

FS9V4-RH-V-D-HV

Particle counting, water sensing, viscosity + density sensor for high viscosity oils

ON-SITE OIL ANALYSIS

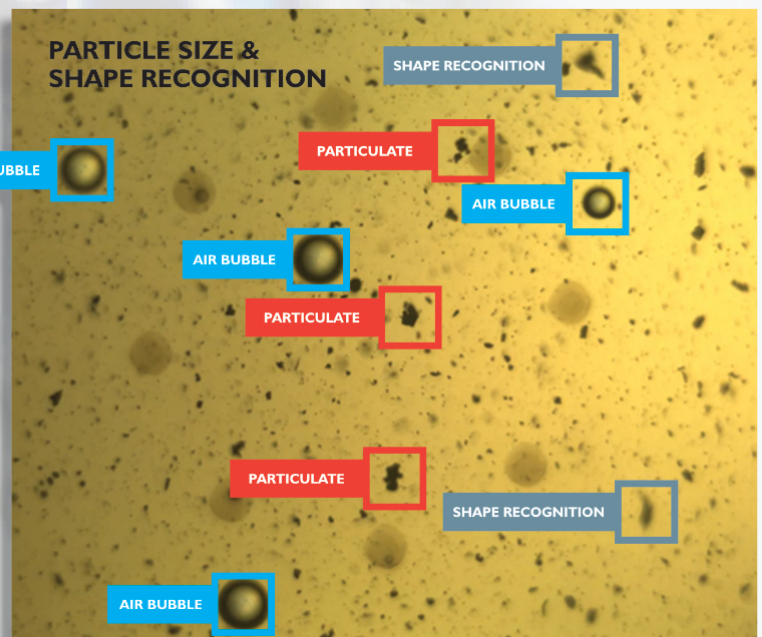
Our all new **Particle Pal Plus** utilises breakthrough digital imaging technology which provides a greater insight into the size and type of particulate in any oil system. Air bubble elimination and shape recognition gives root cause particle analysis. Viscosity, density and water content sensors, along with stepper motor pump for high viscosity oils completes the package.



FS9V4-RH-V-D-HV

Harnessing the power of proven digital imaging technology with added viscosity, density and water sensing technology

We've embedded the latest in particle counting technology along with a viscosity and density sensor into our new Particle Pal Plus series. Giving ISO 4406 counts as well as 4, 6, 14, 21, 38 & 70 micron sizing and bubble elimination. Digital imaging, combined with advanced algorithms, sorts particles into fatigue wear, cutting wear and sliding wear categories to give root cause analysis. The viscosity sensor gives live dynamic readings. This powerful technology when coupled with an additional sensor for measuring water content, gives unprecedented, on-the-spot insight into the condition of your oil.



The image above is 4mm x 3mm and shows particulate that the human eye can't see. Images of the oil are not displayed on the screen.



Digital Imaging Particulate Counter

Capable of broad size determination from 4, 6, 14, 21, 38 & 70 micron counts. Air bubble and water droplet elimination. Shape determination to identify fatigue, sliding or cutting wear as well as fibre identification.



Battery Life

Internal rechargeable lithium batteries providing up to ten hours of use.



Water Sensor

Water in oil is a contaminant that can contribute to microbial growth and encourage further contamination, from solids to rust. The inbuilt water sensor shows the relative humidity of any oil as % saturation.



Viscosity Sensor

An accurate piezo electric viscometer with a measuring range of 25-400mPa.s. Knowing the viscosity of your oil can help spot end of life or dilution/ topping up issues.



Internal Stepper Motor Pump

Stepper motor driven pump to deliver exact flow rates for any oil, from 1 to 2,400 cSt. The pump also allows connection to a live system up to 350bar via a high pressure adaptor.



Water content.

Displayed as % saturation (relative humidity). Helps inform whether an oil change is actually required.



Viscosity & Density

Displays live dynamic viscosity, density and temperature.



Particulate analysis.

The Atten2 digital imaging particle counter gives advanced size and shape recognition for any sample. Counting particulate in virtually any oil up to 2,400cSt, the Atten2 device also eliminates air bubbles, making it ideal for heavy lube and gear oil applications in cold temperatures. Reporting 4, 6, 14, 21, 38 & 70 micron counts as well as categorising any particle greater than 20 microns into:

- Fatigue Wear • Sliding Wear • Cutting Wear • Fibres

Clear and easy to read ISO code which changes between green, white and red to indicate the oil cleanliness.

Oil cleanliness for each size category details the ISO code, number of particles per millilitre and the bubbles detected.

Additional sensors give an unprecedented insight into the overall condition of the oil.

ISO: 18 / 16 / 13

88%

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Size	ISO	Particles	Bubbles
4µm	18.6	1921	4
6µm	16.2	364	3
14µm	13.4	54	2
21µm	11.5	15	2
38µm	9.3	3	1
70µm	8.2	1	0

Density: 886 kg/m³
Viscosity: 188 mPa.S

NAS: 7
SAE: 4
RH: 56%, 22°C

Fatigue: 44	Sliding: 6
Cutting: 12	Fibre: 1

Additional settings allow control of the pump speed for priming and flushing, datalogging, ISO cleanliness alarm limits and changing the time zone.

Oil cleanliness is trended over time to show how its condition changes.

Particles are analysed and sorted into fatigue wear, cutting wear, sliding wear and fibre identification to give root cause analysis.

Particle Pal Plus Advanced Oil Analysis - TECHNICAL INFORMATION

Fluid Compatibility	Synthetic oils, organic oils, mineral oils & diesel fuel (2,400 cSt viscosity limit)
Display Information	<p>Particulate: ISO 4406, SAE AS4059 & NAS 1638, bubble elimination and particle wear analysis.</p> <p>Water sensing: Water is displayed as relative humidity (RH) % saturation.</p> <p>Viscosity: Range: 25-400mPa.s Resolution: 0.1 mPa.s Accuracy: +/- 5%</p> <p>Density: Range: 0.6kg/m³ - 1.3kg/m³ Resolution: 0.001 kg/m³ Accuracy: +/- 2%</p>
Modes of Operation	High pressure live system sampling (up to 350 bar) - via a high pressure adaptor. Bottle sampling and tank sampling.
Data	All data stored locally with an option to export to CSV or PDF.