
OVERVIEW

A rigid structure is of paramount importance in a performance car. High rigidity provides a stable platform for proper suspension geometry and alignment, and it makes possible a tight, rattle-free interior. Additionally, central to the goal of performance is a favorable power-to-weight ratio; a very light car can achieve high performance levels with less horsepower. After an intensive research effort, it was determined that the most efficient way to meet the rigidity and weight targets for the NSX was to build the car exclusively of aluminum.

Using a Cray supercomputer, the engineers performed millions of Finite Element Modeling (FEM) and stress analysis calculations. The result of this research and development effort is a chassis that weighs 210 Kg (462 lbs) with doors, hood and deck lids installed—about 40% less than a steel chassis, but with the same rigidity and impact protection. The NSX structure is significantly stiffer than every other competitor currently on the market.

For the 1995 model year, the NSX will be available with a removable top. Both models meet 1997 federal side-impact standards.

BODY REINFORCEMENTS

To restore rigidity to the body with the roof panel removed, the structural engineers employed extensive reinforcement measures throughout the body. The areas that required reinforcement were a redesigned side sill aluminum extrusion with significantly thicker wall sections, the base of the B-pillar where it joins the rocker panel, a larger rear bulkhead crossbar, a thicker trunk leading edge panel, a reinforcement web in the rear floor cross member, an additional rib in the center rear bulkhead section, a redesigned and thicker walled rear roof rail section, a redesigned front roof rail section with increased wall thickness, a completely redesigned and thicker upper A-pillar, a redesigned and thicker upper dashboard cross-member, and a redesigned front lower floor section with increased wall thickness.

REMOVABLE TOP

The removable top is made of aluminum for light weight and durability. The roof panel is body-colored and is easily removed by means of two latches located on the left and right side. Its light 8.5 Kg makes it easy to remove and stow away. A dash indicator light alerts the driver if the latches are not properly closed. Once removed, the panel is stored under the rear glass hatch and the hatch can be locked with a key for security. Since the top has its own storage compartment, it doesn't use any of the available trunk or interior space. In addition, the vehicle security system functions with the top removed as well as in place.



EXTRUDED ALUMINUM SIDE SILLS

To attain a structure of high rigidity, complex aluminum extrusions were used for the crucial side sills of the unit body. These extrusions, with their carefully braced internal structure, contribute to the extremely high torsional stiffness of the NSX.

For the NSX-T, these side sills received extensive reinforcement. The wall thickness of the vertical center web of the five-sided extrusion was increased from 2 mm to 6 mm. Other wall thicknesses were increased from 2 mm to 5 mm, 3 mm to 6 mm, and 5.5 mm to 6 mm.

RADIUSED FRONT FRAME RAILS

To maximize occupant protection, the front frame rails of the unit body are designed with large-radius curves where they meet the passenger cabin. This design helps to dissipate energy in the event of a collision, spreading out impact loads and diverting them under the passenger cell.



CONCEPT AND GOALS

The objective was to create an interior that was the sports car equivalent of a jet fighter pilot's helmet. The key elements of this concept were unlimited visibility, a feeling of snugness or intimacy with the interior of the vehicle, and the sense that the cockpit and driver were out in the airstream rather than enclosed and isolated from the environment. To achieve this feeling, the seating space for the driver and passenger was designed to fit snugly at the hips and flow outward and upward to provide ample space for the head and shoulders.

SEATING POSITION AND VISIBILITY

A low seating position contributes to a low center of gravity and helps to reduce the frontal area for improved aerodynamics. Ordinarily, a low hip-point would impart to the driver the feeling of being buried in the interior and create a claustrophobic feeling. To avoid this, the body engineers created a very low cowl section which allowed them to lower the height of the dash and instrument panel. The low cowl also enhances forward visibility.

INSTRUMENTATION AND CONTROLS

In designing the instrument panel, the approach was one of simplicity. Since the primary function of the instruments is to relay information as clearly and quickly as possible, the designers opted for a traditional analog execution.

The instrument faces are round with white numerals on a black background. The instrument panel is dominated by the tachometer on the left and the speedometer on the right. To the left of the tach are the smaller water temperature and oil pressure gauges. To the right of the speedometer are the fuel gauge and voltmeter.

All the major controls are clustered around the steering wheel column to make them easy to reach.



NSX/NSX-T INTERIOR

The windshield header of the NSX has a special aerodynamic design that directs the airstream up and over the passenger compartment to minimize wind buffeting at speed. It's also equipped with smaller sun visors to enhance visibility.

Additional features unique to the NSX-T include a dash light alerting the driver in the event the roof panel isn't fully latched and a locking mechanism for the roof panel storage compartment.

**DUAL AIR BAG SUPPLEMENTAL RESTRAINT SYSTEM (SRS)
WITH AUTOMATIC SEAT BELT TENSIONERS**

The NSX is equipped with driver's and passenger's Supplemental Restraint System (SRS) air bags which are intended to supplement the seat belts. In conjunction with these, the NSX features automatic seat belt tensioners which use the same impact sensors as the air bags. The belt tensioners are activated simultaneously with the air bags, causing each belt to retract to help restrain the occupants in the event of a severe frontal collision.

LEATHER-TRIMMED UPHOLSTERY

Leather was a natural choice for the seat trim material; it is hand-stitched and hand-fitted to ensure quality craftsmanship and durability. The seat facings, door inserts, steering wheel and shift knob are covered with leather. The choice of a black or a tan leather-trimmed interior is available for all models, regardless of exterior color.

AUTOMATIC CLIMATE CONTROL SYSTEM

A compact Climate Control System has been developed specifically for the NSX. This is a fully automatic system, but the automatic function can be overridden and the system can be used in a fully manual mode.



ACURA/BOSE® MUSIC SYSTEM

Bose® engineers became involved with the NSX sound system at an early stage of interior design. This 4-speaker system was designed and calibrated specifically for the unique acoustics and resonances of the NSX interior and provides the highest quality imaging and spatial dynamics for both the driver and the passenger.

The Acura/Bose® Music System speakers are precisely aimed so that the pressure wave of the speaker closest to each occupant does not overpower the pressure wave from the speaker which is farthest away. This produces a balanced sound from each speaker and the net result is true stereo performance.

The AM/FM stereo/cassette features Dolby® Noise Reduction and an FM diversity antenna system. The auto preset function will automatically lock on eight strong AM and eight strong FM stations and store them into the preset selector buttons. An optional CD changer is available.

THEFT-DETERRENT SYSTEM

A sophisticated alarm system is standard equipment on the NSX. If an unauthorized attempt is made to enter or start the NSX, the horn sounds, the flashers are activated and the starter system is disabled. The system automatically arms 15 seconds after the doors are locked and is disarmed when a door is unlocked with the key. The system will operate even with the removable roof panel off the car.



MANUFACTURING

The central goal behind the design of the unique NSX assembly plant in Tochigi, Japan, is to produce the highest-quality automotive product in the world.

This plant has no automated conveyor line. Rather, each car is mounted on a dolly and pushed by hand from one workstation to the next. Each team of workers is responsible for the quality of work performed at their station. The car is not passed on to the next area until the team is satisfied that their procedures have achieved the tolerances and goals required in the specifications. Each assembly station, in effect, also functions as an inspection station.

Engine assembly is also done in a unique way to ensure the highest level of assembly quality. Contrary to typical mass production procedures, each NSX engine is assembled by an individual, highly skilled technician from start to finish. This process keeps tolerances to levels that would not be possible in a mass assembly procedure and helps assure reliability and durability.

PAINTING

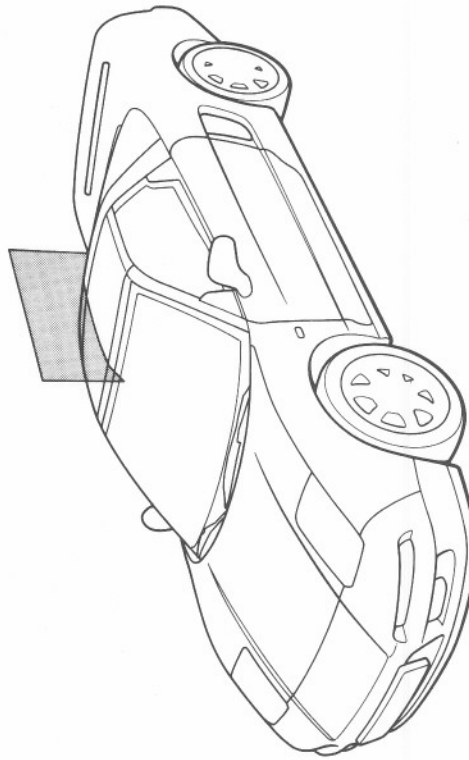
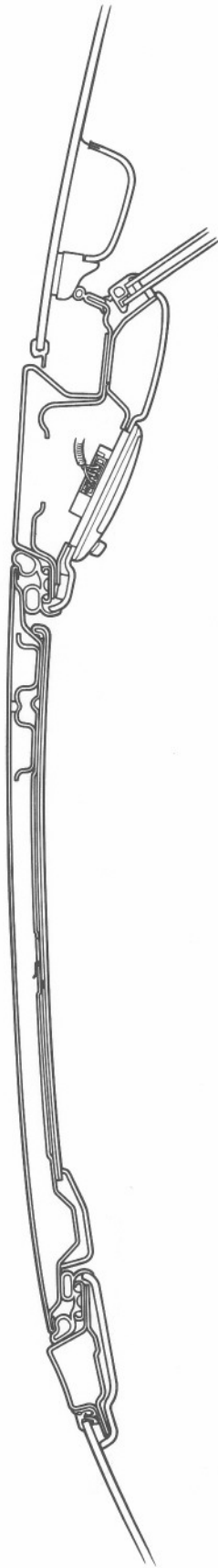
The NSX is painted in a 23-step paint process, including an aircraft-type chromate coating designed for use with aluminum. A waterborne paint for the base coat was developed to achieve a clearer, more vivid color and a smoother surface finish.



1995 ACURA NSX-T

REMOVABLE TOP CROSS SECTION

ALUMINUM CONSTRUCTION FOR LIGHT WEIGHT



1995 ACURA NSX-T

REMOVABLE TOP ROOF-LATCHING MECHANISM

ONE LATCH HANDLE ON EACH SIDE

