

자동차 부품의 원격 레이저 용접기술

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Remote Welding of Automobile Components using CO₂ Laser & Scanner

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Abstracts

The laser welding of the car body and components has been spread in the automotive industry. The Nd:YAG laser welding system could be used in 3D welding with robot. However, this system cannot efficiently reduce the welding cycle time according to various welding sequences because the robot's moving time is same that of the resistant spot welding system. But the remote welding system with high power CO₂ laser and scanner makes it possible cycle time much faster than the robot laser welding system. In the CO₂ laser remote welding system, laser beam can be rapidly transferred to a workpiece by moving mirrors of scanner system. So, it makes reducing the cycle time of welding process. Therefore, in this paper, the characteristic of weld strength according to patterns of weld bead on CO₂ laser welding was investigated. Also, the relationship between shape of weld bead and value of tensile load was studied. Finally, the optimum remote welding condition for car bumper was investigated.

Key Words : Remote laser welding, CO₂ laser, Scanner, Patterns of weld bead, Car bumper