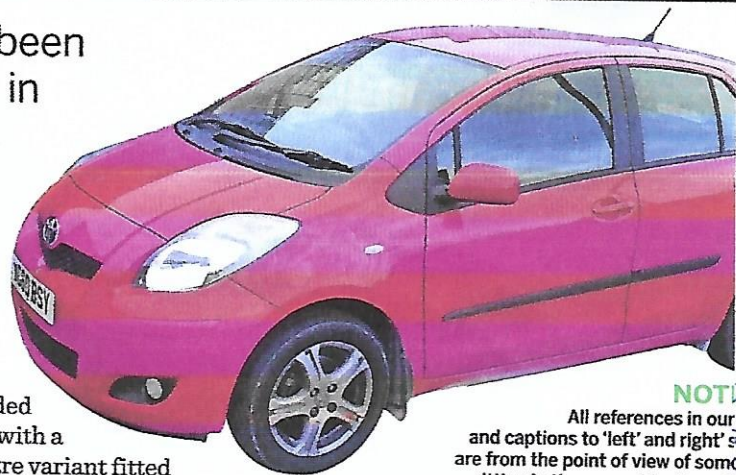


# Electronic Diagnostics

TOYOTA  
YARIS  
1.3 VVT-i

Tracing and fixing faults in electronic engine management systems

Toyota's compact Yaris has always been highly praised by owners and those in the motor trade, not least because it has an excellent reputation for its mechanical reliability. **Kim Henson** and **Edward Hagg** lift the lid on its diagnostic aspects.



**NOTE**  
All references in our text and captions to 'left' and 'right' sides are from the point of view of someone sitting in the car and looking ahead.

**R**eplacing the much-liked Starlet, the first-generation Toyota Yaris arrived in the spring of 1999 for UK buyers, who could choose between three- and five-door hatchbacks. The newcomer's styling was derived from that of Toyota's 'Funtime' concept car, first shown at the 1997 Frankfurt Motor Show, with the production model making its debut at the 1998 Paris Motor Show. In Europe, the Yaris was only offered in hatchback form, but saloon and coupé versions were sold elsewhere in the world.

Safety and environmental performance were taken very seriously by Toyota in developing the vehicles, all of which, at launch, were fitted with a 998cc 16-valve four-cylinder engine – which won the first International Engine of the Year Award. In the autumn of 1999, a 1.3-litre VVT-i (Variable Valve Timing with

intelligence) engine was added to the line-up, with a 'stroked' 1.5-litre variant fitted to the class-beating Yaris T-Sport of 2001. All-aluminium, 1.4-litre common-rail diesel engines were offered from the spring of 2002.

Larger second-generation models developed at Toyota's ED2 base in France came along in January 2006. The new cars had more spacious interiors and were intended to be more sophisticated and refined. In addition they incorporated modular rear seats that could be slid forwards and backwards by up to 150mm (six inches) to vary available space between passengers and luggage.

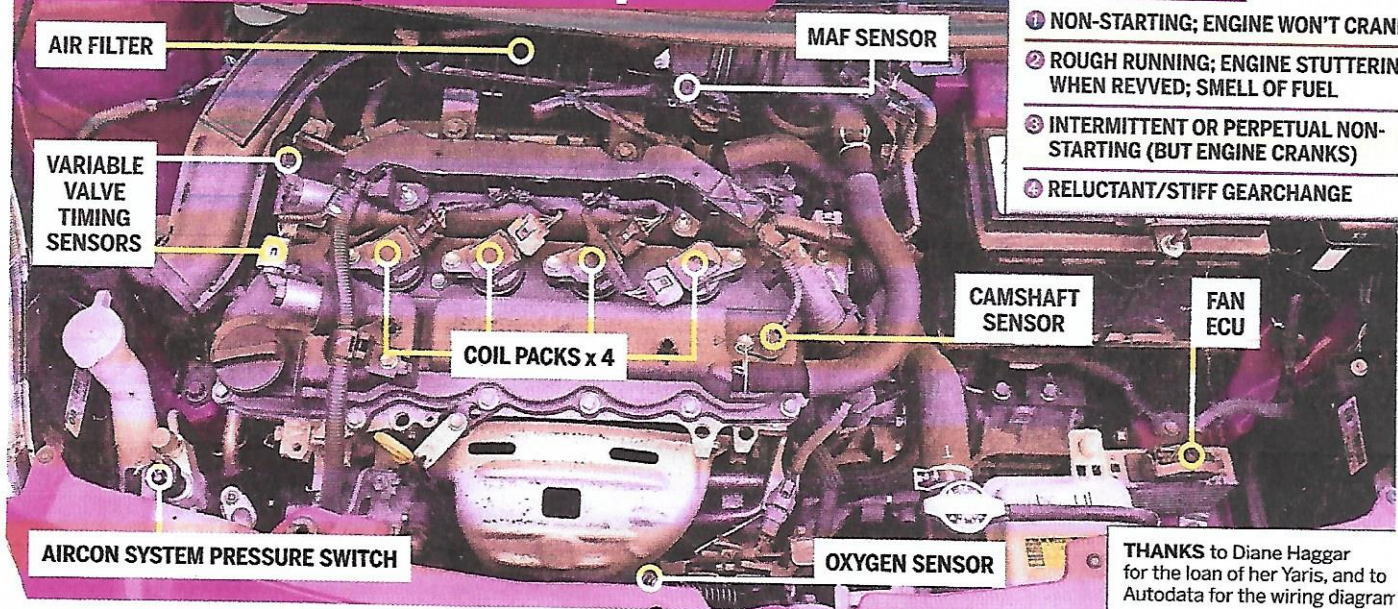
Importantly, the new Yaris provided much-improved collision protection, gaining the highest possible five-star rating in the Euro NCAP crash test.

Engine choices were 1.0- and 1.3-litre petrol units (the 1.3 motor was brought forward from the first-generation models), plus an updated 1.4-litre diesel unit. The sporty SR 1.8 was introduced in February 2007.

Two years later, the range was updated and a new 1.3-litre Dual VVT-i engine arrived, equipped with a stop/start system mated to a six-speed gearbox. Revised third-generation Yaris models ousted the second-generation cars in 2011.

Our car for this feature is a 2010 1.3-litre petrol model, with engine code FFZ. A Denso management system is employed. Our guide to this model's engine and its system is Edward Hagg

## 1329cc four-cylinder 16v petrol



### TYPICAL FAULTS

- 1 NON-STARTING; ENGINE WON'T CRANK
- 2 ROUGH RUNNING; ENGINE STUTTERING WHEN REVVED; SMELL OF FUEL
- 3 INTERMITTENT OR PERPETUAL NON-STARTING (BUT ENGINE CRANKS)
- 4 RELUCTANT/STIFF GEARCHANGE

AIR FILTER

MAF SENSOR

VARIABLE VALVE TIMING SENSORS

COIL PACKS x 4

CAMSHAFT SENSOR

FAN ECU

AIRCON SYSTEM PRESSURE SWITCH

OXYGEN SENSOR

THANKS to Diane Hagg for the loan of her Yaris, and to Autodata for the wiring diagram