

Title (en)  
INTERNAL COMBUSTION ENGINE HAVING TWO-STAGE SUPERCHARGING

Title (de)  
BRENNKRAFTMASCHINE MIT ZWEISTUFIGER AUFLADUNG

Title (fr)  
MOTEUR À COMBUSTION INTERNE AVEC SURALIMENTATION À DEUX ÉTAGES

Publication  
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Application  
**EP 11708714 A 20110304**

Priority  
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Abstract (en)  
[origin: WO2011110314A1] The invention relates to an internal combustion engine, in particular for a motor vehicle, comprising a fresh air tract (12) for feeding fresh air to working cylinders (10) of the internal combustion engine, an exhaust gas tract (14) for discharging exhaust gas (21) from the working cylinders (10), a first exhaust gas turbocharger (16) of a low-pressure stage (low-pressure exhaust gas turbocharger), wherein said first exhaust gas turbocharger has a first turbine (26) (low-pressure turbine) disposed in the exhaust gas tract (14) and a compressor (36) (low-pressure compressor) disposed in the fresh air tract (12), and at least one second exhaust gas turbocharger (18) of a high-pressure stage (high-pressure exhaust gas turbocharger), wherein said second exhaust gas turbocharger has a second turbine (24) (high-pressure turbine) disposed in the exhaust gas tract (14) upstream of the first turbine (26) and a second compressor (38) (high-pressure compressor) disposed in the fresh air tract (12) downstream of the first compressor (36). At least one of the turbines (24, 26) has a variable turbine geometry (68) (VTG).

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Citation (search report)  
See references of WO 2011110314A1

Citation (examination)  
• JP 2006057570 A 20060302 - TOYOTA MOTOR CORP  
• WO 2007040071 A1 20070412 - ISUZU MOTORS LTD [JP], et al

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