

3차원 위빙 대용착 지능 용접캐리지 개발 및 적용

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The Development and Application of Intelligent Welding Carriage with High Deposition Rate by 3-D Weaving

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Abstract

In shipbuilding industry, welding position are usually flat and vertical position at the erection stage. Application of SAW and EGW for these positions makes it possible to achieve enhanced productivity and high quality. But owing to their large size and weight it is difficult to apply these techniques in short and narrow regions. To overcome this problem, our company developed light weight and compact size 4-axis welding carriage which perform 3D weaving. The purpose of this study is to explain the development and application of intelligent welding carriage using 3D weaving pattern that can fill a large amount of welds and thereby making it possible to achieve high quality of welding. This study shows 3D weaving pattern, development of weaving database, and skill of adaptive control response for the variable gap. Also, it shows the results of procedure qualification test for the AH-grade steel when applied to the intelligent welding carriage.

Key Words : Shipbuilding industry, Flux cored arc welding, Intelligent welding carriage, 3 dimension weaving, high depositejon rate, Weaving database, One layer one pass welding, Adaptive weaving control