구형 곡면상에 부착된 노즐 자동용접에 관한 연구

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Study of automatic welding for nozzles on spherical surface

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Abract

The quality of heavy industry product largely depends on the welding technology. For the soundness of weld metal it is important that a high reliability and repeatability should be kept during the whole welding process. Automatic welding is essentially requested for improving the repeatability. In case of nozzle welding on spherical surface the application of automatic welding has been limited owing to its curvaceous weld line. Furthermore for Inconel weld material it is more susceptible to the weld defect. The study aims to the developing of automatic head torch and gas shielding device, quality approving through the mock-up testing, and defining the residual stress. Weld head torch is composed of many axes to be controlled simultaneously with trajectory SW. Gas shield device is designed with multi flowing method and optimum position through many times testing. The mock-ups of several nozzle coupons with a different inclined angle are carried out as a good quality. Additionally residual stress and deformation rate are measured. Finally the automatic welding technology for nozzles on spherical head with Inconel weld material was established for the application of heavy industry products

Key Words: automatic welding, nozzle welding, shielding device, residual stress, Inconel material