

Title (en)

Method of manufacturing castings by directional or single crystal solidification.

Title (de)

Verfahren zur Herstellung von Gussstücken durch gerichtete oder einkristalline Erstarrung.

Title (fr)

Procédé pour fabriquer des pièces coulées par solidification dirigée ou monocristalline.

Publication

EP 0477136 B1 19941102 (DE)

Application

EP 91810678 A 19910823

Priority

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Abstract (en)

[origin: EP0477136A1] The method of manufacturing castings by directional or single-crystal solidification is carried out in vacuum-casting units (100) which, apart from a conventional cooling plate (50), have no special devices, in particular no auxiliary heating systems for the casting mould (10). The unidirectional heat flow required for guiding the solidification front is on the one hand produced by means of heat sources which are partly formed from overheated melt and on the other hand by means of heat sinks which consist of the cooling plate (50) and the surroundings of the casting mould (10). According to the invention, the casting mould is heated in a separate heating furnace (40) to a temperature which is greater than the liquidus temperature of the melt, with the aim of having the casting mould contribute to the heat source in addition to the melt. The method is especially suitable for smaller components whose dimensions in the direction of the unidirectional heat flow are less than roughly 15 cm.

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Cited by

EP2060342A1; EP0661415A1; CN104066533A; US9555471B2; US10265764B2; CN104801694A; EP2902135A3; DE4212410A1; GB2266066A; FR2689793A1; US5353860A; GB2266066B; EP0491656B1

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