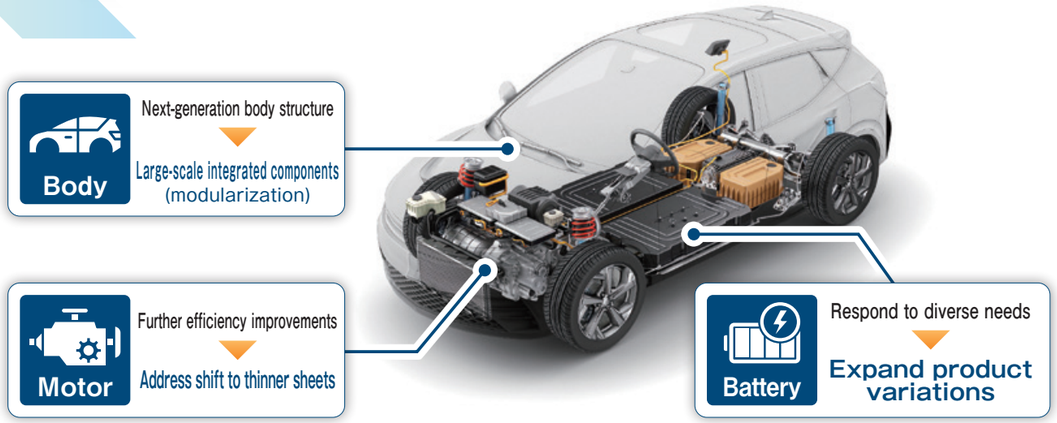
Strengthen Development Capabilities and Technological Capabilities



Body

Following the rapid shift to EVs in recent years, changes in trends for composition, structure and materials of our mainstay product of auto body components have become apparent. Large-scale integrated components that enable small components that were previously produced separately to be manufactured all at once, as one large part, have caught the attention of many automobile manufacturers due to the potential for reducing production and assembly processes. G-TEKT is developing two types of large-scale integration technology optimized for different materials and manufacturing methods so as to be able to make flexible proposals that are optimized to meet the diverse needs of customers.

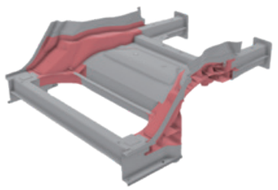
Hot stamping integration specification

Hot stamping (hot press) is a processing method that is one of the Company's strengths, and involves the press-forming of steel sheets heated to a high temperature while simultaneously cooling them rapidly to give a high-level of strength and precision to the product. Auto body components must have enough strength to protect the occupants in the event of a collision, and the degree of strength varies according to the location on the vehicle. In the past, the usual manufacturing method for auto body components was to press-form them separately as small parts, then weld them together. G-TEKT's proposal for large-scale integrated components consists of combining steel sheets with different characteristics and thicknesses in accordance with the required strength, and welding them in advance to form one large steel sheet, which is then hot stamped. This allows the efficient production of highly integrated products that have the optimal specification, and that also fulfill all the performance requirements for each location.
This manufacturing method can be applied to a variety of locations on the vehicle, and has already been used in mass production in the Company's North American locations for an integral molding of the front door aperture called "door ring." We are also moving forward with the development of products for use in other locations of the vehicle where the benefits of large-scale integration are expected to be significant.

Integrally molded door ring

Multi-material specification

The multi-material specification being proposed by the Company aims to achieve weight reductions by combining aluminum materials and steel sheets. Through the localized use of aluminum diecast it is possible to achieve not only reductions in weight but also in parts count and the number of processes. While aluminum materials are very effective in reducing weight they are also expensive, so this is optimally balanced against cost by identifying the vehicle locations where they are partially adopted.
Aluminum diecast is a manufacturing method where by aluminum is melted, poured into a mold, and pressed, and in recent years an integrated technology for super-sized products called "gigacasting" has been attracting attention.
As an option to replace gigacasting, G-TEKT is proposing to customers its multi-material specification, which maximizes both the effect of weight reductions achieved through aluminum diecast and the use of the press forming technology it has developed over the years.



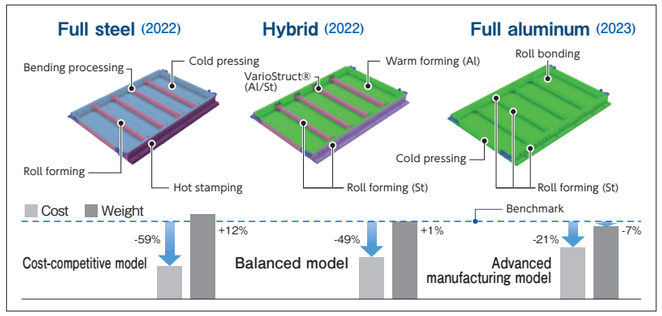
Multi-material specification rear frame module concept

Battery

Batteries can be said to be one of the most important parts holding the key to electrification, and technology in this area is evolving at dizzying speed. The Company is moving forward with product development in anticipation of future growth in demand for battery-related components. Specifically, we are focusing on the battery housing, which is the case that protects the battery as a whole, and the cell cases into which are inserted the electrodes and electrolytes for each battery.

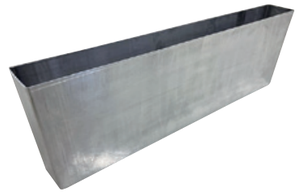
Battery housing

The battery housing is a large part in the shape of a box that is situated under the cabin. Because it is responsible for protecting the battery in the event of a collision, it must be strong. Conversely, because an increase in weight has a negative effect on fuel consumption, another option is to use aluminum materials that are lighter than their steel counterparts. However, for cost reasons the use of a certain amount of steel is likely to continue. Predicated on the assumption that the necessary level of strength is obtained, companies are being required to take control of a variety of manufacturing methods, such as combining materials or joining parts together, in order to strike a balance between weight and cost.
G-TEKT has prepared, and is using for its proposals, a lineup that allows it to address the various needs of automotive OEMs. We have created three different types of concept model, namely the full-aluminum performance model version, the full-steel version with an emphasis on cost, and the hybrid version that seeks a balance between cost and weight. With these we have demonstrated our ability to address various combinations of materials and manufacturing methods. Going forward we will continue to win orders by providing optimized proposals that are based on a deep understanding of the approaches taken by automotive OEMs.



Cell case

Broadly speaking, cell case shapes can be divided into the three types of cylindrical, prismatic, and pouch (laminated). G-TEKT is targeting prismatic cell cases, which is expected to generate the highest volume of sales, and has developed top-opening and side-opening types. We have adopted press and roll forming after ascertaining the manufacturing method that we consider optimal for each, depending on the different structures involved. In each case our technological goals are in sight, and we are moving forward with demonstration testing with the aim of further improving quality and productivity.
Our strategy for cell cases is also one of preparing a diverse lineup, and while aluminum products currently constitute the mainstream of the market, we are working on developing steel products with strength and cost advantages.



Cell case

Motor

Motors are an essential component of electric vehicles, and the Company is developing a motor core, which is arguably the most important part of the motor.

Motor cores

Motor cores are created by laminating several hundred layers stamped out of the thin magnetic steel sheet that constitute the raw material. Production requires sophisticated press technology, for which end the Company is able to leverage the technological capabilities it has cultivated over the years. First, it has acquired a technology called caulking lamination that enables layers to be fixed in place through the formation of bumps on the magnetic steel sheets, using which it has achieved world-class production speeds. Reflecting the shift in the market toward thinner magnetic steel sheets to improve motor efficiency, the Company is aiming to acquire adhesive lamination technology that is suitable for addressing this trend, and is speeding up its technology development.

The stator and rotor that make up the motor core