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car



EXCLUSIVE!

ID.3 vs Golf GTI

VW's new EV and hot hatch tested

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AUGUST
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Official WLTP fuel consumption figures for the Audi A5 Range in mpg (l/100km):

Figures shown are for comparability purposes; only compare fuel consumption and CO₂ figures with other vehicles tested to the same technical procedures. variations in weather, driving styles and vehicle load. Data correct at 1 July 2020. Figures quoted are for a range of configurations and are subject to change. Models shown include optional extras.



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WLTP Combined 34.0 (8.3) – 55.4 (5.1). WLTP CO₂ emissions: 186 – 133g/km.

These figures may not reflect real life driving results, which will depend upon a number of factors including the accessories fitted (post-registration), to change due to ongoing approvals/changes. Please consult your Audi Centre for further information. Image for illustrative purposes only.

car

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**SF90: can its new
986bhp hypercar
future-proof
Ferrari?**

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Welcome

‘Miniature wrenches, fiddly diffs and tyre-shredding drifts’

If Zoom video conferencing is having a good pandemic (on the last day of January its share value was \$76; by 26 June it was \$257), Tamiya isn't far behind. Since Covid-19 sent us all home, UK demand for the maker's detailed and brilliantly executed kits has consistently matched the kind of rush it normally sees in the run-up to Christmas.

For readers of a certain age, Tamiya is synonymous with the radio-controlled buggies that exploded in popularity in the '80s. Hornet. Monster Beetle. Grasshopper. If, as a pre-teen, you spent your time assembling little oil-filled dampers and launching your finished buggy from ramps of planks and bricks, those names are as familiar – as magical – as 959, Countach and Testarossa. And when you suddenly find yourself with a lot of leisure time (and some faintly depressing current affairs), what better escapism than diving back into a world of miniature wrenches, fiddly differentials and tyre-shredding drifts?

Obsessed with Tamiya from the moment I got my first catalogue, I've come to think of the model company as a kind of Honda twin. Both were founded in the aftermath of the Second World War: Tamiya in '46 as a sawmill that diversified into wooden model kits; Honda in the same year as a maker of bicycles with bolt-on petrol engines. Both found their feet in the '60s: Tamiya with a move to plastic kits; Honda via world-leading engineering, race success and an inspired move into the North American market with its motorcycles. Both had heydays in the '80s: Tamiya with the

radio-controlled buggy boom it helped create (the '79 Sand Scorcher and Rough Rider are seen as landmark releases); Honda with cars like the CRX and NSX, its fine F1 engines of the period and a ramping-up of motorcycle production that saw it hit a cumulative total of 50 million units in 1984.

Both have used genius slogans: Tamiya's 'First in quality around the world'; Honda's 'You meet the nicest people on a Honda'. Both have long prioritised quality over a lightweight or cut-price approach. Both have dabbled in expensive, idiosyncratic and sometimes unsuccessful engineering solutions: Tamiya with its flawed Avante flagship; Honda with the slow-selling hybrid NSX and its perverse NR four-stroke and 'upside-down' two-stroke NSR 500cc Grand Prix motorcycles. Both owe much of their success to bold corporate identities and strong visual branding: Tamiya's logo is a graphical masterpiece and its box lids and build manuals works of art in their own right (when Caterham overhauled its self-build manual, it looked to Tamiya's instructions); Honda's wing has graced every motorcycle it's built since the late '40s.

Pleasing, then, that my pandemic home 'office' (a draughty garage with no heating or windows) is home to an actual Honda and more distracting Tamiya Hondas than is ideal for peak productivity.

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Ben Miller
Editor

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Dream cars demand dream teams – our first drive of Ferrari's SF90 (p58) is brought to you by **Chris Chilton** and **Richard Pardon**.



We continue to fail to repress the irrepressible **Georg Kacher**; the big news and early drives continue to flow (p8, p38, p72...).



Newshound, digital native, mean hockey player – **Tim Pollard** has many strings to his bow, including group testing (p106).

Insider

THE MONTH ACCORDING TO



Luxury brands for sale!

One once indulgent owner!

Could coronavirus force VW to sell Lamborghini, Bentley and Bugatti? **Georg Kacher** investigates

Volkswagen Group is considering selling the crown jewels: Lamborghini, Bentley and Bugatti. Some or all of these brands could be on the block, along with Ducati motorcycles and the Italdesign consultancy, as the novel coronavirus pandemic triggers some novel thinking.

The five operations are collectively valued at circa €16bn, according to the Roland Berger business consultancy. But that's theoretical, dependent on whether there's a serious buyer, whether Volkswagen will truly sell, and whether any agreement can be hammered out.

The boutique car brands were acquired in a '90s spending spree, when Ferdinand Piëch was chairman of VW's managing board. He went on to chair VW's supervisory board, but things have changed since the automotive legend's grip loosened in 2015. (Piëch died last year.)

Ex-group finance guy Hans-Dieter Pötsch is now in charge of oversight, with Herbert Diess CEO of day-to-day operations. There's been friction between the two camps, with Diess under fire for delays to the Mk8 Golf and ID.3's introduction.

And in June, Diess had to issue an apology for accusing the supervisory board of leaking confidential info; he was swiftly stood down from running the VW brand to focus solely on the Group. A priority is to map out a clear future for the boutique brands.

'Five years ago, money was no object and VW could easily afford a handful of hobby brands,' says a former board member. 'But since Audi lost its mojo and the diesel scandal devoured €30bn, all non-essential activities are currently subject to review.'

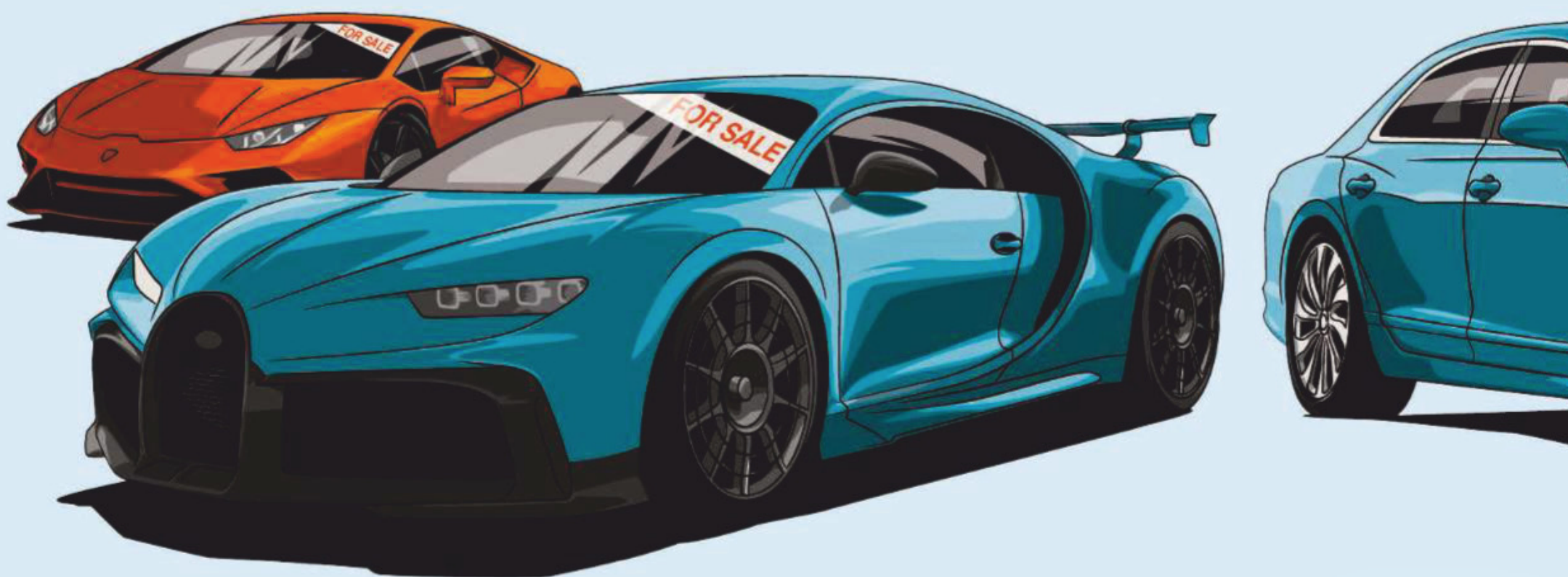
Over the past two decades, the VW Group has passed on plenty of parts and know-how to its luxury trio, but a grand divorce could be spurred by the pending transition to EVs. And how the luxury brands embrace pure electric is not yet signed off, although Bentley is adamant it will deliver its first EV in five or six years.

To put the potential €16bn disposal fee into context, that's half the €31.3bn cost of the diesel emissions scandal and about a quarter of VW's investment in electric vehicles and digitalisation.

In late 2018, Lamborghini was valued at €8bn by a consortium of Italian and Asian investors; one which subsequently pulled out because of uncertainties around the funding of the next-gen ►

Illustration: Chris Rathbone

Is VW's Herbert Diess plotting the sale of its 200mph 'hobby brands'?



The house that Piëch built, fuelled by a love of going very, very fast

sports cars and the Urus licensing agreement's terms. Rumours in early 2019 suggested Investindustrial (which co-owns Aston Martin) had put out feelers on Lambo and Ducati. Around this time, Diess was asked under which conditions he might dispose of Lamborghini. 'If a Chinese investor comes along with a bundle of cash, I would not rule out succumbing to persuasion,' he replied frankly.

This spring, new suitors from the Arab and Asian spheres emerged. 'This is not a good time to sell a car manufacturer, but it is a good time to buy,' says a source in Italy. 'As far as we understand, Lamborghini is currently worth around

€6bn, give or take a little. Bentley has been provisionally pegged at €8bn, Bugatti and Ducati may fetch up to €1bn each, Italdesign would probably change hands at €200m.

'But these numbers must be taken with a pinch of salt because they depend on the final agreement concerning long-term parts supply and shared capacity. From what I gather, the Group wants to honour these commitments only until Lambo's current product portfolio expires.'

Volkswagen's managing board has now signed off its plan for the next wave of Lambos. This includes an updated version of the V12 engine crucial for the Aventador, Lambo's

THE VW STABLE 2020: WHO'S HOT? WHO COULD BE OUT IN THE COLD?



VOLKSWAGEN

Late to SUVs but Tiguan is VW's top-seller; T-Roc and T-Cross shift 500k. Operating profit up 17%, but headwinds galore



AUDI

Caught out by switch to WLTP testing; bottle-necks hurt sales and profits. Staid planners need a hit like TT of old



PORSCHE

VW's profit engine shows no sign of stalling: €4.2bn return beat the VW brand's. Embracing electric with gusto, too



SKODA

Czech machine humbles some siblings: sales growth with 8% return twice VW's margin – and that's before new Octavia



SEAT

Sales up 10% and record profits, with posh Cupra spin-off hitting 25k. But turnaround king Luca de Meo has left for Renault



BENTLEY

Excelling pre-crisis with 11k record sales powered by Conti GT and the SUV. But lost £20m a week during shutdown



BUGATTI

VW hides its hypercar satellite's financials, but said Molsheim delivered 82 Chirons. The question remains: what next?



LAMBORGHINI

Urus SUV has turbo'd Lambo; sales up 42% and big profits. Heart says new supercars, head says fund another SUV



ITALDESIGN

Sore thumb #1: design consultancy that's now a Giugiaro-free zone. €1m Nissan GT-R 50 most recent headline-grabber



DUCATI

Sore thumb #2: flagship Panigale the Ferrari of superbikes. More than 50,000 sales, €52m operating profit in 2019



Lamborghini is currently worth around €6bn, Bentley €8bn and Bugatti €1bn

own bespoke V8, and pooled supercar componentry.

Sant'Agata's 2019 earnings pleased Diess, but the supervisory board reportedly wants to keep all options open as protection against further penalty payments and a prolonged downturn.

The other Italian outpost is Ducati. Diess is an avid rider, but knows two-wheelers are not core business (nor are trucks, which puts a question mark over ailing MAN). If a buyer can be found, freeing the Italian marques is a real option. A similar fate is on the cards for Bugatti, which requires a substantial influx of capital. Bentley, like Lamborghini, posted strong results before the pandemic struck. Demand was bullish, and the facelifted Bentayga (see p30) is coming. But coronavirus has blown a hole in the finances, triggering 1000 redundancies, and work on the next-generation products has only just begun.

A Bentley source vehemently denied the brand was for sale. 'We have complete support from the VW board. Bentley is the world's biggest luxury brand, and we're in growth markets. Without Covid, Bentley would have delivered record sales and profits this year. We still will – just at a later date.'

Crucially, what do the owners – the Porsche and Piëch families, who control the Group with the state of Lower Saxony – think? Wolfgang Porsche has expressed his solidarity with Lamborghini, and spoken out against Bentley prior to its resurgence. Ducati does not really figure on the owners' radar, and Italdesign is little more than a haven for special projects. And of course Bugatti's champion – Ferdinand Piëch – is gone. But it's difficult to fathom their intentions for each brand.

Regardless, Volkswagen Group needs an enormous war chest to fund the zero-emissions future across its 11 million annual sales. Diess was recruited to help cut costs, which will involve a ferociously expensive battle with powerful trade unions. And if the US courts do confirm more emissions-related penalty payments initiated by the states of Florida and Utah, VW could be on the hook for billions more in fines. It's enough to make executives think the previously unthinkable.



Georg Kacher's inside line

Project Titan, the sequel: Apple looks to be reviving its on/off iCar project

► Apple started pondering an iCar back in 2008, then in 2014 put together a team of about 1000 software specialists, battery experts and automotive engineers to give life to Project Titan, aka the Apple iCar. But in mid-2019 boss Tim Cook pulled the plug, without ever formally declaring the project dead.

Apple had underestimated the challenge of building a car to high quality standards; of setting up an efficient yet personal concierge-type online sales and service network; and of securing double-digit profit margins that would justify taking a multi-billion investment risk.

Another big obstacle was that no potential partner – among them VW, BMW, Mercedes, Nissan, even McLaren – would allow Apple to control the customer experience.

► Apple would still love to beat both the car makers and its tech rivals in terms of autonomous driving software and hardware. Apple is now

reportedly evaluating two alternative ways of reviving Titan: design its own car from top to bottom; or develop a digital data box – including cameras, sensors and a bespoke interface – that would be offered to car makers as an autonomous driving package.

► This spring, Apple approved fresh funds and started hiring talent in the fields of electrification, autonomy, AI, VR and digitalisation. A former Apple executive suggests Titan needs around 3000 people short-term to get into gear again, doubling by 2022.

► According to some German EV insiders, Apple's special projects team in Cupertino has 2024 as a target date for completing a rival to the Tesla Model 3, priced from \$40k. Rumours suggest it would come in three sizes, all with a low-drag body on a skateboard-style chassis, with clamshell doors and an all-in-one digital operating platform.

Model 3 is in Apple's sights



The unthinkable: M5 goes electric

Believe it – Munich is brewing up a near-1000bhp electric powerhouse for 2024's all-new M5. By **Georg Kacher**

Factfile

POWERTRAIN

135kWh battery (est),
three e-motors, 990bhp (est),
all-wheel drive

CHASSIS

Steel, aluminium and
composite monocoque

DUE
2024



Illustration: Avaravarii



1 FLYING LIKE A G60

As the facelifted F90 5-series and M5 go on sale now with a cleaner look, it's the next-gen G60 that'll ring the changes. The all-new 5-series arrives in the autumn of 2023, with the G60 M5 due a year later in two states of electrification: plug-in hybrid and pure electric. Who'd have thought it?



2 TESTING, TESTING...

BMW is openly working on a 'power BEV', using a 5-series mule. It has three e-motors borrowed from the powertrain we'll see in the electric i4 and the iNext SUV. One drives the front axle while the rear wheels get a motor each. Numbers? 711bhp and sub-3.0sec 0-62mph. For 2024's electric M5, BMW is targeting 800-volt architecture and 330bhp per e-motor, or 990bhp in total...



3 PLAYING THE FIELD

BMW acknowledges that the rate of electrification won't be the same in every market, so alongside the e-M5 it'll offer a 'power PHEV' M5. The hybrid will use the same powertrain as the upcoming X8 M – a twin-turbo V8 and around 200bhp of e-boost for a total of some 750bhp.

4 SHARING'S CARING

The zero-emission M5 dives deep into the BMW and Rolls-Royce parts pool. Like the eDrive 7-series, due in 2023, it'll use the CLAR WE platform. Commonality extends to the Rolls-Royce family; the current Phantom will go electric in very small numbers from in 2022. A silent, battery-electric Cullinan is due to follow in 2027.



Kai Langer
Head of
BMW i design

'Do not worry about an electric BMW not being fun to drive. It's actually kind of easy, because of the fine control and performance that an electric drivetrain offers. So, yes, cars like the i4 will be fun, because prioritising driving pleasure has served us very well in the past. That's something that goes to the bone with BMW.'

HANS MEZGER | 1929 - 2020

Porsche's one-man powerhouse

If you love Porsche engines, chances are you love them because of Hans Mezger's engineering genius

Hans Mezger, who passed away on 10 June, was one of the most dedicated and successful engineers in the history of a company stuffed with dedicated, successful engineers. Over the course of a 37-year career he fended off job offers from all sides, telling us in a 2012 interview: 'Porsche was my first company, and my last.'

Mezger was born on 18 November 1929 in Ottmarsheim, a village north of Stuttgart. After studying mechanical engineering at Stuttgart university, Mezger joined Porsche on 1 October 1956, starting his career in diesel engine development (yep, really).

From then until his retirement in 1993, Mezger's success was relentless. He pretty much perfected the flat-six engine configuration synonymous with the marque's 911 sports car, his mastery of the motor such that, to many, his

is known simply as 'the Mezger'.

Motorsport achievements included an instrumental role in the development of the iconic 917 racer and pioneering turbocharging in racing (not to mention its translation to the road, in the form of the 930-generation 911 Turbo).

'When we developed the Turbo, we expected only 400 cars to be built [to meet FIA rules]. But it's been so successful that we've never stopped,' said Mezger. It's a mark of the lasting impact of his creation that today Porsche's fast EVs wear the Turbo name, despite not having engines...

Mezger's crowning achievement? Perhaps the 1.5-litre TAG-Porsche V6s, which rampaged through mid-'80s turbo-era Formula 1, cleaning up in the back of the McLarens of Niki Lauda and Alain Prost.

Long after retiring, he still owned a 911 Carrera 3.0 in Glacier White. The man bled Porsche.



Miss the old Land Rover Defender?

Land Rover has a new Defender. But if you prefer the old one, how about Ineos Automotive's Grenadier? By **Colin Overland**

Land Rover's new Defender is an altogether more road-capable, sophisticated and refined vehicle than its predecessor. But if you love box-section ladder frames and beam axles, it won't be for you. Step forward the Ineos Grenadier.

'Number one focus was off-road mobility and capability,' says the British firm's commercial director, Mark Tennant. 'An off-road vehicle that doesn't keep on going and provide years of faithful service isn't really doing the job. The Grenadier's designed first and foremost to be a working tool, but you shouldn't have to suffer for that utility – there's connectivity, screens, seat comfort, plenty of room... It's not a throwback. It's a modern vehicle built to a certain style.'

It's boxy, with prominent wheelarches, low bonnet, near-flat glass, external hinges, utility rails, asymmetric rear doors, a ladder to the roof, exposed tie bars, bash plates and steel wheels.

Design chief Toby Ecuier says: 'For inspiration we looked at other 4x4s, tractors, helicopters – all sorts of different hard-working vehicles. Then we designed an honest, uncomplicated vehicle.'

Your engine options are a 3.0-litre straight-six petrol or diesel from BMW, and Ineos has a deal that covers the next generation of engines. Transmissions are from ZF, axles from tractor-makers Carraro, and a lot of the development work has been done by Magna, the same people who make the G-Class for Mercedes. In all, around 160 suppliers are involved.

Assembly involves bodies and chassis being built in Portugal, before the cars are completed at a purpose-built factory in Bridgend, Wales.

How much? 'Durability isn't cheap. But the G-Class has taken a path into the stratosphere from a price point of view,' says Tennant. 'We don't want to go that high.' When sales start next year, expect to pay at least £35k.

In time the Grenadier range will comprise this wagon, a short-wheelbase version and a double-cab pick-up with an extended wheelbase.

For more on Ineos Automotive's ambitious expansion plans, see carmagazine.co.uk



CAR MATHS

Look out: it's the Arteon you want

VW facelifts the Arteon – and gifts us an R and a caddish shooting brake

GOLF MK8 TECH INSIDE

Revised Arteon gets new materials, more touchscreen controls and latest-gen digital instruments, all from the Mk8 Golf. IQ.Drive takes a step up with Travel Assist, merging several self-driving systems for easy, assisted progress.



STICKING THE BOOT IN

Dramatic Shooting Brake version stretches the rear glasshouse for more rear headroom and boot versatility. New 215bhp eHybrid version has 34 miles of e-range and diesels get twice the AdBlue dosing. Nerdy.





LET'S GO TO WORK

Land Rover has unveiled a commercial version of the new Defender, in both 90 and longer 110 forms. Called Hard Top, it has just

one row of seats. Like the regular Defender, the Hard Top's towing limit is a handy 3500kg. Prices will start at £35,500 plus VAT.



Separated at birth

Fancy Citroën's new C4 or Vauxhall's new Mokka?



MY EYES!

Citroën C4

New C4 attempts to merge family hatch and crossover. There are bits of CXperience concept in there but the Cactus's Airbumps have vanished. The overwrought rear end is meant to be assertive and muscular – looks Pontiac Aztek.

Vauxhall Mokka

Outgoing Mokka was duller than watching paint dry. New car is the first production model with the Vizor face, and Vauxhall's recent fascination with two-tone colours means brave options like this Manta-inspired combo.

REVOLUTIONARY?

Citroën C4

Notably less funky than the C3 inside, but Citroën's squircle steering wheel remains and fresh digital instruments debut. PSA also sacked the person who used to put the air-con controls onto a laggy touchscreen. Progress.

Vauxhall Mokka

There are bits of Corsa inside, but design boss Mark Adams has spearheaded a minimalistic Pure Panel infotainment design that merges two large screens together, like in a VW Touareg – 'detox' is the buzzword.

CLEVER, AT ALL?

Citroën C4

Suite of Advanced Comfort kit includes super-squidgy seats and Progressive Hydraulic Cushion suspension. A new 'smart pad support' system means your front passenger can fix a tablet to the dashboard.

Vauxhall Mokka

CMP platform shared with the C4 means shorter overhangs and a handy 120kg weight loss compared to the old Mokka. IntelliLux matrix LED headlights and Level 2-and-a-bit driving assistance tech are available, too.

R YOU READY?

Oh yes. New R gets 316bhp and all-wheel drive to put the Arteon on your map. No e-assist like the Touareg R, but you get a proper ESC-off function and performance-driven torque vectoring. Available in both hatch and estate guises.

Despite – or because of? – tiny UK sales, VW's throwing everything at the refreshed Arteon, on sale autumn 2020

+



=





Illustration Chris Rathbone

Hyundai: the gloves come off

Performance cars, EVs, design to shame BMW... On every front Hyundai is on the offensive, and thinking big. By **Jake Groves**

While Hyundai quietly churns out dependable cars for the masses, it's what's bubbling just beneath the surface that's of real interest. Not content with shifting big numbers – in 2019 it out-sold Citroën, Peugeot, Skoda and Seat in the UK – it's now targeting a holy trinity to get enthusiasts interested: bold design, ambitious investment in next-gen tech, and a performance-car wing with its sights set on BMW's M division...

N: THE NEW M DIVISION

Prior to 2013, the letter N meant nothing. Now, thanks to success in World Rally – Hyundai holds the manufacturers' crown – and TCR customer racing programmes, not to mention the lauded i30 N hot hatch, N has become a respected Hyundai satellite.

Now, under former BMW M boss Albert Biermann, the N portfolio is looking to expand. Biermann's efforts have been boosted by another Munich veteran, Thomas Schemera, who since 2018 has been Hyundai's head of high-performance cars and is now also boss of product strategy. The i20 N is already confirmed, and N versions of the Kona and Tucson have been spotted lapping the Nürburgring.

The i20 N will need to be superb – it faces some fierce competition, not least from the Ford Fiesta ST. 'The i20 N is related to our WRC car – it will be the best in segment,' Schemera boldly tells CAR. 'It is always our target. You see, our way of business is not to copy and paste, because we don't think that all of our competitors are doing things right. We go our own way,' he adds.

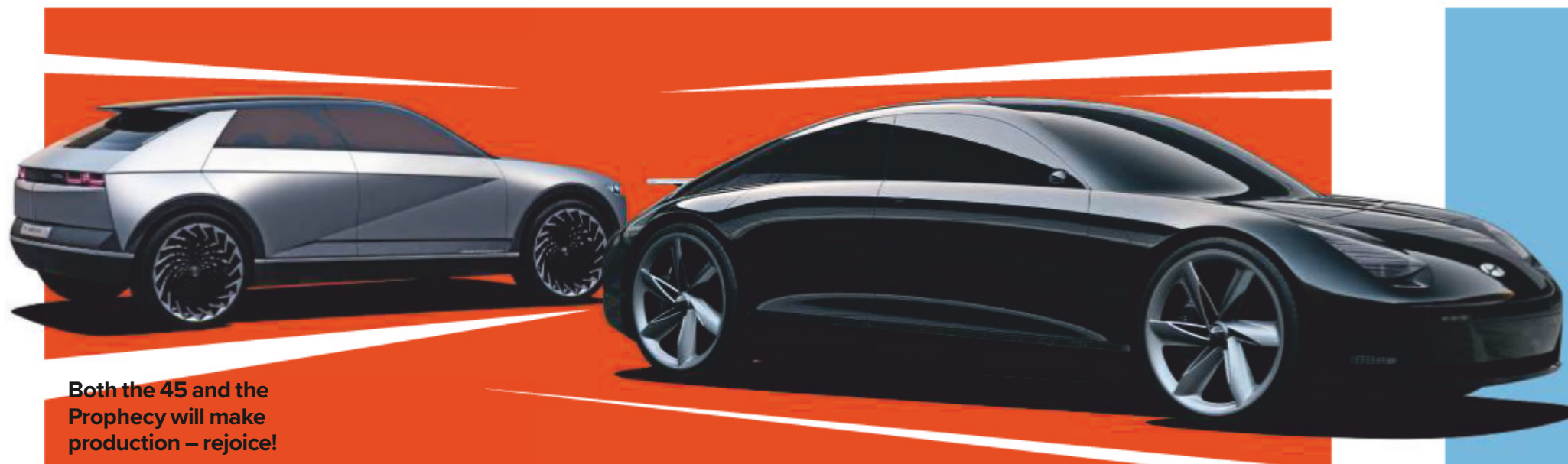
Along with more conventional models getting the N treatment, Schemera is aware that the brand needs a show-stopper to bridge the gap between the road cars and its motorsport activities. The RM19 is both that bridge and a preview of things to come. Officially, it's a test bed for Hyundai's performance-car expertise, and elements of it will be distilled into future production cars. But there's more to it ►



'The i20 N is related to our WRC car – it will be the best in its class'

Thomas Schemera

Incoming! i30 N (front) provides the passion, while electric 45 (centre) and Prophecy add beauty



Both the 45 and the Prophecy will make production – rejoice!

than that. Schemera hints that an N halo car ‘may be Veloster-based’, with ‘either a combustion engine or battery power’.

‘The future of N for sure in the long run is electrification,’ he adds. ‘Without it, you cannot survive – that is a matter of fact. But to what extent that’s true hasn’t been decided yet. If we apply a technology which is costly now, then we compromise some of the affordability expected by our customers. But with our architectures we can be flexible, according to market needs. I wouldn’t say we would necessarily have to go full electric, no. We are now coming up with modular vehicles that could be plug-in hybrid, electric or range-extender.’

Sound familiar? BMW’s future-proofing strategy is very similar – another comparison that proves just how far Hyundai has come, and how ambitious it remains.

THE EX-BENTLEY MAN BRINGING THE BEAUTY

The Prophecy and 45 concepts are both so pretty they make the idea of an all-electric future infinitely more palatable. But while both are easy on the eye, they couldn’t be more different: the Prophecy with its smooth, organic silhouette; the 45 with its *Blade Runner* lines, creases and stark surfaces.

SangYup Lee, head of Hyundai’s design centre and the man who penned the Bentley Bentayga, says: ‘The Prophecy and 45 show what we can do with an electric platform. They might be very different but they have timeless design in common. And there is production-intended design on both of these cars.’

And Lee means it; we’ve already spotted test mules of a production-spec 45 out in the wild, designed to rival the Honda E and Mini Electric.

While the 45 harks back to the ’70s Pony Coupe in its proportions, the futuristic Prophecy draws inspiration from an older chapter in history. ‘Instead of just creating a very typical four-door saloon, I wanted to create something unique. For me, the

‘The ’30s were optimistic, so why not be inspired by that period?’

SangYup Lee



‘From the ix35 system to the Nexo we halved the cost of development’

Dr Sae-Hoon Kim



’30s era of streamlined design was an optimistic age, so why not make something inspired by that period?’

The Prophecy is also evidence of Hyundai’s discreet approach to technology. ‘Technology has been viewed as upscale and sophisticated in the past, so you’d want to display it,’ explains Lee. ‘But this perception has now been completely reversed. Now, we prioritise which technology should be presented at all times, while hiding functions that are not used every day.’

SERIOUS INVESTMENT IN FUTURE TECH

The 45 and Prophecy will be battery-electric, but Hyundai is also a passionate supporter of hydrogen fuel cells. Dr Sae-Hoon Kim, VP and head of fuel cells, says: ‘We have always seen fuel cells as the ultimate future technology and, while other companies say that fuel-cell technology is for the far future, we don’t think like that.’

Hyundai is part of the Hydrogen Council (a group of car makers, fuel companies and infrastructure businesses) established to help accelerate fuel-cell development. It is also one of only three manufacturers to have put a fuel-cell production car on sale, and it recently put aside \$6.7bn to help fund a ramping-up of fuel-cell production by 2030. ‘Our vision is to have produced half a million fuel-cell cars by then, and that will obviously not be through one model,’ says Kim.

The biggest challenge for Hyundai is making fuel cells profitable. Huge investment and modest sales are not good business, but Kim is confident progress is being made: ‘From our ix35 system to the Nexo we halved the cost of development, and for the next generation we are working on halving that cost again.’

If costs are coming down, is a high-performance fuel-cell Hyundai a possibility? The RM19 (right) might be the perfect starting point for the fuel-cell and performance arms to work together on a truly game-changing Hyundai.

HYUNDAI'S RM19: SERIOUS BUSINESS

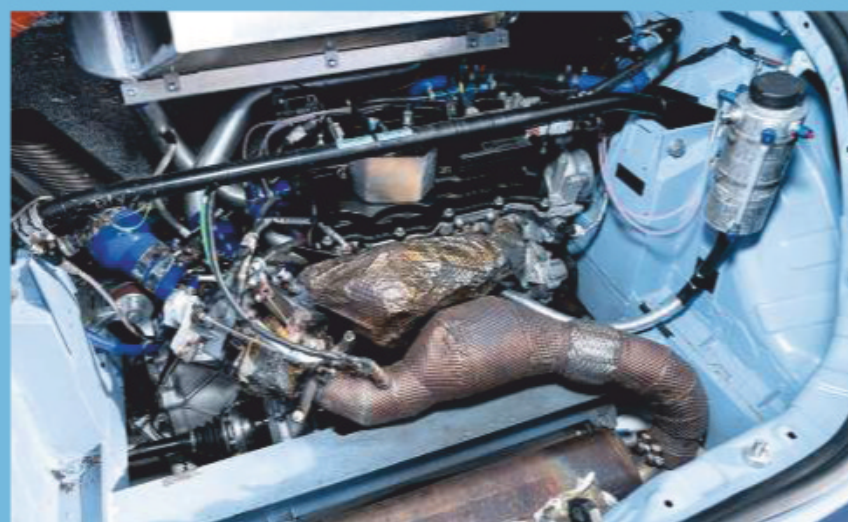
Mid-engined, rear-drive, wild looking and blessed with extreme performance – the RM19, a radical concept racer living a double life, is all of these things. Ask anyone at Hyundai and they'll call it a development car, but it's also our first look at a top-shelf halo model for N division. It's currently powered by a TCR-spec 2.0-litre turbo four making 385bhp, for a 0-62mph time under four seconds and a handy 155mph top speed.

Tech from the motorsport division is already trickling down to Hyundai's more pedestrian models. The latest dual-clutch auto in the new i20, for instance, draws on motorsport experience. 'It shows that motorsport developments are necessary for our high-performance segment but also for normal production cars,' says

Schemera. But however advanced the tech, Schemera is well aware that the production version of the RM19 – expected in 2021 – needs to be cautiously priced. 'It's clear we cannot compare our brand values to BMW just yet. If we were to sell it at a high price, it may be difficult to sell it as a Hyundai.'

The brand is also exploring hybrid, BEV and FCEV powertrain options via the RM19 for future halo cars.

'The three electrification technologies have very different characteristics. Battery-electric cars have relatively high power, fuel cells are good for long-range driving and supercapacitors have small but very explosive power,' explains Dr Kim. 'We should combine these in a performance car for the future.'



Officially a test bed, unofficially Hyundai's embryonic N division halo car

**JEAN-PHILIPPE
IMPARATO**
PEUGEOT
EXECUTIVE
VICE-PRESIDENT



‘It’s time to make EVs affordable’

The car world is changing, and Peugeot’s boss is ready – and excited – to lead that change

Jean-Philippe Imparato is an ebullient presence, and the energy of Peugeot’s executive VP mirrors that of the marque itself. Peugeot has been re-energised of late, with the 208 beating the Tesla Model 3 and Porsche’s Taycan to the European Car of the Year title in March.

‘It’s an interesting result,’ says Imparato. ‘You have three EV cars on the podium [the 208 is available with the choice of either conventional engines or a pure electric powertrain]. I get the sense the 208 is on top, aside from its design, because of affordability. Not everyone is able to pay more than £60,000. In terms of EV transition, it is time to provide affordable cars.’

He adds that in January and February, the electric e-208 (priced from around £25k) made up 15 per cent of the model’s sales, alongside its petrol and diesel stablemates. A shrewd move, then, to be an early mover with affordable, mainstream EVs, before tougher emissions regulations swing into force?

‘We discussed the strategy around 2015. We wanted to give people choice. Not a specific [electric] line-up, but a car with the ability for you to choose the powertrain depending on your local regulations, your usage, your personal conviction. At the end of

2016 we took the decision to go ahead.’ Tightening emissions regulations accelerated matters: ‘I remember the day we received the new EV guidelines for 2030 at the 2018 Paris motor show. We had a face-to-face with Carlos [Tavares], my boss, and we took two decisions. The first was to go full speed on EVs. The second was to cancel the WRX [World Rallycross] programme, and to put the money into Peugeot Sport Engineered.’

That’s Peugeot’s upcoming series of high-performance hybrids and EVs, starting with the rapid PHEV 508, due in the autumn. An electric 208 GTI successor is being considered too. ‘At the moment I am pushing on the top of the range with the 508. If the market is there, I will cap the volumes at 1000, 2000 cars. Then I will go on to the other proposals in this range. For example, it could be 3008 PS Engineered, and I would love to be able to do something around the 208. A sporty electric version would be interesting, no? But we will decide after the other cars.’

Imparato is a petrolhead implementing an EV strategy. ‘Everything motorised is my passion, including bikes. I am always on a bike except when it snows. In the week, commuting to work, and at the weekend on track.’ A keen amateur car racer,

Illustration: Chris Rathbone

he's competed in endurance racing at the Nürburgring and cites Peugeot's two Dakar rally wins under his watch among his proudest achievements: 'My best moments in this life are around motorsport.'

He began his professional career at Peugeot in 1989, and rose quickly through PSA's ranks, shifting gears through a variety of weighty responsibilities across the globe. From heading up Peugeot's Latin American operation to bossing sister company Citroën's sales and marketing in Italy, he has been Peugeot brand executive vice-president since 2016.

'My experience has a lot of scope. It's good; I've achieved all the professional targets I imagined in my life.' From 2013 he managed PSA's dealership network, no small task. 'In the UK, we were facing a very difficult situation. We were losing a great deal of money when I came in. After three or four years we were breaking even. I loved this experience.' He's proud (and, you sense, relieved) that Peugeot's residual values are improving in the UK: 'In late 2008-2009, when the markets were down, we believed you could compensate by dropping pricing. But we learned never to kill the ranking power of the car. If you kill the pricing power of the car, you kill its value.'

And future trends? 'First: total cost of ownership will become the average way of selling cars, not so much in the UK, but in all the other countries of the world. Especially with everybody switching to electric in the coming decade. Second, increased online sales. If you don't want to have contact outside the internet to buy your car, you don't have to. Third, 5G connectivity is coming, and so is autonomy. But we will never do something that is trendy only because it is trendy. We will do something only if we first believe in it. Because if you make a B-segment car tomorrow that has EV power, connectivity and autonomy, you are more than doubling its price. Not everybody can afford to pay that in the coming five years. So our responsibility is to provide sustainable, affordable mobility. That is the mission of the Peugeot brand over the next 10 years.'

JAMES TAYLOR

Six questions only we would ask

Tell us about your first car

'Ha, well, full transparency: my first car was a Renault 5. A GTL, white, with orange seats. But I later switched to a 205 GTI.'

What achievement makes you most proud?

'Two Dakar wins for Peugeot, and two Car of the Year wins in four years. It's not just my result, obviously, but of all the team.'

Tell us about a time you screwed up...

'At one point I believed that we could compete against the market with discounts. That was a big mistake.'

What is the best thing you've ever done in a car?

'Racing the 24 hours of Magny Cours in a Peugeot 208 Racing Cup car; 50 guys on track, all of them completely mad.'

Supercar or classic car?

'Both. I am at the start of restoring a Peugeot 504 V6 coupe – let me show you a picture. I have a huge job to finish it!'

Company curveball: in which year did a Peugeot bicycle first win the Tour de France?

'The last one was '77, but the first one? I'll have to check!' [The first win was in 1905, for Louis Trousselier] 'I will revise...'

Grab your khakis

Q5 goes military grade with its update



Light 'em up

Tweaked design and new colours like army-spec 'District Green' keep things fresh. Optional OLED rear lights have drive mode-based signatures, and proximity sensors make them glow if you're too close.



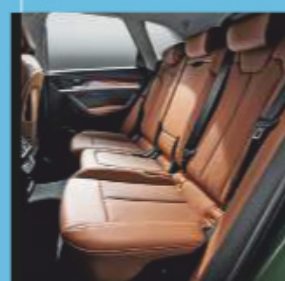
Business as (mostly) usual

Petrol and diesel engines come at launch with mild-hybrid assistance, while the PHEV gains an extra power variant. A diesel V6 that no one will buy in the UK comes later, as does the warm SQ5.



I can finally see!

The Q5 was the last car to use Audi's old infotainment. New glued-on glossy tablet ditches MMI wheel and includes Alexa integration and car-to-x tech that can relay real-time traffic-light info in certain cities.



Flex appeal

Basic floorpan is the same, so rear space (made better by optional sliding rear bench) and boot volume both remain competitive. A coupe-like forthcoming Sportback will erode that space, though.



Updated Q5, built in Mexico, is inbound in the autumn of 2020. Prices to start at £42,950

With a hint of Apple

Smartwatches have inspired normal watches to get clever. By **Ben Oliver**

The Apple Watch has just celebrated its fifth birthday, and the traditional watch makers are celebrating an extra five years of life they once thought they might not have. Despite their initial fears, the rise of the smartwatch has not rendered them irrelevant, and many well-known names now make semi-smartwatches of their own. If they won't do as much as a pure smartwatch, that's a plus point for those of us who don't want our phones to completely colonise our wrists. Here are a couple of new smartwatches from Swiss makers, and an example of how to do it differently from Breitling.



01



02



03

01 | **Frederique Constant Smartwatch Vitality** £695

A digital display in the lower half of the dial only reveals itself when you touch the crown. It can track your heart rate, activity and sleep, display notifications from your phone apps and be configured to show a stopwatch, countdown or a second timezone. Less than an Apple Watch can do; cheaper than some of its rivals.
frederiqueconstant.com

02 | **Breitling Exospace B55** £5810

Like Frederique Constant, Breitling was quick to embrace smartwatch thinking, but did so in a very watch-focused way. Its Exospace smart watches will display phone notifications, but your phone's main role is to configure the watch, allowing it to do more of the technical tasks which Breitlings have always done brilliantly for pilots, racing drivers and mariners.
breitling.com

03 | **TAG Heuer Connected Golf Edition** £2100

TAG's Connected range keeps the traditional case design and quality, but swaps the physical dial and hands for a touchscreen powered by Google's Wear OS. It can do a lot more than its rivals as a result. This has 18 gradations etched onto the ceramic bezel, and a lightweight (but pricier) titanium case for an easier swing.
tagheuer.com



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Tech

THE INNOVATIONS TRANSFORMING
OUR DRIVING WORLD



Charge! BTCC's hybrid ambitions

It will take more than a pandemic and a recession to halt the British Touring Car Championship's move to hybrid power. Even closer racing? Believe it. By **Colin Overland**

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The BTCC grid of 2022 will look a lot like the BTCC grid of 2020. But under the skin of the race-prepared hot hatches and saloons there will be three modest bits of hardware that promise fresh excitement, interest and relevance to the long-running series.

While some other championships are tangling themselves up in rule changes and vague promises of going green, BTCC has mapped out a clear plan for its next evolution.

The very safe pair of hands leading the transformation belongs to Cosworth, the Northampton-based engineering operation that over 60-plus years has been hugely successful in F1, Indycar and beyond. Its electronics division has come up with a hybrid kit – battery, cooling system and an electric motor – that’s simple, universal and affordable.

Cosworth’s motorsport programme manager, Tom Brown, says the advantages of hybridisation will include more power, better performance and closer racing. The teams and drivers are on board, and on-track testing has just begun with BTCC and Le Mans veteran Darren Turner at the wheel.

And, crucially, it’s not wildly expensive, unlike some of the hybrid systems seen in F1 and endurance racing. ‘In LMP1 the budgets were astronomical – over and above what people were spending in F1,’ says Brown. ‘The hybrid system that we are leasing to every team is £20,500 per kit per season. It is the first [motorsport] hybrid system that’s cost-effective.’

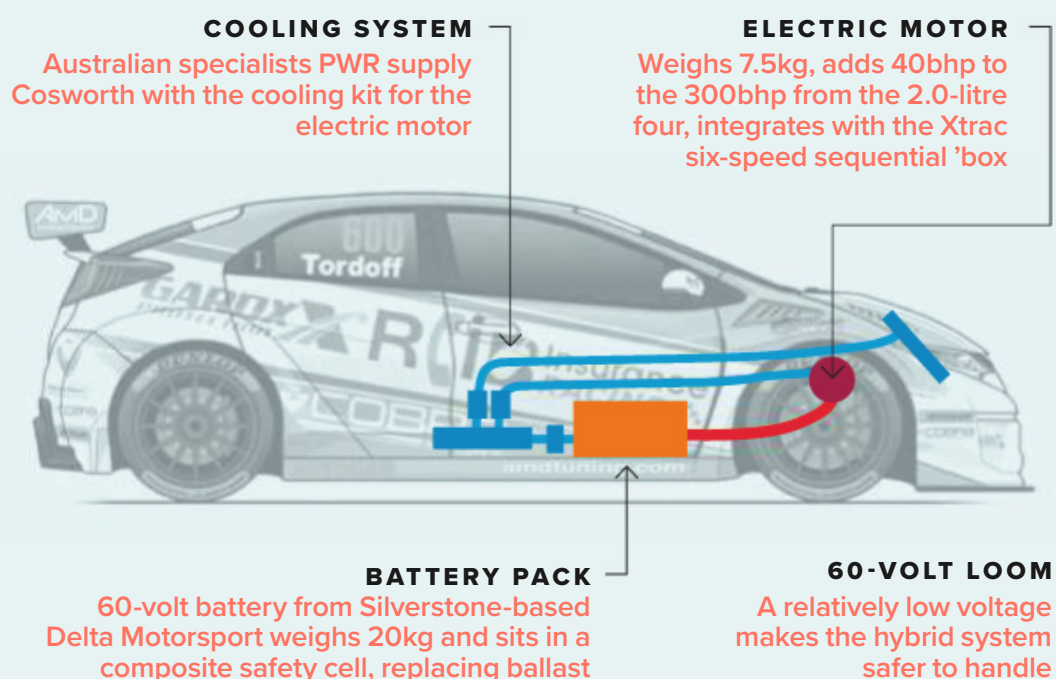
Development work began last summer, initially using computer simulations. At the request of series organisers TOCA, the aim is to give the driver enough extra boost per lap to enable him to catch a rival on a long straight, or defend his position, but not so much that he’ll easily overtake.

‘That’s how we came up with the figure of 40bhp for 15 seconds,’ explains Brown. ‘Once you’ve got that loose specification it’s then about working backwards. We know we need 40bhp. So what voltage do we need? What power do we need to get out of the electric motor? What does the battery capacity need to be?’

INSIDE A 2022 HYBRID TOURING CAR

The hybrid hardware has been designed to slot into today’s touring cars with minimal modification. Every car gets the same kit from Cosworth, with only tiny differences between front- and rear-drive versions. Cosworth is testing with Speedworks, which runs the Toyota Gazoo Racing UK Corolla, but the end result will be

universal. Cosworth engineers will attend every team’s initial installation process, and will be available at every round to help with any problems that may arise (just as Cosworth already does in its capacity as provider of BTCC’s standard electronics). At the end of each season it will take the hybrid kit back for a refurb.



The aim is to give the driver enough boost to catch a rival on a long straight

POST-COVID RACING'S GREEN AMBITIONS

INDYCAR: HYBRID IN 2022

The previously planned 2021 target was scuppered by Covid, but the US single-seater series is on course for hybrids in 2022, with Chevrolet and Honda committed. Remarkably, NASCAR, home of the pushrod V8, is also talking up a 2022 switch.



Works teams a rarity in WEC

WRC: US TOO!

Rallying resumes its interrupted 2020 season soon. Testing of 2021 cars has been hit, but WRC is going hybrid in 2022. At the same time it'll introduce new regulations designed to make the sport more affordable. New blood would be good – the field has felt seriously depleted since Citroën's departure last year.



WRC gearing up for big changes

WORLD ENDURANCE: CONFUSED

WEC has a strong heritage of encouraging hybrids and diesels. It's currently heading for a twin-formula strategy of no-holds-barred Hypercar and slightly more affordable LMDh. Looking light on works support.

DTM: DOOMED?

The big-bore petrol engines that have been at the heart of the German touring car series' success could now be its undoing. From the end of this year, only one manufacturer remains, after an exodus in the general direction of Formula E, which is much more on-brand for most makers.

Bench testing followed, and then the first track test at Snetterton with Turner and a Toyota Corolla.

As well as giving drivers extra power, the hybrid system will also replace BTCC's often-controversial 'success ballast', where doing well in one race means you carry a heavier load in the next. From 2022, it will be tweaks to the hybrid system that level the playing field. Cosworth is also working on an LED system to be mounted in the cars to inform the TV audience of exactly what's going on. 'You can see that maybe someone hasn't got as much regen, or that they're running out of deployment per lap.'

The 2022 switch to hybrid power should chime with the road-car experience of many spectators. Like BTCC drivers, they must juggle power and range: 'People understand regen. It's becoming a common term,' says Brown. Cosworth is exploring ways to let drivers select different strategies. If you're stuck in traffic, for instance, it might make sense to go to max regen – the car in front's holding you up anyway, and the boost you build up could help you pass when the track clears.

Paddock practicalities have been factored in: the quick-release battery can be charged up in an hour using a wall socket – or charged by doing the warm-up lap on the highest level of regen. Cars will leave the pitlane running on electric-only.

'It's really advanced compared to what other series are doing. Australian Supercars are watching what the BTCC is doing. The TCR series are watching,' says Brown. 'When it comes to hybrids, TOCA are a long way ahead of the curve.'

Meeting
of minds

Is the art of sketching dead?

Car design has long been a trade of traditional human skills: sketching, rendering and hands-on clay modelling. But is new tech making such methods obsolete? By **Ben Miller**



**IVO VAN
HULTEN**
PORSCHE



**ACHIM
ANSCHIEDT**
BUGATTI



**MASSIMO
FRASCELLA**
LAND ROVER

Astronaut, racing driver, car designer – these are the careers of boyhood dreams. It's hard to imagine a better way to earn a crust than conceptualising new supercars all day, first on paper, then as a full-size model in clay.

But, just as becoming a racing driver is now as much about simulator work, social media and telemetry analysis as it is putting away champagne and nailing 130R at Suzuka, so car design has become digitised, with tablets instead of sketchbooks and virtual reality threatening to replace clay modelling.

So, how useful are these tools? We ask Ivo van Hulten, director of interiors at Porsche, Bugatti design director Achim Anscheidt, and Land Rover creative director Massimo Frascella.

TABLET OR SKETCHBOOK?

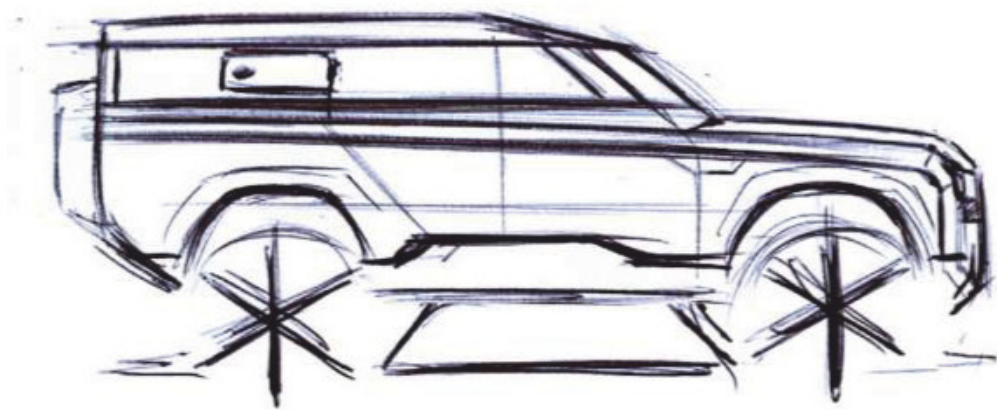
Ivo van Hulten, Porsche: 'The best way is always a combination. To be honest sometimes, to share a quick idea, there is nothing faster than grabbing a piece of paper and doing a fast scribble. You know, "This is what I mean..." Or, "Why don't we solve it like this?" But when you're trying to achieve a perfect impression of how the car will look at the end, then you go into Wacom tablets [capable of transferring pen strokes into rendering software on the computer].'

Achim Anscheidt, Bugatti: 'I agree. There is still a place for



sketching. It is crucial to establish an early theme; one which you, as design director, are in love with. Then you work to ensure that everyone around you falls in love with the idea too.

Sketching is key for this. Many of the young guys use a tablet and stylus, with a keyboard for their left hand. It's amazing to watch them work. The right hand is sketching and the left hand is working the keyboard, switching between different pen weights, size and style of nib, from pencil to marker... It is like watching a pianist. They also flip the image as they work, and this is useful. The sweep of your hand left-to-right creates an accelerating curve, which is the kind you want to translate to your car. For most people, sketching conventionally, this is easy from left to right, but it's harder to do the return curve. But on the tablet you can flip the image, so it's easy.'



‘To be honest, to share an idea, sometimes there is nothing faster than grabbing a piece of paper and doing a quick scribble’

IVO VAN HULTEN

Massimo Frascella, Land Rover: ‘I really encourage the young guys to sketch on a pad. It is the most direct way of putting an idea across, without the software getting in the way. I fear some of the traditional methods are being lost, and that this is one of the reasons perhaps a lot of new cars are beginning to look the same – with the technology you can lose some of that individuality. You can become more driven by the software than your ideas and personality.’

VIRTUAL REALITY OR CLAY MODEL?

Achim Anscheidt, Bugatti: ‘Since I joined [in 2004] we have been talking about taking our design development process completely virtual. But it’s only recently – in the last few years – that we are reaching this point. With virtual reality, the HoloLens glasses [mixed-reality smartglasses through which you can see rendered forms in the space in which you’re standing], you can see almost everything, letting you walk around the car and evaluate the proposal. It’s a very useful technology. A full-sized clay model costs maybe €500,000, with five clay modellers working all day for weeks to create it. Don’t get me wrong. I’m in love with the romance of the clay process; manipulating a surface by hand. But with the glasses we can get 90 per cent there, with maybe two models to prove a new concept at, say, €80,000 each. So that’s €160,000 versus half a million, and maybe 30-40 per cent of the time.’

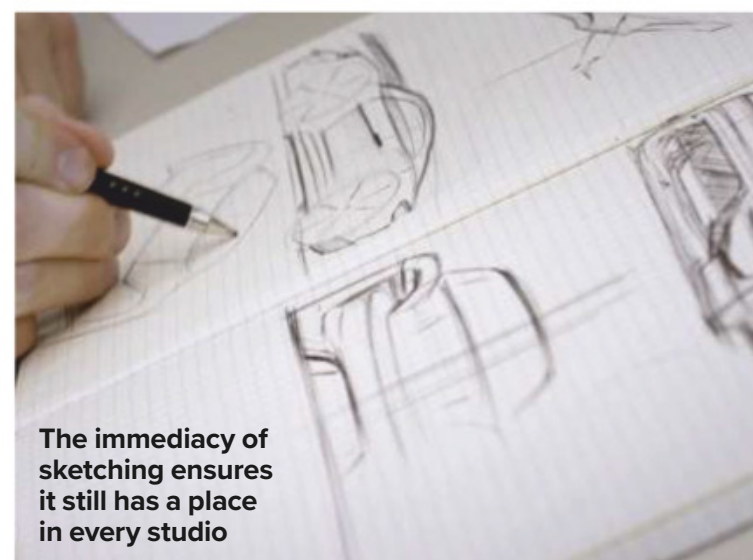
Ivo van Hulten, Porsche: ‘The 3D glasses help you avoid mistakes that are hard to see when you’re working on a small screen. When you scale up the proposal it makes these issues easy to spot, because you suddenly see the idea at life size. But I also think that somehow the human body is not 100 per cent adapted to the technology; it does not feel the same as seeing a car when you’re standing next to it.’

Massimo Frascella, Land Rover: ‘We’re keen on retaining a strong human interaction in what we do. You can’t replace the skills and the touch of an experienced clay modeller, or the fact that you can walk around a clay model and run your hand across it to understand whether a surface is too full or too flat. These are subtleties that make a difference in the end so, while we are using new technologies, there is always a part of what we do that must remain human.’ **car**

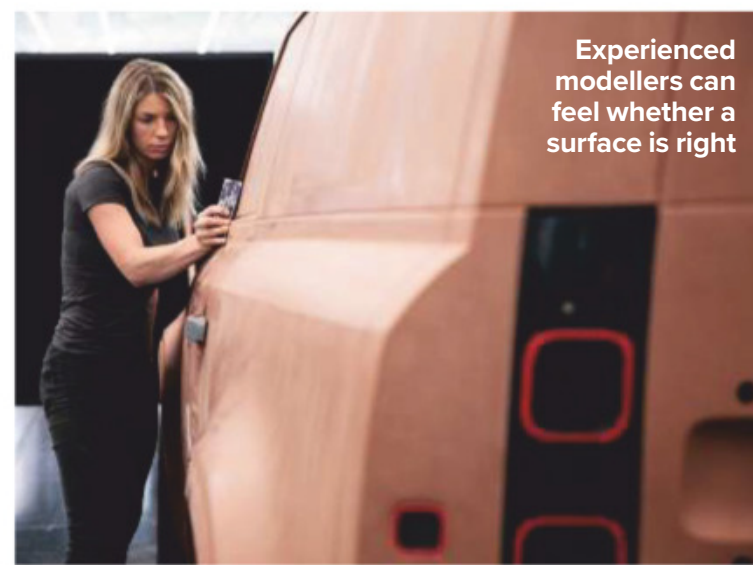


BEAUTY IS IN THE (VIRTUAL) EYE OF THE BEHOLDER

HoloLens glasses work to project a digital, rendered 3D image into the real space in which you’re standing. To an extent, they can replace clay models, which are expensive and time consuming. But clays still have their value.



The immediacy of sketching ensures it still has a place in every studio



Experienced modellers can feel whether a surface is right



‘Mate, your wheels are way too big. Think of the ride quality...’



HoloLens glasses (see left) particularly useful for interiors



Does it
work?

McLaren's Variable Drift Control genius

What's better than a 710bhp supercar with ace steering? A 710bhp supercar with ace steering that anyone can slide... By **Ben Miller**

Okay, it's not perfect. For a start, and in a very un-McLaren bout of wanton imprecision, Variable Drift Control, as featured on the 720S Coupe and Spider, isn't really variable drift control at all: it steps in long before you're anything like sideways enough to be considered drifting. And so needlessly complicated is McLaren's Active Dynamics panel (certainly compared with rival interfaces from the likes of Ferrari and Porsche) that you might never actually find it (see handy guide, right). But the good news is that Variable Drift Control is a brilliant example of technology helping you get more from a car. And with bald numbers like 710bhp, 0-62mph in 2.8sec and 212mph, most of us could use a helping hand in the benchmark modern McLaren.

Activating Variable Drift Control is a three-stage process, and you must have the Active Dynamics panel activated and the Handling knob in Sport or Track. (Chances are you will have anyway, given the 720S's remarkable interlinked suspension is so pliant in Comfort it's actually too soft for quick road use.) Hit ESC and you'll be offered ESC Dynamic, which broadens the threshold before intervention, and Variable Drift Control. Opt in and you'll be presented with the slider graphic to set the degree to which the system will let the car oversteer.

And now? Well, for regular drivers with some skill and experience, you now simply get to enjoy the 720S as intended, but without the heart-in-mouth fear that you might at any point leave the road and give an ancient patch of roadside foliage a really hard time with the McLaren's delicate nose and very un-delicate carbonfibre monocoque.

The first thing that strikes you is how much more pleasant the car is to drive with the traction control ordered to relax. Where previously the twin-turbo V8 was forever threatening to overwhelm the rear Pirellis, prompting the electronics to constantly and obtrusively strangle the power, ESC Dynamic lets the car behave more organically, flaring into benign wheelspin here and there but always accelerating. And through well-sighted corners you can now accelerate harder, earlier, relaxing the steering lock as you feel the rear axle help rotate the car. It is not drifting. But it is the kind of helpful, very satisfying mild oversteer you needed to be fairly experienced to access only a few years ago.

Does it work?

The name is a little disingenuous. Drifting – to us at least – suggests armfuls of lock and some punchy modulation of the loud pedal. Variable Drift Control is more about safe, accessible and very enjoyable mild oversteer. And it delivers that.

APPY THOUGHTS HOW IT WORKS



1

BOOT IT UP

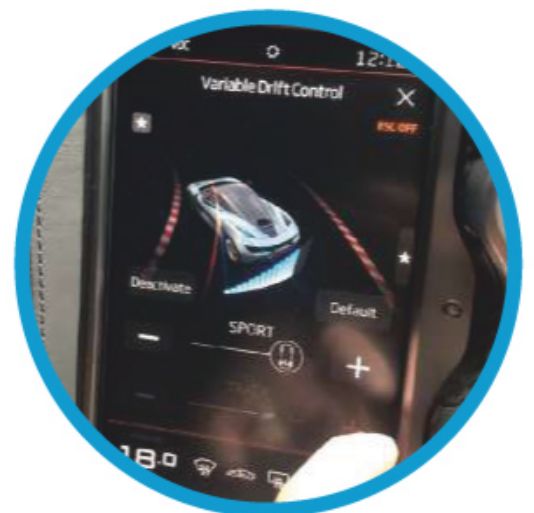
Couldn't be easier. (Okay, it could, but it's not that hard.) Select Sport or Track Handling modes, and make sure the modes panel is 'Active'.



2

ESC DYNAMIC MODE

Now prod the ESC button once for Dynamic mode. A prompt will offer Variable Drift mode – prod to activate.



3

ANGLE OF DANGLE

You'll be presented with a visual of a 720S in the middle of a racetrack corner. A slider lets you increase or decrease the angle of oversteer.



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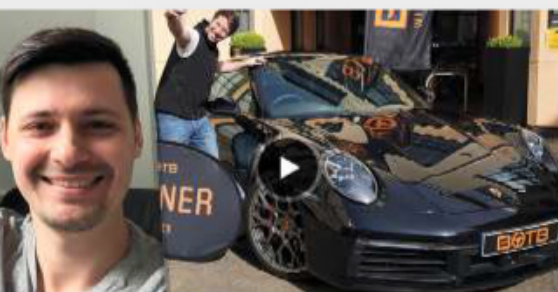


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**The
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NEW CAR MEETS REAL WORLD

BENTLEY BENTAYGA

Unstoppable opulence

Bentley has evolved its sales king, the Bentayga SUV. We give it a thorough workout in the heat and dust of South Africa's best roads and trails

Words Ben Miller Photography Richard Pardon

South Africa:
not short of
breathtaking
landscapes. Or
great roads



**You don't so much approach
corners as find they're flung at you**



S

outh of picture-postcard Franschhoek, in the Mont Rochelle nature reserve, the snaking tarmac of the R45 down to Cape Town is a sensational bit of engineering. It's a relentless 30°C outside. The landscape is a ferociously three-dimensional and parched place of sheer rock slopes, broken peaks and blackened, fire-ravaged wilderness. Yet somehow the road through it is perfect; smooth, empty, wide (important when you're driving a contemporary Bentley) and dry.

In a W12 Bentayga you don't so much approach corners as find they're flung at you, such is the twin-turbo, 6.0-litre unit's surfeit of performance. (Peak power and torque are as before, 627bhp and a stonking 664lb ft – not figures that would suggest any need for a turning up of the wick.) As corner-entry looms, you're faced with a little game of mind over matter. Significant portions of your brain, drawing on experience and encouraged by your squidgy self's fondness for self-preservation, are keen to get on the brakes. But recent evidence, gathered over the last day or so behind the wheel of this new Bentayga in both V8 and W12 guises, suggests you need do nothing of the sort – the Bentley will be just fine.

And so, with nothing more involved than a click or two on the downshift paddle (an action inaudible to passengers, just as the gearshifts themselves are all but imperceptible) and a deliberate movement of the wheel, the Bentley arcs into the onrushing right-hander at undiminished speed. Grip feels infinite. With the drive mode controller clicked one stop counter-clockwise, from default Bentley to tauter Sport, body control is, frankly, breathtaking. It's been with us for some years now, Bentley's performance SUV. But its party trick – 48-volt active anti-roll bars with the power to remove the implicit contradiction in both a cossetting ride and the deft body control required for generous corner speeds in such a tall, heavy car – can still blow your mind. And it's this, rather than the car's wanton straight-line speed, that makes it such a mighty distance machine. I once drove the length of France in a day in a V8 Bentayga, on a mix of roads, and if it hadn't been for the fuel consumption's merciless destruction of my solvency, I'd have happily carried on.



With the Mulsanne limousine no more and the Continental GT and Flying Spur recently replaced (in some style, it should be said), the Bentayga – foundation of modern Bentley's success (the SUV accounts for half of Crewe's sales) – has been re-worked. Mechanically, little has changed: same platform; same corner-crushing 48-volt roll control; same choice of W12 (though the 12-cylinder flagship won't now be available in the UK), V8 (542bhp and 568lb ft) or V6 plug-in hybrid powertrains, though the automatic transmission's had its code tickled for still smoother shifts.

But this is a significant revision to the exterior metalwork and the interior, two of the original Bentayga's less convincing aspects. The interior's combination of VW Group tech and lavish Crewe craftsmanship was not without appeal. But the infotainment felt dated from day one, and the ►

Bentayga remains an unlikely bend-swinger (top); elegance of new rear light signature shines through

PICK-UP: 0 MILES



Two Bentayga prototypes, two days of driving and Bentley's board member for engineering in the passenger seat. Wagons roll!



12 MILES

N2 runs east/west but isn't much to write home about. For the good stuff we head towards the nature reserves north-east of Cape Town.



18 MILES

Sharing driving means stints in the second row. There's more legroom now, and a lovely little tablet for controlling media and air-con.





Acres of new aluminium have been neatly sculpted by Stefan Sielaff's design team



Front end gets a cleaner design. Windscreen now cleaner too thanks to 'wet' wipers with built-in nozzles...



84 MILES

An SUV it may be but the Bentayga is a 21st century GT; spacious, effortless, fast. It's happy here in South Africa's wide open spaces.



167 MILES

Dirt tracks give plenty of scope for easy off-roading. An irrelevant attribute for most UK buyers, sure, but Bentayga relishes a bit of loose-surface work.



197 MILES

Tired? A touch, but not as tired as we should be having driven all day off the back of an overnight flight from London to Cape Town.

The cabin's hushed and cooled calm removes anything resembling discomfort or effort from the act of travelling

car's challenging aesthetic didn't become any less polarising with time. Despite Bentley's touch-and-go profitability, head of engineering Werner Tietz (the body specialist behind the Panamera, Macan and 992-generation 911 Porsches) managed to get sign-off on swathes of new exterior metal. The front end, bonnet, front wings, body sides and boot are all new and all aluminium, with only the roof and door skins carried over. Key to the updated look are new lights front and rear. Using similar themes and forms to those of the Continental GT and Flying Spur, these pieces of automotive jewellery go a long way toward making the new Bentayga more comfortable in its skin.

'It's a big investment but necessary,' says Werner (since confirmed as Seat's new vice-president for R&D; Matthias Rabe will take over Tietz's role at Bentley). 'When you join a company [Werner arrived in Crewe in 2018] you always have the impression that you can do something better, you know? The design of the old car, especially at the rear, we thought was perhaps a little old fashioned. So we modified it [the bootlid is now full-width]. It's near enough five years since the original car, so we needed to freshen it up. So yes, a big investment, but we sold some 5000 Bentaygas in 2019, and we ended up selling 11,006 cars in total, a new record for us.'

A keen driver who owns a Porsche 911 GT3 (991.2) and cites his laps of Portimao in Bentley's Conti GT racer as the best thing he's ever done in a car, Tietz has been hands-on throughout the development of this updated Bentayga, driving when he can in environments as disparate as African wilderness and the snowy expanses of Sweden. So, when he says he's confident Bentley's SUV didn't need wholesale revision of its chassis or powertrains, it's not from a position of office-based ignorance.

'We haven't made any changes to the spring and damping rates, or to the steering – in these areas we are still competitive,' explains Tietz as we meander out of Cape Town on the coast road, the crowds and beaches giving way to more elevation and a spectacular view of the glittering ocean to our right.

'We are looking at the Mercedes active four-corner suspension system [E-Active Body Control, as found on some versions of the GLE not sold in the UK], which offers some potential beyond our active anti-roll bars, but we are still competitive with what we have. In terms of the chassis, we have increased

the rear track width a little [by 10mm each side, achieved via a geometry change using carry-over components but with a new pair of necessarily longer rear driveshafts]. This brings a little more stability and support to the rear axle, especially with the plug-in hybrid version, which of course places more weight on the rear axle [thanks to its rear-mounted battery].'

As we turn inland the view shifts from the surf and spray of the shoreline to progressively more imposing hill ranges, inland lakes dotted between them. As the road climbs and twists, the Bentayga wants for neither power nor composure. Its breed of ultra-rapid progress isn't big on nuanced interaction or driver involvement, but neither is it meant to be. The Bentley prefers instead to simply overwhelm every obstacle you throw at it, air suspension smothering rough roads (mostly; there's a restless air-suspension fidget on some surfaces) just as the engine renders even fierce gradients inconsequential. At the same time the cabin's hushed and cooled calm removes anything vaguely resembling discomfort or effort from the act of travelling.

Behind the wheel, you notice that the previous car's analogue dials are gone, replaced by a 10.9-inch digital instrument cluster. The default view's still a pair of dials, in the same clean Bentley font, but digits are only illuminated in the vicinity of the needles, leaving the rest of each dial dark. On unfamiliar roads you can also substitute one dial for a big map; nice functionality, and the display is suitably glare-free and crisp.

In the middle of the dash, the old infotainment screen's been replaced by a bigger, crisper one familiar from the Flying Spur. The system uses the same combination of touchscreen and physical controls (buttons and a knob for the rapid navigation ►

New rear aspect combines Conti GT-style lights with a wider track



214 MILES

Dusk gives an opportunity to see the new lights through these prototypes' cladding. They're prettier, no doubt.



245 MILES

Adaptive headlights switch from short, broad beams in Town mode to long, narrow beams in Motorway.



300 MILES

Two days on the road and the Bentayga's demolished everything we've thrown it at (and a wing mirror against an oncoming van when the road got really tight...).

New metalwork
is far sleeker
than the slightly
gawky original



of lists or scaling of maps), and it's a slick system – responsive to the touch, easy on the eye and with 'Hey Bentley' voice recognition, if you're into that sort of thing. The new system lifts the Bentayga's interior considerably, as do the new central vents (also pinched from the Flying Spur), while in the back there's more legroom and more recline courtesy of revised seats.

Opportunities for off-roading anything in the UK, let alone Bentleys, are few and far between, but this region's laden with vineyards, some of them high on sun-drenched hillsides. Configuring the car for the rough stuff has never been easier, with the drive mode controller offering a range of off-road settings (we opt for Muddy Ruts). A quick prod of the touch-screen extends the air suspension to full height.

The terrain isn't hugely demanding, but neither could you get a Clio up here – the vineyard uses a Land Cruiser. On summer tyres the Bentley never struggles for traction and clears some ugly-looking ridges and troughs without so much as a scrape of its undercarriage. It's curious, forging ahead over flood-ravaged ditches and rocky drops in a car this valuable. But, like pouring the Bentley into fast on-road bends at three-figure speeds, so capable is the car that you're soon comfortable.

'Bentley is not about sports cars, it's about the combination of luxury with performance,' says Tietz as we head for base. 'The Flying Spur is a good example. Drive it in Comfort mode and it's a luxury limousine. Switch to Sport and you're suddenly on a level of performance you really don't expect. It's the same with the Bentayga; comfort, performance and this high level of off-road capability. This is unique, I think.'

Unique? Rival machines from the likes of Aston Martin, Rolls-Royce and Porsche would beg to differ. But they'll need to see off a Bentayga made more compelling than ever by this surgically targeted update. **car**

Next month:

ASTON MARTIN DBX

SO, THAT'S THE BENTLEY. WHAT OF ASTON?

Evolution of the species

Much of what was great about the first-generation car – its powertrains (the turbocharged V8 and W12 remain stunning; the less convincing V6 hybrid wasn't available to test on this occasion), chassis and unlikely off-road ability – is unchanged. But the Bentayga's now more handsome inside and out, its interior in particular lifted by a slick new infotainment system and driver's display.

The terrain isn't demanding
but neither could you get a
Clio up here – the vineyard
uses a Land Cruiser

Front or back?

With the Mulsanne now retired, the Bentayga steps up to offer the rear-seat limo experience. Five-seat cars offer more rear-seat recline but if you're planning to be driven, go four seats – now you'll have acres of legroom and a seat as deliciously over-spec'd and decadently comfortable as the two up front. That said, being in an SUV doesn't somehow feel as special as being in the back of a vast, imperious saloon like the Mulsanne...

Go on, shrink it

Slightly broader across its rear track, the new Bentayga is fundamentally the same size as before – big. Technology does a great job of hiding the car's weight but can do nothing about its size, which can be problematic on narrower roads. A Macan-based mini Bentayga may not add up on paper but we'd be first in line.



Data	PRICE	POWERTRAIN	PERFORMANCE	WEIGHT	EFFICIENCY	ON SALE	RATING
	£146,700	3996cc 32v twin-turbo V8, eight-speed auto, all-wheel drive	542bhp @ 6000rpm, 568lb ft @ 1960rpm, 4.4sec 0-62mph, 180mph	2416kg	24.8mpg (official), 260g/km CO2 (official)	Now (first deliveries autumn 2020)	★★★★★



New Michelin compounds and BMW's new chassis make for awesome grip

It's you, but different

The new M3 is imminent, featuring a new platform, a new engine and soon a driven front axle too. But rest easy; M3 is as M3 was



THE FIRST HOUR

20 seconds

Can these wipers go any faster? This is not M3 weather

2 minutes

S58 engine is a potent device – and this is the lowliest spec in which it'll be deployed in the M3

12 minutes

What a front end! Just grips and grips. Understeer requires huge optimism/stupidity/clumsiness

47 minutes

Rear end far keener to do its own thing – would you want it any other way?

59 minutes

Oh, you would? Then the AWD version is for you. But we're impressed with this RWD car



PLUS

Performance; front-axle grip and response; M driver's display

MINUS



Still hard work in the wet; might it be ugly under all that camo?

Raining? Cats and dogs, mate. Mercury pools of standing water shimmer in the braking zone on the downhill run to the Sachsenkurve, where the pros hit 135mph in fifth. The spray of the lead car plots a diffuse course through a curtain of rain moving across the circuit. Halfway into the third-gear esses, two rivulets as wide as the new M3 rudely interrupt grip on the approach to the track's trickiest apex.

Needless to say the M3 is all over the place, rotating like a breakdancer and fishtailing wildly under full acceleration. Just in time the marshalls red-flag our three-car convoy, which duly returns to the pits, only to come under instant fire from half a dozen air wrenches. Semi-slicks off... road tyres on... done! But before we go we must wait until Dirk Häcker, M's engineering director, returns from his sighting laps, whereupon four liveried mechanics jump at the steaming car, check the pressures, exchange nods with the boss and tweak the settings. Forget wear. What counts right here and now is grip, and grip only.

The plan is to kick off the session in the current M4, then step into the new car. A quick reminder: the current M4 weighs 1660kg (with the twin-clutch 'box). It's powered by a 3.0-litre twin-turbo straight-six good for 444bhp and 405lb ft. Key to its talents are its mixed wheel sizes – 19-inch up front, 20-inch at the back – and the electronically-controlled M diff, for optimum traction and grip. Thus equipped, the M3/M4 is arguably the best-balanced driver's car in a league it founded back in 1985.

After a brief radio check we're off, a pair of identical M4s trailing the instructor in a 2021 model. What about stability control? 'Do what you like. As long as you know what you're doing...' I set the wiper speed on three and leave the DSC button untouched. We nevertheless find ourselves fishtailing three times at close to 100mph through the three uphill left-handers.

Five laps later body and brain have finally adjusted to the track, the car and the weather. We pit, and I swap my 2019 M4 for a 2021 M3. The difference? Obviously four doors instead of two, an additional 25kg and a one-tenth

disadvantage from zero to 62mph compared to the new M4.

Both pre-production cars are fitted with six-speed manuals, which further reduces the subjective difference in performance between previous and future, even though the latest metamorphosis of the S58 engine delivers 473bhp and 479lb ft. Since that's all the torque this gearbox can cope with, only the base variant will come with a three-pedal gearbox option. Although M xDrive will next year be available in combination with the more powerful M3/M4 derivatives, the bottom-rung beast remains rear-drive only, just like the car five generations before it.

Dynamically more significant than the beefed-up drivetrain is the more advanced CLAR donor platform, which also underpins the latest 3- and 4-series (we drove the latter in last month's issue). It is stiffer, approximately 50kg lighter and more competent in terms of handling, roadholding and ride. Can't wait for the lights to turn green...

So many impressions to register and filter, so little time. So many perspectives to consider, so little variety of weather. This much I do know: buyers can at last escape from the stylish but stupid instrument graphics that infect every current BMW cockpit by selecting the much clearer M view option. Or simply focus on the head-up display: hockystick revcounter, gear indicator, speed. The pre-configured M1 and M2 settings wisely avoid DSC Off, but the appropriate button is where it's always been, so slacker traction control is only a fingertip away, should the rain ever stop...

The guy in the pace car talks too much. I let myself fall back a bit to better guesstimate the racing line; wider, softer arcs. After five laps cars number two and three are instructed to swap position, but a glance in the rear-view mirror draws a blank. Let's use the extra time to zoom in on steering and brakes. Turn-in is as brisk and positive as ever. If anything, the feedback is now meatier, marginally more positive, better grounded. This is the result of changes to more than just the steering ►

itself; congenial partners include redesigned suspension, tuned kinematics, recalibrated springs and dampers, thicker anti-roll bars and notably tauter mounting points all round.

Steering effort decreases when you switch from Sport Plus to Sport, and again when you go back to Normal. Although the increased lightness is accentuated by today's slippery surface, the steering feel is still there in 3D haptic force, with input, weight and self-centering action delivering a persuasive lesson in homogeneity. The brakes bite promptly but need a heavy hoof. At the end of the day it's this awesome front-axle grip, rather than the car's stopping power, which dominates the driving experience. Because the front tyres just hang on and on, the new M3 can carry quantifiably more speed into a corner than before.

Like the M2 CS, the latest M3 is fitted with a forgiving clutch and an undemanding gearbox. Sounds like a compliment; in fact it's a gift-wrapped criticism. Must the clutch and tranny of an M3 really feel as soft and indifferent as their 420i equivalents? Should we not expect a more aggressive and precise shift action? And while we're at it, what exactly happened to the coveted dual-clutch seven-speeder? Carsten Proll, in charge of the vehicle programme:

'The M Steptronic with Drivelogic is the more compelling option. It offers one more ratio, better economy, a choice of three shift speeds and a smoother action in traffic.' Although single-gear upshifts take the blink of an eye longer, multi-gear jumps are quicker, and one must not forget that BMW's accountants simply love the substantially cheaper ZF auto 'box used across the entire CLAR range.

The 473bhp powering our prototype is only an appetiser – there's a lot more grunt to come. It starts with the M3/M4 Competition versions, which will get 503bhp, followed by the mildly decontented and even sportier CS – rated at 527bhp – and trumped by the no-holds-barred CSL, with its higher-revving 542bhp engine.

But the key go-faster innovation for the new M3/M4 is the M xDrive all-wheel-drive system, which promises to shave two-tenths off the 0-62mph time while offering the dynamic spectrum from safe AWD to lurid RWD. The exact number, relayed off the record, is 3.8sec 0-62mph, which should improve to 3.6sec and even 3.4sec respectively as the more potent engines become available. By specifying the M driver's package, the top speed of 155mph can be increased to 175mph. The M4 CSL will nuzzle up to the 200mph barrier, sources say.

Contrary to earlier rumours, the drag coefficient and the frontal area remain virtually unchanged in the wake of the model change, and there are no significant downforce improvements either. Having said that, front axle lift certainly was not an issue on the track, and any ground effect working to help the rear tyres stay put was easily nixed by some ill-timed lift-off or premature power-on manoeuvres. Let's face it: losing grip in the rain under power is part of this car's DNA – if an M4 never steps sideways, you're not trying hard enough.

It's a different story in the dry, when on-demand oversteer is there for the taking in the bottom three gears. When it rains, however, involuntary tail-out antics in fourth and fifth are the rule rather than the exception. Heart-stopping at first, these shoulder-shrugging motions soon become second nature because all it takes to rejoin the original flight path is a quick flick at the wheel and, occasionally, the briefest lift-off gesture. To fully relish this innate tail-happiness, the new M3/M4 comes with a new drift control analogous with the AMG's yellow oversteer thumbwheel. Wind things off progressively and you can learn on the job, in safety.

Our final lap is the fastest, the car really getting into its stride as its brakes start to struggle. First contact with the sixth-generation M3 is like embracing your son after a couple of terms abroad – you proudly register the transformation from insecure adolescent to a brighter, fitter and more mature adult. And just as this person has gained new skills and the experience to deploy them well, so the grown-up new M3 has fewer edges but is a sharper tool nonetheless. It's a better car now in almost every respect, and that appeal will only grow when it becomes available in AWD guise (due mid-2021, a few months after the rear-drive car goes on sale; the soft-top M4 will arrive late next year). The first M car to go all-wheel drive, the M5, is currently the best car BMW makes. That accolade may last only as long as it takes us to get behind the wheel of the M3 blessed with the same technology.

GEORG KACHER

First verdict

Even in its meekest state of tune, and without the M5-inspired all-wheel drive, this is a still a compelling drive, and a mighty M3 ★★★★★

The front-axle grip is awesome. And because the front tyres just hang on and on and on, the new M3 can carry quantifiably more speed into a corner



Data	PRICE	POWERTRAIN	PERFORMANCE	WEIGHT	EFFICIENCY	ON SALE
	£60k (est)	2993cc 24v turbocharged straight-six, six-speed manual, rear-wheel drive (all-wheel drive to follow)	473bhp @ 6250rpm, 479lb ft @ 2600rpm (est), 4.0sec 0-62mph, 155mph (limited)	1685kg (est)	31mpg (est), 205g/km CO2 (est)	Early 2021



The last all-new
M3 to feature
exhausts?



Gets memo,
matches shirt
to hide

A white Honda Fit is parked on a gravel path in a forest. The car is positioned in the lower half of the frame, angled slightly towards the left. The background is filled with tall, thin trees with dense foliage, and the lighting suggests a warm, golden hour. The car's license plate is R020 YCK.

**The engine and electric gubbins have
been crammed into the nose, so you
still get nearly a metre of rear legroom**

Perhaps not the
prettiest supermini
on sale, but the
most practical

HONDA JAZZ

2020: the good news

Floods, pestilence... But what's this? A new Jazz, and a ray of light

When Honda swapped the Civic's clever folding Magic Seats for a lower driving position and independent rear suspension it was a sad day for anyone who liked to regularly transport a big plant pot or tall dog in their hatchback.

So, when it was announced that the new-generation Jazz would be sold in Europe exclusively with a hybrid powertrain – something that ordinarily eats into space under the rear seats and boot – it felt like the little Honda might be robbed of its Mary Poppins' handbag USP.

Happily, though, the 1.5-litre petrol engine and associated electrified gubbins have mostly been crammed into the Jazz's stubby nose, so you still get nearly a metre of rear legroom (986mm to be precise) and those one-touch folding seats with cinema-style flip-up bases.

Renault faced a similar challenge when making its E-Tech hybrid system fit in the Clio. But while the French car uses a baffling F1-style multi-mode clutchless dog 'box arrangement, the Honda opts for a fixed-gear transmission. That's because some of the time the engine powers a generator motor, providing battery charge for the electric motor that drives the wheels, like in a BMW i3 range extender. Smart.

Smarter still is a lock-up clutch that can be closed between the petrol drivetrain and the wheels, so the engine can also contribute to forward motion during faster driving too. The CR-V Hybrid uses a similar system. Also smarter is the cabin, which borrows from the Honda E: thin-rimmed, two-spoke wheel and a horizontal line of screens stretching across the dash. The infotainment system is now laid out like a phone and far more usable than before.

The hybrid set-up has three modes: silent EV running for town; noisier petrol-only propulsion for the motorway (boosted by the electric motor under acceleration); and a mixture, where the electric motor provides the drive and the petrol engine whirs away quietly to keep the battery topped up.

At urban speeds it feels for the most part like an EV, it uses less fuel than the previous Jazz, and



View out widened by fancy new A-pillars

the engine doesn't moo when you accelerate. Just press your foot on the gas and the car seamlessly works out which mode is the most efficient.

Greater use of high-strength steel for a stiffer chassis helps the new Jazz deliver in the corners without needing overly uncomfortable suspension. No engaging, lift-a-wheel-at-will laughs like a Fiesta, but the steering is accurate and body control neat. While it's not a fast car, the hybrid drive supplies plenty of torque when you need it. Frankly, it's a bit of an unexpected joy.

ADAM BINNIE

First verdict

The Jazz remains ruthlessly fit for purpose for another generation. Drivetrain is now as clever as its rear seats

★★★★★



THE FIRST HOUR

1 minute

Seats go down, seats go up, seats go down, seats go up...

5 minutes

Shades of Honda E in here. Far more stylish than before

10 minutes

How is this Jazz so hilariously quick off the line?

40 minutes

Around town this honestly feels like a pure EV

59 minutes

Didn't think my highlight of 2020 so far would be a two-pedal Jazz

▲
PLUS

Big jump in interior quality, actually quite fun to drive

MINUS
▼

Design isn't for everyone, firm low-speed ride

Data

PRICE

£21,385

POWERTRAIN

0.7kWh battery, 1498cc four-cylinder plus e-motors, front-wheel drive

PERFORMANCE

108bhp @ 5500rpm, 187lb ft @ 4500rpm, 9.4 sec 0-62mph, 109mph

WEIGHT

1228kg

EFFICIENCY

62.8mpg, 102g/km CO2

ON SALE

Now

FERRARI F8 SPIDER

Phew, what a scorcher!

The F8 Tributo is the last pure V8 in a glorious Ferrari bloodline. And now, just in time for summer, Maranello's lifted the lid

It was as much a compromise as it was a convertible when Ferrari launched the 208 GTS Turbo in 1983. Now a largely forgotten if seminal footnote, the 208 was Maranello's first turbocharged convertible and a preview, some four decades early, of this new F8 Spider. The removal of the 208's roof made it wobblier than a coupe, but the real compromise was the engine – a gruff, laggy 2.0-litre turbo V8 that knocked 35 horses from the near-identical 308's 252bhp and ducked the 38 per cent VAT that Italy levied on that car's bigger, 3.0-litre V8.

But compromises and the new F8 Spider? I'm struggling to think of any as the Ferrari and I fly across this rolling landscape with sun beating into the cabin, bringing an almost obscene 710bhp to the boil with flicks of long paddleshifters fixed to the steering column. Squeezing the F8's perky throttle, it's the insatiable surge of midrange performance – 568lb ft from 3250rpm – that's the real giveaway that we're dealing with forced induction, rather than a mushy throttle, finger-drumming turbo lag or any lack of enthusiasm for revs. Only Ferrari makes turbo engines so responsive.

Judging by the way in which the F8 arcs and glides through turns, neither is there much difference to the coupe's beguiling dynamics; suspension is near identical, with the adaptive damper tuning adjusted for the extra weight. There's still that medium-light and super-rapid Ferrari steering, the sensation of a mid-engined supercar that's set low and planted and very much on the nose as you corner, and palpable tension as the e-diff loads up and the throttle bristles with energy, like the F8's goading you into bad behaviour (an evolution of Side Slip Angle Control and Dynamic Enhancer means you've got more scope to play and less chance of putting it in a field, too). There might be a little extra wheel patter versus a coupe, particularly roof-down, ►



THE FIRST HOUR

20 seconds

Purposeful start-up bark settles to disappointing putter

2 minutes

Sunshine! Brilliant retractable hardtop really is best of coupe/convertible worlds

15 minutes

Maybe more wheel patter than Tributo coupe, still super-composed

30 minutes

Steers quick, corners flat, grips hard, ever-ready to be throttle-steered

59 minutes

Turbo engine might lack soul but has mighty lag-free delivery. Feisty in the wet



PLUS

Handling; performance; coupe refinement with convertible thrills



MINUS

Fussy design; gruff exhaust



Alex Tapley



Side Slip Angle
Control and the
F8's twin-turbo
V8 do their thing



Conventional
doors a little
lacking in
theatre



They'll think
you bought it to
show off. You
actually bought
it because it's
phenomenal



Select Race mode, thread the F8 Spider down a flowing B-road and it is sublimely balanced and engaging

but no, compromise definitely isn't the first word that springs to mind.

The F8 Spider is an open-air version of the F8 Tributo coupe we drove last August. Its platform dates back to the 458, and this new model slots in the gap between the 488 Spider (which it replaces and comprehensively updates) and the 488 Pista Spider track special.

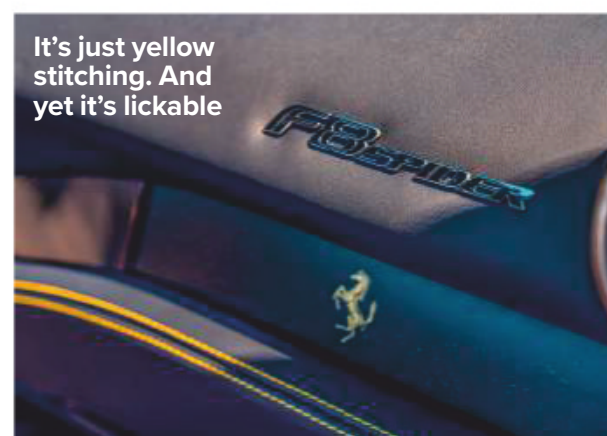
The premise here is all the comfort and usability of the 488 Spider, all the performance of the Pista Spider with only 20kg extra to carry, plus a tickle of fresh exterior and interior design. Prices start from £225,897, which represents a £6k increase over the previous 488 Spider. McLaren asks £242k for a 720S Spider, while Ferrari's other V8 convertible, the front-engined Portofino, costs £168k.

So the spec is much like the Tributo, but for the first time the F8 Spider throws this combination open to the elements, using the retractable hardtop from the 488, with a tweak to the tonneau cover. Press a button and that tonneau, with twin roadster pods, rises up like a rocket launcher, and a two-piece lid twirls through 180° before lowering, leaving the car looking all the better for the transformation. The revolving-roof process takes only 14

seconds, the whirring of hydraulic motors is impressively quiet, and you can do this at speeds of up to 28mph. That said, I think the Tributo design is more harmonious than the roof-up Spider; the coupe's cooler too, with its F40-inspired Lexan rear screen and view over the V8, which the Spider loses.

The folding roof is handy during my drive, where in the space of two corners conditions shift from searing heat and sticky tarmac to actual hailstones and decidedly un-sticky tarmac. This F8 could've been built for the whims of British summertime.

The trade-off is 70kg more mass than the coupe (the 1400kg dry weight is 20kg lighter



than the 488 Spider), but rear visibility is also better than a Tributo's slatted rear screen, because there's a vertical heated pane of glass behind the seats that provides an actual view of following traffic and – another plus – you can lower this glass independently of the roof. I drop it on the M40 in pouring rain and it's an invigorating rush of chill summer air far calmer than the bluster of lowering windows. And you get to hear more V8 – though we need to talk about that.

The engine remains a 3.9-litre V8, but it evolves the base 488's unit with 50 per cent new parts, including titanium conrods, Inconel manifolds and titanium turbocharger turbine wheels that all help boost power by a huge 49bhp, pep up response and drop 18kg, just like the Pista. Accelerate from rest and 62mph flashes up in 2.9 seconds, 124mph in just 8.2.

Crucially, though, emissions regulations now mandate a gasoline particulate filter, and after a head-turning bark on start-up, the F8 settles to a disappointing putter. Things improve on the move, with more voluminous bass, and there's no question of this being an exciting engine, but it's still gruffer and less tuneful than the 488 Spider that introduced turbos to modern mid-engined Ferrari convertibles. Neither is there quite the Pista's sense of visceral connection.

This is all relative, however – select Race mode, thread the Spider down a flowing B-road and it is sublimely balanced and engaging, with Zen-like body control, a cushioned ride (Bumpy Road mode is best, activated by a button on the steering wheel), keen steering and strong brakes. These qualities form the stage upon which the benchmark powertrain then struts its stuff. Squeeze that throttle, feel the instant surge, the escalating excitement of chasing high revs and dual-clutch shifts as tight as a snare drum, and wonder if driving can ever be more enjoyable than this. A Tributo owner gets the same fundamental sensations, but dropping the roof is like a drug that makes the F8 experience all the more intense.

BEN BARRY

First verdict

Exhilarating fusion of coupe refinement with open-top excitement adds a welcome extra dimension to the F8 experience

★★★★★

Data

PRICE

£225,897
(£282,225
as tested)

POWERTRAIN

3902cc 32v turbocharged
V8, seven-speed
dual-clutch auto,
rear-wheel drive

PERFORMANCE

710bhp @ 8000rpm,
568lb ft @ 3250rpm,
2.9sec 0-62mph,
212mph

WEIGHT

1400kg
(dry)

EFFICIENCY

21.7mpg,
296g/km CO2

ON SALE

Now

TESLA MODEL Y

Y? Because he can

Tesla's Elon Musk will get you. The Model Y is his latest bid for your custom

On the road to electrification and the race to Mars, no one is ahead of Tesla and Space X boss Elon Musk. But with the Model Y, perhaps his most important model yet, the American visionary will have to get used to a new perspective: where the Roadster and Models S, X and 3 were all pioneers, the Model Y will chase rivals from more established mainstream makers – at least in Europe, where the first cars aren't expected until 2021. By then VW's ID.4 will be with us, the ID.3 firmly established, and Audi's Q4 e-Tron and the BMW iX4 vying for your cash.

As a semi-compact SUV, the Model Y is both familiar and alien at the same time. Technically closely related to the Model 3 (the UK's best-selling car in April, albeit in a collapsed market), the Model Y also looks like the 3, making for a relatively elegant, smooth and dainty machine by crossover standards. But the hint of Model X in the silhouette is no illusion; Tesla has stretched the Model 3 7cm wider, 6cm longer and 18cm taller to create the roomier Y.

Climb in and, while you sit a touch higher than you do in the Model 3, the difference isn't marked. The good news is there's the same calmness thanks to the almost switch-free cockpit. The bad news is that the nose is so short and stubby you can't see the front of the car when you're behind the wheel – thankfully there are cameras all round.

That elevated roofline makes a real difference in the back; there's now sufficient headroom (tall passengers can feel squeezed in the back of the Model 3), and in the Y you can adjust the angle of the three-part backrest. Fold the seats flat to access 1900 litres of space for the movement of new white goods acquired on scarcely believable finance but, as spacious as the luggage compartment may be, you can't imagine the optional third-row seating being of use to anyone too old to understand *Minecraft*.

The Y will be available initially in Performance (tested here) and Long Range guises. Both are twin-motor and all-wheel drive, with the Performance sacrificing some range (298 miles,



Cabin (and car) is heavily Model 3 based

estimated, versus 314 for the Long Range) for 3.5sec 0-60mph (versus 4.8sec) and an entirely academic and pointless 150mph (versus 135mph).

Get moving and the affection you're probably already nurturing for the Y is likely to blossom rapidly. Progress is quiet (wind and road noise, despite the Performance's big 21-inch wheels, are well suppressed), refined, calming like a good therapist and, when you need to trade serenity for speed, unfeasibly rapid. Little this side of a Porsche Taycan can live with the Model Y's startling turn of speed; an incongruous truth given that one's a four-seat sports car and the Tesla a family wagon (albeit one likely to cost £60k).

Like the 3, the Model Y is a more engaging drive than the bigger Teslas, certainly the bulky, aloof X. The Y's steering is nicely direct, the brakes strong (choose your level of regenerative braking on the 15-inch touchscreen), body control way better than most crossovers, and the grip and all-wheel-drive traction generous in the extreme. The trade-off for this unlikely appetite for carrying corner speed is an unyielding edge to the ride quality.

THOMAS GEIGER

First verdict

The battery-electric crossover battle is hotting up, and the Y is a compelling i-Pace rival; fast, pretty, practical and good fun
★★★★★



THE FIRST HOUR

2 minutes

Just me, or is this thing handsome? Neat Model 3 motifs, vaguely Model X silhouette

5 minutes

Climb in, go – we should be used to it by now, but Tesla's easy mobility is still a thrill

27 minutes

Giant centre screen takes acclimatisation, but it works well

49 minutes

Ride is firm. Powertrain far quicker than any crossover really needs to be

▲ PLUS

Handsome; fast; capable; refined; a Tesla

▼ MINUS

You'll have to be patient; Performance likely to cost £60k

Data

PRICE

£60,000 (est, Performance version)

POWERTRAIN

75kWh battery, twin e-motors, all-wheel drive

PERFORMANCE

444bhp, 470lb ft (est), 3.5sec 0-60mph, 150mph

WEIGHT

2003kg (est)

EFFICIENCY

n/a miles per kWh, 298-mile range (est), 0g/km CO2

ON SALE

2021

Little this side of a Porsche Taycan can live with the Y's startling turn of speed



Model Y is that rare beast: a crossover to truly covet

Opinion

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ELECTRIC LANCIAS + VIRTUAL RACING + HYDROGEN PROBLEMS

Letter
of the
month



Forza Italia!

The new Tonale crossover looks fine, but why isn't Alfa Romeo playing to its strengths? Italian cars are known for their timeless style and handling that feels like it's hardwired into your nervous system. And Alfa has an excellent platform to work with. Meanwhile, Fiat should burnish the image of its affordable city cars with a snazzy coupe – a modern version of the sort of thing it used to do so well. And Lancia? The cars were always classy and beautiful. It's time the marque made a comeback, just electrified.

Charles Winingham

The Tonale exists because crossovers sell. As for Lancia, I'll be at the front of the queue for your electric Delta Integrale reboot. BM



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Pedigree chums

In Our Cars in the May 2020 issue, Anthony French-Constant refers to his 'beloved Scirocco GTI Mk1'. I too had a white 1.6 GTI, a rare animal then, as most were sold as GLIs. The GTI was only sold towards the end of the Mk1's run although the spec was, I believe, identical. Now my son has a 2012 Scirocco 1.4 TSI 140 and brings the family full circle.

I loved mine, my first real performance car, though some years later it was displaced in fondness by my Corrado VR6, my favourite car ever. My current BMW 428i Gran Coupe is great, but doesn't have the character or fun factor of those VWs. Interesting to see Anthony has such a good pedigree.

Damian Bushell

The last Scirocco was penned by Ferrari's design boss, Flavio Manzoni (below). BM

Virtual hangover, too?

The lack of live motor racing on TV isn't, admittedly, the biggest problem facing the world right now. But weekends aren't quite right without a Grand Prix and, being a latecomer to the Le Mans 24 Hour, the wait for September's re-scheduled race feels like a long one. eSports? A mixed

bag so far, in my view. The online F1 races I've watched just haven't proved all that interesting, but I gave last weekend's Virtual 24 Hours of Le Mans a go regardless. And I'm glad I did. Close, compelling and – crucially – properly run, with driver conduct and all the normal WEC regulations observed, it provided more than a few hours' entertainment. And now I'm furiously clearing out the garage while researching the prices of simulator rigs and a PlayStation...

David Hart

See you at the real thing in September, fingers crossed. BM

Is that the best they can do?

I have owned Audis since 1983. It's now time to change my current petrol Q3, and I realise that my next car must be more environmentally friendly.

I have looked at EVs but on closer examination, from cradle to grave, they are not as environmentally friendly as the manufacturers will have you believe, and there are many disadvantages: cost, battery cost, battery weight, range anxiety and charging. Then I looked at hydrogen-fuel-cell cars – there are currently three on the market. These use a technology that is currently the most environmentally friendly, only



generating heat and emitting pure water. As far as I can see, there are only two major disadvantages to a hydrogen-fuel-cell car: cost and the lack of a refuelling infrastructure. The high cost is mainly attributable to tiny volumes and no economies of scale. The lack of refuelling infrastructure can be attributed mainly to successive governments, who have seen to it that most hydrogen stations are close to or within the M25.

So where do I go from here? My nearest hydrogen station is 35 miles away. Must I drive around in an EV, suffering from range anxiety, knowing that I should have bought a better technology?

Mark Woolfson

I've driven several fuel-cell cars (Honda Clarity, Toyota Mirai, Audi A7 prototype, Hyundai ix35) and, for what it's worth, all drove nicely; refined, quiet, calming. They're EVs, after all. But as you point out, fast refuelling counts for nothing if the nearest pump's an hour's drive away. A new VW ID.3, a bicycle and a green electricity tariff? BM

The legend lives on

Reading your recent Lotus Evora GT410 300-test (May 2020) was made even more enjoyable by the small mention of the Aitkin-Walker garage, which helped James Taylor during his trip to Scotland. Recently I've been stuck in the perennial time-sink that is watching old rally videos on YouTube, and the company's namesake appears in many.

Louise Aitken-Walker is a certified rally legend, winning the FIA Ladies' World Championship in 1990. I recently stumbled across her stunning



Works of art, or 'derivative, ungainly, and slightly awkward looking cars'?

A GLE. Does it do anything an E-Class cannot?

performance on the 1987 RAC Rally. Driving a 1900cc, non-turbo, front-wheel-drive Peugeot 205, at one point she sat in eighth position overall, ahead of drivers in much quicker machinery such as Carlos Sainz, David Llewellyn and Kenneth Eriksson, before ultimately succumbing to the treacherous Langdale Forest.

Happy to hear that her family business is still going strong!

Thomas Harrison-Lord

Beyond a joke

One of my favourite elements of CAR is the space you give over to Gavin Green and Mark Walton. I particularly enjoyed Mark's prose in the May 2020 issue, and was inspired to type 'Aston Martin V12 Speedster Reveal' into YouTube. And, yes, my word, what an utter shambles. It was pretty hard to watch – I almost convinced myself it was a spoof for a while. The robotic Lawrence Stroll and the haunted-looking Andy Palmer made uneasy bedfellows.

In time, as I made it through the magazine, I reached the 'Aston's Next Chapter' feature. There, two derivative, ungainly, slightly awkward-looking cars were described as 'works of art'. Not to my eyes. And that's before we even start talking about that DBX monstrosity.

It's 2020: maybe it's time for this irrelevant dinosaur of a company to be allowed to die. I wouldn't shed a tear.

Robin Harper

Needs versus wants

Most manufacturers now offer the same size of car as both a traditional saloon or an SUV. Look at the basics and, for example, the Mercedes E-Class and GLE are both spacious, luxurious,

comfortable and prestigious. But then there are the obvious compromises of poorer performance and poorer handling with the (more expensive) GLE, which will only matter to a small number of prospective buyers. But the poorer economy and ride will be noticeable to many more, and what do you get in exchange? A higher seating position! There is nothing else: they do not satisfy different needs; they merely satisfy different wants, and a lot of people want (but do not need) an SUV.

If manufacturers want to be eco-friendly, they need to convince people to buy something other than over-sized, over-weight, over-wrought SUVs. As Henry Ford said, if he'd asked the public what they wanted, they would've said a faster horse! Someone needs to come up with a new Model T.

Sydney Dott

Sydney, might the answer be a Series 1 Land Rover with a battery-electric powertrain conversion (see page 58)? BM ►

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Dyson car, we hardly knew thee

Fascinating to read the inside story of James Dyson's aborted electric car in the July issue. What a loss to the car world that we'll never know how the final product would have turned out. It seems a worrying indicator for the future of the car world in general that half a billion pounds isn't enough to get an inventive product with real substance off the ground.

What hope for any new blood in the mainstream car market? If the car makers we have are the ones we're stuck with for the foreseeable, that doesn't feel like good news for innovation.

The Dyson car's seats look great, incidentally. If James Dyson has any spares knocking around, please tell him I'll take a pair.

Steve Bradford

Sobering proof of just how cash-intensive EV development really is. Somewhere in a BMW filing cabinet, there are return-on-investment calculations for the i3 and i8... largely in red. BM

This is not progress

Phil McNamara identifies exactly the current failings with electric vehicles, even the £80k ones, in May's Our Cars. He was stressed out of his box by a 79-mile trip to Goodwood. Zap-Map searches. ID cards. Sixty-four minutes in Costa after he eventually got plugged in: £14 for electricity and

another tenner to the coffee shop. Google Maps times that journey today at 100 minutes. I could go on, but I'm concerned I'll run out of...

Bob McEwan

...charge? BM

NSX, king of the passes

For the past 20 years I've owned a Honda NSX-T. Each summer my wife and I travel through Europe for three to four weeks, going where the mood takes us. Over the years we've covered every country west of Poland: Portugal, Spain, Corsica (three times), the Czech Republic, Croatia, too many Alpine passes to mention (okay, I will mention the Stelvio). And the Honda has never missed a beat.

A few years ago we visited the start of the Mille Miglia, then decided to head for the Dolomites, taking a route past Lake Iseo and over what looked like a hairy mountain pass towards Bolzano. No sooner had I started the climb than I heard a roar and saw six bikes in my mirror. Three tore past me, with the other three hanging back. Normally I'd have let them go – beautiful day, lovely scenery, targa top stashed above the engine. But something inside snapped and I thought, 'Let's go for it!'

What followed probably only lasted 15 minutes but in my mind's eye took an hour. Dropping a couple of cogs, I went after the three in front and soon caught them up (they obviously weren't trying at this stage). Game on! Glancing behind, they opened up and started pulling away, but it was a fascinating match as, although they had the advantage on the straights, these were rather short and bikes, no matter how powerful, don't like hairpins. With



All the touring car you could ever need

every tight bend I'd find myself back on their tails, their glances telling me they were wondering what they had to do to shake me off. VTEC screaming, we soon dropped the three behind and spent a glorious time in a nip and tuck to the top, my heartbeat matching the revcounter.

Sadly, within a half mile of the downhill section I had to let them go or I would have cooked the brakes, but I still have the grin (and the flies in my teeth!) to this day. A memorable drive indeed. And the NSX is still going as well as ever.

Ken Green

Ain't that the truth! The only bikes I've ridden that enjoy hairpins are adventure bikes like the BMW R1200GS; narrower tyres and wider handlebars make them quicker to change direction. BM

Too sensible by half

Recently the tone of some of the letters you run has got me wondering whether they're actually being written by CAR readers. Remarks about the turning radius of cars, the need for torque

James Dyson (with one of the most expensive backdrops in the history of portrait photography)



figures rather than bhp, and the Festival of the Unexceptional being a refreshing change from the 'gas guzzlers' few can afford! Surely these are the reasons we have been buying/reading CAR for many years?

Mike Franklin makes a very pertinent point about the development of hydrogen as a car fuel, as does Steve Hammatt. I have long advocated the development of hydrogen as an alternative to the all-pervasive battery. Those who support electric power make great play on the environmental benefits of the clean power available, but avoid mention of the hideously expensive and rare metals being mined and delivered across the globe in order to make batteries. I agree with Andy Furmidge-Owen on the point that the car industry, and motor racing for that matter, is kow-towing to the green lobby and acting as apologists for enjoying driving a motor car.

I have been a long term reader of – and subscriber to – CAR despite your fixation with Porsche in all its iterations, and more recently the increasing coverage of all things electric and technological. I often wonder how many people who buy cars loaded with tech buried within obscure computer programmes actually use any of it.



Our F-Type 300-mile test, by Alan Whicker

Yours is still a fine magazine though. Fabulous article on the Huracan (300-mile test, June 2020); that's more like it!

Neil Davey

It's called CAR

Love your bloke's professionalism, style, expertise and humour. But wouldn't that saggy F-Type story in the March issue been better placed in a travel mag?

David J McCarthy

Erm, thanks? BM

Whole-life costs

While the purchase price of EVs is high, the total cost of ownership is cheap. 'Fuel' costs are 1-2p per mile. Brakes last for ages. Servicing costs are tiny. In two and a half years of ownership, the only three-figure cost we've had was two new tyres at 40k miles. Covering 12,000 miles a year, we're saving over £1500 annually over our old diesel supermini.

And the depreciation is far lower than 'regular' cars. Look at the recent articles about the fall in the values of a BMW 3-series versus a Tesla Model 3 – the former lost a third of its value in a year; the latter lost five per cent. Our Renault Zoe is still worth close to what we paid for it two and a half years ago. This means lease deals are cheaper, or you make far more when you sell it. You can't really ignore the fact that three of the top 10 best-selling cars last month were EVs. Strange days, I know, but EVs will only become more popular.

Charlie Heard

car

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INSTANT REACTIONS VIA FACEBOOK

CORVETTE C8 CONFIRMED FOR THE UK



'We all know how good a 911 is, but let's give the Corvette a chance in this changed world.'

Derek Evans

'And about five people will buy one.'

Martin Jones

'You'd be in the Corvette and a 911 would draw up alongside and in that moment a part of you would die inside.'

Andrew J Reilly

'The one thing they got so wrong was the styling. Every Corvette until now has looked fantastic. Now the car is brilliant but looks at best bland.'

Eldridge Szymanski

‘Sitting in my parents’ Ford Falcon watching *The Dirty Dozen* was as good as it got in the late ’60s’

A wonderful slice of American car culture is coming to the UK. The drive-in cinema, a staple of my childhood in Sydney, is heading to a stately home, sports ground or car park near you.

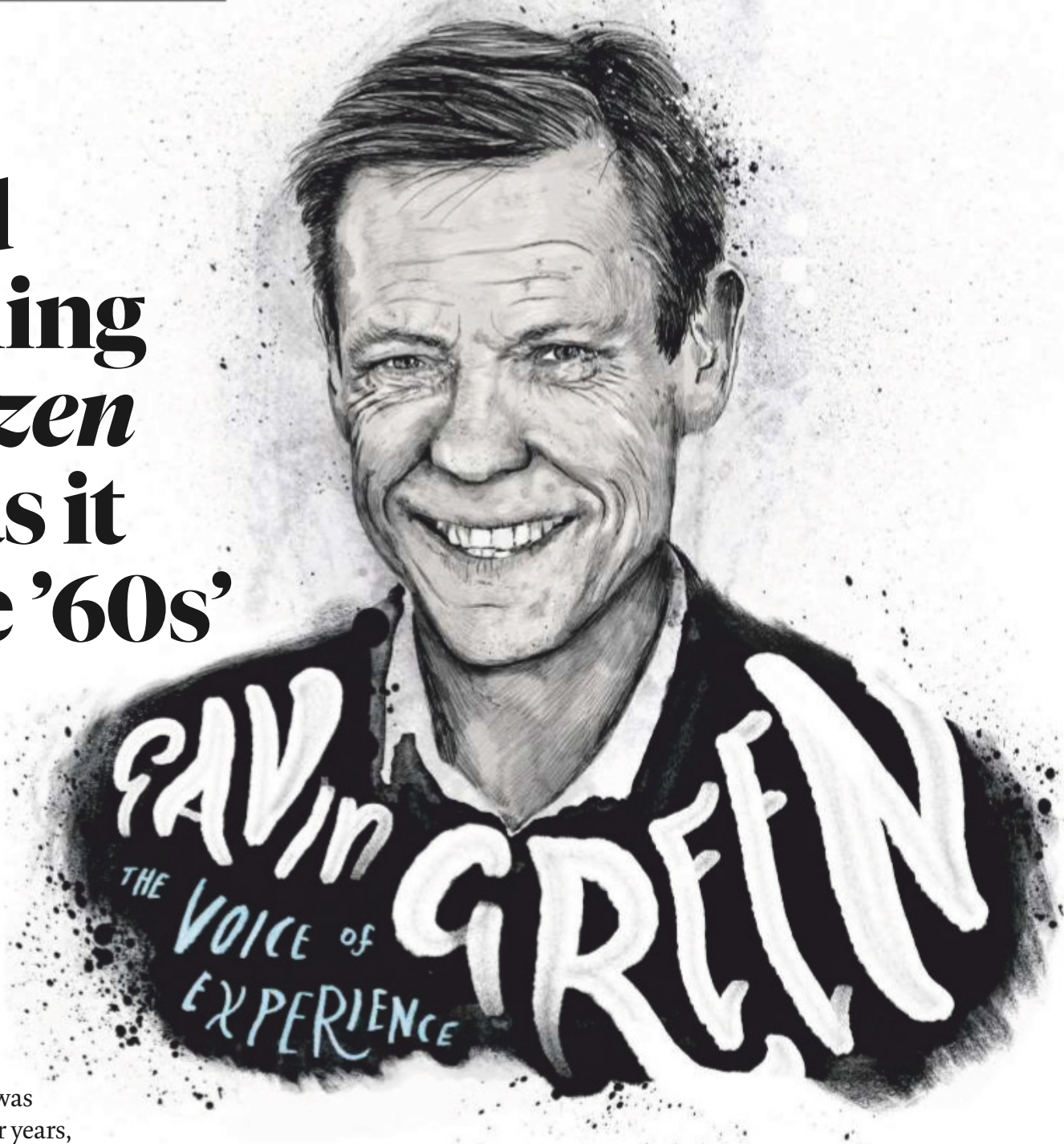
This sliver of *Happy Days* was hugely popular in the US and Australia in the post-war years, right up to the ’70s. You’d park your car facing the giant outdoor screen, the movie beamed across the clear night sky. You’d attach a speaker to the driver’s open window. Picture quality was fuzzy by today’s high-def standards and sound quality was feeble. But nobody seemed to mind. Rather, you’d enjoy your movie and burger and Coke. Some even had girls on rollerskates who’d deliver food and drink, right to your car.

Drive-ins never took off in the UK. I guess the weather was too rubbish – rain and outdoor movies don’t mix – and land too expensive. They died off in America and Australia, too. Colour television, video and the galloping price of land all contributed. But, as the coronavirus turns the world upside down, so they’re making a comeback. Or in the case of the UK, a very late entry. Cocooned in the social-distanced safety of your car, you can now watch the films that your local Odeon deems too risky.

Up to now, the only drive-in cinema I was aware of in the UK was in McLaren F1-designer Gordon Murray’s Americana-themed barn. So it wasn’t outdoors and it wasn’t open to the public. Yet sitting in Gordon’s Cadillac flat-top sedan watching the big high-def screen, 4500-watt seven-channel surround-sound pumping out the soundtrack and little LEDs sparking in the barn’s ceiling like a starry summer sky in LA, is about as close to Sunset Strip circa 1959 as is possible in southern England.

Now, this summer, drive-in movies are coming to Warwick Castle, Blenheim Palace and Knebworth House. Venues that usually earn good money from picnics and concerts hope drive-in cinemas can provide a profitable alternative. Up to 500 cars and two or three screenings a night are planned. The Allianz Park rugby ground in north London is also being used by Luna, outdoor cinema specialists now diversifying into drive-ins. Movies include *Grease*, *La La Land* and *The Blues Brothers*.

Meanwhile, pop-up drive-ins are appearing throughout the country until September. London, Birmingham, Manchester and Glasgow are



among 12 cities where you’ll be able to watch movies from the comfort and social-distancing safety of your own hatchback. Novel locations include Edinburgh Zoo, Brighton Marina, and Newcastle and Bristol airports, which all have no shortage of unused parking.

As a kid in Australia, drive-in movies combined what would become two of my keenest interests, films and cars. Sitting in my parents’ Ford Falcon watching *The Dirty Dozen* at the Skyline Drive-In French’s Forest was about as good as suburban Sydney got in the late ’60s.

Later, as a teenager, I’d go with mates. A favoured cost-cutting ruse was to drive up to the ticket kiosk with a friend in the front seat and two hidden in the boot. The ticket sellers were wise to this trick and would frequently check trunks. Old Holdens, Fords and Chryslers, nose up, rear bumper almost scraping the tarmac, were a clear giveaway.

Blenheim Palace and Warwick Castle organisers, take note.

The best drive-in-cinema vehicles were panel vans. Colourfully painted Holden or Ford vans, often with surfing murals on their flanks and burbling 5.0-litre V8s in their noses, would reverse into their drive-in parking slots. Movies were watched through the open tailgate. Typically, a double mattress would be fitted in the cargo area, and you’d eat your burger and drink your Coke lying with your arm around your girlfriend, and... Well, you can probably imagine the rest.

I’m sorry, dear reader, but watching a movie at Blenheim Palace or Edinburgh Zoo from the cargo area of your Citroën Berlingo or Volkswagen Caddy just won’t be the same.

Contributor-in-chief Gavin Green left behind Australia and its drive-ins in the ’80s. Only now are they catching up. That’s how far ahead of his time he is...



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‘Of course, this got my mind racing. There’s loads of room for a motor and battery in the Series 1!’

I bought my Land Rover at the wrong time. Let’s call it ‘Peak Series 1’: it wasn’t long after JLR announced its Reborn programme: an as-new, restored classic for a whopping £80k. For a few months Series 1 prices went silly. Peak stupidity on my part.

Still, I console myself with the notion that when legislation eventually bans all petrol cars from the road, and I have to tell my wife that my ‘investment’ is not only redundant but also worth naff-all, at least the Series 1 will be ripe for an EV conversion. As an early 80-inch example, it’s a tiny, featherweight car, weighing just 1178kg (about the same as a Lotus Exige). If you took the 1.6-litre engine out, it’s basically a rolling ladder chassis trimmed with fresh air and alloy. A couple of Duracell batteries and an electric toothbrush motor ought to do it.

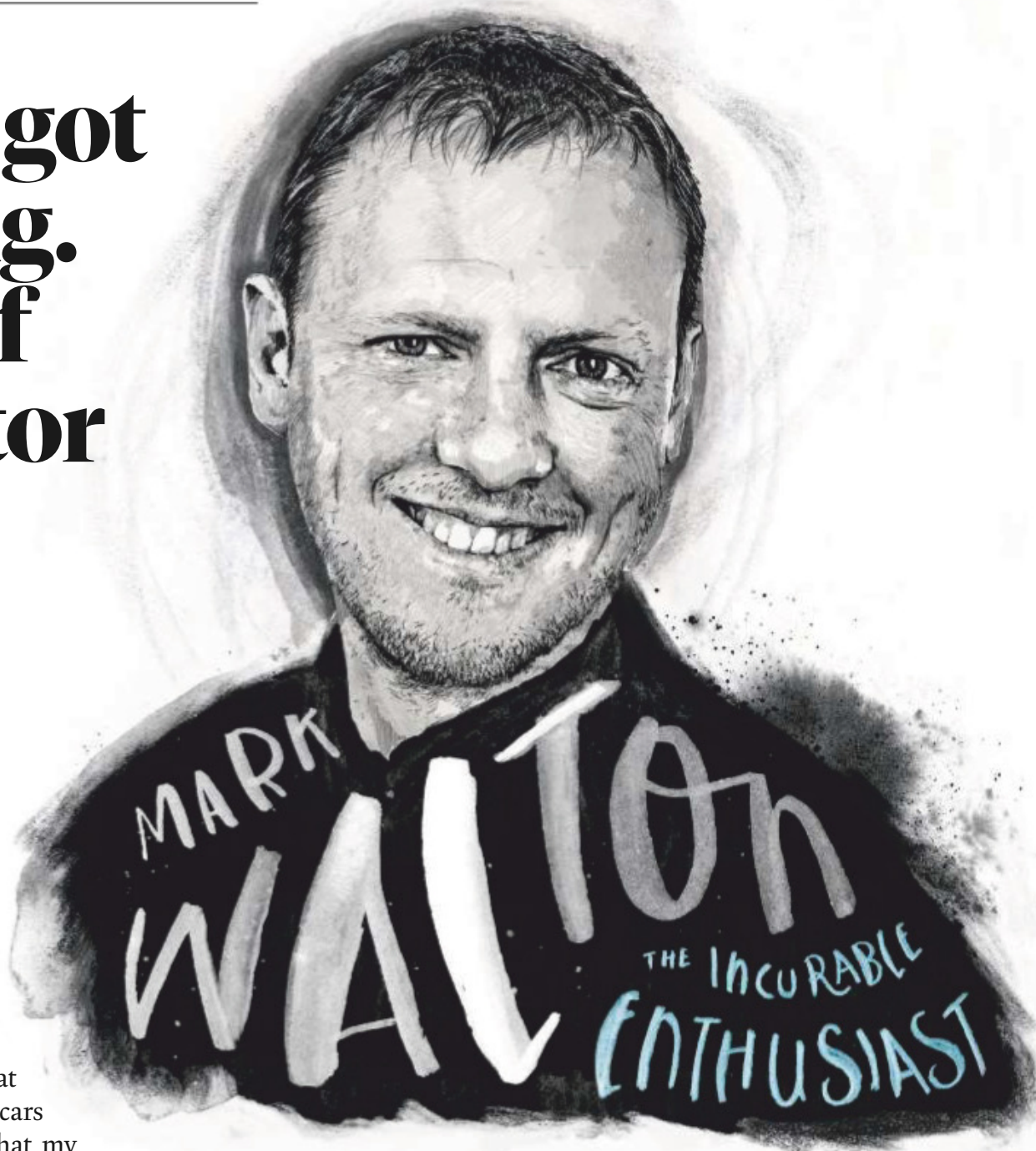
That’s why I sat up and took notice when Swindon Powertrains recently announced its EV ‘crate’ motor. You may know Swindon as the company that builds BTCC touring car race engines. Now it’s released the details of its High Density Power (HDP) motor, an off-the-shelf electric power unit. For £6400 plus VAT you get an 80kW (107bhp) motor with transmission, differential and a metre of cabling. The rest is up to you.

The announcement seems have tapped into the imaginations of car enthusiasts everywhere – company spokesman Nick Bailey told me they’ve been inundated since announcing the HDP. As well as ongoing talks with three manufacturers, they’ve also had enquiries from owners of everything from a Lotus Elise to an Austin Healey 3000 and even a canal boat. ‘Until now, DIY-ers have been trying to do EV conversions with parts scavenged from scrapped Nissan Leafs,’ Nick tells me, ‘but the packaging of the Leaf motor isn’t really suitable for a classic-car conversion. Our HDP motor is compact, it has multiple installation points and you can site the inverter and cooling packs separately, for maximum flexibility.’ Swindon can also design and supply a bespoke battery pack using Samsung cells.

Of course, this got my mind racing. There’s loads of room for a motor and battery in the Series 1! The Land Rover would be modernised! Cutting edge! Relevant again! Worth something!

I was just about to tell my wife that I’d solved our stupidly overpriced Series 1 problem (by spending a further 10 grand on it), when I drove the new Porsche Taycan Turbo. Oh dear.

Finished in Volcano Grey with 20-inch Sport Aero wheels, Porsche’s



new electric saloon looked sensational. Inside, it had the super-modern, ‘leather free’ interior in grey fabric. The sports seats, the alcantara-wrapped steering wheel, the curved screen ahead of you, digital instruments – my God, this car is so zeitgeisty it makes Apple feel old-fashioned.

And it wasn’t the £131k price tag (with options) that shocked me; nor was it the brutal shove of the 616bhp all-wheel-drive powertrain (670bhp in Launch Control mode). Though that did make me want to vomit, after a few 0-62mph starts.

No, the mind-blowing thing about the Taycan is how unbelievably sophisticated it feels. This is a car that drips with profound engineering know-how. The ride is faultless: it feels light and agile, despite the 2.3-tonne kerb weight, a perfect blend of four-corner communication with surface-smoothing refinement. And it’s so quiet inside: no squeaks or rattles; every switch, knob and handle operating with achingly German precision. If the Taycan was a sock drawer, it would be a sock drawer that glides out silently when you touch it, stopping slowly and exactly without any kind of a judder or friction, and all the socks inside would be immaculately folded and made of organic grey cotton.

The Taycan is the best electric car I’ve ever driven – way better than a Tesla – and now I feel a bit miserable. It’s just highlighted the enormous gulf opening up between ‘regular’ cars and a new generation of fully digital, sci-fi-era EVs. On the way home, in my Subaru Forester diesel – built in 2012 – it felt like I was driving a Nokia 3210 phone from the ’90s.

Face it, even with an EV conversion, my Land Rover will feel like a clunky ’50s tractor. Give up, analogue DIY-ers, the software guys have won.

Editor-at-large Mark Walton is lightweight and sought-after, making him ripe for conversion to battery-electric power

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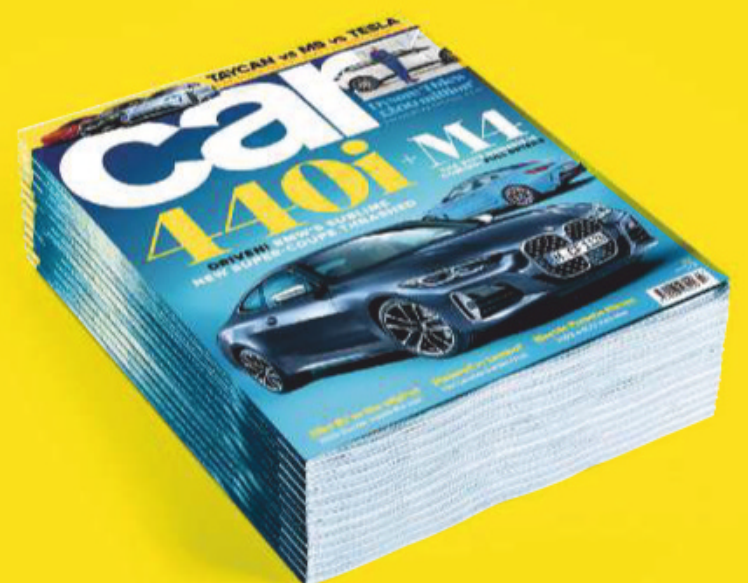
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This, then, is it. Everything Maranello's learned from its hybrid LaFerrari and F1 cars, distilled into the all-wheel-drive, V8/electric SF90. We drive the hypercar that must safeguard Ferrari's future

Words Chris Chilton **Photography** Richard Pardon





Just as 20th century powertrain tech has no place here, so Ferrari's moved on from round rear lights

still mostly aluminium chassis, and powered by a hybridised twin-turbo V8, the SF90 is a regular production car, like the F8 Tributo. Only one that costs 85 per cent more.

For all the clever tech Ferrari has packed into the SF90, the price is one of the smartest things about it. The SF90 costs £376,048 in standard trim, or £39,360 more in sportier Assetto Fiorano spec. Dip into the options list – or Ferrari's personalisation programme – and you could probably spend half a mill without breaking sweat. That's serious money, and with production likely to reach a couple of thousand cars per year, a nice earner for Ferrari.

What else is a rich, but not revoltingly rich, Ferrari lover to do, but fork out for it? There's not actually much available to buy in the void between junior supercars like the £203k F8 Tributo and full-blown hypercar like the now dead £1.2m+ LaFerrari, either from Ferrari or anyone else.

And even if you can afford the next LaFerrari, so too can more people than there will be cars to go round. With SF90, you've got a good chance of nabbing one without having to prove you've bought every Ferrari since Fiorano was a turnip field.

LaFerrari was a hybrid too, but while a few owners convinced Ferrari to update their cars to be able to run purely on electric power, that wasn't part of the original plan. But times change, laws change and so do the mindsets of owners. These days, enjoying supercars and caring for things like city air quality needn't be mutually exclusive.

Although, as a low-volume manufacturer, Ferrari doesn't have the headache of meeting the same 95g/km fleet-average CO₂ target as VW or Ford, like McLaren it's still bound by a promise to reduce its own emissions. Which is why, like it or not, this latest Ferrari is a hybrid.

It won't be the only one. If you were slightly disappointed that Ferrari chose to facelift the already facelifted 488 to create the F8 Tributo rather than make a brand new car, this is the answer – this and the smaller V6 hybrid sports car it will spin from the same platform.

We don't yet know much about the baby V6, or the hybrid SUV also in the works that will benefit from some of the same technology. But we're about to find out plenty about the SF90, which is waiting for us just inside the famous factory entrance.

The SF90 doesn't have the visual draw of a LaFerrari-grade hypercar, but compared to the F8 Tributo it looks, fuller, wider, weightier. Wider it isn't, but weightier it most definitely is. Adding four-wheel drive and hybrid ►

The Ferrari SF90 has more sides than a dodecahedron with dissociative identity disorder. A demon track weapon one minute, a relaxing cross-continent cruiser the next, it's the heaviest Ferrari sports car ever built, yet can lap Ferrari's Fiorano track as quickly as the lightest. Depending on which driving mode you select, it can either keep a Bugatti Chiron honest from the lights – or be shown the door by a supermini.

And if you pull away sharply on a loose surface in its eDrive EV mode, during which the V8 and the rear axle take a little nap, you'll discover one more mind-bending fact: the SF90 is, at least some of the time, Ferrari's first front-wheel-drive production car. Unprecedented times, indeed.

Ferrari claims the SF90 launch was put back from March to early July because of the coronavirus outbreak. But maybe it was just to give the SF90 the chance to get its story straight. What exactly is this car for? And is it any good at it?

What it most definitely isn't, despite an ability to out-sprint it in a straight line and match its Fiorano lap time, is a replacement for the limited-edition carbon-bodied, V12-powered LaFerrari hypercar. Built around a new but



In Formula 1, Ferrari's hybrid powertrain leads the field



New badge key slots in here. Drive controls a nod to open-gate manuals of old

**THE HEAVIEST
FERRARI SPORTS
CAR YET BUILT,
IT CAN LAP
FIORANO AS
QUICKLY AS
THE LIGHTEST**



SF90
introduces
Ferrari's new
HUD and
16-inch TFT
display

Don't worry too
much about all
this talk of front-
wheel drive



Brave new world
is accessed via
new-generation
infotainment
system and
driver's display



IN EDRIVE, IT SOUNDS LIKE A CLANDESTINE FORKLIFT TRUCK TIME TRIAL IN AN AMAZON WAREHOUSE

power has brought significant ballast; ballast that even a new-era aluminium chassis incorporating carbonfibre bulkhead elements can't hope to offset. Ferrari claims a 1570kg weight, compared with 1330kg for the rear-drive, non-hybrid F8. And that's a dry weight, so not comparable with the numbers from, say, Porsche. Think closer to 1700kg with a beefy driver and a full complement of fluids. Worrying.

Worrying too is the sound on start-up. Prod the button at the base of the wheel and there's no eruption, just a gentle, brief, synthesised *zizzzz* to let you know the car is ready. Wait, what? After all the build-up, the anticipation, the numbers, that's it? It's like watching Hitchcock's *Psycho* for the first time, witnessing the lead character get stabbed to death at the halfway mark and thinking, 'Er, okay, so now what?'

Yep, unless you select Performance or Qualifying midway through the process, the fastest roadgoing Ferrari of all time defaults to Hybrid mode at start-up. But rather than immediately send the V8 its draft notice, let's roll with it. In fact, let's double down and investigate the fourth option on the steering wheel's new *e-manettino* powertrain mode selector: eDrive.

In eDrive the V8, the new eight-speed dual-clutch transmission and the single e-motor sandwiched between them all take a back seat. All forward propulsion comes from the two electric motors mounted in the nose, which draw on a 7.9kWh battery on the rear bulkhead to send up to 217bhp to the road and give you an electric-only range of 15.5 miles. And a sound like a clandestine forklift truck time trial in an Amazon warehouse.

You don't need to be manning the *Countdown* whiteboard to realise that a 1570kg car with 217bhp isn't going to feel especially rapid. Ferrari says its performance target was a mid-spec Golf, and that in EV mode the SF90 was never meant to be a Tesla rival. So while Porsche's seven-year-old 918 Spyder could whir from zero to 62mph in 6.2sec, the SF90 needs 9.3.

Objectively, that's more than enough to keep up with any traffic, but is it really enough to keep up with the expectations you have of something wearing the Ferrari badge? And subjectively, the throttle tip-in – that reaction you get when you first hit the right pedal – is unusually soft by EV standards, which makes the SF90 a very relaxing, if unexciting, EV. It's also worth noting that no matter how hard you mash the throttle, the combustion engine will never intervene to spare your blushes.

Pointless pontificating, Ferrari would say, because Hybrid mode gives the best of both worlds. And it really does. The big surprise is how often Hybrid mode devolves to EV power, dropping the V8 out whenever possible, and seamlessly pulling it back into play when you need it. But the even bigger surprise is the natural feel you get from the brakes; a key point of communication with a supercar, but so often a disaster on cars that use braking to regenerate energy.

That slick blending of the two power sources is not just technically impressive, it adds something to Ferrari's mid-engined cars we haven't seen before: GT-style refinement. As we meander south from Maranello in traffic too dense to be picked off, you're aware of just how easy the SF90 is to drive. You still have access to all 986bhp when you need it, but with the near-silent smoothness of an e-Golf when you don't. I'm sure if you owned an SF90, you'd find yourself using Hybrid more than you ever imagined.

But not when you want it to feel like a Ferrari – or what you imagine the fastest Ferrari of all time should feel like. For that you need the upper two *e-manettino* modes. Both lock the twin-turbo V8 into play, but while Performance prioritises charging, Qualifying is all about maximum punch ►



ELECTRIFYING

SF90 has three electric motors: one sandwiched between engine and transmission and driving the rear wheels; and two on the front axle.

Ferrari considered a single front motor, but decided the extra weight was worth it for the twin set-up's torque-vectoring function. Total e-output is 217bhp and 196lb ft.

MATERIAL GIRL

Unlike McLaren, which is all-in on carbonfibre, Ferrari still thinks aluminium is a better choice for its series production cars. The new aluminium body is designed to offset the extra weight of the hybrid system, and also cope with a massive increase in power. The rear bulkhead is carbonfibre and castings are now hollow, not ribbed. Structure has 40 per cent more torsional rigidity than F8 Tributo.



ENGINE

The SF90's V8 is based on the F154-code twin-turbo unit from the F8. Capacity is up from 3.9 to 4.0 litres courtesy of a wider bore, and there are new heads with larger intake valves, a central injector and higher-pressure direct injection. Gasflow is improved by lowering the position of the turbos – which now get electronically controlled wastegates – and raising the height of the exhaust. The F8 already makes a healthy 710bhp, but those mods push the SF90 to 770bhp, plus 590lb ft. And that's before you get to the three electric motors...

DAN'S THE MAN

The SF90's party piece is an electrically adjustable two-piece rear wing called the shut-off Gurney. At low speed the two sections align, allowing air to flow above and below the Gurney. At higher cornering speeds or under braking, one section is lowered, uncovering the other, fixed portion, boosting downforce. But the SF90's shape was dictated as much by the need to provide cooling to its powertrain as to provide downforce. Air passing through the front radiators is directed along the underbody rather than the flanks, to keep air entering the rear intakes cool.

NO GOING BACK

Gearbox is a new, 10kg-lighter, dual-clutch eight speeder – with no reverse. That's handled by the electric motor. If you need to go backwards and the battery's flat, the engine will fire up to power it. Casing is now 20 per cent smaller, lowering the powertrain's centre of gravity by 15mm.

**YOU STILL HAVE ACCESS
TO ALL 986BHP WHEN YOU
NEED IT, BUT WITH THE NEAR-
SILENT SMOOTHNESS OF AN
E-GOLF WHEN YOU DON'T**





eDrive is the fresh ground broken here – that and a near-silent start-up



THIS IS BUGATTI CHIRON-LEVEL SHOVE, THE PHYSICS THROWING YOU BACK IN THE SEAT



Massive all-wheel-drive traction can be defeated



V8 gets bigger bores, new heads, new manifolds...

at all times. The SF90's V8 is based on the F8 Tributo's, but stretched from 3.9 to 4.0 litres by opening up the bores, and there are new cylinder heads and intake and exhaust manifolds, plus electronically-controlled wastegates for the turbos. That lot pushes output up from the F8's 710bhp to 769bhp, and lifts torque from 568lb ft to 590lb ft. Factor in 217bhp of e-power and you're looking at 986bhp – or a nice, round 1000 metric ponies. (Ferrari states 133bhp and 63lb ft for each front motor and 201bhp/196lb ft for the rear motor, but isn't going public with a total powertrain torque figure. And while the e-motors' theoretical combined might is far higher, the battery limits the their total output to a nominal 217bhp.)

Ask for everything and you'll accelerate more quickly than anyone ever has before in a production Ferrari with more than one seat. This is Chiron-level shove, the physics hurling you back in the seat and, as both axles dig in to send you 0-62mph in 2.5sec and 0-124mph in just 6.7, leaving you struggling to keep your hands stretched out ahead of you. An F8 needs 2.9sec and 7.8sec in the same tests, and while neither is as musical as Ferrari's naturally-aspirated V12, the SF90 has a richer, more cultured tone. And a much crisper throttle. The electric motors don't only add outright power, but their instant torque helps fill the bottom of the V8's twist curve, and almost (but not completely) gets rid of the already minimal turbo lag.

Diving into some esses in the hills south of Maranello, it's clear there's less steering latency here, too. The now electrically-assisted rack is more rigidly mounted. It feels as high-gearred as every mid-engined Ferrari of the past decade, but that more direct response, and what feels like a touch more weight, makes for a better sense of connection to the front tyres.

And those front tyres have more to do than ever before. Instead of falling back on the F8's traction control and rear-diff collab to deal with your keen right foot, the SF90 uses its front driveshafts and torque-vectoring function to send almost every horse it can muster to the tarmac uninhibited. There's no understeer to speak of, and much more traction than you could possibly expect.



A couple of hours in I'm impressed by its technical ability, and by the SF90's ability to disguise its weight. But something's niggling. Having always liked the distinctly rear-wheel-drive feel of Ferrari's sports cars over rival Lamborghini's four-wheel-drive alternatives, that very discreet but still palpable sensation of torque flowing through the front wheels as you climb on the power on the exit of a tight corner feels alien.

An hour later, having ripped the SF90 through some faster, flowing roads, we arrive at Ferrari's Fiorano track ready to go faster still. Normal Ferrari launch protocol involves sitting alongside a test driver while he runs through a few hot laps, before taking the wheel yourself for three messier, distinctly cooler ones. But social-distancing rules means we can't share a car, so we'll have to follow the test driver in a second SF90.

This is no bad thing. First, it means we get six laps behind the wheel, ►



1973 308 GT4

Fashionably wedgy 2+2 308 GT4 debuts a new 3.0 V8 in 1973. It makes 252bhp – but only 168bhp when downsized to 2.0 litres to suit Italian tax regs in 208 GT4.

1982 208 GTB Turbo

Bolting on a turbo to create 217bhp GTB Turbo saves Italian Ferrari drivers' traffic-light blushes. Four-valve head for 237bhp 308 QV is good news globally.

1990 348 GTB

Having stretched to 3.2 litres and 266bhp for the 328 GTB, the V8 grows again to 3.4 litres and 296bhp – and then 317bhp for the facelifted 348 GTB.



1999 360M

The final version of the Dino V8 measures 3.6 litres and kicks out 395bhp in the 360M, and an even tastier (and tastier-sounding) 419bhp in the Challenge Stradale.

2009 458

An extra 200cc and direct injection help push output to 562bhp (597bhp in Speciale tune) for the 458, but cute and cruisy California gets a soft 454bhp 4.3-litre V8.

1973-2020: FERRARI'S V8 POWER CURVE

1980 208 GTB

A switch to emissions-friendly fuel-injection for GTBi drops output to 214bhp. Think that's bad? Tax-special 208 GB is a 153bhp pansy.



1984 288 GTO

Homologation special looks like a 308 on top but nothing like it underneath, and its 395bhp twin-turbo V8 makes almost twice the power. By 1987's F40 it's a 471bhp monster.

1995 F355

A longer stroke squeezes another 100cc from the block, but the big news is the pair of five-valve heads that help send 375bhp to the rear wheels (paddleshift optional).



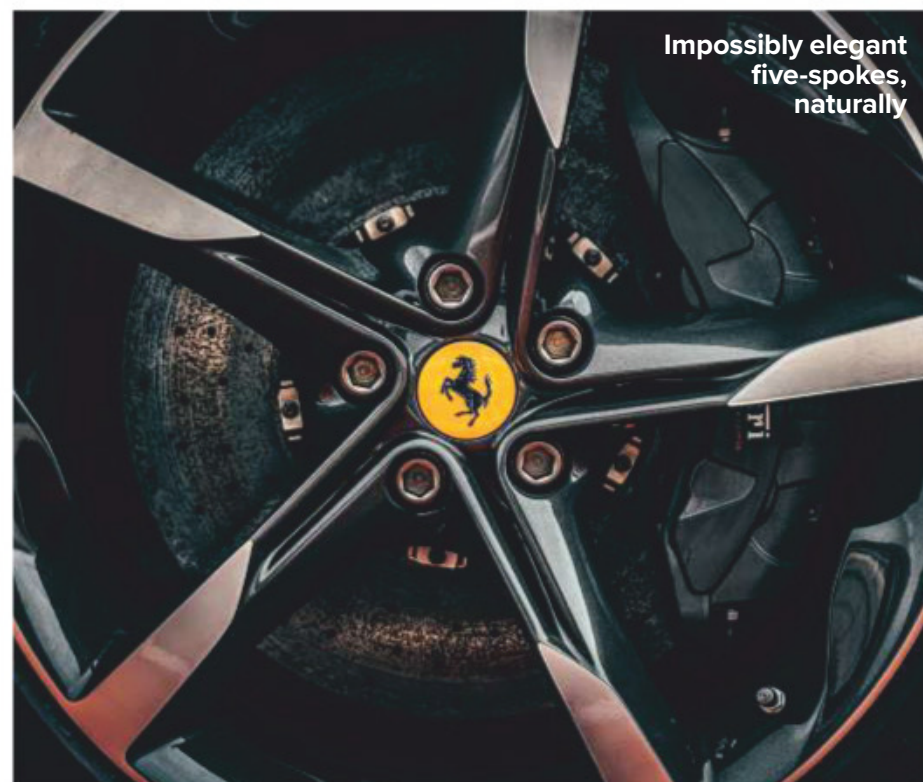
2004 F430

All-new F136-code 4.3-litre V8 is distantly related to the Ferrari-built Maserati V8, but with a flat-plane crank. Makes 483bhp – or 503bhp in Scuderia trim.



2018 488 Pista

Clean-sheet twin-turbo V8 launches with 552bhp in 2014's California T, but the following year it's making 661bhp in the 488 GTB. Pista lifts that again, to 710bhp – same as the current F8 Tributo. SF90 ups that to 769bhp.



IF YOU CAN DRIVE, YOU CAN DRIVE AN SF90 LIKE THIS, SMUDGING THE REAR TYRES WIDE ON EXIT

instead of three. And second, with a set of brake lights reminding me to lift, there's less chance of me sailing into the gravel at the end of the start-finish straight, like I did last time I drove a 1000bhp Ferrari here...

That was entirely my fault: the LaFerrari was simply so much faster than any regular Ferrari road car that my existing braking reference points were rendered obsolete. But hang on – the SF90 is even faster in a straight line, but weighs over 500kg more. What could possibly go wrong?

Nothing, as it turns out, because 1000bhp or not, I can't think of another mid-engined car that's so unintimidating, so flattering. And flattery is exactly what it is. The SF90's chassis works so subtly, helping mask your mistakes and boosting your confidence, it's like watching a CGI blockbuster at the cinema – five minutes in you're convinced it's real and have completely stopped thinking about all the spectacularly complicated hardware and software interplay involved in making it happen.

As always, Race mode focuses on keeping things neat and working to make your tyres last. There's no slip and for most of us non-pro drivers, this is probably the fastest way around the track. But it's not the most fun.

A gentle interjection by the traction control on occasions when you think you could have gone faster – but probably couldn't – will soon have you feeling curious, and feeling for that toggle. Now the real genius of the SF90 Stradale is revealed. Because while building a 1000bhp supercar is one thing, it's something else altogether to build a 1000bhp supercar that anyone with a shred of driving talent can jump into and experience, enjoy and exploit up to and beyond the limit of tyres wider than this magazine. If you can drive a car, you can drive an SF90 like this, diving into corners on a trailing throttle to set the car up for the next straight, or smudging the rear tyres wide on the exit of a faster bend, knuckles still full of colour, not bleached the colour of bone.

Or you could drive it like this: throw a couple of cases in the nose (or you could if the electric motors hadn't crucified the boot space) and take

off across continental Europe for a week. Or just grind through city traffic on your morning commute without wishing you'd taken the Range Rover instead. Because there's so much more to the fastest, most powerful roadgoing Ferrari of all time than simply being the fastest, most powerful roadgoing Ferrari of all time.

Fans of old-school supercars might say that misses the very point of a supercar. These machines, they would argue, exist to deliver concentrated hits of adrenaline in short doses, to sound and look ridiculous, and hang the rest.

And if that's what you're after, perhaps you'd be better off with a Lamborghini Aventador SVJ, one of the few other exotics available at this price point. You get the looks, that majestic V12 noise, the trick doors, carbon chassis bragging rights and none of the extra weight and complexity of a hybrid powertrain you probably don't fancy anyway. It's your traditional cartoon supercar, and there are definitely times when it would plaster a bigger smile on your face.

But not many. The surprising thing about the SF90 is the awe-inspiring breadth of its ability. The single best thing about it – and there are many – is that the car's ability doesn't come at the expense of its capacity to involve and entertain. Like it or not, hybrid supercars are the future. And if they're going to look and feel like this, we're not going to spend too much time bemoaning a lost past. **car**

WANT MORE? CHOOSE FIORANO

Plan to spend most of your time at the track (or just want people to think you do)? There's an SF90 for that. For £39,360 over the standard car, the Assetto Fiorano adds trick dampers from F1 supplier Multimatic, lightweight carbon door panels and titanium springs and exhaust for a 30kg weight reduction. You also get a big rear wing for extra downforce and stickier Michelin Cup 2 tyres (though they're available on the standard SF90). The LaFerrari-matching Fiorano lap time was recorded in Assetto spec.





Ferrari SF90 Stradale

PRICE £376,048

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For all sorts of reasons, VW has force-quit its old ways and reset. On the streets of their home city, we drive the key cars of its new era, the electric ID.3 and the feisty new GTI, and ride in the Mk8 GTE hybrid

Words Georg Kacher Photography Tom Salt



Unlike lesser EVs, ID.3 relishes corners



Pods, touch-sliders, classy minimalism – all the EV boxes ticked



ID.3 couldn't look more electric if it tried. As timeless as Giugiaro's Golf?



FUTURE FIRST: ID.3

You can see what they've tried to do, and you can understand why they've tried to do it. If the inside of the ID.3 looks a bit Apple and a bit Tesla that's no coincidence. For the mass market Apple defines classy consumer electronics, just as Tesla defines electric cars. And the ID.3 is very much intended as a car for the masses, like the Beetle and the Golf before it.

The overall proportions and the clean detailing are modern. Thanks to a wheelbase 100mm longer than the Golf's, the cabin is roomy and the boot a useful 385 litres. But even this well-kitted test car – close to 1st Plus spec, the only model initially available in the UK – could do with a bit of extra colour and some more sophisticated surfaces. The materials used in the lesser variants are even more mundane, the ambience dipped in various shades of grey and the wall-to-wall plastics not particularly kind to eye or touch. The ID.3 is de-contented and minimalist like you'd imagine an iCar might be, but the classiness typical of Apple products got lost in translation.

Still, a few average plastics can't dampen today's thrill of anticipation. Within days of Dieselgate, Tesla boss Elon Musk suggested VW might use these darkest of days as a chance to change direction, to pivot to a cleaner electric future. In truth, it had little option. And here, finally, is our chance to drive the ID.3 properly, just as some fortunate hack once got to first drive the Beetle and the Mk1 Golf.

Climbing in, you face a busy multi-function three-spoke wheel, a small rectangular instrument panel the size of the largest iPhone and a mid-mounted colour touchscreen featuring five buttons and four touch-sliders – VW's latest obsession, and much less user-friendly than traditional knobs.

Hit the button, twist the blocky gear selector attached to the steering column into Drive, and remember to go easy on the throttle. The only battery available at this point is a 58kWh lithium-ion pack – larger and smaller variants will follow. (The MEB skateboard architecture stows the batteries between the axles, for neat packaging and a handy weight distribution. The motor

drives the rear wheels through a single-speed transmission, averaging a competitive 4.3 miles per kWh.) 58kWh may not sound potent but the point is that its peak torque of 229lb ft is available instantaneously, and it does a good job of overcoming the portly kerbweight of 1794kg. The bagful of hush-quiet torque is disconcerting for the first few seconds, until your neck muscles start feeling the effect of hard acceleration from low speeds.

The mid-range ID.3 can spool 0-62mph in 7.3sec, thereby losing by 1.1sec to the new GTI in its standard manual form. But while the GTI is all revs and noise and shift action, its electric brother glides into orbit so effortlessly it's as if it can defy gravity. That's the great thing about EVs: they waft like they're running on air, only to flit to full attack mode in the blink of an eye, with no clutch, gear ratios or rev limits to trip you up.

The ID.3 combines whiplash take-off action with sufficiently long legs for whisper-quiet cross-country junkets, and if you're in the mood you can persuade all four tyres to squeal as you challenge the VW EV through tighter bends; the odd bit of inner front wheel lift-off is possible too. Unlike the Renault Zoe and Nissan Leaf – which are so chaste they could have been trained in a girl's boarding school – the emission-free Volkswagen is happy to indulge your enthusiasm.

However, the ride is compromised on poor surfaces. Not terrible, but there's an underlying harshness that pops up more than you'd expect on a car that isn't particularly performance-orientated. And in the 25-50mph bracket the speed-sensitive steering is not sufficiently direct and responsive. While the turning circle is formidably tight at 10.2 metres, the ID.3 requires more than another entire turn to go from lock to lock than the

brisker-handling Golf GTI. The brakes are on the heavy side even when warm, and the feedback is a bit too relaxed for confidence-seeking drivers.

But, as chief operating officer Frank Welsch tells me, VW is in the process of making some final adjustments. 'Although the sign-off mission is almost accomplished, the fine-tuning never ends,' says the former R&D chief.

The drive mode selection process is also far from satisfactory in its current form. It lets you personalise six different elements (steering, drivetrain, sound, cruise control, lighting and air-con) according to four parameters (Eco, ►

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The more things change, the more the Golf's GTI's seats remain tartan



Exhausts still look like wheelbarrow handles – which is a shame

POWER IS NOT THE DECIDER WITH THE NEW GTI – WITH A MEAGRE-BY-CURRENT-STANDARDS 241BHP, HOW COULD IT BE?

Comfort, Sport, Individual), each of which is adjustable in no fewer than 15 steps. That would be okay if adjustment was intuitive, but it's not. Even more complex is the Travel Assist feature, which is a stepping stone towards fully autonomous driving (and which is also fitted to UK Golf GTIs). It can take charge of brakes and accelerator on a highway cruise, but it's handicapped by vague and tremulous steering when keeping within lane, for which it needs really clear markings. While the ID.3 can cope with sailing through some junctions hands-off like a pro, stopping at red lights and restarting on green is not yet part of its repertoire.

There's only so much you can learn about the ID.3 in a morning. I'd need to live with it to compare the actual driving range to the claimed numbers, and to experience the different charging processes, which can take between 35 minutes (at 100kW) and nine and a half hours (in auntie's garage). In addition, it would help to find out how the huge glass area affects the energy balance: in summer, when the air-con is running non-stop; and in winter, when the heating is bound to drain the batteries. Another question that needs answering is whether the touch-sliders that dominate the MMI eventually become second nature... Here's hoping.

Dynamically, the ID.3 already eclipses most rivals. And while it is better built than a Tesla Model 3 and offers much more car for the money than the BMW i3, the Hyundai Kona and Kia e-Niro may still be smarter buys. But in this pre-production car the essentials are mostly very impressive. The ID.3 feels grown up, reassuringly competent and highly desirable.

OLD FLAME: NEW GTI

Like its seven predecessors, the new Golf GTI wears tartan, sports red accents on the grille and throughout the cabin, shifts gears via a knob shaped like a golf ball (though the car in the photos is DCT), and had its chassis trained in the gym. And unlike some other markets, the Mk8 Golf GTI will come to the UK fitted with a good level of standard equipment, including 18-inch wheels, those signature five-spot foglamps and LED matrix headlights.

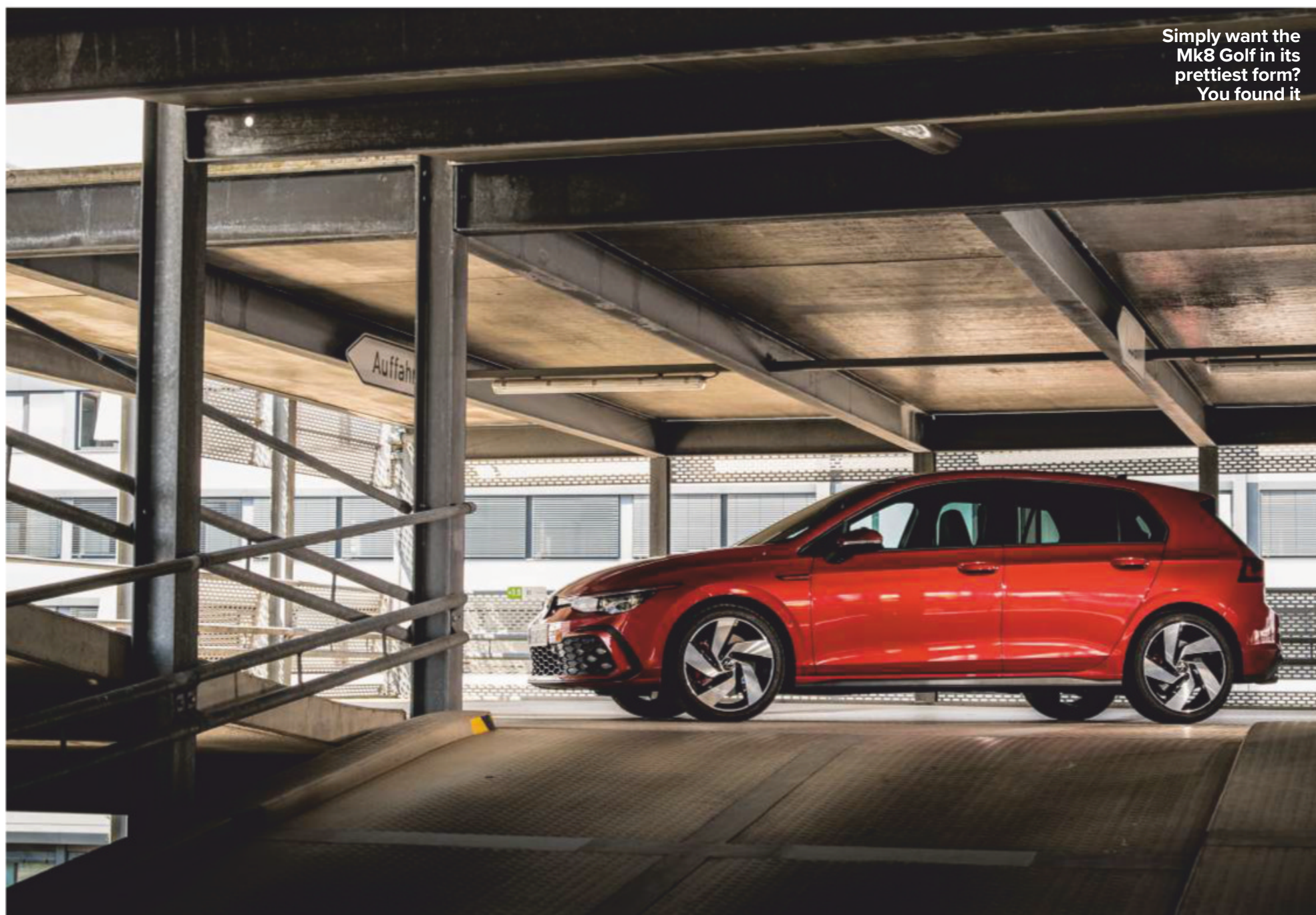
Under the bonnet, the new base GTI is fitted with the very same 241bhp/273lb ft 2.0-litre turbocharged four which powered the Mk7.5 Performance version. Although the latest top-of-the-line Golf boasts a more slippery drag coefficient – down from 0.3 to 0.275 – the top speed is again limited to 155mph. In two-pedal form, the go-faster Golf can accelerate in a hand-stopped 5.9sec from 0-62mph. There are no official fuel economy figures yet.

The GTI wardrobe includes a large roof spoiler, bespoke wheels, wraparound front splitter, black full-width honeycomb lower air intake, subtle sill extensions, rear diffuser and twin exhausts. In combination with the road-hugging suspension, wider track and fatter tyres, this is clearly the best-looking Mk8 Golf. It's also the most rewarding drive by a long way. Power is not the decider here – with a meagre-by-current-standards 241bhp, how could it be? Instead, it's the sweet yet sharp handling, the compliant but not exactly cushy ride, the reassuring zip-strength roadholding and the intuitive bond between car and driver that makes this a more complete hot hatch than the BMW M235i xDrive, Merc-AMG's ►

ID.3 slower everywhere, except onto early-adopters' driveways



Simply want the Mk8 Golf in its prettiest form? You found it





A little bit of ID.3,
a touch of GTI
– is GTE best of
both worlds?



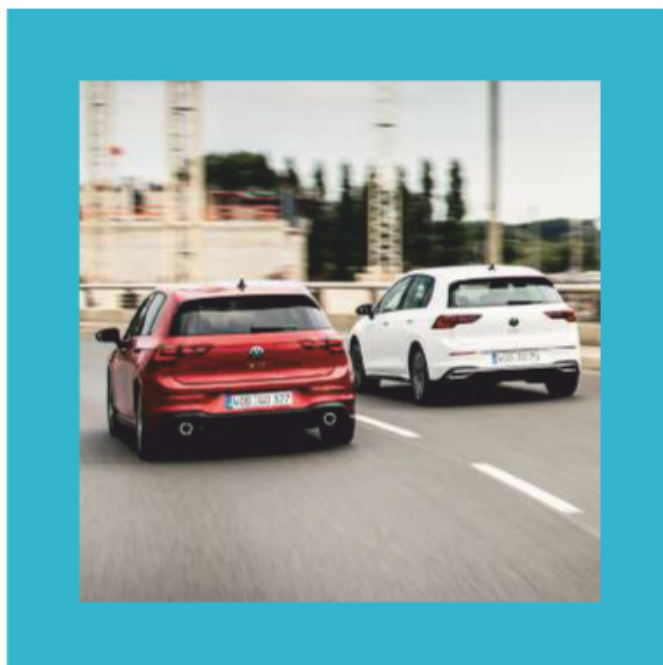
Like the colour blue
and touch controls?
You're in luck

A35 and the Audi A3 45 TFSI. Only a direct comparison will tell whether it also edges the Hyundai i30 N, let alone the latest Honda Civic Type R. Unlike some rivals – among them the upcoming 335bhp Golf R – the GTI can only be had with front-wheel drive. This may cost a couple of tenths against the stopwatch, but it in no way diminishes the remarkable driving pleasure, which clearly prioritises balance and involvement over speed, traction and grip.

Although it shares a platform with the Mk7, the new GTI beats its forerunner on the 2.06-mile handling track in the vast Ehra-Lessien testing facility by a remarkable four seconds. How come? For a start, the engineers recalibrated the springs (five per cent tauter up front, 15 per cent in the back), shocks, mounting points and bearings. To shed a couple of kilos and increase lateral stiffness at the same time, the steel rear subframe has been replaced by the aluminium item used in the previous GTI Clubsport S, while the wheel carriers were redesigned. VW still charges extra for must-have adaptive damping, which is even faster acting now thanks to a major software boost.

The key innovation is perhaps the so-called Driving Dynamics Manager, which masterminds the integration of all the stability systems and the electronic differential. A wet clutch directs torque to the wheel that needs it most, thereby virtually eliminating steering fight and understeer. To make the car follow the chosen line, more oomph is gradually transmitted to the outer front wheel, a move which swiftly reduces the turn-in radius and thus the tendency to run wide. If need be, the inner wheel(s) are simultaneously decelerated for a subtle chip-induced and apex-focused at-the-limit cornering attitude which feels totally natural.

Controlled by the Driving Dynamics Manager, Dynamic Chassis Control also suppresses bodyroll, speeds up the steering response and – in combination with XDS – ensures a predominantly neutral cornering style even when pushed. Not enough goose pimples? Then hit the Sport button, which duly increases the locking ratio for improved traction



**WITH STABILITY
CONTROL OFF
AND MEGASPORT
ACTIVATED,
YOU ARE FREE
TO INDULGE IN
THIRD-GEAR
FOUR-WHEEL
DRIFTS**

while preloading the differential for a more emphatic throttle response. At only 2.1 turns from lock to lock, the variable-rate progressive power steering feels extremely agile in direction changes while being totally at ease around the straight-ahead position, which is a big bonus during fast autobahn stints.

In addition to the standard DNA spectrum, which ranges from Comfort to Sport, both extremes can be further extended by a couple of notches to SuperComfort and MegaSport. With ESP off and MegaSport activated, you are free to indulge in third-gear four-wheel drifts. The main improvements made to the brakes are a bigger master cylinder, which enhances the pedal feel, and a speed-sensitive booster which co-modulates the pedal effort in sync

with specific driving conditions.

The first things you notice when entering the latest GTI are the red pulsating starter bar, the stubby drive selector, the dished three-spoke steering wheel loaded with shiny things to do with your fingers, and the nicely integrated touchscreen. Now start the engine and check out the redesigned digital instrumentation, which offers three different views. Few physical buttons remain. ESP Off? Take a deep dive into the relevant sub-menu. Dampers in Sport? Ditto.

Unfortunately these – and other regularly used functions – cannot yet be addressed by the ‘Hello Volkswagen’ voice control system. Which is an idiosyncrasy in itself, because VW swapped the widely accepted conventional controls for advanced future-generation ergonomics before the chips had completed their ripening process.

Fortunately the GTI’s strengths lie elsewhere. Like on the country lanes between Wolfsburg and Braunschweig, via Gifhorn. It’s noon, we are between two shifts at the vast factory complex, and the feeder roads are lockdown-empty. The countryside between Hanover and Berlin is as flat as a pancake, but there’s a good selection of corners of varying radius, width and surface. ►

YOUR HANDY VW SPEC COMPARISON

VW ID.3

PRICE £36,000
(est, after plug-in grant)

POWERTRAIN
58kWh battery, single e-motor,
rear-wheel drive

PERFORMANCE
201bhp, 229lb ft, 7.3sec 0-62mph,
99mph

WEIGHT 1794kg

EFFICIENCY 4.3 miles per kWh,
261-mile range, 0g/km CO2

ON SALE Now

★★★★★

Golf GTI

PRICE £33,000
(est)

POWERTRAIN
1984cc turbo four, seven-speed dual-
clutch, front-wheel drive

PERFORMANCE
241bhp @ 5000rpm, 273lb ft @
1600rpm, 6.2sec 0-62mph, 155mph

WEIGHT 1390kg (est)

EFFICIENCY 40mpg (est),
155g/km CO2 (est)

ON SALE Autumn

★★★★★

Golf GTE

PRICE £35,000
(est)

POWERTRAIN
1395cc turbo four plus e-motor, six-
speed dual-clutch, front-wheel drive

PERFORMANCE
241bhp @ 5000rpm, 295lb ft @
1600rpm, 7.0sec 0-62mph, 140mph

WEIGHT 1500kg (est)

EFFICIENCY 160mpg (est),
40g/km CO2 (est)

ON SALE Late 2020

★★★★★

We begin the loop with the DNA in Comfort, which is okay for a couple of miles, then Sport – which doesn't last long either. As always, the best compromise is in the mix: dampers in Comfort, everything else in Sport. Sport very nearly puts the throttle on fire, speeds up the steering and plays the loudest exhaust music. It's impossible not to admire the quick-shifting DCT for its cleverly spaced ratios and the rapid shift action, but under hard braking it's occasionally caught out.

The finest GTI since the very first lightweight four-speed 108bhp crackerjack is not an overwhelmingly strong performer. It's quick, but not outright fast; its twist action sits at the bottom end of the acceptable scale and the package lacks an electric, variable-vane turbo or a mild-hybrid system. What makes the 2021 vintage stand out instead is the sum of its abilities: its broad range of talents; the smooth yet swift interaction of the key dynamic elements; the buzz and delight of its company.

The steering is a real-time 3D terrain scanner, an incorruptible feedback authority and a surgically precise pathfinder. The brakes' deep pedal feel, robotic stamina and hurried response bring together the graceful action of a high-board diving athlete and the absolute determination of a top short-distance runner. Driving is believing, and drive it you must.

HAPPY HYBRID? GTE

Think of it as a Golf with the heart and soul of the previous plug-in Passat. Thanks to the slightly bigger 13kWh lithium-ion battery, enhanced power electronics and a much stronger 113bhp e-motor, Wolfsburg's latest PHEV – which we've ridden in – can cover up to 35 miles without fouling the environment. Or, if you don't mind draining the battery, maxing out the GTE in e-drive at 80mph for 20 minutes might be a fun way to go.

The fuel-fed propulsion partner is a 1.4-litre TSI engine rated at 148bhp. Together, the two units muster a combined 241bhp and 295lb ft – numbers which compare favourably to the GTI, if only for a short period of time. When the state-of-charge read-out drops below the 20 per cent mark, the combustion engine takes over, and the performance drops accordingly, which should be remembered before one ventures a boost-less overtake.

Like most plug-in hybrids, the Golf GTE offers a selection of driving modes from pure electric via Eco and Comfort to PHEV and, eventually, Sport, which pulls out all the stops until the battery taps out. The e-motor sounds like a big solitary bee humming somewhere behind the rear seats and is potent enough to allow the GTE to swim near-silently with the flow. The electric motor has more than enough punch to win the daily drive to work, but the range will still be too short for many. The petrol engine takes over above 80mph, or if you floor the throttle at lower speeds. Like the GTI's 2.0-litre unit, this 1.4-litre four is not going to win any awards for refinement, but it's much more muffled than the GTI's engine.

So, is the GTE the best of all worlds? Sounds too good to be true, and it is – the two 'pure' 2020 VWs are the more compelling cars. The ID.3 is a huge step for Volkswagen, which is betting everything on electromobility. The first ID model is a promising appetiser which harbours plenty of potential to grow in variety and ability. Not yet ready to go the full electric? The plug-in-hybrid GTE attempts to fuse past, present and future, and seems to be a significant improvement on the previous car. But it needs a more generous e-drive range to convince.

No, it's the latest Golf GTI that really shows where VW's true talents currently rest. Just as it should be looking long in the tooth and irrelevant, this most iconic of VWs is more compelling than ever. **car**



White cars leave the tunnel air as clean as it was before they arrived

**IT'S THE LATEST GOLF
GTI THAT REALLY SHOWS
WHERE VW'S TRUE TALENTS
CURRENTLY REST**



Coffee with *CAR*

DRIVING WITH A MAJOR PLAYER





JÜRGEN STACKMANN | VW'S ELECTRIC CAR TSAR

‘VW must become a tech company’

Jürgen Stackmann and the zero-emission ID.3 have a common purpose: to move VW out from beneath the shadow of Dieselgate and into a bright, electric and software-driven future

Words Gavin Green Photography James Cheadle

W

elcome to Wolfsburg, or Stadt des KdF-Wagens ('city of the KdF car') as the Nazis originally called it. It was built to manufacture the 'people's car' commissioned by Hitler, and to house its workers. Slave labour, many from the local concentration camp, manufactured military vehicles there during the war. It was renamed Wolfsburg after the

local castle, on the advice of the British occupying power. The giant factory was dismissed by UK, US and French motoring experts as unworkable, and the Beetle as unsaleable. They would become, respectively, the world's biggest car plant and the world's best-selling car.

Some 70 years later, Volkswagen would become the world's biggest car maker and, at about the same time, the most scandal-ridden. Jürgen Stackmann agreed to join Volkswagen just 14 days before the diesel crisis broke, in the autumn of 2015. As Volkswagen's electric car tsar, he is now leading the company's path to redemption. 'Do we continue as the bad boys or do we become part of the positive change?' the 59-year-old global head of sales and marketing for Volkswagen asks over a coffee in Wolfsburg. We know the answer. Or at least the aspiration.

Stackmann is positively evangelical about electric cars. He has been a key driver of the ID project and its first progeny, the upcoming ID.3 Golf-sized hatch. This is not some half-baked EV conversion of an ordinary petrol car, like most battery-electric dullards on the market. It's a bespoke electric car, bristling with ingenuity, 360° environmental logic and, in all probability, a rosy sales future. No car maker invests as much in EVs as the one-time dirty diesel diehards from Lower Saxony.

We meet in a modern glassy showroom, which contrasts with the old brick-and-smokestacks factory surrounding us. This factory is the heart

THE MAN, THE CAR, THE COFFEE



Jürgen Stackmann

Global head of sales and marketing, and VW's electric car tsar. He's a major player in Volkswagen's transformation from diehard diesel maker to EV evangelist.



ID.3

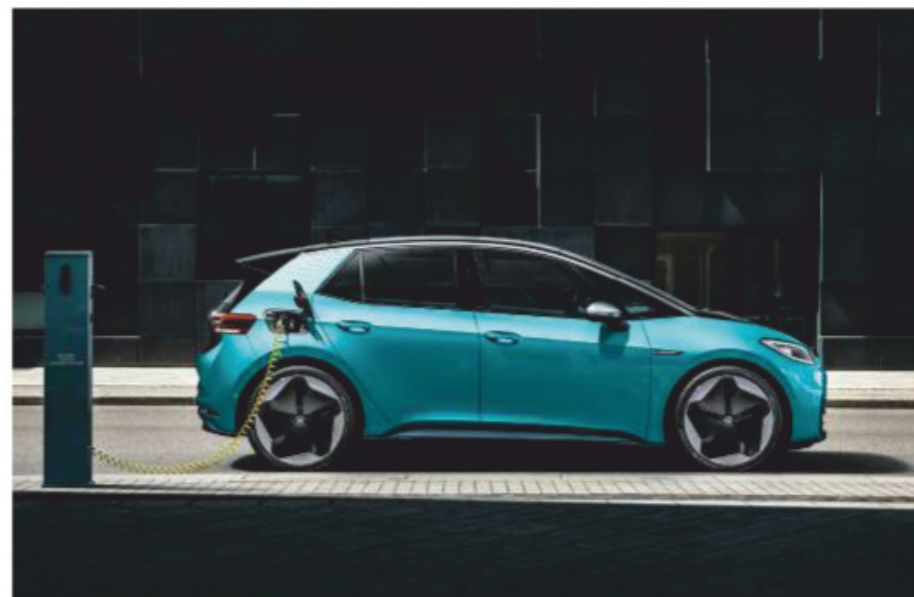
The ID.3 is the first in a new range of EVs from Volkswagen. It's Golf sized but has Passat space and GTI acceleration. An ID.4 crossover and cute bus are also on the way.



Black, please

'I used to be a cappuccino lover. But I have switched to black coffee. Why, you wonder? For the purer flavour – nothing beats freshly ground, of course!'

ID.3 is late, but it may yet prove revolutionary



'Before 2015, we thought we could manage the future with the technology we had'

JÜRGEN STACKMANN

of Wolfsburg. The site is about the size of the Principality of Monaco, though that's where the similarities between Monte Carlo and Wolfsburg end. There are almost 50 miles of roads, 40 miles of railway tracks, seven locomotives and a canal. It's the world's single biggest car-making complex. It's not just VW's home, it's also invariably home to Volkswagen's most important model. Once, that meant the Beetle; nowadays it's the Golf.

The factory even has its own power plants (two of them), which also supply power to the city. Disappointingly, they're coal fired. Cleaner natural gas will replace them next year, apparently saving 1.8 million tonnes of CO₂ a year, but they'll still contribute to Volkswagen's enormous global carbon footprint. Including all global manufacturing and customer vehicle use, it works out at one per cent of the world's total man-made CO₂ emissions, '...or roughly the same as Australia's,' says Stackmann.

His excellent English is partly due to a 20-year career at Ford, including a stint in the UK. He joined the Volkswagen Group in 2010 and rose to become chairman of Seat before moving to VW in its darkest hour.

'In mid-October 2015, just three weeks after the diesel crisis began, our boss Dr Diess gathered his new board for an off-site meeting at the old Volkswagen guest house. [Then, Diess was CEO of Volkswagen cars as well as boss of the wider VW Group; he remains the latter but not the former. This June it was announced that the VW board had accepted an apology for comments Diess made in a meeting, and that it would 'continue to support him in his work'.] We were in crisis. Big change was needed and we all knew that. The issue wasn't a technology crisis, it was a trust crisis. Before 2015 we thought we could manage the demands of the future with the technology we had. That came from our traditional industrial, engineering logic. After 2015, we knew we had to change. Our future would be electric.'

It's difficult to grasp the scale of this turnabout. Volkswagen was on the brink of becoming the biggest car maker in the world. Its stand-out engine technology was diesel. Its bosses were still dismissing EVs as aberrations. Volkswagen has had many watershed years in its 80-odd-year history, from its post-war rebirth (1948) to betting everything on the Golf (1974). But none was more significant than 2015 and its fallout.

Unequivocally, VW would transform itself into a maker of electric, not petrol- or diesel-powered, vehicles. The entire 'old school' car industry, ►

Who's laughing now?
VW will be, if the ID.3
can become the Golf of
the 21st century





Frustratingly, software issues have delayed the ID.3's introduction

hitherto full of doubters and ditherers, would follow VW's lead.

'We plan to stop developing new combustion engines by the late 2020s,' says Stackmann. 'Somewhere in the 2030s, we'll sell as many battery-electric vehicles as combustion-engine cars worldwide. It's likely to be faster in China and Europe than in South America or Africa. The US depends on political decision-making.'

The promise is net zero carbon emissions by 2050. That means, says Stackmann, Volkswagen will have to stop selling all combustion engines, including plug-in hybrids, by about 2040 in the vast majority of countries.

The ID.3 is mostly for European roads. Sales were due to begin earlier this year... 'The software isn't at the level that we want. We need a few more weeks of work,' Stackmann told CAR in May. Mainland European sales should be starting as you read this, with first UK deliveries in the summer.

The ID.4, a Tiguan-sized SUV (above), will follow. It will be the first ID sold in America. 'The electric-car era will force SUVs to change. Because of the need for better aerodynamics, they'll be more elegant, more fluent in design. We've always wondered what's the next big thing after the SUV. It's



the fully electric SUV, like the ID.4; a different kind of vehicle. Roomier, more handsome, more efficient.

'With bespoke electric cars you can get a flat floor, you can push the front of the cabin to the front of the car and you have small overhangs and a long wheelbase. The ID.3 is as compact as a Golf, the perfect size for European roads. Yet it has the interior space of the Passat, the turning circle of an Up and the accelerative punch of a GTI. It almost goes back to the Beetle:

short nose, strong eyes, strong visual impact and rear-wheel drive.'

Volkswagen's plan to cut carbon starts with manufacturing. 'Our Zwickau plant [where the ID cars are being made] will be Europe's biggest electric-car factory. It runs entirely on renewable energy. Our [EV] battery creation is done in Poland by LG. Battery production takes a lot of energy, a common criticism of electric cars. Our battery plant uses only certified zero-emission green electricity. We will guarantee that the ID.3 has net zero CO₂ when it's handed over to our customers. It will not leave a negative footprint.' Suppliers will be ordered to clean up their act or else lose their VW business. Any work that can't be done sustainably, like digging holes to extract minerals for manufacturing, will be carbon-offset.

‘Moving this company from hardware thinking to software thinking is harder than moving from combustion to electric’

JÜRGEN STACKMANN

But what about all the CO₂ spewed out by the power stations, charging your clean-as-mountain-air ID.3? The Volkswagen 2050 net zero carbon promise (although here it's more of an aspiration) includes cars in use.

‘It assumes we move to renewable energy for charging. To this end, we have a new company [Elli] that manages sustainable energy supply to our customers, and we already offer this in Germany, Austria and Switzerland. We invest in Ionity [a joint venture to build a network of rapid chargers throughout Europe], which uses green renewable energy.

‘We are not dreamers. We can't insist, for example, that Poland stops using coal power. But we can help and influence Poland, the EU, and other places to change. And things are moving positively, with the UK an excellent example. Of the big industrial economies of Europe, Britain has made the biggest transformation in its power generation. Electric cars are already greener than petrol or diesel cars. Every time power generation gets cleaner, so electric cars get even cleaner.’

The coronavirus pandemic has clearly caused VW great pain: ‘It will change some of the ways we do business. We saw it first in China. There was a very deep, very sharp decline. But we expect now to be at or above our normal sales level there, amazingly enough. The rest of the world is likely to take longer to climb out of this. The UK car market was down 97 per cent [in April]; basically no sales. Nobody can remember ever having a big market with no sales for a month. We saw the same in France, Italy and Spain. But we believe that underlying demand remains strong. There is a drive towards online selling, and we will do this.

‘Fortunately for us, in times of crisis people tend to go back to trusted brands. We'll have great financial offers and “bundled” products, with security in case of unemployment. It's important to reassure people that whatever happens, there's a solution, and that we're backing them with regard to mobility. More than ever, I also think the ID.3 will be the perfect car for Europe at exactly the right time.’

There will be some pain in this electric transformation. ‘It will mean a major shift in what we do, how we do it and how many people we will need to do it. The employment needed for powertrain engineering will drop significantly after 2025. The labour intensity of building battery cars is about 20 per cent less, so fewer people will be employed to make cars.’ VW is discreetly shedding about 1500 jobs globally a year.

He denies more production will be shifted to China, already the major producer of car battery and electrical systems for the world motor industry, and thus far the biggest beneficiary of the growing popularity of EVs. ‘Half of Volkswagen's global production is already in China and that won't change. China is where innovation comes faster than anywhere else. I expect we'll also develop more in China, too.’

Despite the upcoming EV revolution, Stackmann says electric drive isn't Volkswagen's toughest task. ‘I know we can manage that. The bigger challenge is the move to fully connected cars. Moving this company from hardware thinking to software thinking is much harder than moving from combustion to electric. We have to keep our hardware and process excellence while also changing into a software-driven tech company. Until we achieve that, and deliver on our sustainability promises, we have achieved nothing.’ **car**

car
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HOW HE GOT HERE

WORKING FOR FORD IN BRITAIN
Stackmann trained as a bank clerk before joining Ford in 1989.

MOVING TO VOLKSWAGEN
He's been with the German group since 2010, starting as sales and marketing boss for Skoda. In 2013, he became head of Seat – ‘a fun place to work’, certainly compared with what was to come... He agreed to join Volkswagen just

14 days before the diesel crisis broke.

BATTLING THE CRISIS
‘There was a trust crisis. The company could have fallen apart,’ says Stackmann. Instead, in one of the seminal moments for the motor industry, the world's biggest car maker decided to abandon the internal

combustion engine and embrace an electric future. ‘This industry is part of the problem. Instead, we want to be part of the positive change.’ ID.3 is the first fruit of this re-alignment, though Stackmann and the ID. R racer (below) have been quietly building the ID brand for a while.



Supercharger

Remember Ariel's loopy off-road Nomad? Now there's a road-focused, supercharged version with a £20k sequential gearbox... Buckle up

Words Ben Barry Photography Alex Tapley



**SUPERCHARGED
HONDA POWER
(335BHP) AND
A RACE-SPEC
SIX-SPEED
SEQUENTIAL
GEARBOX**

**BEN, HAPPIER
THAN ANYONE
ELSE ON THE
PLANET RIGHT
NOW**

**ROAD-
OPTIMISED
WHEELS
AND TYRES**

**TOP-SPEC
ÖHLINS
SPRINGS
AND
DAMPERS**



Already flab-free Nomad, with its great power-to-weight ratio, now has more power and ultra-short gearing...

I

magine the fury of a ghost train distilled into a road-legal vehicle: the mechanical clunks and whines from carriages, screaming riders, groaning skeletons lurking round darkened corners, shocking pneumatic bursts, the adrenaline that tingles your toes and somersaults your stomach as you plunge into compressions.

That's how it feels to drive an Ariel Nomad R over this tumbling North Devon landscape, clinging on just as hard as you're smiling. Add a disclaimer to the windscreen about dodgy tickers, bad backs and pregnancy, and a tedious queue before being seated, and this is an automotive Alton Towers.

The regular Nomad buggy's been around since 2015 as an all-terrain, all-weather alternative to Ariel's original track-focused Atom, if still rear-wheel drive and with its engine behind the driver. There's more ground clearance, a proper windscreen and wipers, and a structural web of steel tubing extends protectively up and over the occupants. The Nomad is Ariel showing how a maker of sports cars should actually build an SUV.

This R version takes those fundamentals, but it ditches the 2.4-litre engine from the US-spec Honda Civic (235bhp, better at torque than searing revs) and its six-speed manual gearbox, and drops in the Atom 3.5 R powertrain. That involves an Eaton supercharger and charge-cooler added to the incendiary old K20Z3 Civic Type R engine, as well as a six-speed Sadev sequential gearbox, like you'd find in a rally car. It produces 335bhp and can rocket from zero to 62mph in a claimed 2.95sec.

So the Nomad R sits between the Nomad and the Atom: more fast-road-focused than the regular Nomad, less track-capable than an Atom. Driving to Ariel's base in Somerset this nagged at me. Could the R lack the laser focus of other Ariels? I thought it might.

It's 18 years since my last visit. Modern Ariel was just two years old back then (although able to trace its roots back to 1870). It's moved premises since, and staff numbers have grown from a handful to 32, but still that knack for hand-crafting cars overflowing with intensity and reduced to their essence continues. Around 2000 cars and 130 Ariel Ace motorbikes have been built in total, and today four-wheeled prices start from £39,975 for an Atom, £37,044 for a Nomad. Customers spend much more, though, and you'll need £77,000 for a Nomad R. Yes, lots; we'll get to that.

Boss Simon Saunders' son Henry Siebert-Saunders greets us today. He was 16 and sweeping the floor during my last visit. He now runs the business day-to-day with brother Tom, and though Simon's still keenly involved he has stepped back gradually over the last few years.

There are two ways of getting into the Nomad R. I opt for squeezing through the gap in the side, but realise it would have been quicker and more exciting to jump through the roof like Burt Reynolds bounding through a Trans-Am's T-top in *Smokey and the Bandit*. From the seat you can pore over the engineering detail like you might a Tamiya model car – watching the steering shaft barrel-roll where it meets the rack near your toes, glancing ahead to the gold Öhlins dampers that are adjustable for bump and rebound and inclined between unequal-length double-wishbone suspension. There's space to spare, and a well-sorted, purposeful driving position, ►

**It tingles your toes
and somersaults your
stomach as you plunge
into compressions**



Nomad R isn't
happy going
slowly. Nor is Ben.
They get on fine

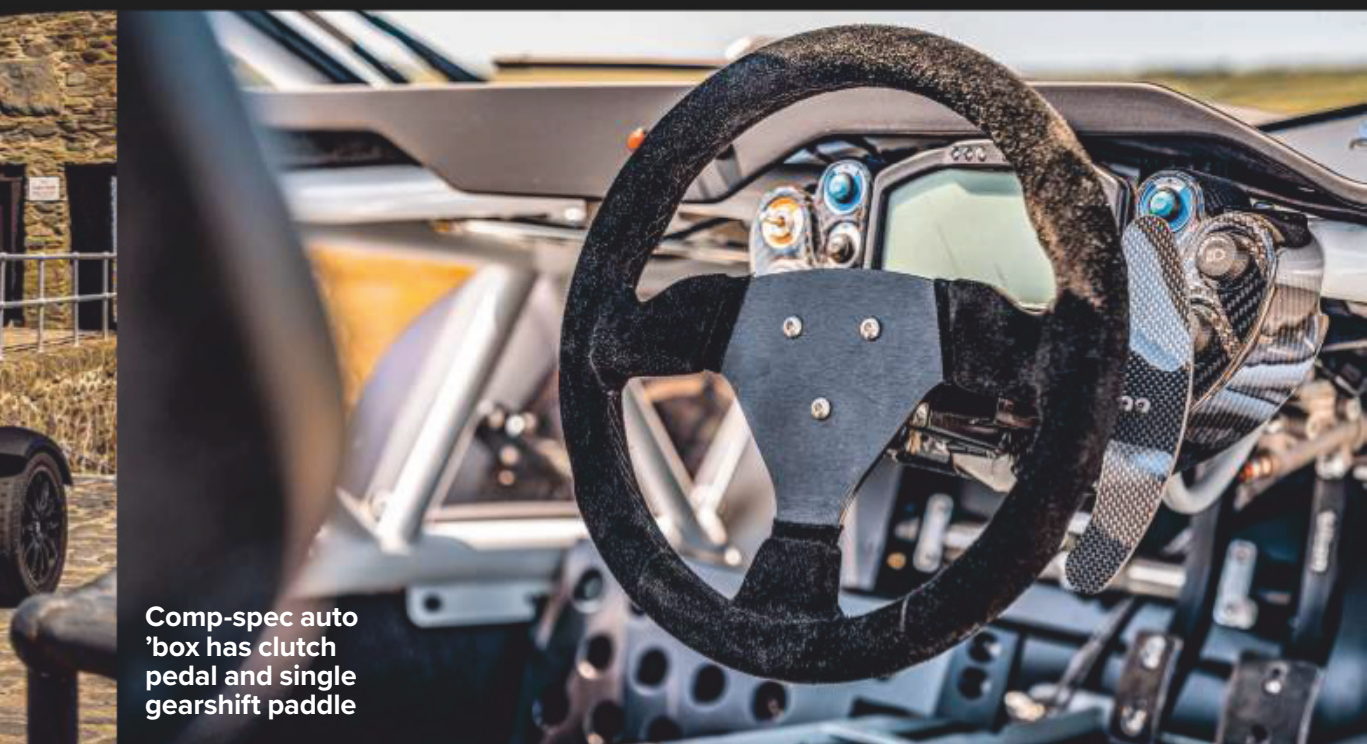
BB on the lookout for direct rivals to the Nomad R. He may be some time



Less wheel travel than regular Nomad, more ground clearance than Atom



Comp-spec auto 'box has clutch pedal and single gearshift paddle



though I'd want padding on the metal by my right elbow.

Slide the quick-release steering wheel over the steering column's splines, tighten the four-point harness, press the rubbery start button to wake the engine and then engage the clutch – because it's a competition-spec auto 'box you still need to dip the clutch at a standstill, and you use it for upshifts during gentle driving. Gears are selected by a single paddle to the right of the steering wheel: pull to go up a gear, bat away for down. I pull up and trigger the kind of metal-on-metal clank you might hear in a forge. This is normal, and soon we're off, making our way north through Somerset.

Aside from the powertrain, much of the Nomad R is as per the standard Nomad, but the super off-road Fox shocks are off the menu, because such suspension travel is inappropriate in a road-focused car. Instead you get specially tuned Bilstein shocks as standard, with the option of Öhlins suspension, fitted to our test car along with Yokohama A052 tyres with pastry-pattern tread and uprated Alcon brakes from the Atom V8.

So equipped, the Nomad R has an altogether more serious character than the Nomad CAR recently had on long-term loan: more grip, less roll, and a ride that's firmer if still very much tolerable – you can see the front wheels parrying bumps that your bones don't feel, and the exaggerated roll oversteer I brace for at the first couple of roundabouts doesn't materialise.

With this transmission it doesn't particularly enjoy trundling through town or behind traffic on B-roads. There's wearing transmission whine, the accelerator flicks between on and off, and you'll spend much time easing it through gears on the clutch after finding the paddle as unresponsive as an over-ambitious tombstoner. The R strains impatiently, desperate for velocity, so if you do much bumbling, you're better off with the more relaxed 2.4-litre engine and standard transmission.

On the motorway the Nomad R begins to settle. It rides comfortably, and the windscreen and silvers of weather protection provide surprisingly good shelter from the wind. In fact, on this baking hot day, it's invigorating to drop a hand hot from gripping the saucer-sized suede steering wheel out into a cooling breeze.

Performance doesn't so much build as explode, and the gearing is astonishing: the R will do 60mph in both first and sixth, can't stretch beyond 121mph, and it'll pull 5000rpm at 80mph in sixth. Drop those kind of ratios in any car and they'd perk up acceleration at typical driving speeds no end, but the Nomad weighs just 670kg and produces 335bhp, which means 500bhp-per-tonne, similar to the rabid Ferrari 488 Pista.

When I give it a few squirts of throttle, the supercharger yelps with a high-pitched shriek and the acceleration hits in volleys of violence, compressed into such staggering bursts of energy and battering through pneumatically activated gearshifts that I can't fully extend it for more than a few seconds at a time. It's as though you're two or three gears lower than you actually are, and so quickly does the R blitz towards the 7600rpm peak that the usual thrill of hearing a VTEC engine rise to a climax is gone, replaced by a primal rush more akin to bungee jumping. Yet the R cruises happily, and because everything's loud, the fast-spinning crank doesn't seem such an issue. I'm far happier here than I would be in an Atom.

Traffic thins as we approach the coast and ease onto Exmoor National Park, first through a narrow maze of country lanes with vision frustrated by hedgerows and earthy banks; at 1850mm wide, the squat Nomad's wider than the new VW Golf. Then we're climbing up and onto a fast, sinuous thread of B-road. It ribbons over the crown of the landscape, looking down over open, sun-frazzled moorland that rolls golden to the coast like a sponge pulled from the oven in the nick of time. With barely any junctions, trees or walls, and nothing but blue overhead, you can see for miles.

This is a buggy with a dynamic focus to make a sports car feel flabby, and it's an Ariel that's more at home blatting over the gnarled imperfections of a British B-road than an Atom. Forget about that halfway-house compromise I feared, because it feels like it could have been built for this road.



It has a more serious character, with more grip, less roll, and a ride that's firmer

The unassisted steering is sneezy-rapid at 1.7 turns lock-to-lock, and the turning circle is poor, so watch those tight hairpins. When you really pile it into the apex, there's the kick-back you should expect from a system this unfiltered. More striking is just how obediently it follows your instructions, no matter the cambers, curves or imperfections. The suspension's working hard, ironing it all out, leaving you the unflustered little spirit-level bubble in the centre.

While there's no question of the R's performance, it stops short of feeling excessively quick, even though there's no stability control to catch talent shortfalls. It's because the chassis is so well sorted and there are such deep reserves of mechanical grip that you can actually use all the power (at least in our bone-dry test conditions), and because the relatively modest 243lb ft of torque is on the top shelf in a bag at 5500rpm. You don't work the Nomad R hard by accident.

Similarly, there is no ABS, but in a car so light, with such powerful brakes (optional more powerful stoppers, remember) and with tyres that bond to this hot, abrasive surface like chewing gum to the sole of your shoe, it seems unlikely you'll lock them. When you do brake hard, the lack of mass and the fact so little of it is located at the front means weight transfer wields less of a destabilising influence over the Nomad than you get in a normal performance car. I wouldn't particularly want to, but you could make this machine faster still, and I imagine it'd cope very well.

Do more miles and the fear of uncorking so much performance begins ►

HONDA SWAP

Usual K24 2.4-litre engine ditched for K20Z3 Civic Type R 2.0-litre, boosted by twin-lobe Eaton supercharger running 11psi. Produces 335bhp and revs to 7600rpm. Familiar from Atom 3.5R.

NO GREEN-LANING, PLEASE

Fox dirt shocks not offered for Nomad R. It comes with retuned Bilstein MDS two-way shocks, or our test car's optional adjustable Öhlins. We had them in the 'road' setting, which gave acceptable level of comfort.

HEAVIER, BUT STILL LIGHT

Air-to-water charge-cooler is plumbed in to keep intake temperatures low. Extra hardware shifts weight distribution slightly forwards, though removal of some off-road protection keeps weight around 670kg.

RACE CAR GEARBOX

Sadev six-speed sequential ST82-17 gearbox, plus uprated driveshafts. Upshifts in 40 milliseconds, downshifts 50ms, smoothed by auto throttle-blip. Not suitable for muddy off-roading. Ratios tightly packed, but taller gearing an option.



TARMAC TEARAWAY

Lightweight 18-inch alloys with 225/45 Yokohama A052 tyres. Our car also gets optional Alcon brakes from Atom V8 – still four-piston fronts, two-piston rear, now with crescent moons on disc surface for extra friction.



You can tell a lot about a car from its pedals

Work it hard and you'll struggle to reap more reward from anything else on four wheels

to lift. It's so driveable that you trust you can work the Nomad hard into corners. You can squeeze the throttle generously and early to revel in the grip available (and hear the supercharger whoop when the tyres just begin to fizz and the revs flick). Or brake late so the Nomad rotates fluidly through the apex while still the gummy grip and unflustered body control hold physics at bay with an outstretched palm. Then it's the next straight, the spit of a 40-millisecond upshift, the mechanical smack of a downshift, then leaning hard on a brake pedal with its ideal weight, twisting the steering and throttle, more throttle, *grüüüüin*.

These miles, up on the moors, is where I really click with the Nomad R. Use it like this, or for sprints or hillclimbs or even trackdays, and you'll struggle to reap more reward from anything else on four wheels. But before you make that call, we need to talk about the Nomad R's £77k price.

Ariel has committed to building only five Nomad Rs, but exclusivity is not its justification for the near £40k leap over other Nomads. It's hardware. Henry Siebert-Saunders explains that the gearbox alone adds £22.5k, then the charge-cooler system is more than £6k, then it's a load of extra hours to assemble.

'We certainly aren't just adding digits to the price tag,' he says. 'In fact it's the opposite – we keep the price as affordable as possible, though I understand that's a bold statement at this price.'

I feared that the Nomad R might be neither fish nor fowl, as well as very expensive, but the team at Ariel have the most remarkable way of turning barking mad ideas into brilliance. And as I unbuckle the harness and reluctantly hand the immobiliser key back to Henry, I wonder if this isn't the Ariel I covet most of all. **car**

Ariel Nomad R

PRICE £77,000 (£87,000 as tested)

POWERTRAIN 1998cc 16v supercharged four-cylinder, six-speed sequential, rear-wheel drive

PERFORMANCE 335bhp @ 7600rpm, 243lb ft @ 5500rpm, 2.95sec 0-62mph, 121mph

WEIGHT 670kg

EFFICIENCY 22mpg (est), 150g/km CO2 (est)

ON SALE Now (five being built) ★★★★★

car

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H O T S O U R C E

The new M2 CS, the mightiest 2-series yet, can trace its lineage back to the sublime 2002 tii. Just like the one owned by CAR's own Georg Kacher...

Words Georg Kacher Photography Tom Salt







bove all else, it's the noise that strikes you first. The badge is the same, the general layout the same, but the soundtracks could not be more different.

The Malaga Red 2002 tii and the Hockenheim Silver M2 CS on these pages are separated by more than 45 years of automotive history and evolution. And where the older car is a sometimes jarring mix of roar, whine and rattle, the new one growls with serious power.

But despite the aural disconnect, and a 316bhp power difference, the BMW's dinky sports DNA has not changed much between the reigns of chancellors Schmidt and Merkel. Rear-wheel drive still prevails, as do manual transmissions, independent suspension, four disc brakes, circular instruments and a four-seat, two-door, notch-back body style.

The 1974 128bhp 2002 is my own; the new 444bhp M2 CS ours for this test. It's the ultimate M2; the most powerful and the end of the current M2. The greatest too? We're about to find out, along with just how much of that magic genetic code remains.

I bought this 2002 tii from a friendly Californian BMW collector who found me a sound if neglected model and had its body and mechanicals fixed in his workshop before shipping it to Amsterdam. The car passed the German MoT with flying colours and ran faultlessly for about 5000 miles before, without warning, it started puffing white smoke through a crack in the cylinder head. Fixing that involved a best-forgotten cheque.

It's not my first tii. Way back when, I briefly owned the range-topping 2002 Turbo. Today, nice Turbos change hands for more than £80,000, about the same as a new M2 CS with the optional carbon-ceramic brakes. But the tii is the sweeter 2002. The Turbo was fast but rough, not particularly reliable, accordingly expensive to run and Jekyll-and-Hyde-ish in character, because of its massive turbo lag. Just in time, before the 'charger went into seizure, I bought a 2000 tii Touring instead – in rare Reseda Green metallic with an even rarer electric sunroof – and I loved it. Perhaps you recall reading about it in *CAR* 40-odd years ago. Looking back, the Touring was one of several cars I should never have sold.

During its time with us, the Kachers settled for painted orange crates instead of cupboards, sat on third-hand Ikea chairs and cooked meals on a camping stove to ensure there was always enough spare dough to buy a set of urgently required Ronal alloys, Scheel bucket seats or Alpina chassis upgrades for the Touring.

When the 1600 ti kicked off BMW's first attempt to bring performance ►



Gaping grilles gobble up leaves; 444bhp gobbles up straights



THE TURBO WAS
FAST BUT ROUGH.
THE Tii IS THE
SWEETER 2002



Tweaked exhaust system makes the CS the rudest sounding M2 yet

THE EXTRA GRUNT HAS AN AFTERBURNER EFFECT ON MIDRANGE IN-GEAR SPRINTS

fireworks to a relatively mainstream group of buyers, the extra horses were still keenly priced. Those days are long gone: the M2 CS costs a hefty £23k over the M2 Competition (the only other M2 variant still on sale). In return you get an extra 40bhp, lighter body panels, special wheels and upgraded spec. The top-of-the-line 2-series is thus even more expensive than the outgoing M4 and the M550i xDrive, and close to the 503bhp X3 M Competition – that's a lot of money for a compact car.

Although BMW won't have the production capacity to build the CS beyond summer 2021, it's not a limited edition as such. But you can imagine sales being modest, given the value-for-money calculation potential buyers will do. The problem is virtually identical performance across the range. Fitted with the M Driver's Package (standard on the CS, optional on the Competition) both M2s are governed at 174mph, so the only quantifiable difference is the 0.2sec advantage the CS has between 0-62mph: 4.2sec versus 4.4 for the six-speed manuals; 4.0sec plays 4.2 for the seven-speed dual-clutch autos. A limited-slip differential is standard on both.

So if the Competition version is effectively just as fast, if the 369bhp M340i xDrive comes close to the CS's acceleration, and if the M240i offers 75 per cent of the fun at a 45 per cent discount, why bother? Because numbers seldom tell the full story. The CS can out-M even the M4 in terms of thrills and entertainment.

You need to be fully focused to enjoy driving the CS. On poor or wet surfaces with its semi-slick tyres, directional stability can be somewhere between flighty and Russian roulette. The handling attitude is playful, with little room for error. With the stability control halfway off in M Dynamic Mode, rapid cornering is an explosive mix of initially nose-heavy and then eternally tail-happy; even more so with it switched off entirely.

The CS changes direction swiftly and accurately. Although the steering feels somewhat under-gearred and heavy at first, when you become attuned

it will relay the road to your palms in 3D. The brakes are fantastic even with the standard steel rotors, although the pedal feels unusually heavy over the final 50 yards. The carbon-ceramic discs are a £6250 option.

The above description applies more or less to everything that's ever worn an M2 badge. What makes the CS special is the manner in which it deploys its outputs. The engine spreads the same peak torque over a wider rev range than the powerhouse of the Competition, and the extra grunt has an afterburner effect on midrange in-gear sprints. Unleash everything in fourth and even short straights shrink fast enough for at least one more unforeseen upshift. The engine's broader muscle keeps the fire burning in fifth and even in sixth. We saw an indicated 186mph at 7000rpm, which still felt somewhat restrained and a couple of clicks off the beast's real limit, despite plenty of aural vroom and boom (and the supposed speed limiter).

Nail the accelerator when the traffic lights change, and trust the trick M diff and the electronic supervisors to prevent the Pirellis from smoking in public. There is, however, no escaping the visual impact of the CS's bespoke duotone alloys, yawning extra bonnet vents, and its shiny carbonfibre splitters and gurney flaps, all of which shout 'catch me if you can'.

Hop from crystal to claret and you find the 2002 tii is a notably more docile and better-behaved machine; a driving device from a gentler age. But first you must get it started. Luck is involved, or possibly divine intervention, if you're to fire it up before the plugs drown in petrol. While the rev-hungry 110bhp twin-carb 1600 ti was a very sweet 02, and the 119bhp 2002 ti will forever be the darling of the round-tail-light faction, the 128bhp 2002 tii used the mechanical Kugelfischer fuel injection system, which was capricious at best and impossible to adjust at worst, with gremlins queuing all the way from the petrol pump in the boot to the injector box under the bonnet. ►

BMW'S 02 SERIES: KNOW YOUR ONIONS



1966: **1600-02**
BMW launches a shortened version of the Neue Klasse; 02 signifies two doors.



1968: **2002**
True to stereotype, the US market demands more power. The 2002 is the answer. Twin-carb 2002 ti ups power from 113bhp to 120bhp.



1969: **2002 tii**
The extra 'i' denotes mechanical injection, taking power to 128bhp and creating the sweetest 02 of the lot.

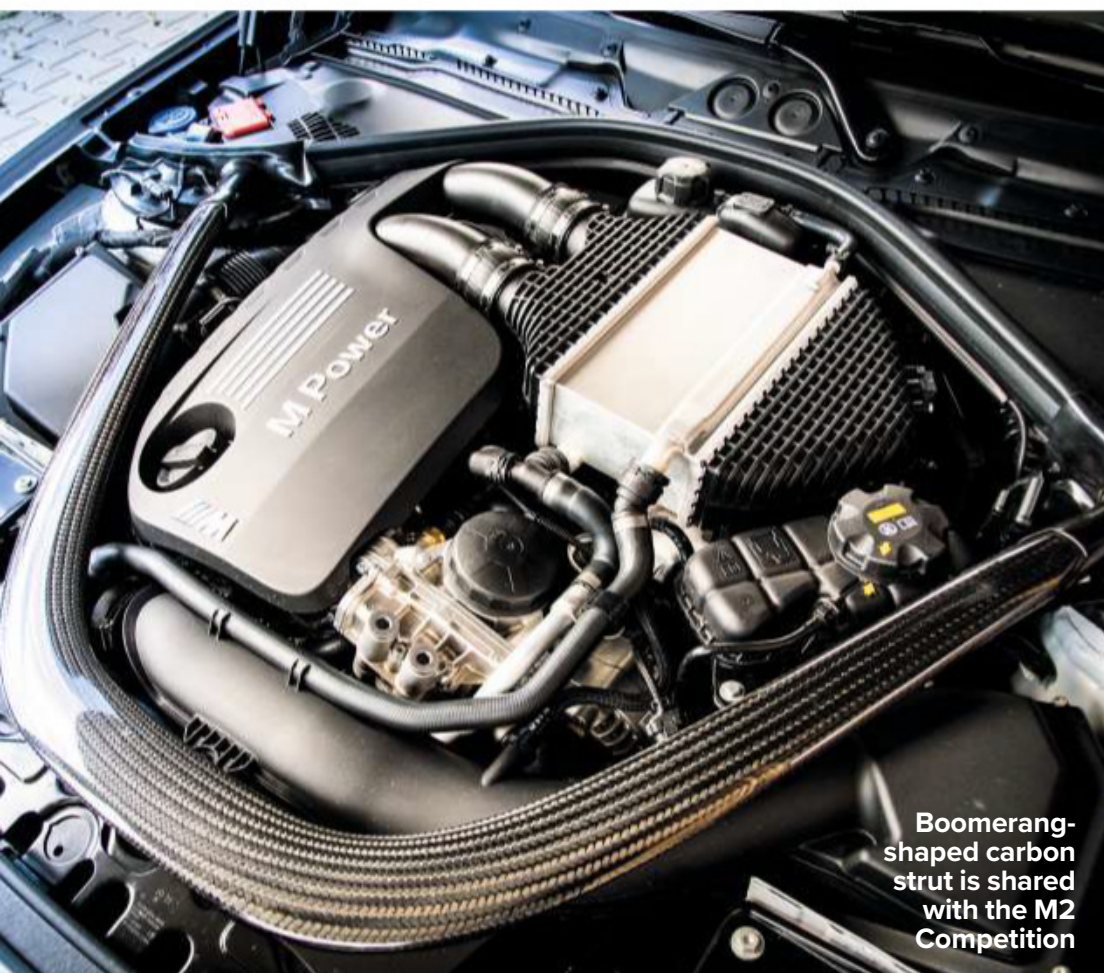


1971: **1802**
Piggy-in-the-middle 1.8 goes on sale in '71. Basic 1502 follows a year later.

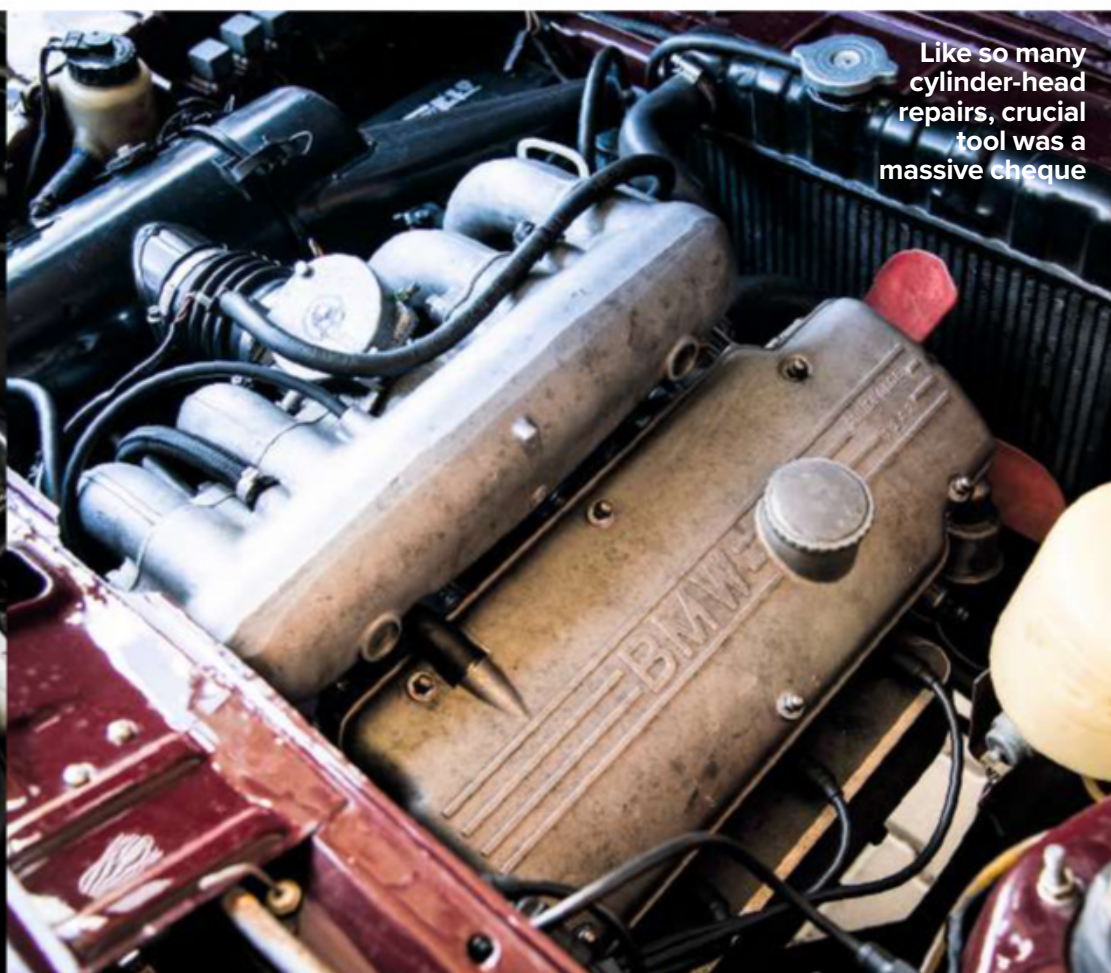
1973: **2002 Turbo**
BMW bangs on a turbo and wide arches to create a '70s icon. Not particularly fast, but values today are into six figures nonetheless.



'My, Grandma, what tiny wheels you have!' Small BMWs have filled out in recent years



Boomerang-shaped carbon strut is shared with the M2 Competition



Like so many cylinder-head repairs, crucial tool was a massive cheque



Georg at warp speed. Manual shift is involving but not the best



Before fast BMWs meant fat steering wheels



Time and performance have marched on but these two still share the same ethos

The guttural exhaust note is accompanied by an intake rasp and a high-pitched whine from the no-name radials. The wind rattles at the solitary chrome mirror and tries to pull out the frameless windows while the gearbox offers a mechanical harmony. Recently fitted with fresh valves and that laser-welded cylinder head, the engine's voluntary rev limit is currently just under 4000rpm, where it sounds rather dull, bass-heavy and nothing like the famously smooth and vocal sixes.

But the controls still feel special. The 2002 is totally analogue from the twist-and-hope front quarter lights through the stubborn steel sunroof to the unassisted steering, which can be a chore in tight spaces but offers a smorgasbord of finger food on the move. The ABS-less brakes are almost as prompt as an aircraft carrier's arrestor cable, although the heavily spring-loaded clutch has seen better days and is about as progressive as a light switch.

Covered in fake leather that must be at least half an inch thick and feels indestructible, the seats are large and quite comfortable, but for optimum lateral support it's safer to straighten up or lean against the

B-pillar. The perfectly legible dials are, in the facelifted cars, de-valued by a fake woodgrain application which looks as naff as the standard black plastic steering wheel – the latter had to go, to make room for a leather-wrapped three-spoke Nardi; much better. The push-button radio can only receive certain stations, the single speaker makes everyone sound croaky, and the manual aerial attached to the A-post splits its services between jamming stations and receiving obscure LW/MW services from Serbia or the Middle East.

The three fan settings are noisy, loud and deafening; the wipers fail to clean the screen; and the dim H4 headlamps are only one step up from rolling the dice. Maintenance is not rocket science (Herr Kugelfischer's invention excepted), but corrosion can make your bank balance melt like ice in the sun.

The maximum torque of 130lb ft coincides with 4000rpm, and on a downhill stretch the top speed of 119mph keeps shaking hands with the rev limiter. My maroon specimen is much better off than 95 per cent of its stablemates because it came equipped with the optional but rarely specified five-speed Borg-Warner

BMW 2002 tii

PRICE £3199 (1973)

POWERTRAIN

1991cc 8v
four-cylinder,
four-speed manual (optional five-
speed), rear-wheel drive

PERFORMANCE

128bhp @ 5800rpm, 130lb ft @
4500rpm, 8.2sec 0-60mph, 119mph

WEIGHT

1026kg

EFFICIENCY

25mpg (est),
n/a g/km CO2

ON SALE

1971-1975

★★★★★

THE 2002 IS TOTALLY
ANALOGUE, FROM THE
STUBBORN SUNROOF TO THE
UNASSISTED STEERING



THE ONES GEORG WISHES HE'D KEPT...



Porsche 924 Carrera GT

Raced by Walter Röhrl. No air filter, ABS or power steering. A hoot to drive



Yugo 45L

13,000 original kilometres. Pus yellow over dog-turd brown. Communist tyres



Ferrari 575M HGTE

Almost died in it, aquaplaning into a huge spin at 125mph. Divorce material



Citroën SM

It'd been restored for a sheik. He went bankrupt; I nearly followed suit



BMW M3 (E46, manual)

Boring black-on-black spec, so I sold it – would have crashed it if I hadn't



Extra 'i' stands
for injection
(and, sometimes,
irritation)

gearbox, which is a priceless bonus on today's autobahn battlefield. Consumption? I have seen 30mpg, but 25mpg is the rule and 20mpg a not uncommon exception to it. Although the M2 CS turns out to be a little thirstier overall, it can better 30mpg when the driver goes gently.

The tii and CS are united by their evocative handling attitudes, driver involvement and randomly accessible tail-happy antics. They're divided by a vast difference in performance, sophistication and convenience. The most obvious contrasts concern power and torque, refinement, safety and quality. Devoid of a diff lock (although it was an option when new) and electronic traction control, the tii freely spins its rear wheels. But it only does so in first, and second, and then only in the wet. Unlike its steroid-stuffed successor, the lean and light 02 simply cannot summon the energy needed to burn rubber at 40mph-plus. Instead, it indulges in various stages of mild oversteer and feinted drifts, the body language meandering between slalom and giant slalom, the narrow three-box saloon whirling through bends with the elegance of a ballet dancer. For the blink of an eye, the tii very occasionally lifts the inside front wheel, like John Whitmore at the limit in his Lotus Cortina.

Swap back into the M2 CS and be prepared to enter a different realm. It's not the highly advanced set-up employed in the M5, where the driver ►



Steering chattier
than Alan Carr;
heater fan noisier



2002's four not
as sonorous as
the six. But it
has character

car
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can choose between all- and rear-wheel-drive, but it's still impressively competent. This is a level of talent to trouble the outgoing M4.

Even so, the CS's score card also shows some misses. The steering is as meaty as its thick-rimmed helm, and although one can select from three different calibrations (Comfort, Sport and Sport Plus), the variation is primarily in weight rather than feel. The adaptive dampers cover the same spectrum, doing little to soften pothole-induced hits amplified by the car's broad-shouldered, grip-is-everything tyres in Sport Plus. The throttle response is impatient, while the light clutch action is anonymous like a Golf's and thus out of place in a car of this calibre. All things considered, I'm leaning towards the two-pedal DCT configuration. The manual 'box is ambitiously spaced and pleasantly old-fashioned, but the sluggish shift action can dent progress.

The direct forerunner of the M2 CS was the 1-series M Coupe. I hated that car when it first came out because of the treacherous high-speed stability, an issue later fixed with a retro-fit aero kit. The same confidence-diminishing attribute returned recently in the M235i Gran Coupe and the Mini GP, but it is thankfully absent in the CS. Its steering has enough play to compensate for surface irregularities, its gearing is calmer and the feedback remains intact irrespective of lock and turn-in speed. This reassuring interface is absolutely essential in a powerful car which mixes a very wide track and a very short wheelbase to an explosive whole best kept on a short leash.

Like the 1M Coupe, the CS prefers clear terms and conditions before committing itself. Tight bends are

fine, but less so when dotted with split-grip tarmac, puddles and cross-grooves. Fast corners are easy-peasy, but ideally not when paired with quilted surfaces and deep aquaplaning ruts. High-speed autobahn esses can be a thrill, but not when interspersed with sudden lift-off or braking manoeuvres, ill-timed gearshifts or kamikaze lane changes.

Although M2 and 2002 operate in two separate speed and tech orbits, what unites them both is the fine art of flow, the high school of bonding with the driver. Not quite half a century after that first tii, the M2 CS has once again made my heart beat up to the Adam's apple, re-ignited dormant fires and brought testosterone leftovers to the boil.

While the M2 CS can set the tarmac on fire whenever you are up for it, the tii is more of a slow-mo, bow-and-arrow type of a car. To fully satisfy, it

needs a matching mix of revs and ratio; it piggybacks on momentum rather than horsepower, and it certainly is not a fan of excessive steering angles and dramatic throttle openings. The older BMW needs to be worked harder, but it pays you back in strong Deutschmarks not virtual Bitcoins (the currency of the CS, protected as it is by four airbags and several dozen electronic controllers).

While the tii marks the ultimate development of BMW's first affordable post-war icon, the top-of-the-range M2 is not the most compelling current M product – that remains the M5 Competition. Having said that, I still prefer the CS by a small margin over the not-long-for-this-world M4 (a new M4 is imminent) because it uncages the tiger inside with such a ballsy, shameless and gloriously vulgar coolness. **car**

BMW M2 CS

PRICE £75,355

POWERTRAIN 2979cc 24v turbocharged six-cylinder, six-speed manual (DCT optional), rear-wheel drive

PERFORMANCE

444bhp @ 6250rpm, 406lb ft @ 2350rpm, 4.2sec 0-62mph (4.0sec DCT), 174mph

WEIGHT 1650kg

EFFICIENCY 28.0-28.5mpg (28.5-29.1mpg DCT), 226-229g/km CO2 (221-224g/km DCT)

ON SALE Now

★★★★★

ALTHOUGH M2 AND 2002 OPERATE IN SEPARATE SPEED AND TECH ORBITS, THE SENSATION IS BOTH MARKEDLY DIFFERENT AND WIDELY COMPATIBLE



Furry alcantara wheel standard in the M2 CS





Modest modernists

The first wave of Tesla-inspired EVs were big-money SUVs. Now the electric hatches are here: Honda's E takes on the Mini Electric and Peugeot's e-208

Words Tim Pollard Photography Alex Tapley



HONDA E

Honda comes over all Apple

Ever wonder how the greatest game-changers make it to showrooms unsullied by committee or compromise? The thrill of a clean-sheet design and an over-achieving mission statement must spur on the cleverest engineers to make groundbreaking cars such as 1959's Mini, the 1974 VW Golf and the first-generation Ford Focus or Audi TT (both 1998). Can the Honda E hope to join this exclusive club? At first glance, its daring wardrobe, electro smarts and digital talents certainly secure the interview.

And so it proves when introductions are made. It's a shame some of the stance and conceptual slam-dunk of the Urban EV show car that sired the E were lost in the transition to showroom spec, but this is still one of Honda's boldest designs for years. It's dripping with cute detailing like the glass bonnet charging flap: it could convincingly wear the Apple apple. The question is: does it have the talent to match the bravura of its exterior

design? If so it'll be ready to sate the public's swelling interest in EVs.

The Honda looks petite but it's actually 45mm longer than the Mini Electric and comfortably the tallest of this trio. Cartoonishly styled and futuristic, it turns heads like no other small car. We find camera pods instead of door mirrors, an NFC (Near Field Communication) smartphone reader on the B-pillar (so you can use your phone to unlock the car) and full LED circular lights front and rear. This car's tech credentials are front and centre, a point rammed home when you unlock the door and sink into the wool-effect front seats to face the iMax of widescreens. Put it this way: my teenage son was in touchscreen heaven when faced with the full-width digital displays that stretch from door to door, replacing everything from traditional dials to sat-nav and radio comms. If you're the sort of person who's driven mad by everything being app-controlled from your smartphone these days, you're not going to like this interior.

But we do. It all works as intended, and we'll forgive Honda's Aquarium button on the homescreen, turning the twin 12-inch screens into a soothing goldfish bowl when parked up. The woke generation lap up this stuff. The screens' matt surface hides grubby fingerprints well and the logic of the operating system is first-rate – it knocks spots off the Peugeot's laggy menus and user experience. Something must have leaked into the water at HQ, as Hondas used to be let down by cheap and plasticky interiors – but the E's is quite a statement, having the heft and quality choices to match any German compact, and the simple wood fascia is beautifully judged. It's the best-built cabin of this trio by a country mile.

Press the start button (yes, this can be done by phone too) and the screens light up like a Christmas tree and certain pixels grab my



'Hang on, hang on. Stop. It's 32°. I'm just gonna get a new fleece'

attention: the range reads just 94 miles after an overnight charge on a proper wallbox. Blame the modest 35.5kWh battery, whose capacity is 40 per cent smaller than the Peugeot's 50kWh. There's simply less energy stored on board; Honda claims only 125 miles on the WLTP cycle. We never saw the range meter tip into three figures, and this poor endurance is the Honda's Achilles' heel. As a result it's surely going to be confined to second-car status; a fun urban runaround for those living in big cities.

The official claims say one thing, but as part of our testing we took all three electric tots on an identical 26-mile journey to see how they fared in real-world driving. It's no lab test, but we set the climate to 20°C, switched off all ancillaries like seat heaters, selected the most eco driving mode available and stuck to the speed limits. Driven thus, the Honda went from 100 per cent to 79 per cent (but the range dipped just two miles from 94 to 92), which goes to show the vagaries of electricity consumption and the complexity of predicting range. Our prescribed, semi-scientific journey gobbled energy at the rate of a kilowatt hour for 3.5 miles.

So you end up pootling gently everywhere in the Honda, trying not to tap into its instant 232lb ft of torque and instead marvel at how smoothly it drives. It reminds me of my old BMW i3 long-term test car, with a similarly well-damped ride quality, darty steering and an extraordinary 4.3-metre turning circle for taxi-spec manoeuvring around town. It's comfier than the bumping Mini, more agile than the sensible Peugeot and somehow manages to make you trust the all-digital trio of mirrors right from the off.

Who'd have thunk it? In the E, Honda might just have released its most significant car since the 1989 NSX. ►

Like an i3 there's a well-damped ride quality, darty steering and a remarkable turning circle



Kitsch and spectacularly well executed – Honda's nailed the interior



PRE-FLIGHT BRIEFING HONDA E

Why is it here?

The E is the first production EV from Honda, a company that was way ahead of the hybrid curve but has thus far dithered on EVs.

Any clever stuff?

You bet. The only rear-drive car here, the E is based on a new platform that will sire additional Honda EVs. While the E's wheel-at-each-corner stance remains true

to the concept car that previewed it, the details are a little blander. It has one of the most digitised dashboards ever seen on a small car – with screens stretching from door to door, bookended by sharp rear-view cameras designed to halve the size of over-the-shoulder blind spots.

Which version is this?

Only two versions are available in the UK: the base model



at £26,660 and this top-rung Advance, which costs £2.5k extra in return for a brawnier 152bhp motor (versus the standard car's 134bhp) plus upgraded heated seats/wheel, a digital rear-view mirror and the ability to spot parking spaces.



If it looks like it could be piston-powered, that's because it could





Kart-like steering wheel, fancy display – formidable!

PEUGEOT e-208

It's always the quiet ones

And so to the Peugeot, perhaps the most understated of this trio. Devoid of retro styling flourishes, the nearest the 208 gets to looking backwards is the C-pillar kink that references the windowline of the much-loved 205, this magazine's car of the '80s. Unencumbered by modish influences past or future, it's a design that works well in the here and now.

The Peugeot is the only car here that busts the four-metre mark on a tape measure and is correspondingly the roomiest inside, with genuine space in the back for adults. Its loadbay is the most capacious, and if you value roominess and practicality it'll be the easiest car here to slot into your life. Peugeot's insistence on sticking with its Lilliputian i-Cockpit interior design means those not familiar with the tiny steering wheel/raised instrument layout may be flummoxed, but it's easy to adapt. One nice touch is the layered, three-dimensional graphics on the digital dials – clever design; a simple *trompe l'oeil* to give the appearance that some of the readings are floating.

This is an interior that for the most part is simple and effective. Quality of materials and design is surprisingly high for a car from a mainstream French manufacturer, and although it can't match the expensive polish of the Honda's space-age cabin, we'd rather spend time in here than in the Mini's paean to plastic. We aren't fans of the 208's faux carbonfibre strip across the dashboard, however, and the shiny piano-black trim on the centre console attracts fingerprints within minutes. The infotainment system is convoluted and slow to respond, lagging behind the simplicity and modernity of the controls in the Honda and Mini.

But what is the Peugeot like as an electric car? Just as the 208's footprint is a size up from the other two, so is battery capacity. A 50kWh lithium-ion pack is slung under the seats, providing a considerable advantage for range and performance, and this will appeal to users who aren't intending to keep their EV as a second or third car purely for short shopping trips around town. We struggled to drive the Honda from Peterborough to Cambridge and back on a single charge – and that's a

The 0-62mph time of 8.1sec is actually quicker than its 205 GTI 1.6 great grandfather

(largely flat) journey of 41 miles each way. With the Peugeot, such trips are no longer a complication requiring ZapMaps and blagging access to friends' three-point plugs.

Even when fully charged, though, we never got the Peugeot to anything like its quoted 217-mile range – a flaw that every one of these cars shared (although we tested them in the hottest week of the summer). We'd be cross if we'd bought one and were never able to get close to the advertised distance. After charging the Peugeot overnight, the range settled at 149 miles and that fell to 130 after our standardised 26-mile route. Energy usage stood at 3.9 miles for every kilowatt hour, putting it just ahead of the Honda on consumption but behind the frugal Mini.

Slip behind the wheel and the Peugeot is a sprightly car to drive. Each car here responds briskly to the accelerator and the e-208's 0-62mph time of 8.1sec is actually quicker than its 205 GTI 1.6 great grandfather. Steering response from the shrunk wheel is quick and eager, the supermini turning in smartly, and you're left thinking that the forthcoming performance versions could be quite something. Peugeot execs have already confirmed that future GTIs will be electric and we suspect they'll take the pocket-rocket sector by stealthy storm.

The e-208 rides with a comfortable pliancy, riding out the bumps and lumps of British blacktop with a smoothness that eludes the Mini if not quite matching the polish of the Honda's chassis. Although it has the least powerful electric motor, you'll rarely want for more than 134bhp, and the front axle doesn't tug and fight like the Mini's. One black mark against the Peugeot is the strange absence of regenerative engine braking – the e-208 never operates as a one-pedal driver, and you end up dipping into the friction brakes where its rivals let you harvest kinetic energy during deceleration by coasting. No matter how we played with the Normal, Eco and Sport modes and selected B for Braking in the transmission, the e-208 never had more than modest regen. Porsche argues high regen is obtrusive and gimmicky. Seems Peugeot agrees.

It hasn't stopped Peugeot hitting the bullseye with this electric car. It's attractively priced and designed, generously packaged and equipped, and above all decent to drive and with the best range here. Could this baby lion cub be the one that'll tempt sceptics to take the plunge and plug in? On this evidence, it'll stand a very good chance indeed. ►

PRE-FLIGHT BRIEFING PEUGEOT e-208

Why is it here?

Available in petrol, diesel and electric forms, the 208 is the 2020 European Car of the Year.

Any clever stuff?

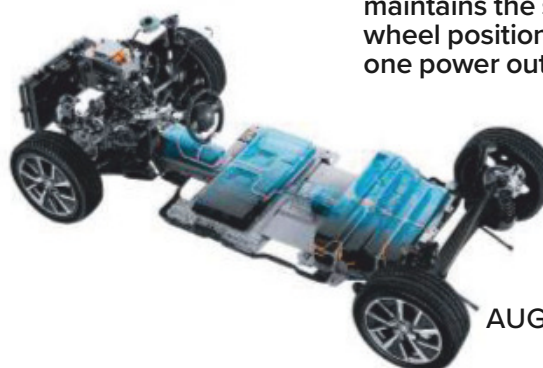
It's underpinned by the PSA Group's e-CMP platform, so it's the same electric

hardware you'll find under the skin of the battery-fed Vauxhall Corsa. Where you'd find the fuel tank and exhaust on a combustion 208, you'll find lithium-ion battery cells – and they've had to develop an angled rear axle that bends around the battery pack but maintains the same wheel position. Just one power output

is available for now, 134bhp. The 7.4kW onboard charger takes 7.5 hours to charge up from a domestic wallbox; find a 100kW DC rapid charger and that tumbles to a half-hour wait for 80 per cent capacity.

Which version is this?

GT spec comes with a host of goodies such as fully automated parking assistance. You can spec an e-208 from £25,050 (after the government grant).



MINI ELECTRIC

That'll do for now

Stepping from the Honda E to the Mini Electric is quite a shock. For two decades we've been lapping up the baby BMW's fun and fizzy character, but the Brit suddenly feels old in this company.

Large dinner-plate-sized circular infotainment screens and a brace of retro toggle switches look quaint next to the digital wizardry of the Honda. You sit low in the sportiest driving position and you're reminded that the Mini is the shortest, lowest and narrowest car on test. The package is correspondingly snug: you miss the rear doors of the other two and the cramped back seats are a joke, compared with the adult-friendly second-row accommodation in the e-208 and occasional-pub-run status of the E. None of these cars has a particularly big boot, and space is gobbled up by charging cables and paraphernalia; the Mini's loadbay will squeeze in a little more shopping than the Honda's, though neither can live with the Peugeot's generous 311-litre compartment. Which is what you'd expect if you compare a supermini with two city cars.

There are few telltale signs to the outside world that this is an Electric rather than a petrol-fuelled Mini: ours does without the three-point-plug-inspired alloy wheels, and only subtle badging and the absence of

an exhaust pipe give the game away. When you pull away and tickle the throttle the Mini is comfortably the fastest on test, making the most of its 31bhp power advantage over the Honda. All three cars are speedy from standstill to 30mph, but the Mini keeps on reeling in the horizon urgently, even at motorway speeds. Like the Peugeot, its top speed is capped at 93mph (the Honda will brush 100mph if you can smother your range anxiety for long enough).

That 7.3sec 0-62mph time makes this a genuine hot hatch, and this is surely the reason you'd pick the Mini – it is the most athletic car here. That familiar heft to the steering, the darty handling, the upright driving position and ease of positioning on the road – the brand traits are all present and correct. What's less welcome is the dreadful sci-fi whooshing noise on start-up and shutdown, and there's more artificial whirring when you pootle at low speeds, too. Yes, EVs legally have to emit low-level noises to alert pedestrians, but does it have to be this childish?

Pull out of town and once you've got used to the instant hit of performance the Mini can muster, you start to notice other things. Like how the steering writhes and twists in your palms if you prod the accelerator too far; torque steer is a constant companion. The ride quality is also markedly worse than in the beautifully damped Honda or resolutely



'Meet you in the car park, bring an extension lead'

comfortable Peugeot. It pogos and crashes over those peculiarly rubbish B-roads that British councils specialise in, but things settle down on a motorway or around town. All three rivals wear identical 205/45 17-inch tyres, so it must be down to the suspension set-up. It's a shame the Electric has lost some of the chassis poise its combustion brothers enjoy, but the Mini is the lightest car here (at 1365kg, it's nearly two hundred kilos lighter than the Honda!) and can be flung around with reasonable abandon if you want to play hot hatch.

Where the Mini scores highest is the maturity of its electrification. Fully charged, the Mini's range says 98 miles and after navigating our identical test route that fell to 87 miles with 84 per cent of charge remaining – a useful advantage over the Honda. Most impressive of all was the fact the journey consumed a kilowatt hour every 4.8 miles, the most miserly consumption on test. You're left with the feeling that Mini has really tapped into the BMW group's expertise in EVs; all those energy management learnings from the i3 and i8 have paid off in making every single amp, volt and watt matter.

The Mini's old-world charm is at odds with the cutting-edge tech under the skin, and you're left wondering if this is a brand hamstrung by the weight of its history. Like the dynamic obsession with sportiness that ruins ride quality. Or the insistence on a large circular dashboard display, despite the inefficiency of a rectangular touchscreen within. The Mini's pop-up head-up display is leapfrogged by the cutting-edge Honda's widescreen. And isn't it time that Mini stopped slathering Union Jack branding everywhere? I counted six flags on the seats alone, plus the large engraved dashboard motif and the rear light graphics...

The Mini couldn't feel more different from the Honda, which is resolutely modern to its core. It feels like the world has moved on. ►



The Mini used a kilowatt hour every 4.8 miles, the most miserly consumption on test



First it was retro, but now it's just old

PRE-FLIGHT BRIEFING MINI ELECTRIC

Why is it here?

Mini's hatch continues to woo with cheeky looks, go-kart drive and quality allure; last year it was the eighth best-selling car in the UK. The Electric – available only as a three-door – has arrived this summer to stimulate interest further.

Any clever stuff?

BMW's led the way with electrification and the Mini's innards



benefit from i project learnings; the motor is nabbed from the i3 S and its brawny 182bhp is nearly 50 ponies up on the least powerful car here, the Peugeot e-208. The Electric's lithium-ion battery is the smallest of this trio at 32.6kWh, allowing

an identical bootspace to combustion Minis (although they don't have to carry charging cables).

Which version is this?

A simple range structure awaits. Pick 1, 2 or 3 trim level. This one's a top-spec 3 without a single optional extra – just as well given it's the priciest car in this test as it is, whether you're paying outright or leasing with monthly payments.

HONDA E & RIVALS

THE DETAIL

HONDA E



PEUGEOT e-208



MINI ELECTRIC



AFFORDABILITY

£29,160 (£29,160 tested)
Representative PCP £299
 (36 monthly payments),
 £5856 deposit, 5.9% APR,
 8000 miles a year
**Typical approved used
 value** n/a (too soon)

£29,965 (£30,510 tested)
Representative PCP £329
 (47 monthly payments),
 £4069 deposit, 5.0% APR,
 6000 miles a year
**Typical approved used
 value** n/a (too soon)

£33,900 (£33,900 tested)
Representative PCP £393
 (47 monthly payments),
 £5000 deposit, 5.9% APR,
 10,000 miles a year
**Typical approved used
 value** n/a (too soon)



POWERTRAIN

Engine 35.5kWh battery,
 single e-motor
Transmission Single-speed,
 rear-wheel drive

Engine 50kWh battery,
 single e-motor
Transmission Single-speed,
 front-wheel drive

Engine 32.6kWh battery,
 single e-motor
Transmission Single-speed,
 front-wheel drive



PERFORMANCE

Power 152bhp
Torque 232lb ft
Top speed 100mph
0-62mph 8.0sec

Power 134bhp
Torque 221lb ft
Top speed 93mph
0-62mph 8.1sec

Power 182bhp
Torque 199lb ft
Top speed 93mph
0-62mph 7.3sec



BODY/CHASSIS

Structure Steel, aluminium
Weight 1555kg
Suspension MacPherson
 strut, forged aluminium
 (knuckle arm and lower arm)
Length/width/height
 3895/1750/1495mm
Boot capacity 171 litres
 seats up, 571 litres seats
 down

Structure Steel, aluminium
Weight 1455kg
Suspension MacPherson
 strut front, crossbeam rear
Length/width/height
 4055/1960/1430mm
Boot capacity 311 litres
 seats up, 1106 litres seats
 down

Structure Steel, aluminium
Weight 1365kg
Suspension MacPherson
 struts front, multi-link rear
Length/width/height
 3850/1727/1414mm
Boot capacity 211 litres
 seats up, 731 litres seats
 down



EFFICIENCY

Energy consumption
 3.4 miles per kWh
Range 125 miles official,
 94 miles on test
CO2 emissions 0g/km

Energy consumption
 3.9 miles per kWh
Range 217 miles official,
 149 miles on test
CO2 emissions 0g/km

Energy consumption
 4.8 miles per kWh
Range 140 miles official,
 98 miles on test
CO2 emissions 0g/km

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FINAL RECKONING

Long-range lion for the win

1st

PEUGEOT e-208

The complete small electric car: this compact EV is strong in every area, and weak in none

★★★★★

2nd

HONDA E

One of the coolest cars of 2020: achingly hip and a joy to drive, let down by tiny range and boot

★★★★★

3rd

MINI ELECTRIC

Firecracker performance can't make up for ageing foundation, and battery range isn't great

★★★★★



This trio feels zeitgeisty and incredibly on-point for the anxiety-laden, finger-gnawing 2020s: electrically powered to save the polar bears, small enough to thread through our increasingly congested cityscapes, yet boasting enough dynamic fizz to reward keen drivers on occasional extra-urban forays – and with an eye on urban chic to boost kerbside feelgood factor for some catwalk cool. Each one couldn't be more on trend if it tried.

Mini has been ploughing a similar furrow for two decades under BMW ownership and there are few surprises with the Electric. In the spirit of all the best Minis, however they're powered, the British contender is damn fast – comfortably the quickest car here – but what surprised us more was how it lacked the sophistication of the others. We never thought we'd say it, but the Mini is beginning to feel its age and the time for cartoon-oversized dials and kitsch detailing might have passed. The new kid on the block from Japan has moved the look-at-me goalposts and the Brit try-hard is no longer quite so compelling, especially with its desperately short range (the Mini's drivetrain is very efficient but hamstrung by a tiny battery) and the least practical cabin on test.

The Honda E is a breathtaking achievement: one of those rare cars that

only comes along once every few years and shakes up the established way of doing things. It's arguably the coolest car of the summer/year/decade thus far, and the design is winningly successful outside and in.

But there's real substance behind the E's flair, and if we were judging this Giant Test on driving qualities alone, it would walk into the sunset with the e-plaudits. It has a sophistication to ride and handling that the others can't match, the cheapest price tag (whether you pay outright or on the tick) and a depth of engineering to soften the blow that Honda is giving up on VTEC and combustion for a new kind of motive power in the years ahead.

If we lived in central London and never ventured outside the North Circular, the Honda would walk this test – but its tiny range and equally small boot conspire to leave the Peugeot in pole position. The e-208 is a resoundingly successful small car that just happens to be electric – strong in every single area we judged and weak in none. Its regular supermini roots endow it with the most generous packaging for bodies and baggage, it's good to drive and it won't run out of slow-to-replenish juice the moment you accidentally turn onto the M25. It's the best electric hatchback here and, if you can resist the Honda's undeniable charms, the one we'd suggest you plug into. **car**

Our cars

**HELLO VW T-ROC R + AUDI SQ8 MEETS BENTLEY FLYING SPUR
+ BMW 3-SERIES TOURING'S DECADE OF PROGRESS
+ VOLVO V60 XC + 11 MORE LONG-TERM TEST CARS**



Bright paint isn't
the same as
daring design,
but it'll do

The question is, why this over a Golf R?

It's based on a great hot hatch. Can it achieve greatness itself? By **Anthony ffrench-Constant**



Volkswagen T-Roc R 2.0 TSI 4Motion Month 1

The story so far

A taller, heavier, uglier, pricier Golf R, because everyone wants a compact SUV

- + Goes like a stabbed rat
- Will it prove as engaging as a Golf R?

Logbook

Price £38,450 (as tested £42,359) **Performance** 1984cc turbocharged four-cylinder, 296bhp, 4.8sec 0-62mph, 155mph **Efficiency** 32.5mpg (official), 28.1mpg (tested), 76g/km CO2 **Energy cost** 19.3p per mile **Miles this month** 1007 **Total miles** 1071

If the Golf R currently constitutes the cake-and-eat-it of the hatchback world, there's no reason to suppose the T-Roc R won't tick all the boxes with equal insouciance in the realm of the compact SUV.

Except in the styling department, wherein VW has clearly lost its way. Each element of the T-Roc's couture seems to have been carried to the clay from a separate annex of the design department, none of which have been speaking to the others.

Judging by shots of the Mk 8 Golf GTI, a lower front grille styled on Aardman Animation's Wallace sucking a leaking pen while composing a letter of complaint about the *Wrong Trousers* having gone wrong is to become commonplace on the bows of future VWs. It doesn't particularly suit the Golf, and on the T-Roc just looks wrong, much like the going-nowhere crease curving over the rear door handle.

Mercifully, things are much less muddled on board. From both a visual and tactile perspective, some of the plastics fall short in the context of a car costing over two grand more than the Golf R, but all is as well screwed together and intuitively operable as we've come to expect from VW.

No complaints about the driving position or the deliciously grabbable steering wheel. But it must be said that climbing behind the wheel fails to deliver that feeling of imminent immersion in the driving process promised by the Golf R; strange how sitting just a whisker more upright and a few millimetres higher can make all the difference between 'on' and 'in'.

There's just about room in the rear seats for a pair of bickering teenagers, but the evil-smelling dog fares less well astern, where a steeply raked rear screen narrows the canine head space afforded by the removal of the parcel shelf to barely acceptable limits. ►

Happily, there's absolutely nothing wrong with a powertrain lifted pretty much wholesale from the Golf R. To quickly recap, that constitutes a 2.0-litre, four-cylinder turbocharged petrol unit developing 296bhp and 295lb ft of torque; this delivered via a seven-speed DSG gearbox to all four wheels courtesy of Haldex.

Thus armed, the T-Roc R will pelt to 62mph in just 4.8 seconds and on to a top speed of 155mph – this terminal velocity, unlike that of the Golf R, ungoverned.

VW has fettled here and there to compensate for the T-Roc's extra 81mm in height and 50kg weight gain over the Golf. An aluminium front subframe (which the GTI gets but the R doesn't) adds rigidity and

loses weight; the brakes are lifted from the Performance Pack version of the Golf R; and the Haldex clutches have been tweaked to offer a more rear-biased power delivery under acceleration.

There's also a titanium Akrapovic exhaust system on the options list to make those noises off a little less disappointingly humdrum. But at £3000 a snap, crackle and pop, that is where it will remain.

Unlike driving the Golf R, you'll have to engage the T-Roc's Race mode to unleash the full stabbed rat, and that's where the capacity to tailor the optional Dynamic Chassis Control's dampers separately from the engine mode comes in handy – Race for the

There's absolutely nothing wrong with a powertrain lifted pretty much wholesale from the Golf R

engine, by all means, but never for the damping. The Normal setting is tuff enuff to deliver flat, hard-charging cornering without dislodging your contact lenses.

Oh, and the brakes are very much front loaded on the pedal; you get the lot with the first touch, which leaves you with the unfortunate impression that you're getting less with subsequent shoving thereafter.

All in all, after a very pleasant year spent idly wishing Mazda's CX-5 came with something a little

shoutier under the bonnet, the T-Roc R has no trouble fulfilling the Sport section of the SUV brief.

On first acquaintance, though, it may struggle to deliver the levels of precision and engagement that make the Golf R such a delight. Understandable, perhaps, given the extra height, weight and lofted driving position. Nonetheless, if it can combine the undeniably sizeable chunks of entertainment on offer with just half an ounce of Utility, you'll hear no complaints from this department.

COLOUR SENSITIVE £1020

It isn't until you specify David Dickinson Racing Orange that you suspect the T-Roc R might be just a tad colour-sensitive. These 19-inch alloys and logo'd brake calipers are standard.

KEYLESS ENTRY £395

And start. And locking. So the car keys can remain safely in your pocket for the duration. Or, more to the point, lost in the bottom of the missus' handbag for all eternity.

BEATS SOUNDPACK £425

Eight-channel 400-watt digital amplifier with six speakers and a subwoofer; because the capacity to smash two small lumps of earwax together with stupefying force in the middle of your brain is what teenagers want in a car.

DYNAMIC CHASSIS CONTROL £695

Choice of Normal, Sport and Comfort suspension settings; includes progressive steering and driving profile selection. Race mode best twinned with Normal or even Comfort damping to spare eyeballs.



Voyage of discovery

Just popping to the shops

Short urban hops don't ask much of the Mini Electric – and it does them exceptionally well. By **James Taylor**



2 ROUGH WITH THE SMOOTH

Ride comfort is on the firm side, which is fine by me. Makes perfect sense if you think of the Electric as a warm hatch. Multi-link rear suspension helps keep body movements nicely controlled.



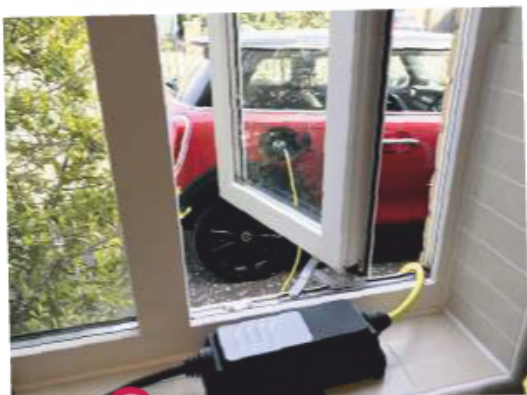
3 TAILSWINGS AND ROUNDABOUTS

The Mini can't help revealing its cheeky side on a deserted roundabout. Centre of gravity is a smidge lower than engine-powered Minis, and since the motor is a bit lighter than an engine the weight distribution's a little sweeter too (although you are carrying an extra 145kg overall). Let's do an extra lap...



4 WHAT'S THAT SOUND?

In the absence of pistons thrashing away, the Electric makes an artificial noise at low speeds, so that you know it's running (via the cabin's speakers) and so do pedestrians (via a hidden external speaker). It's a curious sound, a bit like a small spacecraft docking, or a slightly mournful cyborg sighing.



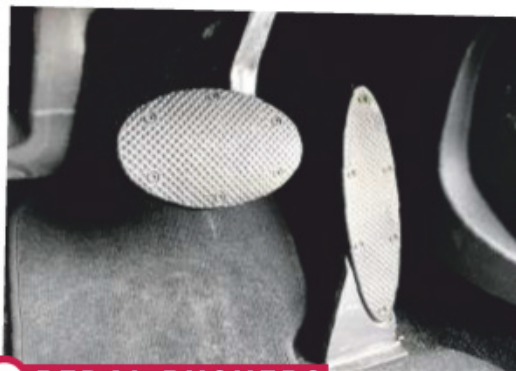
1 PLUGGING AWAY

I've been keeping the Mini topped up by negotiating times I can block my neighbours' driveway to snake a three-pin lead out of my kitchen. It's a lengthy process to do in one go. To get from zero (not that I plan on running it that low) to 80 per cent takes 12 hours.



6 SMALL BOOTS TO FILL

The Electric has exactly the same small boot as a regular Mini. The passenger footwell becomes a second boot for surplus bags on a medium-sized food shop.



5 PEDAL-PUSHERS

Can't imagine accelerator pedal software calibration engineers get many shout-outs, so here's one: the Mini Electric's is amazing. Creeping millimetre by millimetre up to obstacles in tight parking spaces, gunning down sliproads or cruising in the outside lane, it's incredibly precise. Big up yourselves.



Mini Electric Level 3 Month 2

The story so far

Mini's first proper EV, with short range, rapid 0-62mph time and low Spot the Difference score

- + Just as roomy as a regular Mini, despite the batteries
- Which means the boot is still titchy

Logbook

Price £24,900 (£33,900 as tested) **Performance** 32.6kWh battery, single e-motor, 181bhp, 7.3sec 0-62mph, 93mph **Efficiency** 3.9 miles per kWh (official), 3.5 miles per kWh (tested), 0g/km CO2 **Energy cost** 4.7p per mile **Miles this month** 138 **Total miles** 1453

Both close to greatness



320i, complete with handbrake



330i big on screens

Wife, meet mistress. Mistress, meet wife

Fancy new 330i Touring should easily outclass trusty old 320, shouldn't it? But of course nothing's ever that simple. By **Ben Barry**



BMW 330i Touring Month 5

The story so far

3-series Touring in 330i spec – lighter, cheaper and only 3mpg off 330d, more exciting/less rattly than 318d/320d

- + Strong dynamics, space, tech, design, quality feel
- Ride quite firm; four lacks the magic of a good BMW six

Logbook

Price £39,670 (£48,495 as tested) **Performance** 1998cc turbocharged four-cylinder, 254bhp, 5.8sec 0-62mph, 155mph **Efficiency** 38.7-39.8mpg (official), 30.5mpg (tested), 163g/km CO2 **Energy cost** 18.2p per mile **Miles this month** 403 **Total miles** 4531

The 330i's arrival made us a two 3-series Touring family, giving me a chance to delve deep into what a decade's development has brought.

I won't argue my 2009 320i Touring is better, but there is a lot to like. The design has matured well, it's still a comfortable, spacious car, and it's currently enjoying an Indian summer of having shed all its value, still being perfectly good to use, but having enough 'patina' to make us feel carefree if never careless when using it. Decent enough mpg, cheap maintenance by a garage that's within walking distance – there's much to be said for this.

The obvious difference between the two cars is size: the new car is 188mm longer, putting it halfway between a 10-year-old 5-series and my 320i.

Inside, there's a substantial increase in space for the new car, particularly in the back, plus

analogue clocks have given way to a digital dash and an optional gesture function that lets you twirl thin air to adjust volume. Much of this technology is first class, though it's striking how much harder the buttons for headlights and temperature control are to find than the old car's dials.

It's also a smarter, plusher cabin with standard leather trim, but I continue to be fond of the old-timer, which shares its successor's low-set driving position and sense of purpose from behind the wheel. I bought it five years ago from Marshall in Nottingham, who delivered it with four spare alloys shod with winter tyres in the boot; a nice surprise (less so the badly repaired hail damage on the roof).

The 320's drive is a bit underwhelming: iffy electric steering in the early days of BMW's adoption of the technology and uninspiring four-cylinder 170bhp

powertrain saved by a nicely balanced chassis.

The new 330i is far better dynamically, as well as being more spacious and loaded with useful tech. Despite having only 80bhp more and being around 150kg heavier, it delivers comparable low- to mid-30s mpg and feels much brisker. It is stiffer and, I think, suffers more road noise at motorway speeds (though I'm rarely on the motorway in the 320i), a trade-off for this being the tauter, more precise driving machine. Nonetheless, living with them back-to-back, the new 330i is obviously better when judged on every single metric.

The new car also doesn't break down. We had the 320i under extended warranty for as long as possible, at about £350 a year. For three years it worked perfectly, from 50k to 80k miles. In the fourth year we used the car about half as much, and started working through well known coil-pack failure issues, had an injector replaced, and a broken spring due to a man-sized pothole. That probably paid for most of the warranty. Then just before the warranty expired last year, the diff went. It cost the warranty company over £2k.

📍 @lamBenBarry



Matty Graham

Little to be gained by caning it, so best enjoy the comfort

Great-ish and small-ish

Handy plug-in hybrid ahoy! By **Ben Whitworth**

I drove my mother's elderly dog to the vet's last week. Not exactly a winning Top Trump card in the Dream Drives deck, but after three weeks of either walking or cycling, the 10-mile return trip with Stinkyboy Alfie left me buzzing. I savoured every moment, and drank in every aspect, no matter how

small. Starting, appropriately, with the Niro's key. Its asymmetrical shape makes it easy to press the right button without needing to glance at it. And it reminds me of Bodie and Doyle's Pye PF8 walkie-talkies in *The Professionals*.

Unlock and unplug. Drop down into the plumply upholstered

seat. Seatbelt and smartphone. Flick out the key – no pushbutton start-up here – and twist. Pretend I don't hear the cheesy bingbong welcome. Glance down to the right of the gearlever and toggle the powertrain selector to full-electric EV mode. Silence the Virtual Engine Sound System for full stealth approach. Drop into D, breathe on the accelerator and with a faint whirr, dog and I are off.

Although I love the Niro's superb Bose audio system, and the way it instantly hooks up to my phone, I turn off Depeche Mode's *101* and drive in silence. Up to 50mph the Kia is enjoyably brisk in electric mode, although the smooth double-clutch gearshifts that interrupt its linear acceleration still feel odd in an electric car. I'm accustomed to the slightly too-firm ride quality now, and I know the chassis, steering and suspension are only loosely acquainted with the concepts of dynamism and athleticism, so I concentrate on smooth inputs, maintaining momentum and getting the crook canine to the vet's practice as comfortably rather than as quickly as possible.

Alfie perks up the moment he

sees the vet. He's a sucker for a vet with a French accent who's generous with both her treats and her drugs. So what we all thought might be his last trip out of the house turned into a drugs run for him and a driving fix for me. Good result all round, I'd say.



Kia Niro PHEV Month 5

The story so far

Smooth, unobtrusive, near-silent plug-in hybrid

+ Successfully tackles everything it's asked to do

- Wish it was more about driving, not just transport

Logbook

Price £31,945 (£32,530 as tested) **Performance** 1580cc four-cylinder plus e-motor, 8.9kWh battery, PHEV, 139bhp, 10.4sec 0-62mph, 107mph **Efficiency** 202mpg (official), 84.5mpg (tested), 29g/km CO2 **Energy cost** 6.4p per mile **Miles this month** 48 **Total miles** 4007



Bentley Continental GT V8 Month 3

The story so far

V8 rather than W12: downsizing, Crewe-style

+ No lack of performance; V8 restricts thirst (a little)

- Part of you wonders if you should've gone the whole hog

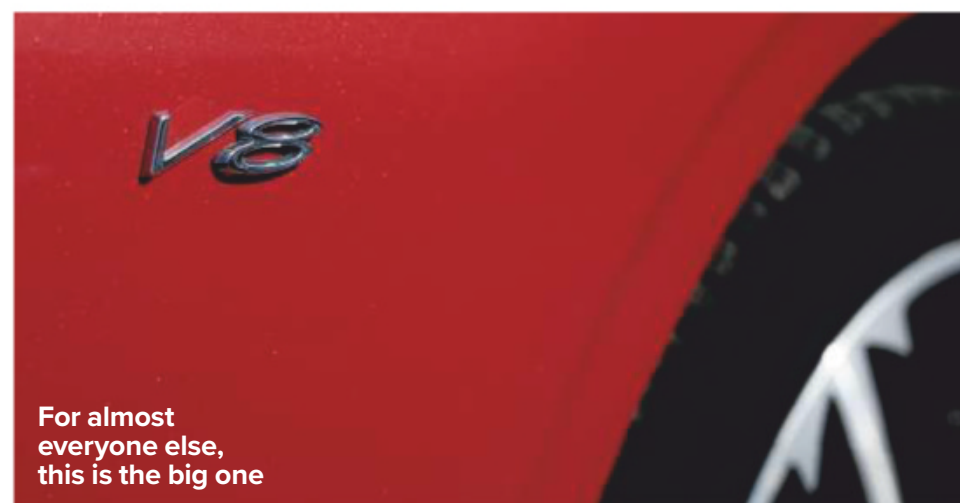
Logbook

Price £151,800 (£194,345 as tested) **Performance** 3996cc twin-turbo V8, 542bhp, 3.9sec 0-62mph, 198mph **Efficiency** 23.9mpg (official), 16.1mpg (tested), 268g/km CO2 **Energy cost** 26p per mile **Miles this month** 323 **Total miles** 5710

We're all in this together

Sacrifice takes many forms. By **Tim Pollard**

Three months in and I'm wondering if picking the V8 rather than the W12 was a step down in any way. The twin-turbo 6.0-litre range-topping W12 arrived with the Mk1 Conti in 2003 and is still available today now that the coupe has reached its third generation. But the majority of customers pick the smaller engine – hardly surprising as the price compares favourably (£151,800 plays £163,100)



For almost everyone else, this is the big one

and there are advantages in fuel consumption and CO2 emissions too. Even at this rarefied strata of the market, such things matter. It's a more modest Bentley for these straitened times.

You'd be hard-pressed to tell from behind the wheel, though. Not once have I felt short-changed

by the absence of one third of the engine's swept volume or hankered for a further four cylinders.

And if you're worried about appearances, only a tiny V8 badge behind the front wheelarch gives the game away; and it's a delete option, so nobody need ever know.

@TimPollardCars

The shape of true luxury in 2020

Audi vs Bentley: it's no foregone conclusion. By **Ben Oliver**



Audi SQ8 Vorsprung Month 5

The story so far

Takes quite a lot to upstage a six-figure super-SUV, but a Covid-refugee Bentley means the SQ8 has been parked

- + Performance; clever chassis and drivetrain; quality
- Questionable looks; compromised practicality; price

Logbook

Price £104,240 (£106,640 as tested) **Performance** 3956cc twin-turbo V8, mild hybrid, 429bhp, 4.8sec 0-62mph, 155mph **Efficiency** 36.2mpg (official), 27.0mpg (tested), 240g/km CO2 **Energy cost** 22.0p per mile **Miles this month** 147 **Total miles** 5212

What is it with me, Bentleys and the end of the world? The last time things melted down this spectacularly, in the financial crisis of 2008, my long-term test car was a used Continental GT. Driving that car at that time made me feel like a Depression-era

Woolf Barnato cruising blithely past the queues for soup kitchens in his 4.5 litre. It felt even less appropriate when my meagre life savings disappeared (temporarily, thankfully) down an Icelandic geyser. I could barely afford the fuel, and searched Yahoo for countries within driving distance but without extradition treaties to which I could abscond with the car and what remained of its residual value.

This time I had the keys to a new, third-generation Bentley Flying Spur when the crisis struck. It was delivered to my place on the day lockdown was announced. The next day an email arrived from Bentley asking if I'd look after its £168,300 car indefinitely. It was here for two months.

So naturally I've been asked to write a comparison between the Bentley and my long-term Audi SQ8. But the Audi didn't get a lot of use while the Bentley was here. When you're scouring Soviet-era supermarket shelves for flour and yeast and having your hair cut with dog clippers, you'll make the most of whatever glamour is available, so if there was a journey to be made it was made by Bentley.

The poor SQ8 was reduced to fulfilling only the 'U' element of its SUV designation, occasionally hauling the bicycles, tents and barbecues required to keep kids entertained. A friend suggested that we take both cars out one night, and with their sliding sunroofs and blinding main beams go lamping for rabbits. But living on a farm with hundreds of rapidly fattening lambs, meat was the one thing we weren't short of. Would have made an unusual twin test, though.

But when lockdown eased and Bentley's men came in their biohazard suits to repossess the Flying Spur, I didn't mourn its loss. The Audi is so crushingly omni-capable and so flawlessly made that even the loss of a Bentley doesn't leave you feeling hard done by. It's also a lot more appropriate for a scruffy father of two who lives on a farm. It certainly felt better bolted-together than the Bentley, whose cabin electronics would shut down momentarily after a pothole, and whose retractable winged-B strictly obeyed the government advice to stay inside. And although I was grateful for the Spur's grace and space and waft, its cabin didn't feel like something that no other car maker could do, as Bentleys once did. Too much chromed and bendy plastic, not enough knurled and polished aluminium.

Yes, criticisms like that seem irrelevant at times like this, but there wasn't much else to think about. Along with banana bread, clapping, bog-roll shortages, Boris and Joe bloody Wicks, the fact that we had a 207mph Bentley parked outside and could barely use it will be how the kids and I remember these strangest of days.



Flying Spur is pretty special, but so's the SQ8



If only everything in life was as reliable as an Audi cabin

Matty Graham



**The Audi is so
omni-capable that
even the loss of a
Bentley doesn't
leave you feeling
hard done by**

Putting your money where your mouth isn't

Nissans are great value, aren't they? Maybe not this one. By **Jake Groves**

Let's do some maths. My top-spec Juke is £24,000 or, looking at leasing deals from Zen Auto, about £250 a month for a three-year, 10,000-mile deal at the time of writing. My question is, does the Juke present a compelling case for itself, given the big choice of other cars for similar money?

The Juke has some decent qualities going for it, not least its striking and actually-quite-handsome looks that have evolved from its Quasimodo-aping forebear. It has plenty of tech, like the headrest be-speakered Bose

stereo system I keep banging on about, semi-autonomous driving assist tech and an interior filled with alcantara and sporty details. The 1.0-litre triple is boosty and characterful (if not particularly swift) and its luggage space is now among the best in its class.

But £24,000 is a hefty amount of dosh, and the competitiveness of the car leasing market means you can find some surprising alternatives. A Peugeot 2008 Allure Premium with the 99bhp petrol hovers around the same list price, a small SUV with a fantastic

cockpit (and those futuristic 3D instruments), equally handsome looks and better ride quality than the Nissan. That list price will also get you a laugh-a-minute five-door Ford Fiesta ST-2.

On the finance front, your options are even wilder. Similar deals could net you a BMW 2-series Gran Coupe in 218i Sport form, a new-generation Audi A3 35 TFSI Sport, a Mazda 3 with its innovative variable-compression Skyactiv-X engine or a VW Golf Mk8 in all-you-could-need Style spec with the 128bhp 1.5-litre TSI Evo engine.

Bigger crossovers are available too. Remember Phil McNamara and Colin Overland's recently-departed Citroën C5 Aircross and Seat Tarraco? Similar specs can be had for about £40 per month less than my Juke, at least in the Citroën's case.

I am genuinely enjoying running this little red and black crossover, and can understand the appeal in living with one. But there are,

logically, more practical, more sophisticated, more desirable or more fun cars.

• @_jakegroves



Nissan Juke 1.0 DiG-T Tekna+
Month 6

The story so far

Novelty having worn off, it's time to ponder our Juke's value

- + Good looks; tech aplenty; epic stereo
- Lumpy ride still threatening my dentistry

Logbook

Price £23,895 (£24,065 as tested) **Performance** 999cc turbo triple, 115bhp, 10.3sec 0-62mph, 112mph **Efficiency** 45.6mpg (official), 31.5mpg (tested), 118g/km CO2 **Energy cost** 16.2p per mile **Miles this month** 208 **Total miles** 4701

Matty Graham

£24,000 is a hefty amount of dosh, and you can find some surprising alternatives on the leasing market



A short history of tall Volvos

The long and winding off-road from the Second World War to the Ikea car park. By **Chris Chilton**



Firmly in the tradition of Volvos with XC as a suffix, not a prefix



Volvo V60 Cross Country Month 4

The story so far

V60 XC continues Volvo's eight decades of off-road adventures

- + Big on comfort and safety
- Short on... tallness

Logbook

Price £40,785 (£48,290 as tested) **Performance** 1969cc turbodiesel four-cylinder, 187bhp, 8.2sec 0-62mph, 130mph **Efficiency** 47.8mpg (official), 34.1mpg (tested), 135g/km CO2 **Energy cost** 17.6p per mile **Miles this month** 721 **Total miles** 3389

Matty Graham

VOLVO TPV

Volvo builds its first car in 1927, but four-wheel drive isn't on the options list (hell, neither are four-wheel brakes, until 1928). But 17 years later, Volvo's engineers mash together the body of its PV800 saloon with the mechanical guts of its small truck to create the Terrängpersonvagn (literally 'off-road car') or TPV, for the Swedish military.



PV544

Volvo's hunchback PV isn't four-wheel drive, but it certainly proves its off-road mettle, demolishing strong competition from Mercedes, Citroën, Peugeot and Ford to win 1965's gruelling Safari Rally. The winning team comprises driver Joginder Singh and his brother Jaswant, who wear turbans instead of crash helmets.



C303

The 'Cross Country' tag makes its first appearance in 1974 on promo material for Volvo's civilian version of its forward-control military truck. Tiny overhangs, portal axles that give it massive ground clearance and an ability to climb an 80 per cent slope make it an off-road weapon. In 1983 a C303 wins the truck class of the Dakar.



V70 XC

The 850 becomes Volvo's first true all-wheel-drive passenger car in 1996, and its first modern crossover arrives a year later when engineers add chunky plastic bumpers and taller springs to the 850's successor, the V70. The idea is cribbed from AMC's 1980 Eagle, but Volvo still beats Audi's A6 Allroad to market by four years.



XC90

The original 2002 XC90 is a massive car for Volvo, in every sense. The company's first true SUV gives the Swedes a serious foothold in the newly exploding tall-premium sector – and more bragging rights over SUV-less Audi, which is behind the curve again, and BMW, whose X5 lacks the XC's third row of seats.



V60 XC

While our XC isn't going to win any African rallies, and it's not going to transform Volvo's image, given the choice of this or a C303 for a seven-hour trek from Devon to Norwich, I'll take the V60 XC, thanks. This or a roomier, even more cross-country-ish XC60 for a similar monthly spend, though? We'll take the SUV.





Fuel savings
swallowed up by
replacement tyre

So long, petrol stations

Learning to keep it EV-only. By **Steve Moody**

One of the very exciting things about life with the Grandland plug-in hybrid is seeing whether I can get to Grantham and back on one battery charge.

Yes, you might think I should get a better hobby, but the Sainsbury's in this storied town – which invented the caterpillar track,

Margaret Thatcher and run-down charity shops – is exactly 15 miles from my house. When I fire up the fully charged Grandland at home it generally predicts a range of 31 miles, meaning I could do the round trip with one mile to spare. This has gone up from the 24-mile range the Vauxhall was showing

when it first turned up, so I must be doing something right.

There are two modes for electric driving: a freewheeling one where, when you lift off, the car seems to accelerate; and a regenerative-braking one, which does the opposite. It's cleverly variable, though, so when you lift off at 20mph there's not much slowing, but do the same at 60 and it tries to put you through the windscreen.

You can flip between the two to see what suits you best. On my first Exciting Trip to Grantham, I went regenerative the whole way and had run out of juice on the return leg before I left the AI, needing to actually use some petrol for the last four miles home. Crazy.

Since then I've opted to freewheel like a kid on his bike on downhill and straight stretches, but nip over to regen to slow for corners and junctions, and for downhill stretches. On Exciting Trip to Grantham 6, I got home with four miles of range to spare. I nearly cried with happiness.

It goes to show that actively managing the powertrain has huge benefits. In this case, a third more range by driving differently.

My wife took the Grandland

on Trip 7 and trashed a tyre in a pothole, less than a mile from home. Vauxhall Assistance and the RAC were brilliantly efficient, but the replacement Michelin Primacy 3 cost a hefty £192, negating (and some) all the cost efficiencies. I was not excited about that.



Vauxhall GrandlandX Elite Nav Hybrid4 Month 3

The story so far

Plug-in-hybrid version of PSA-developed crossover

- + Many and varied Exciting Trips to Grantham
- One trashed tyre and a hefty bill, though

Logbook

Price £43,400 (£43,900 as tested) **Performance** 1598cc turbo four-cyl plus twin e-motors, PHEV, 296bhp, 5.9sec 0-62mph, 146mph **Efficiency** 204-225mpg (official), 34g/km CO2 **Energy cost** 5.6p per mile **Miles this month** 94 **Total miles** 726



Skoda Superb SEL Estate 2.0 TDI 190PS Month 5

The story so far

Latest version of Skoda's biggest non-SUV, here in one of its higher-spec guises

- + Roomily, if slowly, functional
- Doesn't even try to do the fun stuff

Logbook

Price £35,640 (£39,500 as tested) **Performance** 1968cc turbodiesel four, 188bhp, 8.1sec 0-62mph, 138mph **Efficiency** 39.8-44.8mpg (official), 41.2mpg (tested), 129g/km CO2 **Energy cost** 13.4p per mile **Miles this month** 116 **Total miles** 9812

Praying for some fresh dirt

Especially from far away. By **Alex Tapley**

The Superb is shinier than it's ever been since it arrived, as I've spent much of the recent bonus spare time cleaning things, and then cleaning them again.

As I buff those roof rails one more time, I hanker for a decent European road trip. In fact, as I delve into the murk of the wheelarches, starting to restore them to showroom condition, I realise that a trip to the dump



Rare sighting of
the Superb not in
Alex's front garden

would be pretty good. Because driving is so satisfying, isn't it?

And the great advantage of the big Superb is that once I've taken all the rubbish I've cleared from the garage to the local recycling centre, and the grass clippings from the 600-plus times I've mown the lawn, I'll happily take it the long

way home along some country roads for the fun of it.

Although it might not be everyone's first choice for a driver's car, it's in truth a really useful, versatile package. Adjust yourself to its strengths, and it can be a robust companion on both the local trips and the epics.



**Mercedes-Benz
G350d AMG Line**
Month 7

The story so far

Somehow this is the junior G

- + Not the worst climate offender in the range
- People think I'm someone who'd order a brown G63

Logbook

Price £94,065 (£106,300 as tested) **Performance** 2925cc diesel six, 282bhp, 7.4sec 0-62mph, 124mph **Efficiency** 24mpg (official), 23.5mpg (tested), 252g/km CO2 **Energy cost** 24p per mile **Miles this month** 422 **Total miles** 11,788

Just what kind of fool do you take me for?

Because actually **Mark Walton** is a slightly different kind of fool

'Is that the 63?'

How many times have I been asked that question over the last seven months? Passers-by stop me in the street as I'm climbing into our G-Wagen and want to know if I'm driving the top-of-the-range AMG G63, with its 4.0-litre biturbo V8.

I understand – the 63's stats are certainly impressive: 577bhp, 0-62mph in 4.5 seconds, and an eye-watering price of almost £150k.

In response, I always want to say: 'Do you really think I'd order a 63 in brown?' But then I bite my tongue and offer a more informative answer, explaining that this two-and-a-half tonne SUV is actually the relatively sensible one.

'No,' I reply. 'It's not the 63, it's the G350d, which in my mind is a superior car. Of course, it can't compete in pure performance figures; but to drive – to live

with – it's smoother and feels more refined. The straight-six doesn't have the power of the V8, but it's a more subtle engine without the roaring sports exhaust.

'And to look at, without the extra AMG side-skirts, its character is bold but less bling. Plus,' I add with a little chuckle, 'you save yourself 50 grand!'

To which the passer-by replies, 'Alright mate, I was only asking if it was the 63.'



**The straight-six
doesn't have
the power of the
V8; it's a more
subtle engine**

A PERFECT SILHOUETTE

The theory: The DB11's fundamentally right proportions mean Reichman was able to resist the temptation to throw creases and features at it. 'The fashion is to have a lot of visual excitement cut into the surfaces – but that quickly dates. On the DB11, the visual excitement comes from the restrained embellishment of the proportions.' The big exception is the option to pick out the roof strakes in gloss silver or black on the V8 DB11. On the AMR you're restricted to black or nearly-black carbonfibre, and for good reason: it looks better.

In practice: Legroom in the rear seats is abysmal for a car more than 4.7 metres long, as is a 270-litre boot (same as Alfa's Mito). But who cares?

HIPS DON'T LIE (BUT DO GET STONE-CHIPPED...)

The theory: 'There's a real muscularity to the car,' says Reichman. 'The body has a pronounced Coke-bottle shape, with a dramatic flare out to the rear wheels – it's beyond the One-77, even.'

In practice: Yes, it's a wide car (1940mm), but the DB11 never feels anything like as intimidating as, say, a big SUV such as the Bentley Bentayga (1998mm). Indeed, it's somehow easier to place than the Vantage (1942mm). But despite protective film, stones thrown up by the front tyres have made a mess of the rear wheelarches, where the aluminium flares out to the rear wheels aft of the doors.

Beauty is in the eye of... absolutely everyone

Wanna, in the words of The Stone Roses, be adored? Then you need a DB11 AMR. By **Ben Miller**

THE NEVER-ENDING BONNET

The theory: The vast shutline-free clamshell bonnet is one of the largest single aluminium panels in production. Somehow the V12 sits underneath. 'It's tight under there,' says Reichman. So tight the heads are recessed to take the struts of the under-bonnet cross-brace...

In practice: You're very glad of the front parking sensors in tight spots but generally, somehow, Matt Becker's chassis tune makes for tight, agile handling that never feels hamstrung by the enormous V12 ahead of you.

'Mate, sorry to bother you. Just wondered if I could take a picture of the car? Would that be okay? Honestly, it looks amazing.'

That was the postman, but when you drive a DB11 AMR in a spec as stride-haltingly beautiful as ours it happens wherever you go, and on a metronomically regular basis. This is a truly beautiful car – as it should be. The great Astons of the last century were also beautiful, and despite everything stacked against him and his team – regulations, production realities, cost control – with the DB11 Aston design boss Marek Reichman delivered a modern GT that is both contemporary and timeless; a car with the aesthetic chops to go toe-to-toe with a DB5 or DBR1.

Here, from a conversation I had with Reichman at Aston's Gaydon HQ, is some of the thinking that went into the DB11's knockout design – and what those flourishes means for you, the driver, when you're actually using the thing as a car, not just gazing at it like some kind of V12-engined *objet d'art*.



Aston Martin DB11 AMR Month 4

The story so far

Unspeakably handsome V12 GT joins us for six months

+ Gorgeous; vaguely practical; sensationally fast

- Expensive; expensive to run; so big and so valuable you can get panicky and paranoid in rush-hour traffic

Logbook

Price £178,495 (£209,350 as tested) **Performance** 5204cc twin-turbo V12, 630bhp, 3.7sec 0-62mph, 208mph **Efficiency** 24.8mpg (official), 18.7mpg (tested) **Energy cost** 27p per mile **Miles this month** 231 **Total miles** 4053

Forget what it runs on – it's just great to drive

A Jaguar first, an electric vehicle second. And that's no coincidence, given the input of Jag chassis legend Mike Cross. By **Phil McNamara**



Jaguar i-Pace S Month 5

The story so far

Jag's EV is full of dynamic goodness

- + i-Pace lives up to Jaguar's pace, grace (even on 22-inch rims) and space mantra
- Reining in the performance much of the time to preserve range

Logbook

Price £64,995 (£80,980 as tested) **Performance** 90kWh battery, twin e-motors, 395bhp, 4.8sec 0-62mph, 124mph **Efficiency** 2.5 miles per kWh (official), 2.2 miles per kWh (tested) **Energy cost** 5p per mile **Miles this month** 293 **Total miles** 10,730

There's 13 miles to St Albans, I've got a fully charged battery, half a packet of Polo mints, it's dark out and so on. This is a rare chance to drive the i-Pace without worrying about battery preservation.

The roads out of Edgware after midnight are empty and national speed limit, so I accelerate hard. The Jag spins out 516lb ft of torque but it feels much punchier. The 0-62mph sprint takes less than 5.0sec – not quite hypercar-quick, but hypercars don't seat five or emit zero tailpipe pollution.

The i-Pace's dynamic prowess is even more notable: through some fast sweepers, it feels like there's a giant, invisible hand on the roof, pressing the EV into the road, keeping the body level and the tyres stuck fast. But my favourite aspect of the electric Jag is the steering. The rack feels pretty heavy but the response is anything but leaden, turning in eagerly and positively.

It's not just me. Editor Ben Miller, an EV sceptic, said this after borrowing the Jag for a weekend: 'It handles beautifully. The way the i-Pace controls its weight and attitude as you turn is incredible. Love that the regenerative braking effectively makes you a left-foot-braking master, your easing of the throttle enough to transfer weight onto the nose and help it do your bidding understeer-free.' Editor-at-large Chris Chilton says it's his favourite current Jag by far.

All of this got me thinking: I wonder what Jaguar's chief engineer Mike Cross makes of his handiwork a couple of years on? So we had a video call to discuss it.

'I wanted the i-Pace to be a Jaguar first and foremost, just one that happened to have a different powertrain,' says the head of vehicle integrity, whose team set the dynamic parameters for every Jag and Land Rover. 'So we focused

on steering, ride, handling, NVH (noise, vibration, harshness) – all the things that make a Jaguar.

'I think the steering is the most important attribute of any car. It's the one thing you use all the time. Even if you're not a driving enthusiast, good steering imbues you with confidence. We worked hard at making the steering feel good, linear and intuitive.'

Was the battery weight a problem? 'Apart from low-speed ride, there aren't any circumstances where weight would be a positive. But in the i-Pace the mass is well located because it's low down and between the wheels, and it's got motors at each end. The weight distribution is 50:50, which helped. As did four-wheel drive. You only really notice the mass when you decelerate.'

So is the i-Pace Mike's finest hour? 'It's always about the next car,' he replies. 'I've been fortunate to have worked on the i-Pace and the new Defender, both of which are very significant cars. But of all the cars I've done, the [2009] XFR is probably still my favourite actually.'

'It was fast, effortless, refined, fun to drive – everything a Jaguar should be.' And that ethos still guides Jaguar – as everyone who drives the i-Pace seems to agree.

📍 @CARPhilMc

Matty Graham

It's not quite hypercar-quick, but hypercars don't seat five or emit zero pollution





One man went to mode

And came straight back. By **Colin Overland**

Well that didn't take long. I was expecting months and thousands of miles to pass before I'd tested all the possible permutations offered by the MySense driving modes. But I seem to have exhausted all the combinations, and found a clear winner, in this month's 93 miles.

I suspected that I'd go all around

the houses and end up defaulting to Sport. But no! Sport steering is good, but Sport powertrain is a bit sudden. So I favour Sport steering and Regular powertrain. Job done, unless subsequent research reveals hidden depths to Comfort or Regular steering.

There are rather narrow limits

to what you can select. In Sport mode you have to have Sport powertrain and Sport steering. But in the individually configurable MySense mode you don't have the option of Sport powertrain. So it's not actually all that individually configurable.

The only other adjustable elements are cabin lighting (currently a gentle orange), the climate control (favouring Regular, but I've not ruled out Eco – more miles in different weather should provide some answers) and the instrument layout (struggling to care; it's not as if I drive along staring at the temperature gauge).

The shortness of recent journeys has highlighted an impressive aspect of the tech. The phone pairing via Bluetooth has been quick and flawless. I had to introduce my phone to my car just the once, and ever since they've been best mates. I get in, the audio system plays whatever my phone wants it to play. I get out to buy some milk, return four minutes later and the audio picks up where it left off, without needing any nudging. Sounds simple, but so many cars make a mess of it.

Having run out of steering and

powertrain settings to fiddle with, I fear I may soon find myself trying out the parking assistance. The Clio really, really doesn't need any parking assistance, but it's fitted so I'll give it a go.

@ColinOverland



Renault Clio RS Line TC4 130 EDC Month 2

The story so far

Top-spec version of Mk5 Clio with petrol engine and auto 'box

+ Lower, lighter and classier Mk5 is a joy to drive

- Modes don't quite deliver on what's promised

Logbook

Price £20,295 (£21,655 as tested) **Performance** 1330cc turbocharged four-cylinder, 128bhp, 9.0sec 0-62mph, 124mph **Efficiency** 49.6mpg (official), 41.9mpg (tested), 118g/km CO2 **Energy cost** 15.7p per mile **Miles this month** 93 **Total miles** 2714



Peugeot 508 SW GT 1.6 225 Month 6

The story so far

Plucky attempt to offer an alternative to crossovers

+ Mpg improving

- Stylishness incompatible with massive loads

Logbook

Price £38,605 (£39,780 as tested) **Performance** 1598cc turbocharged four-cylinder, 221bhp, 7.3sec 0-62mph, 155mph **Efficiency** 39.2mpg (official), 36.5mpg (tested), 124g/km CO2 **Energy cost** 15.2p per mile **Miles this month** 438 **Total miles** 3633

A job too big for any estate car

Many loads to lug.
By **Ben Pulman**

I've been working through a long 'to do' list. Or more accurately, in the 90 minutes our toddler sleeps at lunch I tidy the playroom, put food in front of a partner who's tied to Zoom for 10 hours a day, then turn my attention to anything else in the remaining moments.

Job No1 – the only job I've managed so far – was to clear out the garage, shed and garden. I've removed enough rubbish to fill the



508 SW 10 times over.

Rather than make numerous trips to the recently reopened local household waste site, instead I got to do something I've always wanted to do: order a skip. It's the biggest that would fit through our gate.

I filled it in just one lunchtime rather than savouring the

experience, so now job No2 beckons: giving the Peugeot a proper clean. With summer here the Twilight Blue paint has started to sparkle in the sun, but the glimpses are fleeting given the thick layer of detritus covering it. Nothing 10 minutes a day for two weeks can't resolve.

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ABARTH

595 ★★★★★

> Pricey pocket rocket with divine details, dodgy dynamics and a choice of 1.4-litre turbocharged engines in various stages of steroidal over-compensation > **VERDICT** Like a small yappy dog: noisy, excitable and likely to give you a headache

124 SPIDER ★★★★★

> Tuning division's take on Fiat's take on the Mazda MX-5, with tweaked brakes, engine, steering and suspension > **VERDICT** A delight to drive, but the rational decision is to go for a better-value Mazda

ALFA ROMEO

GIULIETTA ★★★★★

> Looked like a credible Golf rival for a while but now the game has moved on. Keen prices, but several alternatives are roomier, classier and more fun to drive > **VERDICT** Miles better than a Mito. Miles better than a 4C, even. But, unfortunately, miles behind a Golf – the old one, let alone Mk8

4C/4C SPIDER ★★★★★

> Sexy carbon two-seater over-promises and under-delivers on a double-your-dong-length web-scam scale. Spider a step in right direction > **VERDICT** Shoots for the moon, hits itself in the foot. Lotus Elise more fun, Porsche Cayman a better bet

GIULIA ★★★★★

> Good grief – an Alfa Romeo we can finally recommend that you buy. Auto-only 3-series rival has sharp steering, sultry looks, great driving position and a choice of diesels and petrols. *Bellissimo!* > **VERDICT** Note to dealers: don't cock it up

STELVIO ★★★★★

> Either we've collectively entered another dimension or Alfa Romeo has just built two excellent cars in a row. Now we just need everyone to start buying them again > **VERDICT** Worth the risk at least once in your life

GIULIA QUADRIFOGLIO ★★★★★

> Make that three in a row. Like a regular Giulia doped by Lance Armstrong, this 191mph, 503bhp rocket is a quadruple shot of espresso for Alfa's long lamented soul. At last > **VERDICT** The closest you can currently get to a four-door Ferrari. Really. *That good*

ALPINA

D3 S/B3 ★★★★★

> 3-series derivatives with twin-turbo petrol and diesel stonk and smooth auto 'boxes mated

NEW IN THIS MONTH

Just the two new Golf derivatives this month



Audi A3
Same recipe, but oddly unconvincing this time around
Page 133

Seat Leon

Not Seat's most memorable design, but drives very well
Page 140



Kia Soul
An e-Niro with a bolder design and a bigger price
Page 136

to a quality chassis, but watch out for some questionable OAP-spec interior finishes > **VERDICT** Try an xDrive D3 Touring – it's what the last-generation BMW M3 wants to be when it grows up

D4/B4 ★★★★★

> Same blend of fast and frugal as the above but slotted into the sleeker 4-series shell. ZF automatic transmission is not as snappy as M4's twin-clutch set-up, but much smoother > **VERDICT** 53mpg and a 4.6sec sprint? You're okay with this, BMW?

REPLACED SOON

D5 S/B5 ★★★★★

> Twin-turbo B5 petrol V8's 590lb ft could de-forest the Amazon while the planet-loving D5 doesn't let a relatively meagre 155g/km prevent 174mph max > **VERDICT** You can't have a real M5 Touring, but this comes close

B7 ★★★★★

> BMW doesn't make an M7, but Alpina does. Twin-blown petrol V8 delivers vast luxury couple with autobahn-busting performance that's best enjoyed in Germany > **VERDICT** Niche Mercedes-AMG S63 alternative hamstrung by the ugliness of the raw materials

XD3 ★★★★★

> A torquey straight-six diesel X3 with more cows inside than a tannery. Fast, fun and leftfield in the good kind of way > **VERDICT** Now actually quite good, this is one of the best-handling SUVs you'll ever drive, but it's flanked by cheaper rivals

ALPINE

A110 ★★★★★

> Desirable, cleverly packaged and dynamics to die for. A bit pricey and the interior lacks wow but the Cayman should be seriously worried > **VERDICT** Reborn Alpine has smashed it clean out of the park

ARIEL

ATOM ★★★★★

> Only the Pope's lips get more up close and personal with the tarmac than an Atom driver, but there's zero weather protection > **VERDICT** Spectacular toy. Great on track, barmy on road

NOMAD ★★★★★

> Not content with terrifying on tarmac, Ariel also offers the off-road Nomad. Gains a roll-over structure but, like the Atom, still no doors > **VERDICT** Remember to put the hot water on – you'll need a long, hot bath when you get home

ASTON MARTIN

VANTAGE ★★★★★

> A truly convincing 911 rival that's impressively aggressive and thrillingly quick. Interior is pleasingly solid but lacks fizz > **VERDICT** A stunner to look at and rewarding to drive

DB11 ★★★★★

> Slick aero slinkiness, belting V12 turbo and, crucially, Merc help with wiring > **VERDICT** Finally the right blend of new stuff and classic Aston charm results in a cut-above GT

DBS SUPERLEGGERA ★★★★★

> *Superlight* it isn't, and can't match the spine tingle of a Ferrari Superfast, but stunning to look at, incredibly quick and dripping with prestige > **VERDICT** A proper flagship GT, but softer-edged than a Ferrari 812

RAPIDE AMR ★★★★★

> Glorious final outing for Aston's old-school V12. Forget the limo pretensions, though: it's a cramped four-door 2+2 > **VERDICT** Pretty and still very fun to drive, but the interior is more dated than a New York socialite and almost as hard on your wallet

AUDI

A1 ★★★★★

> Second-generation Mini rival is five-door only and ups the dimensions, tech and maturity on the first gen, although you can spec it in brash two-tone colour combos. Best at its simplest > **VERDICT** The Evoque of superminis: stylish, posh and will sell like hot cakes

A3 ★★★★★

> Still wears Golf underpants, looks sharp, has the latest VW Group tech and is posher than it needs to be – although not quite enough to warrant paying the extra. But that hasn't stopped people before, has it? > **VERDICT** Oddly unconvincing this time around



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A3 CABRIOLET ★★★★★

REPLACED SOON > Premium sun-grabber without macho sports-car posturing. A bit tight in the back, but pretty tight in the bends too. Try a 1.8 TFSI Sport > **VERDICT** Definitely worth the £2k premium over a VW Golf

RS3 ★★★★★

REPLACED SOON > The superhatch/saloon for those lacking in imagination and/or driving talent, RS3 struts its stuff best in a straight line > **VERDICT** Only feel a little bit ashamed for wanting one in preference to something more nimble

A4 SALOON/AVANT/ALLROAD ★★★★★

> Lighter, smarter, better to drive than the last one – and only microscopically different to look at > **VERDICT** As you were, except inside, where tech obsession offs elegance. Rivals remaining calm

RS4 ★★★★★

> Estate-only hot A4 ditches free-revving V8 for RS5's twin-turbo V6. Covers ground with impressive pace and ease and just a tiny bit of proper driver involvement > **VERDICT** An RS5 in a parka and Timberland boots

A5 SPORTBACK ★★★★★

> More tech and even better quality doesn't compensate for a lack of personality. Better looking, but so is Dorking after eight pints. You could buy worse, but you'll definitely get bored > **VERDICT** It's better to live in than to drive

A5 COUPE/CABRIO ★★★★★

> Deceptive bunny boiler – looks normal until you realise it's killed a TT and is wearing its face. Cue B-road mayhem. Not really > **VERDICT** Even more of an A4 in a frock than the last one, but still better to drive, especially the S

RS5 ★★★★★

> Like a bouncer in a tailored suit, the hot A5's power bulges through the creases in its bodywork. Twin-turbo V6 has full-bodied soundtrack; quattro provides grip > **VERDICT** Four-seat express with power to spare, but it's not the most involving

A6 ★★★★★

> BMW 5-series still edges it in the driving department, but the gap is much slimmer. Well-appointed, super comfortable, clever and handsome. Still a bit dull, mind > **VERDICT** A cruise missile for the outside lane of the M4

RS6 ★★★★★

> Audi's ultimate estate car steps up to the plate, swings and scores a home run. Fast, practical, imposing and impressively built, as ever. It's also now fun to drive > **VERDICT** Five-star rival for the non-existent BMW M5 Touring

A7 SPORTBACK ★★★★★

> Think a more stylish A8 rather than A6 spin-off. Capable of incredible wafting ability and grippier than Spider-Man covered in superglue. Petrol properly refined but diesel will make better sense in the UK > **VERDICT** Stylish GT with sensible engines

RS7 ★★★★★

> An Audi RS with communicative steering? Light the beacons! The fact it's an imposing, stupidly fast and technology-overladen sports car killer should come as less of a surprise. Much more a driver's car than the A7 > **VERDICT** Menacing

A8 ★★★★★

> Packs enough technology to worry Skynet and avoids being wooden behind the wheel so

convincingly you'd think it had a different badge on the front > **VERDICT** New king in the exec tech arms race

Q2 ★★★★★

> Odd-looking small crossover is like a Mini Countryman that's lost a battle with a set square > **VERDICT** Nice enough to drive but still a nerd to the Mini's prom queen

Q3 ★★★★★

> Practical, comfy, handsome, well-built > **VERDICT** Shame it's so bland

Q5 ★★★★★

> Textbook Audi: calm and sophisticated, pleasing to have on your drive > **VERDICT** An extremely polished performer that's a considerable cut above so many other premium SUVs

Q7 ★★★★★

> German heavy metal turns techno as Mk2 Q7 sheds weight despite megaload of extra gizmos > **VERDICT** Everything but the charm

Q8 ★★★★★

> First coupe-SUV from Ingolstadt is as sound as you would expect. The cabin might be different, and the grille fresh, but is that enough to steer you away from the formidable Q7? > **VERDICT** The glitziest car Audi makes, with a limited choice of engines

E-TRON ★★★★★

> A bit tubby and plain when sat next to a Jaguar i-Pace but Audi's first all-electric car has all the usual tech and refinement. It's potentially one of the most commercially important Audis ever, hence the risk-averse approach > **VERDICT** Vorsprung durch Elektrisch

TT COUPE/ROADSTER ★★★★★

> Brilliant coupe gets virtual dash and sharper handling. Try 2.0 TFSI. Boot big, but the rear seat's for handbags only > **VERDICT** A proper real-world sports car – but the same money buys an early secondhand R8

TT RS ★★★★★

> At the outer limits of the TT's dynamic envelope, a 17 per cent power hike ekes 395bhp from five pots and targets wounded Cayman > **VERDICT** Audi springs the offside trap, rounds the keeper, but hits the bar. So close!

R8 ★★★★★

> V10 is one of today's most engaging engines and delivers more spine tingles at the top end than a McLaren Sports Series. All versions now hit 200mph > **VERDICT** Brilliant daily supercar with a hint of wildness; and this from the same company that's played it so safe with the e-Tron

BAC**MONO ★★★★★**

> Single-seat racer that took a wrong turn out of the pits. Pushrod suspension, Cosworth-tuned 2.3 Duratec and bath-like driving position > **VERDICT** Sublime track-orientated tool with a six-figure price

BENTLEY**BENTAYGA ★★★★★**

> The World's Fastest SUV matches its 187mph top speed with a superb chassis. If you want something this heavy and this fast, this is hard to beat. The diesel is dead, but a hybrid version fills the ranks > **VERDICT** Super-luxurious options include £110,000 Breitling clock. Or you could spend the same on a two-bed semi in Crewe

CONTINENTAL GT ★★★★★

> Still heavy and thirsty, but few GTs can match its interior, ride quality and performance > **VERDICT** Used to be essentially a pricey Volkswagen; now a great GT in its own right

CONTI GT CONVERTIBLE ★★★★★

> How many convertibles could get away with a tweed roof? Cue shock and awe at the country club. Shame it loses so much luggage space > **VERDICT** Gorgeous, swift, built like a Chesterfield sofa

FLYING SPUR ★★★★★

> What do you get when you cross an M5 Competition with Chatsworth House? A luxu-limo that really can do both ends of the motoring spectrum > **VERDICT** No longer the Continental GT's shunned ugly sister

MULSANNE ★★★★★

> Huge, hand-built anachronism, with twin-turbo V8 born in the '50s, buffed to perfection, and a field of cows sacrificed > **VERDICT** Buy the Speed – any less outrageous display of consumption is just poor form

BMW**1-SERIES ★★★★★**

> While undergoing powertrain reconstructive surgery it had a nose job too, and now manages to look like a twin of the 2-series MPV > **VERDICT** 118d buyers won't miss rwd; M135i fans might

2-SERIES ★★★★★

> Nope, not a looker. But, like the 1-series, it's genuinely a good car – even if the drivetrain is the wrong way round. Polish aplenty, actual practicality and a rear-driven variant in the future isn't dead in the water. M235i grippy if a little flat > **VERDICT** Be happy you don't have to look at it when driving

M2 COMPETITION ★★★★★

> The M2 turned up a notch, and now your only option. M3 engine, new barkier exhaust and tweaked dynamics > **VERDICT** An already great package now even better

2-SERIES ACTIVE TOURER ★★★★★

> Decent drive, great interior. Need to cart OAP relatives around? Get the seven-seat Gran Tourer. Boom boom! > **VERDICT** The ultimate driving (to the park/crèche/post office) machine

i3 ★★★★★

> One of BMW's best cars is home to its finest cabin. Electric version has short range; hybrid is noisy and has a fuel tank like a flea's hip flask > **VERDICT** Carbon-chassis supermini, electric power and £30k price. Did we wake up in 2045?

3-SERIES ★★★★★

> G20 isn't the wildest upgrade but there's a lot going on under the skin. Chassis is so good on M340i version we have high hopes for the next M3 > **VERDICT** Still the dynamic benchmark

3-SERIES TOURING ★★★★★

> As usual, the estate is prettier than the saloon. Still comes with the independently-opening rear window, still drives well, still handles family life > **VERDICT** It's a cliché, but this really is all the car you need

4-SERIES COUPE/CABRIO ★★★★★

> 3-series in a shellsuit is subtly better to drive than the saloon, but comes with the same great engine choices and is almost as practical > **VERDICT** Crushes Audi's A5, its most direct rival. Folding

hardtop cabrio version is weighty but worth it if you favour fresh air

4-SERIES GRAN COUPE ★★★★★

> Pretty and practical, like a bikini car wash, hatchback GC costs £3k more than 3-series but has standard leather. Five belts but four seats > **VERDICT** Smart and useful, much more than a niche exercise. But why isn't this the 3-series?

M3 CS ★★★★★

> Way more of a thriller (in a good way) than the regular, now defunct M3. Better sorted dynamically and epic road feedback. But £86k?! That's a lot of money > **VERDICT** Finally, we get the version it should have been all along

5-SERIES ★★★★★

> Smart, semi-autonomous and still the best in class > **VERDICT** Spirit-crushingly good

M5 ★★★★★

> G30-generation V8 bruiser sends shove to all four wheels but you can still drift it like Ken Block. A sharp-suited and refined yet ballistically quick autobahn prowler > **VERDICT** All-wheel drive hasn't ruined the M5

7-SERIES ★★★★★

> So high-tech, BMW must have ram-raided Google's R&D bunker, confident the 'carbon core' construction would enable it to drive back out > **VERDICT** Gesture control, remote parking, active anti-roll – it's got it all. But not quite the kudos of the Mercedes-Benz S-Class...

8-SERIES ★★★★★

> Not quite the dramatic sports car we hoped for. Still, it's an incredibly impressive piece of kit, and you can really hustle it on track. M8 monsters everything else but misses the point > **VERDICT** Just be thankful a big V8 coupe like this exists at all

X1 ★★★★★

> Ugly old one sold by the bucket load; all-new replacement is miles better to look at and to drive. It's a proper mini-SUV now > **VERDICT** It's even based on the front-drive Mini platform. Swallow that bile, because it works well

X2 ★★★★★

> Sportier, arguably more stylish coupe-ish version of the X1. Avoid the M Sport X if you don't want your SUV to look like Bond villain Jaws > **VERDICT** Great to drive and well-built inside, although not the most rational choice

X3 ★★★★★

> Studiously un-gangsta SUV offers a sweet blend of handling and handiness > **VERDICT** The BMW SUV we don't hate ourselves for liking

X4 ★★★★★

> Blame the Evoque and people who bought the X6 for this carbuncle. Priced at £4k-£5k more than an X3, but better equipped and not terrible to drive > **VERDICT** Depressing X3 spin-off for grown-ups who still dream of being a professional footballer

X5 ★★★★★

> Luxurious, capable and very much at the forefront of good handling in the posh SUV stakes. The full-fat M version is expensive overkill. Even bigger X7 is a serious alternative > **VERDICT** We'd still take a 5-series Touring

X6 ★★★★★

> All the impracticality of a coupe and all the wasteful high-centred mass of an SUV. Genius. If you must, X40d gives best price/punch/parsimony > **VERDICT** Pointless pimp wagon. Buy a Porsche Cayenne or an X5



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The Good, the Bad & the Ugly

X7 ★★★★★

> Gah! Avert your eyes! Gaudy full-size SUV for well-to-do folk who consider a Range Rover a bit too subtle. We challenge you to spec one that doesn't instantly make babies cry at the sight of it > **VERDICT** Big, comfy and excessive – just what a luxu-SUV should be. May be a bad idea, but it's nicely done

Z4 ★★★★★

> The uglier of the BMW/Toyota siblings shines more for its refinement and comfort than its ability to set your hair on fire. Accomplished and robust – the Smeg fridge of the sports car world > **VERDICT** Sweet, but more could have been done to make it thrilling

i8 ★★★★★

> Carbonfibre-constructed three-cylinder hybrid supercar that's fun for four, as fast as an M3 and does 40 real mpg. Minor demerit: looks like it's crimping off a 911 > **VERDICT** Fascinating futuristic sports car that's big on the wow factor

BUGATTI

CHIRON ★★★★★

> 'The Veyron was okay but why couldn't it have 30 per cent bigger turbos and 300bhp more power?' Bugatti answers the question absolutely nobody asked – and answers it loud > **VERDICT** A £2.5m riot

CATERHAM

SEVEN ★★★★★

> For bobble-hatted Terry-Thomas wannabes and the track-curious, the Seven comes in flavours from 160 triple to mental road racers > **VERDICT** 80bhp 160 is underpowered, 310bhp 620R verges on lethal, 180bhp 360 model is just right

CHEVROLET

CORVETTE ★★★★★

> Chevrolet has made impossible things happen with the Mk8 Corvette, and not just the engine layout. Resolved handling, premium interior and bags of character abound, and yet the price (in the US) is still reasonable. We're promised right-hand drive too > **VERDICT** A genuine supercar that's also a bargain

CITROEN

C1 ★★★★★

> Trying hard to escape the clutches of its sister cars from Toyota and Peugeot, the C1 can have a funky Aircscape cloth roof and half-hearted personalisation options. 1.0-litre has most pep > **VERDICT** Good, solid urban fare – of a kind that won't be around for much longer

C3 ★★★★★

> Citroën produces a great small car by looking up its own Wikipedia entry and remembering what it's good at; spacy, compliant and different > **VERDICT** Are Citroëns cool again? They're certainly getting there

C3 AIRCROSS ★★★★★

> Funky mattress on wheels takes C3's style and puts it on stilts. Thankfully retains C3 Picasso's super-spacious interior and flexi seats > **VERDICT** The Vauxhall Crossland X's much more characterful Gallic sibling

C4 CACTUS ★★★★★

REPLACED SOON > Comfy, roomy, slightly sloppy family car, now Airbump-free. Citroën claims it's a hatch; it's not

> **VERDICT** A proper Citroën, with all the pros and cons that involves

C4 SPACETOURER ★★★★★

> Defiantly anti-cool family shifter, with five or (in Grand form) seven seats. Parents go weak at the knees for its peace-and-bloody-quiet ambience > **VERDICT** Drives like a shed, but at least it makes Satan's brood shut up

C5 AIRCROSS ★★★★★

> Currently the biggest of all Citroën's sofas on wheels, yet this one's capable of a smidge of off-roading. A family car that works just as much for the driver as it does for the passengers, so long as you don't come here looking for dynamic brilliance > **VERDICT** Have we mentioned comfortable enough times yet?

BERLINGO MULTISPACE ★★★★★

> A wipe-clean tin lifeboat for cagoule-wearing Thermos-sipping birdwatchers. Recently updated, but still rattles and drives like a van. Is a van > **VERDICT** Dogging cheap seats for aspiring Bill Oddies

CUPRA

ATECA ★★★★★

> Seat spices up its stylish Ateca with powertrain from a VW Golf R and chunky body kit. Then ruins it by slapping on a copper badge with the style of a tribal tattoo students got in Magaluf > **VERDICT** It's good but offers no reason to avoid the obvious Golf R

LEON ★★★★★

> Much to the amusement of tyre manufacturers everywhere, the front-wheel-drive Leon Cupra now has 297bhp. GTI who? > **VERDICT** Ballistic, and best bought with a manual transmission

DACIA

SANDERO ★★★★★

> Cheapest new car on sale, not the worst. Yoghurt-pot plastics and pre-Glasnost styling can't detract from a spacious sub-six-grand runabout with Renault engines, if that's where your priorities rest > **VERDICT** Austerity rocks. Right, Greece?

LOGAN ★★★★★

> Estate looks like a Sandero that's reversed into a phone box. Cavernous boot, but dreadfully unrefined thanks to all the brittle plastic and tin > **VERDICT** You put things in it. It will carry them for you. You can take them out. Job done, at a very low price

DUSTER ★★★★★

> It's just had a major overhaul, which in Dacia terms is akin to creosoting the shed and tacking the roof felt down, but still a hardy 4x4 for low-budget mud-pluggers and family folk; front-wheel-drive versions keep costs ridiculously low > **VERDICT** Like Crocs but way, WAY cooler

DS

3 CROSSBACK ★★★★★

> This might be a case of imposter syndrome. Chic and desirable hatch has turned into a crossover shaped to new DS styling values. Kitsch interior of its larger sibling adds some zest to an otherwise lukewarm package > **VERDICT** We're not convinced this is an improvement; electric version also falls short of genius

7 CROSSBACK ★★★★★

> France's idea of a premium SUV. Sharp-looking interior and plenty of technology fitted as standard, but from some angles it looks like an Audi Q5 in half-baked drag > **VERDICT** Neatly done, but not quite there. Expect plenty more from DS very soon, all of it electrified

ELEMENTAL

RP1 ★★★★★

> As expensive as a used Porsche Cayman GT4, more refined than any Caterham – and a weapon on track > **VERDICT** Crazy, but worth it

FERRARI

F8 TRIBUTO ★★★★★

> Pista-hearted 488 replacement treads fine line between hardcore power and GT driving with aplomb. Pista might have the dynamic edge but it's mission accomplished > **VERDICT** Ferrari's V8 world domination continues

488 PISTA ★★★★★

> So clever even Ferrari's own test drivers recommend leaving the traction control switched on. Every bit as good to drive as it is to look at, which is saying something > **VERDICT** The ultimate Ferrari road car right now, and it's a V8

PORTOFINO ★★★★★

> The transformation from California to Portofino works a treat. It's sweeter, sharper and more practical as a great everyday road car, if ultimately lacking focus > **VERDICT** Measurably better than the California in every way

812 SUPERFAST ★★★★★

> Proof that Ferrari can still make truly epic GT cars that fly the naturally aspirated V12 flag with pride. The screaming 800hp engine is matched by laser-guided handling > **VERDICT** GT? Supercar? Astounding

GTC4 LUSSO/T ★★★★★

> Two-door shooting brake is thoroughly capable. V8-powered Lusso T nudges price below distressing £200k barrier > **VERDICT** Closest Ferrari has got to an SUV (but not for long)

FIAT

TIPO ★★★★★

> Dull, but good value and the best Fiat hatch since the last Tipo – and that dates from 1988 > **VERDICT** Only consider buying Fiats with numbers, not names

124 ★★★★★

> Mazda MX-5's step-sister, seemingly intent on undermining said darling hairdresser's star turn with its punchier 1.4 turbo blow-dryer. Awkward style, for an Italian > **VERDICT** To drive, this is the MX-5 you've been waiting for

PANDA ★★★★★

> Spacious city car with 'squirrel' obsession, as roly-poly as its blobby looks suggest. Two-pot TwinAir willing but thirsty > **VERDICT** Baggier than the VW Up but more charming too

500/C ★★★★★

> Delicate job, modernising a retro cash cow. Fiat's approach pairs a korma-grade facelift with updated tech and even more colour palette kitsch > **VERDICT** Fashion victims rejoice! The cupholders actually work now

500L ★★★★★

> Bloated supermini-sized people carrier, desperately attempting to cash in on city car's chic. Seldom has the point been so massively missed > **VERDICT** In-car coffee machine option the only purchase excuse

500X ★★★★★

> Compact crossover is the Arnie of the 500 range – limited in its range of abilities, but rather likeable > **VERDICT** Worthy Nissan Juke alternative works the 500 thing well, especially after recent facelift, new engines and cabin tech upgrade

QUBO/DOBLO ★★★★★

> Postman Pat's wheels? No. Pat's long since retired to the Caribbean, where he's living off the royalties and drives a red Bentley > **VERDICT** Van-based MPVs. Practicality first, people second

FORD

FIESTA ★★★★★

> Still a peach to drive and now has an interior that isn't from the Dark Ages, even if material quality is still a bit iffy. ST-Line version is suitably sporty but Vignale too expensive to justify > **VERDICT** You can thank the heavens they haven't ruined it

FIESTA ST ★★★★★

> Less mad to look at than before and one cylinder down, but one of the biggest hot hatch bargains currently available. Fast, fun to drive and won't wind you up something fierce > **VERDICT** Buy one. You won't regret it

FOCUS ★★★★★

> Looks derivative but under the skin lies a compact family car that's great to drive. Ford is still throwing plenty of chips the hatchback's way > **VERDICT** The spirit of the Mk1 is almost back

FOCUS ST ★★★★★

> Takes everything that made the Fiesta ST so good and ups the scale. We're a bit gutted there'll be no RS this time > **VERDICT** Shame it looks plain now and costs as much as the (better) Honda Civic Type R

MONDEO HATCH/ESTATE ★★★★★

> Huge space and you can even have the plucky little 1.0 EcoBoost engine > **VERDICT** A fine family car. Best avoid the half-hearted hybrid – it eats up boot space and doesn't do much for economy

PUMA ★★★★★

> Very much not the old Puma coupe reborn, but better than the EcoSport – Ford's other attempt at

this size of crossover – by a mile > **VERDICT** The crossover for keen drivers. Or just get a Fiesta

ECOSPORT ★★★★★

> Ford's half-arsed stab at a crossover sold in droves despite being crap first time round. Current version looks half decent and isn't built out of melted wheelie bins > **VERDICT** Better, but still lags behind most of the increasingly crowded field

KUGA ★★★★★

> Not thrilling and doesn't reinvent the wheel. But Ford relying heavily on Focus know-how for its big-selling SUV is a smart move. Plug-in hybrid onslaught from the Blue Oval starts here > **VERDICT** As normal as beans on toast, and just as satisfying

S-MAX ★★★★★

> Exploits latest Mondeo's undercrackers to full effect. Pricey, but still the best of the seven-seaters to drive. Toys include electric everything and speed-correcting cruise control > **VERDICT** Harder to beat than FC Barcelona

MUSTANG ★★★★★

> Sub-optimal interior quality and still thirsty, but the crash ratings are no longer embarrassing. Sounds great, bags of character, and a lot of fun to drive > **VERDICT** Go manual V8 with sports exhaust

GALAXY ★★★★★

> Based on the same Mondeo-derived platform as the S-Max. Just as high-tech, but more spacious > **VERDICT** Great if you need a seven-seater that doesn't feel like a mini bus – fits adults in all rows with no human rights violations

GT ★★★★★

> Very expensive hardcore supercar from Detroit that proves a global mega-seller can cut it against Ferrari when it wants to > **VERDICT** 'Race car for the road' translates into 'Brilliant fun but a bit coarse'

RANGER/RAPTOR ★★★★★

> One of the less swanky pick-ups but you can doll it up with all kinds of chrome. Great value but crude from behind the wheel. Raptor injects some fun but engine is weak > **VERDICT** Tough workhorse, proud about it

GINETTA

G40 ★★★★★

> Pint-sized road-legal racer. Two models: G40R (civilised version, with carpets) and GRDC (a race car with number plates) > **VERDICT** Tiny, twitchy and top fun. Pick the £35k GRDC and get free entry to a Ginetta race series

HONDA

E ★★★★★

> Gambles on charisma, tech and usability rather than sheer range and bargain price – very un-Honda. Here's hoping it's more an iPhone moment than a Zune one > **VERDICT** Everyone say 'awwww', worry about the range later

JAZZ ★★★★★

> Brilliantly packaged supermini with decent refinement but ordinary performance > **VERDICT** If the sharper Skoda Fabia had a seating system this smart, other superminis would call it a day

CIVIC ★★★★★

> The might of Honda's engineering prowess delivers more space, clever engines and an exterior that looks like it was drawn on a bus on the way into school > **VERDICT** Easy to admire, but loving requires heavy use of recreational drugs

CIVIC TYPE R ★★★★★

> Its many angles hide a rounded hot hatch with a wonderful gearbox. Driving one day to day much easier now but its speed and agility can still take your head off > **VERDICT** Fast, practical, agile and easy to live with

HR-V ★★★★★

> After 10 years, an underwhelming second HR-V. A sort-of crossover thing, up against a lot of much better defined sort-of crossover things > **VERDICT** Sport version is fun but pricey

CR-V ★★★★★

> Design revisions so minor you'd barely notice, or care. Roomy interior, petrol or hybrid power, two- or all-wheel drive, five or seven seats. Libido optional, crumbs in rear footwells standard > **VERDICT** Not exciting – just gets on with the job



NSX ★★★★★

> ‘We’ve blown all our development cash on an insanely complex hybrid drivetrain. Do you think anyone will notice if we fit an interior from a Civic?’
> **VERDICT** Something like a Porsche 918 for half a million pounds less – mind-blowing to drive, crap to sit in

HYUNDAI

i10 ★★★★★

> Not a VW Up, but has a better warranty. Angry face hides plush, well kitted and roomy cabin > **VERDICT** Growing fish in a shrinking pond

i20 HATCH/COUPE/ACTIVE ★★★★★

REPLACED SOON > Dependable but boring hatch suitable for somnambulant warranty fiends only > **VERDICT** Fur-lined tartan slippers, Horlicks and early to bed; repeat

i30 HATCH/TOURER ★★★★★

> Where the current crop of Hyundais got serious – which means it’s now in need of a facelift as the established mainstream moves ahead again
> **VERDICT** Tries hard but lacks imagination

i30 N ★★★★★

> Korea’s first proper hot hatch is very good indeed – no ifs, no buts – and cheaper than a VW Golf GTI > **VERDICT** An intergalactic leap ahead of any previous Hyundai

i40 SALOON/TOURER ★★★★★

> Vast Mondeo rival with cavernous boot and lots of kit > **VERDICT** Nearly-but-not-quite mainstream alternative plays value card well

iX20 ★★★★★

> Compact MPV and Kia Venga’s ugly step-sister; roomy but ultimately forgettable
> **VERDICT** Sorry, what were we talking about?

KONA ★★★★★

> Forgettable crossover, over-styled. Rear space and boot are tight but the occupants get plenty of kit to fiddle with > **VERDICT** You’d have to like the looks to pick it over its rivals

TUCSON ★★★★★

> Promising initial impressions of shiny-looking ix35 replacement tarnish quickly > **VERDICT** Dull to drive, duller inside, unrefined. An N version is on the way, which could fix some of those shortcomings

SANTA FE ★★★★★

> Biggish SUV has always led Hyundai’s assault on the European market from the front. Comfortable, self-assured and easy to live with > **VERDICT** A Hyundai you can choose without shame. Looks fresher than Waitrose parsnips

NEXO ★★★★★

> Hardly a dynamic benchmark but this hydrogen crossover has a fantastic interior and loads of tech. But it’s expensive to buy and only makes sense if you live near a hydrogen filling station, which you don’t
> **VERDICT** Guilt-free motoring for pioneers

i800 ★★★★★

> Massive van-based people carrier that’ll seat eight and still have space for their luggage. Ideal for part-time airport minicabbers > **VERDICT** It is what it is: a van with seats in. But it’s a nice van

IONIQ ★★★★★

> Hybrid, EV and plug-in hybrid – something in all shades of green > **VERDICT** Challenges neither pulse nor helmsmanship, but the numbers stack up if you’re ready for a cleaner future

JAGUAR

XE ★★★★★

> Facelifted to look angrier and now with i-Pace interior tech. It’s charismatic but slightly let down by hit-and-miss engines > **VERDICT** There’s life in the small saloon yet

XF ★★★★★

> Bigger inside, smaller outside, still a great steer
> **VERDICT** Diddy diesels moo more than a dairy

XJ ★★★★★

> Questionable styling but unquestionably an excellent steer – although passengers may mutiny. Interior looks luxurious but lacks intelligence, even if it’s fitted with the latest infotainment > **VERDICT** Hollywood baddies’ limo of choice. Flawed

F-TYPE COUPE/ROADSTER ★★★★★

> New face on the same alluring body, with an updated engine range that drops the fruity V6. Thrifty JLR didn’t do much to update the interior, though, which it desperately needed > **VERDICT** An old Jag that’s been taught some new tricks

E-PACE ★★★★★

> Jaguar’s compact SUV wears the Evoque’s undercrackers and can be had with same four-pot engine as the F-Type – both very good things. Top-spec version is incredibly expensive > **VERDICT** Handsome, filled with technology, lacks polish

F-PACE ★★★★★

> Porsche Macan botherer. Built light to be nimble; body control brilliance and pokey engines prove family DNA. SVR model hilarious fun > **VERDICT** Macan remains most sporting choice, but more rounded F-Pace has plenty of bite

i-PACE ★★★★★

> One of the best-handling electric cars, as you’d hope from a Jaguar. Cab-forward design strikes lustful feelings, and whooshing noises as you hurtle into the distance will make you giggle like a toddler
> **VERDICT** A watershed moment for 21st century Jaguar; and it’s been judged Car of the Year

JEEP

RENEGADE ★★★★★

> Strange but true: junior Jeep is built in Italy alongside Fiat 500X that donates its platform. Even stranger: it’s not terrible > **VERDICT** Only the top Trailhawk version cuts it in the rough (and in the UK Fiat doesn’t even sell a 4x4 version of the 500X)

COMPASS ★★★★★

> Qashqai rival misses the mark. Looks imposing, and the Trailhawk version is very good off road, but Jeep’s own smaller Renegade is more charming
> **VERDICT** Almost as forgettable as the previous Compass

CHEROKEE ★★★★★

> Less ugly to stare at than some recent Cherokees, but with an engine configuration choice that’s clear as mud. Classic Jeep off-road traits and actually half decent to drive
> **VERDICT** Chunky all-rounder, but high price pitches it against some excellent competitors

GRAND CHEROKEE ★★★★★

> Proper off-road cred, but feels cheap inside. Ludicrous Trackhawk demolishes 0-62mph in 3.7 seconds > **VERDICT** Makes sense at \$30k in the US, but doesn’t drive or feel like a premium car when pitched against German and British rivals

WRANGLER ★★★★★

> Much better on road than before, but still an acquired taste on-road. Nigh on indestructible, and now at least a bit modern. Available in various body shapes, even catering for those not keen on doors > **VERDICT** Authentic and likeable, but if you weren’t a fan before, you won’t be now

GLADIATOR ★★★★★

> Its name is Jeepus Maximus Meridius and it shall have its off-roading vengeance in this life or the next. Jeep’s pick-up is super-capable > **VERDICT** Who doesn’t like the idea of stripping the doors off their pick-up truck?

KOËNIGSEGG

AGERA ★★★★★

> Evolution of Lex Luthor’s original CC8S supercar features carbonfibre wheels and twin-turbo 5.0 V8. The R version even runs on E85 biofuel
> **VERDICT** Yin to Volvo’s yang keeps Sweden’s car output balanced

KIA

PICANTO ★★★★★

> Now has an angry face and there’s a feisty turbo triple. GT Line brings amped-up looks > **VERDICT** Better than the previous model, while still being keenly priced

RIO ★★★★★

> Long on space, short on enjoyment, life with a Rio is no carnival, although current generation is much improved > **VERDICT** White-goods car gets the basics right but there are many better rivals

STONIC ★★★★★

> Her name is Rio and she’s put on a bit of weight. Kia’s first go at building a Juke rival has a hard ride but is more practical than the Nissan > **VERDICT** Looks good but forgettable to drive

CEED ★★★★★

> Golf wannabe is big on equipment and not bad to drive. Range-topping GT is an enjoyable if costly warm hatch > **VERDICT** Now with downsized turbo engines. Europe still ahead. But only by a whisker

PROCEED ★★★★★

> Nope, not a three-door hatch any more. Slick shooting brake styling and solid interior hide uncharismatic engines and indecisive auto
> **VERDICT** Style/substance balance are a little off

NIRO ★★★★★

> Hybrid, plug-in and full EV that dodges pigeonholes. SUV? Tall crossover? Regardless, it’s inoffensive as a hybrid and quite good as an electric car > **VERDICT** None of the Jaguar i-Pace’s glamour, but an awful lot of its forward-looking efficiency

SOUL ★★★★★

NEW ENTRY > An e-Niro after a gap year, with a bolder design and a bigger price. The same great e-range, just enough funk on the outside and just enough frills on the inside. Less practical than the bread-van shape might imply, though > **VERDICT** Funky but... why?

OPTIMA ★★★★★

> Sexless Mondeo clone cobbles together some mojo via the addition of sharp-suited Sportswagon and a plug-in hybrid > **VERDICT** All the car you’ll ever need, but not the car you want

VENGA ★★★★★

> Weird sit-up supermini-cum-MPV packs Focus space into near-city-car dimensions. Hard to get comfy, though. Best engine is the 1.4 petrol
> **VERDICT** Too pricey and too ordinary to drive, although the looks are neatly individual

CARENS ★★★★★

> Big, versatile, value-packed seven-seater. Go diesel – 1.6 petrol is wheezy > **VERDICT** For all its pseudo-premium Euro aspirations, this is the stuff Kia still does best

SPORTAGE ★★★★★

> All-new, all-turbo SUV truly handles and rides but somehow a picture of Mr Potato Head’s face got mixed up with the blueprints > **VERDICT** Improved in just about every way – except to look at

SORENTO ★★★★★

> Ambitious new flagship SUV reckons it’s a real Land Rover rival. Bigger than ever, as is the price: up to a salty £40k. Only engine is a 2.2 diesel
> **VERDICT** Impressive, but lacks badge and performance of premium off-roaders

STINGER ★★★★★

> Handsome four-door GT has a mountain to climb to win over German exec buyers but it’s comfy and a head-turner. Interior not as well-finished or techy as rivals > **VERDICT** An impressively solid first effort; V6 GT-S is playful

KTM

X-BOW ★★★★★

> 22nd-century Ariel Atom mixes carbonfibre construction with hardy Audi turbocharged 2.0 four-pot > **VERDICT** Big money, big grins, but single-seat BAC Mono is more racecar-like to drive

LAMBORGHINI

HURACAN EVO ★★★★★

> Spine-tingling V10 engine, beguiling looks and enhanced dynamic ability make the Evo a proper performance contender > **VERDICT** Almost unbearably charismatic and achingly desirable. And we should mention *fast*

AVENTADOR S ★★★★★

> Aventador hits the sweet spot: it’s now old enough for Lamborghini to have sorted out the gripes associated with early versions and young enough to not yet be the subject of 31 run-out limited editions. Semi life-affirming > **VERDICT** Pose-to-talent ratio heading in the right direction

URUS ★★★★★

> Fast, capable SUV that sounds good, looks like

it’s in a movie and is full of Audi bits > **VERDICT** Precisely halfway between armageddon on wheels and a family-friendly five-door Lambo. There’s talk of a more powerful version, but it’s plenty wild enough already

LAND ROVER

DEFENDER ★★★★★

> Not a working vehicle and not cheap. But JLR has absolutely nailed the resurrection of this 4x4 icon: modern yet retro looks, tough yet techy cockpit and a breadth of ability like little else on the road (or off it) > **VERDICT** Land Rover’s greatest achievement

DISCOVERY SPORT ★★★★★

> Comfy, handsome and good off road, but Land Rover’s awkward middle child is outshone by the more desirable Range Rover Evoque and countless other SUVs that are cheaper to run, better built and/or more interesting to sit in > **VERDICT** Decent 4x4 is tremendously overshadowed

DISCOVERY ★★★★★

> Gen-5 Disco can climb mountains and social strata with equal equanimity. Worryingly close to Range Rover, slightly frustrating engine choice
> **VERDICT** The best seven-seat party wagon money can buy. New Defender arrives soon to offer even more choice

RANGE ROVER EVOQUE ★★★★★

> Posh mum’s SUV is five-door only in its current form, but still visually very strong and now better than ever to drive, with a good engine line-up. Even in its most basic form this makes most other compact SUVs feel frumpy, ungainly or compromised > **VERDICT** Pricey, but perfectly pitched

RANGE ROVER VELAR ★★★★★

> Sport-lite or Evoque-plus? Either way, Land Rover’s centrally placed SUV is handsome, capable, well finished and worthy of its name > **VERDICT** The new benchmark Range Rover

RANGE ROVER SPORT ★★★★★

> As luxurious as a Rangie, as practical as a Disco, better looking than an Evoque and could follow a Defender cross country > **VERDICT** Very good at just about everything

RANGE ROVER ★★★★★

> Still the benchmark luxury SUV. V6 diesel acceptable, supercharged V8 petrol hilarious, PHEV pointless > **VERDICT** The perfect car for smuggling cash to Switzerland, skiing, turning up at a ball, game shooting and being smug

LEXUS

CT ★★★★★

> Pig-ugly premium Prius a mix of decent handling, woeful performance and a ride so poor it makes a black cab feel like an S-Class > **VERDICT** Wouldn’t merit a single sale if company car tax bills were less CO2-focused

IS ★★★★★

> Sharp-suited, well-spec’d 3-series rival finally gets decent rear space. Good chassis, but the 250 V6 is irrelevant, and the frugal hybrid is hobbled by a nasty CVT > **VERDICT** So close. Needs a proper automatic gearbox

ES ★★★★★

> Lexus changes tack in exec saloon fistfight by removing samurai-styled, hybrid-powered GS and replacing it with samurai-styled, hybrid powered ES. No, we don’t know why they went to the effort either > **VERDICT** Smooth and quiet, with well built if awkward interior. Sound familiar?

LS ★★★★★

> Interior materials are to die for, but hybrid powertrain less than convincing > **VERDICT** With alternatives as good as the S-Class and 7-series, you’d have to REALLY want to be different

UX ★★★★★

> Baby crossover that’s striking, quiet and a bit hybrid-y, like every Lexus that isn’t a coupe or the LS > **VERDICT** Efficient urban-focused feelgood transport for those who value comfort over ruggedness

NX ★★★★★

> Trumps even the Audi Q5 with a fabulous interior and arrest-me (for persecuting curves) exterior design. Fwd or 4wd with electric motor at rear

> **VERDICT** Doesn't work as a driver's car, so take the NX300h hybrid over faster, costlier NX200t

RX ★★★★★

> Looks like Lord Vader's helmet with wheels on. Interior opulence and general tranquillity make up for idiosyncratic infotainment > **VERDICT** Build quality and refinement to save the galaxy, even if the hybrid tech won't

RC/RCF ★★★★★

> RCF's old-school unblown V8 completes charismatic package that shocked M4 in our Giant Test. Elegance of regular range can't overcome lack of diesel option > **VERDICT** Deserve more success than they'll likely get

LC500 ★★★★★

> A serious sports car from the most serious of makers gets a clever hybrid or a tasty V8, 10-speed auto and less bovine acoustics. It's quite sexy > **VERDICT** Proof that Lexus is at its best when it's not trying to be the Japanese Mercedes

LOTUS

ELISE ★★★★★

> Reminds you just how connected cars used to be, and still can be, for a while at least. Slothful 1.6 reminds how they used to go, too, so pick the 1.8 instead > **VERDICT** A 10-year-old example does the same job for half the price

EXIGE ★★★★★

> Gym-bunny Elise with supercharged V6 retains beautifully unassisted steering. Superb 350 Sport turns up the wick > **VERDICT** The Lotus our tyre-frying Ben Barry would buy

EVORA 400 ★★★★★

> Lost its looks but gained a supercharged 400bhp engine. Probably a decent trade, all told > **VERDICT** The chassis and steering are Lotus at its sparkling best. Sublime. This is the heritage that the electric Evija must live up to

MASERATI

Ghibli ★★★★★

> Small exec drives great, looks the business, doesn't have the four-cylinder diesel that will get it on your shopping list. A shame > **VERDICT** An alcohol-free Quattroporte

QUATTROPORTE GTS ★★★★★

> A fine blend of Maranello turbo V8 and graceful old Maserati bits. Dynamically outshines most other saloons, and remains the coolest four-door money can buy > **VERDICT** It won't let you in unless you're in a suit or chinos

GRAN TURISMO/GRAN CABRIO ★★★★★

> Four genuine seats a rarity in this class, but fill them and you'll regret choosing the weedy 4.2 over the 4.7 > **VERDICT** Podgy, pretty, practical GT for folk who hate four-door faux coupes. And luggage

LEVANTE ★★★★★

> Accomplished SUV that holds its own against the Porsche Cayenne and Jaguar F-Pace, with lots of Maserati charm and very little quirkiness > **VERDICT** Far from flawless but it'll show you a good time

MAZDA

2 ★★★★★

> Shot-in-the-arm supermini packs good value, handling and looks, leaving sweat marks on the shirts of the VW Polo marketing team > **VERDICT** Under-radar Fiesta threatener

3 ★★★★★

> Most stylish family hatch on the market right now? It's also great to drive. Generally weak engine range, including clever Skyactiv-X, the only significant flaw > **VERDICT** A hatch you should pay attention to – it's good

6 SALOON/TOURER ★★★★★

> Boss won't let you have a BMW 3-series? This makes an impressive alternative. Handles well but rides like the tyres have DTs > **VERDICT** Swoopily styled, tax friendly, entertaining alternative to po-faced VW Passat

CX-3 ★★★★★

> This late arrival to the compact crossover party is worth a look thanks to its smart cabin and crisp

drive, not to mention its neat manifestation of Mazda's very sleek current look. Pity about the firm ride > **VERDICT** Pricey, but better than most rivals and well equipped

CX-30 ★★★★★

> Not called CX-4, which is odd. Stellar interior and chassis lifted from the 3 hatch; engines just as limp > **VERDICT** Does everything the 3 does but for more money

CX-5 ★★★★★

> How an SUV should drive. Better than ever, and yet it's still unfairly ignored in favour of inferior rivals > **VERDICT** It's the closest you'll ever get to a five-seat MX-5

MX-5 ★★★★★

> Shorter than the '89 original, and in real terms half the price. The 1.5 is sweet but a little slow; 181bhp 2.0 introduced in 2019 solves that > **VERDICT** Brilliantly uncomplicated budget sports car

MX-5 RF ★★★★★

> When a folding fabric roof is just too common to contemplate, pay more for the heavier and more complicated RF and never fold the bloody roof down anyway > **VERDICT** Right car, wrong spec

MCLAREN

540C ★★★★★

> The world's first discontented supercar. Entry level doesn't get any better > **VERDICT** The work of a very focused company somewhere near the top of its game

570S/570GT ★★★★★

> Base McLaren ditches carbon body and trick suspension, but keeps carbon MonoCell and twin-turbo 3.8-litre V8. Now available with glass hatch, too > **VERDICT** S and GT performance near identical; both make 911 Turbo S feel too normal

600LT ★★★★★

> The Sports Series gets its LT; more power, a comprehensive track-focused re-engineering and high-mounted LT exhausts > **VERDICT** The most thrilling McLaren this side of the Senna. (And let's face it: everything's this side of the Senna)

GT ★★★★★

> The first McLaren where boot space and comfort take centre stage. The entire world shouts: 'What?!' > **VERDICT** Supercar trying to be something it isn't doesn't do great job

720S ★★★★★

> 650S replacement turns the wick up and is measurably better in every way than a Ferrari 488, which is no mean feat. Maranello won't be pleased > **VERDICT** Obscenely fast and engaging – we just wish it was louder

SENNA ★★★★★

> As happy breaking lap records as it is nipping to the shops. Astounding engineering achievement that makes the P1 feel slow > **VERDICT** Named after a hero – but you don't need to be one

MERCEDES

A-CLASS ★★★★★

> Sharp looks and an interior swish enough to put higher-class cars to shame – even if most of the best kit is optional. Dynamically still a bit slushy > **VERDICT** Finally, a compact hatch worthy of being called a Merc, and a fine saloon version too

A45 AMG ★★★★★

> Smallest AMG is winning the hot hatch horsepower arms race and can drift like a Ford Focus RS > **VERDICT** It's quite the weapon

CLA ★★★★★

> Drives like an A-Class, has near-useless rear seats, but exudes a fantastic laptop-on-wheels vibe that will draw in the affluent kids > **VERDICT** Slick tech powerhouse for considerable wedge

B-CLASS ★★★★★

> Hatchback handling and fancy interior. Oddly short of useful cubbies > **VERDICT** Like an A-Class, but taller. Who knew?

C-CLASS SALOON/ESTATE ★★★★★

> Mini-S-Class styling and almost all the same cutting-edge on-board technology > **VERDICT** BMW is still better to drive, but if you want a relaxing techno cocoon, this is it

The Good, the Bad & the Ugly

TOP 5 COMPACT SALOONS

When the new Audi A3 Saloon arrives, what does it have to beat?

1

MERCEDES-BENZ A-CLASS SALOON

Just like the hatchback, but with a boot: very classy cabin, refined ride, good choice of engines, including a hybrid. Feels quite different from the similar-looking CLA. Boot size: 420 litres. Starting spec is slightly higher than the hatchback's entry point: you'll pay from £25,850.



2

BMW 2-SERIES GRAN COUPE

This looks like a five-door but is in fact an actual saloon, albeit coupe-ish. Fruitiest version is the M235i with all-wheel drive, but the basic front-drive diesel and petrol work very well, in an A-Class kind of way. Boot size: 430 litres. Priced from £25,860.



3

TOYOTA COROLLA SALOON

Agreeable, practical and well mannered, the saloon feels a bit more grown-up than the hatch. And it has the wheelbase of the estate, not the hatch, for a more comfort-orientated ride. Just the one engine, a 1.8-litre petrol hybrid. Boot: 471 litres. From £24,185.



4

MAZDA 3 SALOON

Like the elegant hatch, the latest 3 offers excellent interior quality and is well equipped, with lovely design inside and out. Front-wheel drive, with a choice of economical but unexciting petrol engines. Boot: 444 litres. Priced from £23,320.



5

HYUNDAI i30 FASTBACK

Bit of a stretch to call this a saloon, but it's less hatchy than the i30 hatch. Choice of 1.0 and 1.4 turbo petrols, and a good level of equipment that's user-friendly more than design-award-winning. Boot: 450 litres. Hot N version costs over £30k, but the Fastback range starts at £20,710.



C-CLASS COUPE ★★★★★

> Sexpot C-Class 10cm longer and available with air suspension. Still tight in the back for those with legs > **VERDICT** Much more of an event than the BMW 4-series, but the latest Audi A5 is right back in the game; a nice problem for potential buyers

C63 AMG ★★★★★

> Madder than ever with bi-turbo 4.0 V8; coupe gets unique 12-link rear suspension for sharper responses > **VERDICT** Mega traction and one of the best turbo engines ever

E-CLASS SALOON/ESTATE ★★★★★

REPLACED SOON > It may look like a fat C-Class but this techno tour-de-force thinks it can drive better than you. Exceptional interior > **VERDICT** The latest four-cylinder diesel is so smooth it churns motorway miles into butter

E-CLASS COUPE ★★★★★

> Swish, clever and satisfyingly capable, as long as there's six cylinders up front. Like coupes used to be before everyone decided they needed to be 'Ring-meisters > **VERDICT** Middle age has never been so appealing

AMG E63 ★★★★★

> Complete with all-wheel-drive system that you can switch off in Drift Mode (on the S version). Which is exactly why you should buy one, and possibly open an account at Kwik Fit at the same time > **VERDICT** Go S or go home

CLS ★★★★★

> Comfy four-door coupe has great interior and loads of tech, although it can't match the original for visual drama. AMG 53 is punchy > **VERDICT** Slick

S-CLASS ★★★★★

> Enormously accomplished, with camera-guided ride quality and stacks of safety kit > **VERDICT** Makes 7-series and A8 seem like under-specified toys, although the 7 has has the dynamic edge

S-CLASS COUPE/CABRIOLET ★★★★★

> Over five metres of barking mad indulgence; Coupe carries it off like Errol Flynn on a bender > **VERDICT** Howard Hughes would approve, but he went crazy in the end

S63/S65 AMG ★★★★★

> Twin-turbo 577bhp V8 and 621bhp V12 S-Class variants, because being richer than the world isn't enough and you need to out-drag it, too > **VERDICT** S63 V8 is bonkers, S65 V12 utterly certifiable. Does your chauffeur deserve it?

GLA ★★★★★

> Merc's high-rise A-Class is now more practical than the previous one, and generally better all round, but it's also a masterclass in how Merc is cannibalising its other models > **VERDICT** Good, but aimed at badge snobs with no imagination

GLB ★★★★★

> Seven seats in a footprint smaller than a Skodiaq's, plus Merc badge and tech. What's the catch? So-so handling and passive dampers only in the UK > **VERDICT** G-Class + shrink ray = this

GLC ★★★★★

> Dull on paper, and not a looker but benefits from a touch of Mercedes magic, especially the AMG versions > **VERDICT** Rivals are cheaper and better to drive but GLC makes you feel special inside

EQC ★★★★★

> The GLC's battery-only cousin is an unchallenging way to wean yourself off fossil fuels. If you want an

electric car that's as much like a combustion car as possible, this works a treat > **VERDICT** Like an electric comfort blanket, cosy and relaxing

G-CLASS ★★★★★

> Turns out you can teach an old dog new tricks, so long as you completely overhaul its entire personality and physical structure > **VERDICT** A dinosaur that has evolved to avoid extinction. AMG and diesel both excellent

GLE ★★★★★

> Seven-seat SUV dials up the refinement and gadgets. Active air springs can make it tilt like a Pendolino at speed or hop like a baller's low-rider > **VERDICT** No longer an also-ran plush-UV

GLS ★★★★★

> Luxo-monster seven-seater lacks Range Rover panache but it's comfy and refined, and the infotainment doesn't come from Poundland > **VERDICT** A brilliant bus

SLC ★★★★★

> Buy the SLC43 AMG and it's like an uglier but cheaper F-Type with a nicer interior. Buy any other SLC and you've lost your mind > **VERDICT** Come back 718 Boxster, all is forgiven

SL ★★★★★

> The plastic surgeon was worth every penny. Turning up the sporty makes the most of the super-stiff structure, too > **VERDICT** Brilliant execution of a particular version of the European GT dream

AMG GT ★★★★★

> GT C is the very tasty sweet spot, GT R is track-bred lunatic and 'Ring fast-lapper. Whichever you pick, it's blessed with a 4.0-litre twin-turbo V8 and jaw-dropping looks > **VERDICT** Got muscle, maybe lacks finesse

AMG GT 4-DOOR ★★★★★

> Yes, it looks like a steroidal CLS and, yes, it's a tried-and-tested formula, but boy does it work. Pricey, mind > **VERDICT** Mercedes already had one M5 rival in the shape of the E63 S; now it has two – both very good

MG

MG 3 ★★★★★

> Tough-looking, spacious supermini has handling that lives up to the promise of that once-British badge. As does the woeful build, crap engine and concrete ride > **VERDICT** The Chinese are coming! But so far they've only got to Tajikistan

GS ★★★★★

> Spacious, duck-faced SUV hamstrung by coarse 1.5 turbo petrol, shonky gearboxes and shoddy interior. Actually handles okay, if you can hack the firm ride > **VERDICT** Dacia will sleep well tonight

ZS ★★★★★

> Looks like a bootleg Mazda CX-3 and has knock-off driving dynamics, build quality and price > **VERDICT** Stone dead last in an extremely competitive sector, but it would still be last in easier company

MINI

HATCH/CONVERTIBLE ★★★★★

> Bigger and less charming than anything called Mini should be, but comes with choice of smooth and peppy engines, while ride has improved without ruining handling. Britpop rear lights a thorny issue for some > **VERDICT** Better than ever to own, even if you love it slightly less

ELECTRIC ★★★★★

> Arrives late and unprepared to EV supermini party, when snacks have been eaten and booze is drying up. Normal looks a double-edged sword and range is only acceptable, not Renault Zoe excellent > **VERDICT** Outdone by Honda at being charming. Hell really hath frozen over

COOPER S/JCW ★★★★★

> BMW 2.0-litre four-pot-powered 228bhp JCW most powerful Mini ever. Terrific fun, if a tad synthetic > **VERDICT** Beware the options list

GP ★★★★★

> Limited-run hardcore hatch is like owning an over-excitable pedigree guard dog; expensive, unruly and so difficult to tame it could easily bite your arm off if you provoke it. But you wouldn't have it any other way > **VERDICT** Distilled hot-hatch thrills

CLUBMAN ★★★★★

> Replace circus-freakery of old one with full complement of portals, add longer wheelbase, bigger boot; now bake > **VERDICT** Loaf-alike maxi-Mini freshness, the grown-ups' choice

COUNTRYMAN ★★★★★

> A Mini SUV that drives like the hatch. Spacious, solid inside and just funky enough, but expensive > **VERDICT** A respectable family car now, rather than just a chubby brand extension

MITSUBISHI

MIRAGE ★★★★★

> Catastrophic lack of style or charm, given how good many of its rivals are. As well suited to the small-car segment as a Sopwith Camel is to executive short-haul flights > **VERDICT** Want your kids to stay off the roads? Buy them one

ASX ★★★★★

> Box-ticking small SUV feels like it was designed on a spreadsheet > **VERDICT** At least it's cheap and well kitted

ECLIPSE CROSS ★★★★★

> Genuine off-road ability like a traditional Mitsubishi, but cushy ride and interior quality show influence of Renault-Nissan partnership > **VERDICT** Petrol-CVT combo sounds worse than it is

OUTLANDER ★★★★★

> Midlife overhaul brings sleeker looks and lifts cabin ambience by miles. Diesel still a bit of a tractor but PHEV comfy and refined > **VERDICT** The UK's best-selling plug-in hybrid, largely for tax reasons

L200 ★★★★★

> Farmhand/building site runabout is not as decent to drive as older generations. Many trim and cab-size variations available > **VERDICT** Dependable, but not much else to get the motor running

MORGAN

3-WHEELER ★★★★★

> As comfortable as riding over Niagara Falls in a barrel and equally sane. Not as quick as it feels, but quick enough for a three-wheeler on bike tyres > **VERDICT** Brilliant Caterham alternative without the macho trackday posturing

FOUR FOUR/PLUS 4 ★★★★★

REPLACED SOON > Entry-level Mogs still have 'traditional' ash frame and 'traditional' dynamics. 4/4 a surprise eco champ at 44mpg > **VERDICT** Cheap considering the craftsmanship

ROADSTER ★★★★★

> Roadster uses Ford V6 and looks much sportier but some won't be able to tell > **VERDICT** It's this or the new Plus Six for your pokiest Morgan thrills

PLUS SIX ★★★★★

> Despite its BMW-sourced powertrain this is still a Morgan. Just one that's leapt into the current century > **VERDICT** Fun in a way that you wouldn't think still possible

NISSAN

MICRA ★★★★★

> So much better than the old car, the current Micra is on Wikipedia deleting all mention of its predecessor > **VERDICT** Bigger and better, and with a vastly improved interior, although not all versions are equally good

JUKE ★★★★★

> Crossover that's exchanged one sort of ugly for another, and become less interesting in the process > **VERDICT** One step forward, one step back, and now up against much more competition than Juke Mk1 ever faced

LEAF ★★★★★

> Less gawky than pioneering first-gen Leaf, and promises better range, and single-pedal driving. Shame about the dull interior > **VERDICT** Version 2.0 of people's EV now far more... normal

QASHQAI ★★★★★

> Crossover for the masses gets more luxury and a facelift > **VERDICT** It's no Volvo XC but still has huge family appeal

X-TRAIL ★★★★★

> Used to be a rough, tough off-roader designed on an Etch-a-Sketch. Now it's a Qashqai put through a photocopier at +10% > **VERDICT** Still not exciting, but does the job

GT-R ★★★★★

> A hardcase, moments from rage > **VERDICT** Drivetrain sounds like a drum kit falling down the stairs; leaves your brain feeling much the same

NAVARA ★★★★★

> One of the most sophisticated pick-up trucks out, with interior bits from the X-Trail SUV. Perfectly fine on and off-road > **VERDICT** If you own one, you can gloat that Mercedes borrowed bits of it for the now-departed X-Class

PAGANI

HUAYRA ★★★★★

> Spectacular cottage-industry supercar with active aero, AMG-built 720bhp twin-turbo V12 and a wondrously decadent interior > **VERDICT** Obviously we want one but they're all sold

PEUGEOT

108 ★★★★★

> Pug-faced city car twinned with the Toyota Ayo and Citroën C1. Go for 82bhp 1.2: the 68bhp 1.0 is so slow we were all monkeys when it set off and it still hasn't hit 60mph > **VERDICT** No-frills compact transport; boot and rear space tight

208 ★★★★★

> Dramatic looks and a swanky interior might be enough for many. Available in petrol, diesel and electric flavours. Oh, and it has dramatic light-up fangs either side of the grille > **VERDICT** A lovely product, but it's no Fiesta to drive



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J888 AKY	£850	850 BP	£3700	DEL 32L	£1500
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L21 ALM	£850	M27 BRY	£850	P24 DEN	£950
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A19 ALW	£650	D6 BUG	£950	A83 DEN	£1100
F19 ALY	£750	P21 BUR	£650	SI23 DEN	£750
S90 ALY	£950	M24 BUR	£650	DES 2M	£1600
ALZ 399	£650	L27 BUR	£650	P700 DES	£650
L31 AMA	£750	M5 BUS	£650	DG 7422	£2100
P21 AME	£650	I985 CA	£2100	L23 DJS	£650
L21 AMG	£950	CAB 23W	£750	N9 DMH	£650
L25 AND	£750	L28 CAB	£850	7629 DN	£950
VIII AND	£850	765 CAB	£1800	C18 DOB	£650
L24 ANG	£1400	M26 CAN	£650	T7 DOL	£650
L25 ANG	£1300	M31 CAS	£950	S24 DON	£1300
P15 ANN	£1300	P23 CAT	£1200	I60 DON	£2500
L21 ANN	£1600	M28 CAT	£1300	J400 DON	£650
R21 ANN	£1400	501 CCJ	£850	DI DOT	£1800
M21 ARA	£650	CHZ 889	£650	K16 DOT	£650
L121 ARA	£750	C47 CJW	£750	994 DOT	£1100
C9 ARN	£750	600 CN	£3800	DOU 2G	£4500
H888 ART	£850	N21 COL	£1900	IO54 DP	£1500
L10 ARY	£650	N23 COL	£1200	C8 DUG	£1500
M28 ARY	£850	L96 COL	£1100	M21 DUG	£650
N4 ASW	£750	K13 COX	£650	DUG 77Y	£850
P11 ATY	£950	JI CRH	£950	J43 DUN	£650
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936 AUG	£1300	I953 CW	£2800	N31 EAN	£750
L31 AVY	£750	L27 DAD	£650	S515 EAN	£650
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308 HATCH/SW ESTATE ★★★★★

> Hushed 308 is at its best when eating motorway miles, or when you're watching it out of the window of your Golf. Fiddly touchscreen > **VERDICT** Non-GTi hatch isn't up to scratch, but SW wagon is worth a look

308 GTi ★★★★★

> Discreet styling hides playful proclivities; Limited-slip diff keeps things tight up front while fantastic chassis delivers entertainingly lively rear > **VERDICT** 250 and 270 variants both great, but 270 gets more kit

508 ★★★★★

> Best-looking mainstream exec? Quite possibly. Likeable and civil, and the cockpit is a knockout. Estate equally handsome and there's a hybrid too, available with either body > **VERDICT** For the discerning iconoclast

PARTNER TEPEE ★★★★★

> Spacious, versatile, more practical than a regular MPV, drives okay if you keep your ambitious modest > **VERDICT** Make your own clothes? Live in a yurt? This is the car/van for you

2008 ★★★★★

> Take everything that makes the 208 cool, fresh and different and make it a few inches taller. Slightly stodgier to drive, though > **VERDICT** As small crossovers go, this makes a lot of sense

3008 ★★★★★

> Tell your friends you've bought one and they'll laugh – until they see it. Sharp to look at, surprisingly good fun to drive and not too weird > **VERDICT** Just make it clear you've not bought the old one

5008 ★★★★★

> Edgy design meets genuine practicality, comfort and seven seats. Looks quirky, but easy to live with and pleasurable to drive > **VERDICT** Not the German approach to premium, but just as effective and good value

POLESTAR

1 ★★★★★

> Concept car looks, vast power, supernatural handling, Bentley pricing > **VERDICT** Quite the way to start a new marque... with a supercharger *and* a turbo *and* two electric motors

2 ★★★★★

> The other end of the electrified spectrum to the Polestar 1 in terms of scope. Usable, ultra-modern and hyper-pragmatic, and it helps that it's handsome and decent to drive, too. Only tried a prototype so far, though > **VERDICT** Pay attention to this if you're serious about the EV switchover

PORSCHE

718 BOXSTER ★★★★★

> The turbo revolution continues as Boxster bins the six for a brace of faster forced-induction fours > **VERDICT** Whole lotta lag; chassis still a stairway to heaven

718 CAYMAN ★★★★★

> Choral flat-six ditched for punchy but industrial turbocharged four. Uglier than before, still handles like you wish all cars would > **VERDICT** Know any nice 981s for sale?

911 ★★★★★

> 992-generation could have been phoned in and still been fantastic, but Porsche has done it again. The 911 continues to be trackday hero, athletic GT

and surprisingly adept family transport rolled into one > **VERDICT** Unrivalled do-anything sports car

911 TURBO S ★★★★★

> Gone are the days of the 911 Turbo being a fast-but-safe cruiser – Porsche has let its hair down and made a properly fun, balls-to-the-wall ICBM. Handle with caution > **VERDICT** No longer a fast sports car, but a true supercar

MACAN ★★★★★

> Baby Cayenne is even better than dad – and better than the rival Evoque too. Base car with Golf GTI 2.0 makes no sense when S is pennies more > **VERDICT** GT3 RS for trackdays, Cayman GT4 for weekends, this for everything else. Sorted

CAYENNE ★★★★★

> A masterclass in how to make a big SUV handle. Slick Panamera-derived interior is great. Turbo is brutally fast, too, but whole thing feels anally retentive > **VERDICT** Impressively capable but Macan is more engaging

PANAMERA ★★★★★

> The Mk1 was just throat-clearing; this Mk2 is the opera. Ripe with tech, innovation and better dynamics – and it looks nigh on perfect > **VERDICT** A lesson in making nonsensical niches make perfect sense

PORSCHE TAYCAN ★★★★★

> Way pricier than a Tesla and real-world charging still suspect but Porsche's first EV is, naturally, a technological marvel > **VERDICT** Supernatural pace and body control housed in a concept-car body

RADICAL

SR3 SL ★★★★★

> Properly street-legal SR3 gets a 300bhp blown Ford 2.0 instead of a motorcycle engine, a heater and even a 12v socket. It's almost lavish > **VERDICT** Toned down for occasional road use but still hairier than a cave man with hypertrichosis

RXC TURBO ★★★★★

> Play out those Le Mans fantasies on the commute with this Peterborough-built headcase. Sequential gearbox welcome in town like an EDL demo > **VERDICT** When you've outgrown your Caterhams and 911 GT3s, here's the answer

RENAULT

TWIZY ★★★★★

> Part electric scooter, part social experiment, it's easy to love the doorless Twizy, especially on balmy evenings along La Croisette. Grimy days in Hull less so > **VERDICT** Transport of the future, if it's never wet in the future and you like chatting with other drivers at traffic lights. And when we say chatting, we mean having abuse hurled your way

ZOE ★★★★★

> Popular French EV has been polished so much it blinds passers-by in the sun. No, but seriously, while the old Zoe was good, the latest much longer-ranged, more attractive and refined model is enough to convince supermini buyers > **VERDICT** A mainstream EV tipping point

CLIO ★★★★★

> Smaller and lighter? That's not how new generations work, Renault! Interior quality is now up with the best in the class, tidy handling, familiar face > **VERDICT** The same but different, and a bit better; hybrid version is on the way

CAPTUR ★★★★★

> It's the new Clio's cockpit inside, and cheaper

than most of its competitors. There's little to disagree with here > **VERDICT** Much improved compact crossover, even if compact crossovers remain largely baffling

MEGANE ★★★★★

> Looks like a foie-grased Clio outside and a low-rent Tesla inside > **VERDICT** Renault Sport-fettled GT with rear-wheel steering a keen drive

MEGANE RS ★★★★★

> Sport is a credible hot hatch all-rounder but it doesn't thrill like the pokier Cup > **VERDICT** Go for a manual Cup version and you have a properly sorted Civic Type R rival

SCENIC ★★★★★

> Compact MPV trades practicality for a sharper exterior > **VERDICT** Console your manhood with the fact that 20s are standard

KADJAR ★★★★★

> Nissan may rue the day it left the parts store door 'Kadjar', as Renault's take on the Qashqai bests the original in every way (including 'Is that an anagram?' name) > **VERDICT** Aggressive pricing, smooth ride, great refinement, squishy seats

KOLEOS ★★★★★

> A five-seat X-Trail that took a gap year living at a French vineyard and has come back with an accent, more stylish clothes and an avant-garde view on life. Façade doesn't hide its Nissan roots > **VERDICT** Neither great nor rubbish – *c'est bof*

ROLLS-ROYCE

GHOST ★★★★★

REPLACED SOON > A Phantom for millionaires not billionaires. Its BMW 7-series undercrackers are very well deployed to make this remarkably easy to manage > **VERDICT** Perfectly built, highly individual

WRAITH ★★★★★

> A 624bhp twin-turbo V12 sporting vehicle that drives like no other. Dismisses distance but would never lower itself to squealing through bends > **VERDICT** An amazing driver's car

PHANTOM ★★★★★

> Enough opulence to make Blenheim Palace look like an abandoned warehouse yet just the right amount of tech to keep start-up billionaires happy > **VERDICT** By far the world's best luxury car

DAWN ★★★★★

> A Wraith with the roof cut off – although actually 80 per cent of the exterior panels are new > **VERDICT** Starry

CULLINAN ★★★★★

> Redefines off-road plushness. But it costs £100k more than a Bentley and weighs more than the moon > **VERDICT** Rangie is a better off-road, but the fact that Rolls-Royce can build a decent luxury off-road worthy of the badge is itself remarkable

SEAT

MII ★★★★★

REPLACED SOON > Stuck between a cheap Citigo rock and variety-filled Up hard place > **VERDICT** A good city car that's currently electric-only

IBIZA ★★★★★

> Angular Spanish supermini nabs A0 platform before VW, thoroughly grows up in the process. FR versions irritatingly don't look that sporty any more > **VERDICT** Ibiza by name only

LEON ★★★★★

NEW ENTRY > Not Seat's most memorable design, but drives very well, making good use of its Golf basis > **VERDICT** Which family hatch is this one again? We keep forgetting...

ARONA ★★★★★

> Normal-ish VW Group baby crossover but a good one. Practical and easygoing with simple trim structure – pick a spec and get a jazzy colour. Piece of cake > **VERDICT** A sensible daily driver, but then so is an Ibiza...

ATECA ★★★★★

> Latecomer to the SUV party gets the dress code right, isn't the life and soul but neither will it bore you into leaving early. Another sangria please! > **VERDICT** Go SE, petrol, manual

TARRACO ★★★★★

> Seat takes a Kodiaq and gives it a Spanish nose job. Then spends the afternoon in the pub > **VERDICT** No improvement over its very good Skoda and VW Tiguan Allspace siblings; harder ride is of questionable merit

ALHAMBRA ★★★★★

> A big box with slidey doors and seven proper seats; it puts family first, but also drives well > **VERDICT** Genetically identical to the VW Sharan, but nearly £2k less. You'll have to shop around to find either before they disappear forever

SKODA

CITIGO ★★★★★

REPLACED SOON > Skoda's all but identical version of the VW Up and Seat Mii. Well packaged as always > **VERDICT** Cheaper than the Up, but not by much. Only available in all-electric iV spec, just like the Seat Mii. Want an engine? The Up still offers one...

FABIA HATCH/ESTATE ★★★★★

> Mature supermini that's best on small wheels and modest petrol engine. Estate version ideal for Jack Russells > **VERDICT** Roomy, well made and dynamically well sorted – like the low-rent VW Polo it is

SCALA ★★★★★

> A bargain next to its rivals, and good level of standard kit, but it's not exactly brimming with charisma > **VERDICT** Golf space on a tighter budget

OCTAVIA HATCH/ESTATE ★★★★★

> Like a Golf but bigger, cheaper and more functional. Hot vRS versions old-school ballistic fun. 4x4s practical > **VERDICT** A lot for the money

SUPERB SALOON/ESTATE ★★★★★

> So vast inside it echoes. Sharp lines, stacks of kit, double the number of umbrellas. Shame about the dull interior and stiff price, especially for big-powered and high-spec versions > **VERDICT** All the family car you'll ever need. Only bigger

KAMIQ ★★★★★

> A Czech drop in a baby crossover ocean. Like its VW Group compadres, it's absolutely fine at everything it does but has even less pizzazz than the T-Cross and Arona > **VERDICT** Wake us up when it's interesting

KAROQ ★★★★★

> A miniature Kodiaq; practical, sharply styled and comfortable. Shame it's just not as likeable as its predecessor, even in more rugged Scout spec > **VERDICT** RIP Yeti. No, since you ask, we aren't about to let that one go any time soon

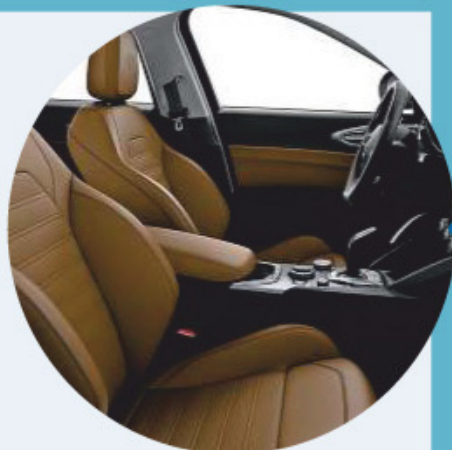


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SPEC EXPERT BUILD A FAB ALFA GIULIA

We spec a sporty and techy Veloce version of Alfa's freshly updated saloon

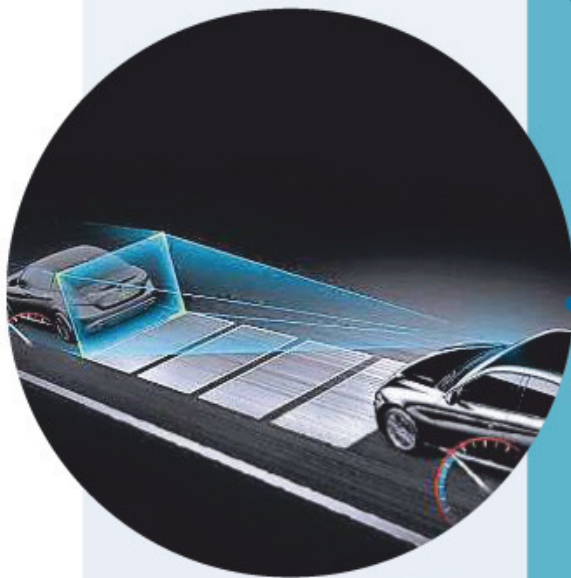


The Giulia has been refreshed for 2020, adding some new options and refining the interior. We decided to option up a warm Veloce model, the one with the 276bhp 2.0-litre turbo rather than the full-fat Quadrifoglio. It's capable of a 5.7sec 0-62mph sprint and handles like a dream.
Starting price: £42,130

We've taken advantage of Alfa's colour palette update and finished our Giulia in Visconti Green (£695) and paired it with 19-inch Dark Petal wheels (£995) and yellow brake calipers (£450) for a neat alternative to the reds and blues usually seen on Veloce models.
Running total: £44,270



Inside, the no-cost tan leather upholstery makes a change from the usual black cockpit, and we've added a Harman Kardon audio upgrade (£950) and laminated glass (£350) for a soundproofing boost.
Running total: £45,570



We've spec'd the Driver Assistance Pack Plus (£1500) which brings adaptive cruise, lane keep, blind spot monitoring and traffic sign recognition. The Performance Pack (£1650) adds metal shift paddles, a limited-slip differential and adaptive suspension.
Total price: £48,720



TOTAL PRICE: £48,720

The Good, the Bad & the Ugly

KODIAQ ★★★★★

> Vast SUV takes the Octavia approach by bulking out on a shared platform, but doesn't share its dazzling personality. Hot vRS version expensive overkill > **VERDICT** The most comfortable place to die a little inside. Very similar to Seat Tarraco, but with softer ride

SMART

FORTWO ★★★★★

> Wider than the last one, and now visually resembling the Toyota iQ, with a much better ride, higher quality cabin and slicker auto > **VERDICT** A brilliant city runabout, with an electric version that makes sense

FORFOUR ★★★★★

> Renault/Merc tie-up means ForFour is accomplished, with a classy cabin, although ludicrous pricing seem at odds with targeted city car buyers > **VERDICT** Its sister car, the Twingo, is more than two grand cheaper. Work that out

SSANGYONG

KORANDO ★★★★★

> Most well-behaved SY on the road, which isn't saying much, and still great off road, which is. Price for a decent one squares it up against so many other good SUVs now, though > **VERDICT** Getting rather big for its boots

REXTON ★★★★★

> SY's poshest SUV yet, which admittedly isn't saying a huge amount. Think old Discovery and you're not actually that far off > **VERDICT** Far less rubbish than the last one

TURISMO ★★★★★

> Less odious than the old Rodius, but every bit as practical, this giant seven-seater is slower than the Crossrail boring machine > **VERDICT** Has minicab written all over it, or soon will, which will handily help disguise the ugliness

TIVOLI ★★★★★

> There's no getting away from it: Korea's also-ran car maker has finally built a contender. Great value, spacious and – get this – well-finished inside > **VERDICT** If they do this again the dross heritage is under threat

MUSSO ★★★★★

> Mega cheap with trim levels that have silly names. Ponderous diesel and incredibly bouncy ride when empty doesn't endear it with road manners > **VERDICT** 'Good... for the money' should be SsangYong's slogan

SUBARU

IMPREZA ★★★★★

> Yes, it still exists beyond the WRX and STi of legend. No, you don't want one. Boggo Impreza is now reduced to a 1.6 or 2.0 petrol hatchback only with optional CVT. Shudder > **VERDICT** Have you got a brand new combine harvester? It's probably a better drive

LEVORG ★★★★★

> Impreza estate with a silly name. Single choice of 2.0 petrol with CVT auto and 4wd means it's got a silly drivetrain too > **VERDICT** Niche, as is all too common with Subaru

XV ★★★★★

> Admirable engineering but you have to pay through the nose for it and you're limited to a petrol, all-wheel-drive and CVT powertrain that dims the pleasure > **VERDICT** Another very niche Subaru

FORESTER ★★★★★

> Functional square-rigger is the kind of crossover that existed before we had 'lifestyles'. Good on road, great off it, not cheap > **VERDICT** A solid Subaru. Tweed cap, pipe, sheep flock optional

OUTBACK ★★★★★

> The unloved last-generation Legacy's only UK legacy is this Allroad-style crossover. It's huge inside and the 4x4 look isn't all for show > **VERDICT** Dependable, not desirable

BRZ ★★★★★

> Pure and simple but slightly under-nourished rear-wheel-drive boxer-engined coupe, crying out for a supercharger. Its Toyota GT86 twin is

marginally more fun > **VERDICT** This is a loveable car we were crying out for, and urged them to make, but it turns out not enough of the paying public wanted to buy one

SUZUKI

CELERIO ★★★★★

> Braking-phobic city car is otherwise spacious, full of kit and cheap. Three-cylinder petrol engine only, plus all the handling vigour of a B&Q Value wheelbarrow > **VERDICT** Dowdy and rowdy. Stop complaining and be grateful you've got DAB and a cupholder

SWIFT ★★★★★

> An unsung hero, and not just the excellent 134bhp Sport. Handles well, spacious and cheap. Upgraded Dualjet motor sweet > **VERDICT** Buy one and challenge anyone who questions your choice to a fistfight

IGNIS ★★★★★

> Cute. Might look tiny but Ignis has more room inside than most other cars this cheap. Shame the stodgy dynamics don't match the adorable '70s Suzuki Whizzkid-inspired looks > **VERDICT** Good mix of cheap and cheerful, if not exactly fun

BALENO ★★★★★

> The biggest of Suzuki's small cars, but not a Focus rival by a long shot. Brand traits come through here: hollow interior, bargain price but fun to drive if you're prepared to work with it > **VERDICT** Practical, unpretentious, almost entirely forgettable

SX4 S-CROSS ★★★★★

> The cheap way to clone a Nissan Qashqai. Won't score any points for style – in fact you might be encouraged by your kids (and everybody else's kids) to hide it at the back of the school car park. Diesel is the best bet, if not an attractive one > **VERDICT** A crossover to be cross over

JIMNY ★★★★★

> It's a mini Tonka toy! Still supreme off road and, now, there's few else like it on sale. It's slow, still not great on road, but we know what we'd have in a zombie apocalypse > **VERDICT** So incredibly loveable we forgive its road manners

VITARA ★★★★★

> Two-tone cross-dresser to rival the Nissan Juke, with handsome body and economical diesel engine or a lively petrol, and genuine all-wheel-drive ability. Cabin could do with some work, though > **VERDICT** Rutting rhinos and pink paint a thing of the past: it's a serious family car now, but still good value

TESLA

MODEL 3 ★★★★★

> An affordable electric vehicle you actually want to drive? Say it ain't so. Impressive performance, taut but spine-breaking dynamics, clean interior > **VERDICT** Musk's watershed moment – if only he could build them at anything approaching the rate needed to meet global demand

MODEL S ★★★★★

> Electro-rocket covers ground like little else on the planet, and in P100D guise is capable of delivering kidney-thumping acceleration. The future, with a cabin from the recent past > **VERDICT** Crush supercars, emit nothing

MODEL X ★★★★★

> You can scare the bejeezus out of your six passengers by reaching 62mph in 3.1 seconds. It's effective, albeit in one dimension. Looks like an SUV holding its breath > **VERDICT** Musky

TOYOTA

AYGO ★★★★★

> City car with a characterful three-pot motor, sharing its fundamentals with the Citroën C1 and Peugeot 108 > **VERDICT** Great to have the choice of this trio or the VW/Seat/Skoda alternatives

YARIS/GRMN ★★★★★

REPLACED SOON > Standard hatch is soulless, while costly hybrid cuts fuel bills (and boot space). Feisty GRMN limited edition is fun but ludicrously expensive > **VERDICT** GRMN is the only one that makes any kind of sense. But the next regular Yaris looks much improved, and early drives of the hot GR are very promising

COROLLA ★★★★★

> Like the RAV4, it combines nondescript powertrains with oodles of room for your passengers, paying or otherwise. Half decent to drive, too, as hatch, saloon and estate > **VERDICT** The Uber in front is a Toyota

CAMRY ★★★★★

> The humdrum saloon now shares hardware with the Lexus ES. It's a lot of room for your money, allied to decent comfort and the reasonable assumption that it will be super reliable for approximately ever > **VERDICT** Would make an excellent taxi

PRIUS ★★★★★

> Prius v4.0 boasts entirely new structure compared to all previous Priuses, improved suspension, and is no longer totally joyless to drive > **VERDICT** A Toyota hybrid that handles. Electric-only range still pathetic

MIRAI ★★★★★

> Weird on the outside, *Star Trek* on the inside and a hydrogen fuel-cell underneath. Drives just like a very refined regular car > **VERDICT** The tech is right, but there's nowhere to refuel it yet. More conventionally stylish new version on the horizon

C-HR ★★★★★

> Compact crossover that's stylish outside, huge fun and kooky inside too > **VERDICT** The start of a more interesting new phase for Toyota

RAV4 ★★★★★

> Styling like an 8-bit Space Invader on wheels is the only element of sparkle in a package that's otherwise all about practicality and safety tech. Ho-hum powertrain and sub-par infotainment don't help > **VERDICT** At least it looks interesting now, and the imminent plug-in hybrid version promises around 300bhp, which should help

LAND CRUISER ★★★★★

> Bare-knuckle ladder-frame brawler that wouldn't know a latte if you spilt one on its rigger's boots. Not cheap, but the excellent stripped-down Commercial version offers a lower-priced way to get the essentials > **VERDICT** Rough, but if we were stranded in the desert we'd trust one of these over a Range

GT86 ★★★★★

> The slowest fast car you can buy. B-road heaven, like its Subaru twin > **VERDICT** As pure as Jon Snow. Both of them

SUPRA ★★★★★

> New coupe relies heavily on BMW Z4 hardware, which seems to be a sticking point for some, but it drives really well – and many who've tried both prefer its feel to the BMW's > **VERDICT** Be very glad Toyota made the effort

HILUX ★★★★★

> Not the most efficient or cheapest pick-up currently available, but it has durability like little else and it does all of the things a pick-up should do well, excellently > **VERDICT** There's a reason there's a trim level called 'Invincible'

VAUXHALL

CORSA ★★★★★

> If Vauxhall's supermini was a huge seller before, new owner PSA's help will keep that trend going. Flexible, tidy design, useful interior and thrifty engines > **VERDICT** It's like someone improved vanilla ice cream

ASTRA HATCH/ESTATE ★★★★★

> Massive step forward compared to previous generation in terms of driving dynamics and interior design, plus added techno-charm > **VERDICT** In hatchback grandmother's footsteps, Focus and Golf turn round to find Astra standing right behind them. You really should try one if you're in the market

INSIGNIA ★★★★★

> Uninspired, but usefully big. The Sports Tourer estate and its rugged Country Tourer variant were the best versions, and best value – and then Vauxhall binned them > **VERDICT** Too close to how you'd hope an Insignia isn't, but fine if you're given one

CROSSLAND X ★★★★★

> Practical Meriva replacement sits beside the Mokka X for size. Designed to be the more pragmatic choice > **VERDICT** Genuinely practical if as dull as Luton's skyline to drive

MOKKA X ★★★★★

> Mokka gets a better cabin, some new engines and pointless suffix. Driving misery reduced by half > **VERDICT** X marks the spot where the ball was – about five years ago

GRANDLAND X ★★★★★

> A Peugeot 3008 in disguise, but different enough to appeal in its own right, and with the benefit of Vauxhall's vast dealer network. Not exciting, but a very good family crossover. Now also available in pricey hybrid form > **VERDICT** Up there with the Astra as Vauxhall's top current car

VOLKSWAGEN

UP ★★★★★

> Charming box on wheels is the kind of city car the Japanese have been building for years, except this is better built. EV has a Yorkshire name but doesn't kill off the petrol just yet > **VERDICT** Spacious small car with a strong, appealing image

UP GTI ★★★★★

> Pokey 113bhp engine, dynamics that come close to delivering on the dream of roadgoing go-kart, and great value for money. And fun by the skipload on every journey > **VERDICT** Compelling mini hot hatch package

POLO ★★★★★

> Mini-Golf isn't that mini any more. It's practical, has a sharp interior and is well built... but so's the Seat Ibiza > **VERDICT** Accomplished but lacking the fun factor

POLO GTI ★★★★★

> A proper junior GTI right down to the tartan seats. Responsive engine, sorted chassis, OTT electronic aids. Manual gearbox adds a sorely-needed bit of zest > **VERDICT** The latest Fiesta ST should be nervous

GOLF ★★★★★

> Supremely comfortable, slick and clean cockpit, and tech steps up a bit. About as much as you'd VW's perennial family hatch > **VERDICT** Now the Mk8, it's good. No surprises, then

GOLF GTD/GTI/R ★★★★★

> GTD is your dad in running shoes. GTI is your dad when he was wild, young and free. R is your dad having a midlife crisis. All are ace, like your dad > **VERDICT** VW has this hot-hatch thing nailed

GOLF SV ★★★★★

> The artist formerly known as the Golf Plus. And by 'artist' we mean medium-sized MPV. The car you always knew the Golf would grow up to be > **VERDICT** Not a bad choice, but now the BMW 2-series Active Tourer is breathing down its neck

PASSAT SALOON/ESTATE ★★★★★

> Interior design and refinement so good it shames some limos, cutting-edge kit and elegant looks. If only most versions weren't so dull to drive > **VERDICT** Mile-muncher for the undemanding

ARTEON ★★★★★

> Here we go again: VW tries to be properly premium, almost pulls it off. Great interior, huge boot and there's standard safety tech aplenty, but it's a bit dull, although some versions are much better than others > **VERDICT** For SUV-resistant saloon fans... or those who can't afford a BMW

TOURAN ★★★★★

> It's still more Millets than John Lewis, but the current Touran does family stuff well > **VERDICT** MPV meets MQB, nearly goes VIP while retaining whiff of OAP

SHARAN ★★★★★

> Large seven-seater sliding-door people carrier > **VERDICT** Nice enough but made to look silly by all-but-identical and cheaper Seat Alhambra

T-CROSS ★★★★★

> Wait, which one is this? Smaller than a T-Roc. Polo-size, not Golf-size. Like the Seat Arona and some Skoda or other. Probably > **VERDICT** Exactly right for today. Definitely.

T-ROC ★★★★★

> Golf-sized SUV aimed at hashtagging millennials. Massive tech options list and scope for personalisation make up for brittle interior and hefty price > **VERDICT** The funkiest VW

TIGUAN ★★★★★

> Accomplished but unexciting, with no real innovations, and Allspace seven-seater has an awkwardly packaged boot > **VERDICT** No sex please, we're VW

TOUAREG ★★★★★

> Less low-key than previous generations, especially that glittery grille, but still not as charismatic as the smaller T-Roc. Composed to drive, and space-age dash is very clever > **VERDICT** The SUV choice for those who don't like drama

AMAROK ★★★★★

> Vying with the Mercedes X-Class to be about as car-like as a pick-up truck can be, for better or worse. V6 power makes it stupid fast, and saying it has a cockpit like a Mk6 Golf is, in this context, a compliment. Relies on electronics for its off-roading skills > **VERDICT** A hot hatch of the pick-up world

VOLVO

V40 ★★★★★

> Smart Swede in a sector dominated by good Germans. Efficient D4 engine and impressive kit, but it's a fraction bloated in seat, suspension and steering feel > **VERDICT** Sitting uncomfortably between Golf and A3. A rock and hard place

S60 ★★★★★

> Imposing mid-size saloon is the first Volvo to ditch diesel, instead offering us a 400bhp Polestar-tweaked point-and-squirt weapon > **VERDICT** Needs a dynamic edge

V60 ★★★★★

> Can now once again reign supreme in the mid-size estate space race – take that, Germans. Otherwise standard modern Volvo; handsome, refined and safer than a fallout shelter > **VERDICT** We've got the need for Swede

V90 ★★★★★

> Sacrilegiously abandons the boot-space race for style while prioritising comfort and refinement over German machismo. Lovely inside. A genuine rival to the 5-series, E-Class and A6 > **VERDICT** If there's such a thing as Swedish zen, this is it

S90 ★★★★★

> Smart, well-crafted and adept-handling exec saloon dances a merry jig on the grave of unloved S80 > **VERDICT** Loudly purring Swedish cat enters 5-series/E-class pigeon enclosure

XC40 ★★★★★

> No thriller to steer but posh crossover has sharp look, practical interior and charming personality > **VERDICT** Feels good, and it'll look after you

XC60 ★★★★★

> A shrunken XC90, and more middle class than a book club morning at an organic farm shop cafe, sponsored by Boden > **VERDICT** Good to drive and super safe, and benefits from the mild hybrids spreading rapidly through the Volvo line-up

XC90 ★★★★★

> Luxurious seven-seater, clever safety tech, choice of efficient drivetrains, refined drive > **VERDICT** One of the most complete cars on sale, of any style, at any price. Drive it and you soon stop questioning its size and its image

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Initial payment £3250; then £454/month for 36 months
Mileage allowance 10,000
Via zen.auto



SKODA KODIAQ VRS £568

Potent twin-turbo diesel
Spec 2.0-litre four-cylinder, all-wheel drive, 237bhp, 209g/km CO2
List price £43,390
Initial payment £3750; then £568/month for 36 months
Mileage allowance 10,000
Via zen.auto



FORD S-MAX ST-LINE ECOBLUE 190 £380

Still great to drive
Spec 2.0-litre four-cylinder, front-wheel drive, 187bhp, 170g/km CO2
List price £34,560
Initial payment £2750; then £380/month for 36 months
Mileage allowance 10,000
Via zen.auto



MERCEDES GLB 200 AMG LINE £364

Blocky baby Merc SUV
Spec 1.3-litre four-cylinder, front-wheel drive, 161bhp, 163g/km CO2
List price £34,695
Initial payment £2750; then £364/month for 36 months
Mileage allowance 10,000
Via zen.auto





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www.rimsavers.com



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Want to upgrade your Land Rover Defender's single reversing light and single rear foglight? Better Car Lighting of Warwickshire has launched a new, quick-fitting kit that replaces the existing lights with clear-lensed alternatives, which act as powerful (white) reversing lights and double up as bright (red) foglights. The usual price is £139.99 + VAT; the first 20 customers will pay just £99.99 + VAT.

www.bettercarlighting.co.uk



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Struggling for traction? Of course you are. What you need is a second driven axle. By **Ben Miller**

1900 Porsche's 4x4 hybrid

Some versions of young Ferdinand's innovative petrol/electric hybrid are two-wheel drive, but the big-money, definitive spec is all-wheel drive, courtesy of four monstrously heavy and feeble e-motors, one per wheel. An early indicator that neither electrification nor hybridisation is likely to yield flyweight driving machines of which (the as yet unborn) Colin Chapman would approve, the 'car' weighs three tonnes.



1900



1945 Dodge puts the Power in Wagon

War: what is it good for? Rugged, unstoppable 4x4s, that's what. The famous Jeep serves in the Second World War before carving itself into legend as a civilian plaything. Dodge's Power Wagon truck launches in '45 as the medium-duty workhorse of America's halcyon post-war years. Dodge's rugged output had long been adored by the US military, and the Power Wagon's mechanicals are derived from the army trucks that helped Patton roar from the Normandy beachheads right into Berlin.



1969 Matra MS84

Ferguson sound like a tractor to you? Us too, and F1's first flirtations with all-wheel drive – the Ferguson P99 in the early '60s – were designed to promote the tech in Harry Ferguson's tractors. The P99 did okay when it rained, but when both Lotus and Matra (with its MS84) give four-wheel drive another F1 outing, neither gets anywhere near any champagne.

1969

1983 Panda-monium in the hills

It's 1983. You're a leathery-faced Italian with a precipitous hillside vineyard. From nowhere, Fiat delivers the car of your dreams: the Panda 4x4. Austrian off-road maestro Steyr-Puch neatly shoves mechanical four-wheel drive into Fiat's cheap and cheerful tin bear.



1983

1985 Porsche's show-off 959

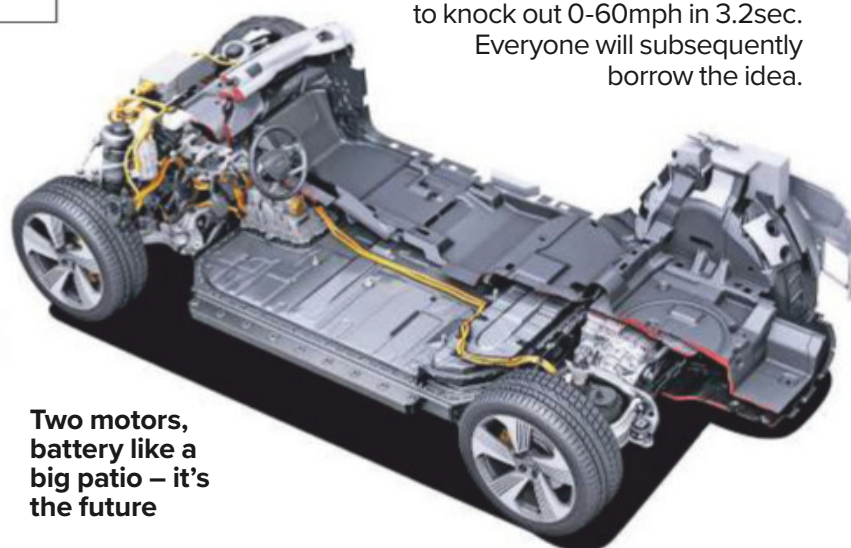
Thanks to rallying, the '80s is – together with bleached denim – the decade of high-performance all-wheel drive. The 959's PSK (Porsche Steuer Kupplung, or 'Porsche control clutch') drivetrain is a terrifyingly expensive but brilliant solution, employing a centre differential with six computer-controlled clutches able to engage sequentially to alter the front/rear torque split.



1985

2014 Musk goes all-wheel drive

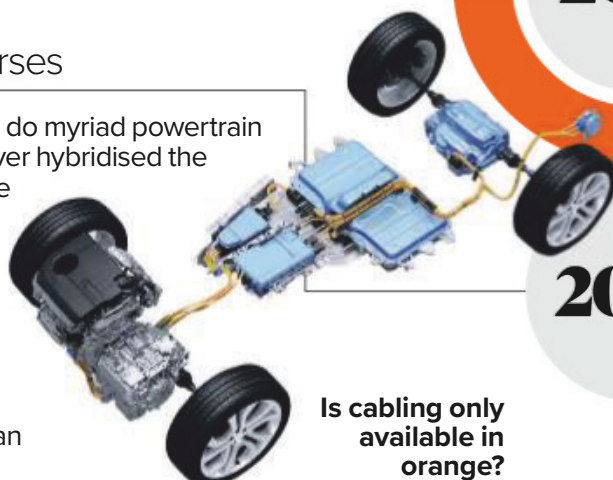
Remember that 1900 Porsche: a four-wheel-drive EV with no mechanical connection between the axles? Just 114 years later, on a warm evening in Los Angeles, Elon Musk pulls the covers off the first dual-motor Model S. The car's two e-motors drive an axle each, enabling the P85D to knock out 0-60mph in 3.2sec. Everyone will subsequently borrow the idea.



2014

2020 Horses for courses

As hybrids proliferate, so too do myriad powertrain solutions. This year Land Rover hybridised the Evoque: electric motor on the back axle, engine up front. It's still 4x4 but ditching the trad mechanicals saves a load of weight and space. Koenigsegg, meanwhile, goes for an e-boosted engine driving the front axle via shafts and an e-motor on each rear wheel.



2020

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