

## 34-53 Numerical Simulation of Free Metal Sheet Forming Using the Underwater Explosion of Explosive

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In recent years, many studies of metal forming have done for a better productivity. In these fields, it is important problem the production cost make lower. However, in generally the very expensive metal die is indispensable for metal forming. Consequently, it is difficult the metal die excludes for the lower cost. We have been developing the technique for the metal forming not using the metal die as an epoch-making method for lower costs. Therefore, we have considered the free plate forming by the explosive forming using the underwater shock wave generated by the underwater explosion of explosive placed in a pressure vessel filled with water. This technique uses only a metal die has circular edges, it dose not use an expensively metal die of a same shape as product. We considered varying the pressure condition acted on the metal plate by changing the set position of the explosive as substitute for a metal die.

Therefore we have done numerrical simulations as a feasibility study of that technique for understanding the deformation shape of metal plate by changing the position of explosive. In this paper, we considered some simulation models, and the simulation results were discussed.

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