

Title (en)  
APPARATUS FOR CONTROLLING AN INTERNAL COMBUSTION ENGINE HAVING AN EXHAUST-GAS TURBOCHARGER AND AN EXHAUST-GAS RECIRCULATION APPARATUS

Title (de)  
VORRICHTUNG ZUM STEUERN EINER BRENNKRAFTMASCHINE MIT ABGASTURBOLADER UND ABGASRÜCKFÜHRVORRICHTUNG

Title (fr)  
SYSTEME DE COMMANDE D'UN MOTEUR A COMBUSTION INTERNE DOTE D'UN TURBOCOMPRESSEUR ET D'UN DISPOSITIF DE RECYCLAGE DES GAZ D'ECHAPPEMENT

Publication  
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Application  
**EP 06725368 A 20060328**

Priority  
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Abstract (en)  
[origin: WO2006106058A1] An internal combustion engine has an exhaust-gas turbocharger which comprises an exhaust-gas turbocharger actuator. Furthermore, it has an exhaust-gas recirculation device which comprises an exhaust-gas recirculation valve. An apparatus for controlling the internal combustion engine comprises an exhaust-gas turbocharger regulator which, as a function of the setpoint boost pressure (BP\_SP) and an actual boost pressure (BP\_AV), determines a controlled actuating-variable exhaust-gas back-pressure (FB\_SG\_PEXH). An exhaust-gas recirculation regulator is provided which, as a function of a setpoint air mass flow (MAF\_SP) and an actual air mass flow (MAF\_AV), determines a controlled actuating-variable exhaust-gas recirculation mass flow (FB\_SG\_EGR). A first decoupling unit is configured to determine a decoupling mass flow (MF\_DEC) in an exhaust-gas section upstream of a branch of the exhaust-gas recirculation device, to be precise as a function of the pilot-control actuating-variable exhaust-gas recirculation mass flow (PRE\_SG\_EGR) and the controlled actuating-variable exhaust-gas recirculation mass flow (FB\_SG\_EGR). A second decoupling unit is provided which determines a decoupling exhaust-gas back-pressure (PEXH\_DEC), to be precise as a function of the pilot-control actuating-variable exhaust-gas back-pressure (PRE\_SG\_PEXH) and the controlled actuating-variable exhaust-gas back-pressure (FB\_SG\_PEXH). A first conversion unit is configured to determine an actuating signal (ATL\_S\_SIG) for the exhaust-gas turbocharger actuator as a function of the pilot-control actuating-variable exhaust-gas back-pressure (PRE\_SG\_PEXH), the controlled actuating-variable exhaust-gas back-pressure (FB\_SG\_PEXH) and the decoupling mass flow (MF\_DEC). A second conversion unit is provided which determines an actuating signal (S\_SIG\_EGR) for the exhaust-gas recirculation valve as a function of the pilot-control actuating-variable exhaust-gas recirculation mass flow (PRE\_SG\_EGR), the controlled actuating-variable exhaust-gas recirculation mass flow (FB\_SG\_EGR) and the decoupling exhaust-gas back-pressure (PEXH\_DEC).

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