

Title (en)
Roller with cooling system

Title (de)
Walze mit Kühlsystem

Title (fr)
Rouleau avec système de refroidissement

Publication
EP 2589446 A2 20130508 (DE)

Application
EP 12190404 A 20121029

Priority
DE 102011055066 A 20111104

Abstract (en)

The roller comprises a roller core (2), a roller drum (4) surrounding the rolling core, and a cooling channel system, by which a cooling medium is conducted for cooling the roller drum, where the cooling channel system comprises: a cooling channel portion, which is provided for cooling the roller drum and comprises cooling channels; and a distribution channel portion flowing into the cooling channel portion. Each distribution channel flows toward the roller drum in a manifold chamber. The cooling channel system further comprises a back distribution channel portion. The roller comprises a roller core (2), a roller drum (4) surrounding the rolling core, and a cooling channel system, by which a cooling medium is conducted for cooling the roller drum, where the cooling channel system comprises: a cooling channel portion, which is provided for cooling the roller drum and comprises cooling channels; and a distribution channel portion flowing into the cooling channel portion. Each distribution channel flows toward the roller drum in a manifold chamber. The cooling channel system further comprises: a back distribution channel portion, which proceeds from the cooling channel portion to conduct-away the cooling medium from the cooling channel, where the cooling channels flow into a back manifold chamber, from which the back distribution channel portion proceeds; a line portion, which proceeds from a front side (16) of the roller core and runs through roller core; and a return line portion (18). An entire cross-section area of the cooling channel portion is as large as the entire cross-section area of the distribution channel portion, and optionally the entire cross-section area of the back distribution channel portion is as large as the entire cross-section area of the cooling channel portion. The distribution channel portion proceeds from the line portion. The entire cross-section area of the distribution channel portion corresponds to the entire cross-section area of the line portion. The entire cross-section area of the return line portion is as large as the entire cross-section area of a redistribution channel portion. The distribution channel portion and the redistribution channel portion partially run, in a radial direction, through the roller core. The line portion and the return line portion run along a roller axis or parallel to a roller axis. The distribution channel portion comprises distribution channels and/or the back distribution channel portion comprises back distribution channels. The distribution channel portion comprises a cross-section extension. The back distribution channel portion comprises a cross-section reduction, which is optionally provided by a chamfer. The openings of the manifold chamber in the cooling channels have equal intervals to open the respective distribution channel into the manifold chamber and/or the openings of the cooling channels in the back manifold chamber have equal intervals to open the back manifold chamber into a respective back distribution channel. The roller core and the roller drum are executed as components that are independent from each other, and the roller drum is force-, form- and/or firmly bonded on the roller core. A groove is formed into a surface of the roller core and forms the cooling channel portion together with the roller drum.

Abstract (de)

Die Erfindung betrifft eine Walze 1 mit einem Walzenkern 2, mit einem den Walzenkern 2 umgebenden Walzenmantel 4 und mit einem Kühlkanalsystem 6, durch das ein Kühlmedium zur Kühlung des Walzenmantels 4 leitbar ist, wobei das Kühlkanalsystem 6 wenigstens einen Kühlkanalabschnitt 8 aufweist, der zur Kühlung des Walzenmantels 4 zumindest abschnittsweise in dessen Bereich verläuft, eine Mehrzahl an Kühlkanälen 9 aufweist, wobei das Kühlkanalsystem 6 wenigstens einen in den Kühlkanalabschnitt 8 mündenden Verteilerkanalabschnitt 10 aufweist und jeder Verteilerkanal 11 in Richtung des Walzenmantels 4 in einer Verteilerkammer 22 mündet, von der eine Mehrzahl an Kühlkanälen 9 ausgeht. Die Aufgabe, eine Walze mit einer verbesserten Kühlleistung zur Verfügung zu stellen, wird dadurch gelöst, dass die gesamte Querschnittsfläche des Kühlkanalabschnitts (8) mindestens so groß wie die gesamte Querschnittsfläche des Verteilerkanalabschnitts (10) ist und optional die gesamte Querschnittsfläche des Rückverteilerkanalabschnitts (12) mindestens so groß wie die gesamte Querschnittsfläche des Kühlkanalabschnitts (8) ist.

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EP 1476262 B1 20060628 - VOEST ALPINE IND ANLAGEN [AT]

Cited by
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