News Release

AICHI STEEL

July 12, 2017

Aichi Steel Corporation

Aichi Steel Accelerates Development of Forged Products with Focus on Structural Changes due to Electrification of Automobiles

–Completes construction of servo press line for development of next-generation forged products–

Aichi Steel Corporation (Headquarters: Tokai, Japan; CEO: Takahiro Fujioka) held a ceremony today, July 12, to mark the completion of construction of a new servo(*1) press line designed to promote the development of innovative forging technologies and positively respond to structural changes due to electrification of automobiles, such as hybrid vehicles (HVs) and plug-in hybrid vehicles (PHVs).

Vehicles units such as engines and transmissions use many forged products made from special steel with excellent strength and rigidity. However, as the structure of these units change and become more compact with electrification, the parts used in these units will also need to become smaller and lighter, while delivering higher performance integrating the functions of several parts.

We have traditionally used an integrated forging and steelmaking process(*2), which combines various materials and techniques, when developing forged products. We have also used a net-shaping(*3) method to drastically reduce processing costs for customers, and have increased strength to enable reduced component size and weight. With increasing needs for higher performance parts in future next-generation automobiles, we have also installed a servo press line for forging, which will enable the development of even more innovative techniques.

This new servo press is a future technology with freely-adjustable molding speed that, when used in the hot-forging process, allows the manufacture of complicated shapes that cannot be achieved with current hot forging technologies (see diagrams). With a double-action molding mechanism built into the servo press, the first ever for a Japanese forged products manufacturer, the press will accelerate the development of more advanced forged products including new products and techniques that maximize the benefits of the system. Also, by using IoT technologies to record and use various manufacturing data, we are able to reduce development lead-times.

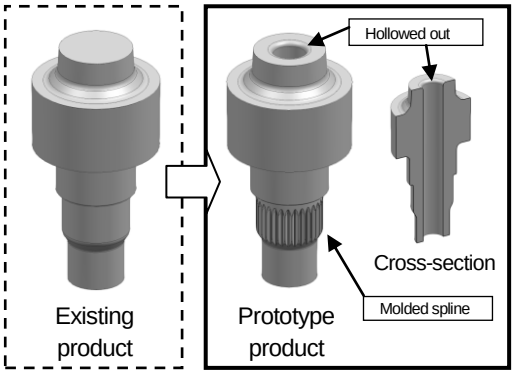
Going forward, Aichi Steel will continue to fulfill its mission of timely delivery of products with superior quality, accuracy and cost competitiveness. In this way, we will contribute to the manufacture of ever-better cars and to the creation of an environment-friendly automobile-based society.

(*1) Servo: Method of driving motors (servo-motors), enabling automated control with feedback of die vertical slide position data

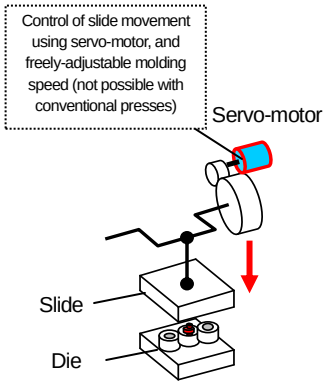
(*2) Integrated forging and steelmaking process: Development and production process technology for integrating all processes from material design through to steelmaking, forging and parts process technologies

(*3) Net-shaping: Method of shaping the forged product as close as possible to the product shape to drastically reduce processing amounts for customers

1. Construction: Servo press line for research and development
2. Location: Aichi Steel R&D plant (Arao-machi, Tokai-shi)
3. Equipment: 1,200 ton servo press, high-frequency furnace and supplementary equipment for forging
4. Products: Forged products (R&D and prototypes)
5. Investment: 600 million yen



Development study



Structural diagram of servo press

Exterior view of servo press

AICHI STEEL CORPORATION