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Unipres Realizes High Hot Press Productivity using New Manufacturing Technology

— Productivity Tripled Compared to Existing Method —

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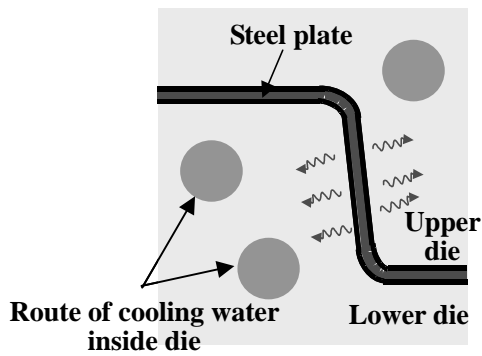
Website : <http://www.unipres.co.jp/>

Unipres Corporation (Head Office: Yokohama City, Kanagawa Pref., President: Satoru Nito) has realized world-class productivity through the improvement of its hot press technology.

In the automobile industry in recent years, the reduction of CO₂ emissions (improvement of fuel efficiency) has become an environmental requirement, resulting in car body weight reduction. At the same time, car bodies are required to be very strong to ensure the safety of passengers in the event of a collision. The use of the ultra-strong material high tensile strength steel (HTSS) makes it possible to reduce plate thickness, leading to weight reduction. Consequently, HTSS is now used in more than 50% of car body structural parts.

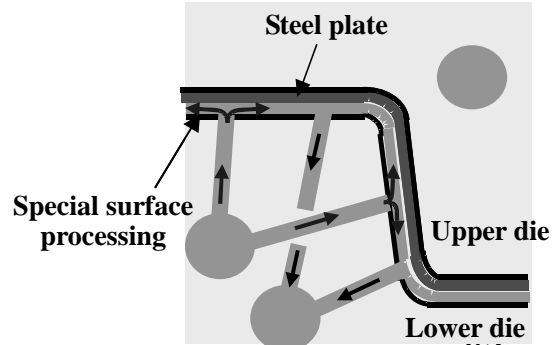
Hot press technology produces high-strength parts by forming steel plate heated to high temperature while rapidly cooling the material inside the die to harden it. However, although this resulted in higher strength and precision compared to the cold press method, its greatest drawback was that the time required for hardening reduced productivity. Unipres has therefore striven to improve the hardening method in order to increase the number of strokes per minute (SPM). The new method achieves rapid cooling by pouring out cooling water from the surface of the die and passing it between the die surface and the car body panel. Making use of a basic technology developed by Nippon Steel Corporation, it enables special processing on the die surface in line with the shape of the part. Utilizing the die technology in Unipres's hot press method, this makes for highly efficient hardening.

Existing Method



Forms steel plate heated to high temperature and hardens it at the same time by conducting rapid cooling inside the die using cooling water

New Method



Rapidly cools steel plate by passing cooling water directly between the specially processed die surface and the steel plate

Since this new method has approximately tripled hot press productivity and quality stability after hardening has been confirmed, Unipres plans to gradually adopt it starting with mass-produced parts for Nissan Motor.

With the recent adoption of many hot-press parts in European automobiles, Unipres is also considering introducing the new method on the hot-press production lines it is planning to set up at its overseas plants. It is attracting much attention as a technology that promotes more environment-friendly production by greatly increasing productivity.

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