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**VALHALLA: THE ULTIMATE DRIVERS SUPERCAR**

* **Valhalla delivers sector defining combination of road and track capability**
* **1079PS / 1100Nm PHEV powertrain combines bespoke 828PS flat plane crank 4.0-litre twin-turbo V8 engine with three E-motors delivering a further 251PS**
* **Capable of an electronically limited maximum speed of 350km/h (217mph) and 0-100km/h (62mph) in 2.5 seconds**
* **Twin front axle E-motors facilitate Torque Vectoring, reverse, torque fill and EV-only drive mode, along with regenerative braking**
* **All-new hybridised 8-speed Dual Clutch Transmission equipped with highly responsive hydraulically actuated Electronic Rear Differential**
* **Active Aerodynamics achieve and maintain in excess of 600kg of downforce from 240km/h to 350km/h. System also features DRS and Air Brake functions**
* **Valhalla has benefited from working directly with Aston Martin Performance Technologies (AMPT) in the key areas of dynamics, aerodynamics and materials**
* **Production due to start in Q2 2025. Limited to 999 units.**

*11 December 2024, Gaydon, Warwickshire:* Fusing the performance-driven methodologies and technologies of Formula 1® with spectacular design and scintillating driving dynamics, Valhalla is a supercar of extraordinary scope. With development now at an advanced stage the time has come to reveal full details of Aston Martin’s landmark mid-engined hybrid supercar.

As befits the ultimate driver’s supercar, Valhalla is a car of ‘firsts’: Aston Martin’s first series production mid-engined supercar and first plug-in hybrid, delivering the marques first production vehicle with dedicated EV range capability. It is also the first model to use the bespoke 4.0-litre twin-turbo flat-plane crank V8 engine – the highest performing V8 engine ever fitted to an Aston Martin – and is the first to use the brand’s all-new 8-speed Dual Clutch Transmission (DCT), which incorporates an e-Motor and electronic rear differential (E-diff).

Valhalla also debuts a fresh design language. Extreme supercar performance expressed with fresh form and proportion, it bears the unmistakable Aston Martin hallmarks of flawless, uncorrupted lines and combines them with innovative high-downforce active aerodynamics. Close collaboration with Aston Martin Performance Technologies (AMPT) – the consulting arm of the Aston Martin Aramco Formula 1® Team – on dynamics, aerodynamics and materials have brought an extra dimension of knowledge and skills to the Valhalla’s design and development. This vital contribution has aided Aston Martin to push the boundaries of supercar engineering and performance to deliver a car which shines on road and thrives on track.

For Aston Martin CEO, Adrian Hallmark, Valhalla expresses the future vision for the ultra-luxury performance brand; “Four years ago we set out on a journey to transform the Aston Martin brand by taking its historic and unmatched luxury credential's and adding cutting-edge F1® inspired technology and class-leading performance, with the aim of taking on the most successful brands in the world.

“With the next generation of sportscars launched to critical acclaim, we are now adding the first ever mid-engine series production Aston Martin to our portfolio, the ultimate driver’s supercar. On paper and on-track Valhalla delivers the most driver-focused, technologically advanced supercar, with true hypercar performance and yet on the road it is as useable and enjoyable as any Aston Martin. A unique proposition, designed to be the most elegant and exciting product in the market.

“We learned to think differently from developing the ultimate hypercar, Aston Martin Valkyrie and working with Adrian Newey. This knowledge and new methodology have allowed us to build on the strengths of our past successes and position Aston Martin as a class-leading company in technology, performance and experience for our customers who will be the custodians of this new piece of Aston Martin history, Valhalla.”

**TECHINCAL OVERVIEW**

This relentless pursuit of excellence has seen Valhalla’s specification evolve significantly from the original concept with significant gains achieved in power output, downforce and dynamic capability. Central to this is Valhalla’s best-in-class 1079PS and 1100Nm of torque hybrid powertrain comprising an 828PS 4.0-litre twin-turbo V8 engine and three electric motors (two of which drive the front axle) contributing a further 251PS. The Internal Combustion Engine, (ICE) produces 207PS/litre, the highest specific output from any Aston Martin. An all-new 8-speed DCT transmission sends drive to the rear axle, delivering split-second shift times and a thrilling shift character. Performance targets include 0-100km/h (62mph) acceleration in 2.5 seconds and an electronically limited 350km/h (217mph) maximum speed.

Active aerodynamics informed by the revolutionary Aston Martin Valkyrie generate in excess of 600kg of downforce. This figure is reached at 240km/h (149mph) and then maintained all the way to Valhalla’s 350km/h (217mph) maximum speed by using active aerodynamics to gradually reduce the front and rear wings’ angle of attack to ‘bleed’ excess downforce as speed rises, thereby keeping the aerodynamic balance consistent across a broad performance envelope for maximum driver confidence.

Sophisticated Integrated Vehicle Dynamics Control (IVC) electronics monitor suspension, braking, steering, active aerodynamics and powertrain systems to achieve optimal performance and driver connection in every situation. Working in harmony with Valhalla’s four driver selectable drive modes, IVC continually shapes Valhalla’s dynamic character by monitoring vehicle behaviour and driver demands. Through precise calibration this immensely complex and sophisticated system delivers an organic, natural feeling driving experience. One which effortlessly and seamlessly ups its game to achieve new heights of performance and driver engagement.

On start-up, Valhalla selects Sport mode as default, with the driver able to manually select Pure EV, Sport+ and Race as alternative drive modes. Each mode has its own combination of settings for powertrain (including Torque Vectoring and hybrid system integration), plus suspension stiffness, active aero, and steering calibration for distinct driving characters. In pure EV mode, drive is from the front-axle motors only with a range of 14km and a top speed limited to 140km/h (80mph).

With the four defined drive modes, drivers can select their chosen mode via the rotary in the center stack. A tactile control, for maximum interaction between driver and machine. Each drive mode is purposefully calibrated to give the driver a distinct and differentiated experience. In pure EV, silent on start-up, and the mode we imagine customers to start and end their journey. As the battery depletes its state of charge, Valhalla will automatically switch from EV to Sport. Sport engages the 4.0-litre Twin-Turbo V8 engine and drives Valhalla as a hybrid supercar, combining the instantaneous torque of the electrified front axle with the exhilarating power of the V8. Dialing up the theatre into Sport +, Valhalla is maximised for dynamic thrill on the open road. Race mode is all about ultimate performance, focused for the racetrack, and engaging the active aerodynamics.

In pure EV, Sport and Sport+ modes, the active rear wing remains stowed to maintain Valhalla’s elegant silhouette. In Race mode, the rear T-Wing raises by 255mm on powerful hydraulic rams for maximum downforce. In conjunction with the distinctive and active rear wing, Valhalla employs a concealed active front wing, just ahead of the front axle, a component that is essential to how Valhalla controls the air in Race mode. A technical triumph, developed with a single mechanism to control and manage airflow across multiple surfaces, the active front wing is set to minimise drag in its default position. When Race mode is selected the front wing shifts to maximum downforce mode with full range of movement including, an automated DRS function when the vehicle determines it needs to bleed of downforce. Under braking, when in Race mode, the rear wing will dominantly deploy as an air brake, working in tandem with the active front wing to shift the balance of pressure and ensure optimal stability when delivering incredible braking performance.

For Aston Martin’s Director of Vehicle Performance, Simon Newton, developing Valhalla has been a unique and rewarding journey: “The challenge for the engineering and vehicle dynamics teams has been to harness, for the first time, the immense power of Valhalla’s hybrid powertrain through a combination of active aerodynamics and integrated dynamic control systems. With 1079PS and 1100Nm, extraordinary performance is a given. The challenge is achieving next-level speed, precision and exhilaration on track while retaining the characteristics of an enjoyable and highly emotional supercar when driving on the road. It’s this unprecedented dynamic bandwidth that separates Valhalla from its class rivals”.

**POWERTRAIN**

Valhalla’s hybrid powertrain combines a new 828PS 4.0-litre twin-turbocharged V8 engine with three electric motors contributing a further 251PS; two E-motors are mounted on the front axle and a third E-motor built-in to the new 8-speed DCT transmission, which sends dedicated drive to the rear axle.

The trio of E-motors are powered by an advanced High-Performance Battery (HPB) system designed specifically for use in a performance focused PHEV powertrain. Featuring an ultra-effective dielectric cooling system the battery combines the capability to deploy its state of charge to satisfy frequent and successive power demands with fast energy absorption and high-power density. This means that on a spirited drive, the full power potential can be called up immediately, while recuperation is strong when decelerating.

The HPB’s cooling system circulates a high-tech electrically non-conductive coolant fluid through the entire battery pack, ensuring each of its 560 individual cells are kept at their optimum temperature to ensure the consistent delivery of maximum performance.

The front axle is driven solely by a pair of innovative Radial Flux Interior Permanent E-motors designed solely for Valhalla, with each motor generating 18.1 PS/kg. When EV mode is selected, Valhalla takes drive exclusively from the front axle. Uniquely, these front E-motors are integrated within a custom-built P4 Front Electric Drive Unit to allow front wheel torque vectoring. To extract all possible torque and power, and achieve exceptionally compact package space requirements, the P4 unit employs market leading high strength Neodymium Iron Boron magnets within an asymmetric rotor. Aided by a newly developed cooling strategy, the E-motor features Active Stator and Rotor Oil cooling to reduce temperatures and consistently maintain maximum performance in the most demanding driving scenarios.

The rear axle is driven by the V8 engine, with additional contribution from the third electric motor built into the DCT transmission. Unlike the V8 found in Aston Martin’s Vantage, DB12 and DBX707 models, Valhalla’s new engine employs a dry sump lubrication system to ensure adequate oil supply even under high lateral forces on the racetrack. Another significant difference is the flat-plane crankshaft, where the crankpins are aligned with a 180-degree offset.

The ignition of the flat-plane V8 alternates from one bank of cylinders to the other, eliminating the residual gas issues of the cross-plane V8. The more uniform combustion across all cylinders allows for optimal utilisation of the engine's power potential and delivers sharper response.

New camshafts and new exhaust manifolds further improve the gas exchange. The pistons have been designed for higher peak pressures while also being weight optimised. The two twin-scroll turbochargers are roller-bearing mounted, which further enhances their response. A larger compressor wheel is used here, allowing the turbos to deliver an increase of almost 20% of air per hour compared to Aston Martin’s most powerful cross-plane crank V8 engine, found in the DBX707.

There is no physical connection between the front and rear axles. Instead, the two axles are continually monitored and managed by Valhalla’s state-of-the-art IVC and Integrated Power Brake systems. Torque Vectoring on the front axle and the rear axle’s Electronic Limited-Slip Differential (E-diff) control drive to all four wheels, according to dynamic demands for a perfect blend of traction, stability and handling agility, with enhanced steering precision and neutral handling balance.

Completing the powertrain is an all-new 8-speed DCT transmission. Designed and built for Aston Martin, this new paddle-shift gearbox has been developed specifically for the hybrid era and features a built-in electric motor. This E-motor is used to start the 4.0-litre twin-turbo V8 engine, charge the high voltage batteries and provide torque fill to assist the engine. It also supports with gear synchronization, allowing Aston Martin engineers to tune the gearshift character and achieve best-in-class shift speeds. When EV mode is selected, Valhalla takes drive exclusively from the front axle. There is no reverse gear, rearward drive instead being provided by the front axle E-motors in all drive modes.

Valhalla also employs a combination of intelligent Torque-Fill, E-Boost and Loadshift functions to extract maximum performance and efficiency from its hybrid powertrain while delivering the best possible driving experience across Valhalla’s full range of hybrid drive modes.

Torque-Fill and E-boost serve to enhance performance and response by using propulsion from the electric motors to support the already prodigious power of the twin-turbocharged V8 engine. The advantages of this state-of-the-art hybrid powertrain become abundantly clear as soon as the driver steps-in to the accelerator, Torque Fill mitigating even the most fleeting moment of turbo lag with instant torque fed from the electric motors until the turbochargers are delivering the required level of boost.

E-boost extends the operation of Torque-Fill to enable the total tractive power to exceed the maximum deliverable by the internal combustion engine alone. Use of E-boost is managed to ensure its effect remains consistent, with Loadshift and braking regeneration used to replenish what electrical energy has been expended.

Utilising the P2.5 electric motor incorporated within the DCT, Loadshift monitors energy expenditure and usage to ensure it is stored or deployed to best effect. In most normal steady-state driving situations the load on the V8 engine can be minimised to achieve improved fuel consumption. When load increases surplus energy is stored in the HV battery. When the engine’s operating efficiency is low – such as idling or in slow moving stop-start traffic – the engine switches-off automatically and electric drive is engaged whilst in Sport mode. Brake regeneration further increases efficiency by harvesting kinetic energy during braking or deceleration events and storing it in the HV battery for later deployment.

To optimise Valhalla’s thermal management, there’s an extensive cooling network throughout the car regulating the Plug-In Hybrid Powertrain to ensure the driver can extract the ultimate performance. Three high temperature radiators are located at the front of the car for the 4.0-litre Twin-Turbo V8 engine, arranged across the nose of the vehicle, with a smaller radiator for the HV system and a condenser for the refrigerant system, cooling the cabin and the battery. Hidden inside the clamshell as no airflow is required, a further chiller for the battery is fed by the refrigerant system, with the AC system chilling the coolant. The F1® inspired roof scoop feeds two air charge coolers mounted directly above the engine. When designing this component, a new mounting strategy was employed to save more than 5kg. Completing the extensive network are the two side radiators, fed by air guided along the side of the car by the door turning vanes, the left-hand cooler for the engine oil and the right-hand cooler for the transmission oil.

**CHASSIS & BRAKES**

At Valhalla’s core is a bespoke carbon fibre tub for maximum stiffness with minimum weight penalty, with the lower section weighing only 74.2kg. Designed and engineered by AMPT, which applies their highly specialised F1® expertise and technical capabilities beyond the pinnacle of motorsport, Valhalla’s structure is the product of cutting-edge composite technology. The Carbon Monocoque at the core of Valhalla helps achieve a dry lightweight mass of 1655kg giving a power to weight ratio of 652PS per 1000kg.

Valhalla’s carbon structure has been created using proprietary technology developed for Aston Martin. The upper and lower sections of the structure are moulded from carbon fibre using a combination of Resin-Transfer-Moulding process (RTM) and F1® derived autoclave technology. The result is a singular, immensely stiff, strong and light passenger cell which delivers best-in-class dynamic structural attributes and outstanding safety, without compromising driver and passenger ergonomics.

Aluminium subframes are attached to the front and rear of the tub. The front-end features Formula One® style push rod front suspension complete with inboard mounted springs and dampers. By moving the dampers inboard, Valhalla benefits from improved airflow within the wheel arch, paired with the purposeful cut outs in the front fender above the wheel lowering the air pressure within the wheel arch and reducing drag. The improvement of airflow out of the wheel arch is directed by the door turning vanes to purposely feed the rear oil coolers with better quality air. From a design and packaging perspective, the inboard damper system has allowed a lower body surface ahead of the A pillar, its efficient packaging allows greater room for the front axle electric motors and front radiator system.

The rear is built around a highly effective 5link suspension system. A bespoke evolution of Bilstein’s precise and ultra-reactive DTX adaptive dampers are fitted front and rear. Tuned to deliver an exceptional range of performance across Valhalla’s various dynamic driving modes, Sport and Sport+ offer the refinement and optimum balance of body control, dynamic agility and compliance for road driving, with Race mode introducing much increased support and control to capitalise on Valhalla’s active aerodynamic downforce for maximum performance on track.

Valhalla’s braking system has also been honed to truly deliver across those two extremes. Progressive stopping power during road use with ample reserves of outright retardation for on-limit track driving. These characteristics have been achieved through careful tuning of a new Integrated Power Brake system, which allows fine tuning of pedal feel across the full range of deceleration. This ensures precise, instinctive modulation thanks to a firm, confidence-inspiring pedal feel whether making modest braking inputs or demanding maximum stopping power from elevated speeds.

Featuring 410mm Carbon Ceramic (CCB) discs on the front axle and 390mm on the rear, Valhalla’s braking system is controlled by sophisticated brake-by-wire technology. Engineered for the rigors of track use and finessed for the nuanced demands of road driving, Valhalla’s brakes are a spectacular blend of power and precision.

With a core of ceramic material reinforced with carbon fibre and covered by an additional ceramic friction layer, these CCB brakes yield significant mass reduction over traditional cast iron discs together with superior thermal and durability properties. Gripped by 6-piston front and 4-piston rear ventilated monobloc calipers fed with direct mass airflow from dedicated ducts for uninterrupted cooling, Valhalla has immense reserves of stopping power. The braking system has been engineered specifically for the Valhalla, incorporating Brembo's Carbon Ceramic Brakes (CCB) technology. This system features the largest combined front and rear brake assemblies ever used in any Aston Martin sports car. Extensive simulation and physical development have been conducted to optimize brake cooling performance, including Computational Fluid Dynamics (CFD) analysis, Finite Element Analysis (FEA), and rigorous physical testing across various global circuits and wind tunnel environments. The calipers are custom designed to seamlessly integrate with the cooling system, incorporating vented pistons to enhance airflow and cooling efficiency across both the brake pads and caliper internals.

This approach guarantees that temperatures are effectively regulated during high-performance driving conditions. despite this focus on performance, the refinement of the braking system has still been a priority and not a compromise. We have continued to build upon the best-in-class Aston Martin brake pedal DNA, providing good support throughout the pedal sweep, matched with appropriate levels of response to instil confidence, and the ease of modulation through a linear, sporty feeling pedal. All this with the introduction of Integrated Power Brake (IPB), ultimately leads to reduced reaction time and a great level of control.

In Race mode Valhalla’s friction braking system is supplemented by the Active Aerodynamics, which adjust front and rear active aerodynamic surfaces to create an Airbrake. Acting like a parachute to significantly add drag during heavy braking, the Airbrake also puts more downforce on the rear of the car. Using aerodynamic downforce to counter the forces of weight transfer improves stability under hard braking. The increased drag also helps reduce stopping distances and improve braking times.

Regenerative Braking is a major feature of the Aston Martin Valhalla, increasing the usable range of the electric drivetrain and making otherwise wasted energy usable again by employing the front axle E-machine to convert braking energy and store it in the HV battery. Valhalla utilises two forms of regeneration; CAT B, via the front E-motor where the driver applies the brakes and CAT A where regeneration is done via the rear E-motor as the driver lifts off the throttle.

The majority of the regenerative energy conversion is achieved when the driver applies the brakes, with the requested deceleration being actively divided between the front electric motors and the conventional friction brakes. This is possible because the car features an integrated power brake, which is a brake-by-wire system decoupling the driver from the actual brakes and integrated into the IVC system, enabling it to be actively used during full-ABS-braking, a novel application with noticeable benefits when driven on track.  A further technical triumph, the regenerative braking is coupled with the Torque Vectoring system, enabling the distribution of wheel individual regenerative torque across the front axle.

**VEHICLE DYNAMICS**

Valhalla excels on both the Road and Track, focusing on driver engagement, agility and dynamic excellence with a unique combination of active aerodynamics and torque vectoring.

Central to Valhalla’s remarkable handling and dynamic behaviour is a sophisticated Torque Vectoring system. Using the two electric motors located on the front axle to independently feed varying amounts of torque to each wheel, Torque Vectoring is used to enhance the agility and stability of the car.

Torque Vectoring (E-TV) is an extension of Aston Martin’s advanced and Integrated Vehicle Dynamics Control (IVC) system. First introduced in DB12, the IVC system has been developed even further for Valhalla, seamlessly adding Torque Vectoring, Electric All-Wheel-Drive Distribution (E-AWDD) and regenerative braking work in harmony with the E-diff, Powertrain and the IPB braking system.

Valhalla utilises E-TV to adjust the way the vehicle handles and feels, by virtually changing basic parameters of the car. This means, that the control system is permanently calculating a desired behaviour with a model-based approach. By changing those parameters in the desired vehicle model, IVC automatically calculates the amount of Torque Vectoring needed. The calibration of torque vectoring is primarily dependent on the selected level of ESP, as E-TV is integrated into the ESP’s control strategy. In turn, the ESP on Valhalla is part of the Integrated Power Brake (IPB), which is a brake-by-wire system to allow for the seamless integration of regenerative braking. There are three modes available, as follows:

**ESP-On**

The main objective of ESP-On is to make the car as accessible as possible for the driver, with E-TV used to make the limit of the car more approachable. This is achieved by ESP acting early to mitigate over- and understeer before it develops to a level where corrective steering inputs are required. By maintaining stability without the need for sharp ESP intervention drivers of all abilities are enabled to gradually work towards the limit of the car without ever breaching it.

**ESP-Race**

ESP-Race increases the feeling of agility and steering response, using Torque Vectoring to attack corners at the limit of maximum lateral performance. The ESP’s intervention threshold is also increased, allowing skilled drivers to drive at and even drift slightly beyond the limits of traction and lateral grip. Though tuned for more extreme driving, ESP-Race still provides less experienced drivers with the background support to confidently explore Valhalla’s elevated capabilities with the reassurance ESP will intervene beyond a certain slip angle.

**ESP-Off**

In ESP-Off, the full scope of Valhalla’s dynamic capability is unleashed. Developed for the enjoyment of expert drivers in a track environment, ESP-Off allows the limits of traction and lateral acceleration to be freely exceeded, placing the driver in full control. To aid their enjoyment, E-TV is tuned to achieve the highest levels of lateral acceleration and used to adapt the balance of the car, sharpening steering response and intensifying the feeling of agility in low-speed corners and focusing on stability and calmer responses at higher speeds.

In addition to E-TV, which distributes torque between both the front axle motors, the advanced IVDC system also distributes torque front to rear across the car via electric All-Wheel-Drive-Distribution (E-AWDD). A model-based and fully integrated approach, E-AWDD harnesses the power of sophisticated predictive software. Taking information from a suite of six-axis inertia measurement sensors, this software builds a real-time picture of road conditions by comparing model-based calculations of how close each tyre is to its limit of lateral and longitudinal grip.

Based on this understanding of each individual wheel, the software then seamlessly manages the flow of torque accordingly. Integrate within the IVC system, E-AWDD works hand-in-hand with front-axle Torque Vectoring and the rear-axle E-diff to precisely meter and continually optimise the amount of torque reaching each wheel.

**ACTIVE AERODYNAMICS**

The aerodynamic approach to Valhalla starts in a similar way to an F1® car, by using all elements of the body shape to generate downforce and minimise drag. However, Valhalla is not restricted by F1® regulations so it can benefit from fully active aerodynamic systems at both the front and rear of which will generate in excess of 600kg of downforce at 240km/h (149mph). Valhalla employs an integrated system of Active Aerodynamics which combines moveable aerodynamic surfaces with precise management of underbody airflow. This enables Valhalla to adapt front and rear downforce to maximise grip, balance and consistency, or reduce drag depending on the situation and the driving mode selected. This enables drivers to extract the very best from Valhalla’s chassis and tyres, across the full performance range of the car.

This powerful system is the key to generating high downforce for maximum cornering capability and braking stability, with the added benefit of DRS to achieve a towering 350 km/h (217mph) top speed. To do this Valhalla uses powerful and near-instantaneous hydraulic actuation to control the active aerodynamics, the rear wing working in conjunction with concealed active front wing to maintain an optimal aero-balance. Behind the front splitter the under-floor surface is concave, creating a low-pressure area that generates downforce. Valhalla’s front wing is a unique piece of engineering that is bespoke to Aston Martin and Valhalla. The movement on the front wing, controls the downforce of the wing itself and the air flow to the underfloor vanes. The front wing also has an integrated cooling bypass to save additional drag at high speed when Valhalla does not need as much cooling.

Taking information from Valhalla’s Integrated Vehicle Control (IVC) electronics system, the active rear dual element ‘T’ wing continually adjusts to optimize downforce, reduce drag or minimise braking distance in Race mode. In Sport and Sport+ modes the rear wing remains stowed to preserve Valhalla’s sleek and elegant profile, only deploying when Race mode is activated.

Having both front and rear active aerodynamic mechanisms allows Valhalla to have excellent control of the downforce distribution between front and rear axles, this is crucial for stability and vehicle performance.

The multi element rear wing lies flat to create the beautiful clean lines of the car, whilst generating a baseline level of downforce with minimal drag. In Race mode the rear wing extends upwards by 255mm, with Valhalla’s electronic systems adjusting the angle of the wing to ensure optimal balance for any given dynamic scenario. When Valhalla is subjected to heavy braking demands the active aerodynamics use the rear wing as an air brake, altering the angle of attack in under 0.5 seconds to increase drag. This is conjunction with the concealed front wing, shifts the aero balance and centre of pressure to maximise braking stability.

Valhalla’s meticulously sculpted aerodynamic surfaces are operating at peak performance to generate in excess of 600kg of downforce, enough for high-speed cornering ability and stability under acceleration and braking. From 240km/h (149mph) the downforce is kept at a consistent level and actively managed to remain at that figure all the way to Valhalla’s electronically limited 350km/h (217mph) maximum speed, with the rear wing’s angle of attack gradually trimmed as speed increases to reduce drag while maintaining elevated and consistent dynamic behavior over the widest possible operating window. Maintaining a consistent downforce figure above 240km/h (149mph) gives the driver an assured sense of stability and predictability as they explore the outstanding dynamic potential of the car.

**DESIGN: EXTERIOR**

Freed from the necessity for a fixed wing, Valhalla’s predominantly carbon fibre body evolves the ethos of form following function to embody a new era of efficient performance and true beauty.

Dramatic forward-hinged dihedral doors add supercar theatre but thoughtful design and engineering of the monocoque and doors – specifically lowered sills, roof cut-outs in the roof and a forward A-pillar position – significantly eases ingress and egress. Creating a class leading opening, the dihedral hinge takes the door up and away from the driver and passenger, allowing the user to easily drop into the bespoke carbon fibre seats and swing their legs into the cabin effortlessly. The doors also incorporate one of Valhalla’s most innovative aerodynamic features. Called the door turning vane, airflow exiting the front wheel arch is directed down Valhalla’s flanks and into ducts which improve performance of the V8 engine and transmission oil coolers by 50%. The inner surface of the door outer is sculpted to serve as a duct, allowing air to flow inside the door, passing along the sides of the car and into the cooling ducts for engine and transmission. This keeps the outer surface clean and free from visible scoops and intakes.

Rising from the sleek roof is an F1® inspired roof snorkel, directing air to multiple places including two engine intake paths, air to air intercoolers and an engine bay cooing duct. The roof scoop is flanked by wing-like opening panels giving access to fuel, oil and coolant fillers for the engine and charging ports for the plug-in hybrid battery. Far from compromising its immaculate surfacing these functional features are amongst Valhalla’s many intelligent details.

The quad exhaust system comprises a pair of top-exit tailpipes to maximise visual and aural drama, with an additional pair of low-mounted tailpipes flanking the underbody venturi tunnels. The lightweight exhaust system optimises the flow of exhaust gases and shapes Valhalla’s sound character; the low-mounted tailpipes being managed by active valves.

The rear of the car is dominated by two large venturi tunnels, accelerating the airflow under the car and generating downforce delivering a perfect balance of dramatic form and aerodynamic function. A design signature of Aston Martin hypercars and special projects, the 3D dimensional light blades protrude through a rear mesh panel, the pattern for which has been designed to allow hot airflow to be extracted from the back of the car.

For Aston Martin’s Executive Vice President and Chief Creative Officer, Marek Reichman, Valhalla sees Aston Martin’s much admired design language take a bold step forward: “As Aston Martin’s first mid-engined supercar Valhalla presented a rare opportunity to create something fresh. Knowledge gained during the Valkyrie hypercar programme was invaluable, as that meticulous mindset drove us to continually evolve and refine Valhalla’s design until finding a perfect balance of beauty and purpose. This striking new aesthetic reflects the unique synergies between Aston Martin’s exemplary approach to design and Aston Martin Performance Technologies’ mastery of materials and aerodynamics. The result is a supercar of unparalleled purity; a design that celebrates the inspiring challenge of seamlessly uniting form and function in this new age of efficient ultra-performance.”

Valhalla’s beauty is more than skin-deep. For example, a tenfold efficiency increase has been achieved in a simplified design for the front clamshell assembly. Originally comprised of 20 separate components made from a mix of aluminium and carbon fibre, the production assembly is made from just two individual carbon fibre pieces and 7kg lighter than the original design whilst integrating the structure and aero ducting.

The carbon fibre body is available either painted or as exposed carbon. Customers have the option to tailor Valhalla’s exterior with a choice of upper or lower pack to add visual carbon fibre. In addition, all exterior carbon panels can be specified in a choice of gloss or satin lacquer. For maximum impact this lacquer can also be specified with a choice of red, blue or green tint. Valhalla can also be optioned in a choice of six bespoke livery themes inspired by Aston Martin’s heritage in various motorsport formula.

A choice of two designs of wheel gives scope for further personalisation. A forged aluminum wheel is available in three finishes; liquid titanium, textured black matte, satin black/ diamond turned and is fitted with bespoke AML coded 285/30 ZR20 front and 335/35 ZR21 rear Michelin Pilot Sport S 5 tyres. For those who wish to express Valhalla’s extreme performance, an ultra-lightweight magnesium wheel (which save a total of 12kg of unsprung mass) is available in either textured titanium and satin black and fitted with track focused Michelin Pilot Sport CUP 2 tyres for maximum cornering performance.

**DESIGN: INTERIOR**

Formula One® influences found in the extreme Valkyrie hypercar also inform Valhalla’s cockpit, with clean, reductive design creating an environment to immerse both driver and passenger in an intense and unforgettable supercar experience. Foremost amongst them are raised footwells for a low hip-to-heel seating position and lightweight, one-piece carbon fibre seats for maximum support. The seating position amplifies the driver’s sense of connection without compromising comfort. The steering wheel shape has too been inspired by F1® and features a one-piece carbon fibre armature.

The Amphitheatre line is a key feature of Aston Martin’s new interior design language, wrapping around the cabin, cosseting the driver and passenger with a cockpit feel. A carbon brace runs the width of the cabin, on top of which floats the Instrument Panel. Each component is designed to enhance the driving experience of Valhalla, while maintaining the high levels of craftsmanship and excellence that customers are familiar with from Aston Martin’s core GT products.

The innovative Aston Martin HMI system provides an ultra-clear, column mounted driver centric display of information essential to road and track use. Features include a Race mode layout with a large linear tachometer and shift lights informed by Aston Martin Aramco Formula One® Team drivers at their Silverstone Headquarters. During road driving the display also features an expanded view function, such as full-screen navigation map, for added ease of use.

The HMI system also features a central touchscreen incorporating the introduction of new EV features, including a uniquely designed drivetrain visualiser illustrating the PHEV Powerflow in realtime. This Powerflow graphic has been purposely designed for Valhalla with inputs showing when Valhalla is regenerating energy under braking, performing load shift to charge the battery and when it is deploying energy to enhance performance and dynamics. Being the first Aston Martin with a dedicated EV range, the EV drive mode presents a clear graphic on to the driver display showing Valhalla’s energy deployment, electric power, and subsequent energy regeneration. Reflecting its position as the ultimate driver’s supercar, Valhalla also introduces selectable ADAS modes to configure the preferred level of intervention quickly and easily for different driving scenarios.

Driven by performance and inspired by the car’s impressive credentials, an emphasis on and extensive use of composite materials has been integral to the development of this race inspired, ultra-luxury interior. Recycled, forged carbon fibre for example provides a distinct, unique visual character. Supported by high-performance coatings on the exterior, also derived from motorsport, enable Valhalla to push beyond limits.

Like all Aston Martin models, Valhalla customers can explore endless bespoke and customisation possibilities via the luxury brands personalization service, Q by Aston Martin. Enlisting the skills of Q’s designers and crafts people, customers can embark on an unforgettable design journey that can encompass everything from a single small distinguishing detail to full-scale engineering and production of entirely bespoke components to create a true one-off.

With the credentials and exclusivity of Valhalla, Aston Martin anticipate a huge number of orders going via Q by Aston Martin to make each car truly bespoke for their discerning customers.

Aston Martin have entered the industrialisation phase of Valhalla with first deliveries of the limited 999 units to commence in H2 2025. To experience Aston Martin’s landmark mid-engined hybrid supercar, the new Valhalla configurator can be found at [configurator.astonmartin.com](http://configurator.astonmartin.com).

- ENDS -

**About Aston Martin Lagonda:**

Aston Martin’s vision is to be the world’s most desirable, ultra-luxury British brand, creating the most exquisitely addictive performance cars.

Founded in 1913 by Lionel Martin and Robert Bamford, Aston Martin is acknowledged as an iconic global brand synonymous with style, luxury, performance, and exclusivity. Aston Martin fuses the latest technology, time honoured craftsmanship and beautiful styling to produce a range of critically acclaimed luxury models including the Vantage, DB12, Vanquish, DBX707 and its first hypercar, the Aston Martin Valkyrie. Aligned with its Racing. Green. sustainability strategy, Aston Martin is developing alternatives to the Internal Combustion Engine with a blended drivetrain approach between 2025 and 2030, including PHEV and BEV, with a clear plan to have a line-up of electric sports cars and SUVs.

Based in Gaydon, England, Aston Martin Lagonda designs, creates, and exports cars which are sold in more than 50 countries around the world. Its sports cars are manufactured in Gaydon with its luxury DBX SUV range proudly manufactured in St Athan, Wales. The company is on track to deliver net-zero manufacturing facilities by 2030.

Lagonda was founded in 1899 and came together with Aston Martin in 1947 when both were purchased by the late Sir David Brown, and the company is now listed on the London Stock Exchange as Aston Martin Lagonda Global Holdings plc.

2020 saw Lawrence Stroll become the company’s Executive Chairman, alongside significant new investment. This coincided with Aston Martin’s return to the pinnacle of motorsport with the Aston Martin Aramco Formula One® Team and commenced a new era for the iconic British marque.

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**VALHALLA TECHNICAL SPECIFCATION**

**Body**

Carbon Fibre monocoque aluminium front and rear subframes

Carbon Fibre body panels including front clam, bodysides, rear clam and diffuser

Two door mid-engine coupe with 2 seat configuration

Dihedral doors for class leading ingress / egress

**Engine**

4.0-litre Twin-Turbo V8

Unique engine for Valhalla

Flat Plane Crank

Hot V configuration to improve throttle response

Max Boost Pressure: 3.0 bar

Firing order: 1-8-2-7-4-5-3-6

New turbocharger and exhaust manifold for improved catalyst heating and performance.

Unique intake system & quad exit exhaust

**Hybrid Powertrain**

Plug-In Hybrid Powertrain (Aston Martin’s First)

3 Electric Motors

2 x Electric Motors Front

* Twin Electric Motor EDU (Electric Drive Unit) on the Front Axle
* Oil cooled for optimum performance and efficiency

1 x Electric Motor Rear

* Electric Motor integrated within DCT transmission

400V Hybrid System

Front Electric motor maximum motor speed: 18,800rpm

Rear Electric motor maximum motor speed: 18,800rpm

**Transmission**

Bespoke rear mounted eight-speed Dual Clutch transmission with integrated electric motor

Electronic rear limited slip differential

Reverse conducted by EDU on front axle

**Performance**

Maximum power: 1,079PS / 1,064bhp / 793kw @ 6,700rpm

Maximum torque: 1,100Nm / 811lb-ft

ICE maximum power: 828 PS

ICE maximum torque: 857 Nm / 632 lb-ft @ 6,700rpm

ICE maximum RPM: 7,000 rpm

EV maximum power: 251 PS

Top speed: 217mph / 350km/h

0-62mph / 0-100km/h: 2.5 seconds\*Predicted Figure

**Gear ratios**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1st Gear Ratio: | 4.53 | 2nd Gear Ratio: | 2.84 | 3rd Gear Ratio: | 2.15 |
| 4th Gear Ratio: | 1.68 | 5th Gear Ratio: | 1.32 | 6th Gear Ratio: | 1.11 |
| 7th Gear Ratio: | 0.91 | 8th Gear Ratio: | 0.74 | Final Drive: | 2.92 |

**Steering**

Variable Electrical Power Assistance

Steering ratio: 13.7

Turns lock to lock:2.31

**Suspension**

Front-Double wishbone pushrod suspension with inboard springs and dampers

Rear - Multi-link Suspension, with Coil Springs & Anti-Roll Bar

Billstein DTX Adaptive Damping System (ADS) with Intelligent Adaptive Dampers

**Drive Modes**

Four selectable drive modes: Sport, Sport+, Race and EV

(Tailoring Drivetrain, Steering and Chassis calibrations)

**Advanced Driver Assistance Systems (ADAS)**

Autonomous Emergency Braking

Adaptive Cruise control with Stop & Go function

Lane Departure Warning

Lane Keep Assist

Auto High Beam

Matrix Headlamps

Driver Monitoring

**Wheels and Tyres**

20” Front and 21” Rear forged alloy wheels

Michelin Pilot Sport S 5 AML (Bespoke Summer Tyre)

Michelin Pilot Alpin 5 (Bespoke Winter Tyre)

Front: 285/30 ZR20

Rear: 335/30 ZR21

**Brakes & Chassis Systems**

Carbon Ceramic Brake System

* Front: 6-piston Alloy Calipers ; 410mm x 38mm Carbon Ceramic Discs
* Rear: 4-piston Alloy Calipers; 390mm x 38mm Carbon Ceramic Discs

Electric Park Brake

Dynamic Stability Control (DSC)

Anti-lock braking system (ABS)

Electronic Brake Distribution (EBD)

Emergency Brake Assist (EBA)

Traction Control (TC)

Hydraulic Brake Assist (HBA)

**Dimensions**

Height: 1,161mm

Height (Doors Open): 2,106mm

Width (including mirrors): 2,208mm

Front Width (excluding mirrors): 2,011mm

Rear Width (excluding mirrors): 2,014mm

Length: 4,727mm (Federal = 4,748mm)

Wheelbase: 2,760mm

Ground Clearance (excluding Air Dam):109 mm

Front Overhang (from wheel centre): 1,038mm

Rear Overhang (from wheel centre): 927mm (Federal = 940mm)

Approach Angle: 8°

Departure Angle: 16 °

Fuel Tank: 65 litres

Weight: 1655kg (Dry weight with lightweight options)

Turning circle (kerb to kerb): 12.2m

Turning circle (wall to wall): 12.5m

**Fuel Economy & Emissions**

EU: Awaiting Homologation

ROW: Awaiting Homologation

**DESIGN**

**Standard Specification (Exterior)**

Paint - Solid

Lower Body Package – Gloss Black

Upper Body Package – Gloss Black

Mirror Caps – Body Colour

21inch Forged Aluminium wheels - Liquid Titanium

Grille – Satin Chrome Vaned

Brake Calipers – Black Painted

Brake Discs – Carbon Ceramic Brake System

Top Exit Exhaust Tailpipe Finisher – Polished

Tail Lights - Clear

Badging – Enamel Wings Badge with Green Infill

Stainless Steel Exhaust System

**Standard Specification (Interior)**

Interior Trim – Alcantara

Seating – Satin Black Carbon Fibre Seat

Trim Split – Monotone

Headlining – Black Alcantara

Interior Carbon – Satin Forged Carbon Fibre

Interior Decorative Strip – Polish Chrome

Interior Jewellery – Satin Chrome

Gear Paddles – Match to Jewellery

Steering Wheel - Sports - Colour Keyed Leather

Seatbelt - Black

Audio – Aston Martin Audio

Apple CarPlay

**Optional Features (Exterior)**

Body

* Painted
* Exposed Carbon Fibre
  + Satin or Gloss Exposed Carbon Fibre
  + Satin or Gloss Tinted Carbon Fibre (Choice of Red, Green, Blue)

Paint

* Metallic
* Signature Metallic
* Racing Line
* Q – Satin
* Q – Special
* Q – Provenance
* Q – Icon
* Q – Ultra

Liveries

* Theme 1
* Theme 2
* Theme 3
* Theme 4
* Theme 5
* Theme 6

Lower Body Package

* Exposed Carbon Fibre
  + Satin or Gloss Exposed Carbon Fibre
  + Satin or Gloss Tinted Carbon Fibre (Choice of Red, Green, Blue)

Upper Body Package

* Exposed Carbon Fibre
  + Satin or Gloss Exposed Carbon Fibre
  + Satin or Gloss Tinted Carbon Fibre (Choice of Red, Green, Blue)

Grille

* Dark Vaned Grille
* Exposed Carbon Fibre
  + Satin or Gloss Exposed Carbon Fibre
  + Satin or Gloss Tinted Carbon Fibre (Choice of Red, Green, Blue)

Mirror Caps

* Gloss Black
* Exposed Carbon Fibre
  + Satin or Gloss Exposed Carbon Fibre
  + Satin or Gloss Tinted Carbon Fibre (Choice of Red, Green, Blue)

Top Exit Exhaust Finisher

* Satin Black Tailpipe Finisher
* Textured Titanium Grey

Brake Calipers – Painted:

* Black
* Red
* Yellow
* Gold
* Aston Martin Racing Green
* Vivid Red
* Vivid Blue
* Vivid Orange
* AMR Lime

Forged Alloy Wheels

* Forged Aluminium wheels - Textured Black Matte
* Forged Aluminium wheels - Satin Black/Diamond Turned

Magnesium Wheels (fitted with Michelin Pilot Sport Cup 2 tyres)

* Forged Magnesium wheels - Textured Titanium
* Forged Magnesium wheels - Satin Black

Badging

* Black Chrome Wings Badges
* Machined Titanium Wings Badges
* Ultrafine Wings Badge (Front) with Titanium Wings Badge (Rear)

**Optional Features (Interior)**

Interior Trim

* Alcantara
* Alcantara & Semi Aniline Leather
* Semi Aniline Leather

Trim Split

* Montone
* Duotone

Stitching

* Contrast stitch (Semi Aniline Leather only)

Seating

* Bespoke Carbon Fibre Seat

Interior Carbon

* Forged Carbon Fibre (Pre Preg) w/ Recycled Content - Gloss Finish
* 2x2 Twill Carbon Fibre - Satin Finish
* 2x2 Twill Carbon Fibre - Gloss Finish

Interior Decorative Strip

* AM Racing Green
* Photon Lime
* Cosmos Orange
* Morpheus Blue

Jewellery

* Dark Satin Chrome

Gear Paddles

* 2x2 Twill Carbon Fibre (Satin or Gloss match to interior carbon)

Steering Wheel

* Alcantara Steering Wheel

Seatbelts

* Black with Silver Contrast, Accent Colour Striping
* Black with Racing Green Contrast, Accent Colour Striping
* Black with Lime Contrast, Accent Colour Striping

Personalisation

* Audio – Bowers & Wilkins Audio
* Garage Door Opener
* Titanium Exhaust System