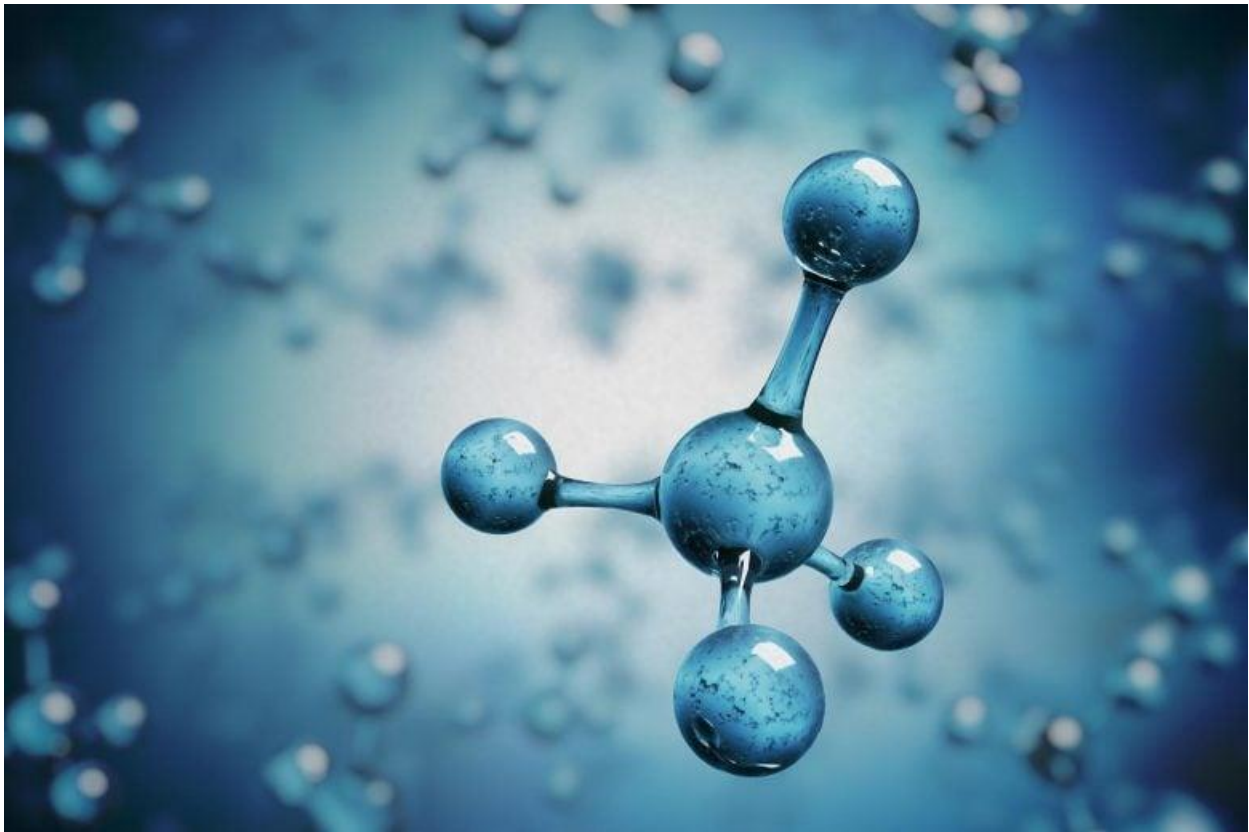


AUTOMOTIVE NEWS VOL 2

Breakthrough Tech Converts Carbon Dioxide Into Methane Fuel



A new method uses nickel catalysts to convert captured CO₂ into methane in a single step, reducing energy use and advancing sustainable carbon capture technologies.

A new method has the potential to deliver significant energy savings, according to a study.

Chemists have developed an innovative method to capture and convert carbon dioxide into methane, raising the possibility that future gas emissions could be transformed into alternative fuel using electricity from renewable sources.

Carbon dioxide (CO₂) is a greenhouse gas that accounts for a large part of Earth's warming climate, and is produced by power plants, factories, and various forms of transportation.

Typical carbon capture systems aimed at reducing its presence in the atmosphere work to lower carbon dioxide emissions by isolating CO₂ from other gases and converting it to useful products. However, this process is difficult to implement on an industrial scale due to the massive amount of energy required for these systems to operate.

A Streamlined Approach with Nickel Catalysts

Now, using a special nickel-based catalyst, researchers have figured out a way to save much of this precious energy by turning captured carbon dioxide directly into methane, said Tomaz Neves-Garcia, lead author of the study and a current postdoctoral researcher in chemistry and biochemistry at [The Ohio State University](#).

By employing nickel atoms laid out on an electrified surface, the team was able to directly convert carbamate, the captured form of carbon dioxide, to methane. They found that nickel atoms, a cheap and widely available catalyst, were extremely good at making this conversion.

“We are going from a molecule that has low energy and producing from it a fuel that has high energy,” said Neves-Garcia. “What makes this so interesting is that others capture, recover, and then convert carbon dioxide in steps, while we save energy by doing these steps simultaneously.”

Most importantly, streamlining the carbon capture process helps reframe what scientists know about the carbon cycle, and is a vital step to setting up more complex strategies for faster and more efficient climate mitigation technologies.

“We need to focus on spending the lowest energy possible for carbon capture and conversion,” said Neves-Garcia. “So instead of performing all the capture and conversion steps independently, we can combine it in a single step, bypassing wasteful energy processes.”

The paper was recently published in the *Journal of the American Chemical Society*.

Although many carbon capture methods are still in their early stages, with researchers from an array of fields working to improve them, the field is a promising one, said Neves-Garcia.

Closing the Carbon Cycle with Methane

Converting CO₂ into a fuel using renewable electricity has the potential to close the carbon cycle. For example, when methane is burned to generate energy, it emits carbon dioxide, which, if captured and converted back to methane, could lead to a continuous cycle of energy production without adding to Earth’s global warming burden.

The study also represents the first time that researchers discovered they could use electrochemistry to achieve carbamate conversion to methane. Although many attempts

have been made to convert captured CO₂ into useful products, until now most researchers have only shown the ability to produce carbon monoxide.

“Methane can be a really interesting product, but the most important thing is that this opens a path to develop more processes to convert captured CO₂ into other products,” he said.

Moving forward, the team expects to keep exploring other chemical clean energy alternatives to help inspire the creation of a variety of sustainable carbon capture routes.

“Everything always goes back to energy, and there’s a lot of excitement and effort invested in the future of this field to save more of it,” said Neves-Garcia.

Reference: “Integrated Carbon Dioxide Capture by Amines and Conversion to Methane on Single-Atom Nickel Catalysts” by Tomaz Neves-Garcia, Mahmudul Hasan, Quansong Zhu, Jing Li, Zhan Jiang, Yongye Liang, Hailiang Wang, Liane M. Rossi, Robert E. Warburton and L. Robert Baker, 6 November 2024, *Journal of the American Chemical Society*.

[DOI: 10.1021/jacs.4c09744](https://doi.org/10.1021/jacs.4c09744)

Other co-authors include Quansong Zhu and L. Robert Baker from Ohio State, Liane M. Rossi from the University of Sao Paulo, Mahmudul Hasan and Robert E. Warburton from Case Western Reserve University, Jing Li and Hailiang Wang from Yale University, as well as Zhan Jiang and Yongye Liang from the Southern University of Science and Technology. [Carbon CaptureCarbon EmissionsMethaneOhio State University](#)

Koenigsegg Intern Designs Wild Hypercar That Needs To Become Reality

A digital designer for the Swedish supercar company [Koenigsegg](#) has just created an absolutely stunning car (albeit only in the digital realm at present), displaying a mix of the brand's lines and forms that would look right at home alongside something like the [CC850](#). That being said, there are elements that remind us of other cars, too.



Koenigsegg

For now, though, the Koenigsegg Aethera exists only in the digital space, meaning that we're eagerly waiting for official news about the car's possible reality.

This Is One Heck Of A Summer Project



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Koenigsegg has released more than a dozen cars since it [started selling hypercars in 2002](#). They've often been variants on a theme, but that hasn't made them any less appealing to look at, or any less exciting to think about. When it comes to renders, the work of [Behance artist Alexandre Bernini](#) might be some of the best we've seen so far. Bernini has plenty of experience, working as a design intern at BYD (we knew those headlight surrounds looked familiar) and Toyota before his internship at Koenigsegg.



Koenigsegg Gemera 3-Cylinder Is Dead© Provided by CarBuzz

Related

[Koenigsegg's 3-Cylinder Hypercar Dream Is Dead](#)

Almost no one ordered the Tiny Friendly Giant 3-cylinder in the Koenigsegg Gemera, so Koenigsegg put the engine on ice.

The Aethera is one of the projects Bernini designed for his showreel. It is a concept model he worked on during his six-month term with the automaker. Bernini's design is sleek and sensual. It also shows a coherence that not every low-volume supercar company seems to be able to manage, though some curves, like the outline of the diffuser and the curve of the front bumper, are perhaps a little less traditionally stylish. Whatever your thoughts on the overall aesthetic or individual elements, it's certainly impactful.

Aethera Captures Koenigsegg Design



Koenigsegg Aethera (3)

Bernini's detailing is clearly Koenigsegg, but at the same time, this shape looks different from the models the automaker already sells. [McLaren](#) could take a page from his book.

A bulbous nose with inset headlamps lets air flow from the front bumper high-pressure area through the wheel arches and out the back. The large front splitter should give the car significant downforce. Yet it has the [Koenigsegg double-bubble roofline](#) and a wiper that stays vertical to make sure it doesn't create more drag when the car is moving down the road.

They aren't ajar, but the car looks to feature Koenigsegg's signature [Dihedral Synchro-Helix doors](#), which open, twist, and spin out, in a dance that's much more elegant (and intricate) than any Lamborghini.



Koenigsegg Agera N - Wrap-2

Related

[1-Of-1 Koenigsegg Agera N's Makeover Costs Millions Of Dollars](#)

The one-off hypercar has made a public appearance at the Salon Privé this week

Bare forged carbon panels, scoops, and channels manage airflow. There isn't any simulated wind tunnel data for this concept rendering, but that doesn't matter to us right now. It looks incredibly fast, and if it looks that fast, well, then it has to be. Right?

Of course, there are no plans for production. But we can imagine this car with 2,300 horsepower from Koenigsegg's mix of 5.0-liter V8 and electric motors from the [Gemera](#). The Aethera certainly explores things from a new angle, and that's something Koenigsegg is always happy to consider.



Dodge Charger SRT Daytona

Hardcore gearheads and muscle car enthusiasts might lament the prospect of an all-electric muscle car. But like or loathe it, it is coming in the form of the 2025 Dodge Charger SRT Daytona. The American manufacturer recently took the covers off the new EV, which will be available in two-door and four-door form and will have at least 456 hp.

Performance upgrades are also possible, with 50 hp available, thanks to the Direct Connection Stage 1 upgrade kit. Another feature is the Power Shot, which will boost the power by 40 hp for 15 seconds. It needs a 30-second reset before the Driver can press it again. You can get even more power with the Direct Connection Stage 2 upgrade kit and the Power Shot feature, boosting power levels up to 670 hp and 627 lb-ft of torque.

China's 621 mph maglev train with 5G could tap Hyperloop idea that Elon Musk abandoned

Researchers in China are advancing the development of 1,000 km/h vacuum-tube maglev trains, aiming to address the near-sonic travel challenges by incorporating 5G technology for reliable communication and efficiency.

China is pushing the boundaries of high-speed rail technology with its ambitious development of maglev trains that could revolutionize travel within the country.

Passengers in China could soon stream ultra-high-definition videos or play online games on their smartphones while traveling at 1,000 km/h (621 mph) on high-speed maglev trains.

Currently, the country's high-speed trains operate at 350 km/h (217 mph) and support 5G connectivity, even in long tunnels.

Efficient fix for maglev train base station challenges

While still in development, China's next-generation high-speed trains are designed to exceed the speed of commercial airliners by traveling through near-vacuum tubes using magnetic levitation.

Maintaining communication between phones and base stations at near-sonic speeds is a major challenge. As the train moves, the signal frequency shifts, disrupting the stable high-frequency signals needed for data transfer. Installing base stations in near-vacuum tubes is also tough; if an antenna dislodges due to vibrations, it could endanger the high-speed train.

Researchers from Southeast University, led by Professor Song Tiecheng of the National Key Laboratory of Mobile Communications, have proposed a solution to simplify base station installation by laying two parallel cables along the inner wall of the tube, *the South China Morning Post* [reported](#).

These specialized cables can emit electromagnetic signals, enabling continuous and stable connections between smartphones and mobile networks. Thus, by applying efficient coding techniques and fine-tuning key signal parameters, disruptions from frequency shifts can be minimized. Initial computer simulations confirm that this approach supports stable communication under the 5G standard during data transmission.

World's largest maglev research base in Shanxi begins full-scale propulsion tests

Engineers from the Magnetic Levitation and Electromagnetic Propulsion General Department of China Aerospace Science and Industry Corporation have participated in this research, as the corporation recently launched high-speed propulsion tests on full-scale prototype vehicles at the world's largest vacuum-tube maglev train research base in Datong, Shanxi province.

Many Chinese cities are currently seeking approval from Beijing to construct the first commercial vacuum tube maglev line. This form of ground transport, known as the "hyperloop," was initially proposed by Tesla's CEO [Elon Musk](#).

However, China is now the only country actively advancing this technology after Musk abandoned the project late last year due to technological and financial challenges.

Over the past 15 years, China has invested heavily in [high-speed rail](#) networks, gaining expertise in research, development, engineering, and advanced manufacturing. Experts believe these resources can now be applied to the early-stage development of hyperloop technology, which China has already tested.

Among the options for the hyperloop lines are a Beijing-Shijiazhuang route, aimed at relieving congestion on existing transport routes near the capital, and a Guangzhou-Shenzhen line, connecting two major economic hubs in the Asia-Pacific region and potentially linking them to the world.

The first hyperloop line is expected to be operational by 2035, though significant work on safety, regulations, and infrastructure still needs to be done.

GM expects more than \$5 billion impact from China restructuring, including plant closures

General Motors expects a restructuring of its joint venture operations with

SAIC Motor Corp. in China to cost more than \$5 billion in noncash charges and write-downs.

The restructuring charges for the "SGM" joint venture are anticipated to include "plant closures and portfolio optimization," according to the filing.

GM said most of the costs are expected to be recognized as noncash, special item charges during the fourth quarter. We've known that General Motors business in China has really

DETROIT – General Motors expects a restructuring of its joint venture operations with SAIC Motor Corp. in China to cost more than \$5 billion in noncash charges and write-downs, the Detroit automaker [disclosed in a federal filing](#) Wednesday morning.

GM said it expects to write down the value of its joint-venture operations in China by between \$2.6 billion and \$2.9 billion. It also anticipates another \$2.7 billion in charges to restructure the business, including "plant closures and portfolio optimization," according to the filing.

GM, which previously announced plans to [restructure the operations](#) in China, did not disclose any additional details about the expected closures.

"As we have consistently said, we are focused on capital efficiency and cost discipline and have been working with SGM to turn around the business in China in order to be sustainable and profitable in the market. We are close to finalizing our restructuring plan with our partner, and we expect our results in China in 2025 to show year-over-year improvement," GM said in an emailed statement.

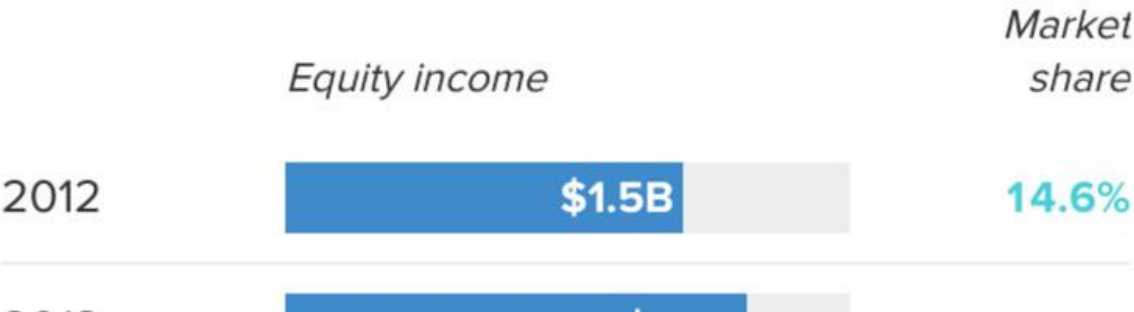
GM said it believes the joint venture "has the ability to restructure without new cash investments" from the American automaker.

A majority of the restructuring costs is expected to be recognized as noncash, special item charges during the fourth quarter. That means they will impact the

automaker's net income, but not its adjusted earnings before interest and taxes – a key metric monitored by Wall Street.

General Motors China

Annual equity income and market share



GM expects more than \$5 billion impact from China restructuring, including plant closures© Provided by CNBC

GM CFO Paul Jacobson during a UBS conference Wednesday said the companies are "very close to finalizing everything" regarding the China restructuring. He said GM expects the actions to make the operations "profitable on a smaller scale" by next year without investing incremental capital.

GM's operations in China have shifted [from a profit engine to a liability](#) in the past decade as competition grows from government-backed domestic automakers fueled by nationalism, and as a [generational shift in consumer perceptions](#) of the automotive industry and electric vehicles takes hold.

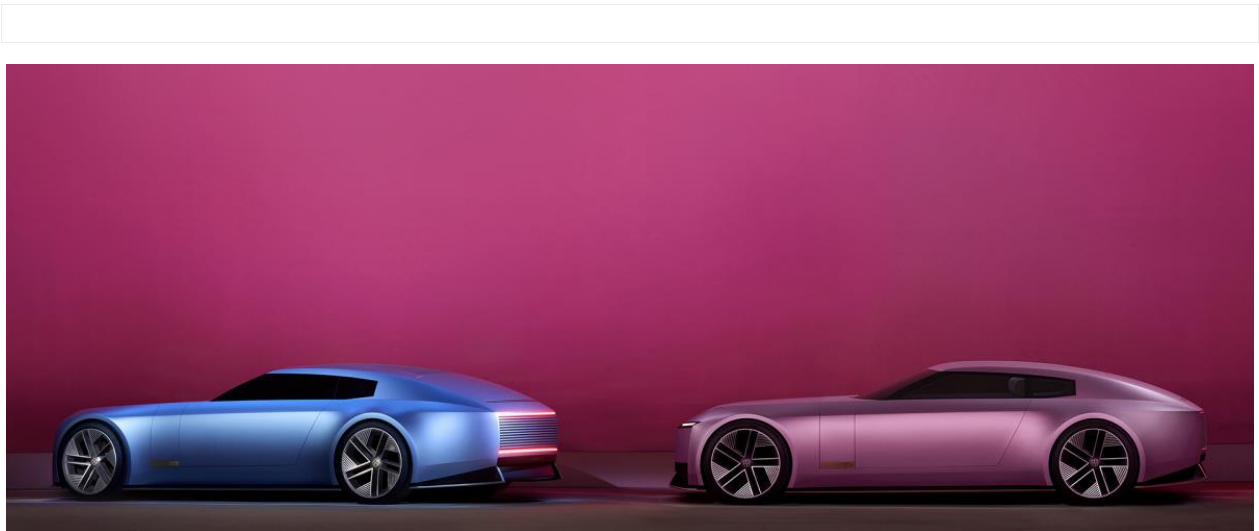
Equity income from GM's Chinese operations and joint ventures peaked at more than \$2 billion in 2014 and 2015.

GM's market share in China, including its joint ventures, has plummeted from roughly 15% as recently as 2015 to 8.6% last year — the first time it has dropped below 9% since 2003. GM's equity income from the operations has also fallen, down 78.5% since peaking in 2014, according to regulatory filings.

GM's U.S.-based brands such as Buick and Chevrolet have seen sales drop more than its joint venture sales with SAIC Motor, Wuling Motors and others. The joint venture models accounted for about 60% of its 2.1 million vehicles sold last year in China.

Before this year, the only quarterly losses for GM in China since 2009 were a \$167 million shortfall during the first quarter of 2020 due to the coronavirus pandemic and an \$87 million loss during the second quarter of 2022.

The Detroit automaker has reported [three consecutive quarterly losses](#) in equity income for its Chinese operations this year, totaling \$347 million. That includes a loss of \$137 million during the third quarter.



Jaguar Unveils 'Type 00' Concept Car Amid Controversial 'Woke' Rebrand

Jaguar unveiled its new electric concept car, the Type 00, at Miami Art Week on Monday night (02December2024) following a controversial rebrand critics branded as “woke”. Traditionalist fans of Jaguar cars were left shocked last month when the carmaker announced a dramatic rebrand with a video featuring a diverse group of fashion models - but no cars. Now the new car, the Type 00, has arrived, marking a dramatic step in its transition to becoming an electric-only brand by 2026. Jaguar’s Chief Creative Officer Gerry McGovern described the Type 00 as a fearless statement of intent, designed to “stir emotions,” and added that the brand has no desire to appeal to everyone. The Type 00, which will not go into production but serve as an indicator of future designs that will, showcases Jaguar's

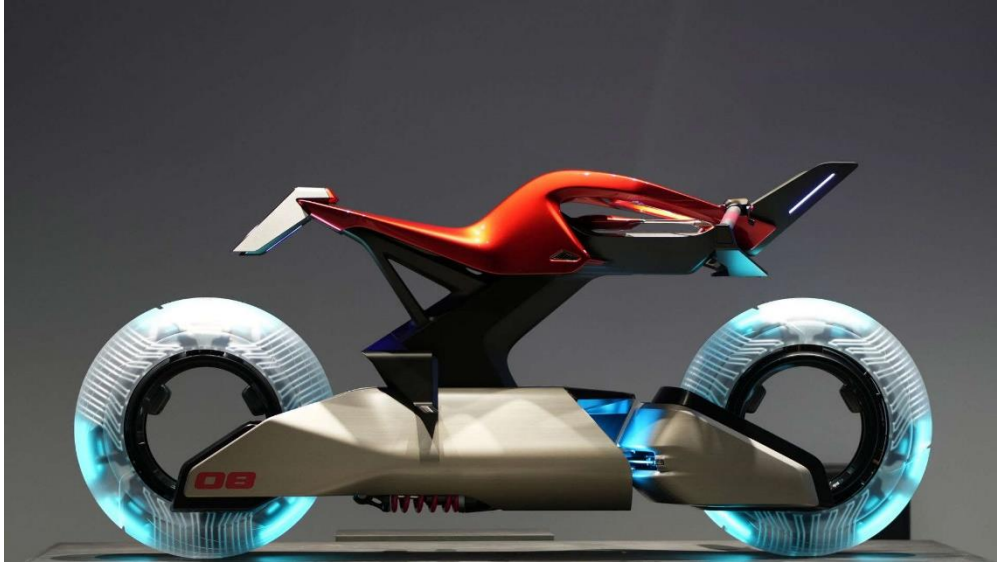
vision for future designs with a sleek silhouette, long bonnet, fastback profile, and dramatic 23-inch alloy wheels. The car's unveiling in Miami highlighted two striking colour options: "Miami Pink," inspired by the city's Art Deco architecture, and "London Blue," a nod to Jaguar's British roots. The car is the first physical expression of Jaguar's new creative philosophy, dubbed "Exuberant Modernism," which aims to combine fearless innovation with modernist simplicity. Motoring and design experts are divided on the daring rebrand, with some commending Jaguar's reinvention, but sceptics have questioned the risk of discarding the brand's heritage in pursuit of a futuristic image. Meanwhile, politicians have even weighed in, with Reform UK leader Nigel Farage saying the company "deserves to go bust" after the rebrand. However, Jaguar Managing Director Rawdon Glover has defended the move, saying: "We have forged a fearlessly creative new character for Jaguar that is true to the DNA of the brand but future facing, relevant and one that really stands out." The Type 00 concept hints at Jaguar's upcoming production models, expected to start at over £100,000 and offering ranges of up to 478 miles on a single charge. Adrian Mardell, JLR's Chief Executive Officer, sees the transformation as a recapturing of Jaguar's original ethos of "Copy Nothing," aiming to reignite the awe inspired by models like the E-Type in the 1960s. He said: "The magic of Jaguar is close to my heart – an original British luxury brand unmatched in its heritage, artistry and emotional magnetism. That's the Jaguar we are recapturing and we will create the same sense of awe that surrounded iconic models like the E-type. Our journey is already underway, guided by our original ethos to Copy Nothing – and the results will be spectacular." The first of the new generation, a four-door electric GT, is set to be unveiled in 2025 and built in the UK, using the bespoke Jaguar Electric Architecture (JEA). Inside, the Type 00 combines artistic luxury with advanced technology, featuring travertine stone, handwoven textiles, and brass accents, alongside deployable digital displays. A unique "Prism case" allows occupants to customise the cabin's ambience, altering lighting, soundscapes, and even bespoke scents through interchangeable totems made of natural materials. The design prioritises subtle, user-friendly technology over dominating screens, ensuring a refined and immersive sensory experience. Jaguar also plans to introduce exclusive brand stores, with the first opening in Paris, blending immersive luxury with local culture. There is no doubt the launch of Type 00 is a gamble given its departure from the existing associations of the Jaguar brand - like its most famous fictional fan, Inspector Morse. However, with sales declining in recent years and the competitive EV market growing, it is one Jaguar may have to take. Whether it pays off remains to be seen, but the Type 00 undeniably signals a daring new chapter for the storied marque.



Glowing tires, hidden engine: Yamaha's new superbike is straight out of sci-fi movie

Design of the Y/AI concept superbike

The Y/AI concept bike is as futuristic as its name suggests. Its design features spokeless, semi-transparent wheels that emit a striking blue light as the rider cruises through the streets. The motorcycle's most impressive feature is its engine, which is hidden in the attached bridge that connects the two wheels, adding a sleek, minimalist aesthetic. The Y/AI isn't just for Tokyo Override—it has been fully realized as a full-scale concept model, showcasing the future potential of motorcycle design.



The role of the Y/AI in 'Tokyo Override'

Tokyo Override is set in a futuristic version of Tokyo, 100 years from now, where artificial intelligence (AI) is fully integrated into everyday life. In this automated world, the Y/AI superbike plays a key role. As the main bike in the series, it zips around the futuristic city, blending style and performance. Its design represents a vision of what motorcycles might look like in the near future.



Future of motorcycle design: A glimpse into tomorrow

The Y/AI serves as a preview of future Yamaha motorcycles. Its geometric, minimalistic body, two front forks, and sharply dropped tail offer a glimpse into next-generation motorcycle design. This radical look, with its aggressive yet sleek appearance, is what the future of motorcycling could hold. The handlebars, uniquely placed on the sides of the front forks and connected by an arch, further enhance the bike's futuristic appeal.



Innovative features of the Y/AI superbike

One of the standout features of the Y/AI is its spokeless, semi-transparent wheels and glowing tires. These wheels not only offer a striking visual, but they also glow with blue light as the bike speeds along. This adds a touch of science fiction to the design, making the Y/AI look like something straight out of a futuristic world. The lack of visible engine components contributes to its minimalist, sleek design, which could influence future models of motorcycles.



The technological inspiration behind the Y/AI

As technology continues to evolve, the manufacturing of AI-inspired superbikes like the Y/AI is becoming more feasible. Yamaha's use of cutting-edge design and engineering, combined with advances in AI, shows that concepts like the Y/AI might soon become reality. These innovations suggest that the days of fantasy motorcycles could be numbered, as technology brings us closer to bringing these concepts to life.



Yamaha's continued involvement in 'Tokyo Override'

Yamaha's contribution to Tokyo Override goes beyond the design of the Y/AI superbike. The company also played a role in shaping the futuristic world of the anime. Yamaha assisted in building the 100-year-from-now utopia featured in the series and provided supervision for the sound effects, ensuring

that the sound of the superbikes was as accurate as possible. Fans of the series can experience Yamaha's contributions firsthand when they watch Tokyo Override.



Premiere of the Y/AI at Motor Expo 2024

In addition to its role in Tokyo Override, Yamaha has brought the Y/AI concept superbike to life in the real world. The full-scale model premiered at the Motor Expo 2024 in Bangkok, Thailand. The expo, running from November 29 to December 10, 2024, offers visitors a chance to see the futuristic design up close and imagine what the next generation of motorcycles might look like.

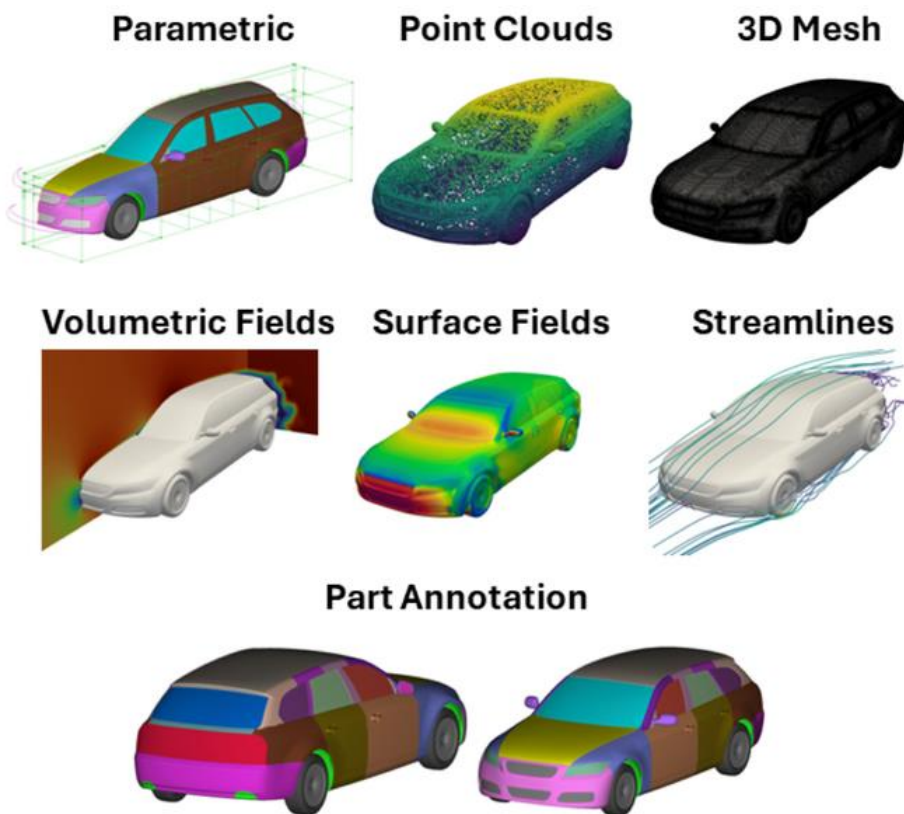
Experience the Y/AI in 'Tokyo Override'

The highly anticipated anime series Tokyo Override premiered on Netflix on November 21, 2024. Viewers can see the Y/AI in action as it races through the futuristic city of Tokyo. Alongside the Y/AI, the YZF-R1 and VMAX models also make appearances in the series.



Want to design the car of the future? Here are 8,000 designs to get you started.

MIT engineers developed the largest open-source dataset of car designs, including their aerodynamics, that could speed design of eco-friendly cars and electric vehicles.



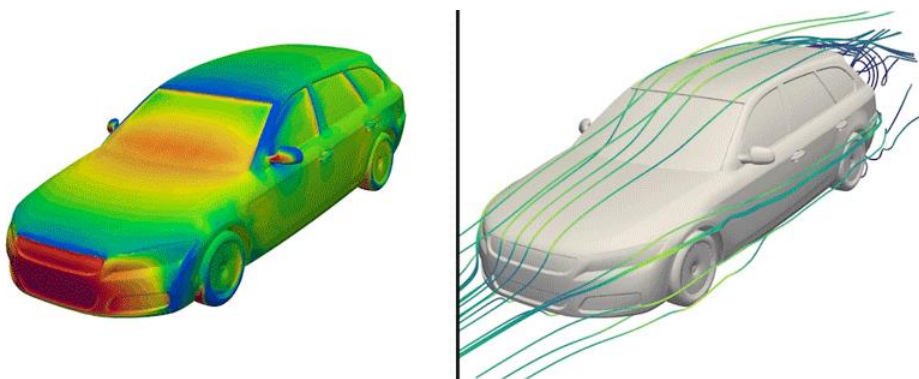
Caption:

Each of the dataset's 8,000 3D car designs is available in several representations, such as parametric, point clouds, 3D mesh, volumetric fields, surface fields, streamlines, and part annotation. As such, the dataset can be used by different AI models that are tuned to process data in a particular modality.

Car design is an iterative and proprietary process. Carmakers can spend several years on the design phase for a car, tweaking 3D forms in simulations before building out the most promising designs for physical testing. The details and specs of these tests, including the aerodynamics of a given car design, are typically not made public. Significant advances in performance, such as in fuel efficiency or electric vehicle range, can therefore be slow and siloed from company to company.

MIT engineers say that the search for better car designs can speed up exponentially with the use of generative artificial intelligence tools that can plow through huge amounts of data in seconds and find connections to generate a novel design. While such AI tools exist, the data they would need to learn from have not been available, at least in any sort of accessible, centralized form.

But now, the engineers have made just such a dataset available to the public for the first time. Dubbed DrivAerNet++, the dataset encompasses more than 8,000 car designs, which the engineers generated based on the most common types of cars in the world today. Each design is represented in 3D form and includes information on the car's aerodynamics — the way air would flow around a given design, based on simulations of fluid dynamics that the group carried out for each design.



In a new dataset that includes more than 8,000 car designs, MIT engineers simulate the aerodynamics for a given car shape, which they represent in various modalities, including “surface fields” (left) and “streamlines” (right).

Credit: Courtesy of Mohamed Elrefaie

Each of the dataset’s 8,000 designs is available in several representations, such as mesh, point cloud, or a simple list of the design’s parameters and dimensions. As such, the dataset can be used by different AI models that are tuned to process data in a particular modality.

DrivAerNet++ is the largest open-source dataset for car aerodynamics that has been developed to date. The engineers envision it being used as an extensive library of realistic car designs, with detailed aerodynamics data that can be used to quickly train any AI model. These models can then just as quickly generate novel designs that could potentially lead to more fuel-efficient cars and electric vehicles with longer range, in a fraction of the time that it takes the automotive industry today.

“This dataset lays the foundation for the next generation of AI applications in engineering, promoting efficient design processes, cutting R&D costs, and driving advancements toward a more sustainable automotive future,” says Mohamed Elrefaie, a mechanical engineering graduate student at MIT.

Elrefaie and his colleagues will present a paper detailing the new dataset, and AI methods that could be applied to it, at the NeurIPS conference in December. His co-authors are Faez Ahmed, assistant professor of mechanical engineering at MIT, along with Angela Dai, associate professor of computer

science at the Technical University of Munich, and Florin Marar of BETA CAE Systems.

Ahmed leads the Design Computation and Digital Engineering Lab (DeCoDE) at MIT, where his group explores ways in which AI and machine-learning tools can be used to enhance the design of complex engineering systems and products, including car technology.

“Often when designing a car, the forward process is so expensive that manufacturers can only tweak a car a little bit from one version to the next,” Ahmed says. “But if you have larger datasets where you know the performance of each design, now you can train machine-learning models to iterate fast so you are more likely to get a better design.”

And speed, particularly for advancing car technology, is particularly pressing now.

“This is the best time for accelerating car innovations, as automobiles are one of the largest polluters in the world, and the faster we can shave off that contribution, the more we can help the climate,” Elrefaie says.

In looking at the process of new car design, the researchers found that, while there are AI models that could crank through many car designs to generate optimal designs, the car data that is actually available is limited. Some researchers had previously assembled small datasets of simulated car designs, while car manufacturers rarely release the specs of the actual designs they explore, test, and ultimately manufacture.

The team sought to fill the data gap, particularly with respect to a car’s aerodynamics, which plays a key role in setting the range of an electric

vehicle, and the fuel efficiency of an internal combustion engine. The challenge, they realized, was in assembling a dataset of thousands of car designs, each of which is physically accurate in their function and form, without the benefit of physically testing and measuring their performance.

To build a dataset of car designs with physically accurate representations of their aerodynamics, the researchers started with several baseline 3D models that were provided by Audi and BMW in 2014. These models represent three major categories of passenger cars: fastback (sedans with a sloped back end), notchback (sedans or coupes with a slight dip in their rear profile) and estateback (such as station wagons with more blunt, flat backs). The baseline models are thought to bridge the gap between simple designs and more complicated proprietary designs, and have been used by other groups as a starting point for exploring new car designs.

Library of cars

In their new study, the team applied a morphing operation to each of the baseline car models. This operation systematically made a slight change to each of 26 parameters in a given car design, such as its length, underbody features, windshield slope, and wheel tread, which it then labeled as a distinct car design, which was then added to the growing dataset. Meanwhile, the team ran an optimization algorithm to ensure that each new design was indeed distinct, and not a copy of an already-generated design. They then translated each 3D design into different modalities, such that a given design can be represented as a mesh, a point cloud, or a list of dimensions and specs.

The researchers also ran complex, computational fluid dynamics simulations to calculate how air would flow around each generated car design. In the end, this effort produced more than 8,000 distinct, physically accurate 3D car

forms, encompassing the most common types of passenger cars on the road today.

To produce this comprehensive dataset, the researchers spent over 3 million CPU hours using the MIT SuperCloud, and generated 39 terabytes of data. (For comparison, it's estimated that the entire printed collection of the Library of Congress would amount to about 10 terabytes of data.)

The engineers say that researchers can now use the dataset to train a particular AI model. For instance, an AI model could be trained on a part of the dataset to learn car configurations that have certain desirable aerodynamics. Within seconds, the model could then generate a new car design with optimized aerodynamics, based on what it has learned from the dataset's thousands of physically accurate designs.

The researchers say the dataset could also be used for the inverse goal. For instance, after training an AI model on the dataset, designers could feed the model a specific car design and have it quickly estimate the design's aerodynamics, which can then be used to compute the car's potential fuel efficiency or electric range — all without carrying out expensive building and testing of a physical car.

“What this dataset allows you to do is train generative AI models to do things in seconds rather than hours,” Ahmed says. “These models can help lower fuel consumption for internal combustion vehicles and increase the range of electric cars — ultimately paving the way for more sustainable, environmentally friendly vehicles.”

This work was supported, in part, by the German Academic Exchange Service and the Department of Mechanical Engineering at MIT.

MIT engineers want to use AI to streamline the future of car design

If you had asked me what I wanted to be when I was growing up, I would have told you that I wanted to be a Formula 1 race car driver, a Lamborghini test driver, or even an airline pilot. I was obsessed with cars or anything cool that had to do with speed.

Another job on my dream list includes car designer, although I never had the art skills to pursue that path.

I could only dream of my name being revered like Giorgetto Giugiaro, Henrik Fisker (yes, that Fisker), Ian Callum, or my personal favorite: Marcello Gandini, the guy behind the striking lines of Lamborghini's Miura and Countach.

Ultimately, my way around pencils, pastels, and paintbrushes would dissuade me from pursuing anything remotely artistic. Unfortunately, like how it has affected most traditional and digital artists, the threat of AI is also reaching car design, and MIT engineers are behind it all.

Virtual insanity

In a news release, engineers at MIT [announced that AI could help streamline the car design process](#) and make cars more efficient by eliminating designers, clay models, and wind tunnels and letting AI do the heavy lifting.

AI tools that help design aerodynamic cars from scratch with aerodynamics in mind already exist. However, the data it requires to run has been either closely guarded by private companies or is next to impossible to find.

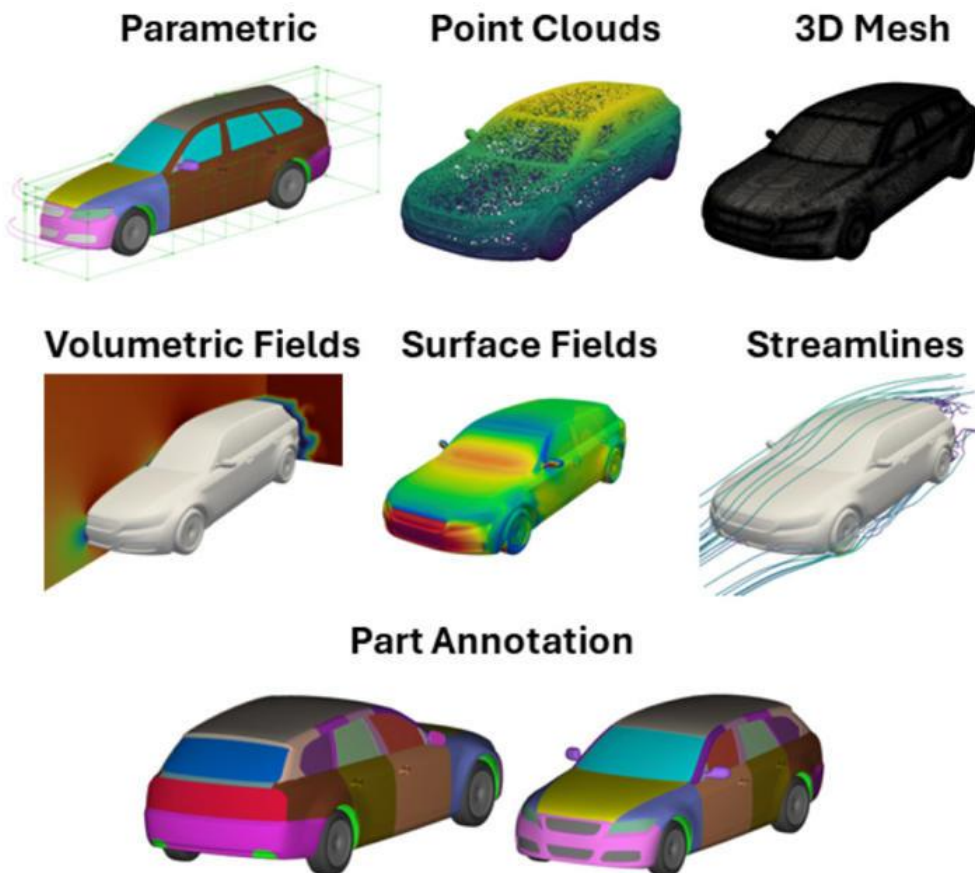
MIT's solution was to create a dataset, essentially a big, organized folder with lots of data in it. Dubbed *DrivAerNet++*, this dataset boasts over 8,000 3D car designs, each paired with simulation-based aerodynamic data. Think of it as a

library full of car designs where each “book” contains data for a car that exposes how aerodynamic or not they are.

MIT engineers started compiling this data in 2014 from a few baseline 3D models provided by Audi and BMW.

These models were divided into three categories: fastback, notchback, and estate back (wagons). With these baseline files, the team made changes to 26 different parameters around the car — adjusting their lengths, mixing up different parts in the underbody, and adjusting the slope of the windshield. They saved each variation as a new design until they had 8,000 unique designs.

The MIT engineers shared examples that look like station wagons, like the BMW 3 Series Touring or the Audi A4 Avant, while other models look like a hodgepodge of different BMW and Audi design features.



Each of the dataset’s 8,000 3D car designs is available in several representations, such as parametric, point clouds, 3D mesh, volumetric fields, surface fields, streamlines, and part annotation. As such, the dataset can be used by different AI models that are tuned to process data in a particular modality. Mohamed Elrefaie/MIT© Mohamed Elrefaie/MIT

The end-all, be-all of the MIT engineers is that this dataset will be used to teach AI how to design cars, which would cut out a significant expense for many automakers. Last month, General Motors laid off 1,000 workers, most of whom worked at the GM Tech Center, one of GM's Research and Development centers in Warren, Michigan.

"This dataset lays the foundation for the next generation of AI applications in engineering, promoting efficient design processes, cutting R&D costs, and driving advancements toward a more sustainable automotive future," says Mohamed Elrefaie, a mechanical engineering graduate student at MIT.

Additionally, MIT Assistant Professor of Mechanical Engineering Faez Ahmed noted that with AI, automakers could do away with making small tweaks and significant redesigns more frequently without spending millions on R&D expenses like physical prototypes or agonizing over wind tunnel tests.

"Often when designing a car, the forward process is so expensive that manufacturers can only tweak a car a little bit from one version to the next," Ahmed said. "But if you have larger datasets where you know the performance of each design, now you can train machine-learning models to iterate fast so you are more likely to get a better design."

Where will all the human-designed cars go?

However, for all the "efficiency" this promises automakers, the AI-driven revolution does trigger some doubts and questions.

First, will automakers teach AI to design a car for actual people?

I am no Giugiaro, but car design isn't just about making designs that cheat the air; it's a puzzle that makes something beautiful using limited parameters.

If everyone's goals are the same, will we end up with roads, highways, and parking lots full of blobish cookie-cutter cars that are indistinguishable except for the badges on the grille? The real danger exists in an industry that is losing meaning.

Additionally, there are other human-made factors to consider, like crash safety regulations and adapting designs for tooling or to fit on a physical production line, as well as additional expenses that can make or break the next “breakthrough” in car design.

Then there’s the enthusiast angle. Car fanatics love the quirks and features of today’s cars, which could be lost to AI in the future if this dataset has any legs. Imagine this model-year Honda Civic or Ford Mustang being a collector’s item in the future because it’s a “pre-AI” model.

There is no doubt that AI software can help bring new cars to market faster and cheaper, make them more fuel efficient, or extend their range, but for many, cars are more than aerodynamic shapes.

This whole AI design debacle reminds me of another lesson. When my teacher taught me how to use a calculator, I was told that although they can add or subtract for you, they are only useful if you know how to do the math behind them; they will only do some things for you.

In the case of car design, designers and auto executives might want to treat AI like a calculator: it is only as smart as the person using it.

2025 Bentley Continental GT Speed First Test: A Massively Powerful Beast and Sedate EV Tourer

Electrifying the Continental helps make it the most powerful Bentley ever, but it's also a fancy EV when you want it to be.



2025 Bentley Continental GT Speed First Test: A Massively Powerful Beast and Sedate EV Tourer

Pros

1. Wicked Quick
2. Easy EV operation
3. Gorgeous inside and out

Cons

1. Tires give up at upper limits
2. Dual-clutch shift strangeness
3. Some wonky driver aids

We're trundling along in EV mode, minding our own business, when traffic clears and the road ahead finally opens. Dial turned to Sport, the twin-turbo V-8 burbles to life, its 591 horsepower ready for battle. Foot to the floor, the EV gauge swings wildly as the electric motor aids the proceedings, and all 771 horses are summoned. Whoa. Hold on. Because when the motor and engine combine to activate in the [2025 Bentley Continental GT Speed](#), prepare thyself for speed from this steed.

Such is the dichotomy of experience behind the wheel of the latest Continental GT—the most powerful production Bentley ever produced. The GT's 4.0-liter twin-turbo V-8 conspires with a 188-hp, 332-lb-ft permanent-magnet electric motor situated inside the housing of its eight-speed dual-clutch transmission to produce that 771 total horsepower and 738 lb-ft of torque all in. But when you want, you can skulk about on EV power alone, and in fact, it's what the car would rather you do.

The 25.9-kWh (usable) battery pack and associated electronics located in the boot (that's English, er English, for trunk) helps balance the 2025 Bentley Continental GT's hefty 5,406 pounds to a 49/51 percent front-rear weight distribution. Fully charged, we saw 47 miles of all-electric range on the readout; the EPA rates it for 50. It's more than enough to get you to and from most daily dalliances, and like many plug-in hybrids, you can use electric power alone at speeds of up to roughly 87 mph. That is, if you don't hit the accelerator pedal too hard, because when you do, the engine will fire to aid in power delivery.



025 2025 Bentley Continental GT © Mike Floyd, Renz Dimaandal

Big GT Goes Fast, Stops Hard

With that kind of power, old chap, how quickly does this big-boned, British-branded coupe move out when we released the hounds at the test track? We were able to hustle the all-wheel-drive (it also benefits from an electronic limited-slip differential) 2025 Bentley Continental GT Speed to a 60-mph time of just 2.8 seconds, on to a 10.8-second quarter mile at 130.7 mph. A decade or so ago, that would have been supercar territory. Today, it's still right in the mix, especially so for a car in its weight class. For some perspective, that's 0.5 second quicker than a roughly 400-pound lighter, [W-12 equipped GT coupe we tested in 2019](#) and an even lighter V-8 model we tested later in the same year.

Thanks in part to its weight distribution and this car's massive 17.3-inch carbon-ceramic brakes (an \$18,820 option) with 10-piston front calipers, we experienced very little brake dive during our panic-attack stops from 60 mph, with a best of just 100 feet. (The nose-heavier W-12 and V-8 took 105 and 103 feet.) Again, that's borderline exceptional for this type of car, one that isn't billed as a numbers-generating machine. Out in the wild, we found the braking system, which helps deliver regen energy into the battery, to be strong and easily modulated for the most part.



003 2025 Bentley Continental GT Interior Dash© Mike Floyd,Renz Dimaandal

Limit Handling Is Limited

In a straight line, the new Continental GT Speed went like proper mad and stopped equally hard, but things fell apart a bit when we put it through our at-the-limit handling exercises. While the end numbers weren't anything to shake a stiff upper lip at, they fell short of the last two GTs for the most part, with the W-12 crushing it on the skidpad (0.99 vs. 0.90 g average) and outclassing it on our *MotorTrend* figure eight (23.8 seconds at 0.85 g average vs. 24.5 seconds at 0.84 g).

What gives? The tires, for one, as in giving up and crying for mercy every time we tried to reach for the stars. Given the new Conti GT Speed's electrified mission, it's fitted with a set of ELECT-branded Pirellis shod on its 22-inch rims; they're aimed slightly more toward improving electric range and keeping tire noise down than they are at outright performance, a compromise that likely hampered the car's handling limits.

There always seemed to be some sort of stability control still working in the background despite it being switched off. We also experienced some inconsistent shift behavior from the car's eight-speed twin-clutch gearbox, which is a carryover unit; it's a behavior not in keeping with what we've previously observed.

(Perhaps the electric motor needs better integration?) It all added up to an experience that frustrated us somewhat. This despite its improved weight distribution, updated bushings front and rear, a new semi-active suspension damper system, as well as the 48-volt variable anti-roll bars, four-wheel steering, torque vectoring, and eLSD systems. [We did previously get a taste of a prototype version of the Continental GT Speed on a wet track in Spain](#), however, and found it to be a more than adequate dance partner during our short time with the car.



018 2025 Bentley Continental GT © Mike Floyd, Renz Dimaandal

Touring About

All this talk of track-attacking and inconsistent 10/10ths behavior likely means little to most prospective buyers of a car like this, short of bragging rights. They are far more likely to do what we did at times: Turn the dial to Comfort, let those newly updated dampers pamper you, and roll around town in silent EV mode operation. If you have any charge in the battery, it defaults to EV operation in its (B)entley mode; you can only access the engine directly by switching to Sport. A neat feature we experienced is when the battery is fully depleted, the engine operation, along with regenerative braking, will help add juice.

We spent several days driving the Continental GT in Los Angeles, which will be one of its natural habitats, traversing surface streets, hustling and halting on

freeways, and stretching it out on a challenging road or two. It handled everything we threw at it with ease, though we have a few caveats.

At least on a tight, twisty two-lane route like one of the Malibu canyon roads we hustled it over, this isn't necessarily a car that shrinks around you, though it was tuned to handle it. Yes, it corners and tracks well with direct steering (on the lighter side of the spectrum) and doesn't waft or wallow, but it just feels big. Because it is. Although its 112.2-inch wheelbase is the same as the outgoing car, it's close to 2.0 inches longer and roughly 0.5 inch wider. This car is at its best on wide-open expanses of pavement where you can really get your grand tour on, or along, say, Sunset Boulevard, where battery-powered rolling and posing in a car this stunning is typically what it's going to be about—now and in the future.

One other small callout was with the 2025 Bentley Continental GT's updated suite of driver assist tech, which like most of its underpinnings is Volkswagen Group-derived (primarily from Porsche) and Bentley-massaged. While we found its adaptive cruise with the start-from-a-stop feature worked well, the lane keep assist didn't do that great of a job assisting, as it tended to wander in the lane, and it misread a couple of pavement line markers.



009 2025 Bentley Continental GT © Mike Floyd, Renz Dimaandal

Flying the Winged B Flag

Since its debut back in 2003 when it woke up the world to what a Bentley in the modern era could be, the Continental GT has stood for elegant touring, and this car only elevates that aesthetic. The First Edition model we tested, sprayed in a gorgeous Kingfisher blue hue, with its more [aggressive fascia highlighted by the new, single “tiger”-style light banks](#), still gets looks. We had a small motorcycle gang of young toughs roll by us on the Pacific Coast Highway with thumbs firmly up. It just exudes luxury, oozes style.

Inside, while much the same as the car it replaces, the metal organ pulls, swathes of quilted leather, diamond-pattern metal accents, and the First Edition trim that carries the Kingfisher theme into the cabin still impresses. However, we wouldn't be disappointed if Bentley reorganized all those buttons surrounding the gearshift. Its digital infotainment also remains one of the easier and least frustrating to operate in this car's price stratosphere. And while we didn't exactly find it bank-vault quiet at highway speeds, around town in EV mode, it's simply divine, with the requisite super-high-end Naim sound system for the First Edition model.

In the end, Bentley achieved what it needed to—and more—to usher its 2025 Continental GT into the electrified era. It delivers power and performance to brag about and enjoy while continuing to refine and otherwise puff up its mission as a grand tourer designed announce itself wherever someone who can afford a car that starts at \$300,000 roams—silently or otherwise.



027 2025 Bentley Continental GT © Mike Floyd, Renz Dimaandal

2025 Bentley Continental GT Speed Specifications

BASE PRICE	\$305,250
PRICE AS TESTED	\$391,175
VEHICLE LAYOUT	Front-engine/motor, AWD, 4-pass, 2-door coupe
ENGINE/MOTOR	4.0L twin-turbo direct-injected DOHC 32-valve 90-degree V-8, plus permanent-magnet elec
POWER (SAE NET)	591 hp @ 6,000 rpm (gas), 188 hp (elec); 771 hp (comb)
TORQUE (SAE NET)	590 lb-ft @ 2,000 rpm (gas), 332 lb-ft (elec); 738 lb-ft (comb)
TRANSMISSION	8-speed twin-clutch auto
CURB WEIGHT (F/R DIST)	5,406 lb (49/51%)
WHEELBASE	112.2 in
LENGTH x WIDTH x HEIGHT	192.7 x 77.4 x 55.0 in
0-60 MPH	2.8 sec
QUARTER MILE	10.8 sec @ 130.7 mph
BRAKING, 60-0 MPH	100 ft
LATERAL ACCELERATION	0.90 g (avg)
MT FIGURE EIGHT	24.5 sec @ 0.84 g (avg)
EPA CITY/HWY/COMB FUEL ECON	Not yet tested
EPA RANGE, COMB	50 miles (elec), 534 miles (gas+elec, mfr est)
ON SALE	Now

How We'd Spec It: 2025 Bentley Flying Spur in Classy Colors



We just drove the new plug-in-hybrid Flying Spur for the first time, so we played pretend and designed our own on Bentley's configurator. © Bentley

While the 2025 [Bentley Flying Spur](#) looks essentially the same from the outside, it hides a significant upgrade under the hood. The old W-12 engine has been swapped out for a twin-turbocharged 4.0-liter V-8 hooked up to an electric motor for a total of 771 horsepower and 738 pound-feet of torque. We just drove the 2025 Flying Spur Speed for the first time and found the new powertrain to be an excellent blend of performance when you need it and smooth, silent electric operation when you want it. Driving the new Flying Spur had us daydreaming about owning one, so we fired up the [online configurator](#) and built our own grandiose machines.

Drew Dorian's Camel Bentley Flying Spur Mulliner

I just had the pleasure of spending time with the Flying Spur Speed on a first-drive event in Arizona, and let me tell you, this car does a great job of convincing you it's worth its six-figure price tag. It's quick, relatively nimble, and insanely luxurious. It's like a rolling day spa, especially if you use its massaging seats.

As good as the Speed is, I'd go for the even more expensive and even more customizable Mulliner trim. Why? Well, to be honest, it's because I like the wheel design and diamond-patterned grille. Is that worth the \$21,800 upgrade over the Speed? I dunno, probably not. But we're talking hypotheticals, right? I imagine the Flying Spur's actual clientele can afford to make such a frivolous decision, so in this dream-the-impossible-dream world so can I.

I'd paint my Spur in this lovely Camel color, and I'd choose a two-tone leather interior with Saddle as the main color for the seats and the secondary color in Cumbrian Green. I'd also opt to cover the headliner in Cumbrian Green to keep things looking correct. Of all the Spur's wood trims, the crown-cut walnut is my favorite, and I'd have Bentley put that chrome pinstripe in and also add the wood panels to the rear doors. And while they're at it, I'll have the rear seatback tables in the same wood, please and thank you. The chrome interior trim? I'd like that to have the diamond knurling pattern. And instead of Mulliner embroidered logos on the seats I'd prefer the Bentley logo instead. Bentley's cars are super customizable, so if you don't like my suggestions here, go build one for yourself.

—[Drew Dorian](#)

Caleb Miller's Verdant and White Sand Bentley Flying Spur Mulliner

Like Drew, I'm a big fan of the diamond pattern in the Flying Spur Mulliner's grille, and while the sedan's new 771-hp plug-in-hybrid powertrain is incredibly potent, driving a Bentley is not all about speed. Instead, buying a Bentley is all about customization, so I skipped the Speed model and chose the Mulliner variant, starting at \$298,250.

My Flying Spur wears two-tone paint, with a White Sand upper section over a Verdant lower one. Since the two-tone option exudes the high-end look expected of a car wearing the Flying B hood ornament, I paired the green-and-white paint with 22-inch wheels with black-painted spokes.

Inside, I had the seats, steering wheel, and headliner upholstered in a deep red hue called Cricket Ball, with the rest of the leather in Imperial Blue for a distinguished but eye-catching appearance. I went for a classy split-veneer finish for the dashboard, with a dark stained burr walnut over gloss black, and had Bentley extend the wood finish to the rear doors and the fold-down picnic tables. Lastly, I swapped out the Mulliner embroidering on the seatbacks for the iconic Bentley logo. While there are a lot of colors in play with my Flying Spur build, they combine for a sophisticated aura. —[Caleb Miller](#)

Jack Fitzgerald's Orange Flame Bentley Flying Spur Speed

Configuring a Bentley is an exercise in choice paralysis. From the jump, Bentley inundates you with endless paint options. Do I want Black Sapphire? What about Dark Sapphire? Oh wait, there's also Light Sapphire and Light Sapphire Satin. In the end, I opted for Orange Flame, which I think does a good job expressing the Flying Spur Speed's athleticism without drawing too much attention.

Possibly an unpopular opinion, but I'm not impressed by Bentley's wheel options for the Flying Spur. I've been over the black-wheel fad for a few years now, and the configurator's silver options are sorely lacking. Nevertheless, I opted for the generic 22-inch Speed wheels in silver.

Unfortunately, choosing an orange exterior makes selecting an appropriate interior quite a bit more difficult. I ultimately landed on the slate-colored Imperial Blue leather for my seats, with the slightly lighter blue Brunel leather accenting. For the doors, dashboard, and full-length center console, I selected the open-pore Koa wood, which I think does a good job of complimenting the orange exterior while bringing some warmth to the cabin. The rest of my build adds a

leather headliner, wellness seating, animated welcome lamps, a heated windshield, and the Naim sound system. —[Jack Fitzgerald](#)

Eric Stafford's Grey Violet Bentley Flying Spur Mulliner

The Bentley Flying Spur is the epitome of *old money*. While I'm the epitome of *no money*, dreams are priceless, and I'm going to use all of them to spec my ideal Flying Spur. What's that, you say? It's no longer offered with a glorious W-12 engine but rather a newfangled plug-in-hybrid setup? Well, it's a good thing this is only a fantasy, because if I actually had upward of \$300,000 to spend on capitalism personified as a sedan, I'd go for the [Rolls-Royce Ghost](#), which thankfully still has a 12-cylinder pulse.

Forced into the Flying Spur, I'd go for the much ritzier—and more customizable—Mulliner model. Give that to me in the delicious Grey Violet paint with the Mulliner Blackline treatment. It tacks on a light-up hood ornament and turns the gaudy chrome trim black. All-black wheels on a car like this scream "I have money but not style," so I'd opt for the black-and-polished 22-inch set.

Inside, I'd get nostalgic with a PB&J-inspired space. That's right. I'm mixing the peanutty Newmarket Tan with the purplish Damson as my primary and secondary upholstery colors. Imagine ordering piano black trim on a car this elegant—eww is right. I'd spec the considerably more tasteful open-pore Koa wood, make the headliner Damson to match the surrounding surfaces, and get diamond knurling on the dashboard vents. Bentley also gives the choice of three sound systems: anonymous, Bang & Olufsen, or Naim. The latter features 19 speakers and 2200 watts, which I much prefer over B&O's 16-speaker, 1500-watt stereo. I could've added the rear-seat entertainment system, but the fewer screens in my personal limo the better. —[Eric Stafford](#)

The car manufacturer plans for the future and what can we expect

Car manufacturers are coming under increasing pressure to reduce their emissions while making their vehicles greener and cleaner.

With the UK having mapped out its goals for a net zero economy by 2050, many car brands have decided to set their carbon-free future by phasing out petrol and diesel vehicles by a certain date – which varies depending on the brand.

However, recently with the drop in sales of EVs, some firms have revised their future product portfolios and have either extended a phase-out date for internal-combustion-engined models or dropped the entire electric future altogether.

We check out the key pledges of some of the biggest and most important car manufacturers.

Volvo



The EX30 is the firm's smallest electric car. (Volvo)

Last year, the Swedish firm announced that it was stopping production of all diesel engines and would be focusing on electric, mild-hybrid and plug-in hybrid powertrains.

Its future goal was to become an all-electric car manufacturer by 2030 and with five EVs on sale, and a further five in development, it's clear the firm knows where its future is heading. Plus, it wants to become a net zero business by the year 2040.

However, in September 2024, Volvo announced that its plans for going all-electric by the end of the decade had been adjusted in favour of aiming for a 90 to 100 per cent of its global sales to be either electric or plug-in hybrid. The remaining 10 per cent will be mild-hybrid models to be sold if the demand is there.

Ford



The Capri has hardly shares anything with the old two-door coupe. (Ford)

The blue oval is undergoing controversial changes in its model line-up. Firstly, there was the removal of one of Britain's most popular and loved cars, the Fiesta and next year, the Focus will meet a similar end.

Also, bringing back two famous nameplates such as the Explorer and Capri onto vehicles that hardly resemble the cars of yesteryear means that one of the world's biggest car makers faces a tough few years.

Its plans going forward are that by 2026, all its passenger vehicles in Europe will have zero emissions and by 2035 will be electric-only.

Currently, the firm offers four electric models and will be releasing its fifth EV next month.

However, in August this year, Ford announced that it had scrapped plans to produce a large three-row electric SUV and had postponed the launch of its electric pick-up.

Toyota



The bZ4x is the first of many upcoming electric Toyotas. (Toyota)

One of the world's biggest carmakers, Toyota, seems to be late to jump on the EV bandwagon and currently only sells one battery-powered vehicle in its passenger vehicle range – the bZ4x.

Although the firm has been in partnership with the European giant, Stellantis, since 2016 for producing its electric commercial vehicles, the Japanese firm is still looking into other alternatives to power our vehicles of the future. It currently offers the Mirai hydrogen fuel-cell car and it's also looking into the hydrogen internal-combustion engine where the only emission created is water vapour.

In terms of electric cars, Toyota will add to its product mix over the coming years. In fact, a couple of years ago it announced that it was planning to introduce a total of 30 BEVs by 2030 and achieve around 3.5 million sales globally. But, there

would be 10 new models coming to Europe by 2025, with the first being the bZ4x – which is built in conjunction with Subaru.

Mercedes



(Mercedes)

Just like Volvo in this list, Mercedes has done a U-turn on its future line-up of electric cars. Offering a wide range of EVs from its 'EQ' range, the firm announced earlier this year that the nameplate would be dropped in future for conventional names and that by 2030, all of its cars would be battery-powered.

However, Mercedes recently said that it would continue to sell internal-combustion-engined models past that target date. Plus, by 2025 it wants to have a sales target mix of 50 per cent of electric or plug-in hybrid models. But, despite this slight change in the mix, Mercedes will still be launching new EVs in the coming months and years with the next to join the line-up being a new CLA.

Volkswagen



The 'ID' range is to expand even further into the future. (Volkswagen)

Another automotive giant with ambitious plans is Volkswagen. Its 'ID' range is scaling up with a total of five different models that run on electricity and even more to follow including a budget city car. The brand wants to focus on its sustainability and has set a target to become a net zero business by 2050 and by 2025 will offer a total of 20 BEV models globally – with EVs accounting for 25 per cent of the firm's sales.

Bentley



Bentley will reveal its first EV in 2026. (Bentley)

The British firm, Bentley, is also focusing on an all-electric future and has ambitious plans to remove all of its internal-combustion engine models by 2030.

However, this is another manufacturer that has announced a slight change in its plans towards its decarbonisation strategy, pushing back its 2030 deadline to 2035. Meanwhile, it won't reveal its first EV until 2026 – which will be an SUV.

In fact, Bentley has said that it will continue to offer internal-combustion engine vehicles until 2035 instead of the initial 2030 phase-out date it had first intended.

2024 Chevrolet Corvette E-Ray Review: Absurd Value, Absurdly Cool

Even before you set off—hell, even before you get in it—the

2024 [Chevrolet](#) Corvette E-Ray feels special. This generation of Corvette has garnered its fair share of aesthetic detractors and, in pictures especially, some proportions do feel iffy. But you can't deny that in person, it's got presence.

This decidedly exotic, European-adjacent aura was already apparent in the regular Stingray but it's even stronger with the E-Ray because there's quite a lot going on underneath the skin. The Stingray's 6.2-liter V8 meets an electric front axle, resulting in not just the first hybrid Corvette but the first-ever all-wheel-drive 'Vette and, as of this moment, the quickest-accelerating version of America's sports car Chevy has built so far (currently, GM has not disclosed this stat for the upcoming ZR1).



Yes, folks: tech reserved for seven-figure, unobtainium hypercars just 10 years ago can now be had starting at \$106,595. And it isn't an LT2-duct-taped-to-a-Volt-motor slapdash job either. There's proper engineering going on, and the Corvette team deserves its flowers for packaging the E-Ray's hybrid system in a way that doesn't hinder passenger or cargo room.

Tight Packaging

Let's talk styling for a sec. What is essentially the Z06 body brings a more aggressive front-lower fascia. Body-colored trim including the side wishbone thing visually set it apart from other variants of Corvette. Swoopy-yet-chiseled surfaces and cab-forward, mid-engined proportions make it look properly exotic and properly supercar.



Reach for the door and you almost expect 'em to open upwards. They don't though, but that's OK because the inside of the Corvette is plenty exotic. Potential unpopular opinion: I love the square steering wheel. It looks and feels immensely cool, making the car feel like a LaFerrari or something, and to me, it doesn't hinder its functionality as a steering device one bit. Also, *heated* carbon fiber is and will always be a luxuriously neat automotive touchpoint, that's just a fact.

The rest of the cabin feels properly cool, too. Even compared to other cars of this ilk, the inside of the Corvette is a—cramped isn't the right word—*fitted* space. As a five-eight Asian man with a non-egregious BMI, precariously slipping in and feeling like I'm wearing the car rather than sitting in it is a seriously cool sensation, but I can't imagine the Big Corvette Boys being very comfortable in there for very long.



2024 Chevrolet Corvette E-Ray Review: Absurd Value, Absurdly Cool



There's a mile-long list of performance car cabins that claim to get inspiration from fighter jets, but the C8's cockpit arguably leans into this motif the hardest. The dash wraps around you, and the screens—with their very Lockheed Martin-esque font—are angled to seemingly only serve the driver. The gear select toggles, the ultra-weighty drive mode selector, the carbon shift paddles, and the concept car dash design are all tailored to make you feel like you're flying a plane that may or may not have guns on it. The long line of physical climate buttons, meanwhile, is a comically minimalist yet surprisingly functional solution that still beats relegating that stuff to a touchscreen.

This being a supercar by GM, though, there are some quirks. The seat doesn't go down quite far enough, surprisingly. The screens' colors look noticeably washed out. Some interior touches such as the little plastic nubs you use to adjust vents feel like they could've come off a Chevy Sonic. And even after living with the E-Ray for a weekend and flipping through the relevant sections in the owners' manual, I still have no idea how to lock the doors from the outside without using the key fob, adjust the brightness of the screens, or make sense of the seat memory buttons and settings.



Get this Coupe and the hand-removable targa top is easy enough to take off and store in the rear trunk (there's a front trunk, too). But open-top driving at anything above around 50 mph results in an excessive amount of buffeting, and I don't recommend it.

Electrified Exotica

All of that is forgiven, however, when you spool up the E-Ray's party piece: the V8 hybrid powertrain. By now, you probably already know all the specs and facts. But as a refresher, a mid-mounted 6.2-liter LT2 V8 shared with the base Stingray makes 495 horsepower by itself and powers the rear axle. Powering the front axle, however, is a 160-hp hybrid electric motor hooked up to a 1.9-kWh lithium-ion battery hiding between the seats. Total system output clocks in at 655 hp and 585 lb-ft of torque, rocketing the E-Ray from zero to 60 mph in a quickest-Corvette-ever 2.5 seconds and onto a top speed of 183 mph.



Even just pulling out of the parking lot, though, the Corvette E-Ray feels exotic. Light, tight, direct steering and that wraparound cabin immediately make you feel like you're piloting a big go-kart and wearing the V8 like a backpack. Shift the hefty, knurled drive mode knob into Sport mode, point the E-Ray at an empty on-ramp, give it the big beans, and the car rockets forward with a frightening yet smooth amount of thrust. The steering continues to feel precise and pleasantly physical—E-Ray's nose darts in and the car goes where you point it with a satisfying eagerness that you feel wouldn't be present if it were front-engined.

There is an electronic whirr coming from the hybrid system if you listen for it, but where, say, the [McLaren](#) Artura wears its electrification on its sleeves, the E-Ray's is more subtle. The hybrid Corvette's hybridity is merely a supporting background act for the big V8, not the other way around. Even so, though, I wish the V8 sounded meatier for more of the time—it's sonorously great when your foot is pinned to the floor and the tach needle is charging toward red but a tad underwhelming everywhere else.



The brakes—eBoost-assisted carbon ceramics with Brembo four-piston monobloc calipers—are strong but a bit touchy. They take getting used to using smoothly on the street and don't exhibit that satisfyingly short, solid feeling you get in, say, its [Cadillac](#) CT5-V Blackwing sedan stablemate. Similarly, the Tremec eight-speed dual-clutch transmission shifts pretty quickly but lacks the malleable, immediate snappiness of, say, [Porsche](#)'s PDK or even the best applications of ZF's eight-speed.

Going over some of the E-Ray's features on paper, you might think it's quite livable, but that wasn't really my experience. It may have Magnetic Selective Ride Control 4.0, but even in Tour mode, the ride is rough. It may have a silent, electric-only Stealth Mode, but that only works for "three to four miles" at speeds of up to 45 mph. And, yes, it may have an optional front lift system to help it negotiate steep driveways, but, uh, Chevy didn't tick that option when it spec'd this one out. Make no mistake, this is a capital-S supercar made to decimate racetracks and challenge stopwatches, not navigate city centers or cross countries.



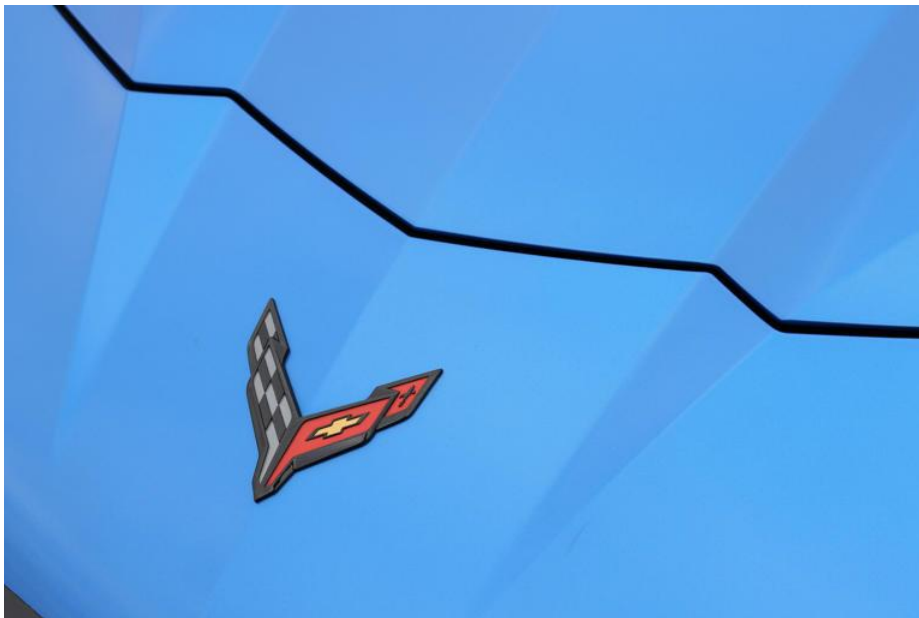
It's a Hybrid So I Guess We Should Discuss Fuel Economy

The E-Ray's hybrid-ness exists mostly in the name of performance, and nowhere is that more apparent than when you realize it's actually slightly less efficient than the unelectrified Stingray that shares the same engine. Per the EPA, it's rated for 16 mpg in city, 24 on the highway, and 19 combined—the base Stingray matches these city and combined figures but ekes out 25 mpg highway. Over about 270 miles of mixed driving, I averaged 17 mpg in the E-Ray. Here's how its official figures compare against other mid-engined hybrid cars of this style.

2024 Chevrolet Corvette E-RAY	2022 Acura NSX Hybrid	2023 McLaren Automotive Artura	2025 Ferrari 296 GTB
<p>Hybrid Vehicle Gasoline</p> <p>6.2 L, 8 cyl, Automatic (S8)</p> <p>MSRP: \$102,900 - \$120,850</p>	<p>Hybrid Vehicle Gasoline</p> <p>3.5 L, 6 cyl, Automatic (AM-S9), Turbo</p> <p>MSRP: \$169,500</p>	<p>Plug-in Hybrid Vehicle Gasoline-Electricity</p> <p>3.0 L, 6 cyl, Automatic (AM-S8), Turbo</p> <p>MSRP: \$233,000</p> <p>Plug-in Hybrid Calculator</p>	<p>Plug-in Hybrid Vehicle Gasoline-Electricity</p> <p>2.9 L, 6 cyl, Automatic (AM-S8), Turbo</p> <p>Plug-in Hybrid Calculator</p>
<p>Premium Gasoline</p> <p>19 combined city/highway 5.3 gal/100mi</p> <p>MPG 16 city 24 highway</p> <p>Gasoline Total Range: 352 miles</p>	<p>Premium Gasoline</p> <p>21 combined city/highway 4.8 gal/100mi</p> <p>MPG 21 city 22 highway</p> <p>Gasoline Total Range: 328 miles</p>	<p>Elec + Gas 39 MPGe combined city/highway .0 gal/100mi of gas + 86 kWh/100mi</p> <p>Prem. Gas 18 MPG combined city/highway 5.6 gal/100mi</p> <p>Gasoline Only: 11 miles Elec + Gas: 330 miles All Elec: 0-11 mi</p>	<p>Elec + Gas 47 MPGe combined city/highway .0 gal/100mi of gas + 72 kWh/100mi</p> <p>Prem. Gas 18 MPG combined city/highway 5.6 gal/100mi</p> <p>Gasoline Only: 8 miles Elec + Gas: 350 miles All Elec: 0-8 mi</p>

Verve and Value

The 2024 Chevrolet Corvette E-Ray feels about as special as a drive as it does as an item. Yeah, there are some GM parts bin elements that I wish were nicer. And maybe I'd be singing a different tune if I drove it on the track, but on the street at least, it isn't the dynamically perfect, set-your-nerves-on-fire driver's car that I perhaps hoped it would be. The brake pedal could feel better and its hybrid powertrain—as capable as it is—could be rowdier in sound and personality. But the sheer amount of performance, engineering, visual theater, and downright *cool* you get for the money here is absurd.



That's always been the Corvette's schtick, though. In electrifying America's Sports Car, Chevy has chosen to not radically change the Corvette formula but merely enhance it. And on paper, those enhancements are significant. The Corvette E-Ray is a deeply impressive technical accomplishment. Is there room for improvement here? Sure. But it corners like a proper supercar, thrusts like a jet, and looks like it could cost a million bucks. (Just a few short years ago, it *would* have.) And for just a skosh over a hundred grand, I'm not sure it's reasonable to ask it to do any more than that.



2024 Chevrolet Corvette E-Ray Review: Absurd Value, Absurdly Cool



Mercedes unleashes new EV braking system to push electric power and performance



Mercedes unleashes new EV braking system to push electric power and performance

German carmaker Mercedes Benz has proposed a more efficient braking system for electric vehicles (EVs).

The concept, called 'In-Drive Brakes', relocates the braking system from the wheels to the electric drive motor. Positioned where the half-shafts connect, the innovative design integrates the brakes directly into the motor assembly.

The Mercedes system replaces calipers with a circular brake pad mounted on the electric motor's output shaft. The pad presses against a stationary, water-cooled ring within a sealed enclosure.

While the prototype demonstrates this approach on the rear axle, it has the potential to function on both the front and rear axles.

According to Mercedes, the innovation offers better ride quality, cleaner streets by containing brake dust, and streamlined wheel designs for improved aerodynamics.

Integrated brake innovation

EVs rely on regenerative braking for 98 percent of their deceleration needs, but friction brakes are still essential for the remaining 2 percent, especially during critical high-demand stops.

A complete emergency stop may need up to 2200 kW of power, but regenerative braking usually provides up to 290 kW. However, because friction brakes are rarely used, their rotors typically rust, which results in brake dust, noise, and decreased efficiency.

Mercedes is creating an inventive remedy known as In-Drive Brakes to address these problems. This concept relocates the brakes from the wheels to inside the electric drive motor, near the half-shafts connecting to the wheels. Currently demonstrated on the rear axle, the system could potentially work on both axles.

In contrast to traditional disc brakes, the In-Drive Brakes function similarly to a clutch system in manual gearboxes. For EVs, a cleaner, more integrated, and more effective braking solution is provided by a rotating disc that is fixed to the half-shaft.

Effortless EV braking

The proposed braking system replaces conventional disc brakes with a design resembling a manual transmission clutch. It features a rotating disc, integrated with the half-shaft of each wheel, coated with [friction](#) material near its edges.

Two fixed, non-rotating flywheel-like plates flank this disc, with an annular hydraulic cylinder compressing the assembly. This causes the friction disc to drag against the fixed plates, slowing the vehicle.

To disperse heat produced during braking, the system has liquid-cooled fixed plates that are completely contained in housings at the motor's ends. Each brake

housing incorporates a sump to collect brake dust, ensuring brakes that endure the car's lifespan.

According to Mercedes, by removing the requirement for cooling air passages, this enclosed design guarantees silent operation maintains clean wheels, lowers unsprung weight, and provides design flexibility for wheels.

The idea works well with front-motor configurations or even cars without motors, which makes it more appealing for [EVs](#) if the price is comparable to that of conventional brakes.

The system complements the cutting-edge technology of the Mercedes Future Technology Lab and is quiet, effective, and low-maintenance. We're excited to see this innovative method used in the next car models since it has the potential to revolutionize braking systems completely.

Mercedes claims the In-Drive [Brake](#) system is designed to last the vehicle's lifetime without requiring servicing, potentially saving owners thousands in brake repairs and replacements. Brake dust is collected in a sealed compartment that never needs emptying.

Mercedes chops the roof off an SL and adds an F1-inspired halo bar



Mercedes chops the roof off an SL and adds an F1-inspired halo bar© Provided by TAG24 NEWS

Mercedes-Benz has pulled the wraps off its hardcore Pure Speed version of the SL roadster, which is all about open-air driving and doing without a roof, windscreen and side windows in favour of a Formula 1-inspired halo bar.

Formula 1's end-of-term party in Abu Dhabi on Sunday provided a suitable backdrop for the car which is inspired by the AMG One hyper-car along with the legendary 300 SL. Production is limited to just 250 units globally.

The car does have two seats, unlike Louis Hamilton's company Mercedes, and the urge comes from in-house tuner AMG's own V8 engine with a displacement of 4.0 litres and 430 kW/585 hp. That's enough to catapult it from a standstill to 100 km/h in 3.6 seconds. Maximum speed is given as 315 km/h.

The chopped SL is the first model in the brand's new Mythos series of ultra-rare models which, according to AMG chairman Michael Schiebe, embody "the highest level of exclusivity".

Mercedes has not yet provided any information on prices but just because the makers are saving by not providing a soft or hardtop, the SL is unlikely to be any cheaper. Expect to pay more than the home-market price tag of €223,720 for the top model in the SL family.

Inspiration from the past

The PureSpeed shares design elements with the famous SLR McLaren Stirling Moss, a roofless and windshield-less car that debuted over a decade ago. The concept for the PureSpeed was first introduced in May with the name "PureSpeed," a fitting tribute to the car's no-compromise performance. Now, the production version has retained both the name and the design features, creating a roadster that stands out for its unique look and engineering.



A roofless design for ultimate performance

The PureSpeed is a true speedster, completely devoid of a roof and windshield. For safety, the car integrates a halo protection system inspired by Formula 1 cars. While F1 cars use carbon fiber for this feature, Mercedes-Benz opted for steel to better protect the occupants in case of large object impacts. The car also includes dual rollover hoops positioned behind the seats for added security.



Airflow management for high speeds

Despite lacking a roof, the PureSpeed provides a comfortable ride. Small wind deflectors are positioned ahead of the cabin to guide airflow over the heads of the driver and passenger. However, drivers and passengers are required to wear helmets when driving at speeds beyond city limits. To complement the high-speed experience, AMG offers matching helmets with built-in communication systems. This system allows occupants to talk clearly at high speeds and even connect their smartphones for calls or music.



Built on the SL 63 platform

The PureSpeed is built on the SL 63 model from the latest SL lineup. This gives the speedster a powerful 577-hp twin-turbocharged 4.0-liter V8 engine, along with an all-wheel-drive system. The car is equipped with a 9-speed automatic transmission, designed with a wet starting clutch instead of a traditional torque converter. This innovation reduces weight and improves response time, making the PureSpeed even faster. Performance-wise, the PureSpeed can accelerate from 0 to 62 mph in just 3.6 seconds, with a top speed of 196 mph. These impressive figures reflect the car's engineering precision and focus on speed.



Advanced suspension and braking features

Mercedes-Benz has also incorporated cutting-edge suspension and braking technology into the PureSpeed. It features a front-lift kit, rear-wheel steering, and carbon-ceramic brake rotors for enhanced performance and handling. The car's AMG Active Ride Control suspension ensures a smooth and controlled ride by utilizing hydraulic roll stabilization and adaptive dampers. The 21-inch wheels are equipped with carbon-fiber covers that reduce turbulence, improving aerodynamics.



Unique design details

The design of the PureSpeed stands out with its more pronounced front nose, which draws inspiration from the AMG One hypercar. Additionally, the car features a unique paint fade with hand-painted AMG logos. The interior is equally special, with bespoke trim and a custom dash-mounted clock created by watchmaker IWC Schaffhausen, a Mercedes-Benz partner. The interior also boasts a 15-speaker Burmester audio system and a center console badge reading "1 out of 250," further emphasizing the car's exclusivity.

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Honda Unveils Next-Gen Hybrid System: Fuel Efficiency Improved by More Than 10%

[Honda](#), Japan's leading brand

Unveils next-generation [hybrid](#)

Expect a 10% improvement in fuel efficiency



Honda

Honda has revealed details of its next-generation hybrid system and new midsize platform. The reveal showed Honda's fuel efficiency and innovative design goals. Various technologies were revealed, including new 1.5-liter and 2.0-liter direct-injected Atkinson-cycle engines, integrated cooling systems, and downsized drivetrains.

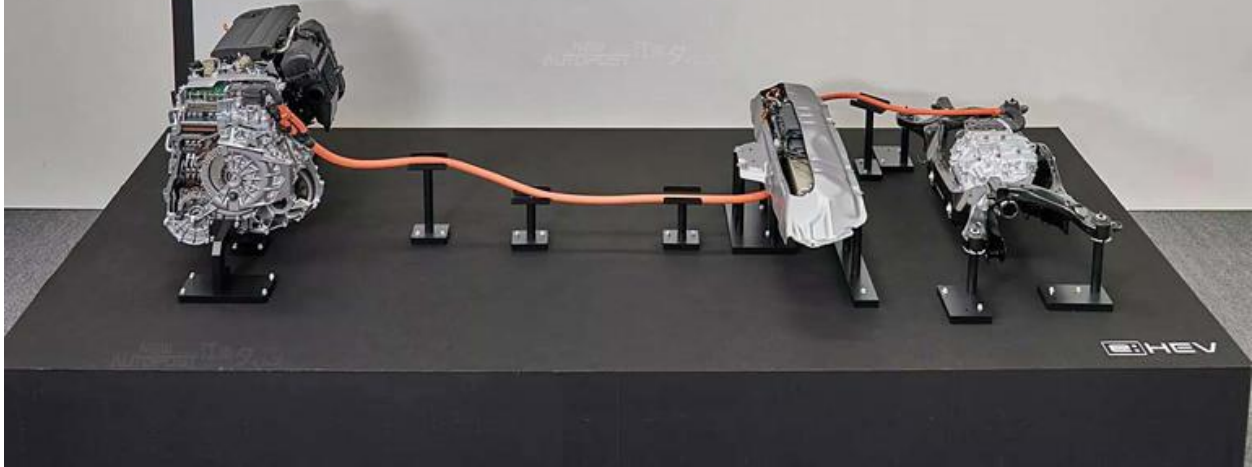
According to Honda, this system is expected to improve fuel efficiency by more than 10% when combined with the next-generation midsize platform currently under development. In particular, the newly designed 1.5-liter engine is expected to improve fuel efficiency by more than 40% compared to the existing e:HEV system, providing drivers with better economy.



New S+ Shift System Boosts Performance and Fuel Efficiency

Honda also introduced its S+ Shift system, which enhances the [driving](#) experience by optimizing the hybrid powertrain's driving modes. This system offers sharper gear shifts and a more direct driving response. It's also designed to improve engine sound quality through the vehicle's audio system, creating a more engaging and connected driving experience.

**Next Generation
Mid-size e:HEV System**



**Next Generation
Mid-size Platform**



Lightweight Body and Platform for Better Stability and Efficiency

Honda's next-generation midsize platform is focused on weight reduction. The new "body rigidity management" technology is expected to reduce body weight by up to 10%, or about 90 kg (198 pounds). With this, Honda aims to develop the lightest platform in its segment.

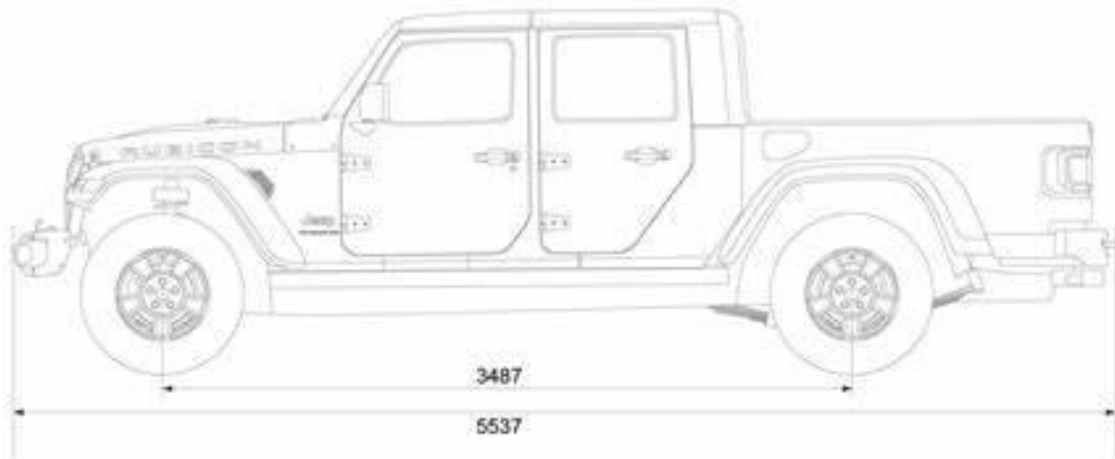
In addition, the new platform has introduced the "steering stability index," which adjusts tire load when cornering to improve driving stability. Along with the simplified body structure, the efficiency of the design process is also expected to be significantly improved.



A Vision for the Future: Hybrid and EV Technology

Honda plans to incorporate a new [electric](#) all-wheel drive unit into its next-generation hybrid system, which could be shared with electric vehicles (EVs), reducing costs and complexity while improving performance in adverse weather conditions.

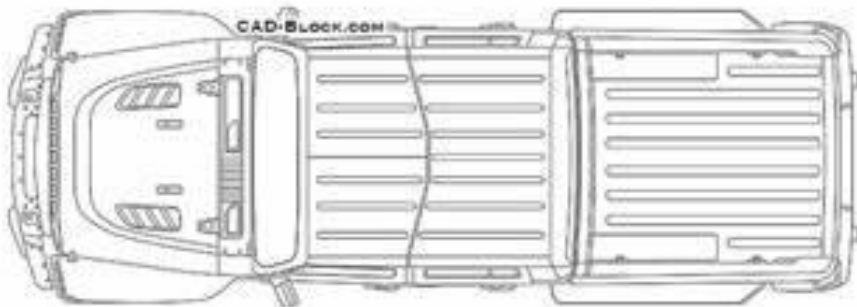
Honda aims to transition to a fully [zero-emission](#) vehicle lineup by 2040. As part of this strategy, the company focuses on hybrids as a stepping stone to broader market adoption, while electric vehicles will be the long-term focus. Honda aims to sell 1.3 million hybrids annually by 2030 and reduce the manufacturing costs of upcoming models by 50% by 2027.



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2025 Jeep Gladiator



MSRP

\$39,995–\$62,995

HIGHS

- All-conquering off-road abilities, the only pickup with removable doors and roof, strong towing capacity.

LOWS

- Off-road prowess sacrifices comfort, lazy on-pavement handling and steering, “Jeep” does not rhyme with “cheap.”

VERDICT

- The Jeep Gladiator combines the Wrangler's all-terrain skill set with a pickup bed, giving back-country adventurers an even more utilitarian alternative.

By [Mark Takahashi](#)

Overview

There's no shortage of off-road-capable pickup trucks, but only one can trace its roots back to perhaps the most iconic terrain tamer of all time. The 2025 Jeep Gladiator is essentially a four-door [Jeep Wrangler](#) with a five-and-a-half-foot bed in back. It has all of the capabilities of the Wrangler, with the added utility and convenience of a small pickup truck—but it also has the same drawbacks as its SUV stablemate. A loud cabin, bouncy ride, lazy handling, and slow, vague steering response all contribute to unsettling on-road behavior, just as they do in the Wrangler. For shoppers seeking a nearly unstoppable adventure rig, these personality quirks are just part of the package. Other midsize off-road-capable trucks, such as the [Chevrolet Colorado](#) and [Toyota Tacoma](#), have far better on-road manners and can be equipped to tackle serious terrain, so they are well worth considering before opting for a Gladiator and taking on the weaknesses that come along with its strengths.

What's New for 2025?

The previously available manual transmission has been discontinued, leaving the eight-speed automatic as the only choice. Power locks and windows are now standard on the base Sport trim, and two new colors debut: Fathom Blue and a military-inspired olive drab called '41. A new Active Cabin Ventilation feature is also available, allowing owners to pre-heat or cool the interior via a mobile app.

We think the Sport S is the perfect canvas upon which to create your ideal Gladiator. We'd choose the all-terrain tires and anti-spin rear differential for improved traction when the blacktop ends, and we'd add the side steps to make getting in and out easier. We'd also select the three-piece hard top for its ability to quickly open the roof. Inside, we'd spec the headliner for better noise-and-temperature insulation and upgrade to the larger 8.4-inch touchscreen, because it adds navigation and is more sophisticated than the standard 5.0-inch unit. Our other preferred options include the Cargo Management pack (400-watt power inverter, an under-seat storage bin, and a bed-mounted 115-volt outlet) and the auxiliary switches and upgraded charging system for any lightbars or accessories that we'll surely add for maximum Jeepness.

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Engine, Transmission, and Performance

The Gladiator is powered by a 3.6-liter V-6 that produces 285 horsepower and 260 pound-feet of torque routed through a standard eight-speed automatic transmission. Every Gladiator comes with a 5.5-foot truck bed. Compared with the regular Wrangler, the Gladiator has an extra 19.4 inches between the front and rear wheels. Jeep says this helps improve the pickup's ride and handling. Having driven several examples we can confirm that, Jeep's claim aside, it drives much like the Wrangler. On paved roads, the truck's steering lacks precision and the ride can be busy on uneven surfaces. Still, these characteristics are part of the formula that makes the Gladiator both a legitimate pickup

truck and a trail-ready tool. Jeep enthusiasts care more about the truck's available off-road equipment, which includes everything from copious skid plates to rock-crawling axle ratios to the ability to ford up to 30 inches of water. Generous ground clearance and approach-and-departure angles further help the Gladiator conquer parts unknown.

0-60-MPH Times

In Car and Driver testing, an [Overland model](#) accelerated to 60 mph in 7.2 seconds. That's in line with the Toyota Tacoma's 7.0 seconds.

Towing and Payload Capacity

The maximum towing capacity for the 2024 Jeep Gladiator is 7700 pounds. Unlocking that capability requires the optional Max Tow package, but even without it, the Gladiator can pull a 4000-pound trailer. For comparison, the Wrangler is only rated to tow up to 3500 pounds. Those looking to load up the Gladiator's cargo bed can carry between 950 and 1725 pounds of payload.

Fuel Economy and Real-World MPG

The Gladiator is estimated to return 17 mpg city, 22 mpg highway, and 19 mpg in combined driving. We've tested a few different versions of the Gladiator with the automatic transmission on our 200-mile, [75-mph highway route](#), where we evaluate real-world fuel economy. The Overland model was the most efficient version, returning 21 mpg, but the Mojave returned a much lower 15 mpg. However, the latter was equipped with bigger tires and a higher rear axle ratio than the Overland (4.10 versus 3.73). For more information about the Gladiator's fuel economy, visit [the EPA's website](#).

Interior, Comfort, and Cargo

Inside, the Gladiator has an upright dashboard that imitates the Wrangler's and supports user-friendly controls. How many vehicles feature waterproof push-button start? Optional convenience features include a heated steering wheel and heated front seats. Jeep says the truck's stretched wheelbase improves back-seat legroom versus the four-door Wrangler. The Gladiator also has easily removable doors that create an open-air cabin. Along with its 5.5-foot cargo bed, the Gladiator is filled with ingenious interior storage options; the cabin has a handful of spots to stick a smartphone and a handy compartment hidden under the back seat. The seats themselves can be stowed in multiple ways as well.



Infotainment and Connectivity

Every Gladiator uses a 12.3-inch infotainment touchscreen with Apple CarPlay and Android Auto. The stereo system can also be upgraded with an optional subwoofer and portable wireless speaker behind the back seat. Front-seat passengers have use of several power points, which include two USBs and a USB-C port; a 115-volt outlet is also available.

Safety and Driver-Assistance Features

Although the Jeep pickup is available with a handful of [driver-assistance technology](#), its tech roster is significantly smaller than some competitors. Sadly, the base Sport trim still lacks many of the standard safety features of the Sport S and higher-level trims. The Rubicon model has a useful front-facing camera that comes in handy when blazing trails or crawling over rocks. For more information about the Gladiator's crash test results, visit the National Highway Traffic Safety Administration ([NHTSA](#)) and Insurance Institute for Highway Safety ([IIHS](#)) websites. Key safety features include:

- Available adaptive cruise control
- Available blind-spot monitoring
- Available rear parking sensors

SPECIFICATIONS

2024 Jeep Gladiator Mojave

Vehicle Type: front-engine, rear/4-wheel-drive, 5-passenger, 4-door convertible pickup

PRICE

Base: Mojave, \$54,890; Mojave X, \$64,890

ENGINE

DOHC 24-valve V-6, aluminum block and heads, port fuel injection

Displacement: 220 in³, 3605 cm³

Power: 285 hp @ 6400 rpm

Torque: 260 lb-ft @ 4400 rpm

TRANSMISSIONS

6-speed manual or 8-speed automatic

DIMENSIONS

Wheelbase: 137.3 in

Length: 218.1 in

Width: 73.8 in

Height: 73.1-75.1 in

Passenger Volume, F/R: 54-57/50-53 ft³

Curb Weight (C/D est): 5000-5100 lb

PERFORMANCE (C/D EST)

60 mph: 8.3 sec

1/4-Mile: 16.4 sec

Top Speed: 97 mph

EPA FUEL ECONOMY

Combined/City/Highway: 18-19/16-17/21-22 mpg

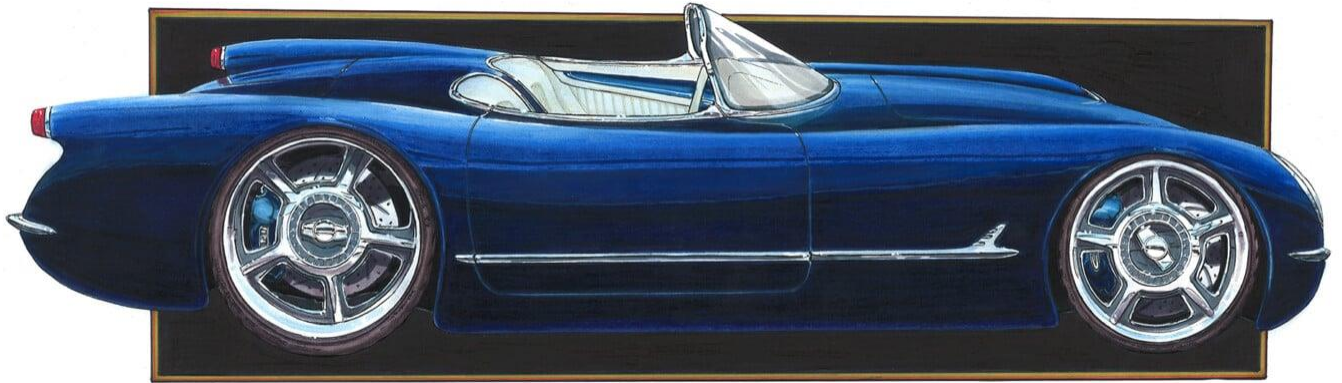


Harley Earl Lives! A Look At The Gorgeous Kindig CF1 Roadster



By [DAVE CRUIKSHANK](#) OCTOBER 12, 2023

Two years ago, Dave Kindig of [Kindig It Design](#) revealed his [CF1 Roadster at the 2021 SEMA Show](#). Think of it as a modern take on the 1953 Corvette with every panel, dimension, and finish massaged to perfection. For those of you not familiar with Kindig's CF1, here's the cheat sheet. Kindig wanted to produce his own turn-key car, designed by his team and sold by his company, so he assembled some of the best suppliers in the business and hit the drawing board.



The idea Kindig had in mind for the CF1 Roadster stretched, highlighted, and exaggerated the elegant lines of the '53 Corvette.

Let's start with Kindig's completely reimagined body. [Doug's Performance Corvette](#) (formerly Classic Reflection Coachworks) makes the carbon-fiber composite body in Lakewood, Washington, and ships it to Kindig It Design in Utah. The new body is a much bigger and wider car than the original Corvette. Kindig once said, "Back in the '50s, it seems like people were smaller. We wanted our car to be comfortable and fit modern humans."



The original 1953 Corvette shown here, is a classy design, but Kindig wanted to bring it into the 21st century with his own flare. A focus of the CF1, according to Kindig, was making it bigger and wider to better fit the size of modern humans.

Kindig also brought GM Design Chief Harley Earl's legendary C1 Corvette proportions into tack-sharp focus, by tightening the space between the top of the wheel wells and the fenders to create a smooth and aggressive look. The CF1 Roadster body weighs in



at a svelte 291 pounds, and the car's curb weight tips the scale at roughly 3000 lbs.

Some differences between the original '53 Corvette and the CF1 are immediately noticeable, like the reshaped wheel arches, redesigned grille, and windshield frame. However, we are confident one could look at the CF1 for hours and pick up on many other Kindig touches.

For power, Kindig stuffs a special LS7 engine package under the hood, all suited up in velocity-stacked, polished glory. The Lingenfelter Performance Eliminator LS7 427 cubic-inch V8 engine produces 673 horsepower and 618 lb-ft of torque. The mill is

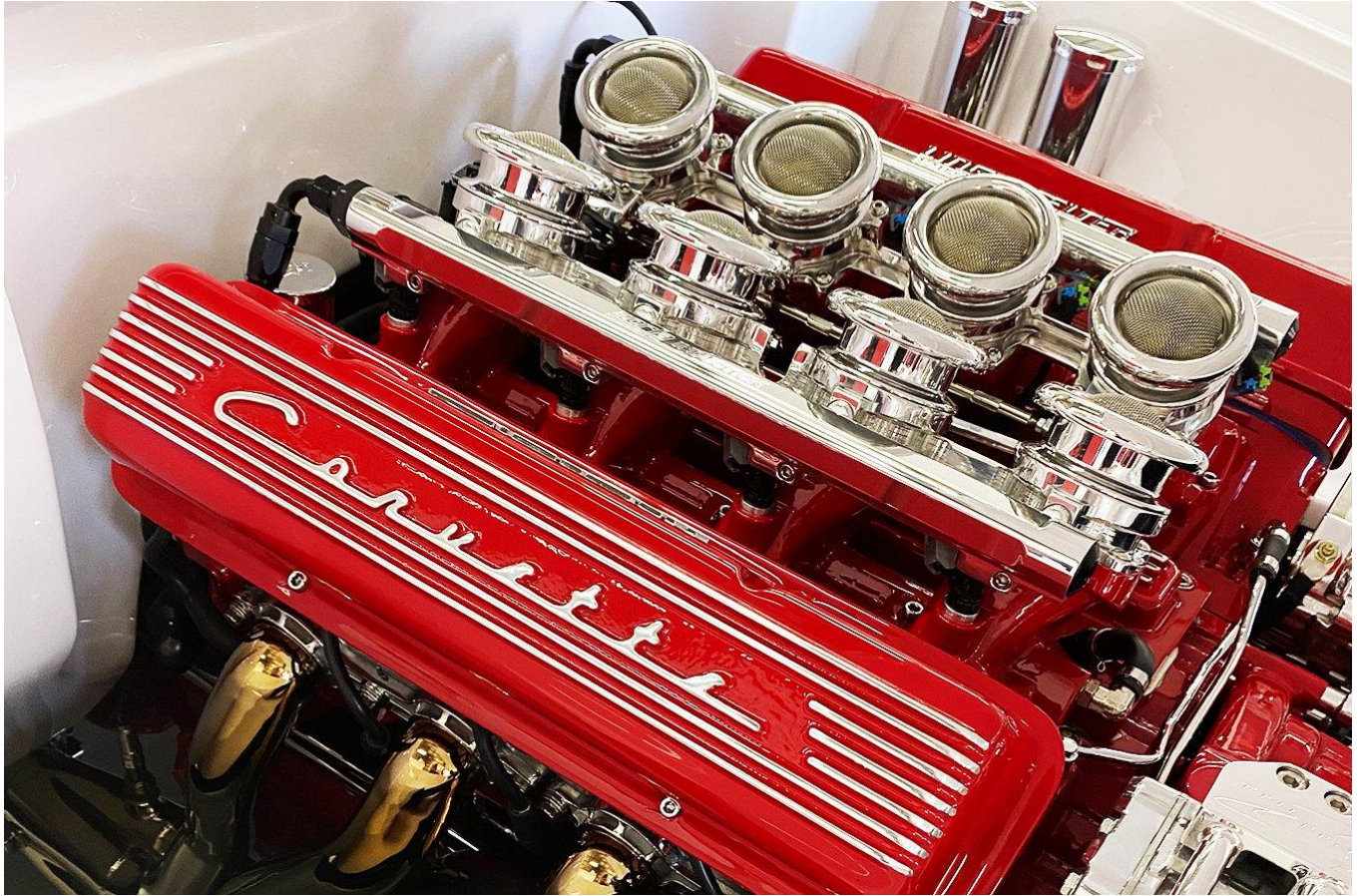
hooked up to a GM automatic transmission, all sitting in a Roadster Shop Spec 7 chassis, with Wilwood brakes, Dakota Digital gauges, and a Borla exhaust system.

The CF1's cabin retains the look and feel of the 1953 Corvette's interior, but with all the modern conveniences that today's drivers expect. JS Customs stitches the interiors, with a loving recreation of the original car. The steering wheel is especially understated and cool, with a nod to classic early-'50s Chevrolet design.

Kindig was very clever here, as most of the difficult aspects of the CF1 are handled by suppliers. Essentially, Kindig It Designs handles the final assembly of the finest components on the market amalgamated into the CF1. However, it would be too simple to imply that just anyone could create the CF1. Kindig and his team's keen eye for design and years of building cars is a killer combo and is absolutely the magic sauce that makes the CF1 so cool.

What does all this cost? Rumor has it the CF1 Roadster retails for around \$375K, and #008 sold at Barrett-Jackson Scottsdale in February of this year for over \$500K. Since 2021, Kindig has produced nine examples of the CF1, including an EV version. However, there seems to be a bit of mystery regarding CF1 #006 as there are no images of the car on Kindig's site, nor do any images of the car turn up in an internet search. Regardless, let's take a look at the rest of the CF1 builds Kindig has produced so far: **CF1 Roadster #001**





CF1 #001 was built as an homage to the original 1953 Corvette that came in any color combo as long as it was Polo White with a red interior.

CF1 Roadster #002





#002 (and #001) debuted at SEMA 2021. The "blueprint" of the build i.e., Lingenfelter engine/stacks, retro interior, and big gumball wheels were fully cooked right from the beginning. This silvery blue color is killer and very retro without veering into poodle skirt and saddle shoe territory.

CF1 Roadster #003



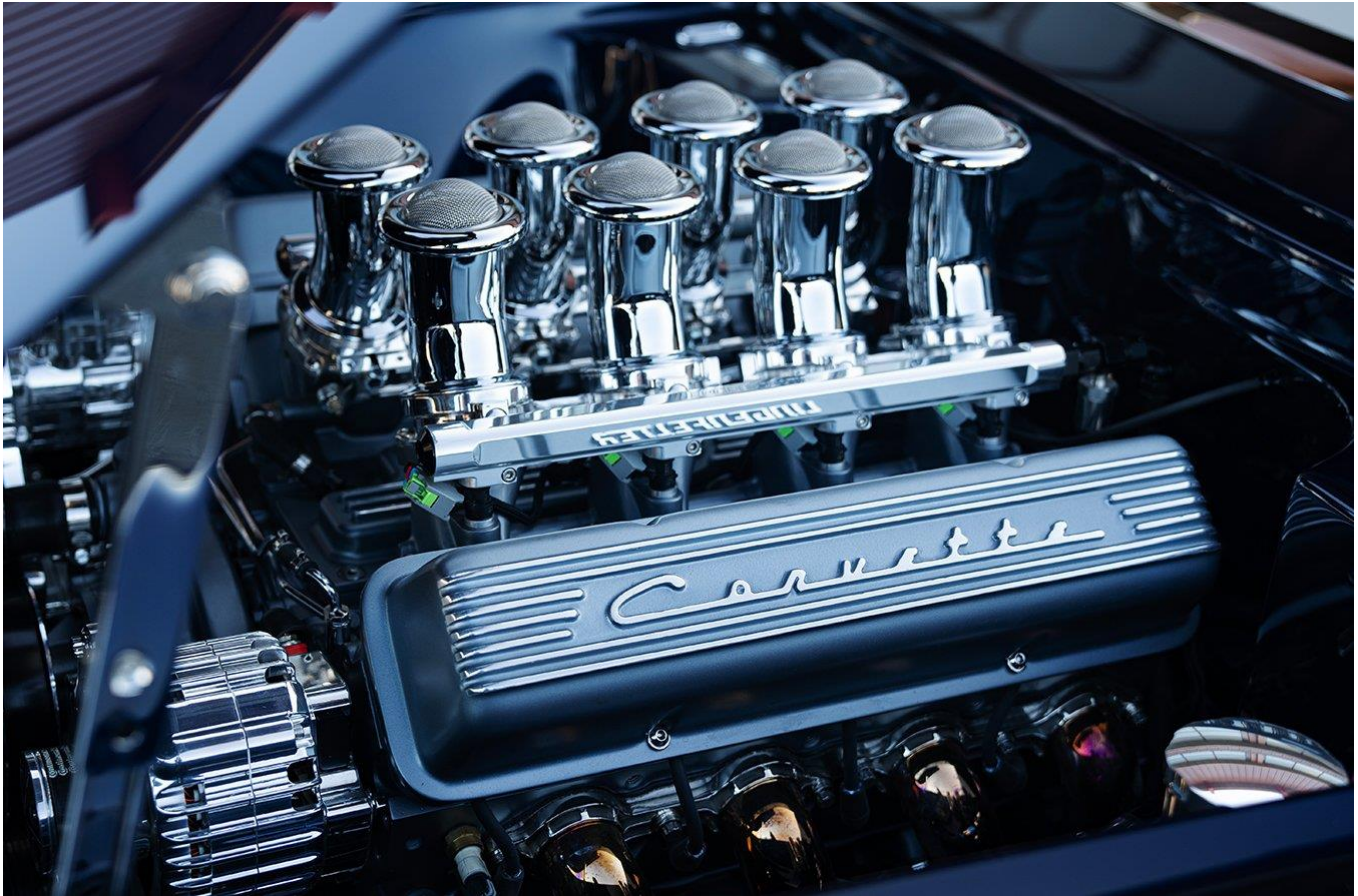


CF1 #003 is all electric. I'm sure that's blasphemous to us here, but this thing is a killer in red with a black and cream interior. Even better, you get a frunk and get to skip gas stations. We think this would be a great beach boulevardier and a Sunday cars and coffee cruiser. This was also the first CF1 to ride on thin-spoke wheels.

CF1 Roadster #004



This midnight blue CF1 #004 looks mysterious and sinister. We especially like the black dash accents that debuted with #003. The engine has taller stacks that poke through the hood, adding a new variation to the existing blueprint.



CF1 Roadster #005





Corvettes look good in earthy colors, i.e. gunmetal, pewter, copper, and stone. This beauty looks like an ingot of silver perfectly accented by a burgundy interior.

CF1 Roadster #007





We saw this car at SEMA 2022 at the Dynamat booth. It was shown without the seats and door cards installed. This edition debuted chunkier wheels that looked especially good up against a blue that Kindig says is "deeper than the Bering Sea..." At this time we can't confirm that there is a #006 CF

CF1 Roadster #008



CF1 Roadster #009

CF1 #009 was seen recently at a fancy Concours event and it looked resplendent holding court on the grass. The Brandywine exterior and gray guts sure popped nicely in the sunshine. When will we see #010?

What's the old saying? All Corvettes are red? We think black is better, and CF1 #008 might be our favorite. The lipstick-red interior is a knockout and we like the big wagon wheel rims here as well. This CF1 was built as a special Barret-Jackson Edition.

Finally, the CF1 Roadster reminds us of the 2002 Ford Thunderbird, the Chevy SS Roadster, the New Beetle, and yes Chrysler's PT Cruiser. That might seem like underhanded praise, but the CF1 is so deftly executed, with just the right amount of firepower and style, that it shows that the retro car thing works when presented lovingly by true car guys. An unlimited budget and low production of the CF1 are key differences with respect to the aforementioned cars, but you get the drift. In the meantime, Kindig It Design would love to build you a CF1, just bring lots of money.

• Kindig It Design CF1 Roadster Specifications

- Designed and built by Kindig It Design in Salt Lake City, Utah
- Engine: Lingenfelter Performance LS7 427 V8 with ITB velocity stack induction



- Horsepower: 673 hp
- Torque: 618 lb-ft
- Transmission: GM Performance 4L80E automatic
- Chassis: Roadster Shop independent Spec 7 chassis to Kindig specifications
- Composite Carbon Fiber Body – Doug’s Performance Corvette in Lakewood, Washington
- Wheels: 21-inch & 22-inch custom wheels built by Forgeline
- Tires: Michelin Pilot S4 tires
- Brakes: Wilwood Engineering disc brakes
- Exhaust: Custom full stainless Borla Exhaust
- Interior: Custom leather interior by JS Custom Interiors
- Gauges: Dakota Digital
- Steering wheel: One-off
- Heating & A/C: Vintage Air
- Paint: Custom colors using Modern Classic by Kindig

Kindig It Designs CF1: A Masterpiece of Modern Craftsmanship

Nov 12, 2021

Tom Clarke here to help all those looking to learn about the masterpiece CF1’s being built at Kindig It Designs! I don’t just consider Dave Kindig one of my car builders, he is a close friend first and then I am a client next. So, as we go down the journey of understanding Dave’s vision on creating the CF1’s, I will do my best to be neutral, but that’s hard when I own the very first convertible CF1 made! So, let’s get to it... When you meander through the illustrious annals of automotive customization, few names pop with the resonance of Kindig It Designs. A beacon of innovation, their prowess in reimagining classic beauties has won accolades and turned heads in the industry for years. Now, let’s turn our spotlight onto one of their most captivating creations yet – the CF1.

Genesis of Greatness

At the very heart of Kindig It Designs is an unyielding passion for cars and an unwavering commitment to perfection. Each project that rolls out from their workshop carries the legacy of meticulous craftsmanship, and the CF1 is no exception. Born from the vision of redefining modern luxury while paying homage to vintage elegance, the CF1 is, without a doubt, a magnum opus.

Stunning Silhouette

One gaze at the CF1 and it's evident – this isn't just a car; it's a work of art. The flowing lines, sculpted to perfection, harmoniously marry aerodynamic efficiency with show-stopping aesthetics. Its stance exudes confidence, while the choice of materials and finishes pays tribute to both luxury and durability.

Under the Hood: A Symphony of Power

Kindig It Designs has never been one to skimp on performance, and the CF1 stands as a testament to this philosophy. Nestled under its hood lies an engine fine-tuned to deliver exhilarating power, ensuring that this beauty isn't just about looks – it has the heart of a beast. Coupled with state-of-the-art transmission and suspension systems, the CF1 promises a driving experience that's both thrilling and refined.

Interiors: Where Luxury Meets Functionality

Step inside, and the CF1 cocoons you in an ambiance of opulence. Every detail, from the hand-stitched leather to the custom-crafted controls, has been meticulously curated. Yet, this isn't just about luxury for luxury's sake. Kindig It Designs has ensured that the interior ergonomics offer utmost comfort, and the advanced infotainment system keeps you connected, entertained, and informed.

A Collector's Dream

In the world of automotive auctions, certain vehicles stand head and shoulders above the rest – not just for their aesthetics, but for the stories they tell and the legacy they carry. The CF1, with its perfect blend of vintage charm and modern luxury, is poised to be one such vehicle. Whether

showcased in a private collection, gracing the streets, or stealing the show at elite gatherings, it is destined to be a jewel in the crown of any automotive aficionado.

Conclusion

Vehicles like the CF1 remind us of the magic that happens when visionary design meets unparalleled craftsmanship. Kindig It Designs, with their commitment to pushing the boundaries of automotive customization, has once again demonstrated why they remain at the zenith of the industry.



By Tom Clarke

2025 Lamborghini Urus SE Review: An automotive oxymoron

You could assume that Toyota is the face of the automotive fleet's transition to hybrid technology but they are far from the only one pitching them. In fact, In the third quarter of 2024, the share of new hybrid vehicle sales reached a record 10.6 percent market share.

Aiding and abetting this increase is none other than Lamborghini, which seems highly unlikely. Yet it's true. The Aventador's replacement is the 1,001-horsepower Revuelto hybrid and following in its wake is the Huracán's successor, the 907-horsepower Temerario.

Now, we have the 2025 Lamborghini Urus SE, powered by the Temerario's 611-horsepower twin-turbocharged DOHC 4.0-liter V-8, 189-horsepower electric motor, and an eight-speed transmission used by Porsche and Bentley siblings in the Volkswagen Group. Here, it generates 789 horsepower and 701 pound-feet of torque for its four wheels, while towing 7,000 pounds.



The 2025 Lamborghini Urus SE hybrid wears a fresh, if still familiar, face. Lamborghini© Lamborghini

Urus SE's hybrid system doesn't dampen its behavior

The Urus SE uses an AC motor that provides 37 miles of electric driving at speeds up to 81 mph thanks to its 25.9-kWh lithium-ion battery, which resides under the rear cargo floor. Fully recharging it from 20 percent requires 4 hours and 20 minutes.

As you might expect from an SUV, there are Strada, Sport, and Corsa modes for on-road driving and Neva, Sabbia, and Terra modes for off-road driving. This is in addition to Hybrid, Recharge, Performance, and EV Drive hybrid driveline modes.

You can endow the Urus SE with a variety of personas, although the overarching qualities are the ones you'd expect: exhilaration and extreme capability.



Just because it's a plug-in hybrid doesn't make it dull boy. Lamborghini© Lamborghini

This hybrid can hustle

We had the chance to drive the 2025 Lamborghini Urus SE at Volkswagen Group's Nardò Technical Center in southern Italy, as well as the streets nearby. It revealed that the Urus SE's practicality and fuel efficiency don't come at the expense of its fun factor.

As if to prove it, we slung this 5,523-pound stud muffin around the skid-pad, which is not the first thing you'd consider doing once behind its wheel. But it wears the Lamborghini badge, which is all that you need to know. It also handles like one, adroitly dancing through a motocross course with an ease that belies its weight and ride height. Credit goes to its rear-wheel steering, adaptive dampers, anti-roll bars, and carbon-ceramic brakes that are easily controlled thanks to its accurate, if light, steering.



Its fold-down rear seats allow it to haul more than just ass. Lamborghini© Lamborghini

It set the stage for what proved to be a riotous ride: several laps around the Strada Bianca, an off-road dirt track course riddled with tight turns and acres of topsoil heaped upon a decidedly inhospitable road surface. This is where the Urus SE comes into its own, hanging its tail out as it easily and effortlessly drifts around corners and absorbs bumps and ridges with the alacrity this Italian stallion is known for.

Yet on the winding roads around the track, it proved potent enough to shove your vital internal organs against your backbone upon initial acceleration, with G-forces that leave little doubt as to its performance ability.

It's the perfect prescription for adrenaline junkies, as the added electrons ensure there's even more of the full-throttle thrills expected from a Lamborghini. That said, you're always aware that you're riding in an SUV, with its weight always apparent. And while the exhaust was quieter to meet European noise restrictions, the ones heading for North American shores will possess the requisite exhaust symphony that snarls, pops, and growls with authority.



Did you notice its redesigned lighting?? Lamborghini© Lamborghini

Lamborghini brought a refined wardrobe for the Urus SE Hybrid

Of course, a new trim level and powertrain calls for a freshened face. The Urus SE benefits from freshly designed grilles that augment cooling framed by redesigned lighting. Inside, you'll sit upon quilted leather seats in a cabin trimmed in aluminum trim.

Once seated, you'll find the instrument cluster, infotainment system, and climate control systems are designed with the excitable angularity that adeptly captures Lamborghini's character. They're each housed on their own 12.3-inch digital display.

And, should you care about such things, the Urus SE is the most practical of Lambos, able to haul 22 cubic feet of stuff, growing to 57 cubic feet with the seats stashed. That's more than a Toyota Venza Hybrid, and this rig is far more ferociously fun.

If you're more concerned about carrying family or friends, there's plenty of room for four, or five if they're really close friends.



The interior design is every bit as exciting as its exterior. Lamborghini© Lamborghini

Final thoughts

Few vehicles combine outrageous fun with prodigious function and fuel efficiency so expertly. Given its unrestrained excess, the fact that it returns 18 mpg is as amazing as a politician keeping a promise. For short trips or the daily commute a few blocks away, it will never use a lick of gas.

With an MSRP starting at \$262,630, its combination of design artistry, extreme excess, fuel efficiency, and unexpected practicality make it tough to resist. Who would think such a reprobate should be such an upright citizen – at least sometimes? It's an automotive oxymoron.



These powerful in-wheel motors could spawn the next generation of affordable high-performance EVs

- **Lighter, powerful and more affordable in-wheel motors are on the horizon**
- **Elaphe Propulsion Technologies revealed a 2,000bhp supercar concept**
- **Donut Lab says its motors can power an array of products**

Most modern electric vehicles use an electric motor that powers either the front or rear axle – or both, if it is equipped with all-wheel-drive and two motors. This works perfectly fine, but it isn't the most efficient solution, seeing as energy (and therefore battery range) is lost to mechanical friction via the transmission, driveshafts and whatnot.

What's more, car designers and engineers are relatively limited in the way they can package new vehicles, having to shoehorn in the required plumbing for a bulky electric drivetrain.

The next big thing in EV land is the introduction of in-wheel motor (IWM) technology, which has been around for decades but has taken a long time to refine to a point where it can affordably and realistically be introduced into production cars.

Donut Lab, a subsidiary of [Verge Motorcycles](#) – the futuristic electric motorcycle brand that pioneered in-wheel motor technology on high-performance two-wheeled transport – showcased the latest generation of its technology at this year's [CES 2025](#), and it has the potential to change the game again.

In-wheel motor technology has been considered too expensive, under-powered and too bulky for mass-produced cars, seeing as a huge amount of weight is essentially positioned in an area (the wheels) that need to be as light as possible – a concept dubbed 'unsprung mass' by automotive boffins that refers to anything that isn't supported by the vehicle's suspension system.



It plays a pivotal role in how a vehicle handles, but Donut Lab says its latest motor technology can be as light as 40kg, yet deliver a power-to-weight ratio that far exceeds anything that is currently on the market. Unsprung mass becomes a moot point.

The company's CEO, Marko Lehtimäki, says that an automotive-spec, 21-inch version can deliver a gut-punching 630kW of power, which is 845hp. Multiply that figure by four, and the next generation of supercars could easily produce 3,380hp, if manufacturers can figure out how to transfer that power to the road beneath.

Silly supercar daydreams aside, the technology will more likely be used in a more restrained manner, with a couple of lightweight and less powerful in-wheel motors powering the rearmost wheels, which could still yield a heady 600-800hp, without the associated costs.

There's a 17-inch application for motorcycles, which delivers around 200hp (that's up there with most modern superbikes) that only weighs 21kg, while a 12-inch version weighs just 8kg.

Lehtimäki says that his company has managed to extract class-leading performance with "a smaller quantity of active materials," meaning that

manufacturers can jump on the in-wheel motor bandwagon and save as much as 50 per cent in manufacturing costs compared to traditional EV motors.

Analysis: The wheels are in motion



Donut Lab wasn't the only in-wheel motor pioneers on display at CES this year, as Slovenian firm Elaphe Propulsion Technologies also showcased its ultra-thin Sonic 1 hardware that's capable of developing 268hp, while allowing enough space inside a 21-inch wheel for standard high-performance disc brakes.

This would make the motors suitable for use in high-performance driving situations, such as on the racetrack, where reliable and predictable braking power is essential.

The company showcased its tech in the Italdesign Quintessenza concept, which takes the form of a futuristic electric pick-up/SUV hybrid that packs a Sonic 1 motor in each wheel for over 2,000hp.

Elaphe says it is working on mass production concepts that it hopes it can develop alongside OEMs. However, don't expect to see a production version until 2030 or later.



Elaphe Propulsion Technologies

Despite those lengthy time frames, the race is on to be the first to introduce in-wheel motors to the buying public. BMW announced last year that it was working with Munich-based electric motor engineers DeepDrive to develop in-wheel motor technology that could be scaled to a point where it makes financial sense for mass-produced EVs.

Similarly, [serial innovator Hyundai Motor Group](#) has been working on and refining its 'Uni Wheel' technology since 2023.

There's been no update on recent progress, but the Korean company said that the technology could completely change the way it packages EVs in the future, helping it to improve battery range and massively increase the durability of its motor units.







