

Title (en)

Overpressure valve device for the cooling circuit of a water-cooled internal combustion engine.

Title (de)

Überdruckventileinrichtung für den Kühlkreislauf einer flüssigkeitsgekühlten Brennkraftmaschine.

Title (fr)

Dispositif de soupape de surpression pour un circuit de refroidissement d'un moteur à combustion interne refroidi par liquide.

Publication

**EP 0520135 B1 19940907 (DE)**

Application

**EP 92101780 A 19920204**

Priority

DE 4121086 A 19910626

Abstract (en)

[origin: EP0520135A1] The invention proposes a pressure-relief valve device for the cooling circuit of a liquid-cooled internal combustion engine for the purpose of limiting the pressure during the operation of the internal combustion engine and limiting a higher pressure with the internal combustion engine switched off. The device has a two-stage pressure-relief valve (10) which opens automatically to the environment at operating pressure in a first stage and at a higher pressure in a subsequent stage. In a valve piston (22) which opens in the second stage, the valve (10) contains an inner piston (51) which can be displaced relative to the first piston counter to its own return spring (54), opens when the operating pressure is reached and closes when the latter is exceeded. The valve is simple, compact and inexpensive and, with the inner piston (51), makes possible limitation of the operating pressure, the said piston simultaneously ensuring, by closing when the operating pressure is exceeded, the attainment of the maximum pressure, which is limited by opening the valve piston (22) to prevent damage in the cooling system and loss of coolant.  
<IMAGE>

IPC 1-7

**F01P 11/02**; B65D 51/00

IPC 8 full level

**B65D 51/00** (2006.01); **F01P 3/22** (2006.01); **F01P 11/02** (2006.01)

CPC (source: EP)

**F01P 3/2207** (2013.01); **F01P 11/0238** (2013.01); **F01P 11/029** (2013.01)

Cited by

EP2105152A1; CN101858450A; CN103363170A; CN103032612A; US6367644B1; US7152555B2; WO9928605A1; US6886503B2; US6532910B2; US8512010B2; US9644622B2

Designated contracting state (EPC)

DE FR GB IT

DOCDB simple family (publication)

**EP 0520135 A1 19921230**; **EP 0520135 B1 19940907**; DE 4121086 A1 19930114; DE 4121086 C2 19930519; DE 59200458 D1 19941013

DOCDB simple family (application)

**EP 92101780 A 19920204**; DE 4121086 A 19910626; DE 59200458 T 19920204