

Title (en)  
VERTICAL MUFFLE TYPE HEAT TREATING FURNACE

Title (de)  
VERTIKALER WÄRMEBEHANDLUNGSOFEN VOM MUFFELTYP

Title (fr)  
FOUR DE TRAITEMENT THERMIQUE DU TYPE A MOUFLE VERTICAL

Publication  
**EP 1498502 A4 20071003 (EN)**

Application  
**EP 03707025 A 20030224**

Priority

- JP 0301996 W 20030224
- JP 2002120037 A 20020423

Abstract (en)  
[origin: EP1498502A1] In a vertical muffle-type heat treating furnace including: a vertically disposed muffle allowing metal strips to be led therein from an upper side to a lower side thereof; a heating zone for heating, from the outside of the muffle, the metal strips passed through the muffle; and a cooling zone disposed at place downstream from the muffle with respect to a moving direction of the metal strips and serving to cool the heated metal strips, the muffle has its upper end fixed to place whereas an extendable muffle elongation adjusting zone is provided which maintains a space between a lower end of the muffle and the cooling zone in a sealed state. <IMAGE>

IPC 1-7  
**C21D 9/56**; C21D 1/00; F27B 5/04; F27B 5/10

IPC 8 full level  
**C21D 1/00** (2006.01); **C21D 9/00** (2006.01); **C21D 9/56** (2006.01); **F27B 5/04** (2006.01); **F27B 5/10** (2006.01); **F27B 9/08** (2006.01); **F27B 1/12** (2006.01); **F27B 7/06** (2006.01); **F27D 99/00** (2010.01); **C21D 9/573** (2006.01); **C21D 9/66** (2006.01); **F27B 9/14** (2006.01); **F27B 9/28** (2006.01)

CPC (source: EP KR)  
**C21D 1/00** (2013.01 - KR); **C21D 9/0043** (2013.01 - EP); **C21D 9/56** (2013.01 - KR); **C21D 9/565** (2013.01 - EP); **F27B 5/04** (2013.01 - KR); **F27B 5/10** (2013.01 - KR); **F27B 9/084** (2013.01 - EP); **F27D 99/0073** (2013.01 - EP); **C21D 9/573** (2013.01 - EP); **C21D 9/66** (2013.01 - EP); **F27B 9/142** (2013.01 - EP); **F27B 9/28** (2013.01 - EP)

Citation (search report)

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Designated contracting state (EPC)  
ES FI GB IT SE

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**EP 1498502 A1 20050119**; **EP 1498502 A4 20071003**; CN 1643169 A 20050720; JP 2003313613 A 20031106; KR 20040101241 A 20041202; WO 03091462 A1 20031106

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**EP 03707025 A 20030224**; CN 03807179 A 20030224; JP 0301996 W 20030224; JP 2002120037 A 20020423; KR 20047013172 A 20030224