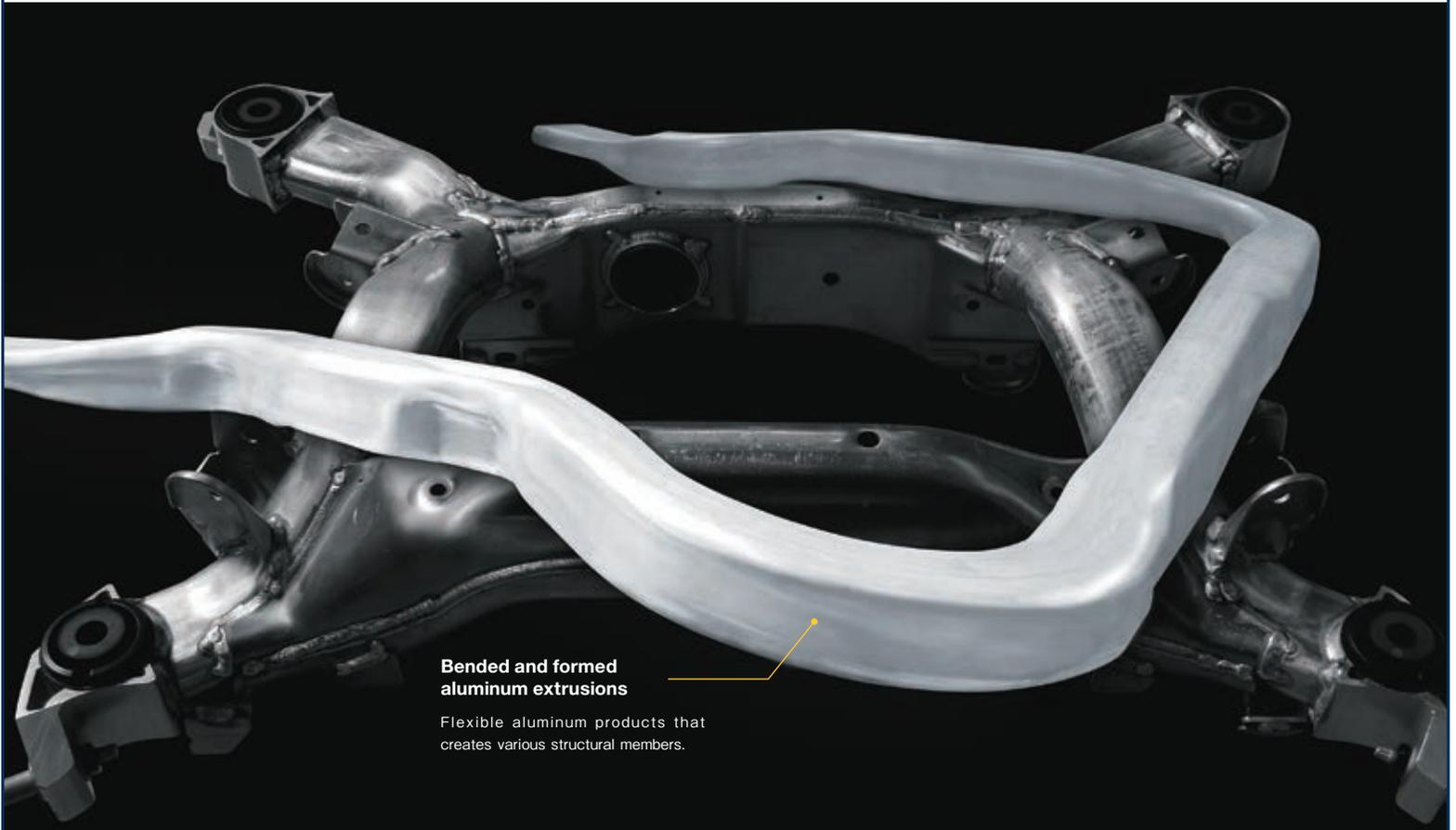


FORMING ALUMINUM FOR LIGHTWEIGHT VEHICLE

FOR CARS AND TRUCKS

Processing of aluminum alloy to create the future of mobility

Suspension frames, side members, cross members, etc.
Aluminum extruded shapes support lightweight car body structures.



Banded and formed aluminum extrusions

Flexible aluminum products that creates various structural members.

Aluminum extrusion is a processing method that can manufacture products that are difficult to produce by other methods, such as long parts with complex cross-sectional shapes, with high precision. In the extrusion process, a cylindrical aluminum alloy material (billet) heated to 400-500°C is pressed and extruded by an extruder under strong pressure into various shaped dies to continuously manufacture products with the required cross-sectional shape. Even products with hollow or complex cross-sections can be extruded in a single process. For this reason, it is the most suitable processing method for manufacturing long components with a constant cross-section, such as bumper beams and space frame components. On the other hand, for sub-frames and steering hanger

beams, aluminum extruded shapes with relatively simple cross-sectional shapes, such as circular or rectangular, are used as a base for parts that are subjected to two- and three-dimensional bending and crushing processes. The bending process includes press bending, compression bending, tension bending, pull bending, and roll forming. Multi-benders can achieve complex and continuous three-dimensional bending shapes that are difficult to achieve with conventional bending processes. Hydroforming is a processing technique that can dramatically change the cross-sectional shape. In hydroforming, a pipe is set inside a mold, liquid is filled into the pipe, and both ends of the pipe are compressed in the axial direction while applying ultra-high pressure to

make the pipe follow the shape of the inner surface of the mold and expand. Aluminum extruded shapes are flexible materials that can be bent, crushed, and hydroformed into structural components for automobiles.



ENGINEER INTERVIEW



Among the practical lightweight and high-strength materials, aluminum extruded shapes are widely used for important automobile structural components, and the UACJ R&D Division is working day and night to apply its processing know-how to help customers improve their products.

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