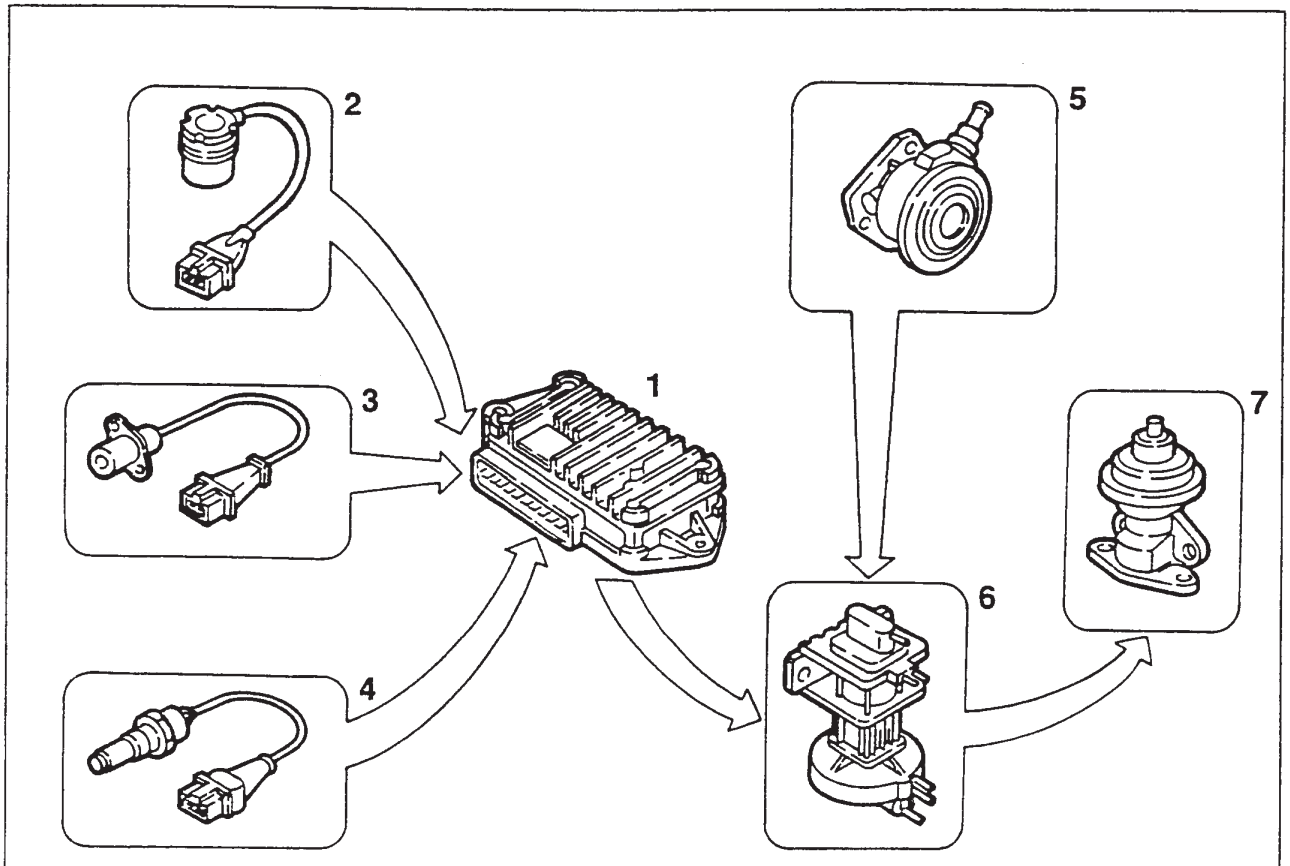
GENERAL DESCRIPTION

This system makes it possible to send to the intake part (5 ÷ 15%) of the exhaust gas, under determinate operating conditions of the engine.
This way the fuel mixture is diluted with the inert gases lowering the temperature peak in the combustion chamber: this reduces the formation of nitric oxides (NOx), thereby reducing them by 30 ÷ 50% at the exhaust.
The recirculation of burnt gas is only allowed at medium-low loads, when the air-fuel ratio is very high and engine operation is not adversely affected by the presence of inert gas instead of air.
The recirculation system is controlled by a control unit (1) which at the input receives signals of the potentiometer (2) on the acelerator lever and from the rpm sensor (3) and coolant temperature sensor (4), and at the output it supplies a command signal for the modulating solenoid valve (Borg Warner) (6) for E.G.R. control.
The latter is connected with the environment through a filter and on the basis of the command signal received it transmits more or less vacuum, leading from the servobrake air pump (5), to the E.G.R. valve (Pierburg) (7).
This valve, if the vacuum is sufficient, opens, putting the exhaust manifold into communication with the intake box.
It is then possible to send the quantity of recirculated gas adjusting the opening of the E.G.R. valve continuously using the maps of the degree of opening in relation to the signals received.



1. *Electronic control unit*
2. *Accelerator lever potentiometer*
3. *Rpm sensor*
4. *Engine coolant fluid temperature sensor*
5. *Servobrake air pump*
6. *E.G.R. control modulating solenoid valve (Borg Warner)*
7. *E.G.R. valve (Pierburg)*