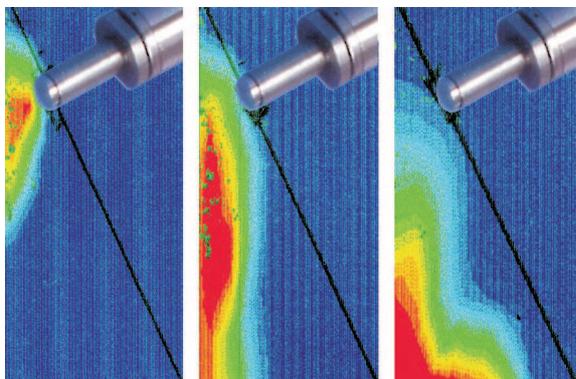


GSV - Gas Sampling Valve

The GSV is a quick, timed sampling valve which can take small amounts of gas out of different locations of an engine. While the sampled gas is transported to the analysis device, the controller prepares the electromagnetically activated valve for the next sampling. A few cycles later the next probe can be taken at a specified time. The GSV has proven its value especially in the area of developing new engine concepts. The optimized size of the GSV enables the user to sample gas out of almost any areas of the combustion chamber at the exhaust pipe. The controller provides the possibility to synchronize the sampling time with the crank angle of the engine. A sturdy design makes sampling times shorter than 1 ms possible. If larger times are required, it is possible to increase the valve stroke up to 3 mm. The setup time of the system is very short, for example in



Valve Stroke	0,3 - 3 mm
Sampling Length	0,8 - 3 ms
Sampling Time	0 - 719 °CA
Accuracy	+/- 1 °CA



Determination of Air/Fuel-ratio

The individual combination depends on the examination goal. The combination GSV with a gas chromatograph provides the possibility to determine the composition at different times and places. SMETEC offers a variety of adaptors to fit the GSV into the engine. If indication probe holes are present, the GSV can be fitted directly without delay because the end of the GSV is identical to a pressure sensor. To examine the mixture composition in the spark plug area, the GSV can be fitted with a spark plug adaptor. Almost every mass production spark plug can be integrated in this adaptor so that the ignition behaviour is not changed. To analyse the mixture formation in the area of the cylinder liner, a specially prepared head gasket can be used. The intake manifold or the exhaust pipes can be examined too. Besides the standard version of the GSV, it is also possible to manufacture the GSV individually.