

# Sand Casting Parameter Optimization by Numerical Method

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**Abstract:** *The current research work is based on the sand casting simulation of pressure plate in virtual environment of Pro Cast. Design of gating and filling system is one of the complicated process it take more experience and expertise to avoid the crack and impurities in casting product. Improper design of gating and filling system is causes of wrong location of runner and riser and it subjected to crack, impurities, shrinkage and porosity. The current research work is based on setting of optimum configuration of gating system including height of sprue in three different combination of casting mould. Here we selected three different height 110 mm, 130 mm and 140 mm of pouring basin with same runner design to find out most suitable parameter for favourable condition of casting. The key parameter of simulation is selected as filling and solidification time with hot spot region and based on the parameter the optimum parameter is selected for sand casting of pressure plate*

**Keywords:** FEA Finite element analysis, FVM- Finite Volume Method, 2 D two dimensional, FDM- Finite Difference Method

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