

Ken's Digifant Page

What is "Digifant"?

Digifant is the name Volkswagen gave to its in-house derivative of the Bosch L-Jetronic computerized engine control system. The system tightly controls fuel delivery and spark to balance exhaust emissions and fuel economy with acceptably high performance.

Every A2 series 8-valve Golf, Jetta, Corrado and Cabriolet manufactured from late 1987 through the end of the model run in 1992 has it.

Digifant has also been used in Vanagons since 1986 and was still in use in [Type 1 Beetles up to 1999](#).

The Digifant system resides inside a tough plastic box, the Electronic Control Unit (ECU). The ECU is located in the air plenum on the left side of the engine compartment under the windshield.

Through a large mutli-pin data cable, the ECU receives data from a network of sensors around the engine and uses the incoming data to control fuel injection pulses, engine spark timing and idle speed.

Sensors

Like L-Jetronic, Digifant measures the volume of air being sucked into the engine with an air flow sensor. The air flow temperature sensor informs the computer of the ambient temperature. Throttle position is reported by switches on the throttle body which indicate closed or wide-open throttle (WOT). The blue sensor in the cylinder head coolant neck reports coolant temperature (the brown sensor right behind it feeds the temperatur gauge in the dash. An oxygen sensor in the exhaust stream reports

exhaust gas composition.

Unlike L-Jetronic, the Digifant Hall sender on the distributor reports distributor position and the knock sensor on the side of the engine block detects detonation (ping), allowing dynamic control of ignition timing.

In addition, the ECU receives information about engine speed and battery voltage.

ECU Arcana

If you have specific details about Digifant micro-processors, boards, software versions and other computer innards, please [contact me](#).

What cars have Digifant?

Several VW engines are equipped with the Digifant Engine Management System.

The 1.8 liter 8-valve RV-code engine found in late 1987 through 1992 A2s is the most common, making 100 HP @ 5400 RPM and 107 Ft.-Lbs. of torque @3400 RPM.

The 1.8 liter 8-valve PF-code engine makes 105 hp @ 5400 RPM and 110 Ft.-Lbs. @3400 RPM. The PF engine makes 5 extra horsepower and 3 extra foot pounds of torque over the RV engine due to its less restrictive double take down exhaust manifold (the so-called double down pipe). For more discussion, see [Digifant Performance Modifications](#).

Other Digifant engines include:

ABG	1990-1993 Fox
2H	1990-1992 Cabriolet
PG	1989-1992 Corrado G60
MV	Vanagon

See the [Interesting Internet Links](#) section for more oddball Digifant applications.

Digifant I and Digifant II

Digifant I -- The Digifant I system is found in the Vanagon, the Corrado G-60 and all 1991 and 1992 California-specification Golfs and Jettas.

Digifant I uses adaptive control and has an On Board Diagnosis (OBD) component which can store fault codes. See the Bentley manual for how to read fault codes from Digifant I.

Digifant II -- Found on later 1987 Golfs and Jettas. Found on all Canadian and US (except California) Golfs and Jettas from 1988 to 1992. The Digifant II computer does not use adaptive control and does not store fault codes.

Digifant At A Glance

It is easy to spot a Digifant engine. Unlike Bosch CIS or CIS-E systems, Digifant has no fuel distributor or braided metal hoses running from the fuel distributor to the injectors. Look for the alloy air flow sensor and black plastic air filter box on the right side of the engine compartment. A characteristic fuel rail feeds each injector behind and just below the valve cover.

Digifant?

On the Usenet discussion group rec.autos.makers.vw.watercooled, Digifant has been perceived by many as the least desirable VW fuel injection system.

Reported driveability problems and restricted performance potential get Digifant a bad rap from owners who have either not found a competent mechanic or can't perform fairly easy troubleshooting and maintenance themselves.

In the real world, mechanics who know or care much about Digifant systems are rare, especially at dealerships.

Common complaints with Digifant include poor throttle response, hesitation on throttle tip-in and lean-surge. Less common are stalling, hard starts and erratic idle.

Since Digifant has been around since the 1980s, age, mileage and hard use are now also taking their toll on many cars.

A hasty and probably ineffective solution to Digifant driveability complaints is to replace the ECU. But ECU problems are rarely to blame for most driveability or starting problems. Several other components, many common to non-Digifant systems, are more likely culprits. Check them out before considering replacing the Digifant ECU.

[Digifant Tune Up](#)

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