

Title (en)

TWIN-STAGE EXHAUST TURBOCHARGING FOR AN INTERNAL COMBUSTION ENGINE

Title (de)

ZWEISTUFIGE ABGASTURBOAUFLADUNG FÜR EINE BRENNKRAFTMASCHINE

Title (fr)

SYSTÈME DE TURBOCOMPRESSEUR À GAZ D'ÉCHAPPEMENT À DEUX ÉTAGES POUR MOTEUR À COMBUSTION INTERNE

Publication

**EP 2334919 A1 20110622 (DE)**

Application

**EP 09778488 A 20090911**

Priority

- EP 2009006613 W 20090911
- DE 102008052170 A 20081017

Abstract (en)

[origin: WO2010043292A1] Twin-stage exhaust turbocharging (1) for an internal combustion engine (2) with an exhaust manifold (2a), wherein the exhaust turbocharging (1) has a first (4) and a second (5) parallel high-pressure turbocharger and a sequential low-pressure turbocharger (3) arranged in the flow direction of the exhaust from the internal combustion engine (2), wherein the second high-pressure turbocharger housing (5a) and the low-pressure turbocharger housing (3a) are connected together such that the exhaust gas flows between them. The two high-pressure turbocharger housings (4a, 5a) maybe arranged on the exhaust manifold (2a) connected on one side to the exhaust manifold (2a) and to the low-pressure turbocharger housing (3a) on the other side and The exhaust from The high-pressure turbocharger housings (4a, 5a) is led to the low-pressure turbocharger housing (3a) by means of a flow channel (13) in or on the exhaust manifold (2a). Said design of the twin-stage exhaust turbocharging achieves a compact construction and a cost advantage.

IPC 8 full level

**F02B 37/007** (2006.01); **F02B 37/013** (2006.01); **F02B 37/02** (2006.01)

CPC (source: EP US)

**F02B 37/001** (2013.01 - EP US); **F02B 37/004** (2013.01 - EP US); **F02B 37/007** (2013.01 - EP US); **F02B 37/013** (2013.01 - EP US);  
**F02B 37/02** (2013.01 - EP US); **F02B 37/12** (2013.01 - EP US); **F02B 37/16** (2013.01 - EP US); **F01N 13/107** (2013.01 - EP US);  
**Y02T 10/12** (2013.01 - EP US)

Citation (search report)

See references of WO 2010043292A1

Cited by

GB2534900A

Designated contracting state (EPC)

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 SE SI SK SM TR

Designated extension state (EPC)

AL BA RS

DOCDB simple family (publication)

**DE 102008052170 A1 20100422; DE 102008052170 B4 20230126**; EP 2334919 A1 20110622; JP 2012505989 A 20120308;  
US 2011185724 A1 20110804; US 8453447 B2 20130604; WO 2010043292 A1 20100422

DOCDB simple family (application)

**DE 102008052170 A 20081017**; EP 09778488 A 20090911; EP 2009006613 W 20090911; JP 2011531372 A 20090911;  
US 201113086520 A 20110414