

Title (en)

Starting aid method and apparatus for internal combustion engine

Title (de)

Kaltstarthilfeverfahren und -vorrichtung für Verbrennungsmotor

Title (fr)

Procédé et dispositif d'aide au démarrage à froid de véhicules automobiles

Publication

EP 0775822 B1 20030102 (FR)

Application

EP 96402432 A 19961114

Priority

FR 9514062 A 19951123

Abstract (en)

[origin: EP0775822A1] The method employs a burner (5) acting directly on a gas-liquid heat exchanger (6) integrated into the coolant circuit (7) of the engine (1) and installed in the exhaust pipe (8). The coolant is pumped (2) also through an oil cooler (3), a heater (4) in the passenger accommodation, and a radiator (10) having an inlet thermostat (9). The burner operates while the engine is cold (i.e. coolant temperature is below about 50 degrees C), for a limited duration depending on ambient temperature and engine load. Heat recovery of the order of 10 kW is claimed in the coolant circuit of an average engine, whose warm-up time is halved and the passenger heater benefits by an average of 5 kW.

IPC 1-7

F02N 17/06

IPC 8 full level

F02N 19/10 (2010.01)

CPC (source: EP US)

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Citation (examination)

DE 3341097 A1 19850523 - VOLKSWAGENWERK AG [DE]

Cited by

CN102359429A; CN111765029A; EP0895886A1; FR2766763A1

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EP 0775822 A1 19970528; EP 0775822 B1 20030102; DE 69625578 D1 20030206; FR 2741675 A1 19970530; FR 2741675 B1 19980102; US 6047676 A 20000411

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