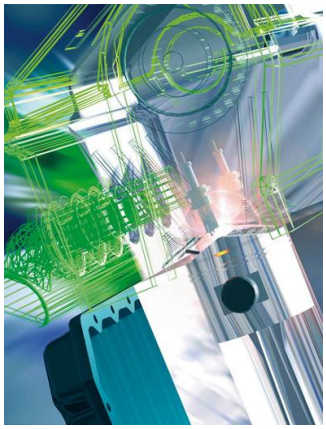
AVL DITEST DPM 800

DYNAMIC CYLINDER PRESSURE MEASUREMENT FOR MOTORSPORTS, TUNING AND TRAINING CENTERS

THE CYLINDER PRESSURE EXPERTS – COST-EFFECTIVE AND WITHOUT MECHANICAL INTERVENTION

The visualization of pressure characteristics in the combustion chamber of an engine is a key process for fine tuning an engine or analyzing engine wear, especially at auto tuning shops, at workshops and in motorsports. By combining the AVL group's know-how, AVL DiTEST and Piezocryst have created an innovative new product. Reliable pressure checks can be performed in the engine's combustion chamber without cooling, even at the highest engine temperatures such as occur in rallye sports.
DPM 800 stands for "Dynamic Pressure Measurement" and allows you to measure the change in internal cylinder pressure over time without any modification to the engine, using a spark plug equipped with a pressure sensor. In diesel vehicles, the glow plug is replaced by a pressure sensor. The full package also includes the pressure spark plug, an amplifier, the AVL DiSCOPE 802 and the AVL DiX software.
Given its moderate price and ease of use, the measuring system is also used in schools and training centers for demonstrating the combustion processes in gasoline and diesel engines.



Mobile application – quick and cost-saving

Piezocryst's know-how on sensors combined with AVL DiTEST's knowledge of systems allows quick and cost-effective measurement and analysis of cylinder pressure. This data allows easier optimization of the engine characteristics by making modifications to ignition and injection parameters such as full load torque, torque curves or vehicle response. Engine fault diagnosis is also improved in areas where it has always been difficult to distinguish mechanical or electronic faults.
With the pressure sensor integrated directly into the special spark plug or glow plug, engines can be tested and optimized just as easily on the racetrack as in the workshop.

Versatile application – comprehensive engine analysis and fault diagnostics

The AVL DiTEST DPM 800 measurement system can be used in both stationary and mobile operation. The measurements deliver a multitude of different facts, e.g.:

- Compression or peak pressure
- Combustion knock or pre-ignition
- Crank angle at 50% mass fraction burnt (CA50)
- Indicated mean effective pressure (IMEP)
- Wear and imminent faults



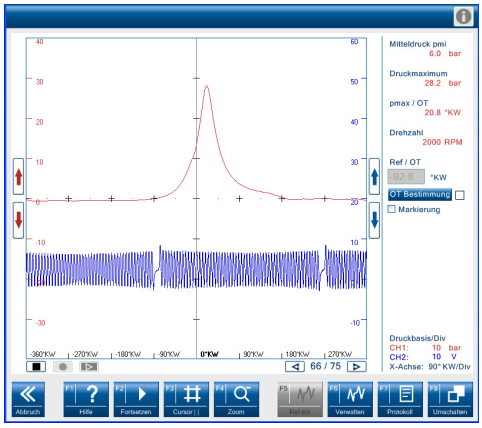
Precise measurement – meaningful characteristic values from patented software algorithms
AVL DiX software features automatic interpretation and clear display of recorded data. The specially patented algorithms, developed by AVL DiTEST system experts, allow precise location of top dead center and display of pressure curves as °CA.
The analytical functions of the AVL DiSCOPE 802 provide motorsports teams, workshops and training centers with the first high quality indicating technology.

Simple handling – unique measuring system without mechanical intervention

Measurements are taken directly in the cylinder chamber by a tiny pressure transducer integrated into the spark plug or glow plug. The pressure transducer developed by PIEZOCRYST allows the utmost precision in pressure measurement at very high temperatures.
No new holes or special cylinder head seals need to be created for this measurement. The entire hardware has been developed for the needs of specialized automotive workshops with regard to costs and handling.

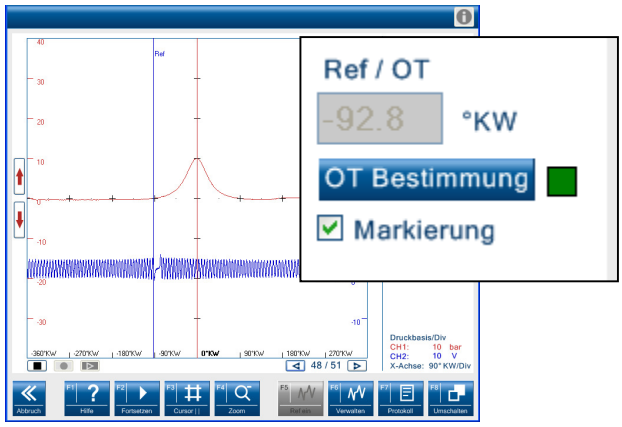
Published by:
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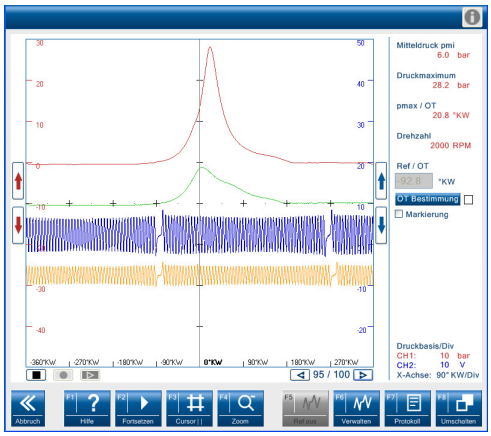
AVL DiX SOFTWARE –
AVL DiTEST KNOW-HOW ALLOWS PRECISE PRESSURE MEASUREMENT



Get started straight out of the box – intuitive operation, familiar displays
AVL DiX software, developed specifically for workshops and training centers, stands out for easiest use and clear color display of curves, measurement results and operating elements.
With a single click, the application starts and all parameters are set automatically. The available expert mode also allows detailed settings of all measurement parameters.
Alongside the display of pressure curves together with the crank angle, the most important measured signal parameters are displayed on the right-hand side, such as IMEP, revolution speed and maximum cylinder pressure with respect to TDC.

Intelligent software – automatic location of top dead center
The pressure curve is graphically displayed based on the crank angle (°CA) for one engine cycle.
The signal from the existing speed and TDC sensor on the engine is also displayed.
The patented software algorithm determines the correct TDC offset value at the push of a button. That guarantees a direct relation between the dynamic cylinder pressure and corresponding crank angle. If desired, markings can be displayed in order to highlight the maximum pressure and the detected TDC offset.





Efficient work flow – measurement technique with comfort functions
The unique **AVL DiTEST DPM 800** is based on the proven **AVL DiSCOPE 802**. The operator has all functions as well as the comprehensive package with all adaptors for a full-fledged engine and component tester at hand.
AVL DiX measurement software includes, among other features

- Functions for displaying, printing and processing comprehensive measurement logs
- Functions for displaying reference curves for all measurements
- Functions for creating and managing your own reference curves, which allow, for example, a comparison of individual cylinders to one another
- Zoom functions and professional cursor functions
- Recorder functions for recording and playback of dynamic signal traces with full functionality
- Functions for displaying the signal history

Technical Data

Signal amplifier		Pressure transducer	
Input range:	6000 pC	Spark plug shell: M10, M12, M14,	
Signal output	1 mV / pC	Available in various lengths and models	
Zero offset:	0.5 V	Glow plug shell	
Signal amplitude	0.5 V – 4.5 V	Custom production	
Temperature range:	-10 °C – 120 °C	Measuring range:	0–200 bar
Power supply:	8 V – 32 V	Temperature range:	up to 400 °C
Dimensions:	l = 131 mm / d=13.8 mm		

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