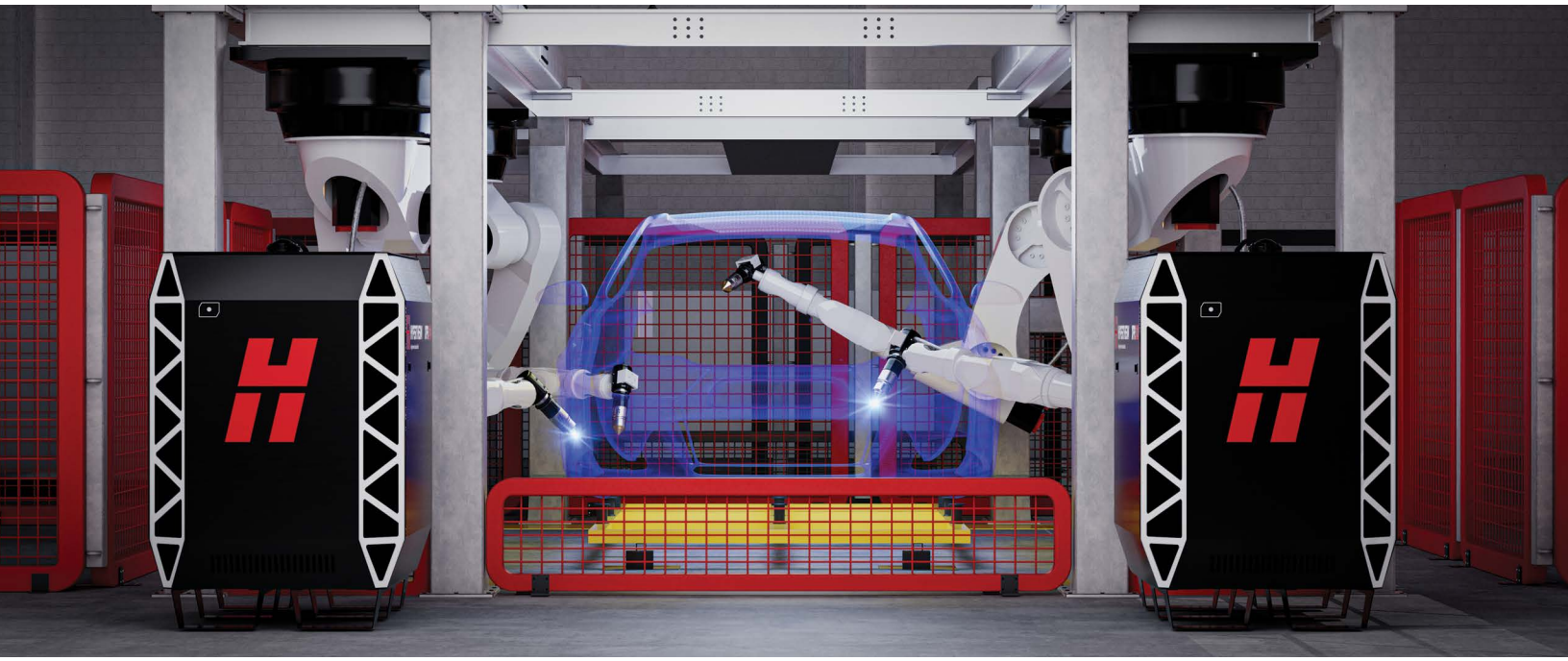
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Plasma cutting enables adoption of giga castings for vehicles



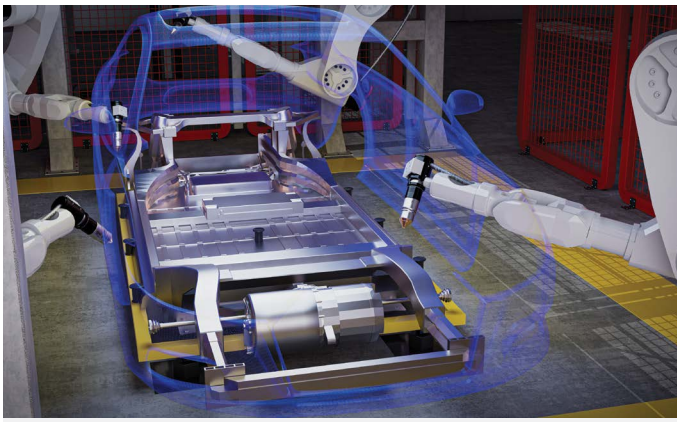
Business impact

- Facilitate transition from multiple castings to a single structural casting for rear underbodies
- Reduce investment by 67%
- Decrease the amount of post-cut grinding required
- Easily switch between different parts without needing to make changes to cutting cell

Large die cast company seeks to produce giga casted rear underbodies

One of the largest die casting companies in China produces aluminum rear underbody castings for a variety of electric vehicle (EV) manufacturers. The traditional process for producing automotive underbodies involves the casting being created, then cooled and put through a trim press to remove the excess material such as risers and runners. However, as EV manufacturers are moving towards giga casting – the process of casting very large structural components in a single piece – trim presses are no longer a viable solution. These large parts are generally complex making it almost impossible to trim using a trim press as accessibility becomes an issue. Even when accessibility is not a problem, to trim these large cast parts with a press would require extremely accurate press dies which are very expensive.

> **Investing in a robotic plasma cutting system, enables the transition to giga casting and to produce large single piece structural components for electric vehicles, while also reducing cutting time and post-cut grinding.**



Robotic plasma cutting is the superior method over a trim press

The die casting company invested in an ABB robot equipped with a Hypertherm XPR 170 plasma cutter. The robotic plasma cutting system allows them to easily trim the rear underbody as the robot can easily access hard to reach areas which would have been impossible to trim using a trim press. Furthermore, the robotic plasma system requires a much lower capital investment than a trim press plus the press dies required.

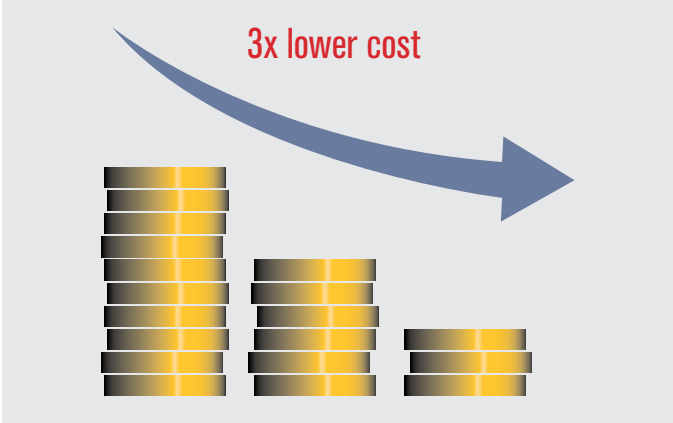
By investing in a robotic plasma cutting system, the manufacturer was able to transition to giga casting and produce large single piece structural components starting with the rear underbody for electric vehicles. Cutting time for each rear underbody, which was about 2 meters long, took less than 60 seconds and resulted in an impressive cut quality that reduced post-cut grinding.

"Previously, each new model required investment in a new press die. Now, with the robotic plasma system, we can effortlessly switch between different models without incurring additional costs."

The die casting company uses the same robotic plasma system to trim a variety of models without incurring additional costs, they simply create a new robot program, set up fixturing to locate the part and they are ready for production.

"We are at the forefront of innovation in China, pioneering efficient production methods for giga castings."

"Previously, each new model required investment in a new press die. Now, with the robotic plasma system, we can effortlessly switch between different models without incurring additional costs."



Global auto manufacturers are adopting robotic plasma cutting for giga casting

As global auto manufacturers increasingly adopt giga castings, robotic plasma cutting emerges as the ideal solution for trimming these large-scale, single-cast aluminum frames.

This advanced technology handles the complexity and size of giga castings and ensures consistent quality and efficiency. Robotic plasma systems occupy minimal floor space, require minimal maintenance, have a long lifespan, and can offer up to 30% higher uptime over trim presses.

These systems also offer the added advantage of being able to cut parts while they are hot and return the hot scrap to the oven reducing takt time, increasing productivity, and reducing costs

Learn more:

Learn more about plasma cast trimming for the auto industry at www.hypertherm.com/cast-trimming

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