

DREW™ DPA IV-USB DIESEL PERFORMANCE ANALYZER



DESCRIPTION

The DREW DPA IV-USB Diesel Performance Analyzer is an advanced cylinder pressure and fuel injection monitoring system designed for use with all two-stroke and four-stroke engines equipped with indicator valves.

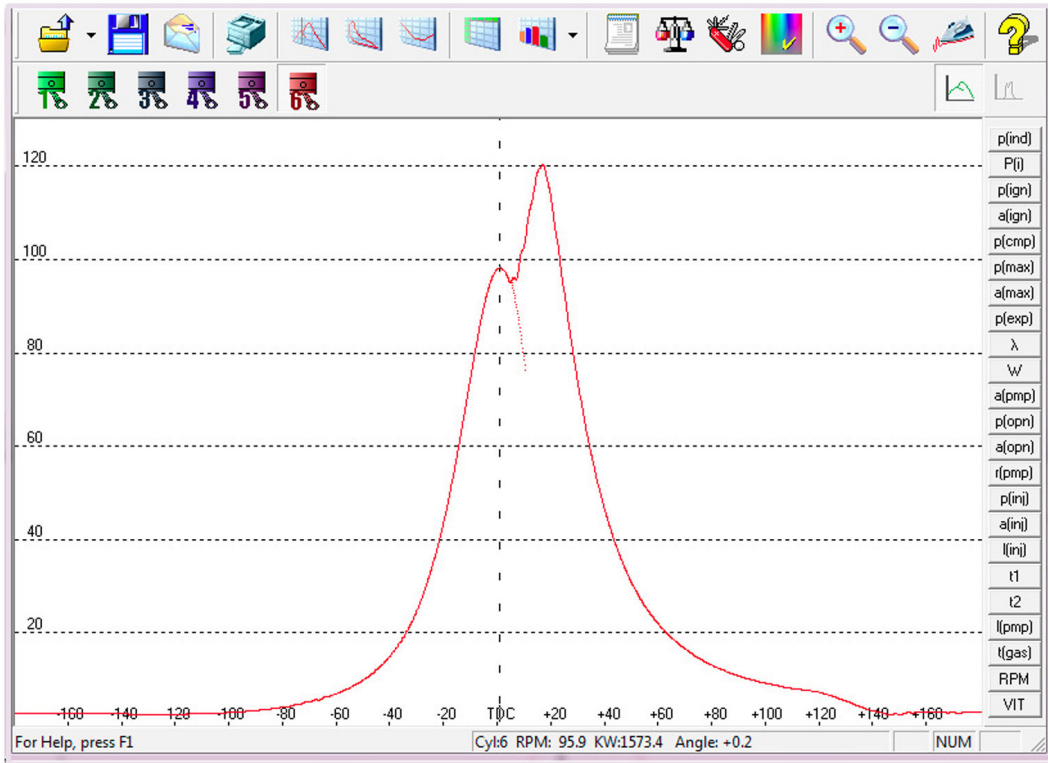
An existing personal computer with any current Microsoft Windows operating system including Windows 7 (32-bit & 64-bit) can be used with the DPA IV-USB software. Built with advanced components and computer capabilities, it sets the standard for automated combustion calculations and analysis. Combustion measurements are taken with a pressure sensor attached temporarily to the cylinder indicator valve to be monitored, while permanently fixed inductive sensor(s) simultaneously obtain RPM and crankshaft angle data from the flywheel. Fuel injection timing measurement (optional) can be achieved with an acoustic emission sensor eliminating the need for fuel system penetration thus improving safety.

FEATURES

- Turns an existing desktop or laptop PC into a user-friendly diesel engine performance analyzer.
- One-person operation with handheld DPA repeater allows

simultaneous measuring and engine tuning.

- Data immediately available on PC monitor screen; no downloading required.
- Real-time pressure diagrams: pressure-angle (p-a), light-spring, and fuel injection timing (optional) measurement.
- High precision and accuracy from 3600 measurements per revolution (every 0.1 degrees).
- Ignition point accurately defined and calculated compression curve shown.
- Dynamic TDC correction adjusts for crankshaft torsion forces while engine in operation.
- Measured parameters displayed numerically and with barplots (absolute or relative format).
- Results are measurable against stored reference data (i.e., sea trials or after engine overhaul/maintenance).
- User variable data inputs allow system customization; selectable report layouts available.



DPA IV-USB Software Interface - Single Cylinder Pressure-Angle (P-A) Diagram

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- Kistler pressure sensors provide long-term accuracy, high repeatability and up to 350 °C operating temperature range.
- Total of nine engines at one site can be measured.
- Engine measurement data files can be electronically transmitted ashore for technical assistance by third party.
- Raw engine measurement data export capability
- Summary report generation capability in PDF format
- Extensive system Help file and tutorial built into the software.
- Diagnostics tool provided for checking integrity of system engine room components.
- Cylinder sensor pressure calibration scheme offers easy annual calibration.

APPLICATION AND BENEFITS

Monitoring diesel engine performance by conventional “draw card” methods, along with planimeter calculations, is timeconsuming and subject to human error. The limitations of these methods generally make it necessary to use a preventative approach to engine maintenance, with engine work scheduled at regular intervals based on running hours. Unfortunately, engine efficiency still suffers from timing problems and load imbalances that occur and remain undetected between scheduled maintenance. A preventative maintenance approach, although better than emergency repairs, can be costly compared with “predictive maintenance,” making repairs and operating adjustments only when needed.

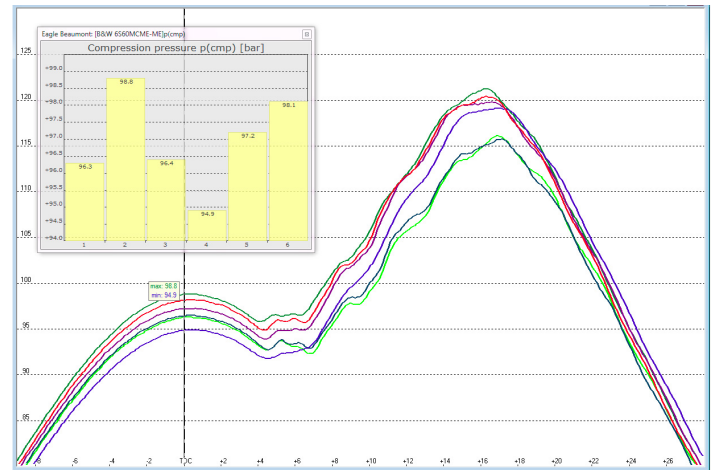
The DREW DPA IV-USB analyzer reduces operating costs:

- Predictive maintenance provides protection against costly downtime and promotes exchange of engine parts based on need, not running hours, reducing spare parts and labor costs
- Total and complete information enables evaluating and improving the efficiency of your engines by:
 - Optimizing engine timing and determining quality of fuel pumps and injectors
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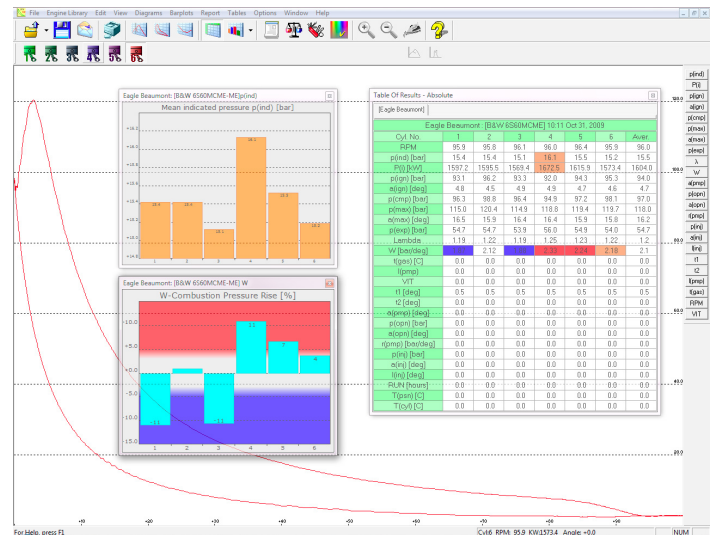
- Optimizing fuel consumption (e.g., potential reduction of 2 to 3 percent)
- Balancing cylinder-to-cylinder output extending engine life, increasing performance and reducing emissions

RECOMMENDED OPTIONAL EQUIPMENT

- Fuel Injection Timing Measurement Option (PCN 1AA2656)



Multiple Cylinders P-A Diagram zoomed in with absolute Compression Pressure graph



Single Cylinder P-V Diagram with Table of Results, absolute Mean Indicated Pressure & relative Combustion Pressure Rise graphs

Contact your Drew Marine representative for more information

DREW DPA IV-USB SYSTEM

Engines		Desktop & Laptop PC
2-Stroke	4-Stroke	PCN
1	–	1AB2297
1	3	1AB2300
1	4	1AB2301
–	1	1AB2289
-	2	1AB2290
-	3	1AB2291
-	4	1AB2292
-	5	1AB2293
-	6	1AB2294
-	7	1AB2295



Contact your Drew Marine representative for more information

Drew Marine maintains Safety Data Sheets on all of its products. These documents contain health and safety information for the development of appropriate product handling procedures to protect your employees. Safety Data Sheets should be read and understood by all of your supervisory personnel and employees before using Drew Marine products.



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