

# 2016

## DAuto Newsletter

JULY EDITION



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

## ASTON MARTIN AND RED BULL RACING REVEAL ROAD-LEGAL HYPERCAR

The V12-powered hypercar, codenamed AM-RB 001, is a mid-engined two-seater that will be available in road and track-only versions.



The expected total production volume will be between 99 and 150 road cars inclusive of all remaining prototypes and 25 track-only versions, with first deliveries commencing in 2018.



The AM-RB 001 – which is the virtual successor to Aston Martin's original hypercar, the One-77, will feature a new naturally aspirated V12 engine & a lightweight construction, which together will allow to achieve an incredible 1:1 power-to-weight ratio.



The development of this extreme vehicle was led by Adrian Newey, Red Bull Racing's Chief Technical Officer and F1 designer, Marek Reichman, Aston Martin EVP and Chief Creative Officer and David King, VP and Chief Special Operations Officer.

Built around a lightweight carbon fiber structure, the AM-RB 001 is characterized by radical aerodynamics, with much of the downforce generated through the underfloor design, which left Reichman enough freedom to create the shapes of the body with the goal of expressing both the cutting-edge dynamism and the essence of the brand.



## ASTON MARTIN AND RED BULL RACING REVEAL ROAD-LEGAL HYPERCAR



Aston Martin has also announced a track-only AM-RB 001, with projected performances in line with that of today's LMP1 Le Mans sports prototypes.



**Marek Reichman**, Aston Martin's Chief Creative Officer, says of the AM-RB 001: "Working so closely alongside Adrian and an organization like Red Bull Racing is a fabulous experience. By definition the objectives we've set for the car ensures there has never been an Aston Martin – or any car, actually – quite like the AM-RB 001. The shared challenge has been finding that magical tipping point where we achieve the most efficient engineering solutions and the most beautiful styling solutions without any compromises. My personal challenge has been expressing the AM-RB 001's extraordinary performance and the unique way in which it delivers that performance. Its style reflects its revolutionary nature, while possessing the form and beauty that makes it unmistakably an Aston Martin."

## HONDA NSX TOTAL AIRFLOW MANAGEMENT CONCEPT

A technical overview of the Honda NSX Total Airflow Management Concept, a set of solutions that allow to combine maximum downforce with optimal efficiency.



*"To meet the challenge of the ambitious performance targets, innovative packaging design and dramatic styling, Honda's engineers had to totally re-imagine the exterior engineering for this modern supercar."*



**Thomas Ramsay**, NSX Aerodynamics and Cooling Project Leader, explains: *"In many ways, with the design of the all-new Honda NSX, you literally have form following function, so this was a really exciting vehicle to work on as an aerodynamicist."*

With the interrelated objectives of superior downforce and efficient cooling, Ramsay and his team sought to extract maximum benefit from the flow of air around and through the all-new NSX.

One core concept employed in the new Honda NSX development was 'total airflow management', to achieve high levels of downforce, minimize drag and enhance grip, stability and balance.

*"This new 'total airflow management' strategy supports component cooling and aerodynamic performance while also contributing to even more dynamic styling."*

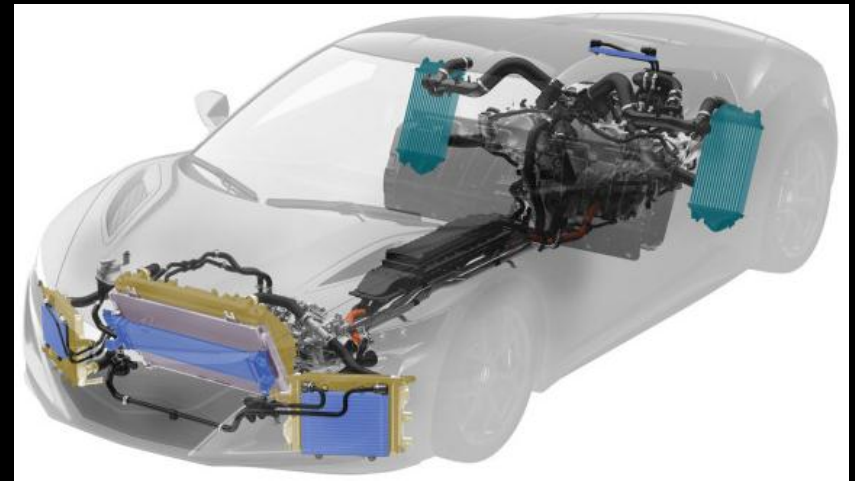
## HONDA NSX TOTAL AIRFLOW MANAGEMENT CONCEPT

### Balancing downforce for optimal performance

The front-to-rear balance of downforce generated by the NSX's exterior design was carefully tuned. An exhaustive research and development program determined that generating approximately three times as much downforce at the rear relative to the front of the car would provide the optimal downforce distribution for high-performance and day-to-day driving.

A rear diffuser works together with the rear spoiler and taillight slots to generate significant downforce and manage effectively the drag created by the aerodynamic wake generated behind the car. The NSX's high level of downforce is accomplished without the need for active aerodynamic bodywork or other devices.

Using computational fluid dynamic (CFD) simulations and testing of 40 per cent scale models in Honda's advanced wind tunnel facility in Ohio, the development team optimized the intricate body shapes. Surfaces, intake grilles and exhaust vents are shaped and proportioned to reduce aerodynamic drag, create downforce, maximize cooling and efficiently dissipate unwanted heat. The analysis was verified at Honda's full-scale, moving ground plane wind tunnel in Tochigi, Japan.





## HONDA NSX TOTAL AIRFLOW MANAGEMENT CONCEPT

### Thermal management

As part of the total airflow management approach, the NSX's exterior design also provides highly efficient thermal management required by its hybrid powertrain. There are seven different primary heat sources -the 3.5-litre V6 engine, two turbochargers, the nine-speed Dual Clutch Transmission (DCT), the Power Distribution Unit and the two motors within the Twin Motor Unit. To provide efficient cooling to each of these elements, airflow is managed through 10 different heat exchangers.

The airflow through the car's front-end follows carefully optimized exit paths, which take into consideration total airflow, maximum downforce and a low coefficient of drag. This air is then deliberately manipulated when exiting in order to achieve a pre-determined downstream flow pattern to feed the mid-engine air inlets. Vents specifically positioned to reduce turbulence and aerodynamic loss around the front wheels work in conjunction with front wing vents to stabilize airflow down the side of the car. These vents combine with the floating C-pillars to provide airflow to the signature side intakes, channeling it into the engine intake, engine bay, and turbo intercoolers. The side intakes are also designed to direct airflow over the rear deck to increase downforce.



## RENAULT LODGY 'WORLD EDITION' LAUNCHED



The automaker claims that this new variant has received 25 new enhancements to the interior and exterior. The changes begin at the front in the form of the jewel-studded front grille and fog lamps with chrome satin finish. Other revisions that are given to justify the 'World Edition' tag are the two-tone bumper, Nepta-finish alloy wheels, black and chrome side body cladding, textured B&C pillar and rear spoiler.

Renault India is riding high on the success of the Duster and, more recently, the Kwid hatchback. Now, in order to rake in more moolah and give stiffer competition to the Toyota Innova, it has launched a new variant of the Renault Lodgy, called the 'World Edition'.



Step in, and you're greeted by the gloss-black steering wheel adorned with a two-tone 'World Edition' badge. Then there are orange highlights on the air vents, instrument cluster and seat upholstery with chrome accents thrown in to further enhance appeal. Additional features added are smart sense AC for second and third row, 2-DIN music system, electrically-adjustable side mirrors, keyless entry, central locking and 12V charging socket across two rows.

## RENAULT LODGY 'WORLD EDITION' LAUNCHED



Powering this special edition is the same 1.5-litre, four-cylinder diesel engine that will come in two power outputs of 85PS and 110PS. The more powerful 110PS version produces 109bhp and 245Nm of torque, whereas the less powerful tune is capable of 84bhp/200Nm. The former is mated to a six-speed manual with the latter coupled to a five-speed gearbox.

The range starts at Rs 9.74 lakh (ex-showroom, Delhi) and goes up to Rs 10.40 lakh for the 110PS model. If you fancy one, there's a choice of four colors, namely: Fiery Red, Royal Orchid, Pearl White and Moonlight Silver.



## NISSAN JUKE COMING IN 2017

New Nissan Juke set for 2017 arrival with greener engines, a hybrid version, upgraded technology and an all-new platform



Two years ago, Nissan even did the unthinkable, it introduced the new Color Studio program that could allow any color combo. Think whatever you may about the Juke, but the bottom line is it offers a fun-to-drive character and arguably remains as one of the most capable compact crossover vehicle in the segment.

A part of the Juke's appeal lies squarely on its controversial styling which it offers without any apologies.

Although the new 2017 Nissan Juke might lack the striking appeal at the first sight, a drive inside will have you seeing the inner beauty of Nissan's feisty crossover/hatchback creation. According to Nissan, various new add-ons such as an available AWD system, a lively performance, unique exterior/interior color customizations, and a sporty handling are installed. Its release is set for next year's May, at least according to various online sources.

Away from the styling, one among the various strengths it possesses lies below its skin – a healthy turbocharged engine. This highly potent yet fuel-sipping engine which comes mated to a genuine rear-axle torque vectoring and an all-wheel-drive means you can get optimum traction via its ability to vary power between the left and right rear wheels as well as the front and rear axles.

## NISSAN JUKE COMING IN 2017

The S's list of standard features and equipment includes a 60/40-split folding rear seats, keyless ignition and entry, 17-inch alloy wheels, Bluetooth phone and audio connectivity, a hands-free texting assistant, a height-adjustable driver seat, full power accessories, air-conditioning, a rearview camera, a six-speaker sound system, a CD player, Siri Eyes Free iPhone integration, a 60/40-split folding rear seats, cruise control, a 5-inch color monitor, a trip computer, and a tilt-only steering wheel.

Stepping up to the SV trim guarantees you of an upgraded cloth upholstery, three drive modes (Eco, Normal, and Sport), a leather-wrapped steering wheel, automatic dual-zone climate control, a sunroof, a rear privacy glass, the I-Con system, and satellite radio.



Under the skin of the 2017 Nissan Juke lies a 1.6L turbocharged inline four-cylinder engine rated at 188 hp and 177 lbs. ft. of torque. An improved version of the engine, however, gets 215 hp and 210 pounds-feet of torque and is offered for the top-rated Juke Nismo RS.

### Specifications

Wheelbase: 8 ft. 3.6 in. (99.6 in.)

Length: 13 ft. 6.4 in. (162.4 in.)

Width: 5 ft. 9.5 in. (69.5 in.)

Passenger volume: 85 ft<sup>3</sup>

Cargo volume: 11 ft<sup>3</sup>

Curb weight: 2981 lbs

Top Speed: 124 mph

0-60: 6,9 sec

MPG: 28/32 (city/highway)

Available Exterior Colors: Bordeaux Black, Brilliant Silver, Cayenne Red, Cosmic Blue, Gun Metallic, Pearl White, Red Alert, Solar Yellow and Super Black

Towing Capacity: N/A lbs



## NEW 2017 TESLA MODEL S



When you come across the new 2017 Tesla Model S, it strikes you as one of the best luxury sedans with its acceptable-to-excellent battery range, an impressive performance regardless of the model, a sleek style, lots of cargo space, and Tesla's ever expanding charging infrastructure. Its release date should be expected sometime in the second half of next year, if online rumors are anything to go by. It offers a performance pedigree capable of thrilling even the most seasoned rally driver, the interior is comfortable and luxurious, and the list of its gadgets is simply breathtaking. This is one among a plethora of cars that can actually boast of pitting against German rivals like Audi, BMW, and Mercedes in terms of luxury and comfort.

The new model isn't just entirely reliant on proving its worth in terms of the fuel economy, it's all about seamlessly combining a myriad of performance systems, luxury and comfort amenities, and superb fuel economy ratings. This is true for the new 2017 Tesla Model S, it is a car worth voting for in a bragging rights competition. It sets itself apart from vehicles in its category in many ways, and you'll be hard-pressed to look for its alternatives.

If at all there was an eco-centric mold contest for all other electric cars ever built in its class, the brand new 2017 Tesla Model S wouldn't have to break a sweat to appease the judges. It addresses two major concerns, just like any other EV would do, but takes them a notch higher: charging time and range.



## NEW 2017 TESLA MODEL S

Standard equipment and features offered for the Tesla Model S 60 trim model include an eight-way heated power front seats, LED taillights, automatic xenon headlights, 19" wheels, Bluetooth phone and audio connectivity, cloth and premium vinyl upholstery, automatic dual-zone climate control, a seventeen-inch touchscreen display, Wi-Fi connectivity, and cruise control.



### Specifications

Wheelbase: 9 ft. 8.5 in. (116.5 in.)

Length: 16 ft. 4 in. (196 in.)

Width: 6 ft. 5.3 in. (77.3 in.)

Passenger volume: 95.0 cu.ft.

Cargo volume: 31.6 cu.ft. ( max 63.4 cu.ft. )

Curb weight: 4647 lbs.

Top Speed: 140 mph 0-60: 5.1 sec

MPG: 88/90 mpg (city/highway)

Available Exterior Colors: Deep Blue Metallic,

Midnight Silver Metallic, Obsidian Black

Metallic, Pearl White Multi-Coat, Red Multi-Coat

Silver Metallic, Solid Black, Solid White, Titanium

Metallic...

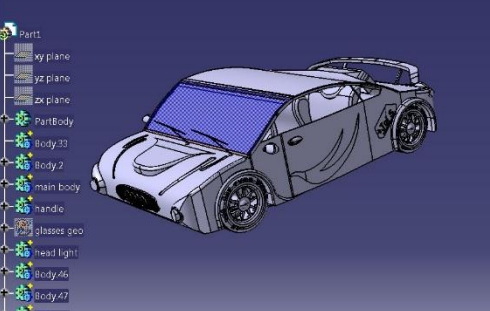
Towing Capacity: N/A lbs



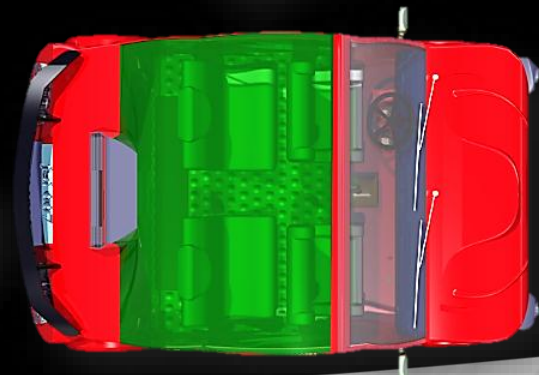
Exterior colors to expect include Titanium Metallic, Solid Black, Silver Metallic, Pearl White Multi-Coat, Red Multi-Coat, Deep Blue Metallic, and Solid White. You should look forward to an exhaustive list on its release date.

# STUDENT'S CORNER

DAuto Training Yield



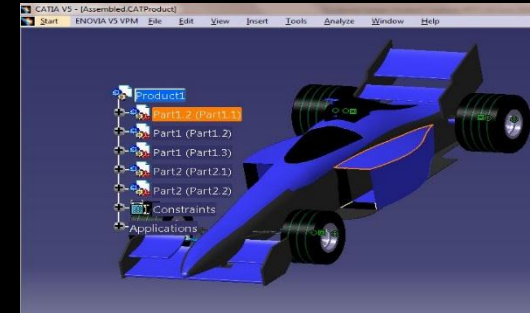
By :  
**JAI SHANKAR**  
(BUI, Bhopal)  
Design Tool :  
**CATIA V5**





# STUDENT'S CORNER

DAuto Training Yield

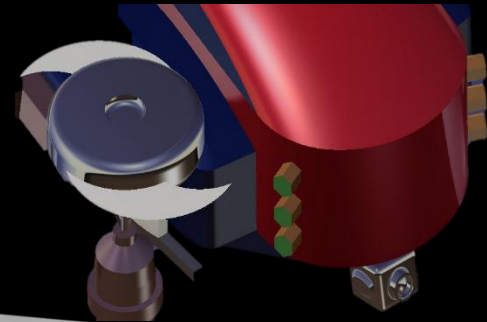
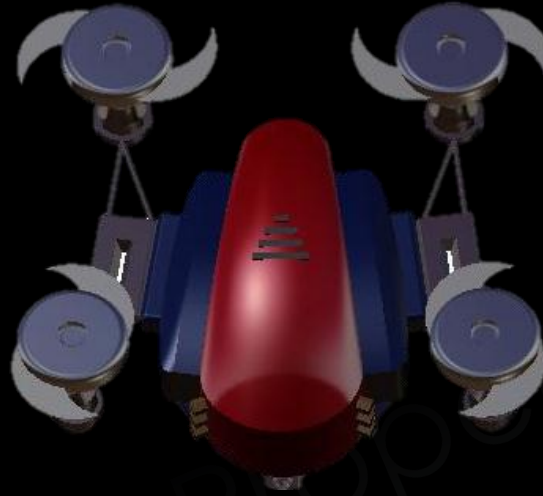


By   
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**CATIA V5**





# STUDENT'S CORNER



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