

Title (en)
MULTI-FUNCTIONAL MODULE FOR AN INTERNAL COMBUSTION ENGINE OF A MOTOR-VEHICLE

Title (de)
MULTIFUNKTIONSMODUL FÜR EINE BRENNKRAFTMASCHINE EINES KRAFTFAHRZEUGS

Title (fr)
MODULE MULTIFONCTIONNEL POUR UN MOTEUR À COMBUSTION INTERNE D'UN VÉHICULE AUTOMOBILE

Publication
EP 3232043 B1 20180606 (EN)

Application
EP 16165369 A 20160414

Priority
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Abstract (en)
[origin: EP3232043A1] A multi-functional module (1) for an internal combustion engine (E) of a motor-vehicle incorporates a part of an exhaust gas recirculation system and a part of an engine cooling circuit. The multi-functional module comprises a central structural element, with a metal body having a face (P6) for attachment to an end face of the cylinder head (T) of the engine (E). The body has a configuration elongated along a direction which is perpendicular to the longitudinal direction of the cylinder head (T). A conduit (6) for circulation of the exhaust gases and a conduit (7) for circulation of the engine coolant are formed within said metal body. The module also comprises an EGR valve unit (3), which is mounted on a first end face (P3) of said body and a heat exchanger (4) for cooling the exhaust gases, said heat exchanger (4) being mounted on a second end face (P2) opposite to said first end face (P3). The EGR valve unit (3) is operatively positioned along the conduit (6) for the exhaust gases in a position which is upstream of said heat exchanger (4), in such a way that the exhaust gases pass through said EGR valve unit (3) when this is in an opened condition, before being cooled in the heat exchanger (4). The exhaust gases can leave the module without passing through the heat exchanger (4), flowing in a by-pass conduit (65) controlled by a by-pass valve (13). The by-pass valve (13) is controlled by a vacuum actuator (14). Such actuator is operated by means of a vacuum source external to the module (1). So the module (1) is deprived of a vacuum tank, with the resulting advantage of a lower bulk.

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