Aston Martin V8 Vantage launched at Geneva

Geneva - Aston Martin unveiled the production version of its eagerly awaited V8 Vantage at the 2005 Geneva International Motor Show on Tuesday 1st March.

First shown as a concept car at the 2003 North American International Auto Show in Detroit, the V8 Vantage immediately caused a worldwide sensation as it allows Aston Martin to enter a new sector of the premium sports car market with a genuine alternative to other cars that are currently on offer.

Deliveries of the V8 Vantage to customers in the UK and Europe will begin in late summer and in North America and the rest of the world by the end of the year.

It will be built at Aston Martin’s Headquarters at Gaydon, Warwickshire, UK, and completes the current Aston Martin line-up. This now comprises the flagship Vanquish S, the elegant DB9 and the agile V8 Vantage.

"The V8 Vantage is a significant car for us," explained Dr Ulrich Bez, CEO of Aston Martin. "It is now the third model in our range and is the culmination of the first phase of reinvigorating the Aston Martin brand around the world that began in the year 2000.

"The V8 Vantage is a true Aston Martin, built with the same high integrity and passion as all of our cars. This is the more affordable Aston Martin and its design and agility should help to widen our appeal and attract younger customers to our marque."

"The real difference is that the V8 Vantage takes us into a new sector of the market where we have not been previously represented. The V8 Vantage has all of the hand-built bespoke attributes for which Aston Martin is renowned."

Styling and Design

The exterior of the V8 Vantage is beautiful and perfectly proportioned from every angle with a low purposeful stance. Each carefully detailed feature provides graphic evidence of the painstaking craftsmanship and quality, which is synonymous with the Aston Martin marque.

The long bonnet and two-seater cabin creates an instantly recognisable stance, while minimal front and rear overhangs, combined with a wide track, appear to push the rear wheels out and enhance the extremities of the bodywork. At the rear a hatchback offers practicality not normally found in sports cars of this type.

"The V8 Vantage features many of the design cues that have become basic DNA for all Aston Martin models and are leading edge in car design," added Dr Bez.

"It was important to ensure that the design was pure, clean and innovative, while at the same time you should be able to cover the front nose badge and instantly recognise the V8 Vantage as an Aston Martin."

Offered with an imaginative combination of different leathers, contemporary fabrics and aluminium, V8 Vantage customers will have an extensive choice of standard body and trim colours from which to choose.

"From the outset, the look, feel and functionality of the interior was a key priority", said Aston Martin's Interior Design Manager Sarah Maynard. "We wanted to ensure the V8 Vantage reflected the new direction that the company is now taking."

The V8 Vantage is a two-seater, with the rear environment offering a large luggage shelf area accessed by a tailgate.

Inside, Aston Martin's craftsmanship is matched to striking 21st century style. The dials are made from aluminium, and together with the switchgear have a very distinct design and unique Aston Martin look and feel.

"We wanted to continue to evolve the interior design we started with the DB9," added Sarah Maynard. "The V8 Vantage has all of those attributes and like the DB9 everything you touch and see within the cabin area is special to Aston Martin. The ambience of the cabin is extremely important and we needed to ensure we continued to maintain the high standards we have already set."

Chassis, Engine and Performance

The V8 Vantage has endured the most extensive test and development programme in the Company's 91 year history during which 78 Prototypes were vigorously tested more than 1½ million miles. In Dubai over 12,000 miles of testing was carried out where ambient temperatures regularly hit 48ºc and the bodywork of the cars reached 87ºc.

High speed testing was conducted at the Nardo test track in Italy and extensive testing was carried out at Nurburgring's Nordschleife in Germany, and cold weather testing in temperatures as low as -30ºc was undertaken in Sweden.

The V8 Vantage is the second model to use Aston Martin's unique VH (Vertical Horizontal) architecture. Constructed from lightweight aluminium extrusions, precision castings and pressings, the underframe is bonded with aerospace adhesives and mechanically fixed with self-piercing rivets.

Certain complex parts of the frame are precision die cast in aluminium; the door inner panels are cast magnesium and the windscreen surround is a one piece aluminium casting.

The frame is bonded with cold-cure adhesive which has exceptional damping properties that help soak up the vibrations which may otherwise appear if the structure was welded.

The unique architecture provides an excellent backbone, while the use of sophisticated materials such as lightweight alloys, magnesium and advanced composites for the body further contributes to the car’s low weight and class-leading rigidity.

The V8 Vantage uses a combination of aluminium, steel and advanced composite exterior panels. Composites are used for panels with a high degree of complexity and a deeper shape, such as the front wings, which incorporate the distinctive side strakes.

Aston Martin’s engineers have worked with Ford Research and Nottingham University to develop RTM (Resin Transfer Moulding) composite panels, using unique processes and materials, resulting in composite panels and extremely high surface finish. The process ensures that the optimum amount of reinforcement material is used in each area of the panel to ensure optimum strength and weight.

Steel pressings are used for the body side panels to achieve the sheer depth of the design. This delivers the required style without resorting to using several panels in the rear three-quarter area, resulting in a remarkably clean and uncluttered appearance.

The V8 Vantage is very much a pure sports car, so from the outset, the priority of Aston Martin’s engineers was to focus on a lightweight, compact size, agility and power. At just 4.38 metres long it is compact and very nimble and is the smallest model in the Aston Martin range.

The all new 380 bhp engine is a 4.3 litre, low emissions all aluminium alloy V8, unique to Aston Martin. This new V8 uses the latest technology to deliver outstanding performance in all environments.

The layout of the powertrain adopts a transaxle configuration, whereby the front mid-mounted engine is connected to the transmission - at the rear of the car - via a cast aluminium torque tube and carbon fibre prop-shaft. This configuration provides the car with a 49:51 weight distribution, giving outstanding handling characteristics and excellent all round capabilities.

Aston Martin has adopted a dry-sump lubrication system for the V8 Vantage. Often used in racing cars, this system allows the engine to sit very low in the body, lowering the centre of gravity which in turn helps to improve handling and the overall balance and stability of the car. The system also helps to improve engine durability by maintaining lubrication under conditions of extreme cornering and braking.

"This is precisely the set-up you want in a sports car," explained Jeremy Main, Product Development Director of Aston Martin. "It helps maximise all of the aspects that you need to create an outstanding sports car."

The advanced quad-cam 32-valve engine is individually hand assembled by skilled Aston Martin technicians at the company’s new engine production facility in Cologne, Germany, where every Aston Martin engine, including the V12 for Vanquish S and DB9, is built.

"The V8 engine is unique to Aston Martin," said Jeremy Main. "We share expertise within the PAG organisation but this design is totally new and not a shared engine. Every significant part of it is unique from the specification of the cylinder block to the cylinder heads, crankshaft, connecting rods, pistons, camshafts, inlet and exhaust manifolds, lubrication system and engine management."

The bore and stroke dimensions are optimised to provide an excellent balance between outright power and torque, while a resonance induction system improves tractability and performance.

The inlet camshaft timing is variable resulting in improved low-end throttle response, mid-range torque and seamless power delivery. Maximum power is 380bhp @ 7000rpm and maximum torque 302lb ft @ 5000rpm.

The V8 Vantage will be initially offered with a 6-speed manual transmission and other alternatives will be announced at a later date. A great deal of time and effort has been spent ensuring that the new transmission has a smooth and fast shift action to ensure its ultra close ratios can be used to maximum effect.

"It is one of the best manual gear changes in the world," added Jeremy Main. "Driving enjoyment is a very important quality of the V8 Vantage and part of this is a superb gear change action."

Words/Photos: Aston Martin

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