

WARNING

- Connect and disconnect ignition system wires, multiple connectors, and ignition test equipment leads only while the ignition is off. Do not touch or disconnect any of the high tension cables from the coil, distributor, or spark plugs while the engine is running or being cranked by the starter.
- Before operating the starter without starting the engine (as when making a compression test), always disable the ignition as described below.
- Inefficient combustion can overload the catalytic converter with raw fuel, leading to converter overheating or plugging. An overheated catalytic converter can be a fire hazard.

CAUTION

- Do not conduct ignition system tests with a test lamp that uses a normal incandescent bulb. The high electrical consumption of these test lamps may damage the electronic components.
- Do not connect test instruments with a 12-volt supply to terminal 15 (+) of the ignition coil. The voltage backflow can damage the ignition control unit.
- Do not connect terminal 1 of the coil to ground as a means of preventing the engine from starting (for example, when installing or servicing anti-theft devices).
- Do not disconnect terminal 4 (center terminal) from the coil or remove the distributor cap to disable the ignition.
- Do not disconnect the battery while the engine is running.

On-board Diagnostics (EZK ignition only)

The EZK ignition system features built-in diagnostic circuitry that detects and stores in memory coded information about system faults. These fault codes can be "read-out" through flashes of the **Check Engine** light. Before troubleshooting an EZK fault and a flashing Check Engine light, check for broken or loose engine mounts or brackets.

NOTE

- As a general rule, a steady-on Check Engine light means the LH control unit has detected a fault. A flashing Check Engine light means that the EZK Ignition system has detected a fault. As an exception to the rule, the Check Engine light on 1992 models does not flash. Therefore, a steady-on Check Engine light on these models could be either a EZK system fault or an LH fuel system fault.
- On 1989 models with EZK only, the Check Engine light may flash intermittently due to a faulty EZK control unit. Check for a control unit date code of "945" or lower (see Fig. 13 for control unit location). The date code is stamped on the unit next to the connector housing. If the control unit is within these dates codes, see an authorized Saab dealer for additional information on correcting this fault.

On 1986-1991 models, start the engine and allow it to reach operating temperature. Briefly raise engine speed above 2000 rpm. Count the number of times the check engine light flashes before repeating the flashing code. The number of times the Check Engine light flashes determines the fault in the system.

EZK Check Engine light fault diagnosis

- three flashes—EZK control unit internal fault*
- four flashes — fault in the knock sensor, sensor wiring, or EZK control unit
- five flashes — faulty input signal from LH control unit.

*This code is applicable to 1989 and later models only.

NOTE

If the wiring harness to the EZK knock sensor is defective, a replacement wire harness is available from an authorized Saab dealer. This harness eliminates the need to replace the entire engine harness.

Test Equipment

Many of the tests of ignition system components require the use of high-impedance test equipment to prevent damage to the electrical components. A high-impedance digital multimeter should be used for all voltage and resistance tests. An LED test light should be used in place of an incandescent-type test lamp.

Many tests require checking for voltage, continuity, or resistance at the terminals of the components' harness connectors. The blunt tips of a multimeter's probes can spread open the small connector terminals and cause poor connections. To prevent damage, use flat male connectors to probe the harness connector terminals.

Disabling Ignition System

To prevent the engine from starting and to prevent the presence of dangerous voltages, the ignition system should be disabled anytime work is done on the ignition system. The ignition system should also be disabled any time work is being done in the engine compartment with the ignition key on or if the starter needs to be operated without running the engine, such as when making an engine compression test.

Disabling the ignition system is easily accomplished by disconnecting the Hall sensor connector. On all 1985-1988 models and 1989 and later Turbo models, disconnect the Hall sensor connector from the side of the distributor. On 1989 and later models with EZK ignition, the Hall sensor is mounted behind the crankshaft pulley. To disconnect the sensor connector, follow the wiring harness up from the sensor until you reach the connector in the engine compartment. See Fig. 3.