

Title (en)
LIQUID-COOLED PISTON

Title (de)
FLÜSSIGKEITSGEKÜHLTER KOLBEN

Title (fr)
PISTON REFROIDI PAR LIQUIDE

Publication
EP 1198667 A1 20020424 (DE)

Application
EP 00949192 A 20000619

Priority
• DE 19930630 A 19990702
• EP 0005633 W 20000619

Abstract (en)
[origin: US2002162448A1] The invention relates to a liquid-cooled piston (10) for internal combustion engines having a cooling duct (16) that has an annular shape or consists of several annular segments, said duct having a substantially constant cross section along its extension and extending in an undulated manner at least in certain areas in the direction of the axis of the piston (18).

IPC 1-7
F02F 3/22

IPC 8 full level
F02F 3/22 (2006.01); **F16J 1/09** (2006.01)

CPC (source: EP US)
F02F 3/22 (2013.01 - EP US)

Citation (search report)
See references of WO 0102713A1

Cited by
DE102016004699A1; US11208943B2; WO2020201745A1

Designated contracting state (EPC)
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)
US 2002162448 A1 20021107; US 6499386 B2 20021231; AT E317497 T1 20060215; BR 0011981 A 20020319; BR 0011981 B1 20100727; DE 19930630 C1 20001026; DE 50012199 D1 20060420; EP 1198667 A1 20020424; EP 1198667 B1 20060208; ES 2256023 T3 20060716; JP 2003526755 A 20030909; PL 198900 B1 20080731; PL 353177 A1 20031103; WO 0102713 A1 20010111

DOCDB simple family (application)
US 3252701 A 20011227; AT 00949192 T 20000619; BR 0011981 A 20000619; DE 19930630 A 19990702; DE 50012199 T 20000619; EP 0005633 W 20000619; EP 00949192 A 20000619; ES 00949192 T 20000619; JP 2001507923 A 20000619; PL 35317700 A 20000619