Abstract

At the time of initial discovery of the use of a connecting rod, the method used is forging presses. Usually used in the making nodular cast iron, nodular cast iron which has high toughness. But in this final duty aluminum material used in the manufacture of products connecting rod. Shrinkage defects is closely related to the shape and type of riser. Shrinkage defects are defects caused by molten metal volume shrinkage during the freezing. Given the differences in shape and this type of riser, then the influence of freezing of metal in the mold.

The study begins with the design of the gating system. The design system includes the dimensions of sprue, runner and gate. Material used aluminum because it is light weight and corrosion resistant. Results of design with variations of form and type of riser is modeled in three dimensions using a simulated Z-cast. The results of the design will be compared with the actual casting.

With these simulations can be obtained by visualizing the freezing process, and can predict the occurrence of defects. From this research has produced design of runner system design that can prevent the occurrence of defects that have been evaluated using the Z-cast.
From the simulation results and the actual casting process with a variety of shapes and types of riser, the smallest value of depreciation is the kind of blind riser type II with a value of depreciation during the simulation of 1.2% and time casting process actual value of the depreciation of 1%.

Key words: Aluminum, Riser, Z-Cast, Connecting rod