

Title (en)  
COOLING AND WARMING SYSTEM

Title (de)  
KÜHLUNGS- UND ERWÄRMUNGSSYSTEM

Title (fr)  
SYSTÈME DE REFROIDISSEMENT ET DE CHAUFFAGE

Publication  
**EP 2564463 A4 20131023 (EN)**

Application  
**EP 11786981 A 20110427**

Priority  
• SE 1050432 A 20100430  
• SE 2011050504 W 20110427

Abstract (en)  
[origin: WO2011149404A1] Cooling and warming system for a device, which system comprises a cooling unit, a warming unit, a temperature sensor adapted to detecting the temperature of the device and to delivering to a control unit a temperature signal based on temperatures detected, and a pipe system arranged to convey a medium for cooling and warming so that the device is respectively cooled and warmed. The system further comprises a reversible pump situated close to the pipe system and adapted to moving the medium in the pipe system in a first direction or in a second direction which is opposite to the first direction, depending on control signals from the control unit. A number of one-way valves are situated close to the respective cooling unit and warming unit in such a way that the flow through the oneway valves passes either the cooling unit or the warming unit, depending on the respective pump direction, the control unit being adapted to delivering to the pump, on the basis of the temperature signal, control signals to pump the medium in a first direction if the device is to be cooled and in a second direction if the device is to be warmed.

IPC 8 full level  
**H01M 10/50** (2006.01); **B60H 1/00** (2006.01); **B60K 11/00** (2006.01); **F01P 5/00** (2006.01); **G05D 23/00** (2006.01)

CPC (source: EP SE US)  
**B60H 1/00278** (2013.01 - EP); **B60H 1/00885** (2013.01 - EP); **B60K 11/00** (2013.01 - SE); **F01P 5/00** (2013.01 - SE); **G05D 23/00** (2013.01 - SE); **H01M 10/486** (2013.01 - EP SE US); **H01M 10/60** (2015.04 - SE); **H01M 10/613** (2015.04 - EP); **H01M 10/615** (2015.04 - EP); **H01M 10/6552** (2015.04 - EP); **B60H 2001/00307** (2013.01 - EP); **B60W 2510/244** (2013.01 - EP); **B60W 2510/246** (2013.01 - EP); **Y02E 60/10** (2013.01 - EP)

Citation (search report)  
• [XY] EP 0675331 A2 19951004 - TOSHIBA KK [JP]  
• [Y] DE 4345532 B4 20080521 - HITACHI LTD [JP], et al  
• [Y] US 2007157647 A1 20070712 - DUHME MARKUS [DE], et al  
• [A] DE 102007017172 A1 20081016 - BAYERISCHE MOTOREN WERKE AG [DE]  
• [AD] WO 2009046269 A2 20090409 - PARKER HANNIFIN CORP [US], et al  
• See also references of WO 2011149404A1

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)  
**WO 2011149404 A1 20111201**; EP 2564463 A1 20130306; EP 2564463 A4 20131023; SE 1050432 A1 20111031; SE 534769 C2 20111213

DOCDB simple family (application)  
**SE 2011050504 W 20110427**; EP 11786981 A 20110427; SE 1050432 A 20100430