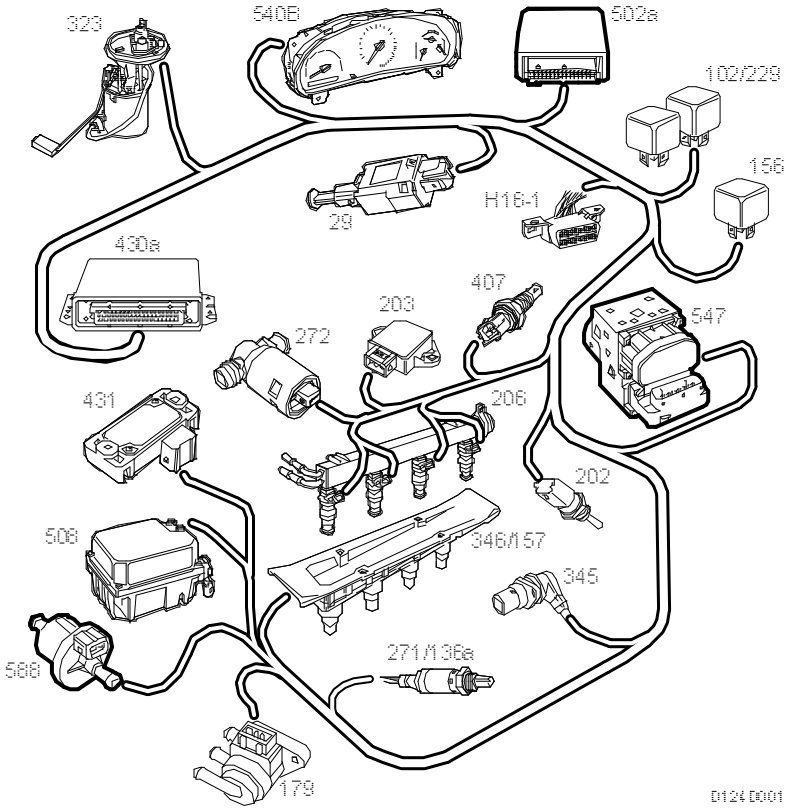
## System overview, Saab Trionic




*Saab Trionic Engine Management System*

Saab Trionic is an engine management system that controls ignition, fuel injection and boost pressure. The system was introduced in 1994 on the Saab 900. A number of modifications have been made since 1994.

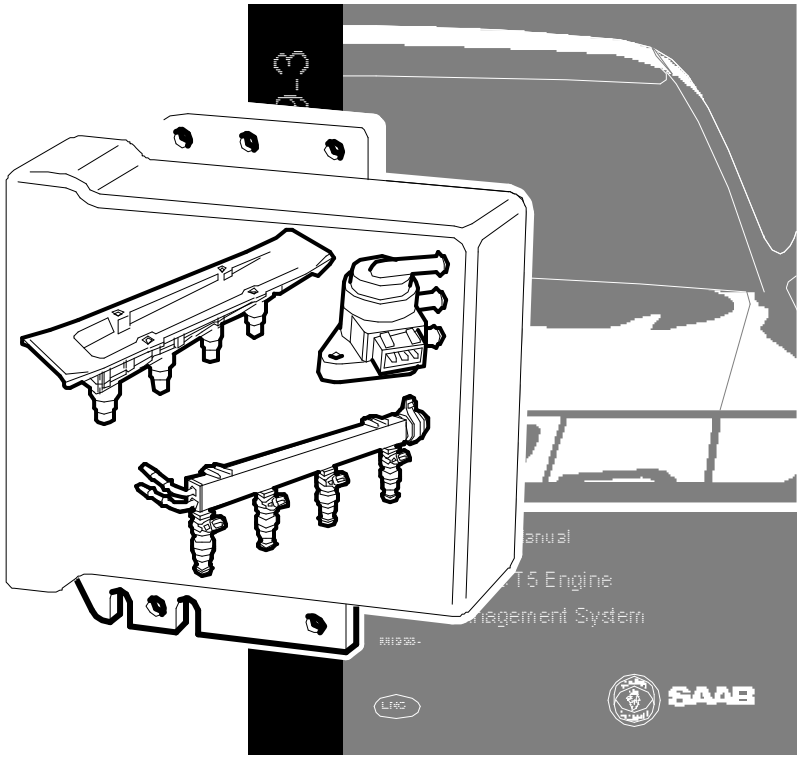
1995: 4-wire oxygen sensor. K-lead connected via VSS to enable immobilizer (when such and alarm is installed).

1996: OBDII diagnostics for USA and Canada.

1996.5: Leak diagnostics for EVAP system on OBDII variant.

1998.5 (Saab 9-3): K-lead connected via MIU to enable immobilizer from TWICE. Fuel pump powered from main relay. A/C request from MIU. Oxygen sensor preheating powered from main relay. SID messages for leaks in EVAP system on OBDII variants.

1999: new engine variant B204R and B204E without charge air control. Cars with B204E engine for Swedish market have OBDII diagnostics and ORVR (On board Refueling Vapor Recovery system), a system that disposes of fuel vapour when refuelling.

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Saab Trionic"s ignition system comprises an ignition discharge module with four ignition coils, one for each spark plug. The ignition system is capacitive. The spark plugs are used as sensors to detect combustion and knocking. This means that neither camshaft sensor not knock sensor is required. The function provides an efficient means of detecting misfiring.

Fuel injection is sequential and is governed by the pressure in the intake manifold.

Boost pressure control (L and R engines) is achieved with a solenoid valve connected to the turbocharger wastegate.