

# THE WRONG TECHNOLOGY....

**A**LL modern petrol engines use direct fuel injectors. They produce more BRAKE HORSE POWER from the same size engines, and go further on the petrol we put in the tank.

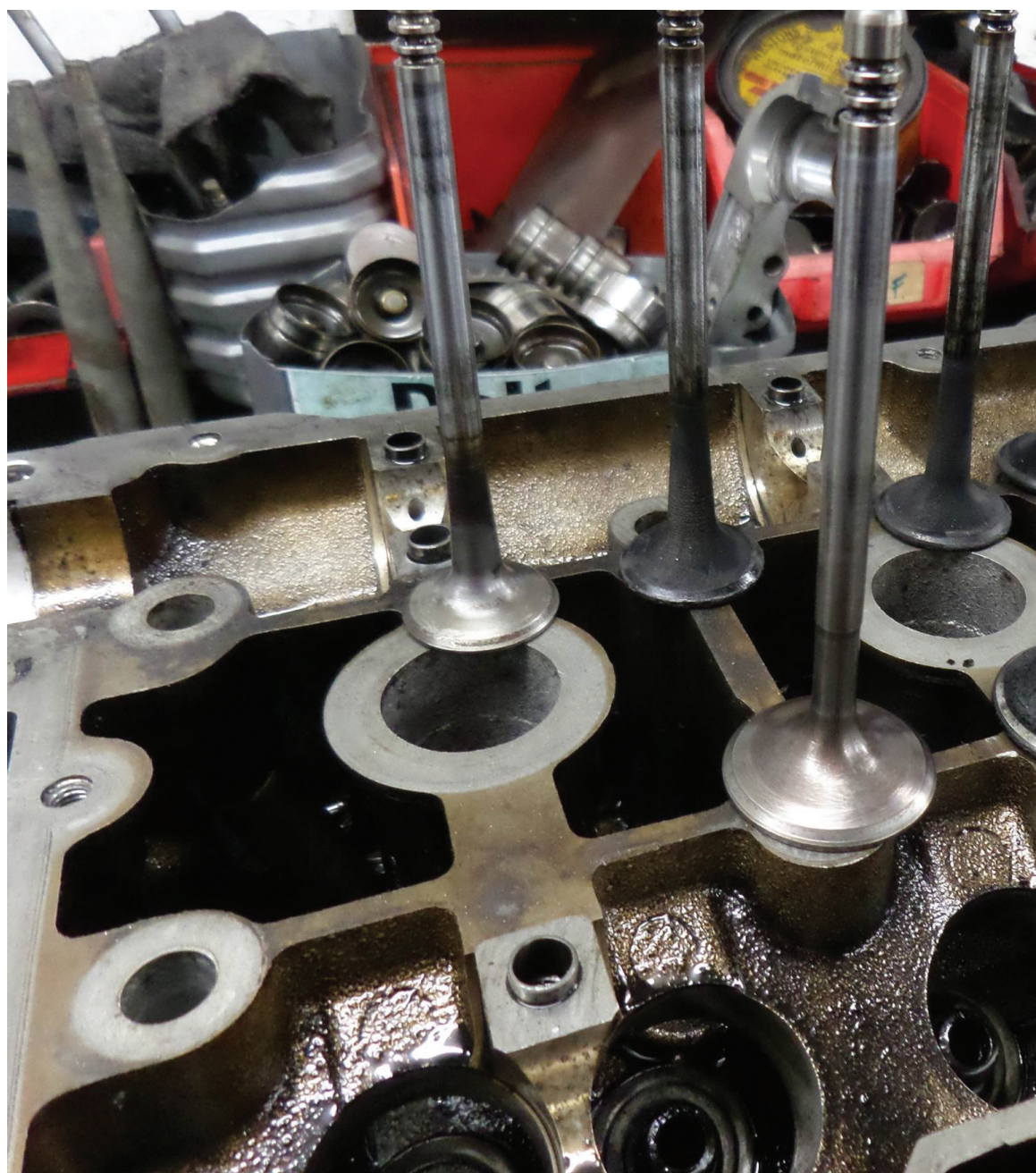
The new type of direct fuel injectors spray directly into the combustion chamber, and after the initial explosion.. they spray a bit more fuel to power the piston downwards prolonging the explosion, providing a more efficient combustion.

But, there is a price to pay. The modern engine works very well for a short time before clogging up the valve stems in the valve chamber with carbon deposits. When this happens, the engine loses power and efficiency as the valve stems are prevented from moving fluidly. The valve stems' 'natural' movement is being restricted by the build-up of carbon, and they begin to stick.

The older type injectors, had less of an issue with this. They are/were set into the intake manifold whereby fuel was sprayed onto the intake and exhaust valves, cleaning the stems before being mixed with air and sucked into the combustion chamber for the 'explosion'.

Today's diesel engines are very similar to modern day petrol engines. The direct injection diesel engines bypass the valve and in doing so create a lot of carbon soot and sludge in key engine components - turbo, EGR, DPF, intake valves etc - as well as in the engine oil.

There is, of course, a plethora of solutions on the market to address these issues and I have tried many, with various levels of success. Recently, my work-



shop invested in a hydrogen engine cleaning solution -Hy-Carbon - from a French headquartered company, FlexFuel. A relatively new entrant to the UK, but with 1500 garages in France using Hy-Carbon, I was confident in investing.

So, how does Hy-Carbon

work? The hydrogen generating machine produces anywhere between 500-600 litres of hydrogen per hour. And this is important. The greater the concentration of hydrogen the better clean it will give the engine. Be aware, some hydrogen cleaning technology from

other manufacturers produce significantly less hydrogen gas, meaning a less efficient clean. Additionally, there are no chemicals involved, no consumables, all it requires is deionised water. It requires little interference from me or my team, it runs itself.





gas 'softens up' carbon and soot, and most importantly cleans the valve stems.

We have seen cam belt driven engines with direct injection come in with worn out cams and followers from sticky valve stems. The valves were totally covered in carbon, and we have seen chain driven engines come in with snapped and stretched chains and adjusters and bent valves.

In summary; whilst today's modern engines are more efficient and reliable, the way the fuel is injected creates lots of issues with carbon deposits that can affect EGR valves, DPFs, turbos, engine efficiency and performance. Every vehicle that now comes into my workshop for a service or repair is also given a hydrogen clean - saving the owners vast sums of money on replacement parts, labour time and improving their vehicles economy and emissions.

As a garage owner, Hy-carbon is quite possibly one of the most profitable machines in my workshop.

## Case studies *real results....*

1 2200 Vauxhall diesel engine... DPF+EGR blocked, engine light on, DPF LIGHT ON, water temp 95 degrees, Exhaust gases at tail pipe red hot. engine not running smoothly and very noisy. After only 90 minute treatment from my Hy-Carbon machine the engine was running more smoothly and the water temperature was down to 83 degrees. The DPF engine light had gone off and I could hold the exhaust pipe with my bar hands without getting burnt.

2 Mito 1300 Diesel. 60000 miles. In for a yearly service. Now runs like a new car. The customer was very impressed by the improvement. He ran the next day with thanks, then a week later to say thanks again and the exhaust system had cleared after a long run and the car went like a rocket.

3 Nisan XTRAIL. Diesel. 190000 miles. Owned by my AUTO ELECTRICIAN. bad engine idle, lots of clattering from the engine. Smoke from the exhaust on an industrial scale. After 90 minutes .... no one could believe the improvement made by the hydrogen generator.

4 Carried out service on customers Volvo 2400 diesel estate along with a Hydrogen service. now gets 48 plus MPG on motorway trips, THIS CUSTOMER EVEN tried to put the blame on me if they get a speeding ticket as they can't keep the cars speed on the motorway lower than 90 mph. Oil still clean after 1000 miles.

5 Customer with Volvo diesel went to Romania, 6000 km. round trip. Very happy with job we did. Showed me the oil dip stick.... STILL LOOKED LIKE NEW OIL JUST REPLACED ON A PETROL ENGINE, clean and clear. He had never seen clean oil in a diesel engine. NOR HAVE I.

The Hy-Carbon machine fills up the entire combustion chamber with hydrogen gas by simply connecting to the air intake manifold and the gas ignites everything. Cleaning the valve chamber, intake and exhaust manifolds, EGR and DPF and the turbo. The hydrogen