

# DOCTOR

# ICON RESEARCH

## Portable Systems

### FEATURES

***Proven Reliability and Accuracy***

***Cylinder Only and Combined Cylinder + Fuel Versions Available***

***Comprehensive Analysis Software***

***Choice of Inductive or Optical Crank Synchronisation***

***Easy Carrying in Compact Shoulderbag***

### Portable Doctor Systems

The portable *Doctor* DK-2 series is an industry standard for cylinder pressure measurement, having built its reputation on reliability, accuracy and ease-of-use. The "Diesel Doctor", as it is often known, is housed in an extremely rugged plastic case and is fully sealed against moisture and dirt. A complete system, including sensors and cables, fits into a convenient shoulder bag about the same size as a camcorder case.

Two versions are available. The DK-2 is a single channel unit for measuring cylinder pressure while the DK-2/FV measures cylinder and fuel pressure simultaneously. Both systems use Kistler pressure sensors for long-term reliability and accuracy.

### System Description

For synchronising to shaft rotation, two schemes are available. The first uses an inductive pickup that senses a small metal target on the flywheel. This can be permanently wired to a junction box on the engine. This



enables straightforward connection of a cable for shaft synchronisation. For large 2-stroke engines, a dual pick-up system is available that compensates for changes in rotational speed during each revolution of the engine. This provides increased accuracy when the engine is, for example, driving a propeller shaft directly.

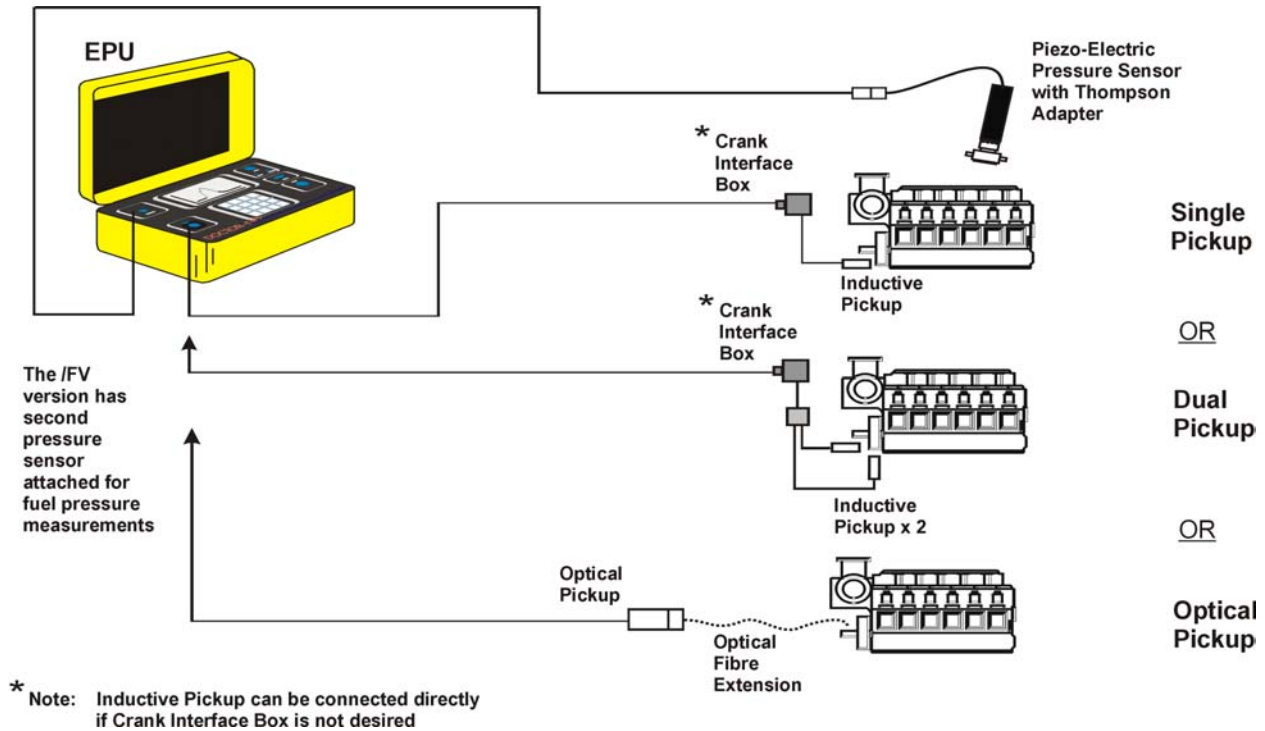
The second scheme is ideal for service work and comprises an optical pickup with a small fibre-optic extension. This will sense any light-coloured marker on the flywheel. It is often possible to use an existing mark and so it is not necessary to stop the engine before taking a set of readings.

Operation of the system is simple. The engine configuration (2-stroke/4-stroke, V/in-line etc) is entered and this is stored under the engine

name. Hence, this is a “once-only” task. To take a measurement, the operator connects the pressure sensor to the appropriate cylinder and presses the GO button on the Engine Processor Unit (EPU). The screen indicates the progress of the measurement and, once completed, the operator just moves the pressure sensor to the next cylinder and presses GO again. Key parameters such as power, angle of Pmax etc

are shown on the screen. One person easily operates the system, and the time to measure a typical engine is just ten minutes or so.

Once all cylinders have been measured, results are transferred to a PC via the serial port on the unit. The detailed graphs and full analysis options of the standard Doctor software are then available to examine results.



**ENGINE PROCESSOR UNIT:**

Power: 100V to 240Vac  
 Memory: Up to 105 cylinder results  
 Display: LCD Screen  
 Keypad: Flexible Rubber type  
 Sealing: IP66 (IP67 with lid closed)  
 Operating Temp: -10°C to 55°C  
 Weight: 4.5kg  
 Link to PC: RS232 @ 9600 baud

**CYLINDER PRESSURE SENSOR**

Type: Piezo-Electric  
 Adapter: Standard Thompson Adapter  
 Power: Supplied from EPU  
 Operating Temp: 350°C max at sensor element  
 Extension Cable: Fischer to TNC  
 Length: 5m  
 Sensitivity (Typ): 20mV/bar

**FUEL PRESSURE SENSOR**

Type: Piezo-Electric  
 Adapter: Threaded adapter  
 Power: Supplied from EPU  
 Operating Temp: 200°C max at sensor element  
 Extension Cable: Fischer to TNC  
 Length: 5m  
 Sensitivity (Typ): 2.5mV/bar

**FLYWHEEL PICKUPS**

Type: Inductive  
 Temp Range: -10°C to 70°C  
 Sealing: IP67  
 Power Supply: From EPU

North American Distributor:  
 Tel: 860-767-9061

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