A Study on Improvement of Cooling Channel Design by Heat Transfer Simulation of Press Tempering Mold

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1. Abstract

Press tempering is a process of simultaneously pressing and tempering a press using a press to prevent deformation that occurs when tempering a steel part that is susceptible to deformation by quenching. The support plate, which is one of the components of the torque converter of automobiles, has a thin flat plate shape. After the carburizing heat treatment and the quenching process at high temperature, the flat plate has defective. In general, deformation of the support plate is reduced through a press tempering process. In this study, we analyzed the number and spacing of cooling channels to uniformly cool a heated support plate in a press tempering mold at 350 ~ 400 ℃. The temperature distribution of the tempering press mold obtained by the heat transfer simulation was analyzed and the mold design was improved by feedback to the cooling channel design.

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References

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