

Title (en)

Process and installation for cooling workpieces with gases

Title (de)

Verfahren und Vorrichtung zum Abkühlen von Werkstücken durch Gase

Title (fr)

Procédé et installation pour le refroidissement au gaz de pièces à usiner

Publication

EP 0705907 B1 19991110 (DE)

Application

EP 95114288 A 19950912

Priority

DE 4435862 A 19941007

Abstract (en)

[origin: DE4435862C1] Cooling (esp. quenching) of workpieces by gases takes place in a heat treatment furnace (1) in which the circulating gases are cooled down on cooling surfaces (12) of at least one heat exchanger (11) located in the furnace and joined by piping (13a,13b) to an external heat extraction unit (17) with a liquid cooling medium. The storage volume (20) for a hydrous cooling medium in this unit is kept under a reduced pressure so that at least a part of the hydrous phase of the volume (20) is evaporated for extraction of heat from the heat exchanger (11). The tank (18) for the storage volume is connected to a vacuum pump (24).

IPC 1-7

C21D 1/613

IPC 8 full level

C21D 1/613 (2006.01); **C21D 1/767** (2006.01); **F27D 9/00** (2006.01); **C21D 1/773** (2006.01)

CPC (source: EP)

C21D 1/613 (2013.01); **C21D 1/767** (2013.01); **F27D 9/00** (2013.01); **C21D 1/773** (2013.01); **F27D 2009/0072** (2013.01); **F27D 2009/0089** (2013.01)

Cited by

CN108411083A

Designated contracting state (EPC)

DE FR GB IT

DOCDB simple family (publication)

DE 4435862 C1 19950824; DE 59507217 D1 19991216; EP 0705907 A1 19960410; EP 0705907 B1 19991110

DOCDB simple family (application)

DE 4435862 A 19941007; DE 59507217 T 19950912; EP 95114288 A 19950912