



The Second-Generation

NSX



2017 Model Media Information

Contents

Overview	1
Dynamic Performance	14
Power Unit	21
Package	39
Aerodynamics	40
Space Frame and Body Panels	43
Chassis	53
Interior and Exterior	60
Integrated Dynamics System	76
Safety and Driver-Assistive Technology	80
Audio and Connectivity	87
Design, Development and Manufacturing	94
Options and Colors.....	96
Index.....	103



A History of Innovation

When the original Acura NSX made its debut over 25 years ago, it forever changed the sports car world by combining exotic car styling and performance with a new dimension of quality, exceptional ergonomics and dynamic poise. The NSX introduced and defined Acura's approach to "Precision Crafted Performance," with its cutting-edge design and innovative technology that provided exotic car performance for real drivers in the real world.

"From the beginning, Acura has always been about performance. Not only speed or power, but elegantly designed and engineered products that stir the soul and harness innovative technology on a foundation of industry-leading quality and reliability."

Ted Klaus, Acura NSX Global Development Leader

By making use of advanced new technologies, such as a lightweight yet rigid all-aluminum unibody and chassis mated to a mid-mounted, transverse V6 engine, the original NSX challenged conventional wisdom for an exotic car. Its high-revving V6 engine featured a number of innovative production-car technologies, including forged pistons, titanium connecting rods and a VTEC valvetrain.



First-generation Acura NSX

The first-generation NSX sought a more intimate connection between the car, the driver and the road, pursued through essential design elements—low vehicle mass and high power-to-weight ratio, a rigid body supporting a performance-focused chassis, outstanding visibility, exceptional ergonomics and accessible performance—creating a paradigm shift in what it meant to be an exotic car.

Importantly, the first generation NSX also exemplified Acura's high standards of quality, durability and day-to-day reliability without compromising performance—something rarely found in exotic sports cars of the day.

Next-Generation Acura NSX

Respecting the foundational concepts of the original NSX, the 2017 Acura NSX pursues an altogether new and revolutionary idea for Acura supercar performance, melding timeless sports car values with next-generation technologies to create a New Sports eXperience. And much like Acura's Precision Crafted Performance DNA guided the creation of the original NSX, every aspect of this new NSX is a next-generation expression of those same values.

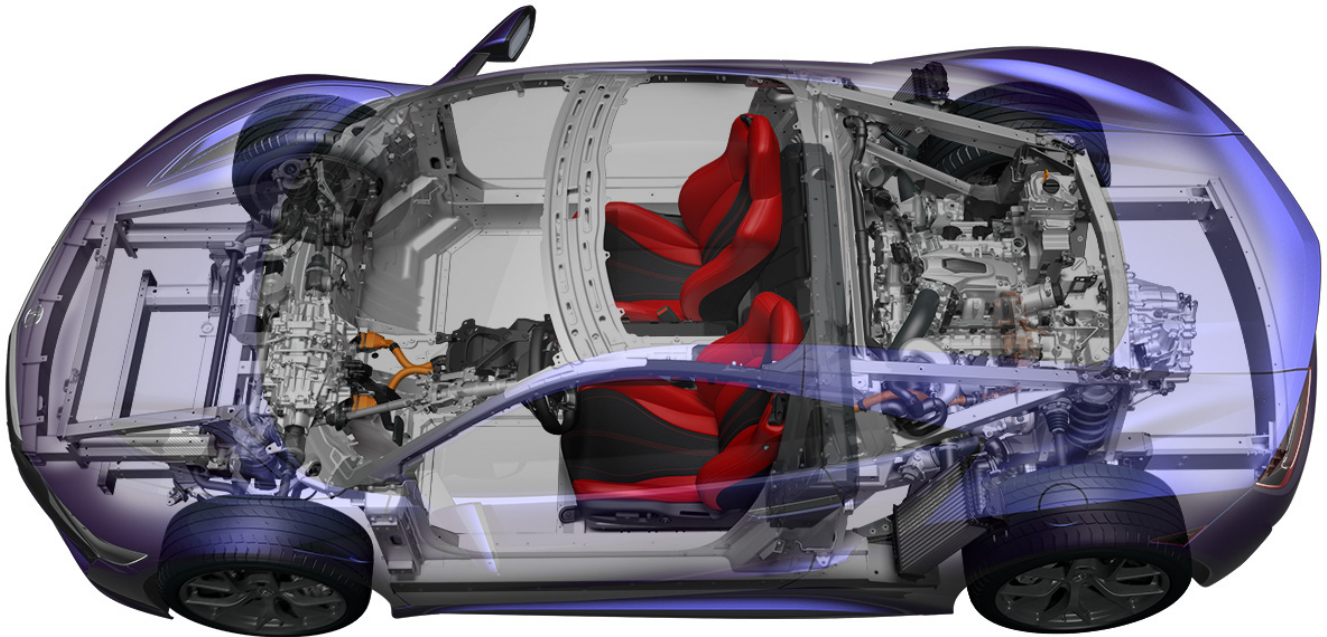
Based on the "man-machine synergy" approach that guides the development of all Acura vehicles, the company has created a driver-centered supercar, where every part of the vehicle is respectful of the smartest part of the car—the driver.

Foremost among its many innovations is Sport Hybrid Super Handling All-Wheel Drive (Sport Hybrid SH-AWD), a first-of-its-kind technology in the supercar realm. Marrying this cutting-edge and electrified new expression of Acura Super Handling performance with new approaches to vehicle design—including advanced body construction, component packaging and aerodynamic optimization—results in a supercar that faithfully translates the acceleration, steering and braking inputs of the driver with incredible fidelity and instantaneous response, thus amplifying the capabilities of every driver, while greatly elevating the dynamic experience in every driving situation—qualities that define the New Sports eXperience.

Sport Hybrid SH-AWD utilizes its electric motors to assist acceleration, braking and cornering. With electrically-powered torque vectoring provided by the front-mounted Twin Motor Unit, the NSX takes Acura Super Handling All-Wheel Drive technology to a new dimension—using the dynamic, instantaneous and continuous distribution of electric motor torque to enhance handling precision and cornering performance in all driving situations.

Overview

The revolutionary NSX Sport Hybrid SH-AWD power unit and its advanced dynamic capabilities are supported by new concepts in supercar design and body construction. The NSX multi-material space frame is a clean-sheet design, utilizing a multitude of advanced materials and joining technologies, each chosen for its capability to deliver ultimate global and local body rigidity in combination with low mass, outstanding visibility and world-class occupant crash performance. The space frame integrates several world-first technologies, including three-dimensionally bent and quenched (3DQ) ultra-high-strength steel A-pillars and ablation cast aluminum frame nodes.



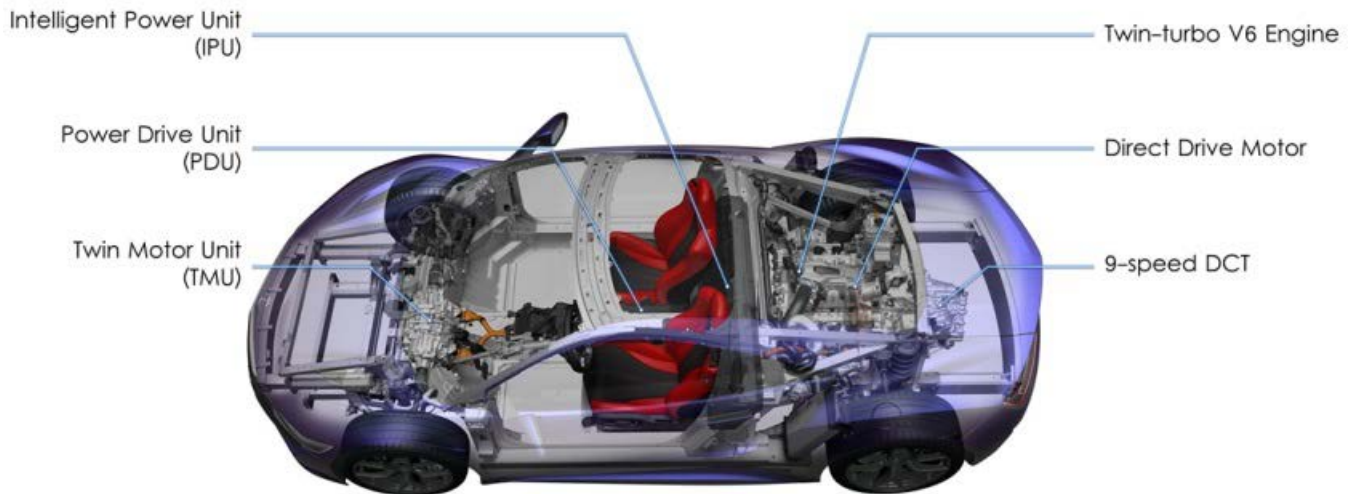
Likewise, the design and packaging of the Sport Hybrid SH-AWD power unit's components—engine, transmission, motors, batteries and control systems—are optimized to support and enhance its dynamic capabilities by lowering the center of gravity (CG) and centering the mass within the car.

General Dimensions, Capacities and Weight

Wheelbase	103.5 in. (2,630 mm)
Length	176 in. (4,470 mm)
Height	47.8 in. (1,215 mm)
Width	87.3 in. (2,217 mm) (includes mirrors)
Track (front/rear)	65.2 in. (1,655 mm)/63.7 in. (1,618 mm)
Fuel Tank Capacity	15.6 gal
Curb Weight (without options)	3,803 lb.
Weight Distribution (front/rear without options)	42%/58%

Sport Hybrid Super Handling-AWD Power Unit

The next-generation Sport Hybrid SH-AWD power unit consists of an all-new twin-turbocharged mid-mounted V6 engine paired with an all-new 9-speed dual clutch transmission (9DCT) and Direct Drive Motor that supplements the engine with instant torque response. The Direct Drive Motor also operates as a generator, maintaining the state of charge of the hybrid batteries to consistently support driver demands.



These systems, which comprise the rear power unit, are supplemented by the revolutionary capabilities of the front-mounted Twin Motor Unit (TMU). Containing two electric motors that independently drive the left and right front wheels, the TMU provides “active AWD,” increasing forward acceleration and continuously varying torque—both positive and negative—supplied to the front wheels. The resulting “direct yaw control” effect enhances agility, stability, performance and response—it is true torque vectoring, available at any speed in both on-throttle and off-throttle situations. Finally, the TMU also provides regenerative braking force, supporting braking demands while also recharging the hybrid battery.

By taking advantage of the immediate and precise torque response of the power unit’s three electric motors, the Sport Hybrid SH-AWD system can elevate any driver’s confidence and performance while extracting more performance than could be obtained without it.

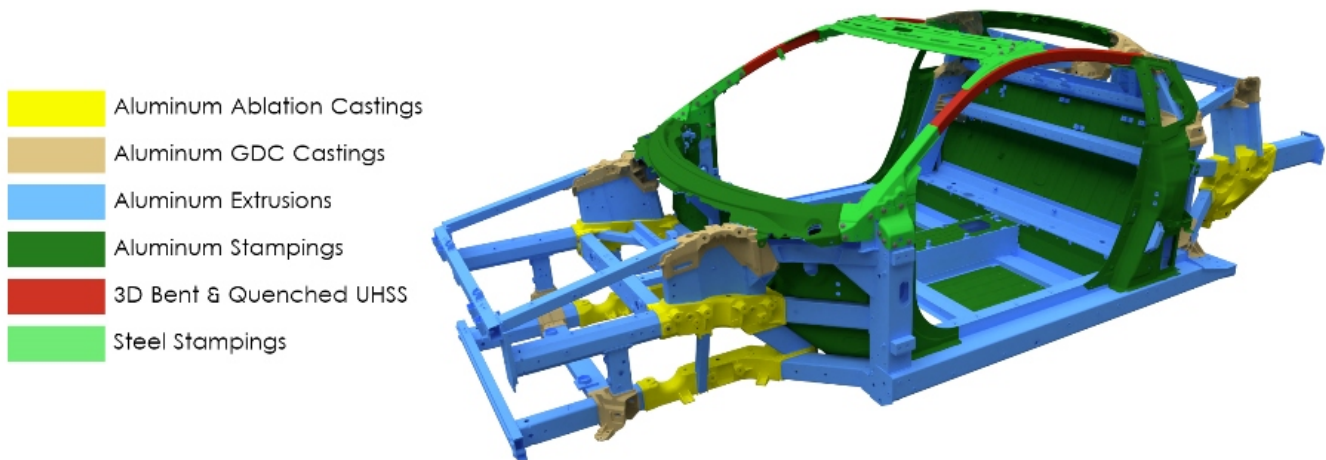
Power Unit Specification Overview	
Sport Hybrid SH-AWD Power Unit	Front wheels: mechanically independent from rear power unit components, two electric motors; Rear wheels: Twin-turbocharged V6 gasoline engine with one Direct Drive Motor and 9DCT
Maximum Total System Power	573 hp
Maximum Total System Torque	476 lb.-ft.
Engine	
Type	Twin-turbocharged DOHC V6
Layout	Longitudinally mid-mounted
Displacement	3,493 cc
Horsepower - SAE Net	500 hp @ 6,500–7,500 rpm
Torque	406 lb.-ft. @ 2,000–6,000 rpm
Direct Drive Motor	
Type	Permanent-magnet, water-cooled electric motor/generator
Layout	Direct drive, situated between engine and transmission, attached directly to crankshaft
Horsepower @ rpm	47 @ 3,000
Torque @ rpm	109 lb.-ft. @ 500–2,000
Transmission and Rear Axle	
Type	9-speed dual-clutch transmission (9DCT)
Differential	Limited slip with wet multi-plate clutch
Twin Motor Unit (TMU)	
Type	Permanent-magnet, oil-cooled electric motor/generator
Layout	Independent twin motors in a single package with a planetary gear set, one-way clutch and brake
Horsepower @ rpm	36 + 36 @ 4,000
Torque @ rpm	54 +54 lb.-ft. @ 0–2,000

Multi-Material Space Frame and Body Panels

Like the original Acura NSX—the world’s first all-aluminum exotic car—the all-new NSX has a cutting-edge structure. Its multi-material space frame utilizes new materials and construction methods to achieve unprecedented dynamic rigidity, outstanding outward visibility and world-class collision performance. Making use of a space-frame design, the new NSX is composed primarily of lightweight aluminum, with the strategic use of steel and carbon fiber in select areas.

- **Unmatched dynamic torsional rigidity** – The NSX directly responds to the driver’s cornering demands, instantly transmitting those inputs to the chassis while maintaining perfect connection between front and rear axles, communicating both the driver’s action and any changes in the road surface with the utmost fidelity.
- **Ultra-high local chassis rigidity** – Each chassis component is mounted to a rigid casting supported by extruded aluminum frame members that act like “truss structures” such that high local attachment-area stiffness is ensured in all directions, helping maintain the precisely-designed chassis geometry at all times.
- **World’s first automotive application of ablation casting technology** – Used both at front and rear, these ablation cast aluminum frame nodes serve as ultra-rigid mounting points for the suspension. Applied in key crush zones, these nodes link frame sections together and uniquely deform in a manner similar to a forged component but with lower weight, enabling shorter front and rear overhang, reduced vehicle mass and world-class collision performance.
- **A-pillars: Super strong, yet slender** – In another world’s first, a new three-dimensional bent and quenched (3DQ) frame member was employed to create thin yet sturdy A-pillars. The resulting ultra-high-strength material allows a slender cross section to maximize forward visibility while meeting structural demands, including roof-crush requirements.

Other advanced construction and manufacturing techniques employed in the all-new Acura NSX include the world’s first use of all-robotic MIG welding of the space frame for uniform and precise joining of its aluminum components.



NSX multi-material space frame

Overview

As with the space frame, NSX designers utilized a multitude of lightweight materials for the exterior body that are ideal for the task. Sheet hydro-formed aluminum is used for the outer door panels; aluminum stampings are used for the hood and roof (a carbon fiber roof is optional); sheet molding compound (SMC) is used for the fenders and trunk lid; and a high-temperature-resistant ABS plastic is used near the engine. This optimized material strategy is key to achieving desired panel rigidity with low weight, pedestrian safety performance, desired aesthetic design and exceptional surface finish.

Multi-Material Space Frame and Body Panels

Space Frame Construction	Multi-material space frame with cast aluminum nodes and a mix of light aluminum and low-density SMC outer panels
Ablation Cast Aluminum Nodes	Complex high-performance aluminum castings for crush zones; World's first automotive application
A-Pillar Structure	3DQ ultra-high-strength steel (1,500 MPa); World's first application
Body Panels	Mix of light aluminum and low-density SMC outer panels
Front Floor Panel	Carbon fiber

NSX Chassis

The next-generation NSX chassis combines best-practice fundamental sports car design with advanced new technologies to elevate and enhance the NSX driving experience. Mounted directly (without subframes) to the ultra-rigid space frame, the all-aluminum front and rear suspension systems—augmented by third-generation active magnetorheological (MR) dampers and a rigidly-mounted dual-pinion variable-ratio electric power steering (EPS) system—elevate the dynamic performance of the NSX while supporting the breakthrough capabilities of its Sport Hybrid SH-AWD system.



Overview

Front double ball joint suspension eliminates torque vectoring steering disturbances. The rigidly mounted EPS provides high fidelity steering feedback. The rear suspension's high lateral rigidity is key to minimizing lateral acceleration response delay, and maintaining proper response phasing of the rear axle with respect to the front, to achieve stable cornering beyond 180 mph.⁴

Deceleration capability is also enhanced with a next-generation electro-mechanical super sports braking system that combines the effectiveness of a high-performance mechanical (friction) braking system with a seamlessly integrated regenerative braking system. This next-generation "super sports brake" concept delivers class-leading braking performance, while recovering what would otherwise be wasted energy to help keep the hybrid battery charged and ready to support other dynamic demands.

Another important element of the chassis design includes the power unit mounting system, which utilizes a rigid aluminum subframe and the ultra-rigid space frame to firmly anchor the power unit; strategically-located mounts minimize engine and transmission movement (pitch and roll).

Chassis Specifications	
Front Suspension Type	Double-wishbone, double lower control arm; aluminum
Rear Suspension Type	Multi-link; aluminum
Dampers	Active Gen III MR coilovers
Brakes	Vented disc with Brembo aluminum mono block calipers and iron rotors; optional carbon ceramic rotors
Steering Type	Variable ratio rack and pinion; dual-pinion EPS
Steering Wheel Turns, Lock-to-Lock	1.91
Steering Ratio	Variable progressive; Range: 12.9:1 (on center) to 11.07:1
Front Wheels	19x8.5J forged aluminum
Front Tires	245/35ZR19 93Y high-performance summer tires; optional ultimate-handling performance tires
Rear Wheels	20x11J forged aluminum
Rear Tires	305/30ZR20 103Y high-performance summer tires; optional ultimate-handling performance tires

Package

The new Acura NSX package continues the design philosophy of the original NSX. It seeks to optimize the packaging and layout of major vehicle systems—including the Sport Hybrid power unit (engine, Direct Drive Motor and 9DCT) and key hybrid components such as the Intelligent Power Unit (containing the lithium-ion battery pack)—to lower the CG, centralize the mass of the vehicle and achieve desired weight distribution for optimal handling.



- The design of the bespoke all-aluminum twin-turbocharged V6 engine, including its 75-degree cylinder bank angle, dry sump lubrication system and compact valvetrain, is optimized for a low center of gravity and overall compact design.
- Likewise, the purpose-built 9DCT utilizes a new design, with the clutch and the differential situated side-by-side in a common housing and a parallel shaft gear set arrangement—both of which help reduce the length of the powertrain.
- The Intelligent Power Unit, located in front the rear bulkhead, contains a new, compact lithium-ion battery pack with high power and energy density, and features a new “caseless” design for reduced mass. The twin fuel tanks are mounted behind the rear bulkhead, in front of the engine.
- The hybrid system’s Power Drive Unit (PDU) uses a compact “three-in-one” design (converting direct current to alternating current to supply all three electric motors) allowing it to be packaged neatly in the vehicle’s center tunnel.
- Vehicle design also prioritizes small overhangs for a small footprint, helped by the aforementioned ablation cast nodes, while preserving comfortable cockpit headroom for 95th percentile male drivers.

Aerodynamics: “Total Airflow Management”

The NSX design and development team utilized a “total airflow management” approach to give the NSX the superlative aerodynamics one expects of a next-generation supercar, while simultaneously providing the effective and efficient thermal management required for its hybrid power unit. Six different heat sources must be managed: The twin-turbo engine, the 9DCT, the PDU, and the three electric drive motors. To provide efficient cooling, airflow is managed through 10 heat exchangers situated to efficiently use airflow through the front grille area, side air intakes, and through the engine compartment.

The NSX effectively manages air flowing through the front motor room and rear engine room as well as around the body, while still maintaining the increased stability of properly distributed downforce. In fact, stability at speed is a hallmark of the new NSX, with unprecedented balance and confidence to enhance the driving experience.



Through extensive research and development, the NSX aerodynamics team determined that a 3-to-1 downforce ratio—placing three times as much downforce at the rear of the vehicle relative to the front of the car—would provide the optimal downforce distribution for high-performance driving.

Through the extensive use of computational fluid dynamic (CFD) simulations, as well as 40-percent scale model testing in the company’s advanced wind tunnel facility in Ohio, the team fine-tuned the various body shapes, intake and exhaust vents and vehicle strakes to reduce aerodynamic drag, create downforce, maximize cooling and efficiently exhaust unwanted heat.

The innovative aerodynamic developments were continuously verified at the company’s full-scale, moving ground plane wind tunnel in Sakura, Japan.

NSX Cockpit

From the intuitive instrumentation and simple control layout to the careful application of materials and padding in the sports seats, steering wheel and center console, the NSX provides exceptional, driver-centric ergonomics that supports and clarifies the driving experience.

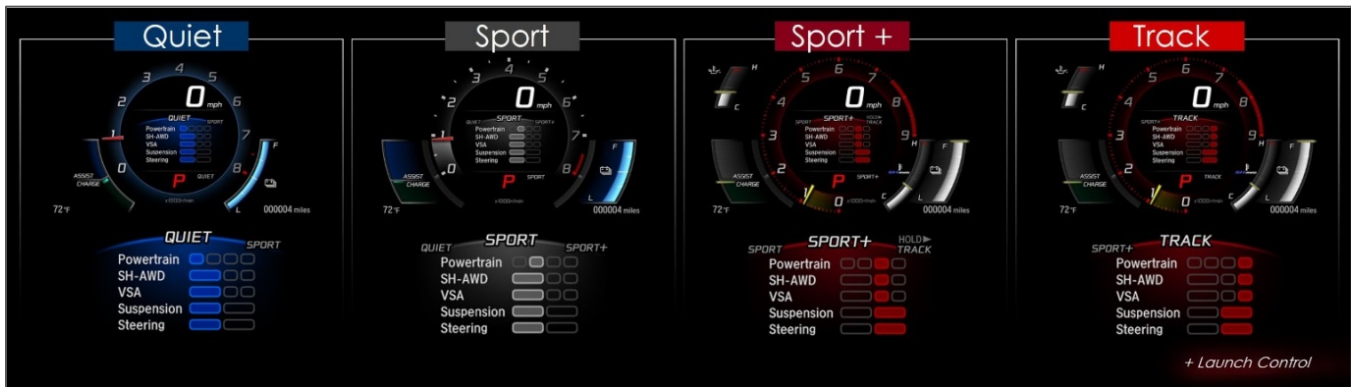
To develop an interior with exemplary ergonomics, the Acura design team utilized a number of test drivers with wide-ranging driving experience and skill sets to gather information to improve all aspects of driver feedback and support in the NSX.

Attractive as well as structurally rigid and lightweight, the seats in the new NSX are designed to offer superlative comfort and support, with the lateral and fore/aft support needed for a supercar. Developed through extensive testing and pressure mapping measurements, these seats offer more comfort than those in competing high-performance vehicles while providing the torso and thigh bolstering needed in a high-limit vehicle such as the NSX. Seat materials such as leather and Alcantara were carefully selected for the perfect combination of dynamic driving support and comfort, including ease of ingress-egress.

Likewise, the center console/controls have been designed to minimize distractions from the most important function—driving—ultimately serving as a “simple sports interface.”

Integrated Dynamics System

The unique nature of the NSX Sport Hybrid SH-AWD power unit enables a higher degree of flexibility to customize the driving experience and dynamic performance to suit the needs and desires of the driver and the driving environment. This capability is provided by the Integrated Dynamics System, controlled by the Dynamic Mode dial on the center console.



The NSX Integrated Dynamics System features four selectable dynamic modes—Quiet, Sport, Sport+ and Track—integrating all of the vehicle’s dynamic systems: steering, brakes, throttle, Vehicle Stability Assist, dampers and Sport Hybrid SH-AWD control systems, as well as providing a customizable auditory experience via new Intake Sound Control and Active Exhaust Valve technologies.

Design, Development and Manufacturing

Design and development of the next-generation NSX involved a global team of engineers and designers. Design and development work on the Sport Hybrid power unit was centered in Tochigi, Japan, while design and development of the body, chassis, electrical and interior, along with total vehicle integration was concentrated in Raymond, Ohio. Initial design for the NSX was conducted at the company's Wako, Japan, design studio and was fully evolved and matured for production by the Acura Design Studio in Los Angeles.

Throughout its roughly four-year development, the fundamental concepts for a New Sports eXperience remained clear and consistent. However, the technologies and means by which the R&D team would realize their concept underwent a process of continual improvement and evolution, most notably in the area of engine design. Whereas the original direction called for a transverse-mounted, normally aspirated V6, the NSX development concept evolved to a new and more challenging approach—an all-new bespoke twin-turbocharged, longitudinally-mounted V6 engine. This radical re-imagining of the engine design had profound implications for every element of the NSX design, especially the package, cooling systems and aerodynamics.

The NSX has been tested and tuned on streets and race circuits around the world. In addition to the Transportation Research Center in Ohio and on-road testing, primary development tracks were Virginia International Raceway, the famed Nürburgring in Germany and at Honda's own Takasu test circuit in Hokkaido, Japan.



NSX space frame construction at the Performance Manufacturing Center

Overview

The NSX is manufactured at the new Performance Manufacturing Center (PMC) in Marysville, Ohio using domestic and globally-sourced parts. The PMC was designed to innovate new means and methods of producing low-volume specialty cars and to realize challenging new ideas for next-generation craftsmanship and quality established by the NSX manufacturing team. The Performance Manufacturing Center employs approximately 100 associates, including 70 highly skilled manufacturing technicians engaged in body construction, painting, assembly and quality confirmation of the NSX. Among its many innovative processes is the world's first use of all-robotic MIG welding for the construction of the aluminum space frame.

The bespoke twin-turbocharged V6 engine in the NSX is meticulously hand-assembled by expert technicians at the company's engine plant in Anna, Ohio, using techniques and processes benchmarked against the company's world-class race engineering programs. Each engine is bench tested and broken in to the equivalent of 150 miles of driving. The 9DCT, Direct Drive Motor and engine are machine-balanced and assembled at the Anna Engine Plant. The TMU and other hybrid system components are built in Japan and sent directly to the PMC for fitment in the NSX.

Dynamic Performance

The new NSX was created to revolutionize supercar performance, delivering a more vivid, immediate and intuitive dynamic experience with instant acceleration, ultra-powerful yet easily controlled brakes and exceptional handling—making the most of the driver's capabilities in every driving environment and rewarding the most skillful drivers with its extraordinary at-the-limit dynamic capabilities. This is the essence of what Acura does differently than competitors in this segment.



- **Instantaneous Acceleration** – Acceleration G force from the moment the driver touches the throttle through the immediate torque response of three electric motors working in concert with the bespoke, [twin-turbocharged V6](#) and [9-speed dual clutch transmission](#) (9DCT)
- **High-Performance Braking** – Powerful, linear and predictable [braking performance](#) in a variety of driving conditions via a high-performance mechanical (Brembo hydraulic) and electro-servo motor-assisted (hybrid) regenerative braking system
- **Precise Cornering** – Continuous and immediate torque vectoring with [direct yaw control](#) combined with [advanced chassis](#) and [frame and body design](#) for precise handling capability
- **Integrated Dynamics System** – The most extensive and evolved [Integrated Dynamics System](#) in Acura's history, integrating all of the NSX dynamic chassis and [Sport Hybrid Super Handling All-Wheel Drive](#) (Sport Hybrid SH-AWD) power unit systems to produce a wide range of driving experiences

The new NSX enjoyed a design and engineering approach that leveraged Acura's global development muscle. NSX engineers employed the latest simulation and development techniques, with every aspect designed to deliver a New Sports eXperience.

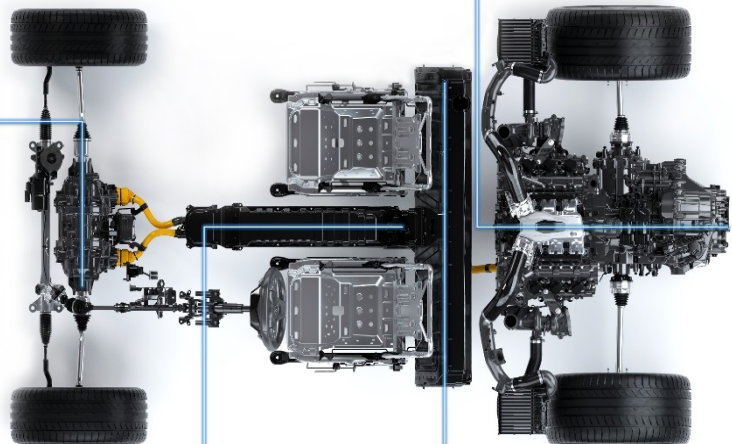
Power Unit

The all-new Acura NSX Sport Hybrid Super Handling All-Wheel Drive (Sport Hybrid SH-AWD) power unit electrifies all phases of driving, whether accelerating, braking or cornering. Sport Hybrid SH-AWD is a further evolution of Acura's highly-regarded Super Handling All-Wheel Drive (SH-AWD). It is a first-of-first-of-its-kind technology in the exotic sports car segment.

An all-new longitudinal, mid-mounted twin-turbo V6 is paired with an electric Direct Drive Motor mounted to the crankshaft. Rear drive force flows to the road through an all-new 9-speed Dual Clutch Transmission (9DCT).

The Twin Motor Unit (TMU) contains two, independent electric motors that support every phase of driving. The TMU provides an active front drive force that, at any moment, can be accelerating, braking or working cooperatively to rotate the vehicle based on the driver's throttle, brake and steering inputs.

The concept of steering supported by vehicle rotation is described as "direct yaw control," and includes what is commonly referred to as "torque vectoring."



The Power Drive Unit (PDU) supports the driver-selected dynamic mode by fine-tuning the power management strategy of the Sport Hybrid SH-AWD power unit, including motor power and battery charge.

The Intelligent Power Unit (IPU) contains lithium-ion batteries that fuel the electric motors. Through smart cooperative control, the IPU is designed to maintain a charge during vehicle operation so that it can be ready to provide an electric drive force during many phases of driving.

Package

The new Acura NSX package pursues a design philosophy that seeks to optimize the design and packaging of all major vehicle systems in order to:

- Lower the center of gravity
- Centralize the mass of the vehicle
- Achieve the desired weight distribution

The low center of gravity (CG) and centered mass pay dividends in handling and response. Biasing the mass toward the center of the NSX reduces the polar moment, making the car respond (yaw rate) faster to steering inputs and reducing its rotational kinetic energy. In other words, it's easier to initiate a turn, and easier to stop the rotation. The low CG reduces the roll moment, which allows softer springs to be used while still possessing excellent body roll control. The new NSX has the lowest CG among its core competitors.

The payoffs are quick response when you want it, minimal unwanted body movement and a stable ride, thus raising the performance levels without punishing the driver and passenger.

Aerodynamics

Every square inch of the Acura NSX exterior body panel surfaces, fluid shapes, air inlets, exhaust outlets and the positioning, shaping and thickness of its floating C-pillars serves a distinct purpose: to optimize aerodynamic efficiency and support dynamic driving performance.

The second-generation Acura NSX was designed with a [total airflow management](#) strategy to achieve critical cooling flow performance, while minimizing drag, and to provide precise downforce distribution between the front and rear axles to help ensure vehicle stability at high speeds. The total airflow management strategy manages airflow not only under and over the exterior surfaces, but through the front and rear motor rooms.

- Front tire wake management was critical to achieving downforce at the front axle, working together with air exiting from the hood and fender vents and promoting smooth airflow down the sides to be re-used through the rear motor room
- The rear decklid spoiler was tuned in conjunction with the diffuser and tail light exit slot to achieve rear axle downforce targets and minimize drag
- Rear brake cooling ducts pull air off the flat floor and direct air through hollow rear suspension members for efficient rear brake cooling, resulting in world-class fade performance

Space Frame and Body Panels

Like the original Acura NSX, which was the world's first all-aluminum exotic car, the all-new Acura NSX has a cutting-edge structure. Its multi-material space frame and body panels utilize new materials and construction methods. They deliver next-generation structural rigidity, outstanding outward visibility, world-class collision performance and superior surface and paint quality, befitting a next-generation Acura supercar.

The aluminum-intensive space frame and multi-material body panels also minimize weight with superior packaging flexibility for the NSX Sport Hybrid SH-AWD power unit. The high level of dynamic rigidity reduces noise, vibration and harshness (NVH) and ensures that driver inputs are directly translated to vehicle actions with incredible speed and fidelity—the essence of the New Sports eXperience.

Some key features of the NSX multi-material space frame and body panels are:

- **Unmatched dynamic torsional rigidity** – The NSX directly responds to the driver's cornering demands, instantly transmitting those inputs to the chassis while maintaining perfect connection between front and rear axles, communicating both the driver's action and any changes in the road surface with the utmost fidelity.
- **Ultra-high local chassis rigidity** – Each chassis component is mounted to a rigid casting supported by extruded aluminum frame members that act like "truss structures" such that high local attachment-area stiffness is ensured in all directions, helping maintain the precisely-designed chassis geometry at all times.
- **World's first automotive application of ablation casting technology** – Used both at front and rear, these [ablation cast aluminum frame nodes](#) serve as ultra-rigid mounting points for the suspension. Applied in key crush zones, these nodes link frame sections together and uniquely deform in a manner similar to a forged component but with lower weight, enabling shorter front and rear overhang, reduced vehicle mass and world-class collision performance.
- **A-pillars: Super strong, yet slender** – In another world's first, a new [three-dimensional bent and quenched \(3DQ\)](#) frame member was employed to create thin yet sturdy A-pillars. The resulting ultra-high-strength material allows a slender cross section to maximize forward visibility while meeting structural demands, including roof-crush requirements.

Chassis

As the connection between the driver and the road, the all-new Acura NSX chassis provides high-fidelity steering and road feedback. Advanced technologies combine to produce sports car agility at low speeds, with confidence-inspiring stability and predictability at high speeds. The NSX faithfully translates driver inputs under a wide range of driving situations for ultimate handling performance.

- All-aluminum [front and rear suspension](#) systems provide precise control through highly rigid construction and precise geometry
- Rigidly-mounted [variable gear ratio electric power steering \(EPS\)](#) eliminates the need for hand-over-hand steering, once out of the parking lot
- Electro-servo [sports brakes \(ESB\)](#) seamlessly integrate friction and regenerative brake systems to provide a powerful and confident response
- Third-generation [active magnetorheological \(MR\) dampers](#) stabilize tire-to-road contact while stabilizing vehicle roll, pitch and heave motions

Interior and Exterior

Every interior design element of the new NSX enhances the New Sports eXperience for the its driver. The second-generation NSX respects the fundamental, driver-centered [interior](#) concept of the original NSX with attention to enhanced visibility, driver support and comfort, ergonomics and simple driver interfaces presented with elegant materials and design.

Staying true to its Precision Crafted Performance DNA, the “interwoven dynamic” [exterior design](#) of the NSX integrates supercar aesthetics with supercar performance while significantly contributing to the total airflow management strategy. Additionally, the NSX contains innovative multi-material body panels.

Integrated Dynamics System

The new NSX is designed to provide a wide range of driving experiences and dynamic character commensurate with the desires of the driver and the driving environment via its Integrated Dynamics System, the most advanced of its kind in an Acura vehicle.

The Dynamic Mode Dial, located in the center console, puts this customizable driving experience at the driver's fingertips, allowing drivers to dial-in desired performance by selecting among four dynamic modes: Quiet, Sport, Sport+ and Track.

NSX advanced technologies—including its rear Sport Hybrid power unit, front-mounted TMU, third-generation MR dampers, electric power steering and electric-servo braking system—enable a finer and more wide ranging degree of control over the dynamic character of the NSX.

Whether flying under the radar in Quiet mode, enjoying a refined yet still exhilarating long-distance cruise in Sport mode, carving up a mountain road in Sport+ mode or exploring the at-limit track performance of NSX in Track mode, the NSX Integrated Dynamics System conforms the dynamic character and capabilities of the car to the will of the driver.

Highlights of the tuning available from the Integrated Dynamics System include:

- Throttle, brake and steering response and feedback
- Sport Hybrid SH-AWD power unit active drive force
- Suspension response, feedback and support
- [Vehicle Stability Assist \(VSA\)](#), including Agile Handling Assist (AHA) and Traction Control System
- Engine sound, inside and outside the vehicle

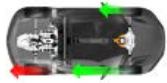
Anatomy of a Turn in the New NSX

It is difficult to effectively convey in words the immediate, high-fidelity acceleration force that NSX provides, or the incredible feeling of direct yaw control that adds a sense of at-will rotation to the experience of steering. The following excerpt was taken directly from NSX expert drivers' board notes, in an effort to visually map the New Sports eXperience that the all-new NSX provides through a turn on the track:



1

Driver decelerates in advance of the turn.
ESB provides powerful braking while the TMU recovers energy.



2

Driver trails off the brakes as they turn-in.
TMU and AHA generate a *yaw moment* that supports driver's steering down to the apex [*direct yaw control*].



3

Driver can transition back to the throttle *prior* to the apex.
TMU and LSD support active AWD traction - allowing driver to accelerate and continue to turn with confidence.



4

Driver unwinds the steering wheel as they accelerate.
All Sport Hybrid components **provide forward and inward momentum**, as driver confidently tracks out of the corner.

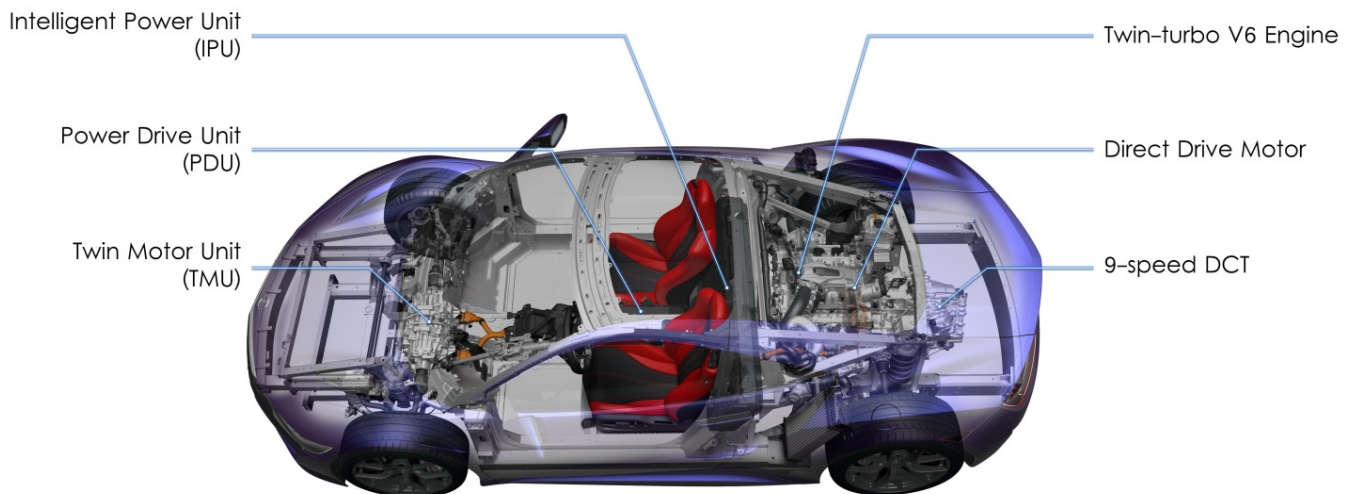


5

Driver returns to full throttle.
TMU pulls through upshift.

Power Unit

The NSX Sport Hybrid Super Handling All-Wheel Drive (Sport Hybrid SH-AWD) power unit electrifies all phases of driving, whether accelerating, braking or cornering. Sport Hybrid SH-AWD is a further evolution of Acura's highly regarded Super Handling All-Wheel Drive (SH-AWD). It is a first-of-its-kind technology in the exotic sports car segment. Instantaneous acceleration G force is experienced from the moment the driver touches the throttle, through the immediate torque response of three electric motors working in concert with the bespoke, twin-turbocharged V6 and 9-speed dual clutch transmission (9DCT).

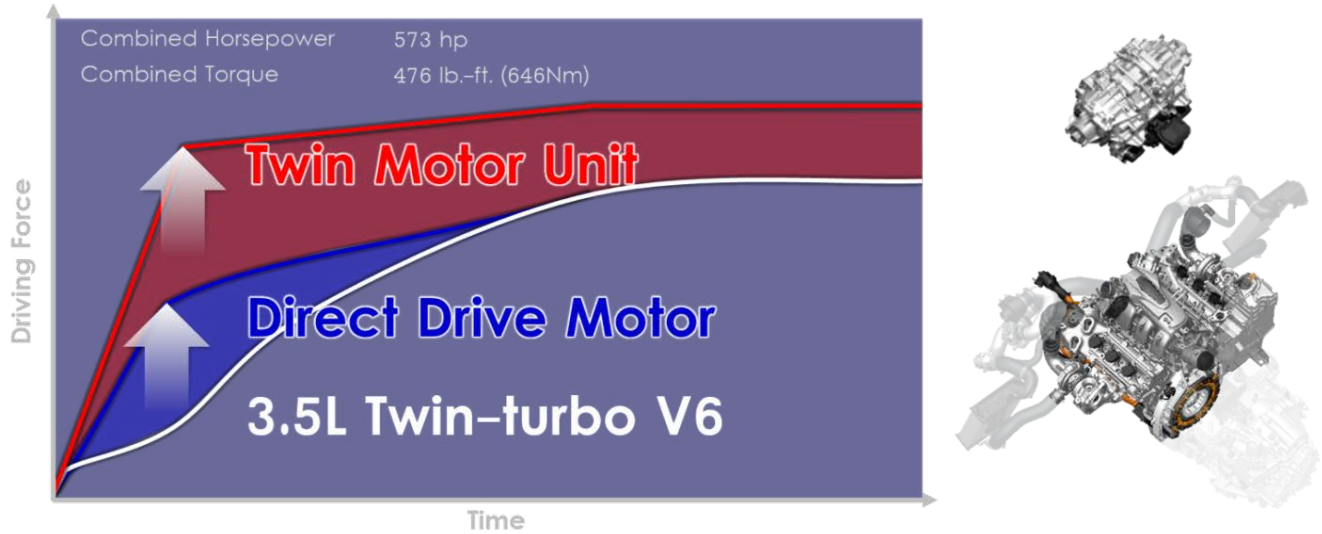


The NSX driver will experience peak performance from the Sport Hybrid SH-AWD power unit's marriage of mechanical and electrical components, working as a system to provide instant and linear acceleration, consistent and powerful braking and precise and predictable handling. Like the first-generation NSX, this driver-centered supercar makes the most of every driver's capabilities while minimizing driver workload and virtually eliminating the conventional tradeoffs between limit performance and everyday driving pleasure.

- The twin-turbocharged V6 engine creates powerful thrust, while the electric Direct Drive Motor and TMU respond immediately to the driver's throttle demands
- Rear axle torque flows through the new 9DCT; 1st gear is for maximum launch acceleration, the close-ratio gears (2nd–8th), making the most of the NSX power band, while 9th gear is optimized for effortless highway cruising
- The front-mounted Twin Motor Unit (TMU) provides through-the-road "active all-wheel drive" with independent electric motors producing on-demand drive force at the front wheels. The TMU "direct yaw control" ability enhances agility, stability and cornering precision—the NSX driver can execute super-precise line tracing during cornering.
- The TMU provides regenerative braking force, supporting braking demands and direct yaw control with negative torque while recharging the hybrid battery
- The TMU also provides electric vehicle operation in Quiet mode at speeds less than 50 mph for short distances

Power Unit

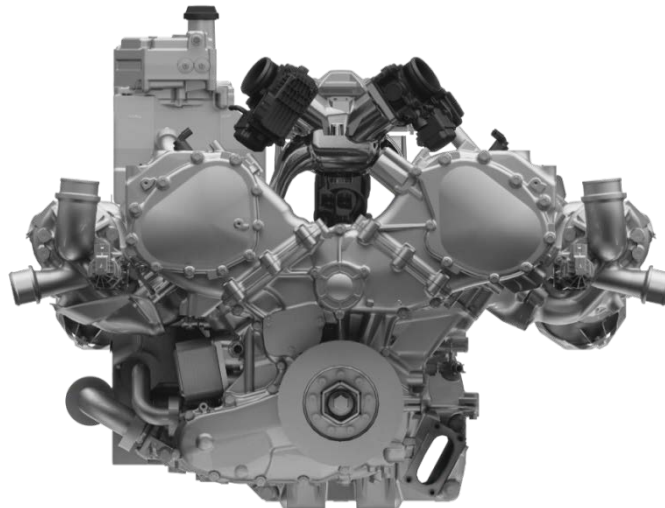
Every time the driver makes a power demand, the TMU and the Direct Drive Motor immediately augment power production from the twin-turbocharged V6 engine, using the instantaneous torque that is an inherent characteristic of electric motors. Total system peak output is 573 horsepower—500 horsepower from the gasoline engine and 73 horsepower from the TMU and Direct Drive Motor.



System drive force across time at wide open throttle

Twin-Turbocharged V6 Engine

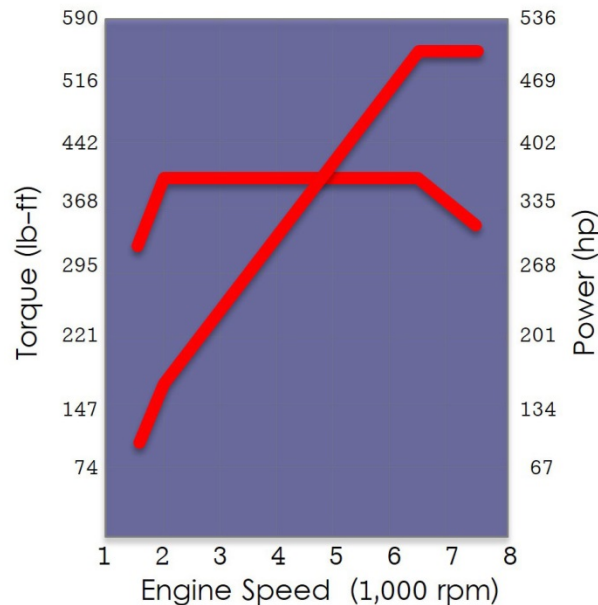
At the heart of the NSX Sport Hybrid SH-AWD power unit is a bespoke, twin-turbocharged, V6 engine that achieves high power and broad torque output.



NSX twin-turbocharged V6 engine

Power Unit

With a compression ratio of 10.0:1, the NSX engine has a specific power output of more than 140 hp per liter of engine displacement, due to a number of advanced engine technologies.



Acura Firsts for the NSX Engine

- Twin-turbo induction system
- Swing arm-type compact valvetrain system
- Three-piece water jacket (engine block and heads), including water jackets between the cylinder bores
- Plasma-transferred thermal spray-coated cylinder walls
- Use of both direct and port fuel injection systems
- Two-stage chain drive system for the valvetrain
- Viscous damper mounted to the crankshaft
- Dry sump lubrication

Engine Highlights

The bespoke, twin-turbo system for the all-new engine offers a strong balance of high power with broad torque, high fuel efficiency and inherent packaging advantages. Through careful research and development, the NSX engine design and engineering team determined that the ideal boost pressure is 105 kPa (1.05 bar or 15.23 psi).

Increasing the engine intake air pressure also increases the intake air temperature. A high-volumetric flow air-to-air intercooler dramatically reduces intake air temperature, while increasing the density of the air intake charge for maximum power.

Each turbocharger uses an electronic wastegate for fast response and precise control. The single-scroll turbocharger design uses smaller turbos to reduce weight and improve packaging, while still meeting power and performance benchmarks.

Power Unit

In an engineering and design exercise drawn straight from Acura's extensive racing experience, the cylinder heads fitted to the twin-turbocharged V6 are highly compact at a 75-degree angle. They include a compact valvetrain that uses swing arm-type valve actuators. The more compact head structure reduces the inertial weight of the valvetrain by 22 percent compared to a rocker arm-type design. This compact design together with the dry sump lubrication was focused on lowering the vehicle's center of gravity.

The cylinder heads utilize a three-piece water jacket for improved cooling efficiency and coolant flow control. The race-inspired cylinder head design also optimizes the swirling of intake air so that it mixes with fuel in a more ideal manner for improved combustion, improving efficiency and emissions performance.

Plasma-Transferred Thermal Spray-Coated Cylinder Walls

Most aluminum engines require a cast iron cylinder liner to provide sufficient wear resistance. Instead, engineers on the power unit development team applied a plasma-transferred thermal spray to the cylinder walls. This recently-developed technique offers 52 percent better heat transfer (thermal conductivity) and a nearly 7 lb.-decrease in overall engine weight versus cast iron cylinder liners. Additional benefits of the plasma-transferred thermal spray-coated cylinder walls include increased horsepower, torque and throttle response.

The plasma-transferred thermal spray process melts an atomized iron powder that can be sprayed onto the cylinder walls. A supersonic plasma jet is used to spray the molten material, stacking the tiny particles on top of each other to form a very thin and extremely wear-resistant coating. Eliminating cylinder liners allows additional water channels to be placed between the cylinder bores for improved cooling efficiency.

Intake and Exhaust Variable Valve Timing Control

The NSX engine incorporates intake and exhaust valve timing control (VTC) technology, which balances high torque and maximum power output with reduced exhaust emissions and superior fuel efficiency.

1. At engine idle, VTC stabilizes combustion for smooth idling by minimizing intake and exhaust valve overlap, decreasing the amount of exhaust gas recirculation.
2. During steady-state cruise or under light acceleration, the VTC system reduces exhaust emissions and engine pumping losses by optimizing valve overlap.
3. Under wide open throttle at low engine speeds, the overlap of the intake and exhaust cam timing is expanded so that the turbochargers can work at maximum efficiency for optimal power delivery and responsiveness.
4. When operating the engine at elevated rpms, overlap of the exhaust and intake timing is gradually reduced for improved volumetric efficiency to create maximum power.

Direct and Port Fuel Injection

The NSX engine combines both direct and port fuel injection systems to provide exceptional power production and emissions performance.

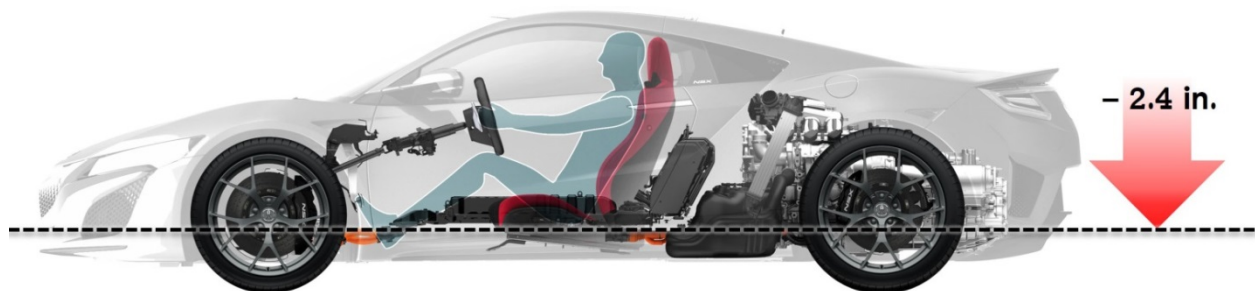
Direct injection is the primary means of fuel delivery within each cylinder, while port injection is used for additional power output in high-performance driving situations. The direct injection system electric fuel injectors are mounted in the cylinder head and spray a fine, highly atomized mist of fuel directly into each cylinder under very high pressure. This is done so that the fuel ignites almost instantaneously and completely, maximizing engine performance and fuel efficiency with reduced emissions. Under high-performance demands, the port injection system supplements the direct injection system, feeding fuel into the intake ports where it mixes with the incoming air for increased power production.

In summary, by optimizing the direct and port injection system with the operation of the engine's twin turbochargers, the NSX Sport Hybrid SH-AWD power unit engineering and development team were able to:

- Optimize direct injection and high tumble airflow combustion process within each cylinder for outstanding emissions performance
- Improve combustion efficiency and power output, assisted by the high tumble intake port design
- Precisely supply the required amount of fuel for maximum power output
- Reduce the production of hydrocarbons and particulate by avoiding fuel wetting on the piston and cylinder sleeve

Dry Sump Lubrication

In another application of race-bred technology, the all-new NSX is the first production Acura vehicle to use a dry sump engine lubrication system. This system lowers the engine center of gravity by 2.4 in. (61 mm) while helping ensure consistent engine lubrication under extreme cornering load conditions. The dry sump lubrication system replaces the conventional oil pan with a separate oil reservoir and a dedicated chain-driven oil pump mounted directly to the lower engine block. Six separate scavenger pump impellers collect the oil, and two pump rotors feed it back into the oil tank.



Intake System

A two-into-one intake manifold design minimizes torque deviation between each bank of cylinders. Twin throttle bodies allow more air into the system and finer throttle control, while reducing the pulsation of the air.

Exhaust System

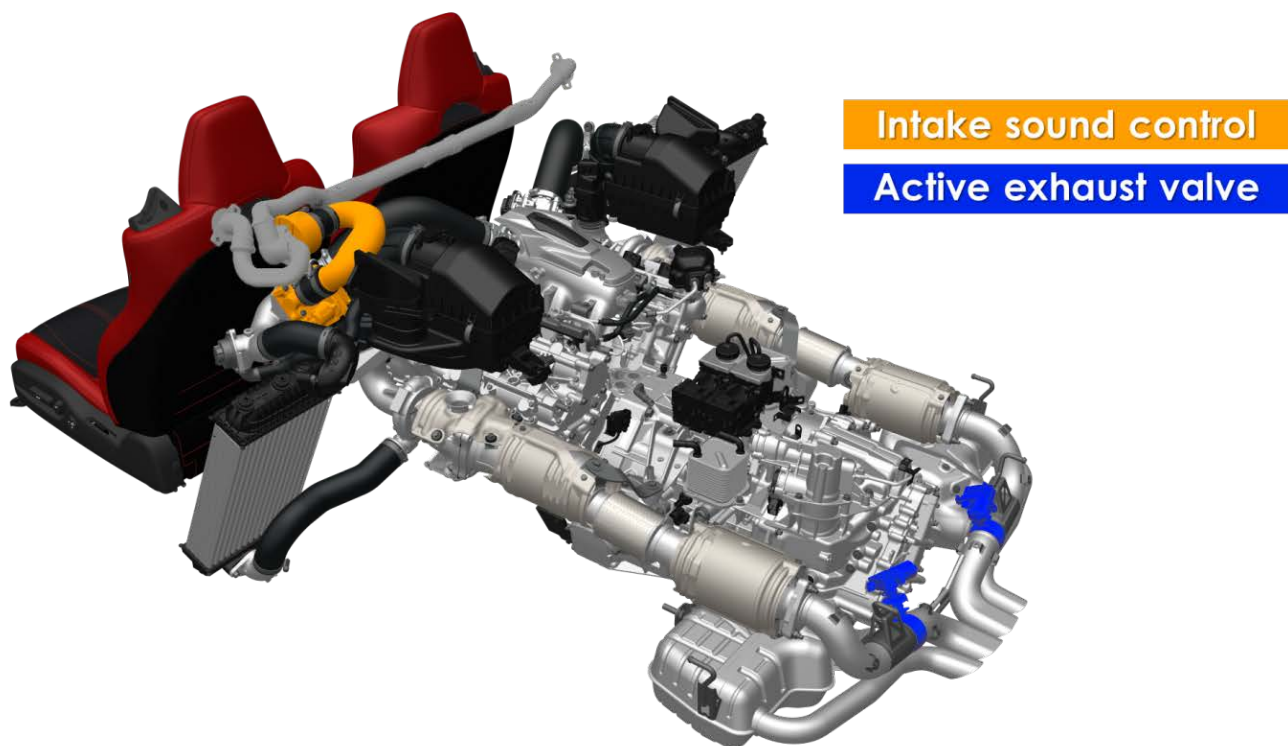
Compact and lightweight, the stainless steel exhaust system fitted to the NSX includes two catalytic converters per cylinder bank and four outlets, enhancing exhaust gas flow and reducing emissions. Silicon exhaust system mounts resist heat and offer a stout means of securing the exhaust system to the vehicle.

Engine Sound Management

Intake Sound Control

To enhance the driver's visceral experience inside the NSX cabin, the Integrated Dynamics System can be used to engage the new intake sound control and active exhaust valve systems to fine-tune cabin sound quality and volume to match the selected dynamic mode. The sound pressure level range within the cabin between wide open throttle in Track mode and electric vehicle cruising in Quiet mode is 25 (dB)—a wide range of audible sensation.

Intake sound control utilizes a pipe, connected directly to the engine's intake manifold, with an electrically-operated butterfly valve that can be opened and shut, depending on the Integrated Dynamics System setting. A diaphragm translates high-pressure air from the manifold to lower pressure sound waves. On the other side of the diaphragm, the single pipe then splits into two pipes that transmit sound to twin outlets in the rear uppermost portions of the cabin.



Active Exhaust Valve

The NSX active exhaust valve system is a complimentary component of the Integrated Dynamics system, offering quiet and refined driving or pulse-quickening sound at the will of the driver. Two electrically-operated valves are either open or closed based on driver throttle inputs and the selected mode of the Integrated Dynamics System setting.

- In **Quiet** mode, the exhaust valves are closed, and the exhaust gases are routed through silencers and out the two outboard exhaust pipes for a more subdued exhaust sound, allowing the driver to experience the *intake soundtrack* more clearly. Power and torque from the Sport Hybrid SH-AWD power unit is more than sufficient to effortlessly meet driver demands.
- In **Sport** mode, the exhaust valves are initially closed. They will open depending on how aggressively the driver accelerates.
- In **Sport+** and **Track** modes, the exhaust valves are open, enabling maximum exhaust gas velocity out of all four exhaust pipes. This produces maximum engine performance and a full-throated exhaust note.

The active exhaust valve system—together with the cabin sound modulation technologies of Active Sound Control and Intake Sound Control—serves to create a customizable auditory experience both in and outside of the NSX. From the hushed silence of Quiet mode to the full concerto of Track mode, the cabin fills with sounds every driving enthusiast loves to hear: the high-performance "pop" from the exhaust when executing an upshift, the quick blip of the throttle upon downshifting and the occasional distinctive off-throttle burble that is a welcome reminder of the power and torque capability of the twin-turbocharged V6 engine.

Engine Balancing and Break-In

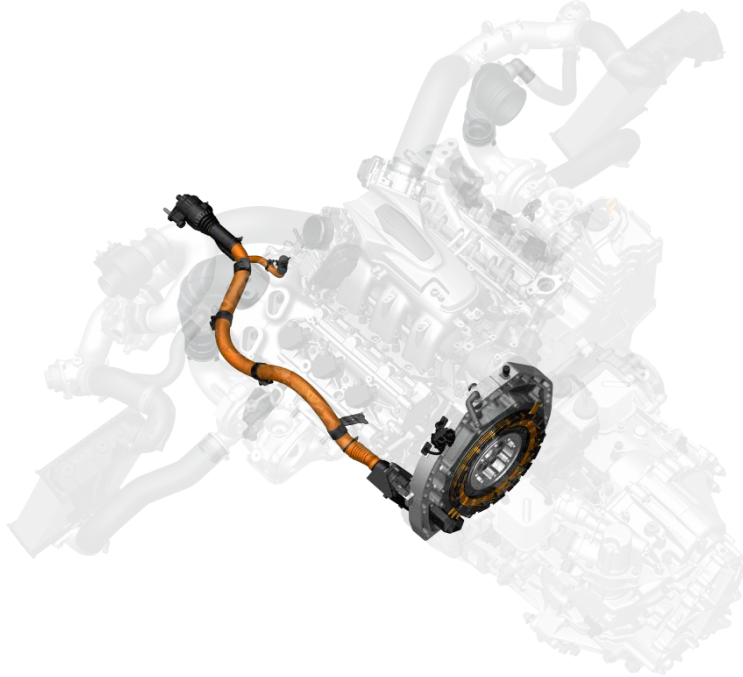
The NSX Sport Hybrid SH-AWD power unit development team further improved engine performance and refinement by reducing noise, vibration and harshness (NVH). The latest in engine balancing technology and a number of new processes were applied to achieve optimal balance, such as:

- Next-generation engine diagnostic equipment to more accurately measure engine imbalance
- Variable bolt weights applied to the eight mounting holes on the flywheel
- Nine mounting holes added to the crankshaft viscous damper that can be used for fine tuning

Before being fitted into the NSX, the engine undergoes an important additional quality step called a "hot fire" break-in program. The engine is placed under load on a specially-designed engine dynamometer that simulates the equivalent of 150 miles of driving.

Direct Drive Motor

The Direct Drive Motor, packaged between the twin-turbocharged V6 engine and the 9DCT, provides additional torque and power assist to the rear wheels.



NSX Direct Drive Motor

To help eliminate the response delay typically associated with turbocharged engines, the Direct Drive Motor acts directly on the engine's crankshaft which, together with the front-mounted TMU, helps the NSX realize immediate, high-output and high-torque acceleration. The effectiveness of this design is particularly noticeable when accelerating from a standstill at low engine speeds.

The NSX utilizes its Direct Drive Motor to start the engine instead of using a conventional 12-volt engine starter motor. Eliminating the 12-volt starter ring gear reduced weight and layout complexity.

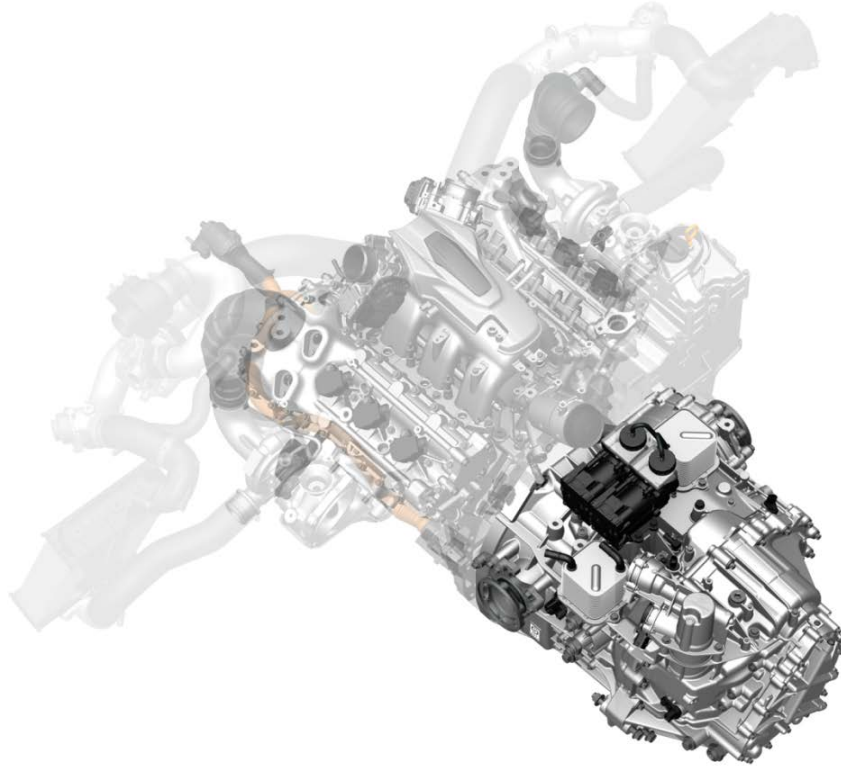
To help improve fuel efficiency, the NSX comes equipped with idle stop capability. Using the powerful Direct Drive Motor as an engine starter ensures that engine restarts are smooth and quick. Engine idle-stop is also fully integrated into the operation of the Automatic Brake Hold system.

Additionally, the Direct Drive Motor acts as a generator, helping to maintain the hybrid batteries at full charge to consistently support driver demands under almost any condition—even while lapping a track at full bore.

The Direct Drive Motor has a liquid cooling passage that provides consistent cooling, even when the system is being pushed to the limit, such as on a track excursion.

9-Speed Dual Clutch Transmission

The NSX's bespoke 9DCT plays a crucial role in dynamic performance, delivering lightning-fast and seamless up- and downshifts. The 9DCT works in concert with the Direct Drive Motor to make full use of the Sport Hybrid SH-AWD power unit's broad power band to produce quick and precise gear changes that support instant acceleration responses.

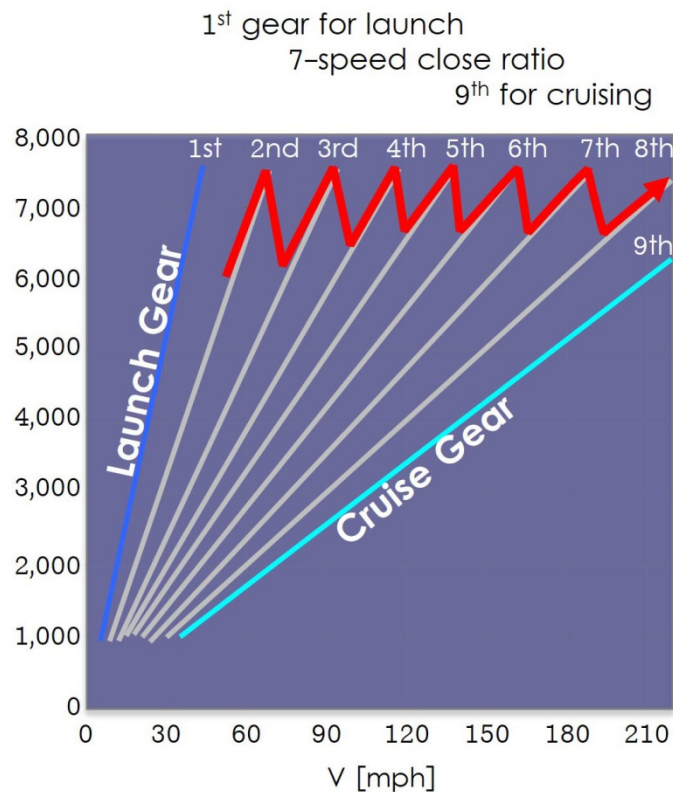


NSX 9DCT

Power Unit

The total ratio range with closely-spaced ratios enables the driver to extract maximum power from the NSX twin-turbo V6 engine. The transmission programming selects the right gear at the right time, or lets drivers select as they wish.

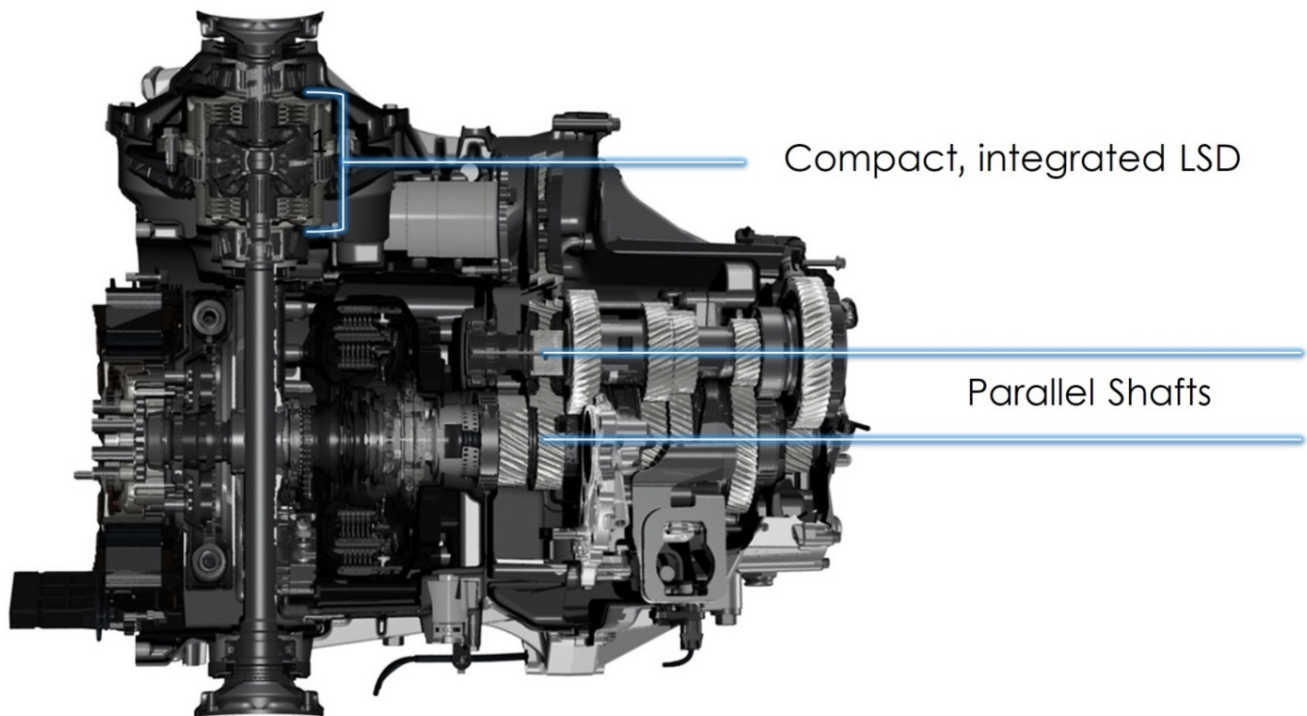
1. First gear is configured for maximum vehicle launch acceleration.
2. The close-ratio gears (2nd–8th) are matched to make the most of the Sport Hybrid SH-AWD power unit's power band. Top speed is achieved in 8th gear.
3. High gear (9th) has been optimized for quiet cruising and fuel efficiency during steady-state highway driving. When driving in 9th gear on a level surface at 60 mph, the twin-turbocharged 3.5-liter, V6 engine is spinning at only 1,700 rpm.



9DCT gear ratios

Power Unit

As a key component of the Sport Hybrid SH-AWD power unit's packaging, the 9DCT has been optimized for compact size, low mass and reduced overhang. The clutches and the differential are uniquely situated side-by-side in a common housing, reducing size and mass. The parallel shaft layout reduces overhang from the rear axle, enabling the 9DCT's center of mass to be moved forward.



Top view of the 9DCT

Other advanced transmission technologies incorporated into the 9DCT include:

- Electronically-operated dual wet clutch, high-rigidity shift forks, double-cone synchronizers and electronic shift actuators work in concert to precisely synchronize shift timing with Sport Hybrid SH-AWD power unit torque for the quickest shifts possible
- Precision surfaced high-efficiency hypoid bevel gear tooth shape for smooth operation and minimal gear noise
- Use of two oil "rooms" within the transmission housing to support efficient and high-capacity cooling
- Clutch case and differential carrier integrated into one transmission cable for a lighter and more compact layout
- Lightweight, high-strength gearbox case
- Multi-plate LSD helps maximize available traction when accelerating and cornering at the limits of tire adhesion
- The addition of a lightweight single mass damper for low noise and vibration levels
- Exclusive new gear oil that improves lubrication while reducing drag throughout the gear train when compared to a conventional heavier gear oil that increases viscous drag

Shift Forks

The 9DCT features highly-rigid shift forks composed of a specialized, high-strength cast iron that provide a smooth and quick shift response. The 9DCT uses a total of five shift forks for the gear actuator system:

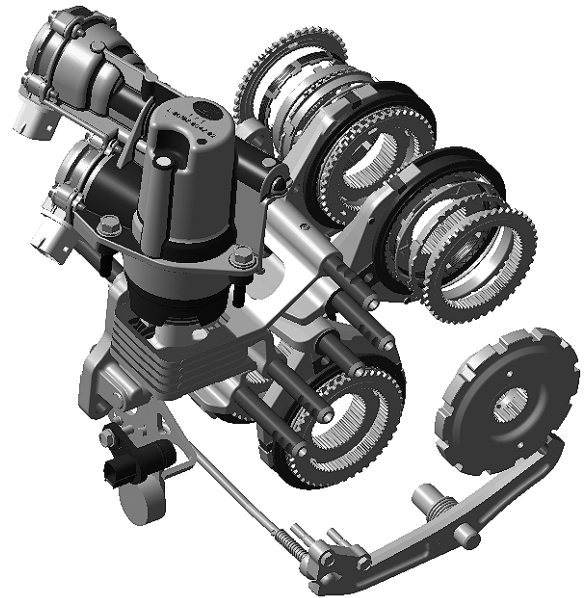
- A one-way clutch is used for 1st gear
- Four shift forks are used for 2nd–9th gears
- A fifth shift fork is used for Park and Reverse

Gear Actuators

A compact electric motor is used as a gear actuator instead of a conventional pneumatic or hydraulically-operated gear actuator. This system reduces weight by eliminating the high-pressure hydraulic pump that is typically used in a gear actuator system. It also provides excellent reliability and system robustness, especially in frequent hard-driving sessions, compared to other available gear actuation systems.

Electric Clutch Actuator

Like the electric motor-powered gear actuator, the electrically-operated clutch actuator eliminates the need for a high-pressure hydraulic pump. The clutch is controlled by a closed-circuit hydrostatic structure, which enables oil pressure to be generated on demand, with greater efficiency.



Shift Characteristics Modification

Adding to the performance and shifting characteristics of the NSX advanced 9DCT, is the ability of the driver to change shift speed and performance with the Integrated Dynamics System:

- **Quiet** – Transmission shift map directs gear shifts at lower engine speeds
- **Sport** – Transmission allows the engine to rev more freely and makes gear changes in a higher rpm range
- **Sport+** – Accommodates higher engine speed gear changes with quicker, more aggressively executed upshifts and downshifts
- **Track** – Fastest upshifting; 40 milliseconds faster than Sport+ settings

Mass Damper

The flywheel has been designed to act as a mass damper. This integrated part is one of the most lightweight components that could be added to minimize mechanical and harmonic vibration caused by oscillation, thereby greatly reducing noise, vibration and harshness (NVH) while helping to ensure the structural integrity and longevity of the transmission case.

Limited Slip Differential

The remarkably crisp turning capability and tractability of the all-new NSX is further enhanced by a mechanically-based limited slip differential (LSD).

The LSD torque bias ratio—an index for slip limit torque that compares torque shifted from a high rotation axle to a low rotation axle—has been optimized to provide two distinct LSD performance settings, ideal for when the wheels are being driven or when the vehicle is coasting.

Engineered to complement the TMU and VSA systems with precision torque vectoring and enhanced traction maintenance, the LSD helps advance vehicle performance in a number of driving situations:

- **Under Braking or Deceleration Approaching a Turn** – Increases engine brake torque on the outside tire and wheel for improved vehicle stability
- **Straight-Line Driving** – Pre-load torque enhances vehicle stability when driving in a straight line
- **Under Acceleration while Turning** – Overall vehicle tractability and poise is improved by shifting torque to the outside tire as traction from the inside tire decreases

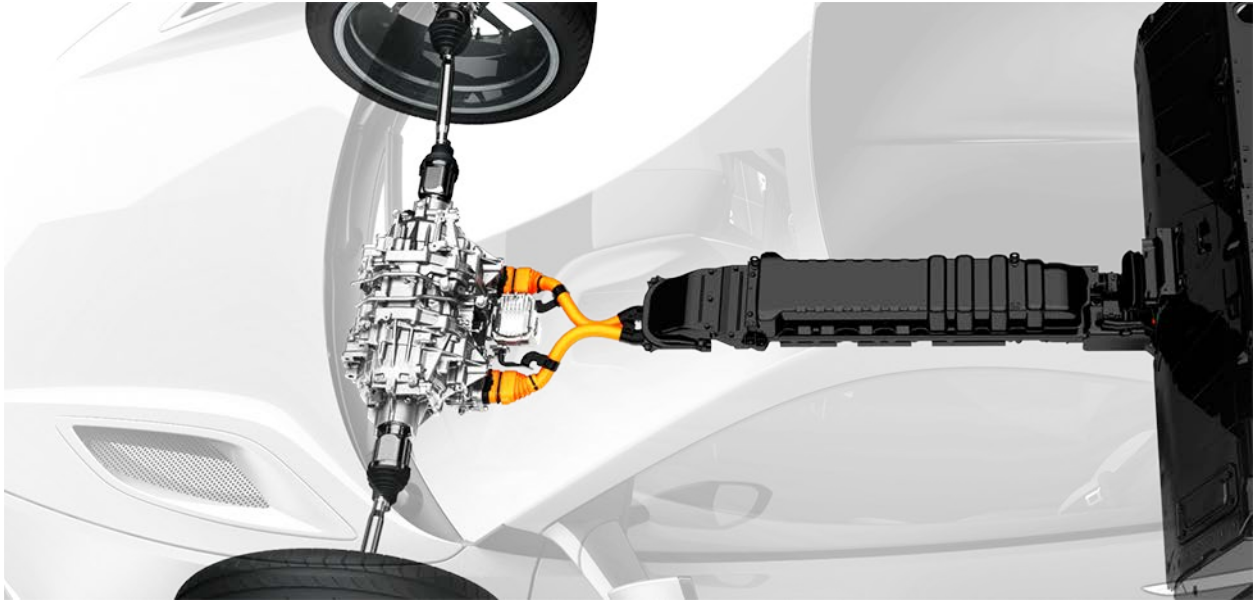
Twin Motor Unit

The instant and linear acceleration of the new NSX, coupled with outstanding dynamic capability is enabled in part by its front-mounted TMU. Designed to be as small and lightweight as possible while delivering ample torque and power and precise torque vectoring to the front wheels, the TMU provides supplemental power in conjunction with the twin-turbocharged V6 engine and Direct Drive Motor for instantaneous acceleration whenever desired. The TMU can dynamically apportion its torque to create a yaw moment, enhancing cornering performance. Finally, the TMU recovers braking energy during deceleration to supply power to the hybrid batteries.

“Using Honda’s original beta method to consider overall handling performance, we’ve been exploring direct yaw control torque vectoring for over two decades. With the development of the Sport Hybrid Super Handling All-Wheel Drive System, we can take advantage of the superior responsiveness of the electric motor characteristics within the system to significantly expand the benefits of direct yaw control.”

Ted Klaus, Acura NSX Global Development Leader

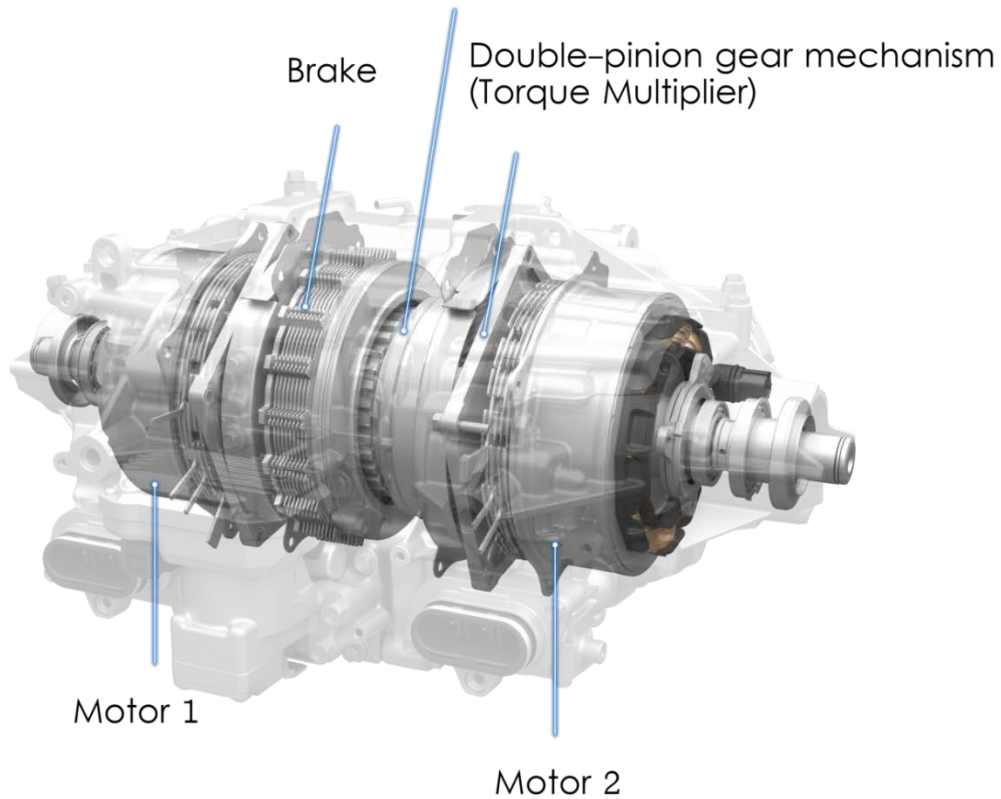
Power Unit



TMU location

Inside its die-cast aluminum housing are two electric motors positioned back-to-back. Each 36-horsepower motor powers a single front wheel and can also apply negative torque to the same wheel. A gear mechanism allows the motors to decouple and still provide on-demand torque vectoring, helping to improve efficiency in certain conditions.

One-Way Clutch



TMU detail

Power Unit

The TMU, along with the 109 lb.-ft. torque-generating Direct Drive Motor, provides the bulk of the accelerative force during initial acceleration from a standstill. After the first 0.15 seconds/0.1 G off the line, the high horsepower and torque from the twin-turbocharged V6 engine enters the fray, along with additional power from the Direct Drive Motor. From there, the engine exponentially increases its proportion of power contribution as the vehicle continues its rapid rate of acceleration.

The TMU is also a key motive force for driving in the Quiet mode setting of the Integrated Dynamics System, allowing for hushed, electric-only vehicle operation for short distances.

Intelligent Power Unit

Neatly packaged in the cabin, just forward of the rear bulkhead, the Intelligent Power Unit (IPU) acts as the primary heart and brains of the Sport Hybrid SH-AWD power unit, containing the following components:

- Lithium-ion battery pack
- Junction board
- High-voltage distribution bus bar
- DC/DC converter for 12V systems
- Electronic control units (ECU) for the electric motor and battery

When driving in Sport, Sport+ and Track modes, the vehicle's air conditioning system provides supplemental cooling of the IPU for optimal efficiency and performance. During development, the system was tested extensively in the desert heat of Dubai to ensure its proper function in extreme ambient temperatures.

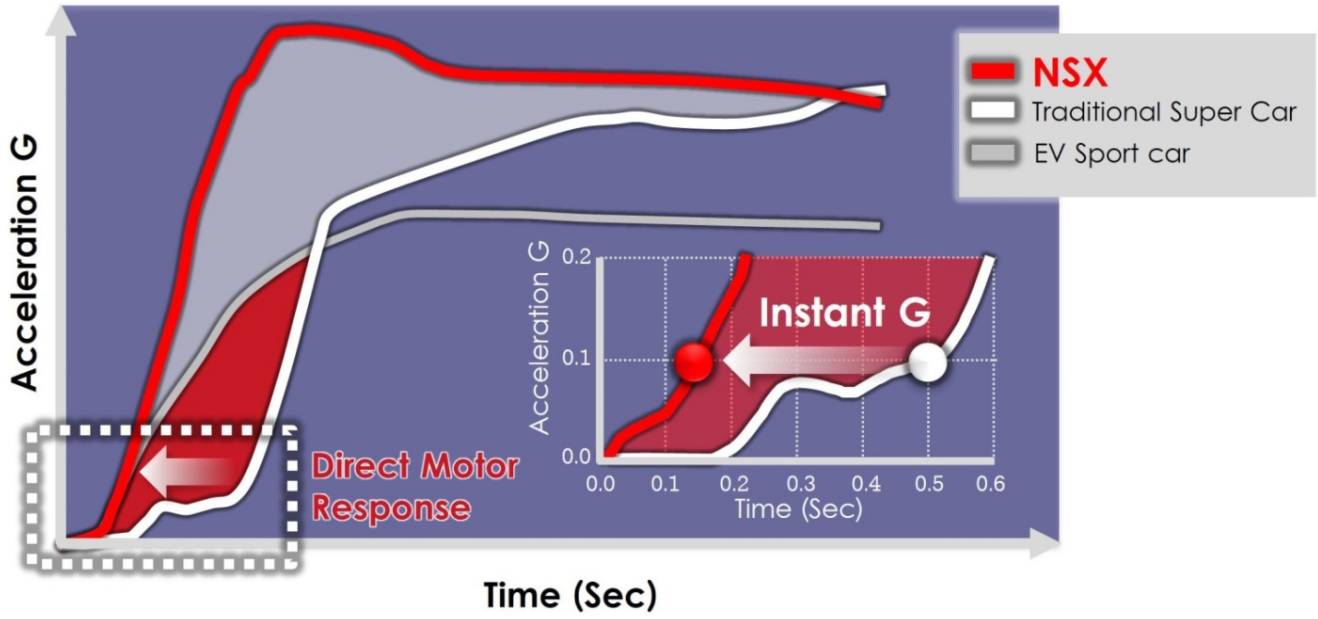
Lithium-Ion Battery Pack

Packaged within the IPU is the lithium-ion battery pack that stores the electrical energy to power the TMU and Direct Drive Motor. The high-output lithium-ion battery pack consists of four modules, each with 18 individual battery cells contained within a specially-designed, caseless structure that utilizes the vehicle body itself for a lightweight yet sturdy housing.

Based on the latest advances in lithium-ion battery technology for automotive applications, both the positive and negative electrodes have been optimized for increased energy density and efficiency. Power output and efficiency of operation have been further improved by implementing a cooperative battery cooling system, fed by fresh cool air channeled into the passenger compartment via the vehicle's air conditioning. Cool air from within the cabin circulates through ducting to cool both the lithium-ion batteries and the DC/DC converter.

Power Drive Unit

The Power Drive Unit (PDU) incorporates three separate inverters to convert direct current to alternating current for use by the Sport Hybrid SH-AWD power unit's three electric motors: the twin motors of the front-mounted TMU and the Direct Drive Motor. This compact "3-into-1" PDU design is critical to the system's compact packaging and the ability to mount it in the vehicle's center tunnel (beneath the center console).



Specifications

Engine	
Type	Twin-turbocharged DOHC V6
Layout	Longitudinally mid-mounted
Displacement	3493 cc
Horsepower - SAE Net	500 hp @ 6,500–7,500 rpm
Torque	406 lb.-ft. @ 2,000–6,000 rpm
Maximum Engine Speed	7,500 rpm
Specific Power Output	143 hp/liter
Bore and Stroke	3.6 in. x 3.5 in.
Compression Ratio	10.0:1
Twin Turbochargers	
Turbocharger Type	Single scroll
Maximum Boost Pressure	105 kPa (1.05 bar) (15.23 psi)
Turbine Construction	Inconel nickel alloy
Wastegate Control	Electrical
Recirculation Valves	Air bypass type
Intercooler Type	Air-to-air
Engine Block and Internals	
Cylinder Block and Head Material	Aluminum alloy
Cylinder Bore Lining	Plasma-transferred thermal spray
Cylinder Bank Angle	75 degrees
Crankshaft Construction	Forged steel
Piston Construction	Cast aluminum with integrated cooling channel
Connecting Rod Construction	Forged steel
Valvetrain	
Valvetrain	24 Valve, IN/EX VTC, chain-driven camshafts
Intake Valve Construction	Forged steel
Exhaust Valve Construction	Forged steel, sodium-filled
Valve Included Angle	30 degrees
Fuel and Intake System	
Fuel Injection	Direct and port injection systems
Throttle Control	Drive-by-Wire system
Fuel Requirement	Premium unleaded (93 octane recommended; 91 required)
Fuel Tank Capacity	15.6 gal
EPA MPG Rating (city/hwy/combined)	20/22/21 (estimated)
CARB Emission Rating	LEV-III SULEV 125
Lubrication and Cooling	
Lubrication	Dry sump system with 6-rotor scavenge pump
Oil Type	Synthetic 0W-40
Cooling system	Liquid and oil cooling

Power Unit

Transmission and Rear Axle	
Type	9-speed dual clutch transmission (9DCT)
1st Gear Ratio	3.838
2nd	2.433
3rd	1.778
4th	1.428
5th	1.211
6th	1.038
7th	0.881
8th	0.747
9th	0.634
Reverse	2.395
Rear Axle Ratio	3.583
LSD–Wet Multi-Plate	Torque bias ratio: Drive 2.0, coast 2.6, 30 N-m pre-load
Twin Motor Unit (TMU)	
Type	Permanent-magnet, oil-cooled electric motor/generator
Layout	Independent, twin motors packaged back-to-back with a 1-way clutch, brake and planetary gear set
Horsepower @ rpm	36 + 36 @ 4,000
Torque @ rpm	54 +54 lb.-ft. @ 0–2,000
Direct Drive Motor	
Type	Permanent-magnet, water-cooled electric motor/generator
Layout	Direct drive, situated between engine and transmission
Horsepower @ rpm	47 @ 3,000
Torque @ rpm	109 lb.-ft. @ 500–2,000

Package

The new Acura NSX package continues the design philosophy of the original NSX. It seeks to optimize the packaging and layout of all major vehicle systems for optimal handling by fundamentally stabilizing the load on the tires by:

- Lowering the center of gravity
- Centralizing the mass of the vehicle
- Achieving the desired weight distribution



The new NSX has the lowest center of gravity (CG) among its core competitors. It also minimizes front and rear overhangs to centralize the mass within the wheelbase and maintain a compact vehicle footprint. A twin fuel tank design with a central placement straddling the front of the engine stabilizes performance, whether the fuel is full or empty, and enhances collision performance.

The low CG and centered mass pay dividends in handling and response. Biasing the mass toward the center of the NSX reduces the polar moment of inertia, making the car respond (yaw rate) faster to steering inputs and reducing its rotational kinetic energy. In other words, it is easier to initiate a turn and easier to stop the rotation. The low CG reduces the dynamic load transfer, thus stabilizing the vertical load on the tires, which means it can corner faster with greater confidence.

Furthermore, the package layout provides the driver superior visibility by pushing the dashboard surfaces down low and minimizing the A-pillar-obstructed view. Hood vents double as vehicle reference points for the driver, supporting them to achieve their desired apex and precisely navigate the corner.

Aerodynamics

Every square inch of the Acura NSX exterior body panel surfaces, fluid shapes, air inlets, exhaust outlets and the positioning, shaping and thickness of its floating C-pillars serves to optimize aerodynamic efficiency and support dynamic driving performance.

The second-generation Acura NSX was designed with a total airflow management strategy to achieve critical cooling flow performance, while minimizing drag, and to provide precise downforce distribution between front and rear axles to help ensure vehicle stability at high speeds. This approach manages airflow not only under and over the exterior surfaces, but through the front and rear motor rooms.

Three main flows make up total airflow management:

1. **Through the NSX** – Air flows through the front motor room, cools the power unit and brakes and provides downforce as it exits the hood and fender vents. The wheel wake management vents also minimize the flow disturbance from the front wheels.
2. **Under the NSX** – A flat underbody helps anchor the NSX by promoting negative pressure under the vehicle. Ducts pull air in and through a hollow rear chassis casting to provide rear brake cooling in a patent-pending design. The air flowing under the body is maximized with another patent-pending design; the rear diffuser increases the negative pressure, enhancing rear downforce.
3. **Around the NSX** – Air that exits the hood, fender and wheel wake management vents is strategically held tight against the side of the vehicle and re-introduced downstream through the intercoolers and over the rear integrated decklid spoiler. All the air flowing through, under and around the body converges to help manage the wake behind the NSX, thereby reducing overall drag.

Aerodynamic Downforce

The most important benefit of total airflow management is stability at high speeds for the driver, as well as maximizing power unit output and brake performance.

A 3-to-1 (rear-to-front) downforce ratio was determined to be the optimal downforce distribution for high-performance driving. This complementing downforce balance maximizes the driver feeling of stability and traction at high speeds.

The greatest downforce is generated as six vortices of air flow across the rear decklid. Air flowing from below the car and exiting through carefully optimized rear diffuser fins further anchors the NSX to the ground. In a patent-pending design, these fins are not parallel to each other but are narrower toward the front of the car and wider at the rear. This unique design amplifies negative pressure, enhancing diffuser efficiency, which further maximizes downforce.

Cooling

All supercars must manage thermal loads, and the NSX is no different. With power unit components at both the front and rear of the NSX, engineers were challenged with how to move air efficiently through the front TMU room and the rear power unit compartment to help cool the brakes and maintain precise downforce management. To do so most efficiently, the total airflow management approach moves air through the front TMU room, out the hood, fender and wheel wake vents to stabilize this air flow once again along NSX door panels, allowing smooth air flow to be re-introduced into the rear engine room. In total, air passes through 10 heat exchangers along these flow paths to cool all power unit components.

In another example of how air moves through the NSX, air is also picked up by ducts in the underbody that cool the rear brakes. Moving large quantities of air across the friction brakes of the NSX means that drivers experience very little fade when braking during high-performance and track driving.

Typically, effective brake cooling at the rear of a mid-engine vehicle is difficult due to heat from the engine and transmission. Rear brake cooling on the NSX is enhanced by the innovative use of two air duct paths that have been designed into the hollow rear subframe. Air passing through the subframe is precisely directed to the rear brakes, using specially-tuned air deflectors on the rear suspension arms.

Some air that enters the front TMU room also exits through the front wheel well to cool the brakes. As part of the total airflow management approach, this flow is carefully directed to perform its cooling function without disturbing flows downstream. As the flow cools the brakes and exits the front wheel well, the wheel wake management vents direct a thin, vertical sheet of air across the wheels that stabilize the turbulence that would otherwise be generated. The front fender vents support this effect.

Aerodynamic Development

Computational fluid dynamics (CFD) was used extensively during development to maximize the performance of all flow structures and to support hands-on experiments in wind tunnels during exterior design and power unit maturation. Along with the use of advanced CFD and wind tunnel and real-world testing, the development team also employed computerized lap-time simulation models of some of the world's most legendary race tracks. These simulation models could then be run on chassis-dynamometers, allowing testing and validation of the computer models for the thermal management.



CFD image of Acura NSX

Aerodynamics

NSX has undergone extensive testing at the company's state-of-the-art scale wind tunnel in Raymond, Ohio, using ultra-detailed 40-percent-scale models. The NSX has also been continuously verified and refined through full-scale testing in the company's wind tunnel in Tochigi, Japan.



Air flows

Space Frame and Body Panels

Like the original Acura NSX, which was the world's first all-aluminum exotic car, the 2017 NSX has a cutting-edge structure. Its multi-material space frame and body panels utilize new materials and construction methods. They deliver next-generation structural rigidity, outstanding outward visibility, world-class collision performance and superior surface and paint quality, befitting a next-generation Acura supercar.

The aluminum-intensive space frame and multi-material body panels also minimize weight with superior packaging flexibility for the NSX Sport Hybrid SH-AWD power unit. The high level of dynamic rigidity reduces noise, vibration and harshness (NVH) and ensures that driver inputs are directly translated to the car's actions with incredible speed and fidelity.

Some key features of the NSX multi-material space frame and body are:

- **Unmatched dynamic torsional rigidity** – The NSX directly responds to the driver's cornering demands, instantly transmitting those inputs to the chassis while maintaining perfect connection between front and rear axles, communicating both the driver's action and any changes in the road surface with the utmost fidelity.
- **Ultra-high local chassis rigidity** – Each chassis component is mounted to a rigid casting supported by extruded aluminum frame members that act like "truss structures" such that high local attachment-area stiffness is ensured in all directions, helping maintain the precisely-designed chassis geometry at all times.
- **World's first automotive application of ablation casting technology** – Used both at front and rear, these [ablation cast aluminum frame nodes](#) serve as ultra-rigid mounting points for the suspension. Applied in key crush zones, these nodes link frame sections together and uniquely deform in a manner similar to a forged component but with lower weight, enabling shorter front and rear overhang, reduced vehicle mass and world-class collision performance.
- **A-pillars: Super strong, yet slender** – In another world's first, a new [three-dimensional bent and quenched \(3DQ\)](#) frame member was employed to create thin yet sturdy A-pillars. The resulting ultra-high-strength material allows a slender cross section to maximize forward visibility while meeting structural demands, including roof-crush requirements.

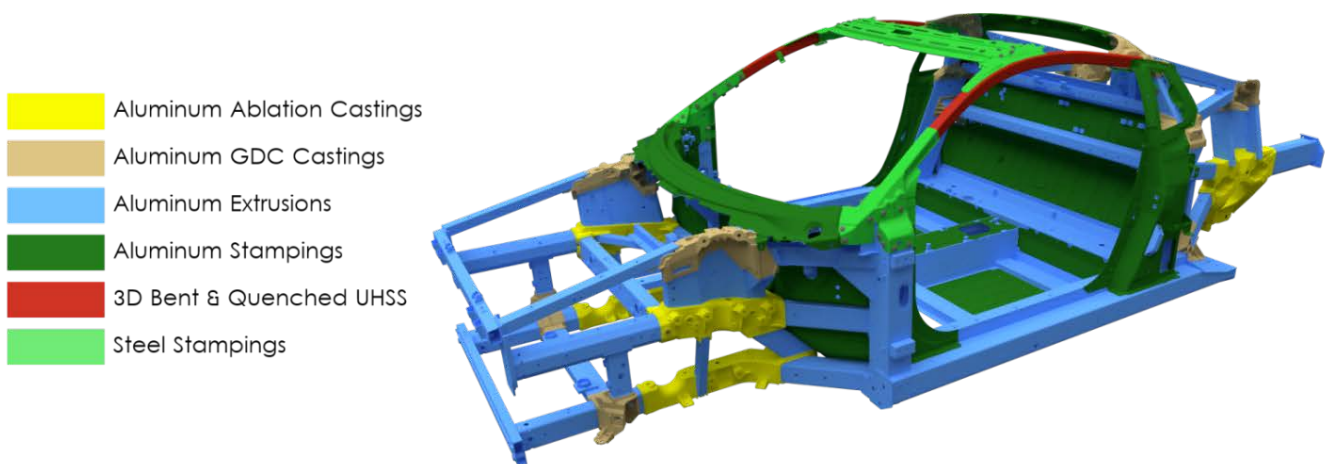


Multi-Material Space Frame

The NSX space frame construction consists of highly-rigid aluminum extrusions, aluminum, high-strength steel stampings and ablation cast aluminum frame nodes, which serve as critical components in the absorption and dispersion of energy in both front and rear impacts.

Highly rigid and reinforced extruded aluminum beams comprise the majority of the space frame. They are utilized for the front and rear frame rails and cross members, front and rear bulkhead frame members, floor cross members and side rails. To further attenuate noise, 38 aluminum extrusions are filled with acoustic spray foam and used in different locations.

Aluminum stampings are utilized as lightweight closure panels for the rear floor, rear bulkhead (firewall) and B-pillars.



Space Frame Development

To unlock the full potential of the all-new Acura NSX Sport Hybrid SH-AWD power unit and its total dynamic performance, the engineering team took a bold and challenging new direction: a completely clean-sheet, multi-material approach that breaks new ground in the automotive realm. By starting from scratch, the NSX development team was able to choose the optimal material and construction technology for each area of the space frame. This process targets both low mass and ultimate rigidity, while also satisfying other critical design objectives.

"The challenge for the body design team was to create a body with a high level of rigidity to be able to transmit the full feeling of this unique power unit directly to the driver without delay." While the all-aluminum unibody of the original NSX was ahead of its time, we would need to look to world-first technology in order to achieve this new level of rigidity."

Shawn Tarr, Acura NSX Space Frame and Body Design Project Leader

Space Frame Construction

A number of advanced technologies and techniques are used in the construction of the NSX space frame, which is built entirely in-house at the company's new Performance Manufacturing Center in Marysville, Ohio. The NSX development and manufacturing teams were determined to maintain in-house control of the complete construction process to ensure the highest levels of quality and performance for Acura customers.

Through strict manufacturing build processes and quality controls, the precise dimensional accuracy of the multi-material body is maintained throughout the construction process. This eliminates the need for post-process machining. This unique manufacturing system is a great point of pride for Acura, allowing the team to achieve quality and accuracy levels superior to its competitors.

Robotic Metal Inert Gas Welding

Metal inert gas (MIG) welding is utilized for the majority of the aluminum space frame construction. The NSX space frame contains more than 860 MIG weld points, where more than 112 ft (34 m) of MIG wire is applied. Most welding is done by fully automated robotic weld arms, which offer exceptional precision and control for superior quality. All welds and body components undergo a detailed inspection by highly skilled Performance Manufacturing Center (PMC) weld technicians.

Underbody section of the space frame are fabricated in a series of four stations, where highly skilled weld technicians work in tandem with automated robotic weld machines to ensure the highest quality parts. Specialized picture frame-style fixtures, developed in-house, hold the component pieces, allowing for more precise control of the weld process and dimensional accuracy of the part. Four of these fixtures are able to rotate 360° to improve the access of robotic weld arms to the part and to allow for full datum referencing (highly accurate measurements between lines on a three-dimensional X, Y and Z axis) of the part.

Strategic sequencing of the numerous weld processes reduces the potential for parts deformation from heat buildup, a common challenge in the welding of aluminum components. The quality of welds and dimensional accuracy of the part are confirmed at each station by technicians through visual inspection.

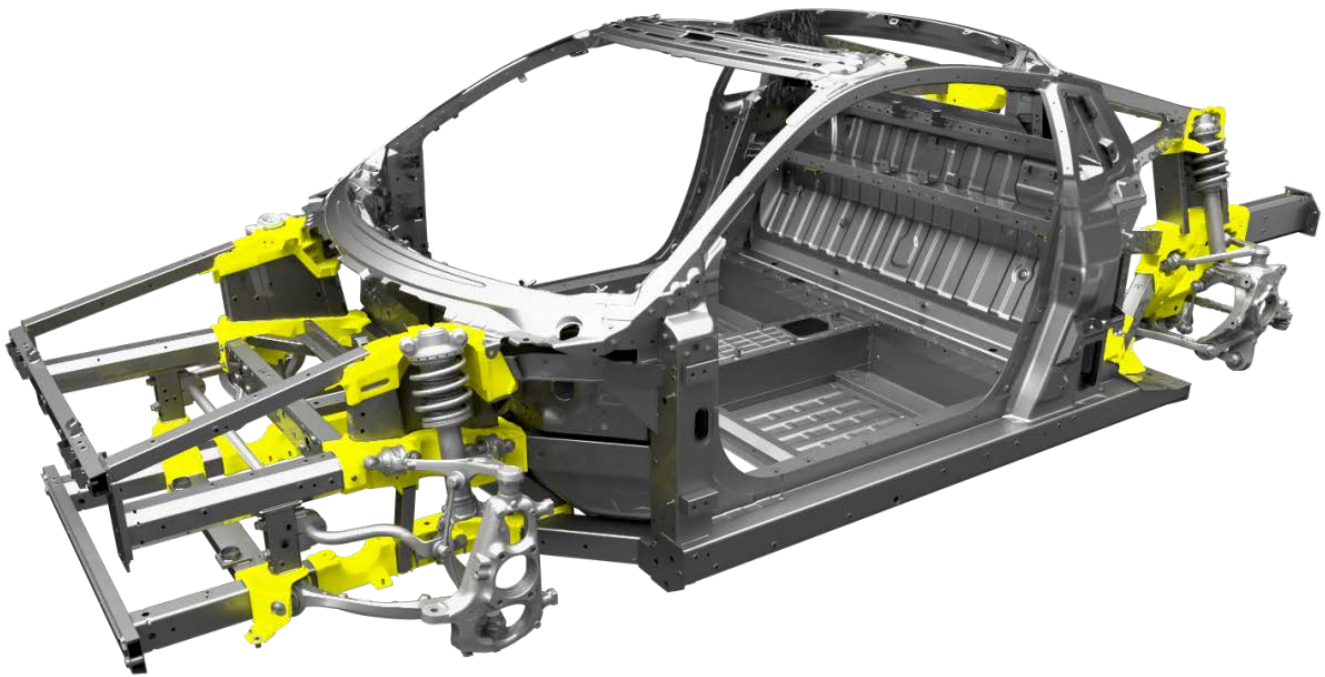
The floor and upper components of the space frame are then joined by large, fully robotic general welders, which also utilize rotating trunnion-type fixtures with 360° movement. Twin robotic weld arms are able to conduct welding processes simultaneously to aid in both manufacturing efficiency and in the uniform distribution of heat.

Aluminum Cast Nodes

Aluminum cast nodes serve as joining points for the extruded aluminum frame members and as ultra-rigid mounting points for the vehicle's front and rear suspension systems and its rear Sport Hybrid SH-AWD power unit. These nodes are either gravity die cast or, in front and rear crush zones, formed using advanced new ablation casting technology.

Ablation Cast Nodes

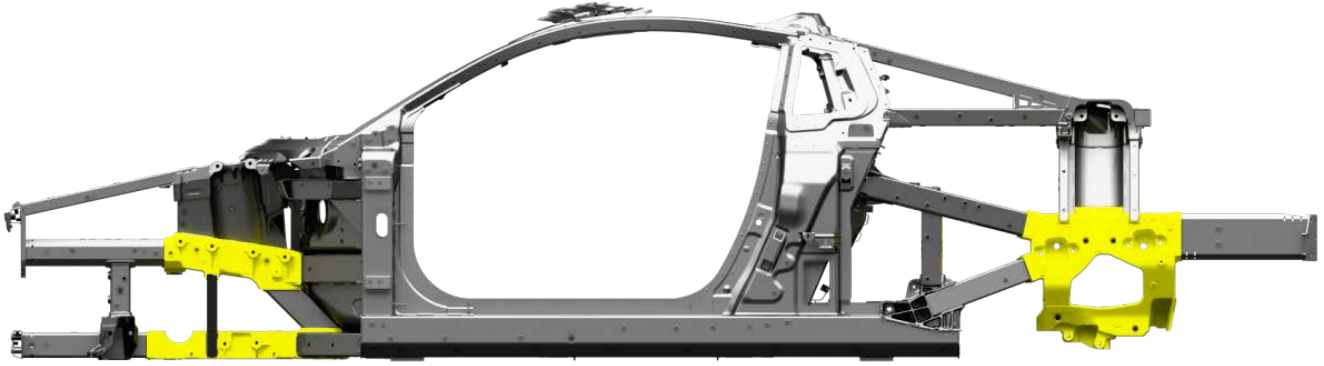
A most difficult design challenge in the development of the new NSX was to minimize the front and rear overhangs of the vehicle while managing collision energy absorption in key areas for crash performance and maintaining optimal structural rigidity. Acura engineers developed an innovative new technology called ablation casting to solve these complex and competing design imperatives. This process is an all-new material application and a world's-first application in the automobile industry. Ablation casting was matured from a fundamental research theme to a production vehicle application within the development cycle of the new NSX—a major design, engineering and manufacturing achievement.



The ultra-rigid space frame uses aluminum castings (shown in yellow) for all suspension mounting points

Ablation casting combines traditional casting methods with rapid cooling techniques to offer the design flexibility and rigidity of casting with the ductility and energy absorption characteristics of extruded material. Traditional castings provide the ultimate rigidity in space frame and other body designs, but experience a major drawback in that they are brittle and not suitable for the crush zones of this no-compromise supercar. Their ductility and energy absorption characteristics make the ultra-rigid ablation castings ideal for the crush zones.

Ablation casting involves the rapid cooling of a sand-cast aluminum component via the precise application of water jets that ablate the sand mold while cooling the part. This process fine tunes both the cast part's shape and its material properties while minimizing weight with hollow forms and optimized wall thicknesses. The technology was developed with Alotech and is performed in-house at Acura's Anna, Ohio, engine plant.



Ablation cast aluminum nodes within the NSX space frame shown in yellow

Ablation casting is utilized in the creation of six joining members, or nodes, of the NSX space frame: two upper and two lower nodes in the front frame and two nodes in the rear frame. These ablation cast nodes also serve as ultra-rigid mounting points for both the front and rear suspensions. The front nodes are designed to absorb and dissipate energy in a frontal collision by progressively crushing at 155 kN of load. The two large ablation cast nodes located at the rear of the space frame are designed for high strength, able to withstand 210kN of load without breaking to help mitigate forward movement of the power unit in the event of a rear collision.

Advanced Joining Technology

Acura uses advanced joining technologies throughout the construction of the multi-material space frame to ensure water-tight joints, reduce weight and part complexity and create strong and tight joints with clean and finished edges:

- **Self-piercing rivets (SPR)** allow for the joining of two or more layers of material without having to pre-drill or punch a hole while providing an exceptionally watertight joint. The NSX space frame contains more than 345 SPRs.
- **Flow-drill screws (FDS)** are used in the place of nuts and bolts in numerous areas of the space frame, reducing both weight and parts complexity. FDS are particularly well suited for use where one side of the part is inaccessible by conventional tools, such as in an extruded component. More than 245 FDS are applied to the NSX space frame.
- **Roller Hemming** joins two pieces of sheet metal by creating a sharp-angle bend, allowing the metal to be folded back over itself, creating a strong and tight joint with a clean and finished edge. There are nearly 60 ft (18 m) of roller hemming edge on the NSX space frame closure panels.

Space Frame Advanced Conversion Coating

Prior to final assembly, the fully-constructed space frame undergoes an advanced conversion coating process using a zirconium pre-treatment material and an e-coat process as an additional barrier to galvanic corrosion while maintaining a low environmental impact.

The use of zirconium, an Acura first, eliminates more than 90 percent of the heavy metal waste byproduct that results from the use of more conventional zinc-phosphate material. The use of a zirconium conversion coating is part of the effort to create a manufacturing process with a low environmental impact, consistent with the ideal of a next-generation hybrid supercar.

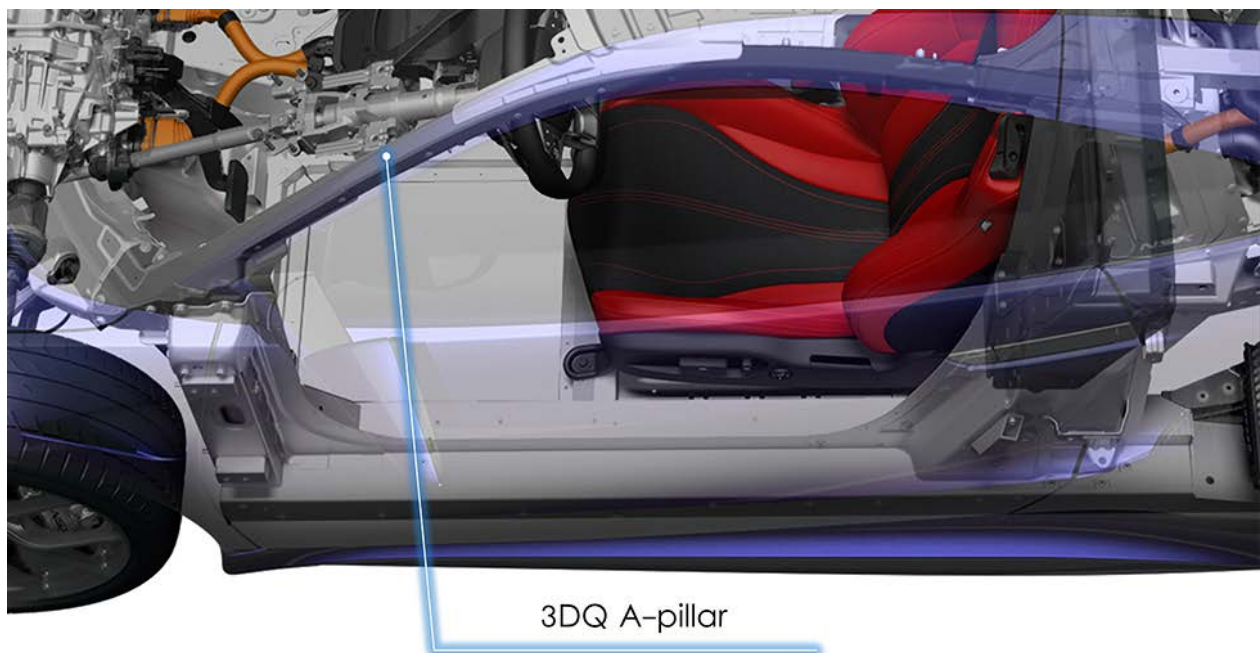
Repair and Serviceability

To reduce the complexity and help minimize the cost of collision repair, as well as to protect the precise dimensional accuracy and functional integrity of the NSX space frame during a collision repair, the NSX development team worked closely with the Acura service engineering team to implement a modular construction concept: Space frame components can be replaced individually or as pre-assembled modular sections (when vehicles are repaired in Acura's Performance Refresh Center). For example, there are "light-collision" and "medium-collision" replacement sections for both the front and rear of the vehicle, which minimize the amount of welding required during repair.

For extensive servicing of the rear power unit (V6 engine, Direct Drive Motor, 9DCT and transaxle), the team designed a modular rear section. The entire trunk section can be removed as a single unit to permit easy access to the mid-mounted V6 engine.

3D Bent and Quenched Ultra-High Strength A-Pillars

The original NSX was known for its outstanding forward visibility, giving drivers a feeling of being connected to the road while expanding their view. This design attribute was maintained as a core characteristic of the NSX driving experience.

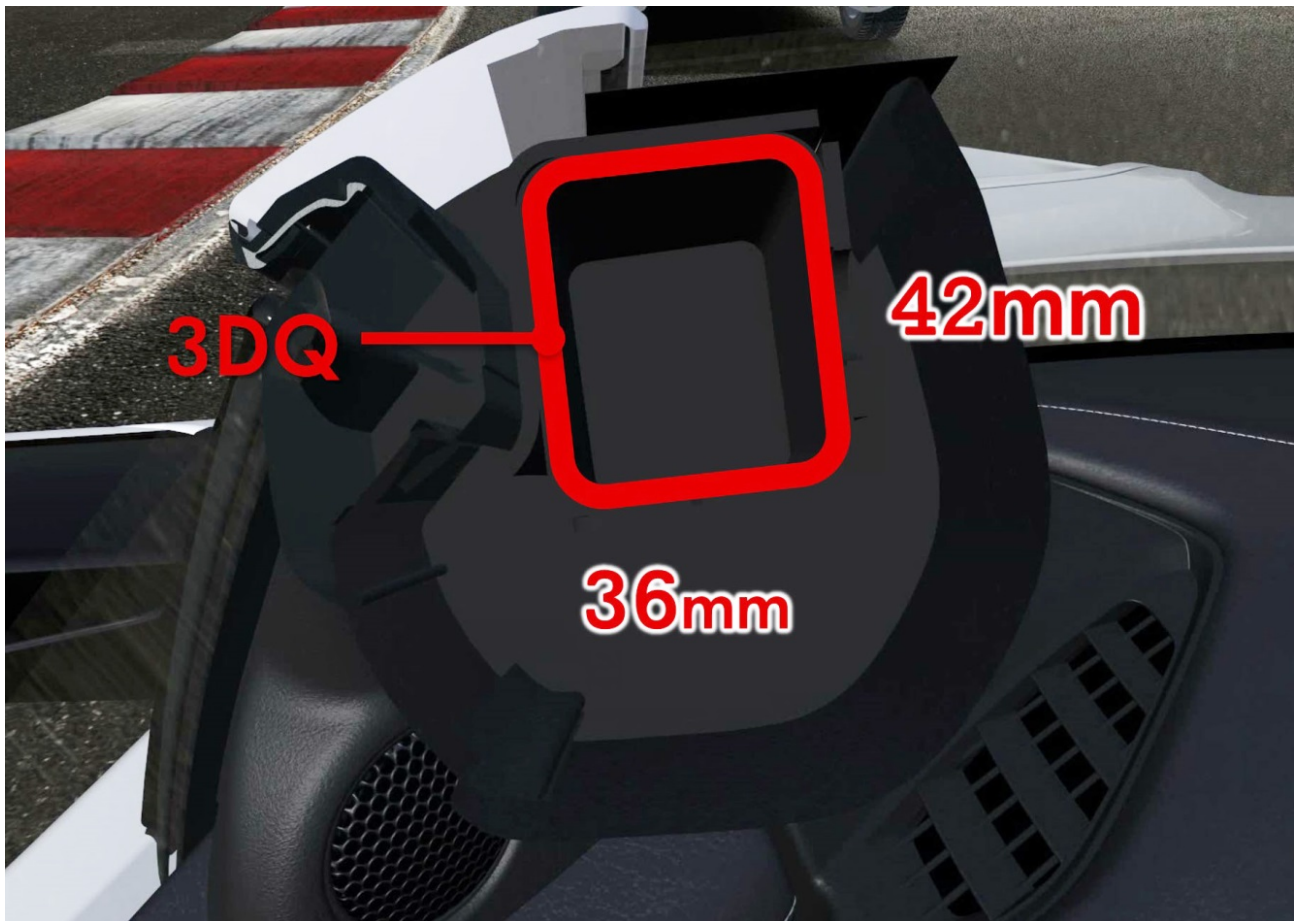


Space Frame and Body Panels

In another world's first, the upper portion of the A-pillars and roof rails, which comprise one continuous section, are formed using three-dimensionally bent and quenched (3DQ) ultra-high-strength steel tubing.

This new forming process allows for highly accurate forming of complex steel tube shapes with ultra-high tensile strength, allowing for extremely small pillar cross sections that give the NSX superior forward visibility while also providing high roof-crush strength.

The 3DQ component is heated and then shaped in three dimensions by an articulating robotic arm, after which the part is quenched using water jets to achieve an ultra-high tensile strength of 1,500 megapascals (MPa). This process enables the pillar to have a very thin cross-section with precise shape specification and tolerances, while meeting the increased structural rigidity standards for roof-crush performance. It also reduces the width of the A-pillar structure to just 1.65 x 1.42 in. (42 x 36 mm) and the finished A-pillar by 1 in. (25 mm), compared to a conventional construction process. The view is a full 36 percent less obstructed than the next-best supercar evaluated by the Acura team, and even better than the original NSX.

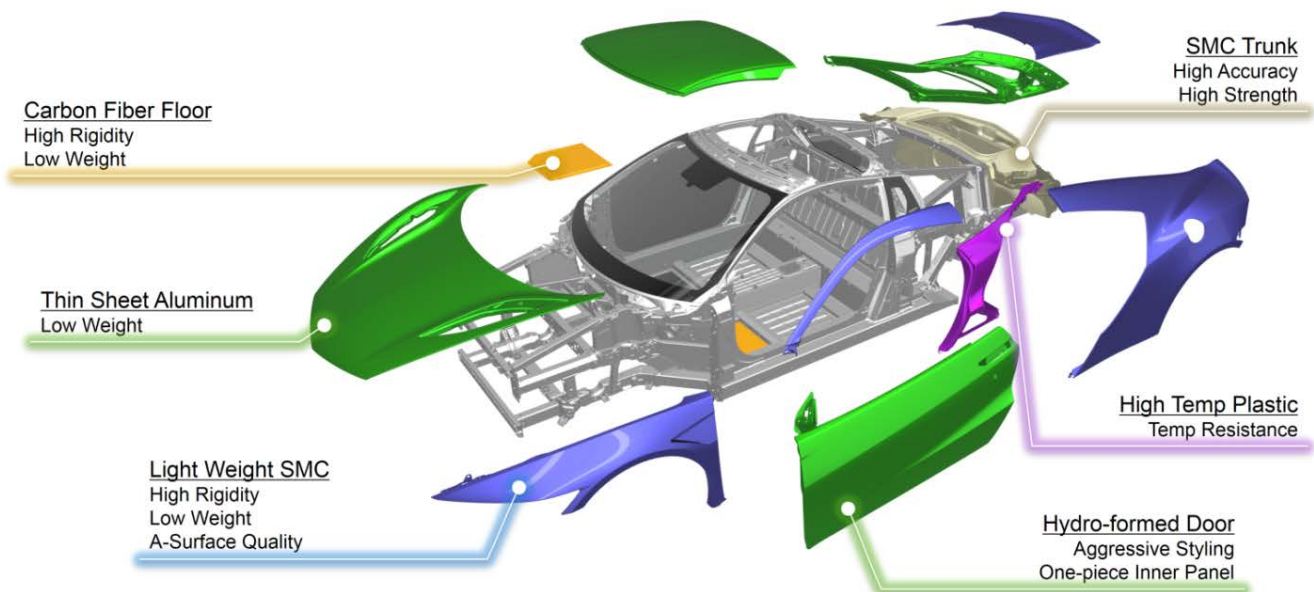


To prevent galvanic corrosion, the 3DQ component receives an electro-deposited coating before being joined to the NSX multi-material space frame.

Multi-Material Body Panels

As with the multi-material space frame, many different lightweight materials were used for the exterior body of the NSX. Each material's unique characteristics create exterior body panels of the highest finish quality. They were chosen for their abilities to minimize vehicle mass, optimize weight distribution and center of gravity and help ensure longevity and durability. These materials also contribute to panel rigidity, pedestrian safety, styling detail and exceptional surface finish. The NSX multi-material body design concept extends throughout the entire body construction.

- Sheet molding compound (SMC) is used for the fenders and trunk
- Sheet hydroformed aluminum is used for the outer door panels
- Aluminum stampings are used for the hood and roof (a carbon fiber roof is optional)
- High-temperature-resistant plastic is used near high-heat areas



Sheet Molding Compound Panels

Used extensively in the construction of high-end exotic cars in key exterior componentry, sheet molding compound (SMC) is high-grade specialty glass-fiber reinforced polyester, its shape formed while heated under pressure within a compression molding. By utilizing special resins as well as high-strength fiber composite matting, NSX exterior design engineers have developed SMC material for specific applications on the vehicle's exterior.

Specially engineered SMC material, for light weight and durability with high surface quality, has been created for use in the fender sections at all four corners. Designed to possess high structural rigidity, this unique SMC paneling optimizes the NSX overall center of gravity by minimizing weight at all four corners. The rear trunk skin is also made of lightweight SMC, with structural support provided by a stamped aluminum inner frame structure.

Space Frame and Body Panels

A rigid, structural SMC material has been developed for use for the NSX trunk internal structure. This highly rigid construction allows the trunk structure to serve as a mounting point for the rear fenders and rear bumper for optimal accuracy and precise fit. An added benefit of the trunk compartment design is that it allows for easy removal when the vehicle is brought into an Acura dealer for service. After removing the rear fascia, the entire trunk structure can be removed for easy access to the engine room. This design also allows for easy replacement of the rear section should the NSX be involved in a rear-end collision.

Sheet Hydroformed Aluminum Panels

The door skins and inner panels are made of sheet hydroformed aluminum. Hydroforming is the ideal means to shape the one-piece aluminum panels that make up each door. The process supports the construction of complex shapes that cannot be formed by conventional stamping techniques. Moreover, the aluminum door skins can be relatively thin and light as they are naturally supported by the inner door structure.

Aluminum Stampings

The hood, roof panel and the engine compartment and trunk frame are composed of high-grade stamped aluminum. Like the other composite materials utilized in the exterior, the use of aluminum in these areas offers reduced weight with excellent structural rigidity.

High-Temperature-Resistant Plastic

A special, high temperature-resistant plastic is used in the small body panel sections just below the floating C-pillars (forward of the rear fenders) due to the body panels' close proximity to the turbo intercoolers.

Carbon Fiber Floor

Carbon fiber serves as the ideal material for the driver and passenger floor section. In addition to its light weight, this material is strong enough to handle the loads occupants place on the floor while entering and exiting the vehicle. Aluminum sheeting would require additional cross-member frame support underneath, which would have added weight.

Body Panel Fitment

As the near-final step in the vehicle assembly process at the Performance Manufacturing Center, the exterior body panels are attached to the vehicle's space frame, starting with the roof, then the doors and other components, working from the top down. This process, along with the high degree of dimensional accuracy for the underlying space frame, allows for extremely fine adjustment of panels to achieve consistent and symmetrical panel gaps.

Specifications

Multi-Material Space Frame and Body Panels	
Space Frame Construction	Multi-material space frame with cast aluminum nodes
Ablation Cast Aluminum Nodes	Complex high-performance aluminum castings for crush zones; <i>World's first automotive application</i>
A-Pillar Structure	3DQ ultra-high-strength steel (1,500 MPa); <i>World's first application</i>
Body Panels	Mix of light aluminum and low-density SMC outer panels
Front Floor Panel	Carbon fiber

As the connection between the driver and the road, the all-new Acura NSX chassis provides high fidelity steering and road feedback. Advanced technologies combine to impart sports car agility at low speeds, with confidence-inspiring stability and predictability at high speeds. The NSX faithfully translates driver inputs under a wide range of driving situations for ultimate handling performance.

- All-aluminum front and rear suspension systems provide precise control through highly rigid construction and precise geometry
- Rigidly mounted variable gear ratio electric power steering (EPS) eliminates the need for hand-over-hand steering, once out of the parking lot
- Electro-servo sports brakes (ESB) seamlessly integrate friction and regenerative brake systems to provide a powerful and confident response
- Third-generation active magnetorheological (MR) dampers stabilize tire-to-road contact while at the same time stabilizing major body motions



Suspension

A key attribute of the original Acura NSX was its novel use of a finely-tuned aluminum suspension. The NSX team went back to the fundamentals to design the next-generation NSX front and rear suspension systems.

The all-aluminum, fully independent front and rear suspension systems are mounted directly to the ultra-rigid multi-material space frame without any floating subframes. Utilizing lightweight yet rigid aluminum alloy components at all four corners, the NSX suspension keeps unsprung weight to a minimum while maximizing each suspension link's stiffness for instant and accurate response.

Front Suspension

The front double wishbone suspension decouples steering disturbances, such as torque steer and steering road kickback by splitting the lower wishbone into two separate links. The all-aluminum front suspension has been optimized with compact and lightweight components and geometry for crisp and communicative on-center steering feel and excellent stability.



Rear Suspension

Featuring lightweight, all-aluminum components, the rear suspension employs a sophisticated independent multi-link design with high lateral rigidity to react faithfully to driver inputs and maintain stability. It minimizes lateral acceleration response delay providing proper lateral response phasing of the rear axle with respect to the front, so stable cornering can be achieved up to and beyond 190 mph (308 kph). Basically, the NSX driver can corner faster with greater confidence and control.



Variable Gear Ratio Electric Power Steering

The EPS system utilizes a variable gear ratio. When on center, the ratio is tuned for optimal high speed control and stability. Off center, the gear ratio becomes quicker for improved turn-in and maneuverability at low and mid speeds while minimizing the need for hand-over-hand steering.

"It was a huge challenge to create a lively and communicative Electric Power Steering for the driver that would be truly worthy of a next-generation Acura NSX. But by optimizing the mechanical components within the system, plus careful tuning of the software, we were able to achieve our goal of delivering highly responsive steering with outstanding driver feel."

Chris Dundon, NSX Chassis Design Project Leader

Rigid mounting in a high position and high component stiffness minimize lost motion to help realize faithful road feedback. The EPS exhibits many advantages over an engine-driven hydraulic-based steering system. Like the original NSX, the next-generation NSX applies an EPS system to reduce weight, simplify the layout by eliminating hydraulics and provide the basis to create a customizable driving experience for a wide range of driving conditions.

The addition of a motor-assisted second pinion to the EPS system more precisely assists with turning force and steering assistance, which leads to improved steering feel and feedback for the driver.



Dual-pin electric power rack and pinion steering system

The NSX features two distinct EPS steering settings: one for the Quiet and Sport modes and one for the Sport+ and Track modes. For the more performance-oriented Sport+ and Track driving modes, an increased level of acuity and performance is accomplished by reducing steering assist based on vehicle speed and steering angle.

Next-Generation Super Sports Brakes

The next-generation electro-mechanical super sports braking system in the NSX delivers powerful and linear stopping performance in combination with highly communicative and easy-to-modulate brake pedal feel and high fade resistance.

The high-performance, Brembo brakes are seamlessly combined with the TMU's regenerative braking capability to support the hybrid battery's state-of-charge and consistent power delivery under demanding driving conditions.

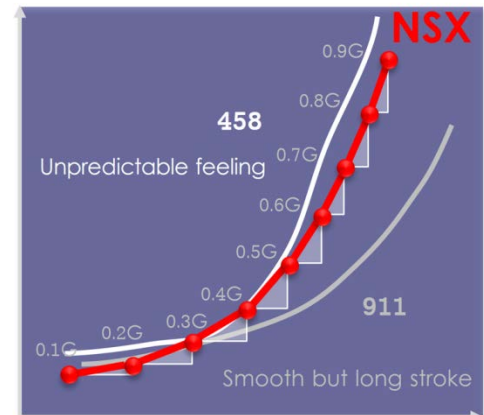
Electro-Servo Braking System

The ESB system has been designed and developed through rigorous testing to provide the driver with superb feedback and brake pedal feel in all conditions, from low-speed city traffic, highway speeds or flat-out track driving.

The high degree of intuitive brake pedal feel is achieved through precise pressure control by the electro-servo brake system. The operation of the ESB is also finely tuned to deliver consistent and predictable brake pedal feel for each of the drive mode settings of the Integrated Dynamic System.

Regenerative Braking

By supplementing the high-performance electro-servo (friction) braking system with regenerative braking, the NSX recycles electricity and feeds it back to the Intelligent Power Unit (IPU). Unlike many such systems, the NSX blends this capability in a seamless and effective way, resulting in intuitive brake pedal feel with superb feedback. Regenerative braking begins as soon as the driver releases the throttle, to maximize IPU recharging during normal driving.



Brake System Components

The high-performance Brembo braking system features:

- **Front** – Large, six-piston calipers with 14.5-in., two-piece, iron and aluminum ventilated brake discs up front
- **Rear** – Four-piston calipers with 14.0-in., two-piece, iron and aluminum ventilated rotors at the rear

All four calipers are of an aluminum mono block design, which provides even pressure distribution across the surface of the brake disc with outstanding heat dissipation and excellent rigidity. The two-piece iron and aluminum brake discs provide consistent brake pad-to-rotor surface contact with high heat capacity and cooling efficiency, which allows much greater thermal expansion without adverse performance effects.



Standard iron rotor brake system



Optional cross-drilled carbon ceramic rotors

An ultra-high-performance carbon ceramic brake disc package (15.0-in. discs up front/14.0-in. rear), available as a factory option, reduces weight. These high-performance brakes save nearly 52 lb. (23.5 kg), when compared to the standard brake package, along with improved fade performance in high-stress conditions, such as extended track sessions. The carbon ceramic rotors are cross-drilled to reduce weight and improve cooling. The package includes a choice of three different brake caliper color options: red, black or silver.

Optimized Brake Cooling

Optimal brake cooling has been achieved as an integral part of the NSX advanced aerodynamic design. Even under the high-stress scenario of extended track sessions, front and rear brake cooling is always robust, providing continued optimum vehicle control.

Typically, effective brake cooling at the rear of a mid-engine vehicle is difficult to achieve due to the surrounding heat from the engine and transmission. Rear brake cooling on the NSX is enhanced by the innovative use of the NSX rear subframe. Two air duct paths have been designed into the hollow subframe. Air passing through the subframe is precisely directed to the rear brakes using specially tuned air deflectors on the rear suspension arms.

Wheels and Tires

The Acura NSX chassis contains a bespoke wheel and tire package that extracts optimal performance from the vehicle in lateral grip, acceleration and braking. Lightweight forged alloy wheels with high lateral stiffness are fitted with high-performance summer tires—Continental ContiSport Contact—to provide the NSX interface with the road. In a joint effort with Continental, the wheel and tire combination was extensively tuned to work in unison with the NSX chassis and Sport Hybrid SH-AWD systems to offer superior traction and grip under both wet and dry conditions. Track-focused ultra-high-performance summer tires, with elevated grip levels and even higher response characteristics, are available as dealer-installed options.

The unique “Y” wheel design is a result of the NSX engineering team’s extensive research to find the strongest and most rigid spoke structure with the least amount of material. Forged in high-strength aluminum alloy, the wheel design offers a lower total weight than any wheels of similar size and material composition within the NSX competitive class. An optional factory-installed wheel set utilizes a thin, exclusive Interwoven wheel spoke design featuring three options of finish: 3D-machined, polished and painted.



Y-Spoke wheel design



Optional Interwoven wheel

Both wheel packages feature staggered fitment to optimize chassis performance, the front wheels measuring 19 x 8.5J, with wider 20 x 11J wheels at the rear.

Active Magnetorheological Dampers

Third-generation MR dampers are used at all four corners of the NSX chassis. These magnetically-controlled dampers help to stabilize the driver and passenger in their seats and stabilize the tire footprint by continuously adjusting damping forces in fractions of a second, instantaneously adapting to the driving situation, driver inputs and road conditions. MR dampers allow the NSX to make optimum use of its high-performance tire design while still providing world-class ride quality.

The reservoir within each MR damper is filled with a special magnetorheological fluid that contains microscopic metallic particles. Running an electric current to each MR damper creates a magnetic field within the fluid that causes an instantaneous change in the fluid properties and resulting change in the damping force.

Chassis

While other active dampers are limited by their internal valve-based technology to vary the damping force, the Acura MR dampers utilize a unique valve-less design that offers a much broader range of damping force and more rapid responsiveness.

The MR dampers also function as a component of Integrated Dynamics System via two unique damper tuning settings—one biased toward unsprung mass control, used for Quiet and Sport modes; and a second with optimized performance tuning biased toward sprung mass control, used for Sport+ and Track modes.

Power Unit Mounting System

To provide the amount of torque that the new NSX delivers with the least amount of sacrifice to the driver, engineers had to give special consideration to the following when securing the Sport Hybrid SH-AWD power unit to the chassis:

- Supporting the rear power unit's massive torque output with minimal compliance
- Controlling the inertial mass of the power unit during transient driving or road inputs
- Minimizing unwanted power unit vibration to the driver and passenger

The solution was an engine cradle that combines hydraulic (oil-filled) engine mounts with a rigid aluminum subframe plate that supports the engine while acting as a vibration and noise inhibitor.

By employing widely spaced mounting brackets—up high at the front of the engine and a mounting cradle bracket down low at the rear (connected to the 9DCT)—the position of the rear power unit is optimized to greatly reduce roll, pitch and yaw motion of the power unit, providing greater acceleration response and handling ability.

Fuel Tank

Finding the shape and placement of the fuel tank for the best low-weight distribution while providing protection in the event of a rear-end collision was a difficult design challenge. The solution was twin tanks constructed of a specialized resin material. That design permitted tremendous flexibility in the shape of the fuel tanks. The tanks are centrally located behind the rear bulkhead and in front of the engine, which minimizes handling changes with varying fuel levels.

Specifications

Suspension	
Front Suspension Type	In-wheel double-wishbone, double lower control arm; aluminum
Front Damper Assemblies	Active Gen III MR coilovers
Front Stabilizer Bar	Hollow steel, 1.04 in. diameter x 0.13 in. wall thickness
Rear Suspension Type	Multi-link; aluminum
Rear Dampers	Active Gen III MR coilovers
Rear Stabilizer Bar	Hollow steel; 0.98 in. diameter x 0.12 in. wall thickness
Wheels and Tires	
Front Wheels	19x8.5J forged aluminum
Front Tires	245/35ZR19 93Y high-performance summer tires; optional ultimate-handling performance tires
Rear Wheels	20x11J forged aluminum
Rear Tires	305/30ZR20 103Y high-performance summer tires; optional ultimate-handling performance tires
Spare Tire	Tire repair kit
Steering	
Steering Type	Variable ratio rack and pinion; dual-pinion EPS
Steering Wheel Turns, Lock-to-Lock	1.91
Steering Ratio	Variable progressive; Range: 12.9:1 (on center) to 11.07:1
Turning Diameter, Curb-to-Curb	39.7 ft
Brake Specifications	
Front Brake Calipers	Brembo 6-piston aluminum mono block
Front Brake Rotor Type	Base: 2-Pc floating iron discs w/ aluminum center Option: 2-Pc floating carbon ceramic discs with aluminum center
Front Brake Rotor Size	Iron: 14.5 in. diameter x 1.3 in. thick Carbon ceramic: 15 in. diameter x 1.3 in. thick
Rear Brake Calipers	Brembo 4-piston aluminum mono block
Rear Brake Rotor Type	Base: 2-Pc floating iron discs with aluminum center Option: 2-Pc floating carbon ceramic discs with aluminum center
Rear Brake Rotor Size	14.2 in. dia. X 1.3 in. thick (both iron and carbon ceramic)

Interior and Exterior

Every element of the interior design enhances the New Sports eXperience for the NSX driver. The next-generation NSX respects the fundamental, driver-centered interior concept of the original NSX with attention to enhanced visibility, driver support and comfort, ergonomics and simple driver interfaces presented with elegant materials and design.

Visibility

The steering wheel, compact meter cluster and low dashboard create a very low cowl that, together with the narrow A-pillars and offset side mirrors, provides both forward and lateral unobstructed views during cornering that support precise clipping of the driver's desired apex.

The new NSX employs a new technology to maximize driver forward visibility: three-dimensionally bent and quenched (3DQ) ultra-high-strength steel (UHSS) A-pillars. These slim yet strong A-pillars offer exceptional strength and roof-crush protection while providing a panoramic view of the road ahead. The new NSX A-pillars are even narrower than those on the original NSX.

"The interior of the new Acura NSX is highlighted by what we call 'Interwoven Dynamic' design." It combines the best attributes of intuitive, easy-to-use functionality and superior ergonomics with a clean and modern design aesthetic worthy of a next-generation supercar. It's the ultimate testimony to the beautiful simplicity of form following function."

Michael Cao, Acura NSX Interior Design Project Leader



Rendering of view from inside the NSX

Instrument Panel and Center Console Design

The instrument panel combines authentic refined materials and surface textures with an easy-to-use and ergonomically designed “simple sports interface” system for intuitive and stress-free operation and functionality. Both the instrument panel and center console feature hand-crafted materials, including genuine leather atop the instrument panel, faux-suede Alcantara across the top of the driver’s gauge cluster hood and additional Alcantara trimming for the center console and glovebox.

The critical surfaces of the center console and doors that envelope the driver and passenger have been fortified with additional padding for optimal knee and elbow comfort and support, which is particularly helpful for driver stability in spirited driving. Many competitors utilize carbon fiber or other hard surfaces that can cause discomfort. Interior door and center console surfaces work in conjunction with the seat, to provide lateral support for the driver’s hips and legs.

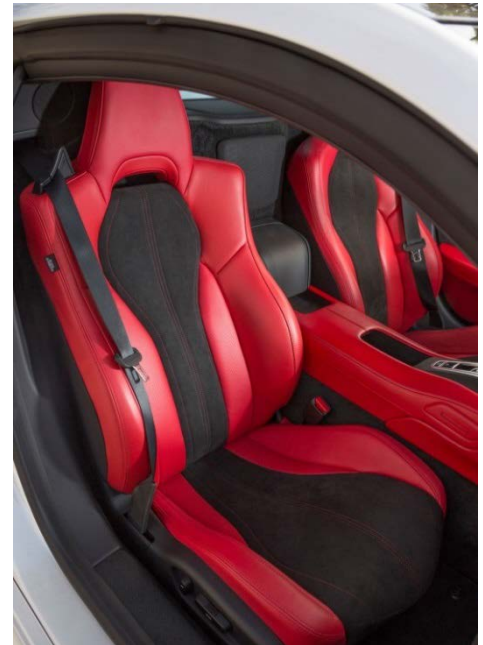


Sport Seats

Attractive as well as structurally rigid and lightweight, the seats in the new NSX are designed to offer higher comfort and support levels than those in competing high-performance vehicles. Seat materials, such as leather and faux-suede Alcantara, were carefully selected to help provide the NSX driver with dynamic driving support and freedom of movement for spirited driving.

The seats include tall bolsters with integrated support structures for improved lateral hold and freedom of shoulder movement. The Alcantara center panels in the seat bottom and seat back reduce sliding, while the leather outer surfaces improve ease of entering and exiting the vehicle. To further facilitate ingress and egress, the optional driver's power sport seat automatically moves rearward when the ignition is turned off.

The seat bottom structure is composed of stamped aluminum for reduced vehicle weight. Both the seat and seatback are of sturdy construction to hold the driver and passenger in place and for improved longevity and crash performance. The headrest is designed to accommodate a helmet for track outings.



Steering Wheel

As the centerpiece of the driver's tactile and dynamic driving experience, the ergonomic, seamlessly-wrapped steering wheel of the NSX provides superior grip, comfort and control. It has been designed to provide man-machine synergy between the driver and the car.

- The leather-wrapped steering wheel has a stitchless design to maximize the NSX driver's connection to the vehicle and the road. The seamless, uninterrupted surface of the wheel helps to provide the driver with predictable, linear feedback.
- The shape of the steering wheel optimally supports two hand positions: nine and three o'clock and ten and two o'clock. The steering wheel shape is complemented by extended-length paddle shifters.
- The flattened top section of the steering wheel offers improved forward visibility, and the flattened bottom enhances driver leg space.
- The side surfaces of the steering wheel were sculpted to maximum ergonomic benefit through correlation between NSX pro drivers and interior designers.
- The steering wheel inner frame is composed of magnesium for low inertia and maximum rigidity to support crisp handling.



Steering-Wheel Mounted Controls

Controls mounted on the steering wheel put critical features and functions at the driver’s fingertips. The audio volume wheel, source selection button and phone controls are on the left of the steering wheel, and the Multi-Information Display (MID) controls and cruise control functions are on the right.

Simple Sports Interface

The driver’s instrument cluster and center console have been designed to enhance the driving experience with intuitive layout and simple operation, creating a “simple sports interface” for the driver.

Audio and Connectivity

The new NSX makes it easy for the driver to operate the navigation and audio functions while focusing on driving. An advanced, user-friendly suite of audio and connectivity technologies is controlled by a single, 7-in. capacitive touchscreen. The Display Audio system is supplemented by steering wheel-mounted controls to put access to features and functions at the driver’s fingertips.



ELS Studio Audio System

An optional [Technology Package](#) includes the ELS Studio Audio System, which was designed, engineered and manufactured in collaboration with Grammy and Emmy award-winning recording engineer and music producer Elliot Sheiner.

Dynamic Thin-Film Transistor Gauge Cluster

Front and center of the instrument panel is an 8.0-in. Dynamic Thin-Film Transistor (TFT) gauge cluster, which is overlaid with a digital analog tachometer dial that resembles a traditional large analog tachometer. Within the tachometer is the digital speedometer readout and full-color MID. The TFT center meter is flanked by digital gauges displaying the Sport Hybrid SH-AWD system motor's state of charge/assist (left) and the battery's state of charge (right), with an analog engine coolant temperature gauge on the left and a fuel gauge on the right.



TFT instrument cluster shown in Sport+ mode

Multi-Information Display

The customizable MID displays a wide variety of functions and information and is controlled by a thumb dial on the right side of the steering wheel. The MID also incorporates the Acura Maintenance Minder system, which alerts the driver of upcoming maintenance needs via the MID. Should a fault occur, specific warning information will appear on the MID.

MID information categories include:

- Integrated Dynamics System mode
- Elapsed time
- Average speed
- Average fuel economy
- Instant fuel economy
- Estimated fuel range
- Maintenance Minder
- Tire pressure monitoring system (TPMS)
- Engine oil life
- Engine oil level
- Turn-by-turn navigation (with Technology Package featuring embedded Acura Satellite-Linked Navigation System)
- Turn-by-turn navigation for integrated Apple CarPlay and Android Auto

Transmission Information Display

The TFT gauge cluster relays important information to the driver relating to the current state of transmission operation in a clear and concise graphical format, depending on the transmission's mode of operation:

- **Auto** – Signals the driver that the car is currently in Automatic mode
- **D-Paddle** – Signals that although Auto is still selected, the car is in a temporary Manual mode, with the driver manually selecting gears via the steering wheel-mounted paddle shifters. The display returns to Auto when manual shift activity stops for a certain period of time
- **Manual** – The meter displays only the gear selected (e.g. "3") when the car is in fully Manual mode

Integrated Dynamic System Meter Modes

The driver's center meter is tied into the Integrated Dynamics System to provide a visual complement to the customizable dynamic and auditory elements of the NSX driving experience. When the driver selects a new Integrated Dynamics System mode using the dynamic mode dial, the MID displays a graphical representation of the Integrated Dynamics System component systems, along with a color to match the mode.

- In **Quiet** mode, the meter takes on a cool blue glow.
- In **Sport** mode, the meter takes on a grey hue with red highlights.
- In **Sport+** and **Track** modes, the tachometer takes on a yellow hue with red highlights, and the tachometer "rotates" to place the lower and upper rpm limits at the six o'clock and three o'clock positions.

As engine speed increases during driving, the outer ring of the tachometer will flash red when the engine speed exceeds 7,000 rpm to alert the driver that they are approaching the 7,500 rpm redline.

Interior Illumination

The driver's gauge cluster and Display Audio touchscreen illuminate upon vehicle entry and progressively brighten to full strength when the Sport Hybrid SH-AWD power unit is started. The display screen of the driver's gauge cluster presents a brightly colored typeface that is easy to read against a black background. Additional interior illumination includes twin LED map lights in the overhead console and blue-tinted LED lighting for the foot wells and center console.

Center Console

The center console contains the following elements:

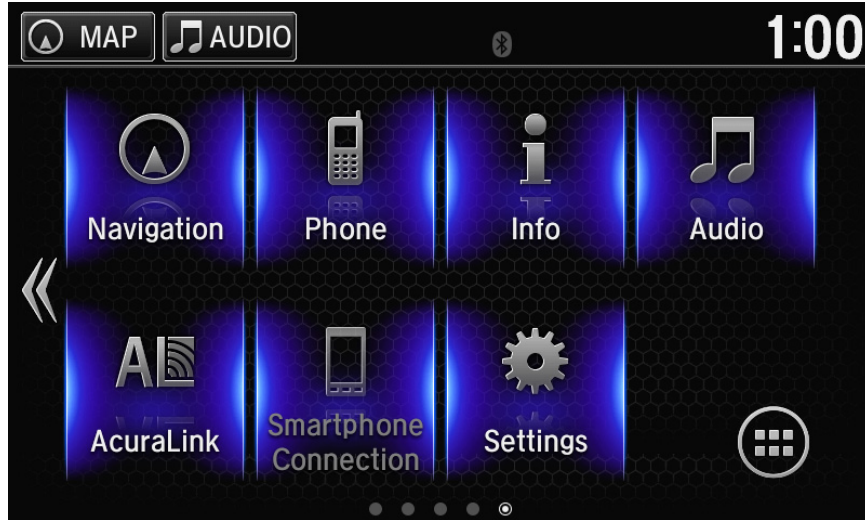
- Display Audio system interface with 7-in. capacitive touchscreen
- Dual-Zone climate control
- Integrated Dynamics System control dial
- Three-position heated seat controls
- Electronic gear selector
- Electric parking brake
- Storage compartments



NSX center console

Display Audio System Interface

A 7-in., high-resolution capacitive touchscreen is included as part of the standard equipment package. When the driver first opens the door, the Display Audio system touchscreen illuminates. A custom NSX animation displays when the vehicle is started.



Climate Control System

Every Acura NSX includes a dual-zone automatic climate control system with humidity control and air filtration. The system enables the driver and passenger to pre-select their preferred temperature settings, and it automatically adjusts volumetric airflow and temperature to maintain a proper and pleasant climate inside the vehicle. With its micron air filtration system, the dual-zone automatic climate control system can filter particulate matter as small as 0.3 microns.

Push-button defrost helps to clear up fogged or icy windows quickly and conveniently for improved outward visibility. A proper and comfortable climate can help the driver keep their concentration and reactions sharp for improved safety and driving performance.

Humidity control improves the vehicle's interior air quality and occupant comfort. It uses a sensor within the cabin to detect temperature and moisture levels and regulates airflow to maintain a comfortable level of humidity.

Dynamic Mode Dial

Effortless transition between driving modes is made through an elegant rotary dial. The large Dynamic Mode dial of the Integrated Dynamics System is located at the base of the instrument panel and center console juncture. The driver can easily reach the dial to change driving modes (Quiet, Sport, Sport+ and Track) without taking their eyes off the road.

Electronic Gear Selector

The Electronic Gear Selector enables the driver to select a vehicle gear setting with the simple touch of a button.

- **Park (P)** – Pressing the button places the vehicle in Park (indicator light illuminates red)
- **Reverse (R)** – Pulling back engages the Reverse gear (indicator light illuminates green) and rearview camera
- **Neutral (N)** – Pressing the button places the transmission in Neutral (indicator light illuminates red)
- **Drive (D/M)** – Pressing the button puts the vehicle in Drive; pressing it again toggles the system to Manual; pressing the button again puts the transmission in Manual mode (indicator light illuminates green)

Electric Parking Brake with Automatic Brake Hold

The NSX adds the convenience of an electric parking brake, enabling the driver to engage the parking brake by simply pulling on a rocker switch located on the center console.

The parking brake also includes the convenience of Automatic Brake Hold, which, once activated, can maintain the rear brake hold even after the brake pedal has been released.

Multi-Function Center Console with Interior Storage

The new NSX offers convenient storage areas for both driver and passenger.

- **Base of the center console** – Inset front pocket
- **Top of the center console between the seats** – Additional storage pocket designed to accommodate a smart phone
- **Rear of the center console** – Roomy storage box containing a 1.5-amp USB interface port that can sync a smartphone to the Display Audio touchscreen for operation of Apple CarPlay and Android Auto
- A phone cord management device is located underneath the rubber mat that lines the bottom of the rear storage box
- **Glovebox** – Includes a 1.0-amp USB interface port that can be used for audio devices, such as MP3 players

Interior Features

Key interior features of the all-new Acura NSX include:

Seating and Trim

- Perforated Milano Leather and Alcantara-trimmed heated and 4-way adjustable manual sport seats
- Optional 4-way power sport seats with power-adjustable lumbar; semi-aniline leather/Alcantara or semi-aniline full leather trim
- Leather-trimmed instrument panel
- Leather-trimmed door panels

Steering

- Leather-wrapped sport steering wheel (available carbon fiber trim)
- Illuminated steering wheel-mounted controls for, Cruise, Audio, Phone and Multi-Information Display
- Tilt and telescopic steering column

Controls

- Push-button start
- Sound control
- Active Sound Control
- Intake sound control
- Dynamic TFT gauge cluster
- 7-in. capacitive touchscreen Display Audio system
- Electronic cruise control
- HomeLink remote system

Interior Illumination

- LED interior ambient lighting
- Rear cargo area light

Climate

- Dual-zone automatic climate control
- Rear engine compartment window defroster

Power Features

- Power windows
- Power side mirrors
- Power door locks
- Power remote-operated fuel filler door
- 12-volt power outlet
- 1.0-amp USB interface port in glovebox
- 1.5-amp USB interface port in rear console storage box of center console
- Frameless automatic dimming rearview mirror

Storage

- Center console storage

Rear Cargo Area

The rear cargo area of the new NSX is pleasantly spacious and versatile for a mid-engine high-performance supercar. With 4.4 cubic feet of space and 100 lb. of capacity, the NSX trunk can conveniently accommodate weekend luggage for two or even a golf bag—all easily accessed through

Interior and Exterior

the rear cargo area's wide opening. A set of four rear cargo area tie-down anchors are included to help secure items, and an accessory cargo net for the rear area is also available.

The trunk can be opened using the remote key fob, a button located on the driver's interior door or by depressing a discretely located button under the trailing edge of the trunk lid. A valet lock-out switch is located in the glovebox. The driver can activate the valet lock out switch and lock the glovebox manually to prevent access to the locked rear cargo area.

NSX Exterior Design

Staying true to its Precision Crafted Performance DNA, the "Interwoven Dynamic" exterior design of the new NSX integrates supercar aesthetics with supercar performance.

The overall sleek yet muscular stance conveys a sense of purpose and power. Remarkably compact overhangs foretell the design and engineering team's exemplary packaging of mechanical and electrical components.

"The idea that form follows function is fundamental to Acura design, and this philosophy is interwoven in the core of NSX, which is why our exterior concept is called 'Interwoven Dynamic.' The NSX is a visual expression of beautiful design and performance working together, influencing every decision we made—every surface, every millimeter, every design element of the new NSX is focused on enhancing performance."

Michelle Christensen, Acura NSX Exterior Design Project Leader

Floating C-Pillars



The floating C-pillars, forward of the rear fenders, integrated into the exterior architecture are as purposeful as they are distinctive, supporting efficient body-side airflow.

The C-pillars extend outward from the sloping rear roofline so that, as air flows down the sides of the vehicle, it is efficiently rerouted into the side-mounted engine air intakes.

The floating C-pillars also aid engine cooling by creating a negative pressure zone around the rear heat exhaust vents, along the outside edges of the rear windshield, improving the efficiency of heat exhaustion. The portion of air that flows down the sides of the vehicle toward the outside sections of the buttress is stabilized to reduce turbulence as it passes with minimal disruption over the rear fenders and spoiler.

Flush-Mounted Automatic Power Pop-out Door Handles

The flush-fitting exterior door handles are both aesthetically pleasing and functional, providing a welcoming “handshake” with the driver or passenger as they extend outward from the door upon approach while at the same time supporting clean airflow along the body side.



Smart Entry with keyless access is enabled by proximity sensors tied to the remote key fob and capacitive touch sensors in the exterior door handles. The proximity sensors actuate the door handles upon approach, extending them outward for easy operation. Grasping either door handle activates a capacitive touch sensor, which unlocks the doors. Once the handle is released, it returns to the flush position. The doors can also be unlocked by pressing the unlock button on the remote key fob, which simultaneously extends the driver’s door handle and unlocks the driver’s door. A double push of the button extends both door handles and unlocks both doors. From outside the vehicle, the doors can be locked using a button positioned just forward of the door handle or by pressing the lock button on the remote key fob.

Even though the exterior door handle mechanism relies on electronics to function properly, it is not possible to be locked out of the NSX due to an onboard power failure. The door handle can be operated manually without electrical assistance. Automatic door handle extension can be disabled by a switch in the glovebox for shipping or long-term storage.

The trunk is accessed by means of the remote key fob, by a button located on the driver’s interior door panel, or by a button discretely located under the trailing edge of the trunk lid. In the event of a loss of power, both the driver’s door and the trunk also feature a traditional key cylinder for manual locking and unlocking of the doors and trunk.

Supercar Wiper and Washer System

The wiper and washer system, engineered specifically for the new NSX, has been designed to operate effectively even at maximum vehicle speeds. Tested in the wind tunnel at airflow equivalent of over 180 mph, the spoiler-shaped wipers have been designed to generate downforce on the wiper blade, while the speed-controlled wiper motor maintains a constant wiping speed, ensuring highly effective wiper performance in all driving conditions. Likewise, the windshield washer system utilizes a three-nozzle system for superior coverage in all conditions and driving environments, including high-speed travel.

In a further nod to improving forward visibility and providing an unobstructed view of the road, the windshield wiper arms are placed as low as possible at the base of the windshield and lower cowl section so that they remain completely out of the driver's view when not in operation. Placing the wipers below the hood also helps mitigate wind noise.

Body-Colored Aerodynamic Side Mirrors



Featuring a two-tone paint scheme that accentuates the NSX low-slung look and wide stance, the powered side mirrors include a thin blade arm to minimize air disturbance. This blade design reduces local airflow noise, prevents disruption of air flowing to the side intakes and minimizes aerodynamic drag. Like the ultra-high-strength A-pillars, the thin blade arm design improves visibility when parking and cornering. Each mirror housing includes light-emitting diode (LED) turn signal.

LED Lighting

The exterior design of the all-new NSX includes a variety of LED lighting features, including Acura Jewel Eye LED headlights, LED daytime running lights (DRL) and LED taillights.

Acura Jewel Eye LED Headlights

Acura Jewel Eye LED headlights are a standard feature on every NSX. Designed to complement the aggressive low and wide exterior appearance, each headlight assembly contains six individual LEDs. The low beam setting uses the four outer LEDs, and all six LEDs are used when the high beams are activated.

The wavelength of the LED is close to the human eye's luminosity curve. With their streamlined shape and lower electrical power consumption, the NSX Jewel Eye LED headlights also aid fuel efficiency and have a longer operational life compared to traditional halogen or high-intensity discharge lamps.



LED Daytime Running Lights

The NSX LED daytime running lights (DRL) use the top half of each LED headlamp that makes up the Acura Jewel Eye LED headlight assembly. LED position lights are located just beneath the LED headlamps. The LED position lights are composed of a series of small and tightly packed LEDs that run in a thin continuous line along the bottom of the headlight assembly. LED lighting is also used for the turn signals at both the front and rear of the vehicle.

Interior and Exterior

This integrated LED-based lighting system creates a design aesthetic that complements the smooth, flowing and streamlined character lines of the vehicle, rather than calling individual attention to the daytime running lights themselves. Most importantly, the DRL design featured on the new NSX provides vivid illumination that can be easily seen by pedestrians or other drivers during daytime hours.

LED Taillights

Similar in character to the Acura Jewel Eye LED headlights at the front of the vehicle, the LED taillights have a compact and narrow appearance with a uniquely freeform shape. The LED taillight array starts off wider toward the center portion of the rear of the vehicle, then gently tapers as it wraps around toward the outside corners and rear fender arches.



NSX LED taillights

NSX Exterior Finish and Paint

The NSX paint team at the innovative new Performance Manufacturing Center (PMC) targeted the highest levels of paint quality with reduced environmental impact, consistent with their target of “next-generation quality and craftsmanship.”

NSX Body Panel Paint Process

- Body panels enter the paint process attached to a specially designed fixture that locates the panels in a position and angle similar to how they are oriented once installed on the vehicle.
- To insure color harmony between multiple substrates, a specialty primer is applied to all body panels. This provides a common base to start the color application process.
- Depending on the final color desired, a varying number of coats is applied.
- Two layers of a high-quality/long-lasting clear coat are then applied.
- Body panels are then hand finished before receiving an additional two layers of clear coat.
- In the case of Andaro paint, several additional layers of nano-particle clear coat are applied during the painting process.
- Once cured, the panels undergo careful inspection in a newly designed inspection booth utilizing high-intensity LED lighting to help associates identify and address even the smallest irregularities.



World-class NSX paint quality

Specifications

Interior Dimensions	
Seating Capacity	2
Headroom	38.3 in. (973 mm)
Legroom	42.8 in. (1,087 mm)
Shoulder Room	57.6 in. (1,463 mm)
Hip Room	54.5 in. (1,384 mm)
Passenger Volume	44.0 cubic feet (1.25 cubic meters)
Cargo Volume	4.4 cubic feet (0.12 cubic meters)
Exterior Dimensions	
Wheelbase	103.5 in. (2,629 mm)
Length	176 in. (4,470 mm)
Height	47.8 in. (1,214 mm)
Width	87.3 in. (2,217 mm) (includes mirrors)
Track (front/rear)	65.2 in. (1,656 mm)/63.7 in. (1,618 mm)
Ground Clearance with load (unladen)	4.2 in. (106.7 mm)
Approach/Departure Angles	9.2°/12.9°

Integrated Dynamics System

The new Acura NSX supercar can mirror your mood—from flying under the radar in Quiet mode, to exploring at-limit track performance. Based on the man-machine synergy that goes into every Acura vehicle, the NSX leverages both fundamental and advanced technologies to expand the range of driving experiences for the NSX driver. Unlocking all of these experiences is the most extensive and evolved Integrated Dynamics System in Acura’s history.

The four selectable dynamic modes—Quiet, Sport, Sport+ and Track—integrate all of the vehicle’s dynamic chassis and Sport Hybrid SH-AWD power unit systems to create a New Sports eXperience across a wider bandwidth than traditional sports cars can offer.

Highlights of the tuning available from the Integrated Dynamics System include:

- Throttle, brake and steering response and feedback
- Sport Hybrid SH-AWD power unit active drive force
- Suspension response, feedback and support
- Vehicle Stability Assist (VSA), including Agile Handling Assist (AHA) and Traction Control System (TCS)
- Engine sound, inside and outside the vehicle

Dynamic Modes

From the available all-electric operation of Quiet mode to the closed circuit, maximum performance capacities of Track mode, the Integrated Dynamics System dials up the dynamic characteristics of the vehicle based on driver desire. The system contains the world’s first custom setting menu that allows the driver to configure the vehicle’s mode for startup. For example, drivers can program the car to always start in a given mode or also program the mode to use based on the time of day.

To enhance the driver’s visceral experience inside the NSX cabin, the Integrated Dynamics System can be used to engage the new intake sound control and active exhaust valve systems to fine-tune cabin sound quality and volume to match the selected dynamic mode. The sound pressure level range within the cabin between wide open throttle in Track mode and electric vehicle cruising in Quiet mode is 25 (dB)—a wide range of audible sensation.

Quiet

Quiet mode gives the driver the ability to prioritize electric-only driving that makes the NSX virtually silent at lower speeds. Its Twin Motor Unit (TMU) provides initial launch from a standstill. When power demand requires the engine, it starts more quietly than in other modes. Maximum engine speed is limited to 4,000 rpm, while the active exhaust and intake sound control valves are closed for a more hushed operation. The transmission shift map also prioritizes lower engine speeds. The driver interface (tachometer and center console information display screen) features a cool and quiet blue color.

Sport

Sport mode takes advantage of the Sport Hybrid SH-AWD power unit to offer the driver a direct responsive vehicle, or a more relaxed vehicle, according to their driving inputs. Compared to Quiet mode, Sport mode eliminates the 4,000 rpm limit on the engine and provides a more aggressive throttle map for quicker response. A more aggressive transmission shift map holds gears longer and allows for higher rpm shift points. The intake sound control system and the active exhaust valve are activated in the mode, enabling exhaust and intake sound to permeate the cabin for a more emotional driving experience. Like Quiet mode, Sport mode stops the engine whenever possible. The Sport mode setting is the default setting in normal vehicle operation. The driver interface turns to a grey hue with red highlights.

Sport+

Sport+ prioritizes maximum Sport Hybrid SH-AWD power unit response and dynamic performance with faster up and downshifts of the 9DCT and still more aggressive throttle mapping. Maximum use of the electric motor torque provides more explosive acceleration. Increased agility is achieved by harmonizing a more aggressive direct yaw control setting that works in concert with the magnetorheological (MR) dampers, AHA and the variable gear ratio electric power steering (EPS) system—perfect for a spirited drive on a winding road. Sport+ mode also offers the driver a higher degree of steering feedback, while intake and exhaust note sounds are further increased for an even more exhilarating and emotional driving experience. The driver interface offers an aggressive yellow “con trail” along the tachometer needle supporting maximum visual feedback of the engine rpm. The center console information display glows with red highlights to reinforce that the driver is in Sport+ mode.

Track

Optimized for circuit driving, Track mode provides the most aggressive settings to support the driver in capturing the fastest and most consistent lap times. In Track mode, Launch Mode Control is available for maximum possible acceleration from a standstill. The super sports brakes system offers enhanced performance and pedal feedback. Up and downshift 9DCT performance, Sport Hybrid SH-AWD and active driver aids, such as VSA and AHA, are programmed to support circuit-limit driving. In Track mode, an even greater amount of engine intake sound permeates the cabin for a heightened, more emotional driving experience that enhances driver feedback, even when wearing a helmet. Track mode supports the driver’s ability to capture the best lap times by prioritizing the IPU state-of-charge for consistent torque delivery and direct yaw control.

Vehicle Stability Assist Operation

The Integrated Dynamics System supports the ability to “loosen” VSA operation up to Track mode, enabling the highest degree of dynamic freedom. In Track mode, the VSA system can also be completely disabled if the driver holds the VSA button on the left side of the instrument panel for six seconds.

Launch Mode Control

For ultimate acceleration from a standstill, NSX drivers can engage Launch Mode Control. In either Drive (“D”) or Manual (“M”) and with the Integrated Dynamics System set to Track mode, the driver can execute a perfect launch. Launch is made by first beginning at a full stop, then pressing the brake pedal and applying accelerator pressure all the way to the floor. When the driver releases the brake pedal, the NSX launches with maximum peak power from all Sport Hybrid SH-AWD power unit systems.

Shift Characteristics Tuning

Adding to the performance and shifting characteristics of the NSX advanced 9DCT, is the ability to change shift speed and performance through the Integrated Dynamics System:

- **Quiet** – Transmission shift map directs gear shifts at lower engine speeds
- **Sport** – Transmission allows the engine to rev more freely and makes gear changes in a higher rpm range
- **Sport+** – Accommodates higher engine speed gear changes with quicker, more aggressively executed upshifts and downshifts
- **Track** – Fastest upshifting; 40 milliseconds faster than Sport+ settings

Startup Mode

The NSX Integrated Dynamics System has the world’s first custom setting menu that allows the driver to configure the vehicle’s mode for startup. For example, drivers can program the car to always start in Quiet or Sport mode. The driver can also schedule the NSX to operate exclusively in Quiet mode during a specified time period, such as early morning, to avoid waking neighbors.

Brake Response

Operation of the electro-servo brake (ESB) is finely tuned to deliver consistent and predictable brake pedal feel for each of the drive mode settings of the Integrated Dynamic System.

Steering Feedback

The NSX features two distinct variable gear ratio, EPS system settings for the Quiet and Sport, and Sport+ and Track modes of the Integrated Dynamics System. In the more performance-oriented Sport+ and Track driving modes, steering assist is reduced based on vehicle speed and steering angle.

Suspension Response

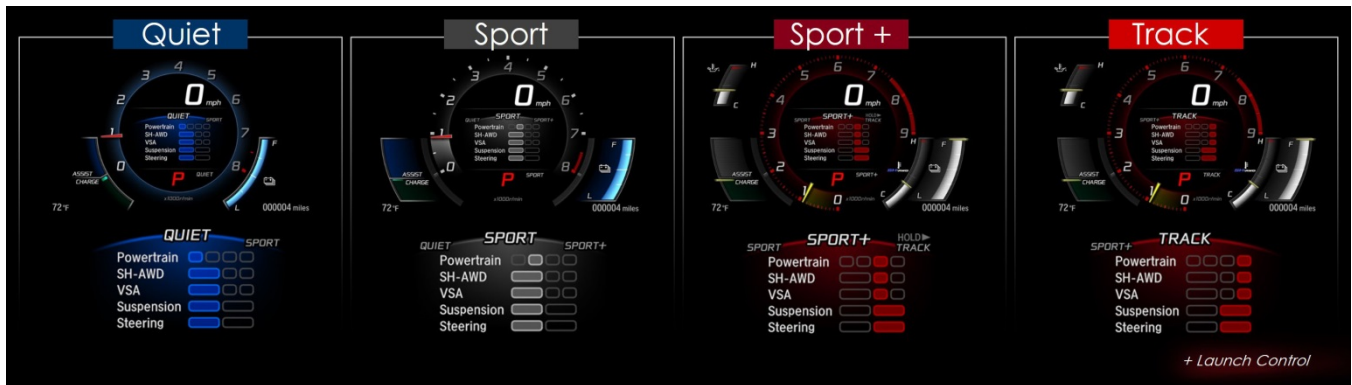
The MR dampers also function as a component of the Integrated Dynamics System via two unique damper tuning settings: one is biased toward unsprung mass control, used for Quiet and Sport modes, and a second with optimized performance tuning is biased toward sprung mass control, used for Sport+ and Track modes.

Sound Control

To enhance the driver’s visceral experience inside the NSX cabin, the Integrated Dynamics System can be used to engage the new intake sound control and active exhaust valve systems to fine-tune cabin sound quality and volume to match the selected dynamic mode. The sound pressure level range within the cabin between wide open throttle in Track mode and electric vehicle cruising in Quiet mode is 25 (dB)—a wide range of audible sensation.

Meter Modes

The driver’s center meter is tied into the Integrated Dynamics System to provide a visual complement to the customizable dynamic and auditory elements of the NSX driving experience. When a new Integrated Dynamics System mode is selected, the Multi-Information Display (MID) shows a graphic representation of the Integrated Dynamics System component systems: Sport Hybrid SH-AWD, VSA, suspension and steering.



Safety and Driver-Assistive Technology

The safety of Acura customers and other road users has been a point of paramount importance for the Acura brand from its inception. Like all Acura vehicles, the new NSX starts with stable, precise and predictable driving dynamics—steering, handling and braking—as the foundation for active safety performance. In the event of a collision, the NSX employs its advanced, multi material space frame, along with primary and supplemental restraint systems, to manage the collision energy, minimizing cabin intrusion and mitigating occupant injury.

The innovative, multi-material space frame of the new NSX utilizes ablation cast aluminum nodes and highly rigid extruded aluminum frame members for superior crashworthiness and occupant protection with light weight and high rigidity. The NSX also utilizes the world’s first application of a three-dimensionally formed and water jet-quenched ultra-high-strength steel for its A-pillar construction, which offers robust structural rigidity, including roof-crush performance.

Furthermore, the multi-material space frame design and the packaging of hybrid componentry, including the IPU and high-voltage systems, have also been optimized to assist with occupant protection and for the safety of emergency personnel (first responders).

Standard primary and supplemental restraint systems in the NSX include:

- Single-stage driver and dual-stage passenger multiple-threshold front airbags (SRS)
- Driver knee airbag
- Side airbags
- Side curtain airbags with rollover sensor
- Three-point seatbelts with a load-limited equipped automatic tensioning system

Accompanying these passive safety technologies, an additional level of safety performance is afforded by advanced active and passive safety technologies:

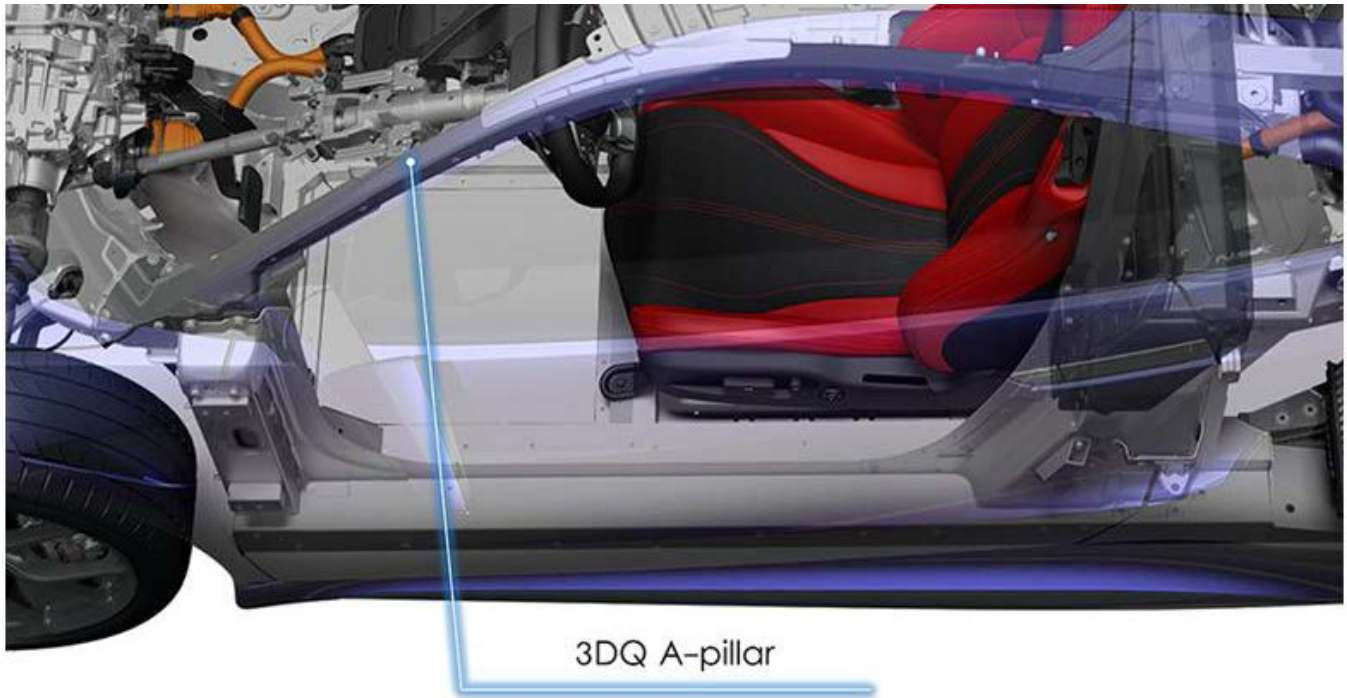
- Vehicle Stability Assist (VSA) with Traction Control
- Anti-Lock Braking System (ABS) with Electronic Brake Distribution (EBD) and Brake Assist
- Multi-Angle Rearview Camera with Dynamic Guidelines
- Tire Pressure Monitoring System (TPMS) with Location and Pressure Indicators
- LED Daytime Running Lights

Multi-Material Space Frame

In the event of a collision, the NSX space frame construction of highly rigid aluminum extrusions, aluminum stampings, high-strength steel stampings and ablation cast aluminum frame nodes (integrated with front and rear frame rails) serves as a critical component in the absorption and dispersion of energy in both front and rear impacts. Additional platform fortification and occupant safety performance is provided by the world’s first automotive application of three-dimensional bent and quenched (3DQ) ultra-high-strength A-pillars.

Ultra-Thin, Ultra Strong A-Pillars

A key technology applied to the NSX is a new design for the A-pillars composed of three-dimensionally formed, ultra-high-strength steel members. The fabrication method allows the pillars to be substantially smaller in cross section than conventional methods, greatly improving visibility while exceeding federal roof crush standards. This is the world's first application of the fabrication technology within the automotive industry.



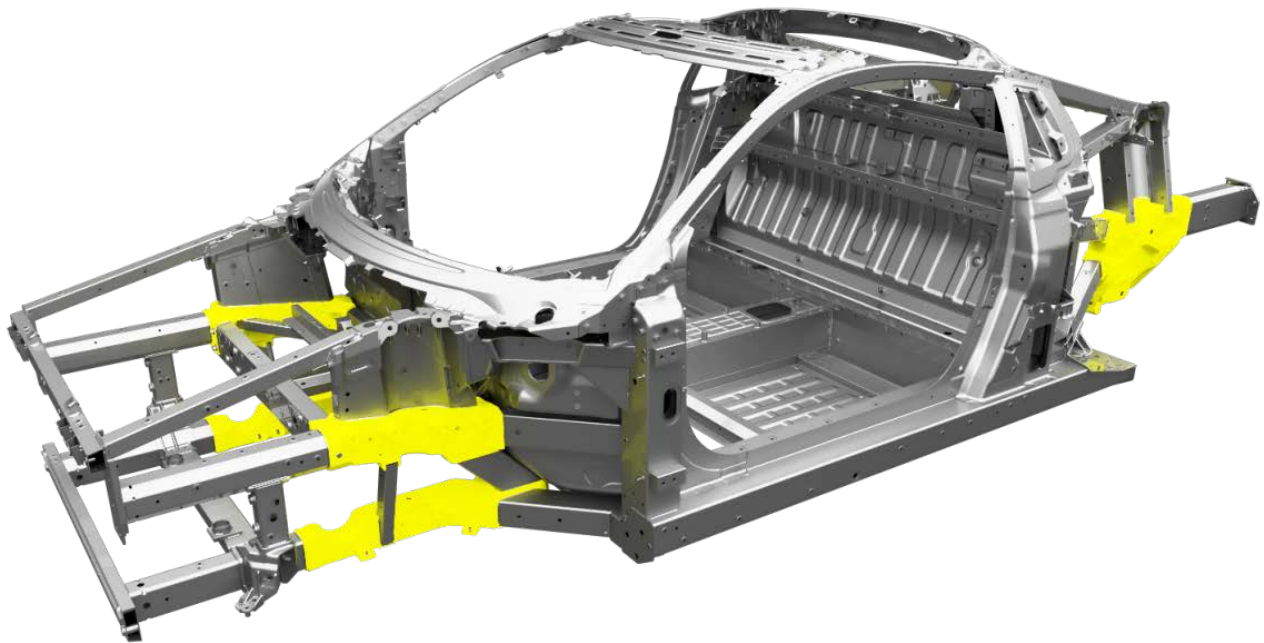
The A-pillar cross section, at 3.5 in. (89 mm), is approximately 1.4 in. (35 mm) narrower than a part using a traditional stamped-steel construction method, which also helps improve forward visibility.

Ablation Cast Nodes

To achieve improved occupant protection and crashworthiness, the NSX body and chassis engineering team opted to use an all-new material technology, ablation cast nodes, instead of the design and fitment of traditional aluminum castings within the crumple zones of the multi-material space frame. The Acura NSX represents the world's first automotive application of this new casting technology.

Ablation cast nodes have been fitted at key junctures within the front of the space frame to help optimize impact protection for the vehicle's occupants in the event of a collision. Strong and stout, these ablation cast nodes help to minimize overall vehicle weight while offering superior strength and tremendous ductility to facilitate energy absorption in a collision. An added benefit in the ablation casting process is the flexibility to tune the component's wall thickness for optimal weight, strength and deformability.

Unlike traditional castings, the high-strength and ductile properties of the aluminum ablation cast members allow these sections of the space frame to progressively crush at tremendous loads without breaking. The space frame's front nodes are designed to deform and, in the process, to absorb energy in a frontal collision, helping to minimize the transfer of kinetic energy to the cabin. Additionally, two ablation cast nodes in the rear frame are designed for ultimate rigidity to transfer crash energy into the extruded aluminum rear frame rails in order to mitigate the potential for forward movement of the rear power unit in the event of a rear collision.



Fuel Tank Design and Packaging

The 15.6-gallon fuel reservoir in the NSX is a twin-tank system designed to enhance safety performance in the event of a rear-end collision. By using a twin-tank configuration, the design team was able to package the fuel tanks in the safest location possible—tucked neatly between the rear bulkhead and the engine.

Intelligent Power Unit Packaging

The Intelligent Power Unit (IPU), containing the vehicle's lithium-ion hybrid battery, is strategically packaged inside the cabin in front of the rear bulkhead, optimizing protection in the event of a frontal or rear-end collision. Further, the location helps protect the IPU from damage in a side impact by the use of highly rigid B-pillars. In testing the performance of this system, engineers went beyond standard government crash safety protocols for side impact performance, which engage the vehicle's door structure (forward of the IPU), and tested a side pole impact occurring directly in-line with the IPU without damage.

Seatbelts

Both the driver and passenger seatbelts are equipped with an automatic tensioning system to help protect the vehicle's occupants in the event of a collision. When an impact occurs, the automatic tensioning system tightens the seatbelts (shoulder and lap) to help position the occupant firmly in the seat within the first few milliseconds of the collision. In the event of a severe, high-speed collision, if deceleration forces rise above a predetermined level, the automatic tensioning system will release a small length of seatbelt webbing to reduce the seatbelt retention force on the occupant, limiting peak restraining forces.

Front Airbags

Single-stage driver and dual-stage passenger, multiple threshold front airbags (SRS) offer superior safety performance for the vehicle's occupants. The SRS system is able to detect crash severity, seatbelt usage and additional factors that allow for optimized deployment timing as well as the capability to inflate the dual-stage passenger airbag at different rates of expansion.

The single-stage driver's airbag promotes early restraint while maintaining constant pressure by reducing airbag volume early and maximizing volume later in the deployment. Along with proper seatbelt use, the single-stage driver and dual-stage passenger multiple threshold front airbag system helps to reduce the chance for head and neck and upper body injuries in the event of a frontal collision.

The front airbag system is neatly concealed with the driver' airbag, housed within the center of the steering wheel, and the passenger airbag, seamlessly contained and hidden out of view within the dashboard. A great deal of time and effort was put into eliminating the seam around the passenger airbag in keeping with the quality execution and design aesthetic throughout the entire cabin.

Depending upon the severity and direction of a collision, activation of the multiple threshold front airbags may occur independently of the deployment of the side airbags or the side curtain airbags. In addition, the airbag system also uses sensors in the seat to assess the weight of the front passenger. The passenger airbag is shut off if the weight sensors indicate that an infant or small child is occupying the passenger seat, although the NSX is not recommended for passengers age 12 or younger.

Driver Knee Airbag

The driver's knee airbag is designed to supplement the driver's single-stage airbag in the event of a frontal collision by helping keep the driver in a proper position. The driver's knee airbag also provides improved packaging benefits. By utilizing an airbag instead of a knee bolster, the design team was able to provide improved knee clearance for the driver, aiding comfort and ease of ingress and egress.

Side Airbags

Packaged within the driver and passenger seat side bolsters, the side airbags are designed to deploy and inflate quickly to maximize potential protection for properly-seated occupants, helping to protect the occupants' upper body (thorax and pelvis) from injury, or evacuate (vent) expanding gases before fully inflating if an occupant is positioned in the airbag deployment path, helping to mitigate the potential for occupant injury from the airbag deployment.

Side Curtain Airbags with Rollover Sensor

Mounted in the outboard roof area nearest to the door, side curtain airbags provide additional head and upper torso protection for the NSX occupants in the event of an angled frontal collision, moderate-to-severe side impact or vehicle rollover. The side curtain airbags effectively cover the window area from the A-pillar back to the B-pillar.

In the event of a rollover, a roll-rate sensor and multiple G sensors determine the rate of roll and deploy side curtain airbags at the correct moment for optimum protection. In the case of a rollover, the side curtain airbags on both sides of the vehicle will deploy. However, in the event of a moderate-to-severe side impact that does not result in a rollover, only the side-curtain airbag on the impacted side of the vehicle will deploy. The side curtain airbags with rollover sensor offer an additional level of protection to vehicle occupants in the event of a rollover.

Vehicle Stability Assist with Traction Control

Active vehicle safety and driving dynamics are enhanced by the implementation of an advanced Vehicle Stability Assist (VSA) with Traction Control system that can correct or minimize traction loss prior to occurring, often before the driver even realizes.

Developed through extensive testing on both road and track, the NSX engineering team has created a vehicle stability system that is highly effective while minimizing intrusion on the driving experience. In most instances, the VSA response is so quick and seamless that vehicle instability is likely to be corrected without needing the driver's involvement.

By continuously monitoring key dynamic parameters and driver inputs, the VSA with Traction Control system—working in conjunction with the Sport Hybrid system and power unit—can instantaneously and unobtrusively redirect torque and invoke the ABS braking system at each wheel to help stabilize the vehicle. It helps provide an additional level of safety performance by increasing tractability and reducing wheel spin in conditions with reduced traction, such as wet, icy or snowy conditions.

VSA is fully functional in the Quiet, Sport and Sport+ drive modes of the Integrated Dynamics System, but its dynamic performance is tuned accordingly, with variations in its threshold of engagement and level of intervention. If desired, the driver can disable the VSA with Traction Control when operating the NSX in the Track mode setting. Disabling the VSA requires that the driver first select Track mode, which requires a deliberate, five-second holding of the Dynamic Mode dial. Then the driver must depress the VSA button on the left side of the instrument panel for an additional six seconds. Shutting off and restarting the vehicle will return the system to its default setting, with the VSA enabled.

Anti-Lock Braking System

The superlative deceleration performance offered by the Acura NSX next-generation Super Sports Braking system seamlessly melds both mechanical (friction) and regenerative braking systems for exceptional braking performance. Braking is further enhanced through a sports-oriented Anti-Lock Braking System (ABS) with Electronic Brake Distribution (EBD) and Brake Assist.

Electronic Brake Distribution

By varying the amount of force of a vehicle's brakes at each individual wheel, Electronic Brake Distribution (EBD) acts as an extension of the ABS by applying the optimal amount of braking force at each wheel to maximize vehicle stability while optimizing stopping power.

Brake Assist

As a further supplemental technology to the ABS and EBD, the Brake Assist system on the NSX provides an additional level of supplemental braking pressure when the driver attempts a hard or emergency stop.

Multi-Angle Rearview Camera with Dynamic Guidelines

When reverse gear is selected, the convenient Multi-Angle Rearview Camera with Dynamic Guidelines automatically shows one of three different real-time views on the Display Audio screen behind the steering wheel. The driver can choose whether to display dynamic guidelines, which articulate with the steering wheel movement to show the arc the vehicle will travel while backing up, fixed guidelines or no guidelines at all. The dynamic and fixed guidelines settings help indicate the clearance required while maneuvering.

The three available views are:

- **Normal View** – Helpful for surveying the area directly behind the vehicle while backing up or parking
- **Wide-Angle View** – Displays a nearly 180 degree perspective behind the NSX, perfect when backing out of a parking spot where it is difficult to see cross traffic or when parked between two tall vehicles
- **Top-Down View** – Offers a highly-detailed and close-up view immediately behind the vehicle, ideal for backing into tight confines

If the last view selected was Normal or Wide-Angle, it will appear the next time the Reverse gear is engaged. If the last view selected was Top-Down, the view will revert to the Wide-Angle View the next time the Reverse gear is engaged.

Tire Pressure Monitoring System

Every Acura NSX includes an onboard Tire Pressure Monitoring System (TPMS) with Location and Pressure Indicators. The current tire pressure is displayed in pounds per square inch (psi) for each individual tire in a visual graphic shown on the center gauge cluster (in the MID). Monitoring tire pressure is an important safety feature for an ultra-high-performance supercar such as the new NSX.

The TPMS has different warning thresholds for both low- and high-speed operation, because track driving requires an elevated tire pressure.

LED Daytime Running Lights

LED daytime running lights (DRL) help to improve safety when driving the vehicle during daylight hours by allowing the vehicle to be seen earlier and more conspicuously by other drivers and pedestrians on the road. What's more, the light-emitting diode (LED) technology incorporated into the vehicle's DRLs use significantly less power than traditional lighting systems.

Audio and Connectivity

The new Acura NSX makes it easy for the driver to operate the navigation and audio functions while focusing on driving. An advanced, user-friendly suite of audio and connectivity technologies is controlled by a single, 7-in. capacitive touchscreen. The Display Audio system is supplemented by steering wheel-mounted controls to put access to features and functions at the driver's fingertips.



Display Audio capacitive touchscreen (shown smaller than actual size)

Audio and Connectivity Features

- 290-watt Acura Premium Audio System with eight speakers
- Speed-Sensitive Volume Control (SVC)
- 7-in. Display Audio system touchscreen
- HD Radio
- Radio Broadcast Data System (RBDS)
- Apple CarPlay and Android Auto compatibility
- Siri Eyes Free
- *Bluetooth* HandsFreeLink
- *Bluetooth* Streaming Audio
- Pandora compatibility
- MP3 and Windows Media
- SMS Text Message function
- USB audio interface
- MP3 and auxiliary input jack

Acura Premium Audio System

Every NSX includes as standard a 290-watt Acura Premium Audio system with FM radio and eight speakers, including a powerful subwoofer, which has been engineered to be lighter than comparable systems found in competing high-end sports cars. Portable electronic devices can be connected to the system wirelessly via the *Bluetooth* HandsFreeLink, or hard-wired through the USB and input ports. The audio system in the NSX also supports the RBDS technology standard.

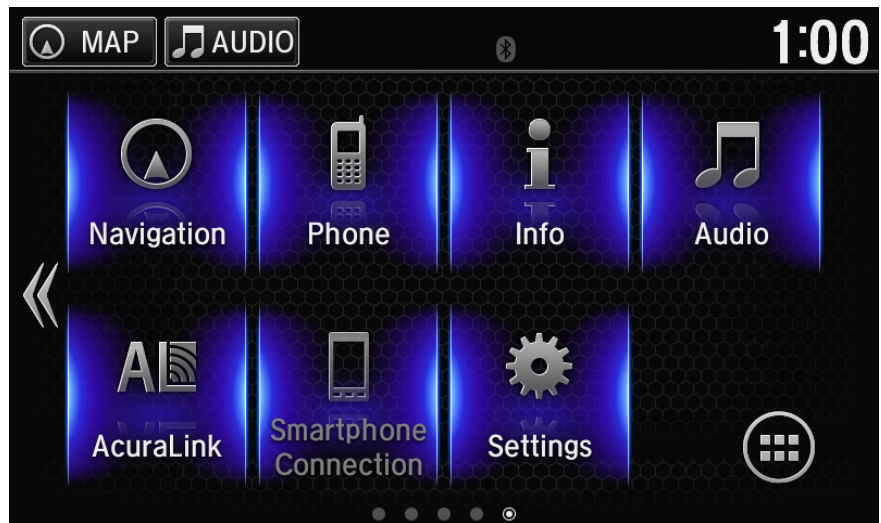
Radio Broadcast Data System

The Display Audio system also supports the RBDS. RBDS allows FM radio stations not broadcasting in the HD Radio format (stations using a conventional FM radio signal) to transmit information that can be displayed on the audio system.

Display Audio Touchscreen

The 7-in. Display Audio touchscreen is capable of displaying rich graphics and allows the driver and front passenger to operate the high-resolution touchscreen in identical fashion to a smart phone or tablet through tap, pinch and swipe user inputs.

The available Technology Package adds Acura Satellite-Linked Navigation System with Voice Recognition, while Acura HD Digital Traffic adds additional functionality to the Display Audio touchscreen.



The Display Audio system touchscreen shows a distinct NSX animation upon vehicle startup. Intuitive operation of the system is ensured thanks to an easy-to-use menu interface and numerous NSX-exclusive icons that resemble smart phone apps. Both Apple CarPlay and Android Auto are supported by the system, as is Pandora Internet-sourced music.

HD Radio

A standard feature on every NSX, HD Radio delivers subscription-free, high-quality digital sound with much clearer sound quality and fidelity from FM radio stations broadcasting in this format.

Next-Generation AcuraLink

Seamlessly integrated into the Display Audio system of the NSX with Technology Package is the next-generation of AcuraLink.

Available in-vehicle and on a free-to-download mobile device app, AcuraLink offers these helpful features and benefits:

- Cloud-Based Navigation
- Mobile Assist
- Messages and Alerts
- Remote Services
- Scheduled Maintenance
- Assist Services

The AcuraLink smartphone app is available for either Apple iOS or Android-enabled cell phones. It is designed to provide in-vehicle navigation features mirrored from a smart phone to the NSX, allowing for in-dash guided mapping directions with voice instruction over the audio system speakers. By downloading the AcuraLink navigation app onto your smartphone, you can stream the entire navigation system onto the Acura NSX Display Audio touchscreen.

Apple CarPlay

Apple CarPlay allows the use of apps within the driver's iPhone to work seamlessly within the vehicle's Display Audio system. CarPlay essentially turns the native in-car control system (NSX touchscreen) into an Apple iOS device, allowing the driver to use their iPhone within the car by utilizing the Display Audio touchscreen instead of looking down at the iPhone (when plugged into the center console USB port).

Intuitive operation is assured as the icons and graphics that appear on the NSX Display Audio system touchscreen are identical in appearance to the iPhone apps when using CarPlay. CarPlay relies heavily on the hands-free voice operation features of Siri that are embedded within the CarPlay system, allowing users to keep their eyes on the road and hands on the steering wheel.

Apple CarPlay requires a compatible Apple iPhone to be plugged into the 1.5-amp USB interface port in the center console's rear storage box.

Android Auto

Android Auto integrates compatible Android smartphones with the Display Audio system. Android Auto projects a customized version of an Android smartphone onto the Display Audio touchscreen when it is plugged into the car's USB port in the center console rear storage box. Once plugged in, all phone calls are handled over the onboard *Bluetooth* wireless connectivity feature.

Android Auto requires a compatible Android-based cell phone to be plugged into the 1.5-amp USB interface port in the center console's rear storage box.

Siri Eyes Free

Playing a key role to support Apple CarPlay, Siri Eyes Free builds upon Apple's hands-free Siri functionality by enabling voice control operation of an Apple iOS mobile device that is linked with the sophisticated NSX Display Audio system.

By pressing and holding the TALK button on the steering wheel when their Apple iOS mobile device is paired via *Bluetooth*, the driver can use Siri to perform a number of tasks while keeping their hands on the steering wheel and their eyes on the road.

Bluetooth HandsFreeLink

A standard feature included on every Acura NSX, *Bluetooth HandsFreeLink* allows a *Bluetooth*-enabled cell phone to be wirelessly paired with the vehicle's Display Audio system, allowing for convenient hands-free operation.

Bluetooth Streaming Audio

The Acura NSX *Bluetooth Streaming Audio* hands-free in-car system helps the driver to stay focused on the road. The *Bluetooth Streaming Audio* technology allows the audio feature of a compatible *Bluetooth*-enabled device such as a smart phone or MP3 player to be paired wirelessly with the vehicle's audio system. Certain compatible devices will even display metadata of the musical artist, album and song title on the Display Audio touchscreen.

Text Messaging

The Acura NSX Text and Email Message technology allows text messages and emails to be audibly read aloud and allows the driver to respond with any one of six different preset messages.

The NSX system is compatible with text-capable Android and BlackBerry devices that have an active data plan and the Message Access Profile (MAP). Apple iPhones do not support this feature, but the Siri Eyes Free mode (iPhone 5 and 6) offers the ability to initiate, hear and respond to text messages via voice commands.

Pandora Compatibility

The Display Audio system includes an interface for listening to Pandora, a free streaming music service that allows users to open an online account and create up to 100 personalized Internet "radio stations" based upon their favorite music genres or artists.

USB Ports

The NSX is equipped with two USB interface ports inside the vehicle. The center console storage box has an integrated 1.5-amp USB interface port that connects with Apple CarPlay and Android Auto, as well as the vehicle's audio system, including the Display Audio touchscreen. Located in the glovebox is a 1.0-amp USB interface port that supports legacy iPod, MP3 and other USB functionality, but does not support CarPlay.

Acura NSX Technology Package

The optional Technology Package available for the new Acura NSX includes the following features:

- 580-watt Acura ELS Surround Sound System with nine speakers
- Acura Satellite-Linked Navigation System with Voice Recognition and Acura HD Digital Traffic
- Next-generation AcuraLink connected-car system
- Front and rear parking sensors
- Available SiriusXM Radio

580-watt Nine-Speaker ELS Studio Audio System

Designed, engineered and manufactured in collaboration with Grammy and Emmy award-winning recording engineer and music producer Elliot Sheiner, the ELS Studio Audio System produces vibrant and lustrous surround sound quality with strikingly authentic tonal quality that can “finally capture and reproduce music the way we hear it in the studio,” according to Sheiner.

The ELS Studio Premium Audio sound system has been designed to provide enhanced performance and sound quality within a constrained acoustic space while respecting other vehicle design priorities, including maintaining a low vehicle weight.



ELS Studio Premium Audio system speaker layout

Sporting nine speakers and a 12-channel amplifier, the 580-watt ELS Studio Premium Audio system is carefully tuned to maximize the performance and acoustic properties of each audio component in the new Acura NSX. The result is a remarkably accurate and dynamic sound that creates the ultimate in-car listening experience for any musical genre.

Acura Satellite-Linked Navigation System with Voice Recognition and HD Digital Traffic

Included as part of the Technology Package, the Acura Satellite-Linked Navigation System with Voice Recognition and HD Digital Traffic utilizes GPS technology to give the driver highly accurate and easy-to-follow turn-by-turn driving directions to any address in the U.S., Canada and Puerto Rico.

Developed in partnership with Garmin, this advanced GPS-based navigation system employs rich-looking graphics to vividly display terrain and 3D buildings while allowing the driver to choose faster, less congested driving routes through its subscription-free HD Digital Traffic information. The system includes a free map database update each year for up to ten years. The navigation system can be operated manually via the touchscreen by utilizing its tap, swipe and pinch functionality.

Using the Voice Recognition system, the driver can operate the navigation and audio systems, adjust the climate control and operate a compatible smartphone.

Next-Generation AcuraLink

AcuraLink enables a wide array of connectivity, information and helpful services for enhanced convenience, accessibility and assistance. This option allows NSX customers to connect with online, cloud-based content and services both inside and outside of the car using the in-car audio and media system or by using the AcuraLink smart phone app.

AcuraLink features include:

- Continuously updated traffic information
- Cloud-based navigation services
- 24/7 concierge service
- Messages and alerts
- Access to a digital version of the NSX owner's manual
- Mobile assist services
- Convenient scheduling of service appointments for the NSX

Front and Rear Parking Sensors

Front and rear parking sensors employ ultrasonic waves to detect obstacles and the distance between them and the vehicle, and the sensors located at the corners of the vehicle will audibly alert the driver.

SiriusXM Radio

SiriusXM Radio is available as a stand-alone option for NSX models equipped with the optional Technology Package. When listening to SiriusXM Radio, the Display Audio system shows the current category, station, song title and or artist's name.

Equipped with the latest version of SiriusXM satellite radio, the Display Audio system in the Acura NSX includes many convenient features, including:

- Listen to all songs in their entirety on preset channels with an instant replay feature that will replay the song from the beginning
- A Sport Flash feature that shows an on-screen alert if your favorite sports team scores or makes a big play in a live game that is being broadcast on SiriusXM Radio while you are listening to non-sports programming; touching a soft-key on the Display Audio touchscreen will allow you to hear up to 30 seconds of audio before and including the big play
- Fast-forward, rewind and pause functionality

Design, Development and Manufacturing

Every custom-built Acura NSX embodies a rich history of precision craftsmanship, innovation and quality. Made with US and globally-sourced parts, the new Acura NSX has the distinction of being the only supercar designed, developed and manufactured in the United States. The new Performance Manufacturing Center (PMC) in Marysville, Ohio, is the exclusive global manufacturing facility for the all-new Acura NSX.

Like the next-generation Acura NSX, the PMC is a clean-sheet design. Combining human craftsmanship and technological innovation, the PMC utilizes new approaches to vehicle construction, paint, assembly and quality confirmation to deliver on the Acura brand DNA of Precision Crafted Performance. The PMC is optimized for low-volume production of high-performance specialty vehicles. Complementary production of the bespoke, twin-turbocharged V6 engine of the new Acura NSX is undertaken by a small group of master engine builders at Acura's Anna, Ohio, engine plant.

Though the fundamental concepts for a New Sports eXperience remained clear and consistent throughout the development of the NSX, the technologies and means by which the R&D team would realize their concept underwent a process of continual evolution. As a result, the PMC was designed around the unique, multi-material space frame and body panels of the all-new NSX.



NSX space frame construction at the Performance Manufacturing Center

Design, Development and Manufacturing

A number of advanced technologies and techniques are used in the construction of the NSX space frame, which is built entirely in-house at the PMC. All structural joints in the multi-material space frame are created with 100-percent [robotic metal inert gas \(MIG\) welding](#)—an automobile industry first.

Eight weld robots apply 860 MIG welds to the space frame, ensuring highly precise and repeatable welds and a highly accurate body. Aiding precision, 360-degree-rotating rotisserie-style body fixtures turn the body during the process to provide optimal access for the robotic weld arms.

Highly-skilled weld technicians visually inspect each part and take precise measurements at every stage of the welding process to validate the quality, precision and dimensional accuracy of the space frame to assist the dynamic performance of the vehicle and precise fitment of its components.

The PMC employs approximately 100 associates, including roughly 70 associates that are directly engaged in body construction, painting, final assembly and quality confirmation, working in concert with advanced robotics to build the NSX to the highest levels of quality and craftsmanship. The efforts of PMC associates to innovate many aspects of the NSX manufacturing process have led to 12 U.S. patent applications.

The NSX development and manufacturing teams were determined to maintain in-house control of the complete construction process to ensure the highest levels of quality and performance for Acura customers. Through strict manufacturing build processes and quality controls, the precise dimensional accuracy of the multi-material body is maintained throughout the construction process, which eliminates the need for post-process machining.

"All of the innovative thinking and hard work that has gone into the creation of this state-of-the-art manufacturing facility has fulfilled our goal to build a supercar in America." "The incredible passion and challenging spirit of our highly skilled associates is readily seen in the world-class quality and incredible dynamic performance of this next generation Acura NSX supercar."

Clement D' Souza, Acura NSX Engineering Development Leader, PMC

Options and Colors

As the first build-to-order vehicle for Acura, the new NSX features an extensive array of factory options and styles, allowing buyers to customize the interior and exterior to make it their ideal NSX.

Factory Option Packages

NSX has three available packages:

- Carbon Fiber Interior Sport Package
- Carbon Fiber Exterior Sport Package
- Technology Package

Carbon Fiber Interior Sport Package

The Carbon Fiber Interior Sport Package features a carbon fiber-covered meter visor atop the driver's gauge cluster, carbon fiber steering wheel garnish, aluminum sport pedals and footrest.



Carbon fiber meter visor

Carbon Fiber Exterior Sport Package

The Carbon Fiber Exterior Sport Package competition-inspired exterior enhancements with the addition of a carbon fiber front spoiler, carbon fiber side sills, carbon fiber rear diffuser and dark chrome exhaust finisher.

Technology Package

The optional Technology Package available for the new NSX includes the ELS Studio Audio System, which was designed, engineered and manufactured in collaboration with Grammy and Emmy award-winning recording engineer and music producer Elliot Sheiner.

The Technology Package integrates the ELS Studio Audio System, next-generation AcuraLink, Acura Satellite-Linked Navigation System with Voice Recognition and HD Digital Traffic and front and rear parking sensors. Additionally, it is available with SiriusXM Radio.

ELS Studio Audio System

Including a 12-channel amplifier and 580 watts of power, the nine-speaker ELS Studio Audio System creates a dynamic audio experience by maximizing the acoustic properties and performance of each audio component that has been purpose-built for the new Acura NSX.

Acura Satellite-Linked Navigation System with Voice Recognition and HD Digital Traffic

Developed in partnership with Garmin, the advanced Acura Satellite-Linked Navigation System with Voice Recognition and HD Digital Traffic utilizes GPS technology to give the driver highly accurate and easy-to-follow turn-by-turn driving directions to any address in the U.S., Canada and Puerto Rico.

The HD Digital Traffic system alerts the driver to current traffic conditions in their surrounding area and can display alternate driving routes (including surface streets in the U.S.) to circumnavigate heavily congested traffic areas.

Next-Generation AcuraLink

AcuraLink enables a wide array of connectivity, information and helpful services for enhanced convenience, accessibility and assistance. This option allows NSX customers to connect with online, cloud-based content and services both inside and outside of the car using the in-car audio and media system or by using the AcuraLink smart phone app.

AcuraLink features include:

- Continuously updated traffic information
- Cloud-based navigation services
- 24/7 concierge service
- Messages and alerts
- Access to a digital version of the NSX owner's manual
- Mobile assist services
- Convenient scheduling of service appointments for the NSX

Front and Rear Parking Sensors

Front and rear parking sensors employ ultrasonic waves to detect obstacles and the distance between them and the vehicle, and the sensors located at the corners of the vehicle will audibly alert the driver.

Options and Colors

SiriusXM Radio

With more than 175 channels of digital programming and near CD-quality sound, SiriusXM Satellite Radio programming includes:

- A multitude of commercial-free music channels of virtually every genre imaginable
- Live play-by-play action of major sports
- News and weather
- Talk radio and entertainment news
- Current traffic conditions in numerous major metropolitan areas
- Several Spanish-language stations

Individual Factory Options

Stand-alone factory-installed features include:

- Carbon Fiber Roof
- Carbon Fiber Engine Cover
- Carbon Fiber Rear Decklid Spoiler
- Carbon-Ceramic Brake Rotors
- Exclusive Interwoven Wheels
- Alcantara Headliner
- Semi-Aniline Leather and Alcantara Power Seats
- Semi-Aniline Full Leather Power Seats
- Upgraded Pearl and Metallic or Andaro paint

Carbon Fiber Roof

The available competition-inspired carbon fiber roof is a complement to the other available interior and exterior carbon fiber trim accessories.

Carbon Fiber Engine Cover

The hand-crafted carbon fiber engine cover adds a distinctive design aesthetic—especially when viewed through the rear window glass.

Carbon Fiber Rear Decklid Spoiler

Composed entirely of carbon fiber, this subtle yet stylish aerodynamic device adds a dose of attitude while providing additional downforce at the rear of the vehicle.

Carbon-Ceramic Brake Rotors

A fixture on racing cars competing in the highest levels of motorsport events, carbon-ceramic brake rotors offer exceptional braking performance and unsprung weight reduction. These brake rotors are nearly 52 lb. (23.5 kg) lighter than the standard brake rotor package, when adopted for use in a road-going production vehicle, such as the Acura NSX. The carbon ceramic brake rotor package comes standard with black brake calipers but can also be ordered with red or silver calipers.

Exclusive Interwoven Wheels

An optional factory-installed wheel set utilizes a thin, exclusive Interwoven wheel spoke design featuring three options of finish: 3D-machined, polished and painted.

High-Performance Tires

- **Front** – Pirelli P Zero™ Trofeo R - 245/35ZR 19XL
- **Rear** – Pirelli P Zero™ Trofeo R - 305/30ZR 20XL

Alcantara Headliner

The available black Alcantara headliner is a highly durable suede-like material to complement the other standard Alcantara parts.

Semi-Aniline Leather and Alcantara Power Seats

The NSX is available with semi-aniline leather seating surfaces with black Alcantara inserts and four-way (fore-aft and reclining adjustable) power seats. Available color schemes include Ebony, Red, Saddle or Orchid. Seat heaters and seat memory systems are also included.

Semi-Aniline Full Leather Power Seats

The power seats can also be custom dressed in full, premium semi-aniline leather (eliminating the Alcantara inserts). This option is available with the Ebony and Orchid interior color. Seat heaters and seat memory systems are also included.

Exterior Colors

Eight distinct exterior colors are available for the new NSX. As a fitting tribute to the NSX superlative performance capabilities, evolved in part from Acura's sports car racing heritage, many of the names for the colors pay tribute to some of the most famous corners of well-known racetracks around the world. These names will be easily recognized for anyone with a passion for top-level motorsports.

Standard Colors

- Berlina Black – This dark and sporting color is carried over from the original Acura NSX
- Curva Red
- 130R White – Named for the difficult 130R corner on the Suzuka International Racing Course in Japan



Optional Pearl and Metallic Colors

These paint schemes add a scintillating sheen by incorporating tiny mica (pearl) or metallic particulate within the paint. Pearl and metallic color schemes for the all-new Acura NSX are:

- Source Silver Metallic
- Casino White Pearl
- Nord Gray Metallic



Optional Andaro Colors

Pittsburgh Paint and Glass (PPG)'s Andaro paint chemistry utilizes a premium dye pigment mid-coat technology that provides an exceptionally high level of color saturation (chroma) typically used on high-end concept cars. The effect further accentuates the NSX exterior design by increasing the contrast between the surfaces and changing the color value slightly when viewed at different angles. Andaro color schemes for the all-new Acura NSX are:

- Nouvelle Blue Pearl
- Valencia Red Pearl



Interior Colors

The NSX can be equipped in one of four available interior colors:

- Ebony
- Red
- Saddle
- Orchid

Color-matched leather surfaces include the driver and passenger seats, outboard arm rests, lower door panels and center console. The black Alcantara seat inserts feature stitching that is color-matched to the leather.

Pricing

Vehicle	
Base	\$156,000.00
Destination and Handling	\$1,800.00
Available from 257 authorized NSX dealers in the U.S. (94% of all Acura dealers)	
Factory Option Packages	
Carbon Fiber Interior Sport Package	\$2,900.00
Carbon Fiber Exterior Sport Package	\$9,000.00
Technology Package	\$2,800.00
Technology Package with SiriusXM Radio	\$3,300.00
Individual Factory Options	
Carbon Fiber Roof	\$6,000.00
Carbon Fiber Engine Cover	\$3,600.00
Carbon Fiber Rear Decklid Spoiler	\$3,000.00
Carbon-Ceramic Brake Rotors	
With Black Brake Calipers (standard)	\$9,900.00
With Silver Brake Calipers	\$10,600.00
With Red Brake Calipers	\$10,600.00
Exclusive Interwoven Wheels (three finishes available)	\$1,500.00
Alcantara Headliner (Black)	\$1,300.00
Semi-Aniline Leather and Alcantara Power and Heated Sport Seats with memory for driver	\$1,500.00
Semi-Aniline Full Leather Power and Heated Sport Seats with memory for driver	\$2,500.00
Optional Exterior Colors	
Exterior Pearl and Metallic Color (three available)	\$700.00
Exterior Andaro Color (two available)	\$6,000.00

Glossary of Terms

3DQ	Three-dimensional bent and quenched
9DCT	9-speed dual clutch transmission
ABS	Anti-lock braking system
AHA	Agile Handling Assist
AWD	All-wheel drive
CFD	Computational fluid dynamics
CG	Center of gravity
DOHC	Dual overhead camshaft
DRL	Daytime running lights
EBD	Electronic brakeforce distribution
ECU	Electronic control unit
EPS	Electric power steering
ESB	Electro-servo brake
FDS	Flow-drill screw
IPU	Intelligent Power Unit
LED	Light-emitting diode
LSD	Limited slip differential
MID	Multi-Information Display
MIG	Metal inert gas (welding)
MR	Magnetorheological (dampers)
NSX	New Sports eXperience
NVH	Noise, vibration and harshness
PDU	Power Drive Unit
PMC	Performance Manufacturing Center
RBDS	Radio Broadcast Data System
SH-AWD	Super Handling All-Wheel Drive
SMC	Sheet molding compound
SPR	Self-piercing rivets
SULEV	Super ultra-low emissions vehicle
SVC	Speed-sensitive volume control
TCS	Traction control system
TFT	Thin-film transistor (LCD display panel)
TMU	Twin Motor Unit
TPMS	Tire pressure monitoring system
UHSS	Ultra-high strength steel
VSA	Vehicle Stability Assist
VTC	Valve timing control
VTEC	Variable Valve Timing and Lift Electronic Control

Overview	1
A History of Innovation.....	1
Next-Generation Acura NSX.....	2
Sport Hybrid Super Handling-AWD Power Unit.....	4
Multi-Material Space Frame and Body Panels.....	6
NSX Chassis.....	7
Package.....	9
Aerodynamics: "Total Airflow Management"	10
NSX Cockpit	11
Integrated Dynamics System.....	11
Design, Development and Manufacturing	12
Dynamic Performance	14
Power Unit.....	15
Package.....	16
Aerodynamics.....	16
Space Frame and Body Panels	17
Chassis.....	18
Interior and Exterior	18
Integrated Dynamics System.....	19
Anatomy of a Turn in the New NSX.....	20
Power Unit	21
Twin-Turbocharged V6 Engine	22
Acura Firsts for the NSX Engine	23
Engine Highlights.....	23
Plasma-Transferred Thermal Spray-Coated Cylinder Walls.....	24
Intake and Exhaust Variable Valve Timing Control	24
Direct and Port Fuel Injection.....	25
Dry Sump Lubrication.....	25
Intake System.....	26
Exhaust System.....	26
Engine Sound Management.....	26
Intake Sound Control	26
Active Exhaust Valve.....	27
Engine Balancing and Break-In.....	27
Direct Drive Motor.....	28
9-Speed Dual Clutch Transmission.....	29
Shift Forks	32
Gear Actuators	32
Electric Clutch Actuator	32
Shift Characteristics Modification	32

Index

Mass Damper.....	32
Limited Slip Differential	33
Twin Motor Unit.....	33
Intelligent Power Unit.....	35
Lithium-Ion Battery Pack.....	35
Power Drive Unit.....	35
Specifications	37
Package	39
Aerodynamics	40
Aerodynamic Downforce.....	40
Cooling.....	41
Aerodynamic Development	41
Space Frame and Body Panels	43
Multi-Material Space Frame.....	44
Space Frame Development	44
Space Frame Construction.....	45
Robotic Metal Inert Gas Welding	45
Aluminum Cast Nodes	45
Ablation Cast Nodes.....	46
Advanced Joining Technology.....	47
Space Frame Advanced Conversion Coating	48
Repair and Serviceability	48
3D Bent and Quenched Ultra-High Strength A-Pillars	48
Multi-Material Body Panels.....	50
Sheet Molding Compound Panels	50
Sheet Hydroformed Aluminum Panels	51
Aluminum Stampings.....	51
High-Temperature-Resistant Plastic.....	51
Carbon Fiber Floor.....	51
Body Panel Fitment	51
Specifications.....	52
Chassis	53
Suspension.....	53
Front Suspension	54
Rear Suspension.....	54
Variable Gear Ratio Electric Power Steering	54
Next-Generation Super Sports Brakes	55
Electro-Servo Braking System	55
Regenerative Braking	55
Brake System Components	56
Optimized Brake Cooling.....	56
Wheels and Tires	57

Index

Active Magnetorheological Dampers.....	57
Power Unit Mounting System	58
Fuel Tank	58
Specifications.....	59
Interior and Exterior	60
Visibility.....	60
Instrument Panel and Center Console Design.....	61
Sport Seats.....	62
Steering Wheel.....	62
Steering-Wheel Mounted Controls.....	63
Simple Sports Interface.....	63
Audio and Connectivity	63
ELS Studio Audio System.....	63
Dynamic Thin-Film Transistor Gauge Cluster.....	64
Multi-Information Display	64
Transmission Information Display	65
Integrated Dynamic System Meter Modes	65
Interior Illumination	65
Center Console.....	66
Display Audio System Interface.....	67
Climate Control System.....	67
Dynamic Mode Dial.....	67
Electronic Gear Selector	68
Electric Parking Brake with Automatic Brake Hold.....	68
Multi-Function Center Console with Interior Storage.....	68
Interior Features	68
Seating and Trim.....	68
Steering	69
Controls	69
Interior Illumination	69
Climate.....	69
Power Features	69
Storage.....	69
Rear Cargo Area.....	69
NSX Exterior Design.....	70
Floating C-Pillars.....	70
Flush-Mounted Automatic Power Pop-out Door Handles	71
Supercar Wiper and Washer System.....	71
Body-Colored Aerodynamic Side Mirrors.....	72
LED Lighting.....	72
Acura Jewel Eye LED Headlights	72
LED Daytime Running Lights.....	72
LED Taillights	73

NSX Exterior Finish and Paint.....	74
NSX Body Panel Paint Process.....	74
Specifications.....	75
Integrated Dynamics System	76
Dynamic Modes.....	76
Quiet.....	76
Sport.....	77
Sport+	77
Track.....	77
Vehicle Stability Assist Operation	77
Launch Mode Control.....	78
Shift Characteristics Tuning.....	78
Startup Mode.....	78
Brake Response.....	78
Steering Feedback	78
Suspension Response.....	78
Sound Control	79
Meter Modes	79
Safety and Driver-Assistive Technology	80
Multi-Material Space Frame.....	80
Ultra-Thin, Ultra Strong A-Pillars	81
Ablation Cast Nodes	81
Fuel Tank Design and Packaging	82
Intelligent Power Unit Packaging.....	82
Seatbelts.....	83
Front Airbags.....	83
Driver Knee Airbag	83
Side Airbags	83
Side Curtain Airbags with Rollover Sensor.....	84
Vehicle Stability Assist with Traction Control.....	84
Anti-Lock Braking System.....	85
Electronic Brake Distribution	85
Brake Assist	85
Multi-Angle Rearview Camera with Dynamic Guidelines	85
Tire Pressure Monitoring System.....	86
LED Daytime Running Lights	86
Audio and Connectivity	87
Audio and Connectivity Features.....	87
Acura Premium Audio System	88
Radio Broadcast Data System.....	88
Display Audio Touchscreen.....	88
HD Radio.....	88

Index

Next-Generation AcuraLink.....	89
Apple CarPlay	89
Android Auto.....	89
Siri Eyes Free.....	90
Bluetooth HandsFreeLink.....	90
Bluetooth Streaming Audio	90
Text Messaging.....	90
Pandora Compatibility	90
USB Ports	90
Acura NSX Technology Package	91
580-watt Nine-Speaker ELS Studio Audio System.....	91
Acura Satellite-Linked Navigation System with Voice Recognition and HD Digital Traffic.....	92
Next-Generation AcuraLink.....	92
Front and Rear Parking Sensors.....	92
SiriusXM Radio.....	93
Design, Development and Manufacturing	94
Options and Colors.....	96
Factory Option Packages.....	96
Carbon Fiber Interior Sport Package.....	96
Carbon Fiber Exterior Sport Package	96
Technology Package.....	97
ELS Studio Audio System.....	97
Acura Satellite-Linked Navigation System with Voice Recognition and HD Digital Traffic.....	97
Next-Generation AcuraLink.....	97
Front and Rear Parking Sensors.....	97
SiriusXM Radio.....	98
Individual Factory Options.....	98
Carbon Fiber Roof	98
Carbon Fiber Engine Cover	98
Carbon Fiber Rear Decklid Spoiler	98
Carbon-Ceramic Brake Rotors	98
Exclusive Interwoven Wheels.....	99
High-Performance Tires	99
Alcantara Headliner.....	99
Semi-Aniline Leather and Alcantara Power Seats.....	99
Semi-Aniline Full Leather Power Seats	99
Exterior Colors.....	100
Standard Colors.....	100
Optional Pearl and Metallic Colors	100
Optional Andaro Colors.....	100
Interior Colors.....	101
Pricing.....	101
Index.....	103