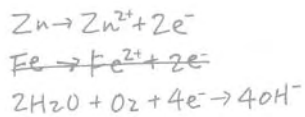
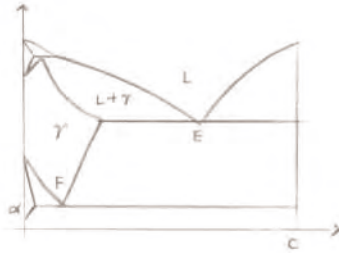




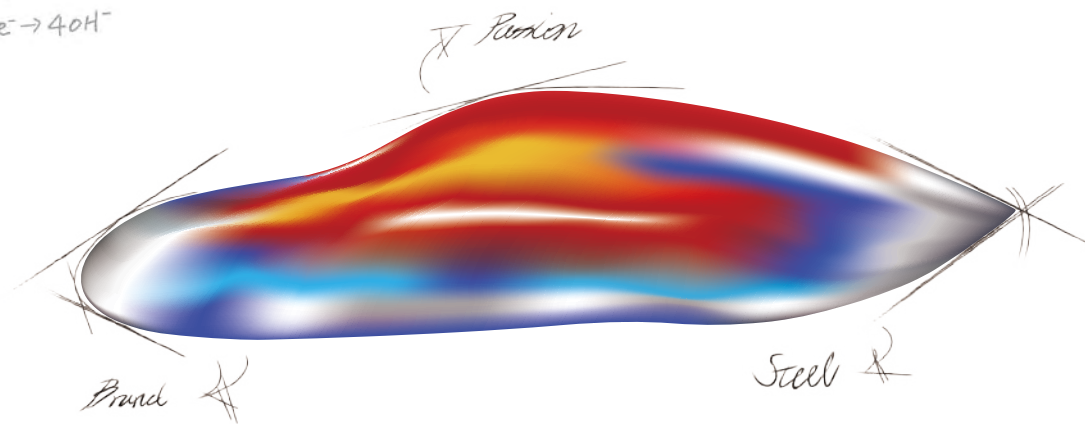
NIPPON STEEL

Products/Solutions

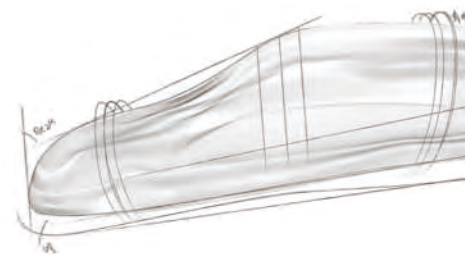
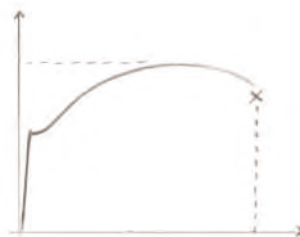
Designing the Future of Automobiles



$$q = r \cdot \frac{I^2}{d^4}$$



$$D = D_0 \exp(-Q/RT)$$

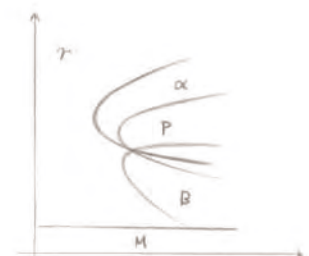


0

NET ZERO

NIPPON STEEL
Green Transformation
initiative

$$\sigma = a(b + \epsilon)^n$$



NIPPON STEEL CORPORATION

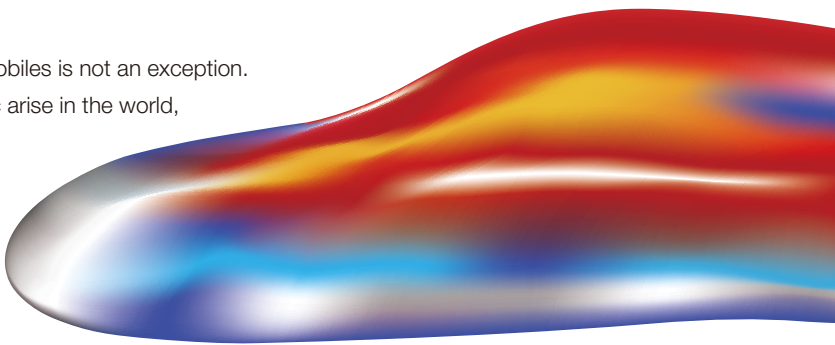
Our Mission

Designing the Future of Automobiles

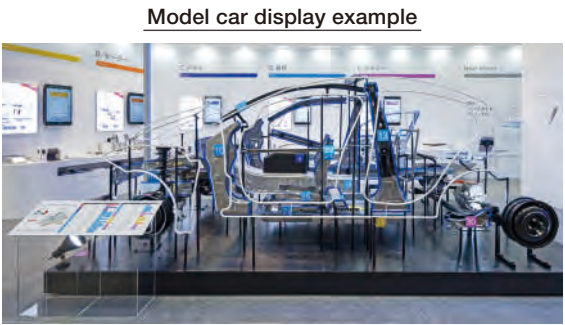
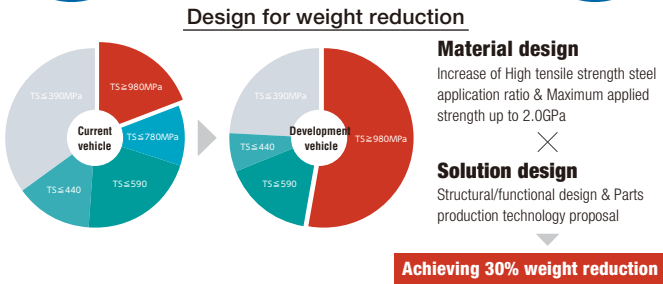
Today, we live in an era of dramatic changes, and the world of Automobiles is not an exception. As new ideas such as Connected, Autonomous, Sharing, and Electric arise in the world, we wonder how we can continuously contribute to this evolving automotive industry.


Steel is a material with infinite possibilities. NSC is committed to maximize its potential and contributes to the realization of a carbon neutral society. NSC provides comprehensive solutions suitable for Automobiles of the new era, by evolving not only the material itself, but also its related technologies for structure design and manufacturing processes.

It is our mission to become a partner who envisions and co-designs every possible future around Automobiles, even the life style of passengers, streetscapes, and the global environment.



Designing future Automobiles with advanced ultimate steel materials, unique parts structure and parts production technology solutions provided by the expert in material manufacturing.






Quiet • Low-vibration

Weight reduction

Compact

Nitriding Steel for Gear

Nitriding Steel for Transmission Gear with Lower Heat-Treatment Distortion and High Durability.



Weight reduction

Compact

Steels for High Strength Fastener

High Strength Fastener (12-16T) superior in Delayed Fracture Resistance.




Weight reduction

Design

High Productivity

Titanium alloy for mufflers

Super-TiX™ 10CU (NB) shows high strength and anti-oxidation resistance at elevated temperatures in addition to superior cold workability.




Compact

Durability

Weight reduction

Higf Performance Forged Crankshaft

Die forged Crankshaft for automobiles or light duty/large vehicles. Developing best material and crankshaft design to meet various customers' needs such as "Light Weight", "Low Noise/Vibration" or "High Strength".



Weight reduction

Durability

Stainless Steel for High-temperature Exhaust Manifold

High temperature high strength stainless steel can reduce the thickness and the weight reduction of exhaust manifold.

NIPPON STEEL Stainless Steel Corporation



Weight reduction


Compact

Durability

Ferritic Stainless Steel for EGR-cooler

Application of high thermal conductivity ferritic steel grades achieves efficient heat exchange and realizes downsizing of EGR-cooler.

NIPPON STEEL Stainless Steel Corporation



Durability

High Productivity

Compact

High-carbon Steel Plate

Highly-functional high tensile strength steel with excellent formability, abrasion resistance and quenching quality.




Durability

High Productivity

Steel suitable for gas nitrocarburizing process

Steel with excellent surface hardness and fatigue strength obtained by gas nitrocarburizing process.



Durability

High Efficiency

High Strength Steel for Common Rail


Steel for Common Rail with High Internal Pressure Fatigue Properties that is essential to Clean Diesel.



High Efficiency

Fuel Injection pipe corresponding to Clean Diesel

Seamless steel pipes for high pressure fuel injection corresponding to cleaner exhaust gas.



Durability

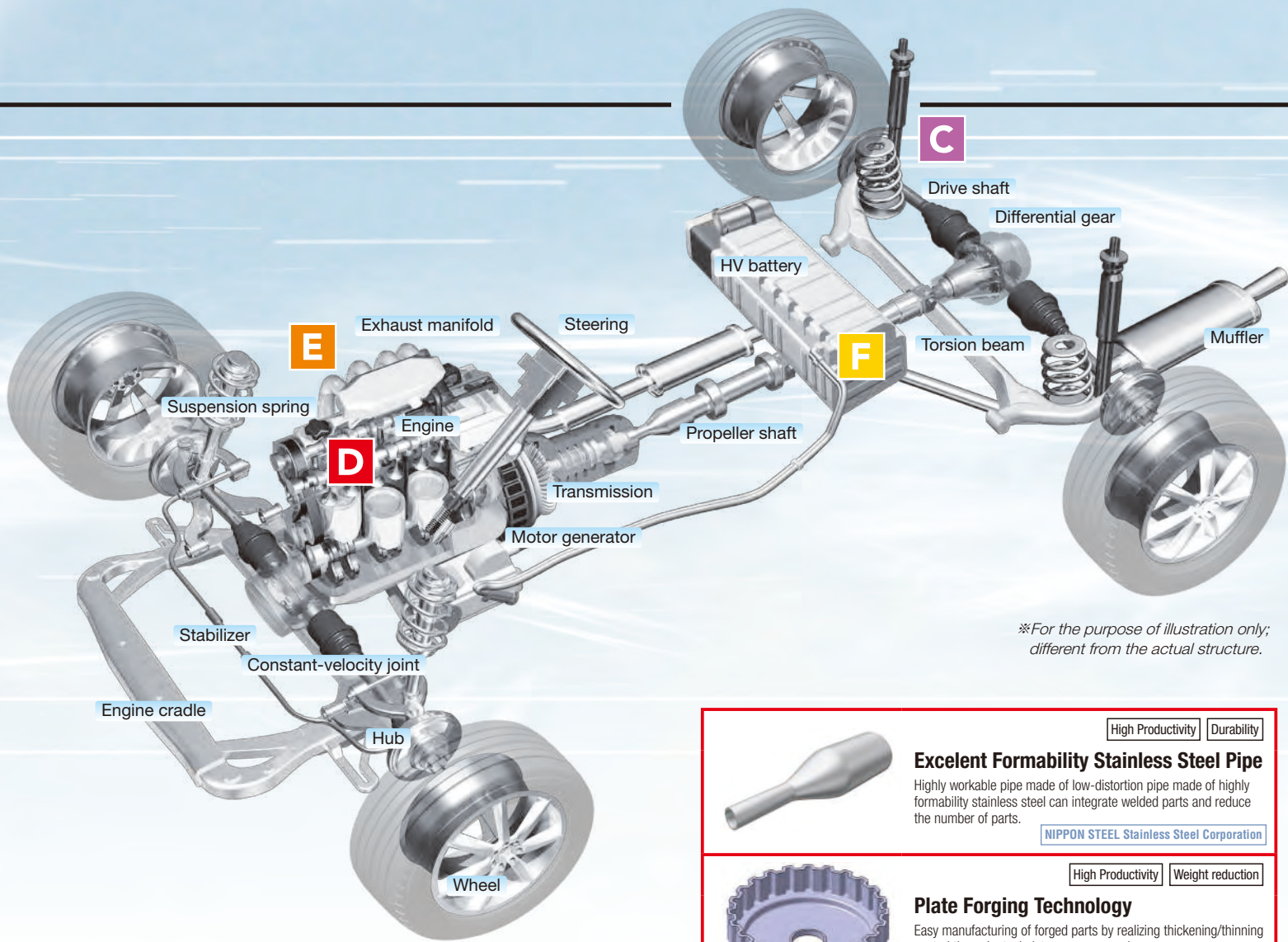
Safety

High Efficiency

High fatigue strength stainless steels for gaskets

NAR-301L, HS1 and HSX, which show improved fatigue performance due to grain refinement, are applicable to gaskets of high grade engines.

NIPPON STEEL Stainless Steel Corporation



※For the purpose of illustration only;
different from the actual structure.



High Productivity

Durability

Excelent Formability Stainless Steel Pipe

Highly workable pipe made of low-distortion pipe made of highly formability stainless steel can integrate welded parts and reduce the number of parts.

NIPPON STEEL Stainless Steel Corporation



High Productivity

Weight reduction

Plate Forging Technology


Easy manufacturing of forged parts by realizing thickening/thinning control through steel plate press processing.



High Productivity

Simulation of heat treatment distortion

Prediction Technique of Heat-Treatment Distortion using Simulating the Shape of Carburizing Gear and its Correct Material Data.



High Efficiency

“ESPANEX”® Copper Clad Laminate

High heat resistant polyimide is formed on copper foil. A flexible substrate material with excellent dimensional stability, good processability, and high reliability.

NIPPON STEEL Chemical & Material Co., Ltd.



Weight reduction

Design

Durability

Forged Aluminum Wheel for trucks and buses “Tough Bright”

improve fuel efficiency by weight saving, tough and stable quality, the most brilliance aluminum wheel for truck and buses.



Durability

Weight reduction

High Productivity

“ESDRIMER”® Optical Clear Resin for Lens

Thermosetting/Photosensitive transparent resin for lenses of automotive cameras and head-up displays, with excellent features: moldability, heat-resistance, chemical-resistance, etc.

NIPPON STEEL Chemical & Material Co., Ltd.

The photo shows a HUD fly-eye lens.



High Productivity

PLM (Product Lifecycle Management) Solution

System that can effectively share/utilize all information from automotive body, parts development, designing to manufacturing preparation. Contributes to QCD.

NS Solutions Corporation

E Motor


High Productivity

Weight reduction

Non-magnetic stainless steel

NAR-305G is not magnetized after deep drawing, which is applicable to cases of motors.

NIPPON STEEL Stainless Steel Corporation



High Efficiency

HILITECORE™

Non-oriented electrical steel sheet that achieves a good balance between low iron loss and high magnetic flux density and can efficiently convert electric energy into mechanical energy (torque).

F Battery

Durability

Safety



Commercially pure nickel for negative electrode of lithium ion batteries

NAR-305G is not magnetized after deep drawing, which is applicable to cases of motors.

NIPPON STEEL Chemical & Material Co., Ltd.



High Efficiency

Durability

Stainless Steel for Fuel-cell Separator

Stainless steel with low contact resistance and high corrosion resistance can be applied as a separator material for fuel cells.

NIPPON STEEL Stainless Steel Corporation




Safety

Durability

Compact

“SUPERNICEL™” Nickel pre-coated steel sheets for lithium ion battery cases.

Diffusion-type Nickel pre-coated steel sheet “Super Nickel” has both high corrosion resistance and high workability required for battery cell cases.



Quiet • Low-vibration

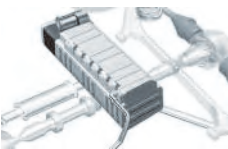
High Efficiency

Design

“GRANOC”® Pitch-based Carbon Fiber and Carbon Fiber Reinforced Plastic.

Pitch-based carbon fiber “GRANOC”®, which is lighter than metal and has excellent thermal conductivity, and various Composite products with optimal properties.

NIPPON STEEL Chemical & Material Co., Ltd.



Durability

Safety

Rechargeable Battery Cell Charge-discharge Inspecting Technology

Provides the inspection line of HV and electric vehicle battery cells and evaluation equipment for development.

NIPPON STEEL TEXENG. CO., LTD.



Safety


Weight reduction

Compact

Stainless Steel Foils for LIB Current Collectors

The high strength (TS≥900) and the ultra-thin thickness (≦0.010mm) make high capacity and secure batteries possible, and lengthen battery life. Can be used for both cathodes and anodes.

NIPPON STEEL Chemical & Material Co., Ltd.



Durability

Safety

High Efficiency

Fast Charging Technology


Provides fast chargers for electric vehicles.

NIPPON STEEL TEXENG. CO., LTD.


Advanced Products/Technologies that Support Future Car Bodies

A

Panels



Highly-lubricating L-treated Steel Sheet (GA)
The range of forming has been extremely improved by adding a highly-lubricating quality. Contributes to the application of difficult-to-formed parts.




SuperDyma™, ZAM™ - EX
Excellent corrosion resistance both on flat surfaces and on cut-end allows eliminating post-painting.

Weight reduction


High Productivity

B

Body Frame



Ultra High Tensile Strength Steel with Good Formability
980TRIP CR/GA, 980DP CR/GA, 1180TRIP CR/GA, 1180DP CR/GA, 1310DP CR, 1470DP CR
TS≥980MPa High strength steel for framework of automotive body with high formability.




Test component after axial crush deformation
Conventional High Tensile Strength Steel
High strength steel sheet for energy absorption structures

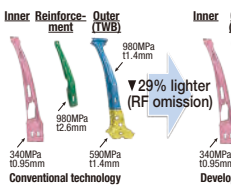
Ultra high strength steel sheet for energy absorption structures
Ultra high strength steel sheets (TS≥980MPa) suitable for crush parts of body structure with excellent energy absorption performance.

Weight reduction

Safety




Steel Sheets for Hot Stamping
•1500MPa HR •1500 ~ 2000MPa CR/GA/Al Coated
Hot stamp process shows excellent accuracy by lower forming load at stamping, and achieves a strength of more than TS1500 after the quenching process.



Tailored welded blank of aluminum coated steel sheet for hot stamping
Achieved high joint strength of the weld metal with our originally developed technology to avoid the joint strength deterioration caused by entering of aluminum into the weld metal.

Weight reduction

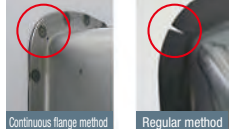
Safety



Free Bend Sheet Forming Technology (NSafe™ - FORM series)
Group of methods that allow forming of ultra high tensile strength steel to be done with conventional press machines. Low pressing load, high yield, etc. realized by bending and special dies.

Weight reduction

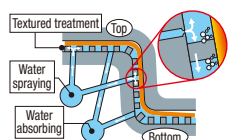
High Productivity



Continuous Flange Forming Technology (NSafe™ - FORM series)
Method that allows continuous flange forming of the edges of parts to be done even with high tensile materials.

Weight reduction

Safety

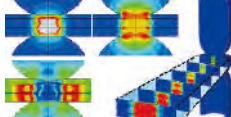


Rapid Cooling Technology for Hot Stamping (Direct water quenching technology)
Method that shortens the amount of time needed for tempering by flushing water between the die surface and steel sheet by directly cooling the steel sheet with water.

Weight reduction

High Productivity

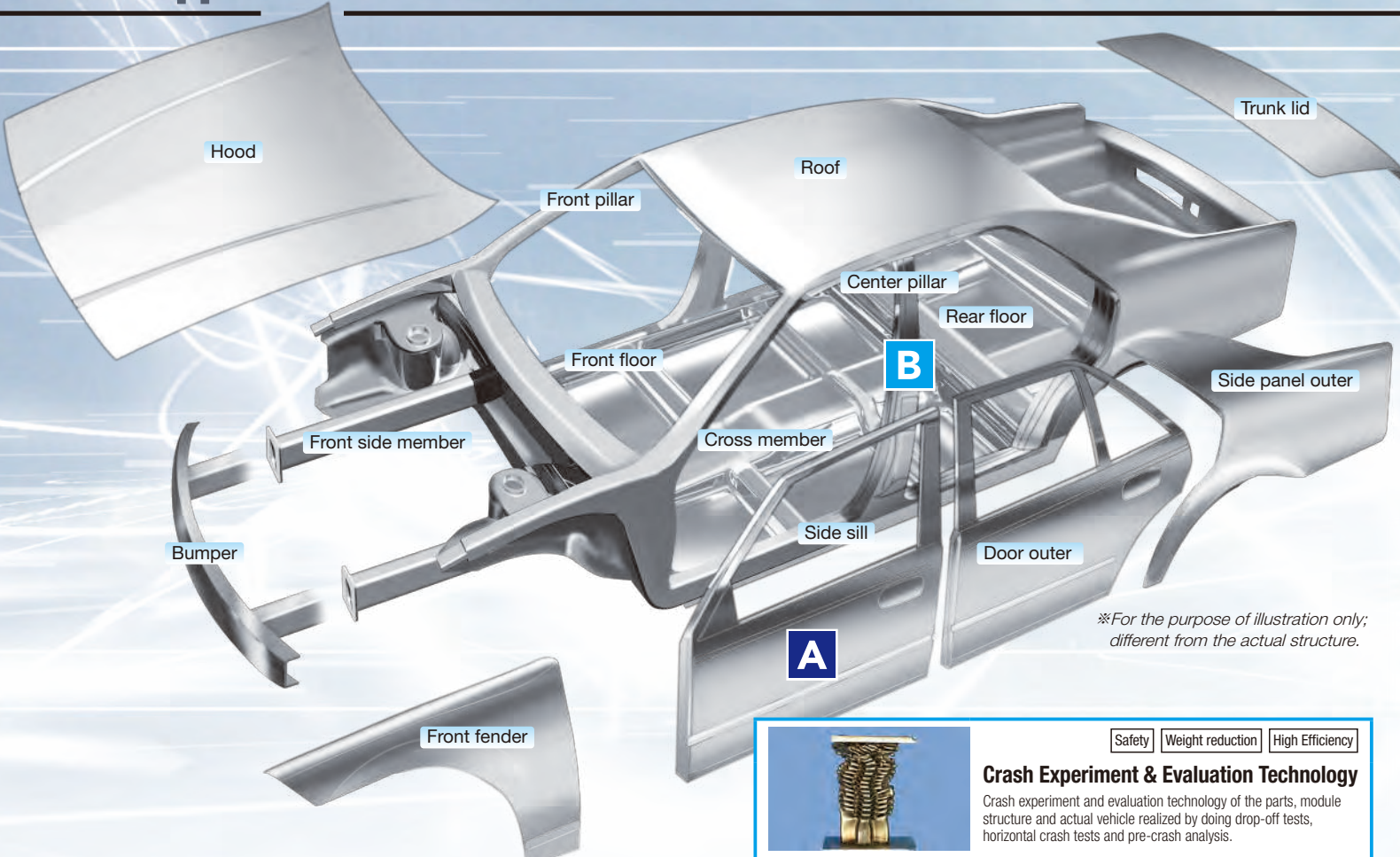
High Efficiency



Spot Welding Analysis Technology
Analysis technology that can predict with high precision from nugget formation to expulsion based on the abundant material data and original analysis model.

Weight reduction

Safety



※For the purpose of illustration only; different from the actual structure.

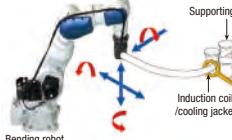


Welding Technology for Ultra High Tensile Steel Sheets
Respective welding methods (spot, arc, laser, etc.) and welding requirements of high tensile materials based on our wealth of knowledge are proposed that meet the needs of our customers.

Weight reduction

Safety

Durability




3DQ Technology
Technology that attains high tensile strength and a 3D shape through simultaneous processing of heating, bending and quenching.

Weight reduction

Compact

Safety



High-performance TWB Processing Equipment
TWB processing equipment that realizes the world's best high productivity and high quality.

Weight reduction

Safety

NIPPON STEEL TEXENG. CO., LTD.

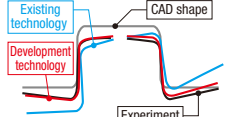


Hot Stamping, 3DQ Parts Manufacturing Equipment
Parts manufacturing equipment that utilizes hot stamping and 3DQ technology.

Weight reduction

Safety

NIPPON STEEL TEXENG. CO., LTD.




High-precision Forming Analysis Technology
High-precision forming analysis technology realized by predicting springback, cracks on the edges, surface strain, etc. through analysis based on accurate material characteristic data.

Weight reduction

High Productivity

High Efficiency



High-precision Crash Analysis Technology
High-precision crash analysis technology realized by using both accurate material characteristic data and the company's original fracture (base material, spot welding) predicting model "NSafe™-SPOT/ MAT."

Weight reduction

Safety

High Efficiency




Crash Experiment & Evaluation Technology
Crash experiment and evaluation technology of the parts, module structure and actual vehicle realized by doing drop-off tests, horizontal crash tests and pre-crash analysis.

Safety

Weight reduction

High Efficiency




Actual Stiffness Measuring & Evaluation Technology
Torsional stiffness of actual vehicles and BIW can be measured by original developed equipment.

Quiet・Low-vibration

Weight reduction

High Efficiency



Advanced hydroforming technology
Widely applicable processing technology such as high pipe expansion, and simultaneous processing of fastening parts.

Weight reduction

Safety

Design

C

Chassis frame



High Tensile Strength Steel with High-λ
HR 780λ, 980λ, CR 980λ, Hot original sheet GA 780λ
High tensile strength steel with excellent formability that has greatly improved the hole-expanding characteristic (burring capability).

Weight reduction

Durability

Safety



High Tensile Strength Steel for Good Design Wheels
HR 590DP, 780DP
Hot-rolled high tensile strength steel with a high design quality that has excellent fatigue-resistant property and press formability.

Weight reduction

Durability

Design



Steel for High Strength Suspension spring
High Strength Steel for Suspension Spring with both High Delayed Fracture Resistance and High Fatigue Strength.

Durability

Weight reduction


Compact



High Strength Wire rod for Steel Tire Cord
Wire Rod for Ultrafine Wire Drawing and Stranded with High Quality of Inclusion, Segregation and Surface.

Weight reduction


© Bridgestone Corporation



High durability crushed-tube torsion beam
Achieves excellent fatigue characteristics, weight reduction and cost performance with a closed cross-section structure.

Weight reduction

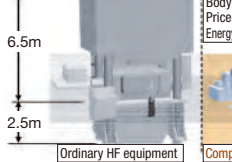
Durability



Steel Tube for Hollow Stabilizer.
Thick-Walled and High-Strength Steel Tube of Excellent Fatigue Characteristic.

Weight reduction


Durability



Compact HF Equipment
Compact hydroforming equipment that saves resources and space

High Productivity

NIPPON STEEL TEXENG. CO., LTD.



High Strength Steel with Electric Induction Hardening
High Strength and High Torsional Strength Steel for CVJ outer race and shafts.


Weight reduction

Compact



Super Forge Steel
Cold Forging Steel with High Workability for Suspension Parts, CVJ outer race and Shafts.

High Productivity



Airbag inflator tubes
Seamless steel tubes for airbag inflator of side impact collision with high dimensional accuracy, high strength and good toughness by induction hardening.

Safety

D

Engine & Transmission



High Strength Micro Alloying Steel
High Strength Micro Alloying Steel for Hot Forging, Crankshaft, Connecting Rod, Suspension System and so on.

High Productivity

Weight reduction

Compact



High Strength Steel for Connecting Rod
High Strength Steel for Connecting Rod with both High Strength and Fracture Splitting Ability by Controlling Precipitation Metallurgy.

High Productivity

Weight reduction

Compact



Wire Rod for Low Fuel Consumption Torque Converter Spring
Wire Rod for Low Fuel Consumption Torque Converter Spring with Excellent Inclusion Quality and High Durability.

Durability

Quiet・Low-vibration



High Strength Steel for Gear
Optimum Steel for Gear with High Pitting Resistance (for Transmission application) and High Impact Strength (for Differential Gear application).

Durability

Weight reduction

Compact



High Strength Steel for CVT Pulley
High Strength Steel for CVT Pulley and Sheave with Wear Resistance and High Pitting Resistance.

Durability

NIPPON STEEL CORPORATION Group's Domestic Network

: Automotive Bases Only

NIPPON STEEL CORPORATION

- (A) Head Office/offices/branches
- (A) Research laboratories
- (D) Works

NIPPON STEEL Stainless Steel Corporation

- (B) Head Office/offices/branches
- (B) Works

NIPPON STEEL Chemical & Material Co., Ltd.

- (C) Head Office/offices/branches
- (C) Works

NS Solutions Corporation

- (D) Head Office/offices/branches
- (D) Works

NIPPON STEEL TEXENG. CO., LTD.

- (E) Head Office/branches/sales offices
- (E) Works

NIPPON STEEL TECHNOLOGY CO., LTD.

- (F) Head Office/offices/branches
- (F) Works



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☎:+81-3-3510-0301 (main)

NS Solutions Corporation

1-17-1, Toranomon, Minato-ku, Tokyo 105-6417
☎:+81-3-6899-6000 (main)

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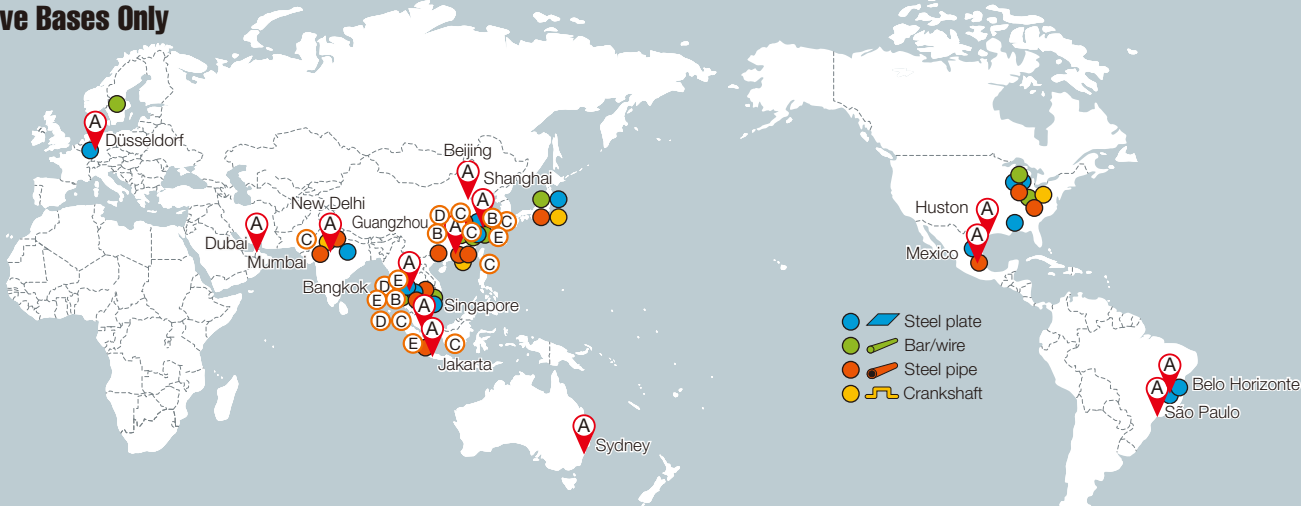
2-5-2, Marunouchi, Chiyoda-ku, Tokyo 100-0005
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NIPPON STEEL TECHNOLOGY CO., LTD.

1-6-1, Otemchi, Chiyoda-ku, Tokyo 100-0004
☎:+81-3-6870-6970 (main)

NIPPON STEEL CORPORATION Group's Overseas Network

: Automotive Bases Only



NIPPON STEEL CORPORATION

- (A) Offices/branches

NIPPON STEEL Stainless Steel Corporation

- (B) Offices/branches

NIPPON STEEL Chemical & Material Co., Ltd.

- (C) Offices/branches

NS Solutions Corporation

- (D) Offices/branches

NIPPON STEEL TEXENG. CO., LTD.

- (E) Group Companies

Europe

- ArcoMittal*
- *technical cross-license
- Suzuki Garphyttan

India

- Jamshedpur Continuous Annealing & Processing
- Nippon Steel Pipe India
- ANS Steel Tubes Limited
- SMI-Amtek Crankshaft

Vietnam

- Vietnam Steel Products
- CHINA STEEL AND NIPPON STEEL VIETNAM JOINT STOCK Company

Thailand

- NS-Siam United Steel
- NIPPON STEEL Steel Processing (Thailand) Co., Ltd.
- Thai Precision Products
- Siam Nippon Steel Pipe
- Thai Steel Pipe Industry

Indonesia

- Indonesia Nippon Steel Pipe
- PT KRAKATAU NIPPON STEEL SYNERGY

China

- Baosteel-NSC Automotive Steel Sheets
- NIPPON STEEL (NANTONG) METAL SHEET CO., LTD.
- Suzuki Garphyttan
- NBC China
- Shanghai Neturen
- Wuxi NSP Automotive Parts
- Guangzhou You-Ri Automotive Parts
- Guangzhou Asahi-Ns-Mit Automotive Parts
- HUIZHOU NIPPON STEEL FORGING CO., LTD.

U.S.A.

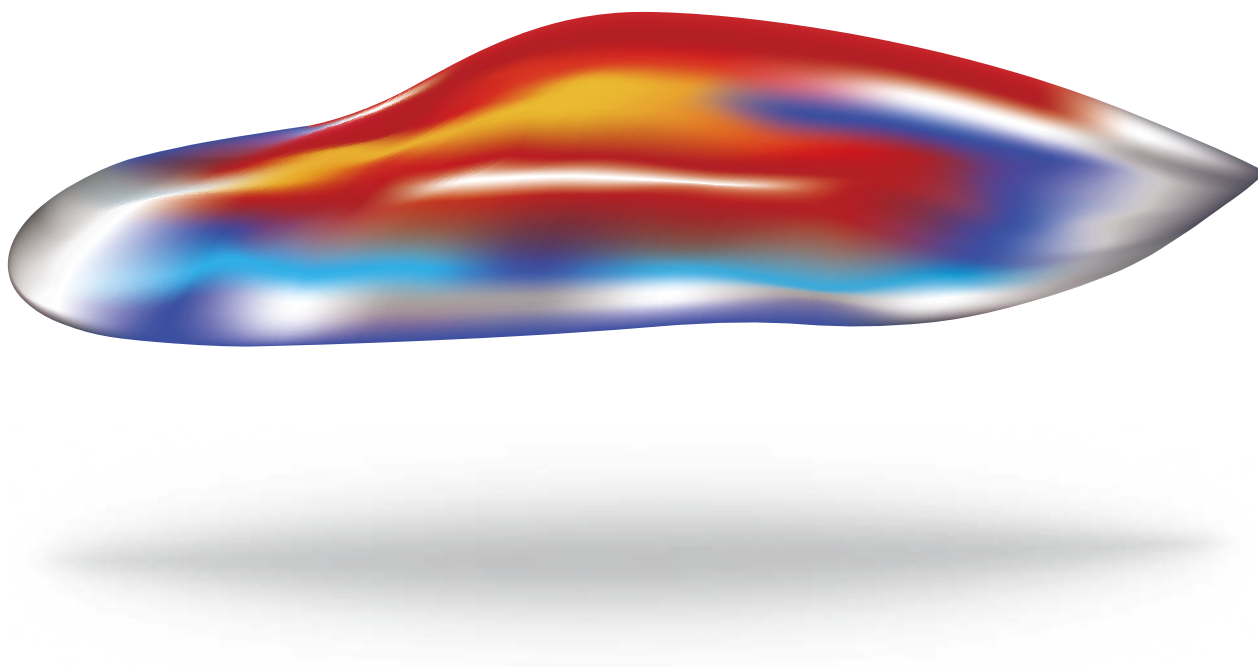
- AM/NS Calvert
- I/N Tek
- I/N Kote
- Suzuki Garphyttan
- INDIANA PRECISION FORGE
- Seymour Tubing
- Nisshin Automotive Tubing LLC
- International Crankshaft

Mexico

- TENIGAL
- Nippon Steel Pipe Mexico

Brasil

- UNIGAL
- USIMINAS



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