VXR leather. With 398bhp on tap, the car was as quick as it was comfortable. In the

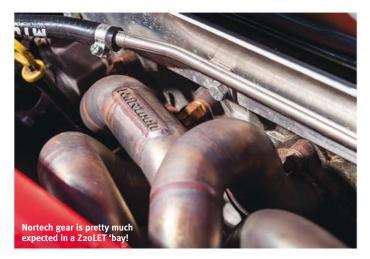


years that followed, however, owners of modified Vauxhalls became more involved with the trackday scene at home and abroad. Rix wanted in.

Midnight Motorsport main man (and the owner of the Mk4 Astra GSi on our Car of the Year shortlist), Ell Howard, provided uprated anti-roll bars, a pair of Corbeau Club Sport seats and various other track-oriented equipment intended to ready the red Vauxhall for its new lease of life. Meanwhile, Carl's work on the car's engine continued apace, resulting in a Z20LET with a balanced crank, Omega forged pistons, Arrow rods, a ported and polished cylinder head, Piper cams, an improved valvetrain and fuel equipment amounting to 1000cc injectors, twin Bosch high-flow pumps, a swirl pot and Torques fittings. Rix also invested in a Garrett GTX2871 turbocharger, a large intercooler with a Garrett core, an EDS inlet and a Nortech Performance tubular exhaust manifold.

Topping the tidy powerplant is a cam cover airbrushed by Lee Morgan Artworx. The brilliantly decorated part depicts Shadow from the





# **ASTRA SRi TURBO**

Sonic the Hedgehog video game series. "The character's presence in my car's engine bay is a nod to the fact that I used to have tall, spiky hair injected with red streaks, a style that informed how I wanted my Astra to look," explains Rix. He certainly didn't want it to appear as impotent as it did at this year's PVS; fresh from a mapping session at Courtenay Sport, the car's clutch gave up the ghost on its first run along the quarter-mile. Yikes!

## **DIFFICULT TIME**

After successfully nursing his automotive love home in limp mode, the car's F23 five-speed transmission – already equipped with a Quaife limitedslip differential – was treated to a custom twin-plate clutch and a TTV Racing lightweight flywheel. Unfortunately, as soon as the car was back on the road, it burst a brake hose. "When I look back," reflects Rix, "I've faced a lot of challenges since buying this Astra for second time!" His woes weren't over yet, though...

A long-planned trip to the Nürburgring was rapidly approaching, a



journey to Germany organised with other prominent members of the Z2oLET Lovers group. Carl and Ell expressed their concern about Rix hammering his SRi Turbo around the Green Hell with an untested clutch, no matter how good the part promised to be. Nevertheless, there was no time to carry out a dummy run in the UK. "The clutch was absolutely fine," he says with a sigh of relief. "In contrast, the dump valve I fitted killed itself when I was hurtling around the 'Ring at 170mph!" he roars.

Sucking in air, the damaged valve kept causing the engine to stall while Rix nursed the turbocharged Vauxhall back to Blighty. To make matters worse, a wiring fault was delivering too much earth ground resistance. Initially, an ECU discrepancy was thought to be the cause of the problem, but the real nature of the complaint was soon discovered, meaning that that a scheduled remap courtesy of Sean McGarry at SM Tuning was unable to take place as intended.

"It's great to be able to reprogram a Mk4 Astra SRi Turbo or GSi's factory ECU, but there's only so far you can take the output of a Z20LET powerplant before you need to seriously consider the purchase of standalone engine management and the protection it provides to valuable fuelling and mechanical equipment," reasons Rix. "To that end, I've decided to invest in a Link ECU, which I hope to have up and running in the new year," he adds.

## **DEVELOPING STORY**

In the meantime, he's booked another date with Sean, a Vauxhall tuner who will map the car to take full advantage of its recent upgrades. "I'm anticipating power well over 540bhp when we meet at Dyno Developments in Stevenage next month. The parts used on Carl's Mk4 Astra GSi are more or less the same as those powering my



JOB Autoglass technician FIRST VAUXHALL MK3 Astra 1.6 FAVOURITE VAUXHALL Nova GTE BEST THUNG ABOUT VOUR

The Lee Morgan cam cover Least FAVOURITE THING ABOUT YOUR ASTRA SRI TURBO The noise generated by the external

fuel pumps in the spare wheel well









# **"THERE'S ONLY SO FAR YOU CAN TAKE A Z20LET BEFORE YOU NEED TO CONSIDER THE PURCHASE OF STANDALONE MANAGEMENT**"

## TECH SPEC

1998cc Z20LET DOHC 16-valve, wedged, honed and decked block, polished and balanced crankshaft, custom billet block girdle, Vibra Technics mounts, Omega 86.5mm pistons, Arrow Precision connecting rods, Mocal external oil cooler, ported and polished race-spec cylinder head, Piper custom profile camshafts, Lee Morgan Artworx cam cover airbrushing, REC 1mm oversized inlet and exhaust valves, Piper double and exhaust valves, Fiper doubte valve springs, bronze valve guides, solid lifters, Injector Dynamics 1000cc fuel injectors, Bosch twin external fuel pumps, 3-inch swirl pot, Torques custom lines and fittings, SM Tuning custom map on factory ECU, 3bar MAP sensor, NGK Iridium spark plugs, EDS inlet manifold, custom hybrid Garrett GTX2871 turbocharger, Turbosmart 45mm wastegate, Garrett-cored intercooler with billet end tanks, FD Tuning custom boost pipes, Turbosmart race-port blow-off valve, tubular exhaust manifold, 3-inch

GYD2 YWV

turbo-back stainless steel exhaust system, large-core alloy radiator, MTC black silicone hoses

## Estimated 54obhp

Front-wheel drive, Getrag F23 fivespeed manual gearbox, custom twin-plate clutch, TTV Racing lightweight flywheel, Quaife limited-slip differential, Vibra Technics gearbox mount, short shift kit

GAZ dampers, lowering springs, RnD Motorsport solid top mounts and subframe mounts, Powerflex polyurethane lower control arm and rear axle bushes, Whiteline rear antiroll bar, custom strut bar powdercoated black

HiSpec Motorsport 'Monster' six-piston front calipers finished in red with 332mm vented discs, factory rear calipers with drilled and grooved discs, Ferodo DS2500 pads, HEL braided hoses

7.5x17-inch factory five-spokes powdercoated Brilliant White, centre cap emblems painted red, TPI 5mm (front) and 10mm (rear) spacers, modified rear hubs, Yokohama AD08 225/40/17 tyres

2002 Astra G SRi Turbo, full respray in OEM Flame Red, factory Prodrive bumpers and side skirts, air intake in fog light apertures, Irmscher front grille, colour-coded door handles and bump strips, roof rails and door mirror cases painted gloss black, custom carbon Mk2 Ford Focus RS bonnet vents, Astra G GSi front and rear lights, smoothed boot lid, tinted registration plates, scuttle panel painted gloss black, SM Tuning and Z20LET Lovers graphics

Corbeau Club Sport seats, custom seat brackets, TRS four-point safety harnesses, stripped rear cabin, MOMO steering wheel, metal gear knob, Piano Black centre console, AEM air/

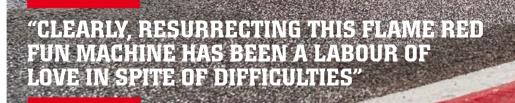
fuel ratio gauge, Pro Sport oil temperature and oil pressure gauges, APEXi AVCR Gen2 boost controller, fuel pump switch in centre console

"I'm telling you, the car's clutch packed up at this very spot!"

Steve Milton (aka Steveboyslim) for providing and sourcing various engine components, Carl Scrivens at CAS Engineering for building the engine and getting it up and running, Ell Howard at Midnight Motorsport for the clutch and fuel system (and various maintenance tasks!), Dan Newman at FD Tuning for the custom exhaust, Zach and Jay at Nortech Performance for the manifold, Jon Shield at Courtenay Sport, Sean McGarry at SM Tuning, Rob Frost at RF Recovery for collecting my car at silly o'clock when it broke down during the 'running in' period, Santa Pod Raceway for the photo shoot location, and to my mum for allowing Mk4 Astra parts to take over her dining room for months on end!

# **ASTRA SRi TURBO**

TOYO T



GYO2 YWV

SRi Turbo. He's seeing 530bhp, while Ell's GSi is running the same turbocharger and is now producing 513bhp. 540bhp seems like a safe bet, but I'm obviously hoping for more," grins the Astra obsessive.

Nailing the car's power to the road (and track!) is a set of GAZ adjustable dampers joined by RnD Motorsport solid top mounts, Powerflex polyurethane bushes and a set of seventeen-inch factory five-spoke alloys painted white, each wheel wrapped in Yokohama rubber. Braking is taken care of by colour-coded HiSpec six-piston calipers with 332mm discs, Ferodo pads and HEL braided hoses, while a MOMO steering wheel, an APEXi boost controller and a host of gauges feature inside the car's partstripped cabin.

Clearly, resurrecting this Flame Red fun machine has been a labour of love in spite of the difficulties Rix has experienced along the way. "To me, this car is like a good woman," he suggests. "I made the age-old mistake of ditching her in favour of a newer model. I didn't fully appreciate what I had until she was gone. Now we're back together, she's making me work hard to gain her respect all over again!" he laughs.

Volatile relationships don't always make sense, especially from the outside, but this is one love affair destined to go the distance!









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# WAYS TO LOWER YOUR CAR INSURANCE

We grilled top insurer, Adrian Flux, in order to get the inside story on how you can save a packet on your premiums

veryone wants to know how they can save money on their car insurance. When all is said and done, it's a cost petrolheads are powerless to avoid. Most of us wince when it comes to renewal time, but this is especially true for younger drivers and those of us in charge of heavily modified motors.

We wouldn't necessarily advocate opting for the cheapest insurance available; low price policies often deliver a poor level of cover that doesn't reflect the real world value of your vehicle. The last thing you want is for that wince to turn into regret in the unlikely event that you'll need to make a claim. At the end of the day, you've got to pay for insurance, so you might as well get your money's worth.

To find out more about how insurance premiums are calculated, we spoke to Calibra Turbo fan, Matt Allen, a man employed as pricing and development manager at Adrian Flux's private car cover division. Matt revealed how you can put yourself in the frame for the best insurance deal, advising what does and doesn't affect the cost of cover for your Vauxhall.

We've compiled his feedback into a list of twentyfive different points for consideration, bolstering them with supporting information. These helpful tips should provide food for thought when it comes to stopping premiums from destroying your bank balance! Some of the suggestions listed are easy to achieve, others are trickier. Some require investment, some don't, but rest assured each will have a positive impact on the cost of insuring your car.

### JOIN THE CLUB!

Membership of an owners club is a great way of showing an insurer that you're proud of your car. Put it this way, firms providing cover recognise that registered club members are more likely to take great care of their four-wheeled friends, doing all they can to avoid loss or damage. In short, owners club members are less likely to make a claim. Make sure you have a verifiable club membership number to quote when it comes to renewing insurance. Your club may even qualify for group discounts.

## DRIVING QUALIFICATIONS

An additional driving qualification can be a great way to shave off a few quid from your premiums, especially if you're young. The most common and widely acknowledged course is the government's Pass Plus (gov.uk/pass-plus) practical training programme, enabling drivers to improve their skills and knowledge of road safety in a matter of hours. The course attracts a fee, although some local councils offer discounts. It's worth bearing in mind that not all insurers offer reduced costs against Pass Plus, so be sure to find out when shopping around for quotes.

# Matt tells us it's vital to provide the correct information when approaching an insurer, even if you're using a price comparison website. "Today's insurers are data enriched, which means we rely on the same kind of information as banks when it comes to evaluating the risk involved in providing an individual with cover. For example, if you enter random name and address data into a price comparison website, the details you've provided won't tally up with what's on the electoral register, which means the insurer will be unable to identify you, resulting in an unfavourable quote."

4

## B This one r better way

## NO CLAIMS BONUS

This one requires patience, but there's no better way to lower your insurance costs than to build up a healthy No Claims Bonus (NCB). Obviously, this means

driving carefully and not making a claim! Consider the benefits of protecting your NCB. In other words, your accumulation of NCB remains unaffected in the event of a claim, regardless of whether you are deemed to be at fault. The service will attract a small fee, but you might end up paying out a lot more in the long run if you lose the discount you've spent years accumulating.



Adding experienced drivers to your insurance policy may lower the price you

pay when it comes to renewal time. Of course, many insurers calculate costs based on the highest risk driver listed, but some do take the experience of additional named drivers into account, helping to reduce the overall cost. If you're relatively new to this driving lark, then you may wish to include a parent or older sibling on your policy, whereas older Vauxhall owners could do a lot worse than adding their spouse. Proving to an insurer that you take this stuff seriously is vital, and a named driver might save you cash.



## MATT ALLEN

JOB Pricing and development manager for the private car division at Adrian Flux LENGTH OF TIME IN INSURANCE INDUSTRY Thirteen years FIRST VAUXHALL Astra G 1.6 FAVOURITE VAUXHALL Calibra Turbo





# CLEAN LICENSE

The best advice here is the simplest: don't speed! If you are unable to resist

updates will have on the cost of cover for your car," he adds.

exercising your lead foot on the public highway, then be prepared to pay a penalty, not only through fines handed down by law enforcement agencies, but also in the form of a heightened insurance premium when it comes to renewal. After all, every driving license endorsement you attract sees you a step closer to being classed as 'high risk' as far as insurers are concerned.

Driving license endorsements can have a dramatic effect on the cost of insurance, so be sure to accept the option of a Speed Awareness course in place of points if the offer is made available to you.

It may seem obvious, but avoid using your phone on the move, and don't get behind the wheel after a night on the sauce. Not only are these actions illegal, but a conviction for dangerous driving will land you a hefty insurance premium come renewal time.



### SPEAK TO THE RIGHT PEOPLE If your car is modified, then few

mainstream insurers will offer you cover. Those that do may limit you to a specific number of alterations due to restrictions regarding the number of changes their underwriters consider acceptable.

If you are in charge of a tuned Vauxhall, then you're better off speaking to a specialist insurer. Not only will the company understand what coilovers and remaps are, but they'll be able to offer you the correct level of cover for your car. They may even be able to provide track day cover if you tell them when and where it is you intend to attack the asphalt.



"In order to provide you with adequate cover, the information an insurer needs is the same as what you'd tell your mates," stresses Matt. "If you've fitted an aftermarket set of wheels or a fat exhaust, then make sure you tell us about it! If you haven't declared

modifications, then you might find yourself without cover in the event of a claim. It's a totally unavoidable situation to find yourself in, and you might be surprised by how little impact certain

### LIMIT MILEAGE

It makes sense when you think about it, but the less time you spend on the road, the less likely you are to have an

accident. Think seriously about how many miles you'll cover during the year after renewal. If you only use your car for occasional trips out on sunny days and for attending events during show season, then consider limiting your insurance to a low number of miles. For example, telling your insurer that you'll cover no more than 5000 miles per year may drastically reduce the cost of cover, but don't lie about it – in the event of a claim, the insurer will check the exact mileage registered on your car's electronically recorded MOT certificates!



### SINGLE PAYMENT

It may seem like an eye-watering wedge to pay in one go, but if you can afford to pay for your insurance in a

single payment, then it will almost always work out cheaper than spreading the cost over the life of the policy. Essentially, paying monthly provides you with a loan from the broker, encouraging interest on the amount you borrow. Of course, not everyone is in a position to be able to pay their insurer a lump sum. This is especially true of young drivers who have sky high premiums, but there are other ways to reduce the cost. For example, consider getting hold of a credit card that offers o% interest on money and balance transfers, then use the feature to fund your policy as a single payment. Be disciplined about paying the required amount into the card every pay day, and you'll have achieved cheaper insurance with the benefit of monthly payments.

# LOWER YOUR INSURANCE



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## VALUE

It stands to reason that a Vauxhall worth £50k is going to cost more to insure than one that is valued at

£1k. This is primarily due to the fact that payout in the event of a claim will be much higher on an expensive car, but don't think that a cheap motor is the answer to your problems. An insurer will almost certainly assume a £50 banger isn't going to be treated with the same respect as a supercar, meaning that the cost of insuring the former may be increased to counter the extra risk of an 'unloved' motor that is much more likely to be in the way of harm. While we're on the subject of value, it's worth looking into the possibility of agreed valuation for your car. Generally speaking, this will increase the cost of insurance, but both you and the insurer will know exactly what needs to be paid out in the event of a claim for total loss. Take regular photos of your car in order to keep a record of its overall condition.

## **DRIVE A CLASSIC**



It's not just because insurers have a soft spot for vintage Vauxhalls that classic car insurance tends to be

cheap. Statistically, older cars are less likely to be involved in a claim. Insurers have their own ideas about what qualifies as a classic, so shop around before accepting a quote. Companies specialising in classic car insurance should be your first port of call, but be mindful of the fact that most will want to hear you're in possession of a second car that performs as your daily.



## SECOND CAR

This isn't exactly a cheap way to reduce insurance costs, but many in charge of a tuned Vauxhall will have a daily drive to smoke around in. Insuring your modified or classic car as a second vehicle (e.g. not your main car) can reduce your premium

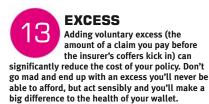
significantly. Many insurers will be generous enough to mirror your NCB across both policies.



MULTI-CAR

If you own more than one car. listing them on a single policy may significantly reduce the cost of cover when compared to insuring

each vehicle individually. You should be able to use your NCB across all cars on a single policy. Mainstream and specialist insurers alike offer multi-car cover, so there's plenty to choose from.



**DON'T BE AFRAID** Ζ **TO HAGGLE** 

VAXCEN

The insurance market is very competitive, so don't accept the automatically generated price of renewal when it lands in your inbox. As frustrating as it might seem, spend time shopping around to see what different companies can do for you. It's a tedious task, but an afternoon of boredom may save you a whole heap of cash!

### **BE SENSIBLE** WITH YOUR MODIFICATIONS

Personalising your pride and joy is a pursuit only you can be in charge of, but keep in mind that engine swaps, transmission transplants and forced induction conversions attract more increases in the cost of insurance than suspension upgrades, wheel swaps or the addition of big brake kits, all of which may improve the safety of your Vauxhall. If in doubt, speak to your insurer and ask what the impact of various upgrades will be before applying them.



## **INSURE PROPERLY**

All modifications should be declared - failure to do so may void your insurance, resulting in your car being impounded and the addition of regrettable endorsements on your driving licence.

Also, nobody wants to be the guy involved in an accident ending in the fatality of a third party, but even less desirable is being the same guy with an invalid insurance policy. You have a responsibility to other road users when you're out and about in your car, so insure correctly. Tell the insurer about all penalty points you've accrued, declare the engine swap you've just carried out (we've lost track of the number of sales ads we've seen for C20LET-powered cars "still listed as a 1.2 on the logbook"). If you come unstuck, you'll only have yourself to blame when you find it difficult to get insured. You have been warned!





-

## LENGTH OF TIME OWNED

If you've owned the same Vauxhall for a considerable length of time, it shows the insurer you take care of your car and that you have a clear attachment to it. It's assumed you're less likely to be involved in events leading to a claim, and the reduced level of risk will result in a lower premium accordingly.

## POSTCODE

There's not much you can do about this one, but where you live has a huge effect on the price you pay for insurance. For example, if you live in a bustling city, you'll pay more for car insurance than if you were out in the sticks. Less cars and less busy roads means less chance of an accident!

## JOB CHOICE

We're not saying you should change your job in order to achieve a lower insurance premium, but use online price comparison websites to play about with the different descriptions that best suit your type of work. For example, 'housewife' will deliver a lower premium than 'unemployed'. A

lower premium than 'unemployed'. A 'restaurateur' will most likely pay more for insurance than a 'café owner'. You get the picture!

"I'd recommend you call Adrian Flux for a preliminary quote before buying your next performance Vauxhall," says Matt. "I've lost count of the number of drivers who buy a car before finding out how much it will cost to insure. This can be disastrous, especially if a vehicle history check hasn't been carried out. The last thing you want is to call for a quote, only to be told your new toy was once written off, is stolen and will command a fortune to insure! It costs just a few quid to check the history of a car using any one of a number of online services, and the DVLA's vehicle enquiry service will give you stacks of information, including MOT history, free of charge."



# LOWER YOUR INSURANCE



### **CHOOSE YOUR CAR CAREFULLY**

If you're seventeen-years-old and fancy driving a 900bhp supercharged VXR8, then perhaps you need to think again! The truth of the matter is that when it comes to affordable insurance. younger drivers are better off in charge of lower-powered, small-engined cars in the interests of building up a healthy NCB.



## ADD-ONS

Insurers are no longer allowed to 'hide' extras such as breakdown cover within the

price of the insurance they offer, but they may still try to convince you to add them to your policy. Have a think about what you need and what you can get for a lower price elsewhere. For example, many bank accounts come bundled with AA cover. The account itself may attract a small monthly fee, but this is likely to be much lower than what an insurer will charge. Besides, the bank's package will include other attractive incentives, such as travel insurance and free overdraft usage.



## DASH CAM

Dash cams have become massively popular over the course of the past few years. They're a great way to identify who is at fault when it comes to a claim. Insurers know this,

and may reward you with a substantial discount for fitting a camera to your car. In some cases, you may be in line for fifteen percent off the cost of your policy! Don't drive like a bell end, though – in the event of a claim that has arisen as a consequence of an accident that's your fault, the insurer will want to see your dash cam footage. You'll have stitched yourself up!



## **BLACK BOXES**

Ideal for many young drivers to prove they're safe and reliable behind the wheel, a 'black box'

(also known as telematics insurance) records various pieces of information about your driving style and habits, including speed, distance, time of day, braking, cornering and so on. Insurers will request the information held by the unit in the event of a claim, which is great if you've been driving sensibly, but bad news if you've been trying to show off your drifting skills on the public highway.



## SECURITY

It's an obvious one, but the more security on your car, the less likely it is to be stolen! Back in the day, this meant adding a noisy alarm, but with today's sophisticated gadgets and key-cloning devices doing the rounds, extra security – such as trackers and immobilisers – are a worthwhile addition. Highly visible physical security (steering

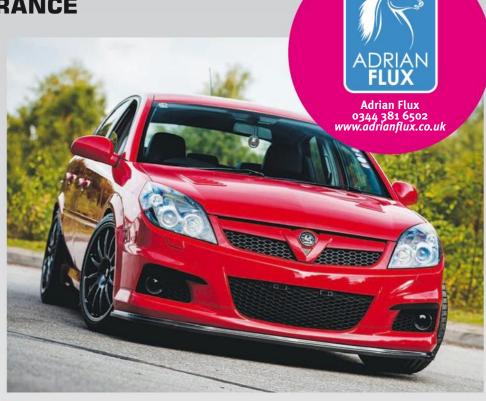
wheel locks and gearshift-to-handbrake locks) is also a great way to deter opportunist thieves, resulting in a cheaper insurance policy when it comes to renewal time.



## STORAGE

If you have the opportunity to get a garage, then do it. Storing your car behind a locked door will almost certainly reduce the cost of your insurance policy, and offers obvious security

benefits (working on the assumption that the garage isn't a million miles away from your home). Even keeping your car on a driveway overnight will reduce the amount of money asked of you by your insurer, more so if the driveway is protected by locked gates. Agree to remove the car from the public highway when not it's not in use and watch the price of your premiums drop. Hoorah!



Not all black boxes are the same," stresses Matt. "Most insist on a driving curfew and penalise you for hard braking. At Adrian Flux, we think this is unfair. After all, you might be stomping on the brakes to avoid a major accident. Also, we don't want you rushing home at warp speed in order to meet an unnecessary curfew. Our black box is designed to focus on the speed a car is travelling at during normal driving conditions. A young person taking the unit as part of an Adrian Flux insurance policy can expect drastically reduced premiums.









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# Insurance for your Vauxhall

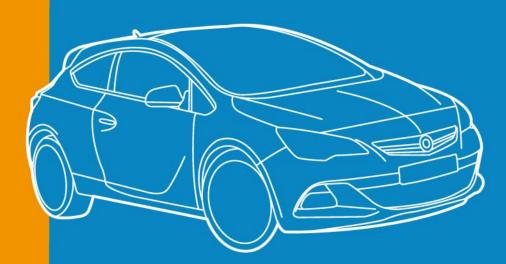
Adrian Flux know how much you love your Vauxhall, that's why we are dedicated to finding you a policy, tailor-made to your own personal requirements and driving history. Call us today for a free, no obligation quote.



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# COMPETITION

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Here's your chance to win a stack of Power Maxed car cleaning products, but first, let's take a look at each of them in action...



British Touring Car Championship (BTCC), we put the pedal to the metal and set sail for the unassuming village of Bidford-upon-Avon, home to car care product manufacturer, Power Maxed, and the Power Maxed Racing BTCC team. There is, in fact, a less selfish reason behind our visit to where the distinctive black and yellow Astra K touring cars live when they're not battling it out at the track; we wanted to show you the effectiveness of various offerings in the Power Maxed range before presenting you with the opportunity to win them all!

Read on, then answer a simple question to be in with a shout of bagging this fantastic collection of car cleaning products. Good luck!

## STEP 1 The pre-wash A 10 MINUTE CLEAN

Each of the products used here work together to form part of Power Maxed's '10 minute wash'. In other words, unless your car is as filthy as our Vectra was (sorry about that, guys!), they should have your Vauxhall looking as good as new in ten minutes or less.

Firstly, Traffic Film Remover was sprayed along the lower half of the dry vehicle to agitate the really icky stuff (bugs, tar, bird lime etc.) while Iron Off was used on its wheels to pull away stubborn brake dust. Iron Off reacts with iron-based brake deposits, oxidising contaminants and quickly turning them to rust. Loosened, they're encapsulated in a liquid that quickly turns purple as it works its magic. The car's staggered Irmscher Sport Stars were left shining following the removal of the impressive scientific cleaning solution with a jet wash.

Snow Foam was then applied over the Traffic Film Remover. The ratio of snow foam to water can vary between products from different manufacturers, with enthusiasts often caught arguing about what constitutes the right formula. Power Maxed Snow Foam requires a ratio of 33:1 when using soft water, producing a foam of the perfect consistency





capable of tackling the topmost layer of grime on your car.

Once the layers of Snow Foam covering the Arden Blue beast stopped carrying dirt, a jet wash had the Vauxhall looking significantly cleaner.

















# **XED PRODUCTS**

STEP 2 THE WASH PART OF YOUR 20 MINUTE CLEAN

It was time to get down and dirty! Donning a lambswool cleaning mitt soaked in water and Shampoo & Ultra Wax, the team worked away at the tougher, more ingrained dirt, paying particular attention to the lower half and front of the car. A grit guard was a valuable tool, ensuring the wash mitt dropped collected contaminants into the bottom of the bucket, leaving only a clean washing solution at the top. Non-Acidic Wheel Cleaner was

Non-Acidic Wheel Cleaner was then used to give the wheels a deep clean. Alloy Wheel Stain & Mark Remover is also available in the Power Maxed range, but as is the case with some of the firm's more aggressive wheel cleaners, it's advisable to be selective when it comes to the wheel finish you use this acid-based product on.

Not forgetting the VXR's door shuts and inner wheel arches, All Purpose Cleaner was sprayed and wiped away with a microfibre cloth and sash brush respectively, marking



the end of the main cleaning stage. A large towel dried the car ready for us to wheel it inside the (much warmer) Power Maxed Racing workshop where the cleaning process continued in the company of the Astra touring cars.



# COMPETITION

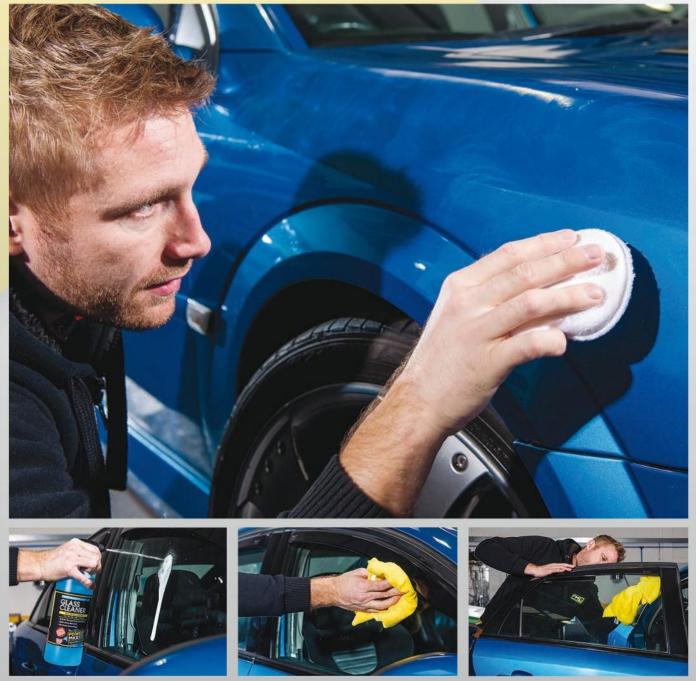
# STEP 3 TARGETED TREATMENTS PART OF YOUR 30 MINUTE CLEAN

Unfortunately, there are marks so stubborn that they refuse to be shifted with a pre-wash or wash. Tar and glue are two such culprits, but they can be removed quickly, safety and easily with Tar Off (a potent product which shouldn't be sprayed onto plastics due to its highly effective and highly reactive formula). It's always strongly recommended to spray products such as Tar Off directly onto a microfibre cloth before applying to the affected area. After doing so, lightly rub the tar or glue contamination away. It's worth noting that this product wasn't used on the vinyl-wrapped sections of the car, and shouldn't be used on vinyl in general.



Next, Power Maxed's renowned Glass Cleaner was used to bring out a stellar shine on the Vectra's windows, mirrors and light lenses, leaving no smears whatsoever, and easily buffing away to reveal a crystal clear finish.





#### STEP 4 MAKING IT SHINE PART OF YOUR 40 MINUTE CLEAN



With the VXR looking fresh, it was time to make it shine. Ultra Finishing Polish was the team's product of choice. Once applied, it took only a few minutes to cure, leaving a deep, wet, glossy finish on the bright blue paintwork. Unlike polishes offered by other manufacturers, Ultra Finishing Polish doesn't produce white dust, making it a delight to use.

Polish doesn't produce white dust, making it a delight to use. Once the polish had cured and was buffed away to a high shine, it was time to seal the paintwork with Winter Coat sealant. This well respected product protects bodywork from salt and grit deposits during the colder months, and it does a sterling job of repelling water and other contaminants, keeping the VXR cleaner for longer. Winter Coat was sprayed liberally onto a clean microfibre cloth and traced all over the bodywork, requiring no pressure at all. The product is considered to be cured and ready for buffing when it is clear in appearance, leaving an invisible, smooth, nano-bonded layer on the treated paintwork.

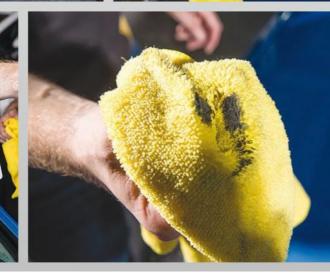
A final touch to the main body of the Vectra, Power Maxed Rain Off was applied to the windscreen using the same methods as Winter Coat, producing a protective and hydrophobic rain-repelling layer which dramatically improves visibility in wet weather.











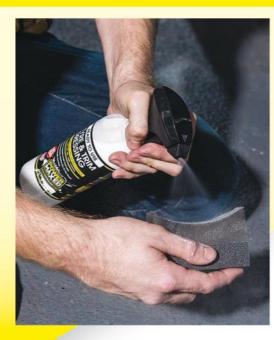
# COMPETITION

## **STEP 5 TIRED TYRES NO MORE!** PART OF YOUR 50 MINUTE CLEAN

Many exclude tyre dressing from their car care routine, but the difference it makes to the end result is nothing short of phenomenal.

Power Maxed layered Tyre & Trim Dressing – a long-term rubber rejuvenator – was applied to the Vectra's Falkens with an added layer of Tyre Shine. The latter is designed to be a 'show shine' product which offers an extremely high shine.

The finish is intended to be temporary due to its ability to compromise grip, so avoid use on motorcycle tyres, and restrict use to your Vauxhall's tyre walls. The solution can, however, be easily removed with water. Even then, the Tyre & Trim Dressing underneath keeps rubber looking dark and new, and can be layered to enhance a deeper matt shine on any tyre without compromising grip. Aces!





## **STEP 6 BEAUTY ON THE INSIDE** PART OF YOUR 60 MINUTE CLEAN



The final step to achieving a perfectly clean car is to finish (or start, if you prefer) with its interior. Initially, a powerful vacuum cleaner was used to remove the muck Dan traipsed into the Vectra during recent weeks. Tsk tsk, naughty boy! Next, Power Maxed Leather

Next, Power Maxed Leather Protector was used to bring a new shine to the re-trimmed half-leathers in the car's cockpit. The nearby gaiters and carbon-trimmed steering wheel were also treated and buffed, ensuring maximum coverage with a gentle touch.

The team then applied Power Maxed Upholstery Cleaner to the cloth sections of each seat. Take it from us, when used in partnership with an upholstery brush, this product will eliminate the need for serious amounts of elbow grease when it comes to cleaning the inside of your Vauxhall!

Power Maxed Interior Dressing was used as a finishing touch on all interior plastics, removing dust, restoring colour and leaving the cabin smelling fantastic.







# **END RESULT**



#### COMPETITION

#### HOW DOES IRON OFF WORK?

- a) By adding 500bhp to your Vauxhall
- **b)** It turns iron into rust to be washed away
- c) By qualifying you to race in the BTCC

Visit www.mediajustice.co.uk/pv/powermaxed and select the correct answer. It really is that simple! We'll announce the winner in the next issue of Performance Vauxhall.



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#### **TERMS AND CONDITIONS**



It is a condition of entry that the prize winner accepts to be photographed with the prize and his or her car for a feature to be included in a forthcoming edition of *Performance Vauxhall* magazine. The winner must supply their name, details of their car and a delivery address at the point of entry. Entries close midnight Sunday 31st December 2017. The competition is only open to UK residents. The competition is not open to employees or associates of Kelsey Media, Automotive Brands or Power Maxed Racing. Only one entry permitted per person. There is no cash alternative and the prize is not transferable. We reserve the right to cancel the competition if circumstances change beyond our control. By entering the competition, you agree to be bound by the rules, and you agree that your name and age may be mentioned in subsequent printed feature text. Details of your competition entry may be shared with Automotive Brands, Power Maxed, Power Maxed Racing and agents acting on behalf of Kelsey Media. *Performance Vauxhall* magazine is a Kelsey Media brand. Kelsey Media www.kelseymedia.co.uk. If you have any questions, please ask when submitting your competition entry. Submitting data indicates your consent to the rules outlined in this terms and conditions statement. We may choose to contact you via email when we have *Performance Vauxhall* news that we think you might be interested in. The editor's decision is final.

WORDS Dan Furr PHOTOS Andy Tipping



J733 HMK

This **366bhp** Mk3 Cavalier GSi2000 has been the subject of an extensive restoration in memory of Jamie White's dearly departed younger sibling...



# **CAVALIER GSi**

amie White draws a deep breath and takes a step back in time to the late 1990s. "I'll never forget the night my brother, Davy, and I were being

challenged to a road race by a Porsche 964 Carrera 4," he recalls. "I was in my V6-powered Mk3 Cavalier CDX, Davy was in his modified GSi2000. We were bombing along the tight, twisty roads near where we lived in the north of Scotland when the Stuttgart speed machine roared into view. We knew the roads like the back of our hands, meaning we were sure there was no way the driver of the Porsche would get past despite his car's four-wheel drive transmission and immense firepower. Even so, regardless of the advantage that knowledge of the local terrain gave us, the Porsche pilot flew by as we approached one of the most dangerous corners on the route."

The White brothers slammed on the anchors knowing full well that anything less would see them leaving the asphalt before becoming airborne and landing in a neighbouring field. The 964 driver – presumably unaware of the jeopardy that lurked ahead – grinned as he passed the Cavaliers at full throttle, only to immediately find himself putting every faith in the

# "THERE MAY WELL HAVE BEEN BROWN SKID MARKS INSIDE THE COCKPIT OF THE CARRERA"

Brembos bolted to his 911. "He was fast running out of road. To this day, I have no idea how he managed to make that corner! Suffice to say he left four long, black skid marks in his wake," gasps Jamie, chuckling as we suggest there may well have been brown skid marks inside the cockpit of the cool Carrera.

#### **FAMILY TIES**

Fast-forward to the present day, and the GSi is still in the White family's possession, although it's Jamie's name that appears on its logbook. "Sadly, Davy passed away in 2002," he sighs. "His will named me as the beneficiary of his beloved Cavalier, a car that I put in storage for many years not knowing what to do with it."

Early Mk3 Cavaliers are notorious for attracting rot if left standing for long periods, a condition that led Jamie to commission a full restoration of the fast four-door. "It had already been treated to neat upgrades, including a four-intoone free-flowing exhaust manifold, an ECU chipset and a Getrag F28 six-speed manual gearbox professionally installed by the lads at Courtenay Sport," he continues. Mechanically, the car was sound, but its bodywork was in dire need of attention. Sadly, the company that carried out the work only served to make matters worse, hiding rot by welding fresh metal over bad. The sills and rear wheel arches were bodged, while fibreglass resin was thoughtlessly splashed across what seemed like every exterior panel. Needless to say, Jamie was less than amused with the 'finished' build.

Under normal circumstances, the car would have been relieved of its twolitre 'Red Top' engine and gearbox before being sent to the great scrapyard in the sky, but the







#### **OWNER**

#### JAMIE WHITE

AGE 50 JOB Fuel service specialist FIRST VAUXHALL Carlton 2.0 CDi FAVOURITE VAUXHALL My old Cavalier CDX V6 BEST THING ABOUT YOUR GSi2000 Its interior LEAST FAVOURITE THING ABOUT YOUR GSi2000 Spending long periods working offshore means I don't get to enjoy as much seat

time as I would like!





# **CAVALIER GSi**

#### **TECH SPEC**

#### ENGINE

1998cc C20XE DOHC 16-valve, Farndon steel connecting rods, Omega forged pistons, block equipped with Mk5 Astra VXR under-piston oil squirters, ARP fasteners throughout, Jenvey directto-head individual throttle bodies, custom fabricated plenum with integral CNC-machined bell mouths, crackle-black cam cover. Retropower polished spark plug cover, polished dump valve, K&N cone air filter in Zidan Motorsport custom intake chamber, heat-wrapped up-and-over tubular exhaust manifold, Garrett GT286oRS turbocharger, large frontmounted intercooler, custom map on DTA S40 ECU, Bosch 044 fuel pump, Sytec MSV adjustable fuel pressure regulator, ASNU 650cc fuel injectors, Aeroquip PTFE/stainless braided fuel pipes, bespoke 2.5-inch stainless steel exhaust system with polished twin-exit tailpipes, tencore aluminium radiator, wingmounted oil catch can, black silicone hoses, battery relocated carpeted box in boot space POWER

#### 366bhp, 368lb/ft torque TRANSMISSION

Front-wheel drive, fully rebuilt Getrag F28 six-speed manual gearbox, Helix dynamically balanced sprung paddle clutch, lightened flywheel, Quaife ATB limited-slip differential, refurbished steering rack, Zidan Motorsport steering rack brace

#### SUSPENSION

Koni Sport adjustable dampers, Eibach Pro-Kit lowering springs, SuperPro polyurethane bushes, adjustable rear camber/toe eccentric bushes, all suspension components media blasted and urethane painted BRAKES

AP Racing four-piston front calipers with Zafira VXR drilled discs,

emotional investment Jamie had in the project meant that he couldn't bear the thought of seeing his brother's Bordeaux Red Cavalier turned into baked bean cans. The hunt was on for a restoration company that could deliver the goods by affording the car a new lease of life.

After much research, the fuel service operative decided to hand his GSi over to Callum and Nat Seviour, the brothers behind Retropower, the UK's leading restorer of vintage Vauxhalls. They're the chaps responsible for the assembly of the 400-kitted, Skyline-powered Manta B on page 24 of this issue of Performance Vauxhall, and they're creators of some of the most exciting old Opels we've ever featured. The brief was clear: restore the shell to 'as new' condition and rebuild the car's naturally aspirated engine so that it was capable of producing 350bhp with the aid of forced induction.

Soon after making contact with the Seviours, Jamie borrowed his mate's trailer, hooked it up to the White family's Volkswagen Transporter T5, and crossed the border into England with the GSi in tow. Once at Retropower's Leicestershire base, the Cavalier Turbo rear calipers with drilled and grooved discs, Ferodo DS2500 pads, PTFE/stainless braided hoses WHEELS & TYRES

7.5x17-inch Team Dynamics Pro Race 1.2 multi-spokes painted silver, Yokohama ADo8R 215/40/17 tyres **BODY** 

1992 Mk3 Cavalier GSi2000, complete bare metal shell restoration, full respray in OEM Satin Red, factory GSi2000 body kit (bumpers, lower door panels, side skirts, lip spoiler), facelift front end (bonnet, grille, headlights, indicators), cold air feed from grille to air filter, Cavalier Turbo rea reflector panel and smoked taillight clusters, smoked side repeaters colour-coded door handles, polished hydraulic bonnet lifters, carbonfibre mud flaps, new rear registration plate lighting lens and surround, raised carbon-effect registration plates

#### INTERIOR

Full retrim in anthracite leather and Alcantara (seats, door cards, dashboard, centre console, arm rests, grab handles, pillar trims, headlining), all plastics recoloured dark grey/black, commemorative roof plaque, factory three-spoke steering wheel, Pioneer DEH-80PRS competition grade CD tuner with Bluetooth, boot-mounted Alpine MRV-F307 amplifier, Focal component speakers, Vibe Audio ICE terminals, fuses and wiring, new boot carpet and battery cover **THANKS** 

All at Retropower for their fantastic restoration work, Dan Furr and Tahir Rasool for the supply of parts, Malcolm Gordon for lending me his trailer so that I could ship the car all over the UK, Zidan Motorsport, and to my wife for supporting the project

car was stripped to a bare shell, but the condition of the resulting Cavalier carcass was much worse than had been anticipated. Yep, the half-arsed work carried out by the previous restorer had caused more corrosion to set in than had been expected, a discovery that significantly increased the cost of the required remedial work.

#### **STRONG EMOTION**

If you've got enough patience, determination and cash, then any car can be restored regardless of its cosmetic condition or expected value when back on the road. For many owners, however, spiralling costs put paid to romantic ideas of bringing a treasured four-wheeler back to life. Fortunately, Jamie's sentimental attachment to the GSi meant he was prepared to stick with it through thick and thin regardless of the impact on his bank balance, which is why the Cavalier he's in possession of today must rank as one of the very best in existence.

After fresh metal was applied, the car's body was coated in a OEM Satin Red, a stock shade taken from the colour catalogue of the GSi's successor, the Cavalier Turbo. Jamie prefers the





rounded ends and updated look of the later Mk3 so much that he sourced a facelift nose (bonnet, grille, headlights and indicators), a Turbo rear reflector panel and matching taillight clusters to replace the GSi's standard 'flat' lights. The result is a Cavalier that many would be forgiven for thinking started life as a Turbo, although more obvious modifications are clear to see in the form of bright red AP Racing four-piston front calipers peeking through the spokes of seventeen-inch Team Dynamics Pro Race 1.2 rims wrapped in Yokohama ADo8R rubber.

Turbo brakes sit at the rear, a step up from the GSi's standard stoppers. The extra slowing power is required

# "I'M ALREADY THINKING ABOUT CONVERTING MY GSI TO FOUR-WHEEL DRIVE"

due to the fact that Jamie's desire for 350bhp has been well and truly smashed thanks to the transformation of his car's engine into a 366bhp throttle-bodied, turbocharged powerhouse of performance; the C20XE's block has been fully rebuilt with Farndon steel rods, Omega forged pistons, VXR under-piston oil jets, ARP fasteners, Jenvey/QED direct-to-head throttle bodies mated to a custom inlet plenum, a Garrett GT286oRS turbocharger, a front-mounted intercooler, a tubular exhaust manifold and uprated fuelling equipment, including ASNU 65occ injectors, a Sytec adjustable fuel pressure regulator and a Bosch 044 high-





# **CAVALIER GSi**

flow fuel pump. A custom stainless steel exhaust system (with a twin-exit tailpipe sympathetic to the GSi's original equipment) runs front-to-back of the car. Nearby, the classic combination of Koni Sport adjustable dampers and Eibach Pro-Kit lowering springs - a firm favourite with owners of Mk3 Cavaliers - helps to keep the car planted when it tackles corners at speed, something the Quaife limited-slipper fitted to the rebuilt sixspeed transmission also does its best to encourage. Of course, that's not to say there haven't been teething problems since the car finally returned to the road in September.

#### **MOVING FORWARD**

"The car's reconditioned steering rack seems to have been struggling with the amount of torque being generated, leading me to place an order for a Zidan Motorsport custom steering rack brace based on the design of the Abbott Racing part for the Saab NG900 and 9-3," explains Jamie. "Long runs in the car also highlighted a need for greater cooling capabilities. Consequently, I've bought a ten-core aluminium radiator, the car's K&N open cone air filter has been repositioned in the engine bay, and it's now fed by a cold air feed channelled directly from the grille into the air filter housing."







He's been driving his completed Cavalier from within the confines of a supremely comfortable cabin comprising re-trimmed seats covered in a combination of luxury dark leather and slate grey Alcantara, a radical departure from the GSi's factory beige plastics. In fact, every interior item has been expertly dressed in fresh fabric or hide decorated with two-tone stitching. "It's a nod to the design of old-school Vauxhall interiors," confirms Jamie, namechecking the Carlton GSi3000 as an example of a great Griffin with dualcolour stitching on its upholstery. We ask what the future holds for his Satin Red stunner now that its restoration has come to an end. "You're never finished with a project like this!" he chuckles. "I'm already thinking about converting my GSi to four-wheel drive in a bid to plant even more power to the road, although I appreciate that'll mean significant changes to the car's floor in order to accommodate a re-routed exhaust, transfer box, rear differential and a propshaft. It'll be a lot of work, and I'm loathed to take the ol' girl off the road for any longer than is absolutely necessary after such an exhaustive restoration. With that in mind, I'm going to spend the next year simply enjoying my restored Cavalier, taking it to shows and undertaking long road trips before any more major work kicks-off," he grins.

His 24-year-old son, Lewis, has already registered an interest in taking custody of the car if Jamie ever decides he's ready to pass it on. It's unlikely that'll happen any time soon, but we're sure Davy would be thrilled to know his pride and joy looks to have a safe and secure future within his extended family of petrolheads. O

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# **CAR OF THE YEAR**



We're inviting you to vote for your favourite *Performance Vauxhall* feature car from the past twelve months...

'ya know who makes the Vauxhall scene great? You. that's who. Whether you're building a future feature car or simply have a passion for great Griffins, it's our readers who afford us the opportunity to showcase some of the very best modified Vauxhalls out there. So who better to decide which *Performance Vauxhall* star car (or van!) should be crowned winner of our 'Car of the Year

and tuned reader's cars that appeared in the 2017 editions of the mag. Each modified motor displayed on the pages before you is exceptional, but there can be only one winner... and it's your call.

Have a flick through the next few pages and reacquaint yourself with the cool creations in contention, and then point your browser at

#### mediajustice.co.uk/pv

and cast your vote. It really is that simple! Voting closes Friday 31st December, and we'll announce the winner in the next issue of the magazine.

2017' award?! We've compiled a shortlist of twelve tweaked

#### WANT TO KNOW MORE?

Struggling to decide which Vauxhall on the list is your favourite? Want to make a more informed decision by reading each of the features that made these star cars famous? You're in luck! All previous editions of *Performance Vauxhall* are

Performance Vauxhall are available to order as back issues either in print or digital formats. Hoorah!

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#### **THE CONTENDERS**



#### **CHEVETTE HSR THUNDERSALOON**







#### TECH SPEC

ENGINE 6-litre LS2 V8, Monkfish 'Magic' camshaft, Magnuson TV2300 supercharger, VCM intake, Wortec switchable exhaust POWER 680.4bhp TRANSMISSION TREME T56 six-speed manual gearbox, LS9 twin-plate clutch SUSPENSION Pedders coilovers, Monkfish 'Road Response Pac' polybushed throughout

E3 VXR8 AP Racing sixpiston calipers, 380mm discs, HSV pads

#### WHEELS AND TYRES 20-inch VXR8 Bathurst S forged alloys with gold faces, Michelin tyres BODY Camaro ZL1 bonnet scoop, Nissan GT-R bumper fins, Holden Racing Team graphics INTERIOR Factory leather, carbondipped dash trim, Iron Man crash helmet

#### **STORY**

Few VXR8s are as well known in the UK as Jason Wilson's outrageous 'Iron Man' E1. Throwing down more than 68obhp – and producing enough noise to wake the dead – the supercharged large barge is a regular at sprint events, including Thunder Road and Performance Vauxhall Show, where the car demonstrates its immense ability to hit high speed from a standing start like a bullet out of a gun.

Dressed in livery inspired by the HSV Commodore VE driven by Holden Racing Team's James Courtney in the FIA International V8 Supercars Championship, and equipped with an exaggerated nose lifted from a Chevrolet Camaro ZL1, the car's statement of intent is clear: it wishes to draw attention to itself, something it manages ably whenever it burtns rubber at the strip! We love this eight-cylinder monster so much, we put it on the cover of the February/ March edition of *Performance Vauxhall*, but will it be the winner in our Car of the Year competition? It's down to you to decide!



#### TECH SPEC

#### ENGINE

2.3-litre Blydenstein Slant Four, Cosworth DTV pistons, Blydenstein camshafts, Lotus 907 big-valve cylinder head, Omex 600 ECU, Weber 48 DCOE carburettors, Blydenstein stainless exhaust pipework POWER

#### 255bhp

ZF five-speed manual

#### racing gearbox and limited-slip diff, Atlas

rear axle

#### SUSPENSION

Koni two-way adjustable coilovers, works wishbones, rose-jointed throughout BRAKES AP Racing Formula 3000 four-piston calipers, hydraulic handbrake WHELS AND TYRES 16-inch staggered Revolution three-piece split-rims, Avon slicks BODY

GRP Thundersaloon aero kit, Lexan polycarbonate windows, DTV graphics INTERIOR

Corbeau Forza Sport 2K seats, Sparco steering wheel, works roll cage

# STORY

Following a colourful motorsport career and three decades laid up in storage, Garry Morgan's 255bhp Chevette HSR Thundersaloon has been attacking the asphalt in hill climb competitions following its master's determination to return the 'Plastic Fantastic' to active service.

Once powered by a turbocharged two-litre BMW powerplant, the rare hot hatch is now propelled by a rock solid Blydenstein-fettled 2.3-litre Slant Four full of Cosworth goodies. At one time, the black beauty was driven by female Formula One pilot, Divina Galica, not to mention Mr Vauxhall himself, racing driver extraordinaire, Gerry Marshall.

Today, Garry is putting the 'Vette to good use in sprint competitions in and around his native Wales, doing his best to beat the owners of Mk2 Ford Escorts at their own game.

"My car has proved to be even more competitive than I thought it would be!" he told us. It's inclusion on our Car of the Year shortlist proves he's not wrong.





#### TECH SPEC

#### ENGINE

2-litre C20XE block, Wössner pistons, PEC rods, Z20LET head, Cat Cams cams, GTX2871R turbo, Nortech tubular exhaust manifold, Piper exhaust, Devils Own methanol injection

450bhp, 410lb/ft torque TRANSMISSION F23 five-speed manual gearbox, TTV flywheel, Quaife limited-slip diff, RnD Motorsport shift kit SUSPENSION GAZ GHA coilovers, RnD Motorsport solid top mounts, Enhance Performance strut brace

#### BRAKES Tarox ten-piston calipers, MTec drilled discs, EBC Bluestuff pads, HEL hoses

WHEELS AND TYRES 17-inch 'Snowflakes', Nankang tyres BODY

Louvered bonnet, custom intake in offside headlight, laser-cut registration plate INTERIOR

Factory Recaros, MSAapproved fire safety system, GReddy boost controller

#### **STORY**

Few Vauxhalls have gone up in flames, only to rise from the ashes harder, faster and stronger than before, yet that's exactly what happened to Ell Howard's Black Sapphire Astra GSi.

"A small puff of what appeared to be watermethanol injection fluid ejected from the car's dump valve. A giant fireball swiftly engulfed the engine bay!" he cries. A faulty fire extinguisher failed to eliminate the furious flames, leading to the nearby brake fluid reservoir catching alight. Forty seconds later, the fire was out, but the damage was done... and then some!

Fortunately, Ell isn't one to throw the towel in, a trait that led him to rebuild his awesome Astra with greater power and optimised performance in mind. Like many of the other cars on this list, the 450hp belter is a regular at Vauxhall's Thunder Road event and our very own Performance Vauxhall Show.

And before you ask, the car is now decked out with a stack of MSA-approved fire safety gear, just to be on the safe side!

# CAR OF THE YEAR

#### ASTRA J AWD



#### TECH SPEC

2.8-litre A28NER V6, CP pistons, Arrow rods, Supertech valvetrain, Precision PT6870 Gen2 CEA turbocharger, 2000cc fuel injectors, NS Racing custom exhaust manifold Aiming for 900bhp!

F4o six-speed manual gearbox, strengthened and upgraded Insignia Supersport four-wheel drive system, bespoke propshaft Insignia Supersport

HiPer Strut dampers,

lowering springs,

polybushes

Insignia Supersport Brembo four-piston calipers, performance discs and pads 20-inch Insignia Supersport Y-spoke forged alloys, Michelin tyres Suzuki Hayabusa Pearl Glacier White paint, Astra J OPC aero

package, splitter Insignia Supersport leather, Plex boost control unit

#### **STORY**

One of the great things about the Vauxhall/ Opel scene is how inventive you guys are when it comes to building completely custom creations. Take this Astra J, for example. VXR/OPC, right? Wrong! What you're looking at was once a Flame Red 1.6 CDTi ecoFLEX. Yes, that's right - this bright white road rocket was formerly a spiritless smoker! The brainchild of Athens-based Opel

tuning outfit, Petropoulos Werks, the car is essentially an Astra J shell loaded with Insignia VXR nuts and bolts. Indeed, the four-wheel drive system, suspension, engine, interior, brakes and wheels of a donor Supersport were carefully fitted to the resprayed CDTi shell before it was treated to an OPC aero kit, resulting in what an Astra J VXR 4x4 might have looked like had Vauxhall decided to build it themselves.

The Petropoulos boys have tuned the 'Sig engine and transmission to such an extent that they're currently chasing 900bhp. Look for the videos on YouTube.

#### DRAG CORSA OPC



#### **TECH SPEC**

1.8-litre Z16LER, Arrow stroker kit, JE pistons, Supertech valve train, Precision PT6766 billet turbo, NS Racing exhaust manifold, bespoke charge-cooler, Vi-PEC V88 ECU

#### 900bhp SION

Four-speed sequential gearbox, custom gear set, Texense flat-shift kit, Sachs racing clutch

KW Variant 3 coilovers, custom rear double wishbones, polybushes

#### Brembo six-piston calipers, grooved discs, performance pads 15-inch Braid Motorsport split rims, Hoosier drag tyres

Extreme Bodyworks carbon-fibre wide body panels, Irmscher grille

Sparco bucket seat, Plex colour digidash, Link ECU display, Bacci shift light

#### STORY

It's those Petropoulos Werks boys again, this time wowing us with their big fat Greek Corsa! Built specifically to tackle the quartermile, this once-stock Arden Blue Corsa D OPC is now the ultimate pocket rocket, complete with Extreme Bodyworks carbon-fibre wide body panels and an Arrow Precision longstroke forged billet crankshaft and connecting rod kit, increasing engine displacement to 1.8-litres.

A Precision PT6766 turbo and a Vi-PEC V88 ECU help to push power towards the 900bhp mark. Managing so many ponies at the front of the car is a four-speed sequential box with custom cogs and super-strong driveshafts. KW coilovers also work wonders. but it's the car's menacing stance and widened track that first caught our attention when we saw the Arden Blue beast (well, there had to be one on the list!) in Greece, an encounter that encouraged us to make this crowd-pleasing Corsa the cover star of our April/May issue.

#### MK2 ASTRA GTE





#### TECH SPEC

2-litre C20LET, Omega pistons, C20XE inlet cam, Cavalier V6 throttle body, K26 hybrid turbo, SBD Motorsport distributor kit, DTA ECU, Astra H VXR fuel injectors

# 336bhp, 284lb/ft torque

F28 six-speed manual gearbox, TTV flywheel, Helix paddle clutch, Quaife limited-slip diff GAZ Gold coilovers, OMP strut braces, Powerflex polybushes

Porsche 930 four-piston calipers, EBC discs, Ferodo pads WHEELS AND TYRES 17-inch Technomagnesio six-spoke alloys, Continental tyres

Zender splitters and side skirts, Superboss bumper grilles, Irmscher rear lights, Morette front lights

Connolly leather seats, Calibra Turbo steering wheel, MOMO gear knob, classic digidash

#### STORY

Mark Dobson's gorgeous Silk Violet Mk2 Astra GTE is a veritable chunk of old-school cool, ticking every C20LET tuning box in the book. C2oXE inlet cam? Got it. Hybrid KKK turbo? It's here. Parts supplied by Steve Milton? You knows it! This 336bhp Morettewearing, Zender-kitted hot hatch is a superb example of a classic performance Vauxhall.

Rare Mk2 Astra parts abound, including rare 'Champion' Connolly leather Recaros, Irmscher smoked rear lights and South African domestic market Opel Kadett Superboss bumper grilles. Period-perfect Technomagnesio alloys and Porsche 930 (911 Turbo) brakes occupy each corner, while carbon-effect wrap covers the car's bonnet and extended boot lid spoiler.

This is quite possibly the best fast-road GTE out there (if you disagree, tell us which you like better!), but does it rank high enough on your list of favourite Performance Vauxhall feature cars to take the top spot in our competition? Only time will tell!

#### ASTRA H VAN



#### **TECH SPEC**

ENGINE 2-litre Z20LEH, Wössner pistons, PEC rods, EDS inlet manifold, Piper cams, Garrett GTX3076R turbo, Airtec Gobstopper intercooler, Nortech Performance exhaust manifold, Pro Alloy radiator POWER 592bhp, 540lb/ft torque TRANSMISSION M32 six-speed manual gearbox, enlarged bearings, Quaife limited-slip diff, lightweight flywheel SUSPENSION Air Lift Performance air ride, AutoPilot V2 digital air management,

#### **STORY**

Regular readers will remember that Andy Stockton's VXR-powered Mk5 Astra Time Attack van won last year's *Performance Vauxhall* Car of the Year award, and with love for Griffin cargo carriers at what seems like an all-time high, will it be a case of history repeating for our favourite model of load lugger?!

This particular Astra van is slammed on an Air Lift Performance air ride kit comprising AutoPilot V2 digital air management, Firestone airbags, twin Viair compressors, nine-gallon air tanks and custom hardlines. The Mk5's body is coated in an unexpected lick of Skoda Meteor Grey (hey, it's more original than Nardo!) and is producing a whopping 592bhp and 540b/ft torque. There are loads of well-executed details here that tend to only make themselves known when compared likefor-like with the features of a standard Mk5 Astra van. That bespoke tailgate is a case in point. The smoothed panel boasts a lip extension that follows the curve of the neighbouring bespoke bumper, creating a flush-fit rear end complete with VXR diffuser and centre-exit tailpipe.

#### MK4 ASTRA CABRIOLET





#### TECH SPEC

ENGINE 1.8-litre Z18XE, Vectra C CDTi intake, K&N panel filter, Toyosports decat, Flow Dynamics exhaust, remap, Roose Motorsport silicone hoses, loads of bling POWER

142bhp, 136lb/ft torque TRANSMISSION Reconditioned F18 five-

speed manual gearbox, new clutch and flywheel SUSPENSION TA-Technix coilovers, polyurethane bushes, new genuine top mounts and bearings

BRAKES Astra G GSi calipers, performance discs

performance discs, Brembo pads

#### WHEELS AND TYRE 18-inch Inovit Sonic wheels, Kuhmo tyres

Full respray in Chianti Red with semi-perl, GSi front bumper, Irmscher bonnet extensions, BMW lip spoiler, SEAT Leon Cupra R splitter, carbon-wrap throughout

Firestone airbags, twin

AP Racing four-piston calipers, EBC discs, Ferodo DS2500 pads

WHEELS AND TYR 19-inch 'Snowflake'

diamond-cut alloys,

Respray in Skoda Meteor Grey, Maxton

Yokohama tvres

Designs splitter, bespoke tailgate

Corsa D VXR seats,

Piano Black centre

control unit

console, Gizzmo boost

Viair compressors

Black leather seats and door cards, custom ski hatch, GSi steering wheel, windbreak, plenty of ICE

#### **STORY**

We regularly get asked what someone needs to do to their car in order to make it worthy of a magazine feature. The truth is that you don't need big turbochargers and a million bhp – as long as the modifications elsewhere on your Vauxhall are carried out to a high standard, then there's every chance you'll find yourself in the same position as James Pearson. That's to say, he's in possession of a *Performance Vauxhall* cover car so impressive that it won last year's PVS Show and Shine competition by a country mile!

Granted, the car is 'only' packing 142bhp produced by a 1.8-litre naturally aspirated lump, but just look at how well presented that engine bay is. The same can be said of the car's leatherclad interior. And its recently resprayed bodywork. In fact, every part of Mr Pearson's prized possession is utterly spotless, totally gleaming and completely worthy of the silverware it bagged for being so clean.

Add to that a set of coilovers, GSi trim and sparkling Inovit alloys, and it quickly becomes clear that this is no ordinary Astra.

#### B234 MK3 ASTRA GSi





#### TECH SPEC

#### ENGINE

2:3-litre SAAB B234 engine, Wössner pistons, PEC rods, GT30 turbocharger, Cosworth MAP sensor, Nissan 2005X exhaust manifold, Coolingmist water-methanol injection, Crankworks map on SAAB ECU

#### 450bhp, 400lb/ft torque TRANSMISSION

F28 six-speed manual gearbox, Abbott Racing flywheel, Drivetorque clutch, Quaife limitedslip differential

#### Bilstein dampers, 60mm lowering springs, SAAB NG900 anti-roll bars

and subframes BRAKES Factory calipers, SAAB

discs and pads WHEELS AND TYRES 17-inch SAAB Three-Spoke Double alloys, Toyo Proxes tyres

BODY Full respray in Ferrari Rosso Scuderia, Morette front lights, BMW M3 door mirrors, shave

#### door kit INTERIOR

Factory Recaros, Raid steering wheel, Mk2 Astra GTE digidash

#### **STORY**

Vauxhalls powered by SAAB engines are now commonplace in the modified motor world, yet few examples of this mish-mash of Swedish and British brands gets pulses racing as much as Germaine Shelton's B234-powered Mk3 Astra GSi.

Resplendent in Ferrari paint and chucking out more than 450hp, this quarter-mile strip star is a regular at Santa Pod where Germaine is constantly pushing his car's 2.3-litre Swedish powerplant to the limit. To that end, forged internals, a GT30 turbo and a modified Nissan 200SX exhaust manifold work alongside a Cavalier Turbo's F28 gearbox and a chassis featuring a SAAB subframe and Bilstein shock absorbers.

With so few Mk3 GSis surviving to the present day, it's great to see a heavily modified example completed to such a high standard, a sentiment echoed by crowds who stopped and stared at the car when it appeared on the *Performance Vauxhall* stand at PVS earlier this year.

We published our showcase feature about this SAAB-powered strip star in the August/September issue of the magazine. Check it out.

# **CAR OF THE YEAR**

#### CALIBRA TURBO



#### **TECH SPEC**

ENGINE 2-litre C20LET, reconditioned turbocharger, Courtenay Sport actuator, frontmounted intercooler, EDS Phase 3 ECU chips, Roose Motorsport silicone hoses POWER 260bhp TRANSMISSION F28 six-speed manual

gearbox, four-wheel drive, Fidanza flywheel, B&M short shifter SUSPENSION Bilstein B4 dampers, Apex lowering springs, polybushes

#### \_\_\_\_\_

AP Racing six-piston calipers, grooved discs, HEL hoses WHEELS AND TYRES 19-inch Dare LP-560

wheels, Kuhmo tyres BODY

Respray in OEM Rio Verde, Mercedes Sprinter wing vents, Irmscher front bumper and side skirt mouldings, Lumma roof spoiler, Cliff Motorsport badges INTERIOR Fully retrimmed in Helios Nappa cream Leather, Cohra Paytona

Helios Nappa cream leather, Cobra Daytona seats, Vectra A 2000 LCD dash STORY

A fantastic example of a Griffin that's more about a

delicate balance of useable power and style than it is outright performance, Steva Armstrong's Calibra Turbo was a mainstay of the Vauxhall Show and Shine scene for years before being retired from the road in order for its extensive restoration to take place. Emerging in time for this year's VBOA National Rally, the reimagined Rio Verde Vauxhall picked up where it left off, bagging plenty of trophies, including the highly coveted VBOA Chairman's Cup award.

The car's engine bay and interior are as pristine as its gorgeous green Irmscher-kitted exterior; specially commissioned Mercedes Helios Nappa cream leather wraps itself around the coupe's dashboard, door cards and Cobra seats. The Benz theme continues with Sprinter vents carefully installed in the car's wings, but the star of the show is the ultra-rare Opel Vectra A LCD digidash Steva bought brand new. Unless you count that airbrushed cam cover. Or the perfectly painted fuel tank. Argh! So many amazing features on one car!

#### DRAG MK2 ASTRA GTE





#### TECH SPEC

ENGINE 2-litre C20XE, JE pistons, Arrow rods, GTX3017 turbocharger, Nortech exhaust manifold, PWR barrel charge cooler, Omex 600 ECU, ASNU fuel injectors, nitrous oxide injection system POWER

#### 424bhp, 379lb/ft torque TRANSMISSION F28 six-speed manual gearbox, Quaife limitedslip differential, TTV Racing flywheel, Helix paddle clutch

SUSPENSION

Spax Krypton dampers, 40mm lowering springs, Powerflex polybushes BRAKES Calibra Turbo calipers, Sapphire Cosworth discs, Ferodo DS2500 pads, Goodridge hoses WHEELS AND TYRES 17-inch Image split rims with Ferrari F40-style centres painted gold, Toyo Proxes tyres BODY

Full respray in Black Starmist, Zender-style splitters, Superboss bumper grilles, Ultima GTR intake

Corsa VXR half-leather seats, OMP Superquadro steering

Superquadro steering wheel, standard digidash

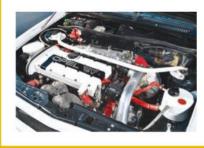
#### **STORY**

Looking at Ryan Davies' 424bhp NOS-injected Mkz Astra GTE drag machine today, it's difficult to believe that it was a decision away from being sent to the scrapyard due to excessive corrosion and a comically flexible bulkhead. Complete with its Irmscher lights, Zender splitters, Superboss front bumper grilles and striking Image three-piece split rims (inspired by the look of the Ferrari F40), this fantastic-looking Black Starmist GTE acts as half show car, half race car, as it demonstrated across the weekend of this year's PVS – the car spent the Saturday flying along Santa Pod's hallowed quarter-mile before changing wheels and enjoying the Sunday as one of the main attractions on the *Performance Vauxhall* stand!

Despite the fact that Ryan aims to break into the tens, he's rejected the idea of gutting his GTE. Instead, he's broken with tradition by retaining many creature comforts! Chief among the nonstandard kit in his car's cabin is a set of Corsa VXR half-leather Recaros, although it would be remiss of us not to mention that giant NOS bottle where the GTE's rear bench once sat!

#### **NOVA GSi**





#### **TECH SPEC**

#### ENGINE

2045cc C20LET, Omega pistons, under-piston oil jets, Kent Cams camshafts, Piper valvetrain, ASNU injectors, DTA S40 ECU, GT3071R turbocharger, Edwards Motorsport exhaust

#### POWER

392.2bhp, 340.1lb/ft torque

F28 six-speed manual gearbox, Quaife limitedslip differential, Helix six-paddle clutch

#### GAZ front dampers,

Spax rear dampers, Edwards Motorsport strut braces, polybushes BRAKES Bremsport four-piston calipers, Cavalier SRi servo and master cylinder

#### WHEELS AND TYRES 16-inch Speedline six-

spokes, Toyo Proxes and Yokohama tyres BODY Full respray in Ford

Full respray in Ford Frozen White, gloss black roof and bonnet, Focus RS bonnet vents, smoothed tailgate INTERIOR Corbeau Forza bucket seats, Safety Devices roll cage, MOMO steering wheel, Mk2 Astra GTE digidash

#### **STORY**

"It's not leaking oil, it's sweating power!" shouts the bumper sticker stuck to the front of Ian Pepper's Frozen White Nova GSi. Re-shelled and rebuilt more times than he cares to recall, his sensational supermini is another Santa Pod strip star built to take on the quarter-mile.

Increased displacement, ASNU injectors, DTA standalone management, Kent Cams camshafts, a Nissan Pulsar GTi-R inlet manifold, a Garrett GT3071R turbo and Edwards Motorsport exhaust paraphernalia help the car to produce 392bhp, power that has delivered a 12.73 second pass at the 'Pod. Subtle body modifications (such as a smoothed tailgate), Speedline six-spokes, GAZ shocks and a raft of aftermarket cabin furniture (including Corbeau Forza buckets, a MOMO steering wheel and a Safety Devices roll cage) have also joined the party, working together to present a nifty Nova that looks just as at home on a show stand as it does at the strip.

Is the little Vauxhall able to generate more votes than the other contenders on this list? Find out by grabbing a copy of our next issue!

PICK A WINNER!

www.mediajustice.co.uk/pv Competition closes Sunday 31\*\* Decemberi



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# DESIGN AND CONQUER

Cirk Robinson's rear-wheel drive Arden Blue Corsa B pick-up is the result of a mad plan and a determination to succeed against all odds...

WORDS Daniel Bevis PHOTOS Adrian Brannan

#### FAST FACTS

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THE PART

Rear-mounted **X16XE** engine **GT28** turbocharger **Spaceframe** rear end Modified Nova **wide-arch kit Rota Kyusha** wheels

# **CORSA PICK-UP**

he point of a pick-up truck is fairly obvious: at the front, there's an enclosed section where the driver and his (or her) passenger can feel like they're travelling along in a regular car, while a big, exposed area at the back carries tools, logs, junk and whatever else you need to cart around. Vauxhall's former owner, General Motors, is big on the idea, with muscular workhorses rumbling out of its Stateside dealer showrooms every few seconds. And then, of course, there are the company's hilarious adventures in muscle pick-ups, with the VXR-badged Maloo being the most familiar example of GM's utility vehicle hoonery here in the UK.

Practicality, of course, is not for everyone. Yes, we've presented a scaled-down pick-up truck on the pages you see before you, but we wouldn't call it a sensible load-lugger. For starters, it commenced life as a Corsa B. Additionally, this once humble hatchback's cunningly constructed pick-up bed is full of engine. You won't be able to sling your toolbox in there – it'll get mangled and melted!

#### **TORQUE SENSE**

This, then, is not a logical solution to any question that may have been asked. It is, instead, the culmination of a lifelong obsession of mucking about with cars, coupled with an inability to

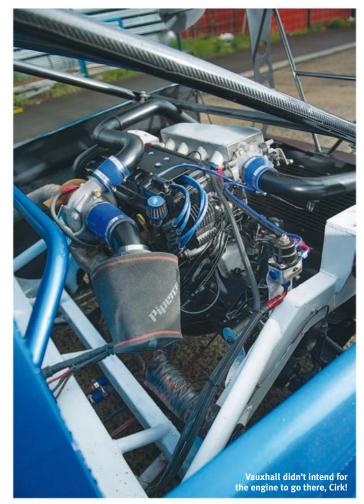


#### **OWNER**

CIRK ROBINSON AGE 29 JOB Panel beater FIRST VAUXHALL Nova 1.4 FAVOURITE VAUXHALL Red Victor 3 BEST THING ABOUT YOUR CORSA PICK-UP The surprise it generates LEAST FAVOURITE THING ABOUT YOUR CORSA PICK-UP The many points I fel like giving up during the three-year build

pass up opportunities when somebody says "I dare you!" We'll let this crazy Corsa's chief architect, Cirk Robinson, take up the story, hoping he can convey some manner of sense among all this preposterousness.

"Every Vauxhall I've owned has been modified in some way. I find it impossible to buy a car and then leave it in a standard state of tune," he muses. "I've owned a few Corsa Sports





"A WELL-RECEIVED APPEARANCE AT PVS ENDED WITH A FRIED CYLINDER"



in the past, including one which I managed to stack into a tree. I needed to get back on the road as quickly as possible, and started to eye up a mate's tweaked and tuned Corsa Sport. It was riding on Cavalier GSi2000 fifteen-inch slabs, and it looked like a panda thanks to white paint joined by random black panels! Despite the car's odd appearance, it fit the bill perfectly. I managed to buy it for just £500."

This is all well and good, but how did a white supermini end up turning into an Arden Blue pick-up? "Initially, I turbocharged the car's engine, although I was already on my third lump by the time the work started," he explains. Lady Luck wasn't on his side, a fact proved when a well-received appearance at PVS ended with a fried cylinder. "I had to drive home from Santa Pod to where I live near Middlesbrough with a big turbo bolted to an engine running on only three cylinders. To this day, I have no idea how I completed the journey," he sighs. He'd had enough, and decided it was time to turn his long-suffering Vauxhall into a pick-up. Wait. What?!

It's the nonchalance with which he





tells us about this decision that characterises the unhinged nature of the build. After all, there aren't many of us who'd think, "alright, I've blown a few engines hammering the crap out of this thing, so let's crack out the power tools and remove most of the car's bodywork." In contrast, Cirk could see potential in the idea from the very start. No quivers, no qualms. He simply hacked his Corsa to bits and transformed it into the utterly mental machine it is today.

"I've seen a few Vauxhall pick-up conversions, but it wasn't until I posted



a mock-up of my idea on the Vauxsausage Facebook page that things started to snowball," he says. Page administrator, Marc Hedley, owner of the bonkers Nova drag machine that we recently featured as part of our Builds series (order a back issue copy at *www.bit.ly/trackspecial*), suggested the finished pick-up would be even better if its engine was located at the rear, with power transmitted to the back wheels. Challenge accepted!

There's no point in going off halfcocked, a train of thought that led Cirk to go back to the

## **CORSA PICK-UP**

# "I HAD A TAPE MEASURE, WELDING EQUIPMENT, A GRINDER AND A THOUSAND CUTTING DISCS"

drawing board in the hope of getting his Corsa's engine to sit behind the cab he'd designed; supported by a spaceframe atop a Corsa C subframe, the engine is now running a GT28 turbocharger, juicy fuelling, a Frontera intercooler and a reworked transmission featuring a mix of Vectra C and Astra G parts.

At the front, coilovers designed for

the Corsa B sit happily, while at the opposite end of the heavily altered Vauxhall, dampers intended to be used at the nose end of a Corsa C reside. This makes more sense than you might think – for a conventionally-constructed vehicle, front dampers are built to take into account the weight of their neighbouring engine.

"The project was carried out on my

father-in-law's driveway," continues Cirk. "I had a tape measure, welding equipment, a grinder and a thousand cutting discs to hand. I even applied all the paint myself, with my three-year-old son, Ben, handing me tools as I went along!" A chip off the ol' block, eh?!

The aesthetics are as cool as this vastly modified Corsa's mechanicals. The aforementioned Arden Blue

paintwork covers a drilled Corsa B GSi front bumper, a 'bad boy' bonnet, Morette headlight casings and a niftily chopped-about Nova wide-arch kit. The underside and interior have been coated in Ford Frozen White. Oh, and there's a mahoosive rear wing to gawp at. "Including the respray, it took about three years for me to complete the project from start to finish," confirms Cirk. "I'm more than happy with the end product, but I've already got the next phase of the build lined up in the form of a 400bhp turbocharged SAAB engine," he smiles. Ah, but of course. We wouldn't expect anything less! Too much ain't enough, right?!

#### BOX CLEVER

Perhaps the most endearing element of this project is that it's a coalescence of intelligent homegrown solutions, as opposed to being some big-budget Gas Monkey-style tunerfest. "All the parts I used were bought cheap and had to be modified to fit," Cirk assures us. "I've used Mk2 Ford Escort suspension components and Nissan Skyline cooling equipment. It's a weird mix of stuff, but it seems to work!" A prime example of his 'thinking outside the box' can be found in his Corsa's gear selector cable mechanism. "One of my mates, Gary Stone, built a Citroen C2 powered by twin V6 engines. I asked for his advice when various parts suppliers told me I





#### **TECH SPEC**

#### ENGINE

1598cc X16XE DOHC 16-valve, custom inlet manifold, Calibra V6 throttle body, modified Honda Civic exhaust manifold, GT28 turbocharger, Frontera intercooler, alloy hard pipes, Courtenay Sport decompression plate, Nissan Skyline R33 twin-core alloy radiator with copper plumbing, twin electric radiator fans, C20XE fuel injectors, Bosch 044 fuel pump, Sytec fuel filter, front-mounted custom alloy fuel cell, Torques fuel equipment fasteners, blue silicone hoses **POWER** 

#### 220bhp TRANSMISSION

Rear-wheel drive, Getrag F13 fivespeed manual gearbox painted black, Vectra C 1.8 gearbox selector, custom cable transmission conversion, Stage 1 hydraulic clutch, Astra G hydraulic clutch conversion SUSPENSION

AP Corsa B front coilovers, AP Corsa C front coilovers fitted to rear, BC Racing adjustable top mounts, Mkz Ford Escort tie bars, modified Corsa C wishbones fitted to rear, Nissan Skyline R33 adjustable rose-jointed track rod ends BRAKES

Mk3 Cavalier SRi front calipers, Corsa C front calipers fitted to rear, Compbrake pedal box, performance discs and pads, braided hoses WHEELS & TYRES

8x15-inch Rota Kyusha wheels painted black with black lips, Federal RS-R 205/50/15 tyres, stud and nut conversion, Corsa C SRi front hubs at the rear

#### BODY

1997 Corsa B Sport, full respray in OEM Arden Blue, gloss black roof, chassis painted Ford Frozen White, modified and drilled Corsa B GSi front bumper, custom splitter, Morette headlights, 'bad boy' bonnet, Aerocatches, modified Nova wide-arch body kit, NACA ducts in offside rear quarter, colour-coded Vectra B door handles, spaceframe rear end using Corsa C front subframe, bespoke rear wing with custom drilled legs, custom diffuser, anodised security bolts INTERIOR

#### Corbeau Pro Series bucket seat, Sabelt five-point safety harness, Kode three-spoke steering wheel, Snap-Off boss, modified and smoothed dashboard painted gunmetal grey with integrated

gauge pod (housing oil temperature, oil pressure, boost, battery voltage and water temperature gauges), keyless ignition, custom switch panel, multi-point weld-in roll cage, Vectra C gear selector, cabin painted Ford Frozen White THANKS

#### My parents for all their help and for encouraging me not to give up on the project, Lauren for collecting parts and for putting up with not seeing me for the past three years, Chris and Phil from Vehicle Smart, Keith at MK DeSigns for the fast turnaround on the sticker job, Dave and Gary, and to my son, Ben, and my brother, Paul, who helped me carry the engine out of the cellar after I thought it would be a good idea to build it down there!

wouldn't be able to fit Vectra C shift cables to my pick-up's transmission. Gary suggested I try modifying the hell out of boat steering cables. Six hours later, my Corsa was moving freely and happily shifting through each gear!"

Cirk's peculiar pick-up was built as he went along, each task tackled without a big game plan. This attitude is what makes the project pop. It's offbeat. It's quirky. The main hook is that the dramatically doctored Vauxhall was built just for fun. And whether you like or loathe this reimagined Corsa, the scene needs wild and wacky creations – life can be supremely enjoyable when you're being silly!









# THE FINAL COUNTDOWN

WORDS Si McNally PHOTOS Jakob Ebrey

Power Maxed Racing's BTCC campaign concluded with fantastic results at the end of the Astra K's first season of action..

ust a week before this year's penultimate round of the British Touring Car Championship (BTCC), Power Maxed Racing (PMR) made the shock announcement that star driver, Tom Chilton, would be out of action due to a medical complaint. Who would replace the BTCC and World Touring Car Championship (WTCC) veteran at Silverstone? Would the appointed party be capable of filling such accomplished boots?

Five days before qualifying, PMR revealed Tom's seat would be filled by a driver more than up to the task – 2012 WTCC champ, Rob Huff. Recognised as one of the best drivers in the world, all eyes would be on the Cambridgeshirebased motorsport hero and what he could do in a PMR Astra.

Saturday morning at Silverstone saw grey skies and drizzle, less than ideal

conditions when you're climbing into a race car you're unfamiliar with. Nevertheless, both Rob and Senna Proctor (Tom's PMR teammate), were in good spirits, feeling hopeful for the weekend ahead. As if to prove the point, the first free practice of the day (FP1) saw Senna sitting in fourth place, with Rob quickly getting to grips with Tom's potent Vauxhall.

FP2 saw the manufacturer-supported team experiment with setups in advance of qualifying later that afternoon. When it comes to driver substitutions in the BTCC, the 'new boy' will have to carry an additional 45kg of ballast on board. Despite this disadvantage, Rob brought the Astra back to thirtieth position, just one place behind Senna. With .88 of a second separating first and thirtysecond, the field was tight!

Race day. Within two laps, Rob was in twenty-fourth position. By lap ten, Senna had rocketed to fifteenth,

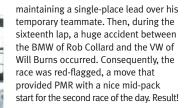


O DUNI









#### **BATTLE STATIONS**

The lights went out and the Astras screamed into action, but Senna struggled with grip, finishing in twentysecond place. Rob, however, gave the drive of his life, earning lots of ITV4 coverage for PMR's sponsors by working himself into an amazing eighth place finish. The result meant that for the famous BTCC 'reverse grid', Rob would start in second place, giving the team an opportunity to reduce his 45kg ballast to just 21kg.

Race three at Silverstone saw most of the field – including Rob – starting on the Option tyre, a hard Dunlop

compound. Before qualifying, every team must nominate to use the Option tyre in one of Sunday's races. This hard compound lasts longer on the track, but takes a while to reach its optimum level of performance, resulting in drivers who struggle with grip. Even so, Rob's stellar start saw the Astra out in front, leading the pack into the first corner while ITV's cameras rolled, capturing the all-new Automotive Brands bonnet livery beautifully. The PMR garage erupted with screams from the team's engineers and fans alike, with all present already on a high following the day's earlier results.

With only four laps to go, Matt Neal found a gap and pointed his Honda squarely in the line of fire. Rob fought back, but the Astra's harder tyre compound gave the Civic an advantage, resulting in a successful pass by the tuned Type R. While this was taking place, Senna climbed his way to an amazing tenth place, aided by



# **BTCC UPDATE**



a faster, softer tyre. Unavoidable incidents in the pack saw the young driver finish eighteenth, yet he still managed to record the fastest lap of the race. A huge achievement.

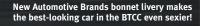
Rob held on to cross the line in second, PMR's best result to date. "Not having experience of PMR's Vauxhall Astra prior to action at Silverstone meant I had no real expectations going into the weekend.," he told us. "It's brilliant to be on the podium, but the PMR team deserve full credit for developing such a capable race car."

#### **CLOSING IN**

Spirits were high as the PMR crew readied itself for the final BTCC race weekend of the year. Tom was cleared to get back in the saddle, and Senna knew he'd be taking home the coveted Jack Sears Trophy. The stage was set for Brands Hatch's long GP circuit to play host to an exciting end of season championship battle.

With wet weather predicted for the weekend, PMR's engineers kept a close eye on forecasts in order to ensure the Astras were configured exactly as they needed to be. Suspension setups change depending on whether wet or







dry conditions are expected, not something that can be changed in the middle of a race.

FP1 saw both Vauxhalls hold their own on a constantly changing track surface; some parts of the circuit were wet, others were bone dry. Qualifying came around quickly, and with it, showers showed signs of easing off. The PMR team took repeated changes between wet and dry tyres in their stride, ensuring the cars were where they should be within minutes. Red flags delayed the session, but both drivers had a good, clear run on the drying track, and at the close of play, Tom had managed to pull his Astra to an incredible fifth place, followed by Senna in thirteenth.

Those of you who follow British motorsport will undoubtedly be aware of seventeen-year-old Billy Monger's story. The Formula 4 driver tragically lost both his legs in an accident at Donington earlier this year. PMR team principal, Adam Weaver, has been a huge supporter of Billy and his road to recovery, and had a huge suprise in store for the youngster as Saturday evening got underway...

Fans of racing have witnessed Billy's

efforts to walk on prosthetic legs, but on what was a cold October evening, thousands cheered as he emerged from the PMR garage and walked the entire length of the pit lane. Flanked by TV cameras and ITV4 presenters, Paul O'Neill and Louise Goodman, Billy managed the whole length of the pit s before jumping on a speciallyconverted buggy and driving around the circuit to greet his loyal fans.

#### **CLIMBING UP**

Tyre choice and suspension setup were paramount in the minds of PMR engineers who were keeping a close eye on the track in advance of sending the Astras out to do battle on race day. Wheelspin caused Tom to lose places in the first round, quickly dropping him to seventh position. Meanwhile, in just one lan. Senna pulled himself from thirteenth place to tenth, and within three laps, the boys were in sixth and seventh position respectively. At that point, they started to fight for fifth! Tom held the plucky northerner at bay, but both drivers gained a place, crossing the finish line in fifth and sixth position.

Each Astra started the second race with excess ballast (39kg for Tom, 33kg for Senna), which proved to be a fresh challenge for the less experienced PMR driver. That said, within seconds of 'lights out', he pushed his way into fourth, with Tom hot on his heels in fifth. PMR finished in a very respectable seventh and fourteenth position, setting Tom up for a prime spot after the Reverse Grid Draw. In fact, it was so good, he started the third and final race of the day in fourth!

Once again, wheelspin off the line forced him to finish the first lap lower down the pecking order than where he started, whilst Senna made up ground to twelfth place. Pushing hard, though, saw him slide into the gravel and finish the race prematurely within a few laps. Tom lasted the distance, ending the race in fifteenth position, although all eyes were on the Subaru of Ash Sutton who ended the day as BTCC champion.

A loud, dry-ice fuelled Jack Sears Trophy presentation followed, interspersed by fireworks and TV interviews for Senna. It's safe to say the team finished the year on a high, bagging two podiums, the biggest (literally) trophy in the BTCC, a cabinet full of silverware and an overall championship position of seventh. Not bad at all, especially when you consider the fact that the PMR Astra K didn't exist last Christmas! The Warwickshirebased team can be rightly proud of the work they've put in developing and building such a fantastic Vauxhall.

You may be wondering what's in store for the team and its cars now that the season is over? It certainly doesn't involve the gsmg having a rest, with 'behind the scenes' work already beginning in preparation for 2018's BTCC campaign.

In forthcoming issues of *Performance Vauxhall*, we hope to bring you insight into what goes on during the 'off season', highlighting extensive development work on the Astras, plus news on the sale of performance parts manufactured by PMR sponsors, HEL Performance, PWR Cooling, Zirtec Manifolds & Coatings, ITG filtration and Scorpion Exhausts.

Yep, the winter months promise to be exceptionally busy for the Power Maxed Racing squad! Subscribe to *Performance Vauxhall* and never miss out on any of the team's updates. Visit *www.bit.ly/subscribepv* to view our latest subscription deals.





**BUYING GUIDE** 

# BUY EARLY CORSA D VXR

The first-gen Corsa VXR is a potent hot hatch with huge tuning potential. With prices for early examples at rock bottom, you can't afford to miss out...

WORDS & PHOTOS Dan Furr and Dan Williamson

hen Vauxhall announced its hottest-ever supermini, a nation of Griffin lovers could hardly believe their luck. Not only would the new baby hot hatch sport a turbocharged 1.6-litre powerplant, it would pack a 190bhp punch. We weren't disappointed.

On its launch in March 2007, the Corsa VXR's chunky good looks, impressive performance and sharp. well-balanced handling amazed everyone. Even Jeremy Clarkson was full of praise for the small, sporty Vauxhall. The car featured a new lowcompression Z16LER engine. Coupled with Vauxhall's M32 six-speed gearbox, it was enough to provide a o-60mph sprint in just 6.8 seconds, with a top speed of 140mph. The model gained a substantially revised and lowered chassis, bigger brakes, a model-specific body kit, large alloy wheels and a stylish interior complete with sexy seats and a matching steering wheel.

Vauxhall tuners were quick to pounce on the VXR's lively chassis and willing engine. Stage 1 remaps were offered almost instantly, plucking an extra 30bhp from the little 1.6. Since then, off-the-shelf power packages featuring uprated engine internals, big turbos and high-flow fuelling equipment are pushing power beyond the 500bhp mark.

Several special Corsa VXRs were available to order from main dealers. First came the Arctic Edition, launched at the July 2008 British Motor Show. A run of 500 examples finished in Glacier White with a Remus sports exhaust claimed a power boost to the 202bhp mark. Spring 2009 brought the Corsa VXRacing Edition, built to celebrate

Vauxhall's BTCC championship success. A total of 444 of these were sold, all of which came equipped with Flame Red paintwork, black leather interior and an individually-numbered plaque. Later, from winter 2007, a range of upgrades from the now-defunct Vauxhall Performance Centre produced the Corsa VXR 888 with power lifted to 225 bhp. And in late 2008, semi-official Corsa VXR specials were offered by Vauxhall tuner. Thorney Motorsport. The firm's 230bhp VXR-S and 240bhp VXR-R offerings were fitted with uprated suspension. even bigger brakes, lightweight alloys, a raft of engine tweaks, plus a range of motorsportinspired equipment. In essence, Thorney was reimagining the VXR in order to make the most of the model's innate abilities.

Today, the early Corsa D VXR makes an outstanding second-hand buy. It's practical, reasonably economical and ready for action. Granted, you can bag a much later Nürburgring edition and claim plenty of scene points, but with some of the earliest Corsa VXRs currently on sale for only a couple of grand, now is the ideal time to bag yourself a performance Vauxhall bargain.

"EVEN JEREMY CLARKSON WAS FULL OF PRAISE FOR THE SPORTY VAUXHALL"

# **BUY & MODIFY**

#### BUYING CORSA D VXR

## **ENGINE**

Like the Corsa D SRi Turbo, the original Corsa VXR uses a 1598cc Z16LER powerplant. It's similar to previous Vauxhall 1.6 sixteen-valve units, but features low-compression pistons (8.8:1), under-piston oilspray cooling nozzles, a reworked 1.8 cylinder head and a KKK turbocharger. As you'd expect from a performance car, most components are tough, but the nature of turbocharging and subsequent hard use means they're not indestructible.

It might sound obvious, but the most important thing to look out for is a knackered engine. They're relatively common. Ordinarily, failure is traced to a hole in piston number four. The cause is speculative, but most mechanics agree extended periods of abuse don't help! The earliest warning of failure is piston slap from cold. When buying, make sure the car's engine isn't warm, and ensure you listen for faint metal-onmetal clattering from under the bonnet. Another potential pointer to piston

problems is a misfire, sometimes accompanied by a glowing engine management light. Don't fret! This could also be due to a faulty coil pack or spark plug. Engine rebuilds are, of course, expensive, but trusted service providers, such as GCAP Performance (facebook.com/GCAPPerformance), are on hand to help.

You'll also need to check a Corsa VXR's turbocharger for faults. Signs of a blown turbo are exhaust smoke, rattling under acceleration and lack of power. Faulty Corsa turbos don't tend to show oil in intercooler pipework – they just get lazy.

Look for oil leaks around the breather system and dipstick tube where it meets the sump. The cause will probably be brittle o-rings. They're no big deal to replace.



More costly will be an air conditioning complaint. Compressors have been known to blow up (literally explode, chucking bits everywhere!), and it's common for the system's cooling pipes to fracture. You can usually see tell-tale signs of wear from under the bonnet.

Finally, look for water leaks underneath the car, especially from the nearside front. Traces of antifreeze dripping from the bumper or low water level in the expansion tank can mean a knackered radiator. Most likely, a radiator end tank will have separated from the core. A replacement part isn't expensive, and will take little more than an hour to fit. The biggest worry would be a car that has been run low on water and allowed to overheat, so check carefully. On the upside, water dripping from this area could merely be air-conditioning condensation on a warm day, or escaping washer bottle fluid.

Windscreen washer bottles are prone to leaking where the motor attaches, caused by nothing more than a faulty seal, which is readily available and easily replaced.

VAUXHALL



#### BUYING

# EXTERIOR

The Corsa D VXR wears a unique bodykit, comprising aggressive front and rear bumpers, side skirts, a roof spoiler and honeycomb mesh grilles. The front fog lamp surrounds, twin-arm door mirrors and centre-exit exhaust outlet follow a similar theme.

Factory colours are restricted to Flame Red, Star Silver, Black Sapphire and Arden Blue. All 500 Arctic Editions are Glacier White



with black-painted roof and door mirrors, electric sliding glass sunroof and dark-tinted rear windows.

The 444 VXRacing Edition Corsa VXRs boast Flame Red paintwork with black mirrors, a matching roof spoiler, rear diffuser and bump strips plus. They also feature dark tinted glass, special VXRacing sill covers and B-pillar graphics.

With the earliest Corsa VXRs being no more than a decade old, none should have serious bodywork issues. If there's bad paintwork, ill-fitting panels or anything remotely dodgylooking, chances are the car's been crashed, bashed or badly abused - and there are plenty out there. It's essential to check for accident damage around the inner wings, boot floor and sill areas. Look for creases, fresh paint and misaligned wheels. While you're at



it, invest in a history check at mycarcheck.com and compare all the chassis and engine numbers on the car to make sure they match what's on the car's V5 document.

Corsa D panels aren't very sturdy, so it's not unusual to see minor dings

in random places, including around the exterior door handles.

Talking of which, if the doors rattle when driving along, the cause is probably the B-pillar striker plates – their plastic components wear out and need replacing.



# **BUY & MODIFY**



# **INTERIOR**

Arguably one of the Corsa D VXR's strongest features, the model's interior houses some of the bestseats fitted to a Vauxhall at the factory! Shell-backed Recaros (of course) trimmed in charcoal cloth with Morrocana side bolsters are the order of the day. VXRs also come with a flat-bottomed leather steering wheel, VXR gearknob, alloy pedals and Piano Black trim. Full leather seats were offered as a cost option, complete with red stitching on the highly prized VXRacing edition. This model also benefits from heated front seats, red air vent surrounds, red steering wheel stitching and a numbered plaque

a data there are no major

problems to report inside the cabin of an early Corsa D VXR, but somewhat unsurprisingly, those sexy seats can show signs of premature wear, broken frames and bolsters if mistreated.

Wind noise can be high (but that's normal) and fan motors can squeal, particularly on low speeds. It could be

"TO DATE, THERE ARE NO MAJOR PROBLEMS TO REPORT INSIDE THE CABIN" a motor fault, but is usually nothing to worry about.

Make sure the glovebox closes properly. It'll drop on its own if the catch has failed! Some factory-fit CD30 stereos have issues with overheating, which puts the unit into protection mode. It'll cool down eventually and won't need recoding.







#### **BUYING**



CHASSIS

The VXR's running gear differs considerably from a standard Corsa D, due in the main to lowered and uprated suspension, more responsive variably assisted power steering and reworked ESP (Electronic Stability Programme). Brake discs are 308mm and 264mm at the front and rear respectively, clamped by blue calipers.

Early Corsa D VXRs come with seventeen-inch Y-design alloys and 215/45/17 tyres as standard. A cost option of eighteen-inch V-spoke wheels with 225/35/18 rubber was offered at the model's original point of sale. Arctic and VXRacing Editions wear the eighteens with black paint. There are no serious suspension issues to speak of, but those big rims play havoc with wheel bearings. Rears are prone to problems, but fronts have also been known to fail for fun. Listen on your test drive for metallic rumbling sounds. You'll hear knocking if they're really bad. Jack up the car and give the wheels a wiggle to be sure of where the sound is coming from.

You might notice squealing from the rear brakes. This is probably caused by the pads sticking in their carriers, caused by build-up of brake dust. If the pads aren't worn out, they can simply be cleaned and refitted with copper grease. The handbrake may also squeak when applied. It's nothing to worry about, and merely a characteristic of the car. Despite their large diameter stoppers, early Corsa VXRs are known -----

to be heavy on discs and pads. This is normal – owners like to drive fast and stop just as quickly!

"CORSA VXR OWNERS LIKE TO DRIVE FAST AND STOP JUST AS QUICKLY"

# **BUY & MODIFY**



#### BUYING

## **PRICE**

There are plenty of early Corsa D VXRs out there, but a limited edition might command a premium. Here's what we found on eBay:

#### 2007 VXR

82k miles, Star Silver, Stage 1 map producing 220bhp, induction kit, dump valve, decat exhaust, recent water pump and timing belt change **£3200** 

#### 2007 VXR

73k miles, Arden Blue, full MOT, K&N air filter, aftermarket boost gauge £4300

#### 2008 Arctic Edition

58k miles, number 157 of 500, new intake pipes and air filter, extensive history **£5600** 

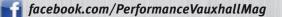
#### TUNING CORSA D VXR

## ENGINE

Corsa D VXR tuning has come a long way since the model's launch in 2007, with examples producing more than 450bhp now commonplace. Tuners all over Europe have spent ten years developing stroker kits, big turbos and performance breathing apparatus for the hot hatch, resulting in it becoming one of the quickest and easiest routes to big power in a threedoor Vauxhall (and that's before we talk about the manufacturer's later Nürburgring edition!). We'll focus on how to extract big bhp out of a Corsa D VXR in a forthcoming edition of Performance Vauxhall, when we'll be celebrating more than a decade of this awesome hot hatch. Subscribe and get the magazine before it hits newsstands (plus you'll receive a few freebies!): bit.ly/subscribepv



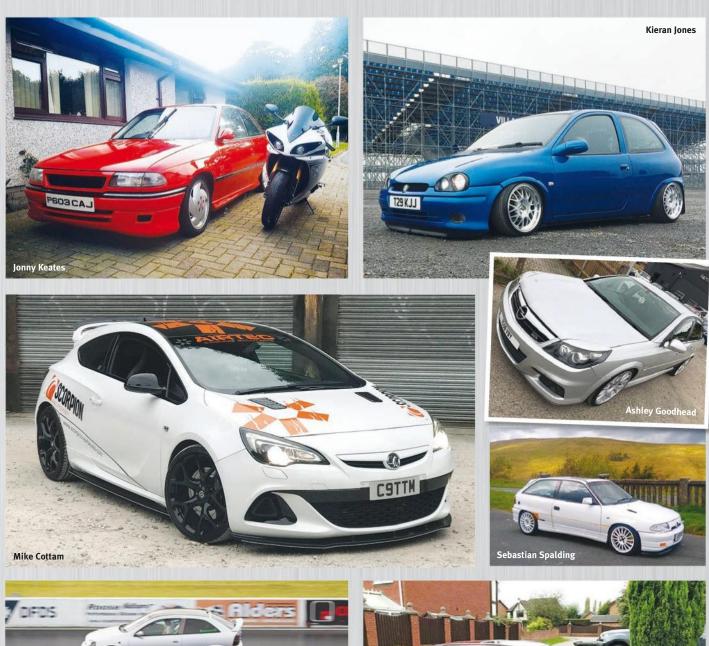




#### @PerformanceVaux

Fancy seeing your Vauxhall in our Hall of Fame? It doesn't matter if you've modified the latest VXR or a classic retro ride, we want to see your cool creation! Email a brief spec, a few pics and a bit about yourself to dan.furr@kelseymedia.co.uk. We'll get back to you ASAP.

#### Readers' cars catching our eye!





















# STAFF CARS

#### THE PV FLEET/THIS ISSUE

DAN IRMSCHER MV6

BOUGHT 2010 STATUS Dan is aiming to have the MVG up and running in time for our next issue!



BOUGHT 2015 STATUS Splitter woes see Vauxhall's supply of fog lamp surrounds rapidly depleted.



BOUGHT 2012 STATUS A new engine wiring harness and fresh leather are to be fitted.... soon!



#### JULIAN ZAFIRA 1.9CDTi 150

BOUGHT 2016 STATUS Taking a 'rest' for this issue, i.e. next to nothing has been done worth reporting!



# BUMP AND GRIND

hose of you who read my last update will recall how the VXR's Renault Espace splitter was scraping on bumps in the road, yanking the whole of the car's lower bumper out of place for fun. I lost bumper grilles and fog light surrounds. Twice. They say everything comes in threes, so I shouldn't be annoyed at the fact that the same thing happened again not long after we went to print.

For the sake of my bank balance, I had little choice but to remove the splitter. It's caused me to spend a pretty penny on replacement parts during the past couple of months, and the fact that the factory brightwork is wrapped gloss black means that I've had to keep visiting All Signs King's Lynn's vinyl wrapping supremo, James Smith, for the fog light surrounds to be changed to a non-silver state.

The splitter added an extra look of aggression to the front of the Vectra, but I'll be the first to admit how impractical the part is. For a start, it prevented the car from being nudged onto the rollers come MOT time, meaning its braking efficiency had to be checked with a decelerometer. The clean bill of health the car received later that day even mentions the splitter as an advisory!

I have to admit, I enjoy driving the car without being forced to wince every

time I crawl over a speed hump. Perhaps it's time to look at buying a Maxton Designs splitter designed specifically for the Vectra VXR?

I've racked up plenty of miles of late, activity highlighted by the 121,121-mile mark being reached not long before I wrote this update. With fresh Falken Azenis FK510 tyres waiting in the wings, I'm looking forward to the next chunk of mega mileage; two years into ownership and I can confirm that this really is a thoroughly enjoyable car to be in charge of. I wouldn't hesitate to recommend a Vectra VXR to anyone interested in a practical performance Vauxhall with bags of torque, killer looks and great tuning potential. I wouldn't mind its steering wheel being easier to remove, though. Having recently bought a re-trimmed, flatbottomed Astra-derived replacement, I'm gagging to get it fitted. There's definitely a knack to doing so without destroying the original part. YouTube tutorials, here I come!

#### THANKS

SC	OS Automotive
01	480 700655
W	ww.sos-automotive.com

All Signs King's Lynn 01553 782594 www.allsignsandprint.co.uk

> It's re-trimmed and flat-bottomed!













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2001, £995. Long MOT, excellent vehicle, reliable 45 MPG, good loading space, lovely interior, low miles, number plate reads W.S.B. World super bike. New discs and service. Please call 07835 651411

#### **ASTRA**

#### ASTRA

**1999, 80,000 Miles, £605.** 5 Door hatchback. 1.6 petrol. Please call 074343 03663, West Suffolk.

#### **ASTRA CONVERTIBLE**

**1997, £250.** Spares or repair, power roof alloys, runs drives but will need trailer interior needs a good clean. Bertone model, electric windows, cup on roof cover down position. Please call 07850 117685

#### **ASTRA ESTATE**

2006, £1,500 ONO. New auto gear box, new battery, lots of history, few miles since last service. Will have a new MOT. Very good clean car. Please call 01628 661299

#### ASTRA MERIT



1995, 36,000 miles, £695. Very good sound original condition, 1400cc, auto, drives perfectly, power steering, stereo, later alloys fitted, original plastic wallet, 7 months MOT. Kent. 01689 861196

#### CARLTON

#### CARLTON GL



**1986, 82,000 miles, £1,500.** 12 months' MOT, very good engine and running gear, very good original body, inside is like new, phone for full details. Suffolk. 07831 462040

#### CAVALIER

#### CAVALIER 1.8

**£2,450.** D Reg, convertible, silver, original, MOT. Please call 07850 209019, Essex.

#### CORSA

#### **CORSA LS 1.4 AUTOMATIC**



**1999, 38,502 Miles, £750.** Has to be a classic in waiting. 11 months MOT. Please call 01617 643690, Lancs.

## CRESTA



**1964, £2,500 ONO.** Blue-Good Solid Car. Sorn-Drives-Needs New Bonnet Hinges 07926380790

#### **D-TYPE**

#### 14 DX



1936, £12,950 ono. All original, owner selling due to poor health, owned car past 11 years. Very reliable rebuilt engine, gear box and clutch. Car on manx plates. Isle Of Man. 01624 8133553 / 07624 451359 (SN)

#### FIRENZA



**1971, £3,750 ONO.** 2.3, slant four engine MOT April 2018. Alloy wheels electronic ignition front disc brakes, electric fuel pump, electric fan four branch manifold. Some spares. Please call 01442 394839

#### NOVA

#### NOVA

1987, £300 ono. 4 door saloon. New wings plus other parts. Lots of spares. Runs. Northants. 01536 269386 or 07842 723923 (PB)

#### NOVA

**1987, £150.** Spares or repair. Runs. On Sorn. Lots of spares. Northants. 01536 269386 or 07842 723923 (RB)



OMEGA

**OMEGA MV6** 

2001, £650 ono. Auto 2.6, metallic silver,

MOT till Feb 2018. This car is in lovely

condition. Only a couple of age related

Drives nice and smooth. Worcestershire.

marks, interior has no rips or tears.

1985, 20,950 Miles, £3,500 ONO.

**SENATOR 24V** 

Purchased in 1989, only 30 licensed in the UK. All MOT's until September 2018.

Quite beautiful condition, genuine luxury saloon. Please call 01214 583020

1993, 76,000 Miles, £0FFERS. One of

the last built in good all round condition

drives beautifully totally reliable, new

2018. Much paperwork. Please call

2006, 93,000 Miles, £1,700. Lots of

history, new timing belt, just serviced

wheels. Please call 07905 601490

mot'd July 2018, newly refurbished 17"

01303 268289.

TIGRA

**TIGRA 1.4** 

battery some spares. MOT until August

07881 775521 (SN)

SENATOR

**SENATOR 3.0 CDI** 

#### VECTRA

#### **VECTRA 2.0 SRI**



2000, £300. No MOT. SORNED. Excellent runner. Bodywork good. Alloys with Avon tyres. Recent head gasket and cam belt. Loads of paperwork. Full V5. Lincolnshire. 07591 657789 (PB)

#### **VECTRA VXR**



2006, 87,626 miles, £POA. 250 BHP, 1 owner, very good condition, 12 months MOT, genuine car and viewing highly recommended, Vauxhall FSH, 1/2 leather, CD player. 07779 330084 (SN)

#### VELOX



**1954, £2,000.** Straight six engine, rusty chassis, all parts included (some brand new) plus extras, restoration required, reg plate valued at £1,200, Royston, Herts. Please call 07973 764345

#### VICTOR

#### VICTOR

**1960, £250.** Spares or repair. Please call 01964 601028, East Yorkshire.

#### **CARS WANTED**

#### VAUXHALL F TYPE

**1958-61, WANTED.** Victor estate in good condition or light reason. Please call 07984 960286.

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**1990, WANTED.** Small to medium size (1000-2000cc), modern classic, up to 25 years old, in excellent condition, for disabled driver!. Warks. 07939 553306 (RB)

#### VAUXHALL VICTOR

**1961, £Up to £7,000, WANTED.** Estate or saloon. 'F' type. Essex. 07984 960286 (PB)

#### PARTS & ACCESSORIES FOR SALE

**K155 VXL NUMBER PLATE £595.** Cherished plate on retention ideal for Vauxhall enthusiasts. Please call 07428 999102, Adlesbury.

#### VAUXHALL PARTS

**1950'S, £POA.** Clear out, gaskets, water pump, gearbox , hubs, door parts, grille lights, badges, axles, gross ply tyres, glass other parts. Please call 01524 843902

#### **REMOTE BRAKE SERVO**



**£40.** Fits Cooper S etc. Please call 07979 406536.

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**£45.** In very good condition. 01454 321386 or 07523327345

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**£15.** One pair of stainless steel air cleaners, 5 1/4 inch diameter by 1 inch deep. To fit 1 1/2 inch. As new, wouldn't fit in my engine bay. Please call 01909 721464

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**£POA.** Tyres in good condition. Plus various selection of 11-22.5 wheels and tyres. Plus a large selection of 10 stud tubeless wheel rims. Please call 01524 241994, N. Lancashire

#### SET OF 4 CHROME STEEL WHEELS

**£400.** Caps (6"x15") with wide white radials + spare. Chevy bolt pattern. Please call 01416 382054

#### STEEL WHEELS



**£100.** Nice set of 6.5 X 16 steel wheels 4 X 100 stud pattern, Ideal for banding. Please call 07884 184279

#### SU PETROL PUMP



**£20.** Type AUB 182, in good working order. Please call 01454 313768 or 07816 952524. Bristol.

#### LITERATURE FOR SALE

#### COLLECTION OF CAR BOOKS

**£POA.** Manuals, handbook magazines. Please call 01507 610016, Lincs.

#### VAUXHALL SERVICE MANUAL

**£25.** Victor series July 1962. Victor ventora November 1968. Victor ventora 1973. Please call 01642 454882

#### MISCELLANEOUS FOR SALE

#### CAMPING TRAILER



**£50.** 4'x3' camping trailer, mini hubs and 10"wheels, very good condition, hitch lock and cover painted orange to match my Type 2. Please Call. 07557 414649

#### **GRILLE BADGES**



**£POA.** Royal Army Service Corps St Christopher grille badge and Porsche, Mercedes, National Trust, RAC, AA. Some older type badges available. Can post. Beds. 01234 213871

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**£POA.** Personalised model made to your own specification from supplied photographs if I have the model in my collection, any enquiry after 5pm. Northants. 01280 701266

#### L2 MDL

**£800.** Character number plate. On retention, immediate transfer. No offers. Bedfordshire. 07989 476930

#### MOTORSPORT MAGAZINES

**1981 to 2006, £OFFERS.** For sale. 07919 028163

#### **MYFORD SUPER 7 LATHE**

**£1,100 ono.** On stand, four jaw, faceplate plus lots of tooling and spares. Can deliver reasonable distance. Ideal for garage/workshop. Essex. 07596 108060

#### N9 HDA FOR SALE



£600 ono. On retention, complete with number plates, may PX swop etc. rosemary646@btinterner.com

#### NUMBER PLATE

**£250.** B6 PED, on retention. Dorset. 01305 269841

#### NUMBER PLATE

£850. W400 RKS. On Retention document. Valid to 17/5/2025. Please call 01603 715555, Norfolk.

PRESTIGE REGISTRATION NUMBERS



£3,800 ono. Available singly on 10 year retention certificates. NDF 80. NBK 91. Ready for immediate transfer. 07840 400569



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# VAUXHALL NEXT ISSUE...



# **NUMBERS DESCRIPTION DESCR**

# PLUS CAR OF THE YEAR WE CROWN YOUR CHAMPION!



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INCLUDING

PREPARING YOUR CAR FOR

ROLLING ROADS

All information correct at time of going to press, but we might be too busy trying to shoehorn a V8 into the MV6 while punch drunk on festive cheer to get around to producing the first Performance Vauxhall of 2018.



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Visit our online store where we keep an extensive inventory of Intercoolers & Silicone Hoses suited for all petrolheads alike! For our gallery, be sure to follow us on Facebook & Instagram!



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# BRAKE UPGRADE KITS AVAILABLE FROM 286MM 4 POT TO 444MM 12 POT

# The Forged Monoblock technology is standard on all front and majority of rear KSport brake kits from 286mm up to 444mm.

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The new KSport calipers are a huge step up over the design traditionally used in brake kits within the fast road and track market. Rather than being a two piece cast caliper, KSport now use the same Forged Monoblock technology only normally found in the top end supercars and high end race cars. The advantage of using Forged Monoblock rather than the usual two piece cast design is much greater caliper rigidity.

Every step forward in reducing caliper flex can be felt directly through the drivers foot as an improved and firmer pedal, with more immediate braking response. Excessive pedal movement is often due to the caliper halves flexing apart, whereas the KSport Forged Monoblock design ensures all pressure applied to the pedal is transferred directly to pushing the pads against the rotors.

KSport also utilise a caliper retaining piece that acts as a substantial bridging support to further increase rigidity.



# AN ESSENTIAL UPGRADE TO FAST ROAD AND TRACKDAY MACHINES

Each kit comprises of all parts required for fitting

- High rigidity aluminium calipers
- > Precision machined lightweight bells
- > Large diameter racing grooved rotors
- > High quality braided brake hoses

ÖHLINS

Mounting brackets and complete install pack

ILABLE	286mm	304mm	330mm	356mm
	6 Pot	6 Pot	8 Pot	8 Pot
<b>KITS AVA</b>	380mm	<b>400mm</b>	<b>421mm</b>	444mm
	8 Pot	8 Pot	8 Pot	12 Pot

# **WWW.KSPORT.CO.UK** CALL 01274 683 633

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