

Title (en)

COOLING CONTROL DEVICE OF INTERNAL COMBUSTION ENGINE

Title (de)

REGELUNGSVORRICHTUNG FÜR DIE KÜHLUNG EINER BRENNKRAFTMASCHINE

Title (fr)

DISPOSITIF DE COMMANDE DE REFROIDISSEMENT POUR MOTEUR A COMBUSTION INTERNE

Publication

**EP 1035307 A4 20070613 (EN)**

Application

**EP 99912118 A 19990406**

Priority

- JP 9901814 W 19990406
- JP 11153898 A 19980407

Abstract (en)

[origin: EP1035307A1] The cooling controller can prevent the problem such as overheating of the internal combustion engine and, thus, can exhibit a secure fail safe function. A spring member (45) in a coil form is wound round the valve shaft (27) of the butterfly valve (26). Both ends thereof are communicated with a pair of pin members (27a and 27b) standing on the valve shaft (27) respectively. The pin member (27a) which is made of a material which fuses and breaks at a prescribed temperature is fused and broken, when the cooling water is heated up to a prescribed temperature. As a result, one end (45a) of the spring member (45) comes into contact with the communication pin (25a) projecting toward the valve shaft (25) due to the return force of the spring member (45), and due to the counteraction, the valve shaft (27) is caused to rotate in the direction of opening the valve. Consequently, it is possible to circulate the cooling water and, thus, the problem such as overheating of the engine can be prevented.

<IMAGE>

IPC 8 full level

**F01P 7/16** (2006.01); **F16K 1/22** (2006.01); **F16K 17/04** (2006.01); **F16K 17/38** (2006.01); **F16K 31/68** (2006.01); **G05D 23/13** (2006.01);  
**G06Q 50/20** (2012.01); **F01P 7/14** (2006.01)

CPC (source: EP KR)

**F01P 7/16** (2013.01 - EP KR); **F01P 2007/143** (2013.01 - EP); **F01P 2007/146** (2013.01 - EP); **F01P 2023/08** (2013.01 - EP);  
**F01P 2031/32** (2013.01 - EP); **F01P 2031/34** (2013.01 - EP)

Citation (search report)

- [XA] DE 4410249 A1 19941006 - VERNET SA [FR]
- [A] US 5111775 A 19920512 - SUMIDA MAMORU [JP], et al
- [A] US 4453668 A 19840612 - ABEL MARTIN L [US]
- [A] EP 0664383 A1 19950726 - BAYERISCHE MOTOREN WERKE AG [DE], et al
- [A] EP 0485254 A1 19920513 - VERNET PROCEDES SA [FR]
- See references of WO 9951863A1

Cited by

DE102016114492A1; DE102014204485B3; FR2844931A1; EP3186537A4; EP2487346A4; EP3636323A1; US11957943B2; WO2013174587A1;  
EP3279534A1; US10570804B2; WO2020074220A1

Designated contracting state (EPC)

DE ES FR GB IT SE

DOCDB simple family (publication)

**EP 1035307 A1 20000913; EP 1035307 A4 20070613; CA 2289018 A1 19991014; CN 1263582 A 20000816; JP H11294163 A 19991026;**  
KR 20010013250 A 20010226; TW 417006 B 20010101; WO 9951863 A1 19991014

DOCDB simple family (application)

**EP 99912118 A 19990406; CA 2289018 A 19990406; CN 99800478 A 19990406; JP 11153898 A 19980407; JP 9901814 W 19990406;**  
KR 19997011241 A 19990406; TW 88104027 A 19990316