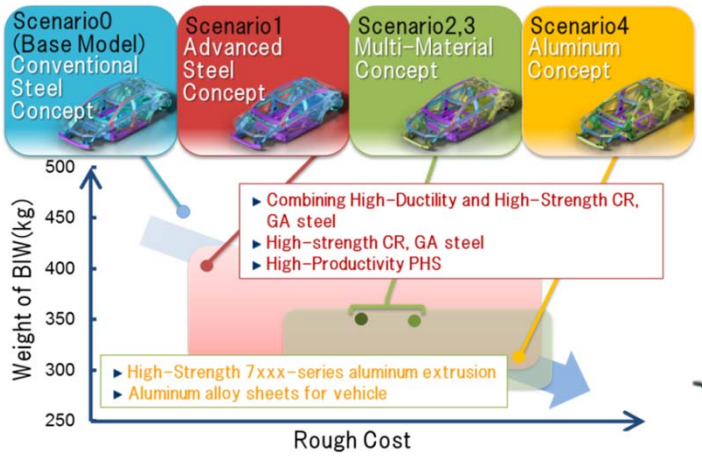
Automotive Solution Center

We are in frequent contact with automobile and parts manufacturers to be fully aware of the issues regarding fuel economy and automobile safety. This results in new developments and proposals for relevant solutions to problems involving (1) the structure of car bodies using steel, aluminum, plastics, and other new materials, and (2) the design and joining of components and work pieces.

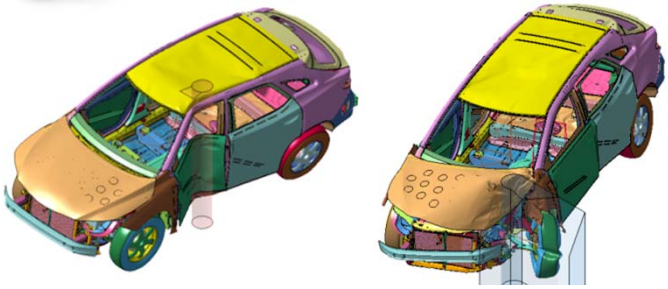
Multi-Material Structural Design

- Weight reduction design
- Collision Analysis Technology
- Collision Test Analysis Technology

Established a structure concept for achieving both weight reduction and improved safety for automobiles. For a solution technology to realize these aims, we undertake R&D on (1) the body structure making use of the features of our proprietary materials such as ultra high strength steel sheets, aluminum sheets, aluminum extrusions, and (2) the design, the prototype manufacturing, and the evaluation of parts and machined products.



Kobelco Light Weight Body Concept



Pole impact　　Small overlap impact

Impact Simulation Technique for Full Vehicle

Combination of Reverse Engineering + Weight Reduction Design + Trial Production and its Evaluation

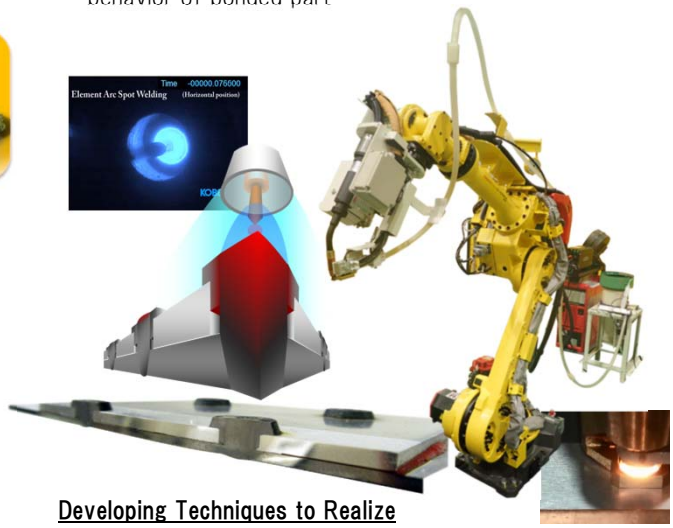
Multi-Material Joining

- Joining Technology for Dissimilar Materials
- Joining Technology for Ultra High Strength Steel Sheets

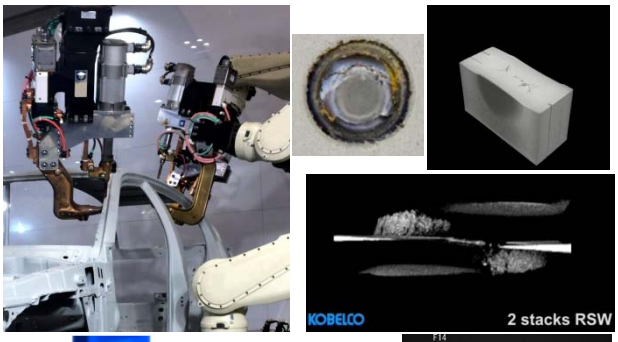
We are at the forefront of domestic leading-edge research as follows by executing a strategy in cooperation with other companies if necessary.

・Techniques for joining methods and machines to realize tight jointing with highly-advanced materials such as ultra high strength steel sheets, aluminum alloy, CFRP which contribute to vehicle weight reduction

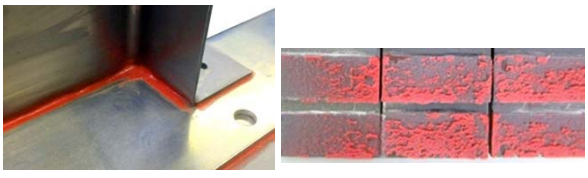
・Techniques for surface treatment and analyzing fracture behavior of bonded part



Developing Techniques to Realize Dissimilar Metal Joining Methods and Machinery



Analysis of Crack Defects for Resistance Spot Welding Part



Peeling Behavior Analysis for Bonded Part

Applications to Products

Various materials for automobiles (steel, aluminum, and welding materials)
Solutions for structures and joining of multi-materials

KOBELCO