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DAuto Engineering Private Limited

2017
DAuto Newsletter

November Edition

Design engineers turn designs into reality. Without them, a great idea but nothing more than, ... well, a great idea.

Honda Sports Vision Gran Turismo Concept

Honda has revealed the Sports Vision Gran Turismo, a sportscar concept developed in partnership with the Gran Turismo franchise.

The "Honda Sports Vision Gran Turismo" mid-engined, 2-seater coupe was born from a collaboration between the Honda design team and Gran Turismo.

The basic ideas behind this pure sportscar concept came from Honda's corporate culture for doing things that simply 'looks fun' and its motto 'Power of Dreams'.

The development started with a competition amongst their designers from all over the world. The competition was won by **Ben Davidson** and the team at the company's Los Angeles studio.

In the later stages of the design process the team was also joined by both Japanese and US designers, who gave their inputs and contribution.

The quarter scale model was built in the U.S., while the modeling data and hardware was developed in Japan.

Honda's 'Human Centered Design' direction influenced the placement of the driver, engine, and tires.

These elements determine the structure of the car; furthermore, the design and proportion of the exterior make the car appear as though it is in motion even at a standstill.

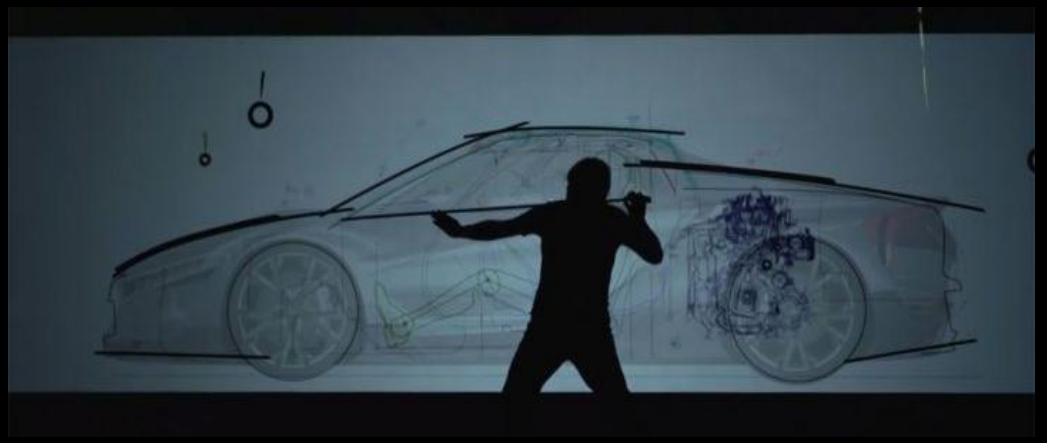
The two-seat interior has a high-tech, industrial design-inspired look, with sharp angles between the main lines and a cloche-shaped steering wheel.

Honda Sports Vision Gran Turismo Concept

The concept makes extensive use of carbon fiber components, thus achieving a claimed total weight of just 899 kg.

The mid-mounted 1998cc 4 inline cylinder turbocharged unit features Honda's iconic DOHC-VTEC, and delivers 410ps at 7500 rpm, transferred through an 8 speed dual clutch transmission.

The aerodynamic performance was tested not only with computer simulations, but also through a wind tunnel using a full scale model, just as in the development of a real car.



Honda unveils Riding Assist-e self-balancing motorcycle concept

Following the first presentation at CES 2017, Honda has announced that at the upcoming Tokyo Show it will debut a new motorcycle concept showcasing the evolution of its self-balancing technology.

The goal of this project is to build a motorcycle that is safer and easier to ride and to move at low speeds.

Dubbed the Honda *Riding Assist-e*, the bike is an electric vehicle with a low center-of-gravity and a very low seat height, but its most interesting capability is a self-balancing technology.

From the imagery that has been released, the gyroscopic self-balancing device appears to be located between the rider's thighs, and though it is likely that power is delivered via an electric hub motor, the single-sided swing-arm seems disproportionately large, suggesting there may be additional Honda engineering magic contained therein. Similarly, the trellis frame appears to be far more robust than one would expect of a low powered learner bike.

The design of the updated concept is minimal, with a tubular frame, sharp surfaces, a very short tail and original LED lighting units.

For those who ride a motorcycle already, the concept of your motorcycle deciding how far you can lean it over might seem counter productive. But Honda's balancing technology, which is apparently derived from its humanoid robot research, only balances the bike at "very low speeds" – something that seems to make perfect sense.

Mitsubishi e-Volution Concept

Revealed at the 2017 Tokyo Show, the e-Volution Concept is an all-electric high-performance SUV that embodies Mitsubishi's new brand strategy and design direction.

Based on the "Drive your Ambition" global tagline, the new strategy reflects "*an adventurous and progressive mindset for inspirational design and product.*"

The e-Volution Concept is presented as a technical prototype and marks the company goals of expanding its customer base and accelerate its EV deployment and development of systems integrating AI, connectivity, on-board and cloud computing.

MMC has adopted a design philosophy under the title "Robust & Ingenious". "*We aim to provide vehicles that fulfill our customers' desires through outstanding design, combined with the power, authenticity and carefully-considered functionality Mitsubishi Motors is known for,*" said MMC Head of Global Design **Tsunehiro Kunimoto**.

The design language is "a study in contrasts". MMC vehicles of the future are meant to be sincere, tough, and functional. At the same time, they will be clever, resourceful, style-setting and technologically advanced.

The design expresses the readiness to grip the ground with all four-wheels, and the agility of a high performance cross-country tourer.

Mitsubishi e-Volution Concept

The front end design is a fresh take on MMC's archetypal Dynamic Shield design. The black grille is shielded under glass, a subtle hint that this car is a high performance electric vehicle. Protected under the glass, and accentuated by blue lines for emphasis, sit cameras and sensors.

Large air intakes are located beneath the headlamps, ready to cool the electric brake calipers. Adding to the vehicle's excellent aerodynamics, the drawn-in air passes jet tailfins on the C-pillars before exiting on either side of the rear bumper.

A sharply slanted front windshield and short overhangs give the e-Volution Concept a unique side profile that has not been possible before the arrival of electric propulsion.

High ground clearance, short overhangs, strong shoulders, and narrow hips project nimbleness and agility. Muscular tires that protrude at the four corners communicate powerful 4WD torque. Bars running from front to rear along either side of the roof enhance the vehicle's muscular attitude.

The large hexagon shape at the rear draws inspiration from the spare tire cover of the quintessential SUV, the legendary Mitsubishi Pajero, a hallmark of off-road driving, and one of the most iconic chapters of MMC's heritage.

Inside, the cockpit shows that its designers suddenly had the freedom to go beyond the traditional firewall. The concept is powered by three electric motors, and the absence of a big internal combustion engine under the hood gave designers the space to realize a radically novel cockpit. Its instrument panel appears to float in front of the driver.

Mitsubishi e-Volution Concept

It is a MMC vehicle, and the instrument panel adopts MMC's trademark horizontal styling, with the focus on information above the axis and on operation below. Acting like a level in an electronic viewfinder, the horizontal instrument panel makes it easier to sense the state of the vehicle during driving – form follows function well down the road.

A large flat screen spans the full width of the dashboard. It displays outside conditions, navigation and coaching information.

The large screen is flanked by two smaller screens, showing images from front and rear cameras. Full-glass windows provide near unobstructed 360-degree visibility, for a feeling more akin to a jet fighter than a car.

The high-torque, high-performance electric motors are fed by a high-capacity battery system to deliver the smooth and powerfully responsive performance that distinguishes EVs from ICE-powered vehicles.

The drive battery is located under the floor mid-ship of the vehicle, providing a low center of gravity for the utmost driving stability.

The brain of the e-Volution Concept is an Artificial Intelligence (AI) system that augments the driver's capabilities. An array of sensors allows the AI system to instantly read changes in road and traffic conditions, as well as the driver's intent. Seamlessly coordinating driver intent with vehicle performance, the system supports drivers of all abilities.

Lexus LS + Concept

The Lexus LS+ Concept gives some indications on the design of the company's future LS flagship and showcases an AI-powered automated driving system.

The LS+ Concept integrates technologies and styling elements that Lexus is planning to integrate in its production models starting from 2020.

The design is an evolution of the brand's L-finesse design philosophy, and features a renewed Spindle Grille, with a **large grille shutter** that contributes to both improved cooling and enhanced aerodynamic performance.

Additional distinctive touches include the partly laser-lit headlamps and rear lamps, as well as the sleek electronic side mirrors/cameras.

From a technological standpoint, the concept integrates several automated driving systems, which are already capable of automated merging, lane changes and diverging, as well as keep a vehicle in its lane and maintain vehicle-to-vehicle distance.

Ad advanced communication system allows the vehicle to communicate with a data center to update its systems' software, while the onboard AI system can learn from big data, including information on roads and surrounding areas.

This allows the car to "grow along with its users", which according to Lexus *"represents a new age for the image of cars to which people can become emotionally attached."*

Lamborghini and MIT reveal Terzo Millennio Concept

Lamborghini and the Massachusetts Institute of Technology have collaborated on the development of new design study that envisions design and technologies for the future.

The Terzo Millennio ("Third Millennium" in Italian) envisions how a possibile future Lamborghini could look like, while introducing some interesting innovative technologies.

Among the advanced technology solutions addressed are **energy storage systems**, **innovative materials**, and propulsion systems.

The first two aspects were developed in partnership with two laboratories at the Massachusetts Institute of Technology: the "Dinca Research Lab", led by Prof. Mircea Dinca, Department of Chemistry and the "Mechanosynthesis Group", led by Prof. Anastasios John Hart, Department of Mechanical Engineering.

More specifically, the carbon fiber **body panels also act as an accumulator** for energy storage so the entire bodyshell can be used as a storage system.



Another innovation is a **carbon fiber self-healing system**: the Terzo Millennio can monitor itself to detect cracks and damages in its substructure derived from accidents and can start a self-repairing process starts using micro-channels filled with healing chemistries, that avoid risks of small cracks propagation.

The **design** of the Terzo Millennio, developed at the Lamborghini Centro Stile, is claimed to anticipate future design elements of production models.

An example is the evolution of Y-shaped front and rear light signature, which in the Terzo Millennio is brought to an extreme, pure level.


Tokyo 2017: Nissan IMx Concept

At the 2017 Tokyo Motor Show Nissan has presented IMx, an all-electric crossover concept vehicle featuring a fully autonomous driving system and a range of more than 600 kilometres (373miles).

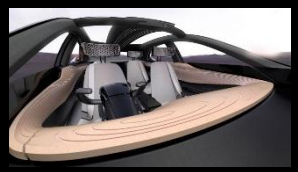
The concept showcases Nissan's vision for the future of mobility, represented by its Intelligent Mobility program, which aims at combining efficiency with driving enjoyment.

The surface language uses clean, tight surfaces defined by precise, almost straight lines that intersect at very sharp angles.

The surfaces of the front area feature a distinctive treatment, with trapezoid-shaped quarter panels that are almost detached from the main body.

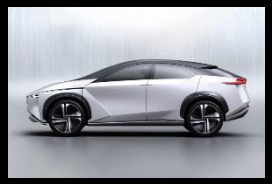
While a bit lacking in terms of elegance and unity, the overall result is characterized by a rather consistent styling.

With the IMx Concept one of the goals of Nissan designers was to break the boundaries between interior and exterior, by creating a cabin that without sacrificing privacy, conveys a sense of openness.



The cabin features a flat floor (enabled by the electric drivetrain), with large individual seats featuring full-width headrests with a distinctive hexagon-based 3D pattern inspired *bykumiki*, a Japanese interlocking wood puzzle. Another diagonal pattern is laser-etched on the surface of the seats.

All the controls are included in the car's panoramic OLED instrument panel displays which supports AI and gestures.



Honda Sports EV Concept

At the 2017 Tokyo Motor Show Honda has presented the Sports EV Concept, a compact sportscar based on the same idea of joy of driving introduced by the recent Urban EV Concept.

The Sports EV Concept combines an advanced, performance-oriented EV powertrain with an AI (artificial intelligence) system.

The goal of its playful, clean design is to make users experience the joy of driving as well a sense of unity with the car.

It's aesthetic language, along with the underlying principles, follow from the Urban EV Concept, which made its debut at the 2017 Frankfurt Motor Show in September, and which indicates the technology and design directions for Honda's future mass-production EV models.

Honda has reported that a first model based on the Urban EV concept will go on sale first in Europe, and then in Japan in 2020.

Mazda Vision Coupe Concept

At the 2017 Tokyo Motor Show Mazda has presented the Vision Coupe, an elegant study that introduces a new design direction, embodying minimalist Japanese aesthetic.

With the Vision Coupe Mazda designers wanted to set the stage for a new start for the company's "KODO – Soul of Motion" design language.

This trend had been already introduced with the 2015 RX-Vision Concept, which has had a strong influence on the Vision Coupe on many levels.

The proportions are sleek and elegant, with a set-back cabin, long hood and a silhouette defined by few flowing, curved lines.

Seen from the side, the concept features a uninterrupted arched shoulder line, which is complemented by the roofline and the hood crease lines.

The surface treatment uses very few character lines and well defined intersections with small fillet radii.

The flanks are deeply sculpted and uninterrupted, except for the blade-shaped air outtake the behind the front wheels.

The front end features a shark-shaped nose and an interesting transition from the headlights to the grille.

Both the headlights and the tail lights are very compact, which contrasts with the overall dimensions as well as with today's common trends.

"A powerful axis runs from the badge on the grille through to the one at the rear, evoking the look and feel of supple steel. All movements centre on this vector, creating a "one motion form" that is extraordinarily simple yet conveys a sense of speed."

Mazda Vision Coupe Concept

"The sharp and powerful highlight on the body shoulder is the primary focus of this model's design and imparts a dignified air of tension. The sides of the body are crafted to present linear transitions in light and shadow that change continuously in conjunction with the car's motion. This subtle movement of light and shadow makes the Mazda VISION COUPE look truly alive."

"The challenge in designing this concept model was to achieve a simple form upon which sharp, powerful highlights contrast against subtle transitions of light to create a new sense of vitality."

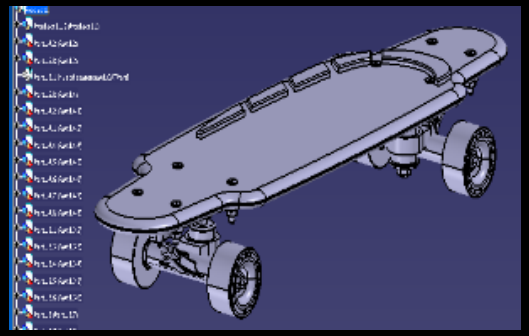
"The interior applies the concept of ma (literally "space") from traditional Japanese architecture, combining three-dimensional depth with a strong longitudinal axis to produce a relaxed space while maintaining the feeling of motion."

As with the exterior, the interior has a minimum number of visible controls, and most of the surfaces are clean and uncluttered.

The cabin is completely wrapped in dark brown leather which in combination with the dark wood trims gives the Vision Coupe an elegant, almost classic look.

STUDENT'S CORNER

DAuto Training Yield



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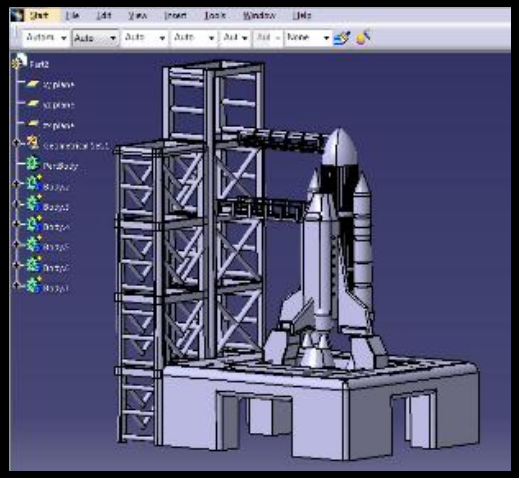

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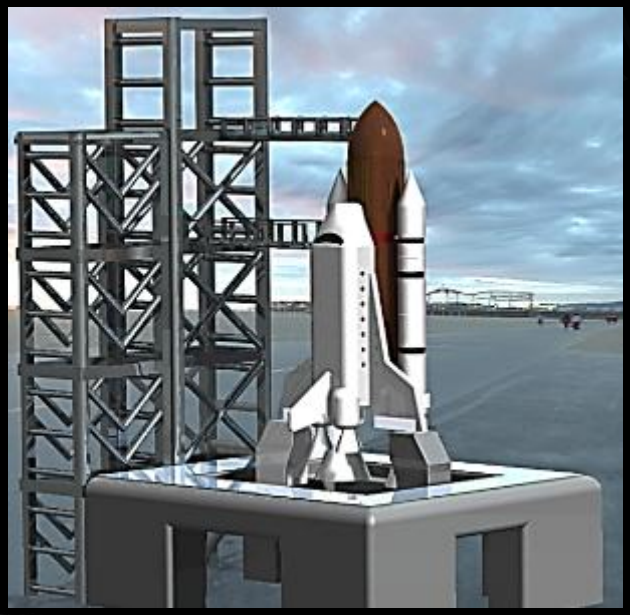

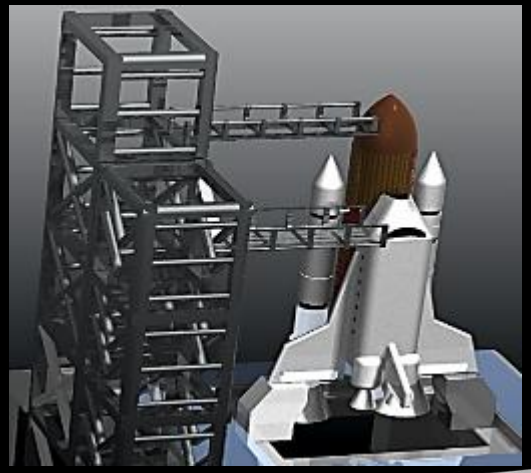

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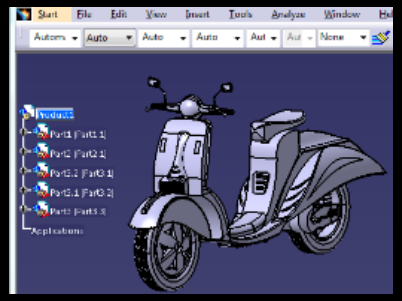

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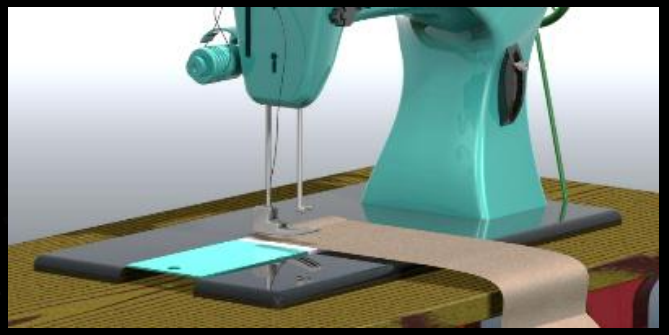

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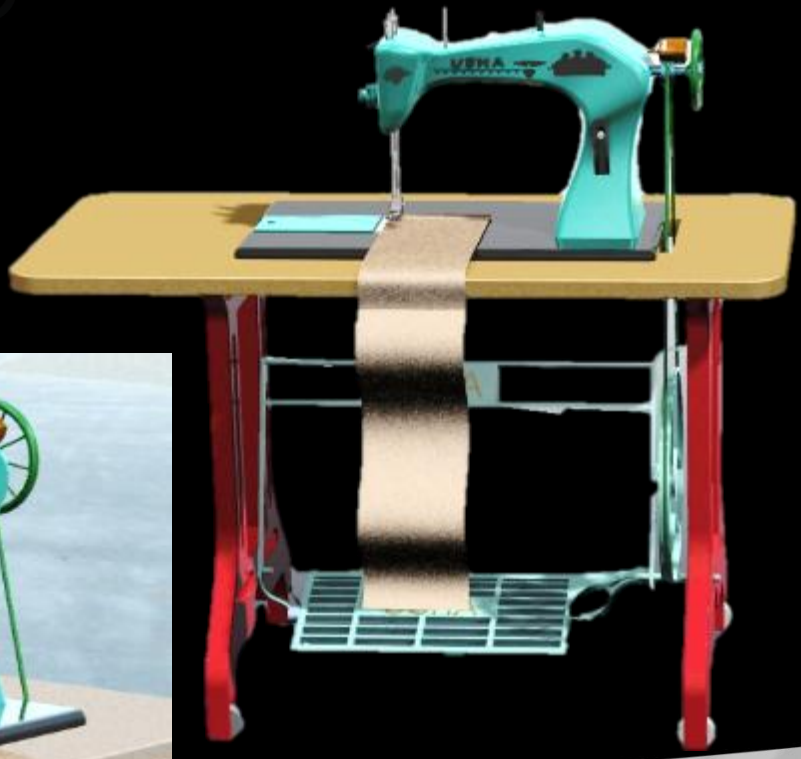

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