

暖瓶限位垫注塑成型模拟分 析及注塑模具设计

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摘要：此次设计的是一种暖瓶限位垫塑件的注射模具。这种塑料部件是用的 PP 做的，并且要大量批量地生产。此种塑件需要的尺寸一致性是不高的，而且它的外表面也并没有太高要求。暖瓶限位垫具有小尺寸，小的壁厚，而且没有复杂的形状。因为该塑料部件需要进行凸凹模进行成型，然后经受分离过程与滑块的侧抽芯机构机构，最终由推杆组成的脱模机构。总体上，用定位销固定滑块和侧芯型，然后利用斜导柱的位移带动滑块移动进行侧抽芯，最后推杆推压离开所述工件。设计应根据设计模具，并分别设计该主要部分的一般步骤。该图纸包括非标准件图纸和模具结构的图。注塑模的设计步骤主要有浇注系统的选择，型芯型腔的分模，型腔的布局，抽芯机构，导向机构，冷却组件等组成，本文主要是系统研究一套完整的注塑模设计，在此之前还使用了模流分析，不仅确定了合理的浇口位置，而且还对注塑加工的工艺进行了分析，改善了加工的工艺，大大减少了实际生产中因试模次数过多而产生的成本。

关键词：注射模具，浇注系统，脱模机构，冷却系统

Injection molding simulation analysis and injection mold design of thermos limit pad

Abstract : This study is a kind of injection mold for the plastic part of thermos bottle limit pad. This kind of plastic part is made of PP, and it needs to be mass produced. This kind of the plastic parts need not high dimensional consistency, and its external surface is not too high. The limiting pad of thermos bottle has small size, small wall thickness and no complex shape. Because the plastic parts need to be molded by convex and concave die, and then undergo the separation process and the side core pulling mechanism of the slider, and finally the demoulding mechanism composed of push rod. In general, fix the slide block and the side core mold with the positioning pin, then use the displacement of the inclined guide column to drive the slide block to move for side core pulling, and finally push the push rod away from the workpiece. The design shall be based on the design of the die and the general steps of the main part shall be designed separately. The drawing includes non-standard part drawing and die structure drawing. The design steps of the injection mold mainly include the selection of the pouring system, the parting of the core cavity, the layout of the cavity, the core pulling mechanism, the guiding mechanism, the cooling components, etc. This paper mainly studies a complete set of injection mold design systematically. Before that, the mold flow analysis is also used, not only to determine the reasonable gate position, but also to analyze the injection molding process and improve it. The processing technology greatly reduces the cost caused by too many times of mold test in actual production.

Key words : injection mold, pouring system, demoulding mechanism, cooling system

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