HEAT SOAK is considered to be one of the biggest problem with modern fuel injected bikes. Combine this with the issue of leaving fuel in the injectors to go stale over the winter months, it's know wonder problems are starting to arise.

Remember Fuel injected bikes have only really become mainstream in the last 5 or 6 years, so problems are only just beginning to become obvious. It is the general opinion that it only takes a few thousand miles to necessitate the need for an injector service.

So what ever you ride, old or new, high mileage or low, there is a very good chance your injectors have some varnish contamination that is affecting there performance, and therefore the performance of your bike.

Do you recognise these symptoms ?

Starting - Will not start properly or starts badly
(usually with a puff of black smoke after the engine starts, Due to dribbling Injectors - common with RSV1000)

Idling - Lumpy tickover, Uneven idling

Performance - Lacking/Loss of power, flat spots, snatchy throttle at small openings.

Economy - Poor fuel consumption, expensive to run

Ride ability - Rides poorly, hesitates, engine 'pinks'

Emissions - High hydrocarbons and CO (where possible, its difficult to adjust)

Lambda Failure - Lacquering up, slow in response

Catalyst Failure - Failing or breaking up but no cause found

SUPERBIKE SURGERY LTD

Japanese Superbike Specialist

Mobile SERVICING, REPAIRS, SALES & ACCESSORIES

What is heat soak?

HEAT SOAK is just one of a number of processes that create injector problems, along with fuel quality and fuel designs, it is possibly the Biggest cause of injector problems, yet there is still no real answer to the problem, the injector must be close to the engine to deliver the fuel in a very specific vapour form.

The **HEAT SOAK** is a process, caused when the injectors and in particular the pintle head of the injectors, are exposed to very high temperatures created by the engine. Because of the location of the injector, when the engine is switched off and the injector remains closed, a small residual amount of fuel remains on the pintle end of the injector.

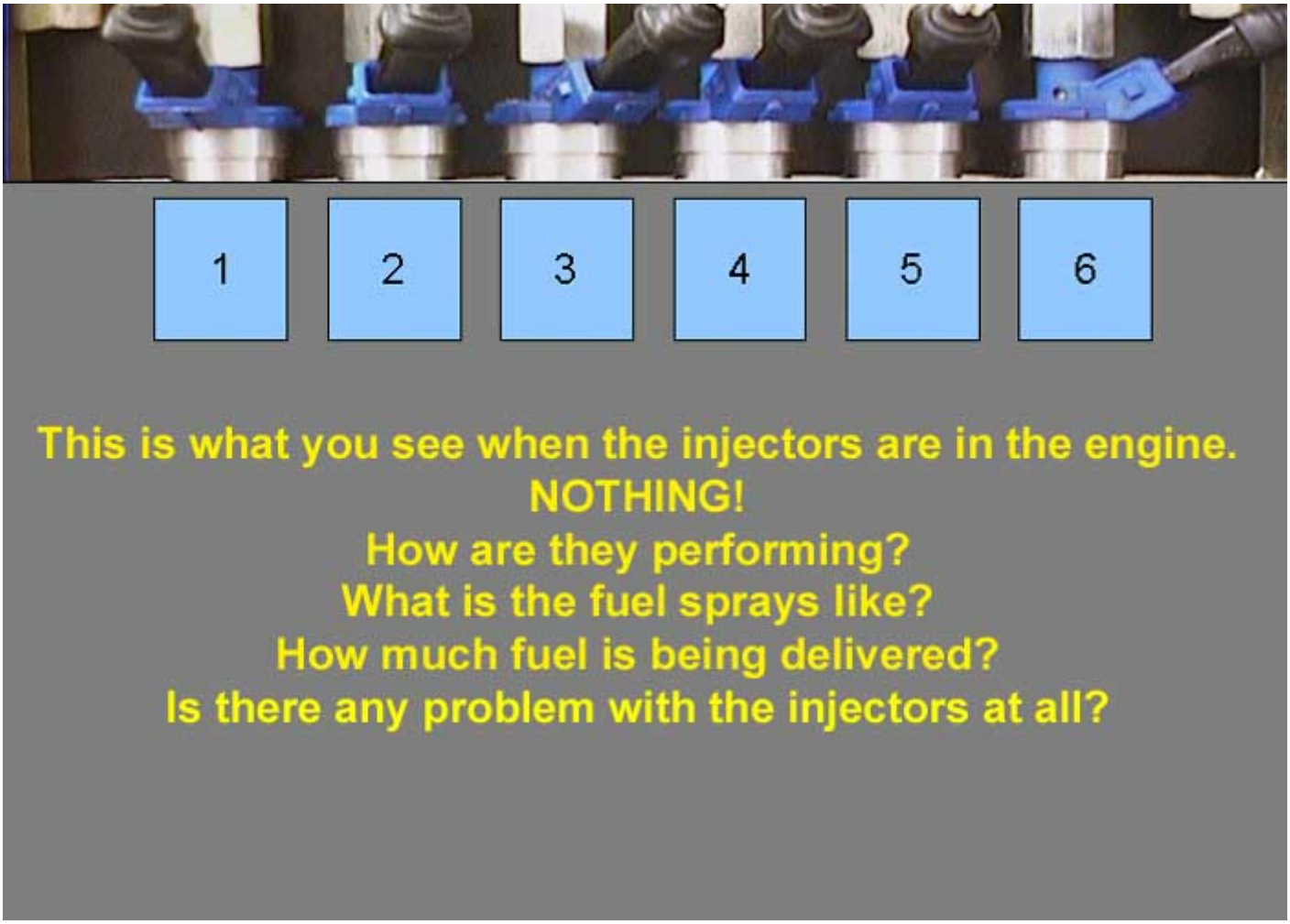
The heat from the engine evaporates this residual fuel, leaving microscopic layers of lacquers, waxes and varnishes from the fuel's chemical additives, on not only the tip and seats of the injector but also on the inner walls and pintle valve of the injector.

This drying process produces a fine layer of hard, "baked on", difficult to see and difficult to remove chemical coating. A small amount of this coating (we call it contamination) can affect the travel and seating of the pintle, which in turn will affect the fuel delivery, the fuel distribution and the atomisation, resulting in combustion related problems.

With the latest generation of lambda controlled engine management systems, a matched balanced set of injectors is critical to the engines correct performance and operation.

Fuel Injector Performance

The injector in the engine.



Fuel Spray Management

You Can't fix what you can't see. What is correct?

Fuel Spray Management
See the cause, understand the problem.

Fuel Spray Management
Patterns Types & Designs

The Spray Pattern has two major functions;

1. To distribute the fuel evenly to a specific point.

2. To atomise the fuel evenly at a specific point.

In the event that the distribution or atomisation should change, the mixture in the combustion chamber will also change, resulting in idling, performance, economy and emission problems. On simultaneous injection systems, the spray was regarded as important, on sequential injection systems, the spray pattern performance is critical to the correct running of the engine and the function of the emission control components.

Injector Filter Baskets

How often do you change the Injector Filters?

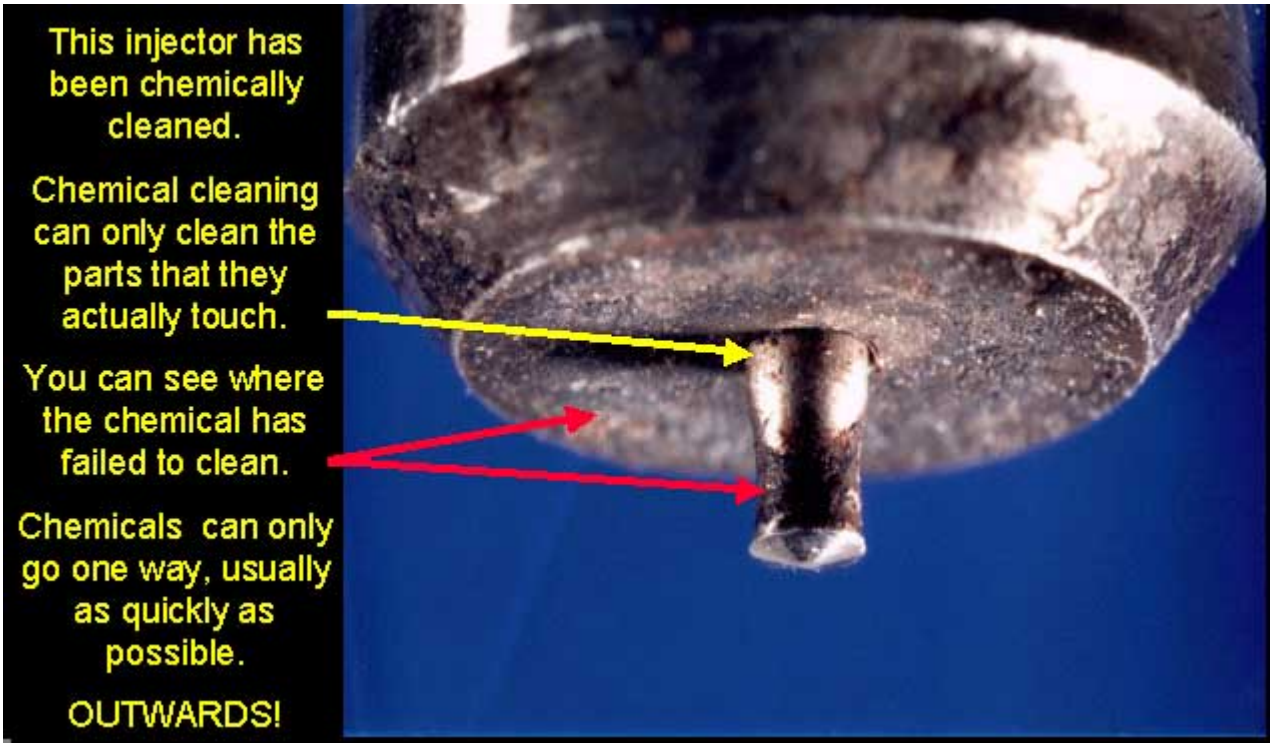
The Injector Valve has the finest tolerances of any mechanical component on the engine.

We are constantly checking Milliseconds, Mill volts, Milliamps. When do we check Millilitres?

Un-burnt fuel is one of the biggest horse power killers, incomplete combustion = incomplete performance. How often do we check the Millilitres of Fuel delivered?

We change Air Filters, Oil Filters, and Fuel Filters, how often do we change Injector Filters?

Chemical Cleaning
Fact not Fiction

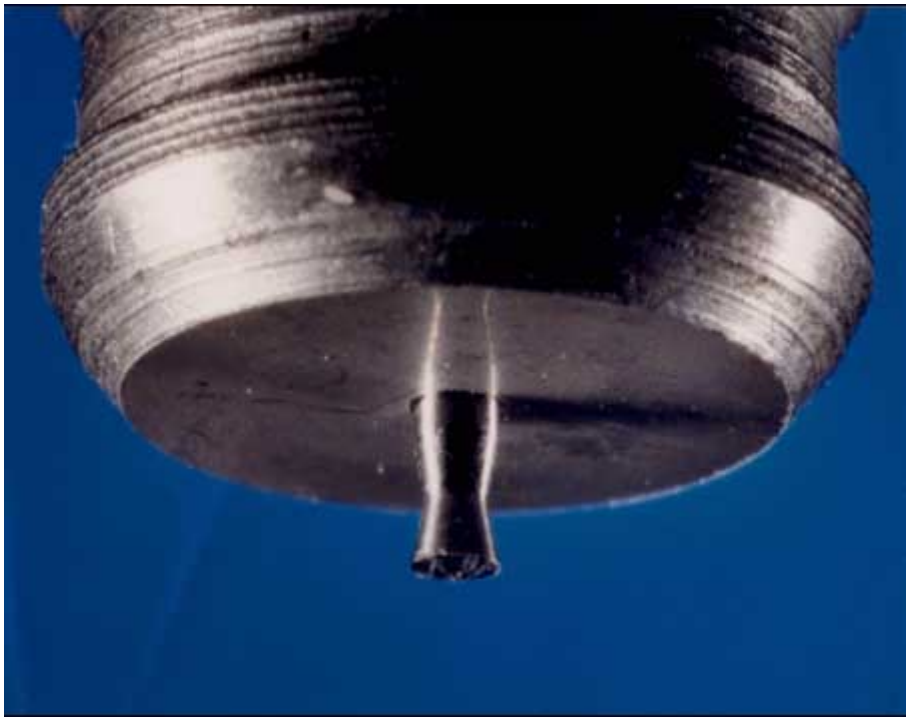


Ultrasonic Cleaning
Fact not Fiction

This injector has been ultrasonically cleaned, it is clinically clean.

Ultrasonic's are used by Dentists, Doctors and Hospitals for clinically cleaning metal instruments.

Ultrasonic's are used successfully in industry for cleaning many objects.



The Problems Begin

The problem begins from day one these injectors have done only 1500 miles.
The carbon build will only increase unless the injectors are serviced.

Serviced injectors will ensure maximum combustion.