

Dieseltune IV

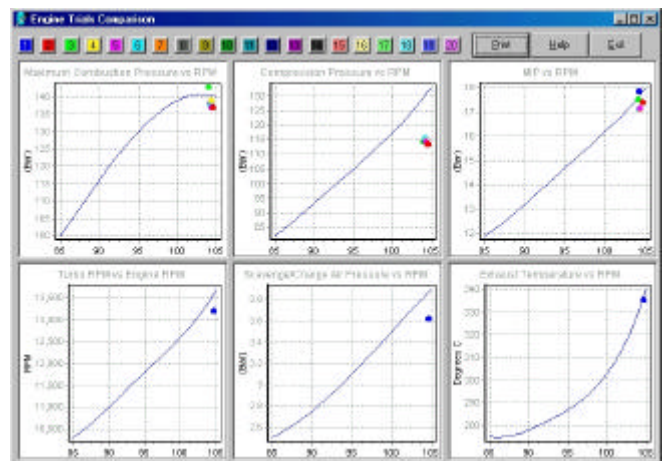
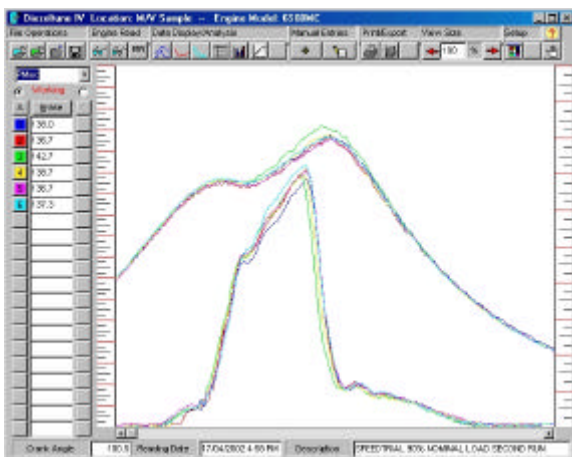
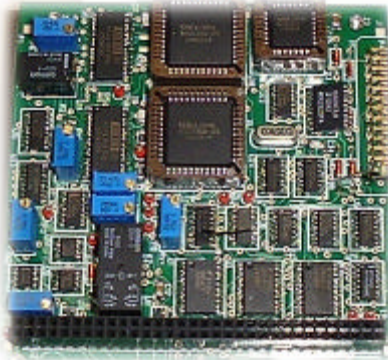
The most comprehensive Engine Performance Analysis System to Date.



For improved:

*Reliability
Performance
Efficiency and
Maintainability*

of Modern Diesel Engines



Contact Details:

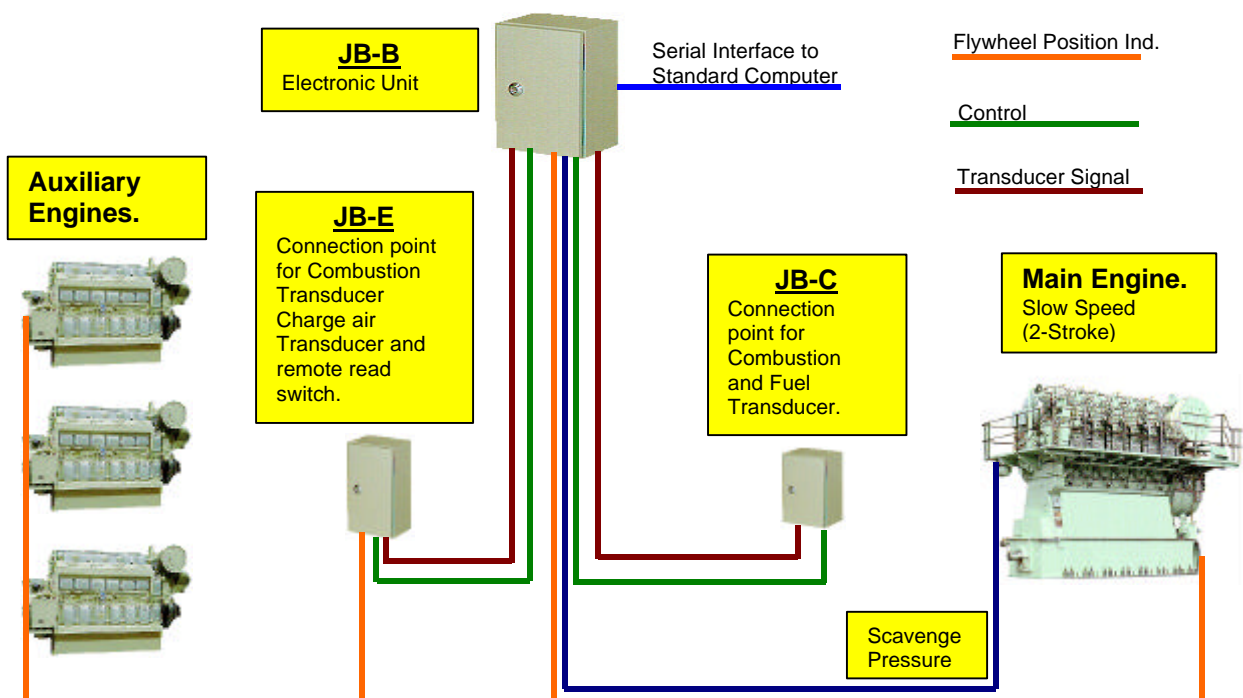
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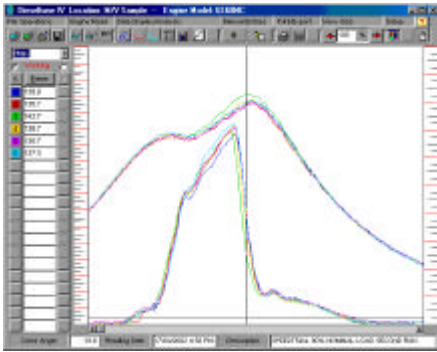
Benefits in Using Dieseltune IV

- Dieseltune makes it very easy to maintain an engine's settings and pinpoint any variation that may develop, thus keeping the engine operating within the desired parameters.
- Improved reliability is achieved by identifying faulty components before they can cause damage.
- Decrease in wear of parts. An unbalanced engine will increase wear rate considerably, and faulty components can quickly damage engines.
- Improved fuel Economy/Speed is achieved by keeping the engine at optimum settings, which is often difficult to identify without a system such as Dieseltune.
- Ability to receive remote advice based on readings. Since Dieseltune readings are very compact they can be sent via satellite at a minimal cost. This enables engineers at head office to give advice or second opinion on any irregularities.
- Improved efficiency of engineers. Using Dieseltune allows engineers to isolate engine problems quickly and it takes a lot of the guesswork out of identifying problems.
- Reduction of spare parts usage. When faultfinding, engineers often replace parts that may be faulty. Dieseltune pinpoints the problem and unnecessary replacement of parts is often avoided.
- Parts are often replaced based on running hours and not on condition. Dieseltune can detect the condition of numerous parts and replacement can therefore be done only when actually required.

General System Description

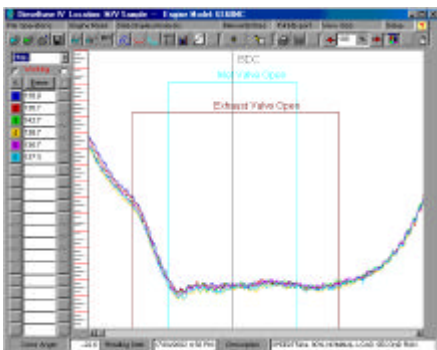
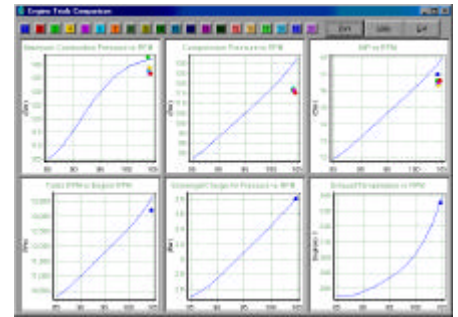


Dieseltune IV Features



← Main Analysis page showing Combustion and Fuel Pressures against crank angle.

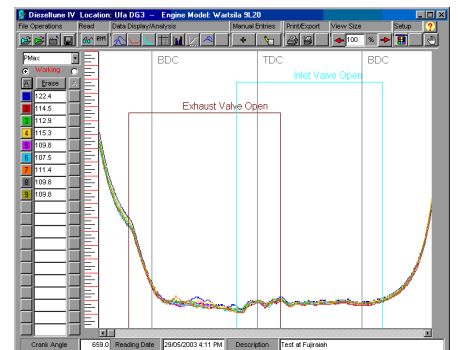
⇒ Values from reading compared to original seatrial data with correction to ISO ambient condition.



Exclusive “**Light Spring Diagram**” showing valve operation and Turbo Charger Performance.

← Lightspring diagram for a 2 stroke engine.

⇒ Lightspring diagram for a 4 stroke engine.



Dieseltune Software measures/derives the following parameters from the Engine:

RPM	Revolutions per Minute
Pmax	Maximum Combustion Pressure
Tmax	Time in Crank Angle of Maximum Combustion Pressure
Pcomp	Compression Pressure
Tig	Time in Crank Angle of Ignition
Pexp	Expansion Pressure measured at 36 degrees ATDC
Ps	Scavenge/Charge air pressure.
Rign	Rate of rise after Ignition
PM/PC	Maximum Pressure over Compression Pressure
MIP	Mean Indicated pressure
IKW	Indicated Kilowatts
IHP	Indicated Horsepower
TIO	Time in Crank Angle of Injection Opening
PIO	Pressure at Injection Opening
PIM	Maximum Injection Pressure
Rise	Rate of pressure increase from build up to Injection Opening
Linj	Length in Crank Angles that Fuel is Injected

The software also includes:

- On-line context sensitive Help
- Engine diagnostics
- System self diagnostics

Detectable Engine Faults Using Dieseltune IV

Combustion Pressure

- Accurately measures engine power for each individual cylinder.
- Compression pressure – due to worn or broken piston rings, or liner.
- Compression pressure – due to leaky exhaust/inlet valves.
- Fuel injection atomisation.
- Leaky injectors.
- Crankshaft twist/slippage.

Fuel Pressure

- Fuel pump performance.
- Fuel injection opening pressure.
- Fuel injection timing.
- Ignition delay.
- Amount of fuel injected.
- Blocked fuel injectors.
- VIT function

Light Spring

- Exhaust and inlet valve timing and duration.
- Exhaust trunk backpressure.
- Turbocharger performance.

Installation

The entire installation/commissioning procedure can comfortably be carried out by a qualified electrician without any prior training from [Digitec Pty. Ltd](#)

System Component Specification

Combustion transducer:

Piezo electric, make: Kistler. Type: 7001, range: 0 - 250 bar, Accuracy: better than 1%

Fuel injection transducer:

Piezo electric, make: Kistler, Type: 6229A, range 0 - 5000 bar, Accuracy: better than 1%

Fuel injection adaptor valves:

One valve is fitted to the fuel injection pump or distribution block on each cylinder, these valves are backseated to prevent fuel leakage, and are fitted with a safety plug when not in use.

No modifications are necessary to the fuel injection system.

Scavenge air transducer:

Piezo resistive, range 0 - 4 bar, Accuracy: better than 1%

Magnetic pickups:

Two pickups fitted to each engine, one sensor produces a TDC index pulse. The second produces one pulse for each flywheel "tooth" which is then converted to 1440 pulses / revolution, enabling a sampling rate of 1440/revolution or (4 samples per degree of crank angle).

Computer:

Any industry compatible computer capable of running Microsoft Windows or Linux operating system is used to analyse engine data. Data is transferred via a standard serial port from the System to the computer.

Agent Details