

Title (en)

Casting device for casting cylinder crank housings using a low-pressure process

Title (de)

Gießvorrichtung zum Gießen von Zylinderkurbelgehäusen nach dem Niederdruckverfahren

Title (fr)

Dispositif de coulée pour la coulée de blocs moteurs selon le procédé de basse pression

Publication

EP 2606995 B1 20190130 (DE)

Application

EP 12195988 A 20121207

Priority

DE 102011056985 A 20111223

Abstract (en)

[origin: EP2606995A2] The casting device comprises a pot melting furnace for holding a molten metal (10), where the furnace chamber is acted upon with an excess pressure, a casting mold (16) that is arranged above the furnace chamber and has a mold cavity (18) having an outer contour of a cylinder crankcase housing to be poured by casting technology, riser pipes (14) for filling the mold cavity with the molten metal connected with a downside of the furnace chamber and the casting mold, and an arrangement of the mold cavity. The casting device comprises a pot melting furnace for holding a molten metal (10), where the furnace chamber is acted upon with an excess pressure, a casting mold (16) that is arranged above the furnace chamber and has a mold cavity (18) having an outer contour of a cylinder crankcase housing to be poured by casting technology, riser pipes (14) for filling the mold cavity with the molten metal connected with a downside of the furnace chamber and the casting mold, and an arrangement of the mold cavity in such a way that crankshaft bearing blocks are depicted above the furnace chamber, and cylinder head top surfaces are depicted below the furnace chamber. The casting device further comprises metallic guides that are retractable so as to protrude the formation of a hollow space of the cylinder crankcase housing as core from an outside by the casting mold and by cylinder head top surfaces of outer contour into the mold cavity, and mold parts that are configured for molding a crankshaft space and cooled by a liquid cooling medium. The riser pipe is located outside of the furnace chamber, and comprises a pipe section (34) for bridging a distance between the furnace chamber and the casting mold. The pipe section has a length of 20-80 cm, and comprises a thermal insulation and/or an additional heating system. A branch system is connected to the riser pipe. The guides and the mold parts are provided for molding the crankshaft space with a cooling device for cooling outer surfaces of the guides and/or the mold parts. The casting mold includes sand and/or a cast ingot.

IPC 8 full level

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CPC (source: EP)

B22D 15/02 (2013.01); **B22D 18/04** (2013.01); **B22D 27/04** (2013.01)

Cited by

DE102015225588A1; CN109175253A; DE102015216452A8; DE102015216224A1; CN112792319A; DE102015216452A1; DE102016220240A1

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